

The Philosophical Society of Texas

PROCEEDINGS

2009

THE PHILOSOPHICAL SOCIETY OF TEXAS FOR THE COLLECTION AND DIFFUSION OF KNOWLEDGE *was founded December 5, 1837, in the Capitol of the Republic of Texas at Houston by SAM HOUSTON, MIRABEAU B. LAMAR, ASHBEL SMITH, THOMAS J. RUSK, WILLIAM H. WHARTON, JOSEPH ROWE, ANGUS MCNEILL, AUGUSTUS C. ALLEN, GEORGE W. BONNELL, JOSEPH BAKER, PATRICK C. JACK, W. FAIRFAX GRAY, JOHN A. WHARTON, DAVID S. KAUFMAN, JAMES COLLINSWORTH, ANSON JONES, LITTLETON FOWLER, A. C. HORTON, I. W. BURTON, EDWARD T. BRANCH, HENRY SMITH, HUGH MCLEOD, THOMAS JEFFERSON CHAMBERS, R. A. IRION, DAVID G. BURNET, and JOHN BIRDSALL.*

The Society was incorporated as a non-profit, educational institution on January 18, 1936, by George Waverly Briggs, James Quayle Dealey, Herbert Pickens Gambrell, Samuel Wood Geiser, Lucius Mirabeau Lamar III, Umphrey Lee, Charles Shirley Potts, William Alexander Rhea, Ira Kendrick Stephens, and William Embrey Wrather. On December 5, 1936, formal reorganization was completed.

The office of the Society is housed with the Texas State Historical Association, P.O. Box 160144, Austin, TX 78716.

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The Philosophical Society of Texas

The inspiration for the 172nd anniversary meeting came from the Society's 1948 program, "The Creative Arts in Texas," which was organized by the Society's first woman president, Miss Ima Hogg. Revisiting this topic, current president Michael L. Gillette put together "Creative Texas 2.0" to survey the state's most significant and creative advances across a broader range of endeavors: education, the arts, writing, and science. The meeting was held in Austin, Texas at the new AT&T Executive Education and Conference Center and Hotel on the University of Texas campus. A total of 334 members, spouses, and guests were in attendance.

The meeting began on Friday December 4, 2009 with optional morning and afternoon tours. The mourning tour visited the Jack S. Blanton Museum of Art, the Petawatt Laboratory, and the Visualization Laboratory located on the University of Texas campus. The afternoon tour showcased the Texas State Capitol and the Harry Ransom Humanities Research Center. The evening ended with a reception and dinner at the AT&T Conference Center. William C. Powers, Jr., President of the University of Texas at Austin, delivered the welcoming remarks.

President Gillette announced the eight new members and presented them with their certificates of membership. The new members were: Sharon Wilson Allison, Waco; Fernando A. Guerra, San Antonio; Herb Kelleher, Dallas; Nancy Cain Marcus, Dallas; W. Frank Newton, Beaumont; Gretchen Ritter, Austin; Chase G. Untermeyer, Houston; and Andrew C. von Eschenbach, Montgomery. Although there were seven openings, the Bylaws stipulate that vacancies are automatically filled in order of number of votes received by the candidates. In the case of a tie, the number of active members shall temporarily increase until natural attrition occurs, per the Bylaws. Because two candidates tied for the seventh place, there were eight new members this year.

The 2009 Award of Merit for the Best Book on Texas was given to Pekka Hämmäläinen, for *The Comanche Empire*, Yale University Press, 2008. This award is given annually for the best book published on Texas, fiction or non-fiction.

A lively roundtable discussion took place on Saturday afternoon and was followed by a reception and dinner at the Lyndon Baines Johnson Presidential Library and Museum. After guests toured the museum galleries, they returned to the AT&T Conference Center for a special per-

formance by Anne Akiko Meyers, a celebrated concert violinist. She was accompanied by Anne Epperson on the piano.

The annual business meeting was held on Sunday morning. The names of Society members who had died during the previous year were read: William Wayne Justice, Elmer Stephen Kelton, Lowell H. Lebermann, Jr., John Dean Moseley, and Dorman Hayward Winfrey. Secretary Ann Hamilton announced Society membership stood at 201 active members, 62 associate members, and 78 emeritus members for a total of 341 members. Officers elected for the year 2010 are as follows: J. Mark McLaughlin, president; Frances B. Vick, first vice-president; Jon H. Fleming, second vice-president; Harris L. Kempner Jr., treasurer; and Ann T. Hamilton, secretary. President Gillette adjourned the meeting until December 3-5, 2010, in San Angelo.

WELCOME AND INTRODUCTION

MICHAEL L. GILLETTE

When Ima Hogg, the first woman president of this society, convened the 1948 meeting, she called on Radoslav Tsanoff to survey the status of the creative arts in Texas. If the topic selected was a response to the national media's preoccupation with oil-rich Texans while ignoring our cultural attainments, the program also addressed causes that were dear to Miss Ima's heart. Indeed, she and other members of her family had been directly involved in many of Houston's advances during the first half of the 20th century: the Symphony, the Museum of Fine Arts, and the Texas Medical Center, to name a few.

Tsanoff was also deeply immersed in a variety of the state's cultural activities since he joined the Rice faculty in 1914. In addition to the symphony and the Museum of Fine Arts, he held memberships in the Texas Institute of Letters and the Texas Folklore Society, and he was, of course, a member of the Philosophical Society. In his presentation, Tsanoff contrasted the state's modest cultural and educational facilities during the century's first decades with the wealth of institutions in the prosperous, more urban, post-war Texas. He cited an impressive inventory of progress: in science and medicine, in education, in the arts, and in the establishment of symphonies, theaters, art museums, and libraries.

But beyond the comparison, there are two striking features of Tsanoff's presentation. The first was his plea for a regional artistic expression: in his words, "an emancipation from the set pattern of Broadway and Hollywood." He invited his listeners to find in Texas life "a unique fountain-source of creative expression." He believed that our museums should not become "small pocket editions" of the Met, but rather should showcase the artistic treasures of the Southwest. He also proposed a Texas literary and art magazine and an expansion of cultural arts festivals to recognize the talent of local composers and playwrights. His call for more funding for the arts and the artists is a refrain familiar to us today.

Tsanoff concluded his address with an egalitarian flourish, extolling art as the grace of common daily life:

"Art, science, philosophy, religion, these are not socially exclusive; they reach into the roots and heart of human life, and they reach

to the summits of our daily hopes and capacities, Against the spurious culture of pedantry and snobbery, see the evidence of deep spiritual hunger, both hunger and sustenance, in the common life of men throughout the ages, Folksong and folklore and proverbs, sagas, myths, pageants, and dances are their seals of genius. And out of this vast source of creative life, new springs of genius are ever rising. They will rise more abundantly still when our social system becomes more enlightened, just, and humane to recognize them and to provide them full expression."

His eloquent words remind us that, despite a half century of remarkable advances, a world of promise went unfulfilled in his day. It was in 1948, after all, that Dr. Hector Garcia had to organize the American G.I. Forum to secure the medical and educational rights of Latino veterans returning from World War II. And Heman Sweatt had spent the two preceding years in the courthouse that now bears his name, fighting to gain admission to this university's segregated law school.

So, as we explore innovation in education, science, the arts, and writing in our own era, we are mindful that history will weigh not only the challenges we meet, but also those we neglect. We also recognize that challenges create opportunities and that creativity is often born of necessity. What are some of the successful strategies that our schools are devising as they grapple with complex problems extending far beyond the classroom? How is our state's great diversity affecting learning, literature, and the arts? Will science and public policy find solutions to the environmental challenges fueled by the last century's technological innovations? As technology revolutionizes the forms of verbal communication, how will its content change? And how will this change transform our society?

To address today's update of the 1948 program, our planning committee has enlisted some of the state's most creative minds and compelling voices. We hope that the discussion will inspire a robust conversation in this afternoon's roundtable and that your voices will enrich and extend the dialogue.

THE ART OF LEARNING

RAMONA TREVIÑO, *Chair*

SUSAN LANDRY, MICHAEL FEINBERG, NANCY WEISSKOPF

DR. TREVIÑO: I am proud to be Founding Principal/CEO of the University of Texas Elementary School, Home of the Littlest Longhorns! Special thanks to Michael Gillette and the organizers of this event for inviting me and the esteemed team of educators joining me for this session: Dr. Susan Landry, Mike Fienberg, and Nancy Weisskopf. We are certain that you put the education piece first because you know it is most important. Or maybe because you know educators are used to getting up so early?

We are grateful for the ongoing work that Humanities Texas has done to improve public education. I had to laugh when Michael and I were exchanging e-mails about what to talk about related to learning because all I could say was: "Well it's the Philosophical Society....say something really wise and philosophical." So, I thought I would start with a few wise words regarding learning from a book of Chinese proverbs:

Learning is like rowing upstream...not to advance is to drop back.

Learning is a treasure that will follow its owner everywhere.

A single conversation with a wise man is better than ten years of study.

Our hope today is to get to the heart of what we believe is truly the "art of learning." What we know is that learning is constant and has no limits. We all agree that learning occurs at all levels and all ages, but today our focus will be on public education. We will address issues and personal success stories ranging from school readiness to school choice to changes and movements in education and the need for reform.

I am going to begin by talking about my favorite topic, UT Elementary! At UTES our motto is, "Teaching to the Spirit of Every Child." As the first university sponsored charter school in Texas, our mission is to develop our population of low-income children of color into life-long learners and college bound students. We were created to serve as a model program for diverse populations in urban settings. We demonstrate research-based practice, provide opportunities for pre-service teachers at the university and professional development and outreach to the larger education community. From the moment we opened our doors in August of 2003, I have been overwhelmed by the grand nature of our school's mission and the divine nature of those who have come our way in support of this mission.



Figure 1.

I am happy to say that we have exceeded expectations in a few short years and are currently rated “Exemplary” by the Texas Education Agency. There are many to thank for this, some in this room! In my work I cannot stress enough the power of community working toward a unified mission.

In creating this new educational organization, the University of Texas has sent a strong message of the importance of social equity

and the critical role of education. They have given our students’ parents hope of a better future for their children. They have validated the need to create models of change. It truly takes a village to raise a child; the Little Longhorns are lucky to be included in the UT village.

The school was created due to three significant institutional initiatives: researched-based reading, the P-16 initiative, and the founders’ vision regarding charter schools. The school is a small, open-enrollment elementary charter school, free to students, with a lottery-based admission system, and designed to serve pre-kindergarten through grade five. It opened to serve a diverse population of students in east Austin with a demographic of 80 percent economically disadvantaged, 75 percent Hispanic, and 24 percent African-American, using a full, state-aligned curriculum.

The school model that resulted at the elementary school has four essential components: strong leadership, a balance of efficiency and humanity, democratic dialogue and strategic planning, and caring and respect. These components have been key to my research and will be the focus of my time with you.

Role of Leadership: As an administrator it is essential to believe in academic success for all students and their families, no matter their economic situation, and to hire highly qualified teachers. The principal must have a clear vision and inspire, encourage, and set the stage for greatness and success for all. Core to my philosophy of school leadership is the ability to create unity of purpose and to empower the school community through responsibility and building from strengths. It is also important to create systems of effective communication and decision-making to promote democratic planning.

Teaching and learning must be of the highest priority, with data analysis, strategic planning, and parent outreach essential components when addressing achievement. Full participation from the staff and community in events, celebrations, forums for dialogue, decision-making, and campus planning must be expected. As the principal, I am intent on bringing pride and distinction to the school and its membership.

Leadership defines culture and culture defines leadership. An important

aspect of leadership is listening and being in tune with the concerns of all participants. Group ideology is formed by the way critical events are managed. These understandings become group values and are passed on to new members and group identity takes shape. It is an important skill in school leadership to be able to balance the equilibrium of the organization and successfully articulate and constantly demonstrate the core values of the school culture. It is important for leaders to build staff capacity for school leadership from within, so that if the leader or key staff members leave, the school will not be adrift.

Balancing Efficiency and Humanity: My research indicates that schools must work to achieve a balance of efficient systems and high expectations for performance within the cultural and human side of schooling. Efficient systems and proven best practices are essential, but schools must also create a culture of respect, caring, and dialogue. Student academic achievement is the reason that efficient systems must exist in public schools, but social and emotional development must be supported as well to cultivate a readiness to learn.

UTES was established as a research-based demonstration school and has a track record of success in serving inner-city children who are mostly minority and low-income. One powerful method used is Response to Intervention (RtI), which prescribes early and frequent assessment of each student and allows for prompt identification of learning difficulties and concepts that need reinforcement. RtI is an instructional framework which allows teachers to analyze individual student's learning needs and to respond quickly with specific resources and strategies. A second method used is Social-Emotional Learning (SEL) which is designed to promote skills needed to be productive in the workforce: respect, problem solving, empathy, communication, and team-work within the elementary classroom. These concepts are essential in any school, but especially those schools in poverty areas.

Caring and Respect: Researcher Nel Noddings says that the main aim of education should be a moral one, nurturing the growth of competent, caring students. All children should learn to care for themselves, others, animals, plants, and all things on our shared earth. As humans, we need to be cared for by being understood, received, respected, and recognized, and, in turn, learn to be caring. Good teaching requires the development of relationships over time. Modeling caring behavior and directly teaching caring for one another puts the human dimension back into education. "Students want to know that you care before they care to know what you know."

Supporting the whole child is a value of the UTES community, and caring and relating to others is important to the model. As a community, children are reminded that they are valued and therefore are more confident learners. Maslow teaches us that self-esteem is developed when people feel loved and cared-for, and this is the basis for children to reach their highest potential and become self-actualized.

Parental Engagement and Communicating Cultural Values: At UTES there are dozens of regular activities that support and reinforce the school's culture. One favorite at UTES is the morning assembly where the entire student body meets with the teachers and administration, along with many parents, to start the day on a positive note. This is significant in contributing to our school culture.

For example, when a new baby is born to a family, the baby is presented at morning assembly and given a baby longhorn bib and a book. The importance of reading is reinforced as the child is welcomed and honored by the school community as a "Baby Bevo" and future member of the school community. This celebration for new life in the community demonstrates the school's respect for the family and the emphasis on early literacy.

I have heard stories from many parents of color how school was not always a positive experience for them. Though most schools have an expectation for parental engagement, not all parents know how to achieve this. At UTES we consciously take on the job of teaching Moms, Dads, Grandmas, and Grandpas how to be successful supporters of a student. We define for the students and their parents what it means to be a "student." Explicitly defining this and coaching parents in parenting a school-aged child has enhanced the school's level of parent participation.

In order for parents to want to come to school and be part of the community, they need to feel welcomed. All parents, no matter what culture or class, should be made to feel that they are contributors and that the school is an important part of their community. I have not met a parent in my 25 year-career that did not love his or her child or want to see them succeed. Traditional methods of including parents, such as school newsletters, class newsletters, websites, and PTA meetings, are usually about communication, not as much about engagement.

At UTES we believe that the school community can only be defined by the total of its participants. All parents must be trusted to help make the school a better place for their children. To accomplish this, there must be forums or easy access to the principal, staff, or decision-making bodies. Drawing good suggestions and demonstrating that parents' ideas can contribute to the school by following through is a powerful means to engage parents.

Democratic Dialogue: Collaboration builds stronger professional confidence and contributes to the ability to initiate and respond to change. The most effective practice for team-learning emerges from dialogue. The goal is to establish a "container" for inquiry or a setting where people can become more aware of the context around their experiences. Allowing time and space to dialogue among teachers is often their best learning experience, and allows them to see that it is important for their students. Forums for problem-solving must be established. These should be open meetings for people affected by problems where they are invited to listen to all sides of the issue before exploring ideas and solutions. Contribu-

tions should be respected and valued, and consensus built. Collaborative conversation is the soul of self-managing teams and democratic organizations in which values emerge and problems are solved as a school culture is developed.

My closing thought is that public education needs a re-alignment. It needs to find balance. I am a firm supporter of accountability and know it was necessary for us to create efficient systems for data gathering to assure student achievement. But what I see is that we are out of balance in our efforts to adopt a strict business approach to schooling. I am sure many of you in this room review the data on your stock portfolios to assure gains and productivity. This is important to validate investments. What we must not lose sight of is the human side of schooling. Our product is productive human beings who must be prepared with twenty-first century skills, such as problem solving, communication, and team-building. It is my opinion that efficiency and humanity must be tightly coupled and well-balanced to assure successful schools.

Ralph Waldo Emerson once said, "Success is to laugh often and much; to win the respect of intelligent people and the affection of children." For those of you who have contributed in any way to schools, you indeed have had a successful journey in this life. We thank you for leaving the world a bit better.

I now want to introduce Dr. Susan Landry, One of the first things I did in starting up the school was to visit Dr. Landry in Houston and to adopt her, at that time, Texas Early Education Model. We are very lucky to hear her speak today.

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SUSAN LANDRY

I'm going to take you on a very, very fast journey from the beginning to where are now with the Texas Early Education Model, which now in its first year of major scale-up in Texas, is referred to as Texas School Ready Program.

It's critically important that we get this right in Texas because we have one of the fastest growing populations of children, and that in 2040 our public schools will double in size. We have a large number of children in poverty, at least 22 percent, which is very conservative and investing in early childhood education is a good investment. There have been many strong studies that show we at least get a \$3 return for every dollar we invest in it.

We've been very lucky in Texas because legislators have recognized the need for this and the importance of it and have paid a lot of attention to it. So I'm going to talk to you about what's happened since a legislative mandate in 2003 was given to the Children's Learning Institute, which houses the State Center for Early Childhood for Texas, to get early child-

hood programs at high quality and be sure children are prepared for kindergarten.

What's unusual about the approach we took compared to many other states is that it was completely informed by large research efficacy studies. Before we brought programs to Texas and asked you to invest in them, we made sure we knew what worked and what wouldn't work. A number of people feel that we've gone from only focusing on social/emotional self-regulation behaviors for young children to now realizing how critically important it is that children are academically prepared. That preparation is not accomplished in a drill-and-kill rote or by bringing structured classroom activities into early childhood programs, but by being sure they're exposed to all sorts of activities that give them knowledge about science, math, early literacy, and strong language concepts. So we have finally had, I think, a complete paradigm shift in the last decade that gets us to the point that we understand how critical that brain development is in the early years and we cannot ignore the cognitive areas.

There's also been a shift in the way we think about policy discussions in this area from just focusing on how much education a teacher should have, how long the day should be, and what the teacher-child ration should be, to really getting down to what should the educational experiences be for these children and what should teachers have to be sure they can prepare children adequately.

This is what we know we need to get our children skilled and to be ready for kindergarten. The National Early Literacy Panel shows in their recent report that phonological awareness, letter knowledge, and language concepts are the three critical predictors in early childhood of children being successful in reading once they reach elementary school. We want them to have this early literacy and language exposure, we want them to develop an appreciation of books, we want them to be confident and socially engaged, and we want them to have very strong language skills so they have good background knowledge and the ability to communicate with everyone.

We took an approach where we basically developed a recipe for what the research and the conceptual/philosophical beliefs were that informed a good model of early childhood education. We have six key ingredients in our recipe.

The first, and I think one of the most critically important, is a responsive interaction style. Ramona talked a little bit about this. This is what teachers need to be aware of when they interact with the children in their classrooms. This includes a number of behaviors that I'll tell you about in a second.

Content that comes from strong training for teachers.

Curriculum planning that takes advantage of how children develop in their brains, memories and concepts.

A balance of teaching strategies. In this paradigm shift we've moved from just thinking that children should play and discover everything they know on their own, to letting them explore, but also have an emphasis on intentional instructional activities in the classroom.

Flexible groupings and monitoring children's behavior to take advantage of teachable moments.

In the work I've done in studying interactions with children in a very large NIH-funded study, we found that when this core group of responsive interaction behaviors was at relatively high levels for very low-income children, we saw normal development by entry into kindergarten. And that includes rich language input which doesn't happen for the majority of low-income families. Only one-quarter of our 350 families provided this kind of stimulation.

Rich language input means children hear names of objects, actions, relations between things. Many children are not hearing this; they're hearing what we refer to as empty language. They hear a lot of phrases like "Do it," "What's that?" "Bring it here." Not rich vocabulary.

Responsiveness to their signals in ways that are contingent on what the child is signaling they need and that are prompt gives the child a sense of being valued and understood. This begins a cycle. And when teachers do this, behavior problems disappear. There is no great need for all sorts of focus on preventing behavior problems. This is the key: maintaining and building on their interests, avoiding a lot of restrictiveness that shuts them down, providing choices so they can learn to make decisions and regulate their own behavior, and monitoring their behavior closely.

So we take that core group of responsive behaviors, and we add it to content. And then we're going to add planning in the classroom that builds memories, a balance of teaching approaches, both intentional and child-exploratory, and a variety of groupings.

So first we add the content, three keys for reading success. First is oral language development. Next is phonological awareness, which is not reading, but is learning to hear and play with sounds. It's all auditory, not visual, and is the foundation for children being able then to read. Then, there is print knowledge—knowing the alphabet, recognizing letters, and sound-letter relations.

We're beginning to know quite a bit more about math and young children and that it actually begins in infancy. We have a lot of wonderful infant studies showing that babies can add and subtract. I know that's hard to believe, but there's some good research demonstrating it. So there's been a very strong focus recently, really in just about the past three years, to bring this core group of math activities into children's classroom activities.

And then, of course, the social/emotional areas. A decade ago in our state, as well as across the country, the major belief was if we brought the literacy-language-math-science into the classroom, all of this would be compromised, children would be completely stunted in their development

of social/emotional skills. In fact, the exact opposite is true; if you bring the engaging things into the classroom in the cognitive areas, it enhances these areas of development, and we have data to show that. So we have this responsive style of behaviors and it is supporting the learning; it's scaffolding the child's ability to learn the content.

Then we look at planning. I think is one of the most critical things because our low-income children enter their pre-K year as three- or four-year-olds usually nine to twelve months behind in their development of cognitive and social skills. If they have a nine-month school year and they develop, as we typically think, one month for each one month of school, where are they the summer before kindergarten? They're nine months behind. So we have to get two months of development for every area that they need to be skilled in for every one month of their life in that school classroom. It has to be very smartly done and planning is the key.

There's a wonderful concept in the neurosciences in infancy and early childhood work called "time windows." It means the child hears something—a word, a concept—and if they are exposed to it in a rich and engaging way, synapses, dendrites, all those things in the brain, start activating and a memory or concept starts to develop. And if they hear it again within a short amount of time, an hour later in a different activity, and again and again across the week, it really develops into a memory. Then they have it; it's part of their repertoire.

But if they don't hear it again and have it expanded on and built on, they lose it; they lose it very quickly. And so the teacher is working very hard, but not very smart if she doesn't use this technique to get things to develop for the child. So we train teachers to build their day in ways that build memories and we train them to develop and set up the room in ways that help children develop these solid, strong concepts.

We want to balance what we ask of children. Can you imagine learning everything you ever learned by exploring yourself and no one telling you, teaching you, instructing you. It's just really impossible. We're missing the boat if we don't have intentional direct instruction and we balance it with child exploration. Then we know very strongly that it's not just about large group work; we have to individualize this instruction.

Then we add, to those five things, assessment—not assessment for assessment's sake, but teachers doing it and getting resources to help them do it that inform their understanding of children's learning and what to do next.

So we put all of this together into a package. We developed a PDA-driven assessment approach where the teacher assesses vocabulary, phonological, math, letter knowledge, and social skills. And she gets immediate feedback with a report when she syncs it into the computer about how to group children, what activities to do with them, and where to move them next.

We use curriculum and a web-based 100-plus-hour professional development program that's done in courses with about 15 to 20 teachers working together. They have a license to bring this up any time that

they want to revisit it and post their activities and experiences with their learning network. This is a web-based program in nine separate courses, and we're linking this with college credits. The PDA, which now is on a laptop, a netbook, and a notebook, is being used all over the state.

We tested this out in four different places in the United States, including Corpus Christi. We randomized, gold-standard approach, those different aspects of the program, so we have a professional development group times four against a business-as-usual, no-internet professional development course. Then we paired a PDA with one of the groups, a pencil-paper with another group where they didn't get feedback, a mentor, and a no-mentor. The winner, after assessing almost 1,800 children, pre- and post-, across these cities and towns, and the teachers on all these areas of their instructional practices, was always the complete package.

In everything we looked at, the professional development program with the mentor, with the PDA giving feedback, gave us not just moderate but very large-effect sizes. We did not have any side effects in spite of having childcare teachers non-degreed in Miami, four-year degreed teachers in Prince George County, a balance of all types of backgrounds in Corpus, and only two-year certificates in Ohio. So we have what the legislators asked us to do, a model.

In Texas we really need the PDA and we need the progress monitoring that gives feedback, we need the mentor, and we need the professional development.

And in Texas we started with this many programs, tested it again, got very strong similar results, and now, because I've got to scoot ahead we have gone from 200 classrooms in '03 in a random assignment study to 38 communities serving 82,000 children this fall. They all get these resources and they're all getting kids ready for school. Thank you.

And now I have the great pleasure of introducing Mike Feinberg, the head and founder of KIPP. You're in store for a great treat.

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MICHAEL FEINBERG

Good morning. First off, thanks to Michael Gillette for inviting me here. I think there are certainly several supporters in the room of KIPP, of what we've been doing the last fifteen years, so thank you to all of you as well. One quick disclaimer: as I get into talking about the history of KIPP, realize it does create severe hair loss, so I warn you on the front end about that.

Given that this is the Philosophical Society, I thought I would open up with a couple of stories, not directly about KIPP, but that relate to what we've been doing and what we're trying to prove here across the state, across the country.



Figure 2

The first has to do with this picture up here which is one of my new favorite pictures, Norm Atkins of *Uncommon Schools* gave it to me two years ago. This is the 1924 Tour de France, and in case you can't see well what's going on, one of the cyclists is lighting the cigarette of another cyclist (figure 2).

I don't need to let that sink in. Apparently eighty years ago they

thought that smoking, beyond being okay for you, helped athletic performance. I've talked to doctors about this to understand what the thinking was and the theory was that smoking somehow thinned out the blood. The blood would travel around the body faster, delivering oxygen to the muscles, so therefore, when you were training for the most difficult athletic contest in world history, you had to bring along a few extra packs of Camels.

Talk about a complete 180-degree mind shift in thinking and beliefs in the last eighty years, from smoking is not just okay for you, it helps you, to the way we think about smoking today. Now, too many of our young kids are starting to smoke again, but they're not doing it because they think it's going to help them; they just think they're being cool. But if that mind shift can happen in smoking, why can't that same mind shift happen in public education?

The framing question I'm going to put to you to start talking about KIPP is to think about if we could somehow snap a picture in 2009 of the way we're delivering public education to the masses and we put that picture up on the wall eighty years from now. I bet they would be chuckling at that picture as well. Here's our chance to think about that and start to figure out how to do something about it.

My next story, which I always like to begin with as I talk about KIPP, is about the Masai, a tribe in Africa. They have a great ritual when their warriors are traveling between their villages: the way they greet each other. "Hello, good morning," the first warrior to the second warrior, and asks, "And how are the children?" The second warrior will respond, "All the children are well." I love that. It's the right focus, the right expectations of a society. It's the focus on the well-being of the children, the expectation of the well-being of all the children, and something they've built into the fabric of what they do fifty times a day: "Hello, how are you doing, and how are the children; all the children are well."

If we ask that question here in Texas and in our country, how are our children, the answer would be some are doing just fine. But the brutal fact is not nearly enough, and that's what Dave Levin and I discovered when we became Teach for America Corps members back in 1992, placed in Houston. Houston ISD made me a bilingual 5th grade teacher. Why bilingual I'm not sure, but I had a pulse.

Like all first-year teachers, we struggled, but we latched on to great teachers. We thought we were doing a good job. This is going to give a really quick version of KIPP. We got very frustrated when we realized it didn't matter how good of a job we were doing with our babies in our classroom; they were going off to middle schools and high schools where very quickly they were joining gangs, skipping class, doing drugs, and becoming parents at alarming rates.

It was very easy to do a lot of this until one day we realized this is what we had to do, because all the finger-pointing and blaming the other schools and blaming society and blaming the community was just contributing to the problem; that was outside of our sphere of influence. We realized we had the kids for a whole year and we needed to set them up not to go survive, but thrive. We didn't give them all the academic skills, all the intellectual skills, all the character skills needed to go off and do well in middle school, high school, college, the competitive world beyond, and that was definitely a much higher bar than just passing a TAAS test back then—or a TAKS test today.

Realizing we did have the kids for a whole year, there was something within our sphere of influence we could do. So back in 1994 we started the Knowledge Is Power Program, KIPP, in just 5th grade. It evolved the next year into a school in Houston ISD, plus a school in the South Bronx, New York, with 5th grade. We grew it up to the 5th through 8th grade years and we started replicating it in 2000. Today, KIPP is this network of 82 public schools, mostly charter schools, across the country in 19 states and D.C., serving 21,000 kids this year, pre-K through 12th grade.

The ultimate scoreboard for us is not state tests; it's where the kids go after they leave us in life. In Houston, our alumni which are the oldest alumni we've had, hit the 90-90 plateau: 90 percent of our kids being on free and reduced breakfast and lunch programs, so low income, now 90 percent of them are going to college. That's a lot higher than the 15 to 20 percent that go to college in neighborhoods we serve, so I'm looking to improve. We'll never be perfect, but I at least want body temperature, I want 98.6, and so we have some work to do as well.

I will back up a little bit to talk about the lessons learned from what we're doing. It ties into why we started to replicate. When we got up to our original two schools, in Houston in the southwest part of town and in the South Bronx, we had these two schools within the district that became state charter schools with the support, actually, of the district at the time. We weren't trying to replicate. We just had our heads down trying to realize that we made some sacred promises to the kids who chose to come to our school, and thinking about what we were doing to make good on those promises and get them to and through college.

Back in 1999, "60 Minutes" did a piece on the KIPP schools, and the day after that program aired, the floodgates opened up. I'm running around the office in Houston the day after it aired, doing the typical things a school leader does; fifty things at once. The phone rings; I pick it up. It's a district client from California. All I hear on the phone is, "Mike, we

saw that program on TV last night; we want to order 15 KIPPs for next year, please." I stopped, I looked up like, *did you watch?* "Let me go check inventory and I'll ship C.O.D., ship them right out."

Unfortunately, in education we fall into one of the traps where everything becomes the flavor of the month, the flavor of the year, the buzz-words. KIPP was becoming the flavor of the month, maybe the flavor of the year. And there's a problem with that, but there's also an opportunity in that people stop viewing our work as some crazy stuff that two young, crazy white guys were doing and thought maybe there was some method to the madness of what we were doing that could be of use to others. And being Teach for America alumni and believing in the TFA mission of one day all children in this nation attaining an excellent education, we started thinking: what can we do to leverage the success of this little tiny school in Houston and this little tiny school in New York to the greater good?

We got in touch with Don and Doris Fisher, the founders of the Gap and Old Navy in San Francisco, and collectively we formed a new foundation in 2000. For lack of a better name, we called it the KIPP Foundation. I wanted to call it the "No Shortcuts Foundation," but Don knows more about brand names than I do. He said call it KIPP, and we said, "Yes, sir." And so the KIPP Foundation 2000 started replicating and the way we did that was the critical path of the school leader. We decided to scour the country for amazing educators and train them for a year in how to plan, open, and run their own KIPP-like school and the key word there is KIPP-like. We weren't going to create the 800-page manual where on December 8 you open up to page 312 and follow the script. We realized that wasn't why the schools in Houston and New York had worked.

We began to realize there were five pillars that made a school a KIPP-like school, and that's what we wanted to replicate. That's what we tried to prove should be in place in all of our schools—traditional, public, charter, private I don't care what—to set them up for success,

Our first pillar is more time on task every day, every week, and every year. A KIPP school day goes from 7:30 in the morning to 5:00 in the afternoon, plus four hours on Saturdays, plus an extra month in the summer. We give two or three hours of homework every single night. We don't fool around. You need that time on the clock.

Take the typical school day in this country: 8:00 in the morning to 3:00 in the afternoon, seven hours, but look at that time. Take out lunch; take out recess; take out bathroom breaks; take out fluffy ancillary periods, good ancillary periods. We're down to four, maybe five hours of instruction a day, at most. Even that's starting to shrink. It's at most for 180 days a year, and that's now starting to shrink. So four to five hours a day for less than half the year. In that kind of time we're not asking teachers and principals to be great; we're asking them to be miracle workers. More time doesn't guarantee success, but it at least sets people up for success, which is why that's our first pillar.

Our second pillar is the power to lead: the fact that there's a great, well-

trained school leader in place with the shackles off so they truly have the power to lead. That's why I like calling heads of schools school leaders, not principals. Too many principals don't have the power to lead. They're not leaders; they're store managers. The power to lead means you have control over staff and budget. You can choose who teaches in your building; you can choose who does not teach in your building. You allocate your budget dollars according to how you see fit. In exchange for all that freedom, you now are held accountable.

What that does is you get rid of shoulder shrug. Too many principals today that are not truly school leaders. When you tell them AYP, No Child Left Behind. "We're going to hold you accountable for great results," you get the shoulder shrug. You get the "You've got to be kidding me. A third of the teachers in this building are not doing a good job, but I can't get rid of them. The good teachers I want to get I can't through the HR department, and God forbid I want to move my computer money bucket to my art money bucket because I think that's going to help instruction. I have to fill out forms in triplicate and give up my first-born. And you expect me to get great results?"

So the way you get rid of that shoulder shrug is to free it up. You choose who you're going to hire; you choose who should leave the building. You do some good career counseling; you choose how to allocate your budget dollars. Now in exchange for that freedom we're going to hold you accountable for great results. That's power to lead.

Embedded in power to lead is also the human power. We keep looking for shortcuts in this country and the most important resource of all is the human resource, but we lose sight of that as society. Let me do a quick survey with you guys in the room to illustrate that. Imagine you have two classrooms up here. You're deciding which one you're going to put your own child into. The classroom over to the left doesn't have a bad teacher. It has an average teacher and it has everything you could want. It's an amazing classroom. There are computers in there, science equipment, reading books, math manipulatives and everything over here. The classroom over to the right is a bare room, not even desks, but there's a master teacher. Where do you put your own child? This is the interactive part of my talk.

What does everyone tell me: master teacher, Right? We know that instinctively for ourselves, but as a society we've got group think going. We forget people make the difference; we forget there are no shortcuts. We start thinking what little gizmo can we invent to squeeze it into this classroom over here to magically transform it from bad to okay, from okay to good? We live in the microwave generation. We want things quick and now, and that makes sense when you're cooking popcorn. As Susan points out, it doesn't make sense when you're teaching children how to lead.

We have to go back to the basics. We realize we need to be investing in the most important resource of all which is the human resource. Beyond more time, one policy at the state level and the federal level is eliminating

the barriers, so great people can come into the profession as teachers and leaders.

We had the honor of hosting Bill and Melinda Gates at the mother ship KIPP school in Houston last year, and one thing that Bill and I talked about was that if he chose tomorrow to go in to high school and teach economics or computer science, he couldn't because he's not highly qualified. So there's something wrong about the way we interpret. I mean, I get where we're going, but highly qualified has turned into highly certified. We have to change the definition to highly effective, and that's the type of people we need to be recruiting into our schools.

Our next pillar is high expectations which are clearly defined and observable. For us that's college prep, not just at high school, not just at middle school, not just at elementary, but even at pre-K. My pre-K three-year-olds this year, they are the class of 2024; they know they're the class of 2024. They're still learning how to count with Susan's help to 2024, but that's what they know.

And their teachers know it too. When the teachers are lesson-planning, they're thinking they've got to get the kids to learn their letters so by the end of kindergarten they're reading, so by the end of elementary school they're reading chapter books, so by the end of middle school they're reading textbooks with understanding, so by the end of high school they're independent learners, so by 2024 when they're studying their college freshman English seminar class, they're set for success. That's high expectations.

Our next pillar is great results which are measurable. While the ultimate goal is getting our kids to and through college, it is what we do daily, weekly, monthly, annually to measure the progress to make sure that growth is happening at the right pace to get them where we want them to be.

And our last pillar is choice and commitment. As public charter schools, we need to break up the monopoly; we need to break up the fact that low-income families should have choices in where they go to school in communities. Right now traditional public schools are very accountable to the state and federal government and their districts with great, great results, but they don't feel accountable to the most important group they should feel accountable to which are the kids and families who are their customers. So what if you eliminate the zones and you give low-income families a true choice: do I go to this school down the block or this school down the block? The schools now have to look at that and think what are we doing to convince the kids and families to come to our school and what are we doing to make sure the day is so enjoyable and so full of learning they'll keep coming back for more?

Well, that's kind of like our theory of change. We want to have the same effect on the public education system the way FedEx affected the Post Office. When FedEx got the 10 percent market share, that's when the U.S. Post Office, a government monopoly at the time, started doing next-

day air. We believe a similar tipping point is in public education, which is why in places like Houston we're trying to grow to 10 percent, which is a pretty audacious goal in Houston with 42 schools, 21,000 kids. At that size we feel not only can we hopefully grow and maintain quality and that we're doing a good job with our kids, but we're going to push the school system to do a great job with their kids as well.

We think if you put those five pillars in place: the more time, the choice of commitment, the power to lead, the high expectations, and the great results, kids are going to knock it out of the park. We're on a mission to prove that because we deal with too many of the "yes, buts..."

Many people come to our schools and at first are cynical and think we succeed because we recruit really smart, poor kids, but they realize that's not true. Then they get inspired and they see this is a really good school and I'm at the door with them and I hear, "Mike, this is great; this is one of the best schools I've seen." And then you start to hear all these "yes, buts..." "But it can't work where I'm from; it can't work in Newark, it can't work in the Mississippi Delta; it can't work in Los Angeles." You hear wherever they're from, for whatever reasons—financial reasons, legal reasons, socioeconomic reasons—they think their community is the most screwed-up place on the planet.

I've had enough visitors to realize that there are about 500 communities that all think they're in the running for the title of the most screwed-up place on the planet. I can't win that debate at the door, so when I hear people say, "This is great, but it can't work in Newark, Mississippi Delta, Los Angeles," I get out my notes. I write down that we have to start schools in Newark, Mississippi Delta, Los Angeles because the actual proof is the possible. We need to change people's beliefs and mindsets like we did up here; that's the critical path to truly getting going on education reform so that someday we, like the Masai, can also say, "All our children are well. Thank you very much."

And now, it's an honor, I can't wait to hear her talk. We have Nancy Weisskopf from South Hills High School in Fort Worth ISD, with a fantastic story about turnaround schools. We know that Secretary Duncan has put the challenge out there for 5,000 schools to be turned around in the next several years. Hopefully, the other 4,999 can learn from Nancy. Ladies and gentlemen: Nancy Weisskopf.

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NANCY WEISSKOPF

Good morning. I am not a researcher; I am not anything but a practitioner and a teacher. I'm sorry; I have a hard time with a podium. But I'm a Yankee with a big voice, so hopefully that will help out. If you have trouble hearing, give me a little wave and I will make my way back to the podium.

I was definitely very intrigued when my superintendent called me up and said, "Nancy, we need you to go down and talk to the Philosophical Society of Texas." And I said, "Why me?" And she said, "Well, because you're the one who's doing what we need to get done." I had a hard time swallowing that. I said, "I'm just a practitioner, I'm just a principal in one school trying to make a difference with one group of kids."

Today I want to teach you a little bit about the challenge that we have in urban education. It's a big mystery to a lot of people but not to me. So I want to show you some of what we're dealing with. Many urban high schools, not only in Texas, but across our nation, are struggling and the question seems to be "Why?" Schools in the past were very successful, so why are we starting to struggle now? There have been some legislative changes that are good changes. We all know that what doesn't get monitored doesn't get done, so accountability is a key to helping us change.

Accountability is a great thing; however, accountability was put in place with elementary schools; initially in math and reading. So the huge focus in urban elementary schools was on math and reading only. Unfortunately, we forgot about science a little bit. Now we're paying the price in high school. We have students that weren't seeing science in the early years until their achievement in science was measured. So what's measured gets done. Science wasn't measured and wasn't getting done as well.

We're also starting to face some other challenges. It was my first year in a very low-performing high school last year and you're going to hear about that in a minute. I was pulled from my building 20 days out of our 180 days with students to go meet with people and justify and explain what I was doing. That took me away from my kids and my teachers, so we struggled. They needed that information; we need the accountability, but it also creates some issues in some urban schools.

We have a very high at-risk population. My population is over 90 percent minority, 75 percent are on free lunch, and another 15 percent are on reduced lunch. They are in the lowest socio-economic group. Many of them are from broken homes. I have homeless students. If you have seen "The Blind Side," my new favorite movie, you will understand when I say that I can only wish that some of my homeless students were in that boy's situation. So it is very high at-risk. It's very hard for students to pay attention to school when they're worried about what they're going to eat next or where they're going to sleep that night, but it's a challenge we take on.

They're also very mobile. I had a gentleman in my office yesterday morning whom I was trying to help. He's just turned 18. He's been in seven high schools in the past year because his mom is constantly moving. Not just seven different high schools, but seven different districts around our state. Because of all that movement and going a week or two in between each school because they don't know where they're going to land, he's fallen way short on credits and only has the credits of a 9th grader. So I was trying to come up with a plan on how he could graduate before he turns 23! It was a situation he didn't have control over.

I'm a former algebra teacher and I always heard from students and parents. "It's okay you didn't do well in math; I was never good at math either." That's very, very common. If we had poor grammar, it would be horrible. Every so often I have a slip of the tongue because I'm a mathematician, not a grammarian, and we just call them Nancy-isms and move on. However, in our society, if someone is not good at math, it's kind of okay; we excuse that. Well, what message does that send to students? By the time they get to high school, they've heard it a couple of times; they automatically turn their brains off when they walk into math class. "I don't have to do good in this one. It's okay, they understand." It's difficult for us to overcome that negativity.

The biggest impact currently is the digital revolution. Just as we went through an industrial revolution, our digital revolution and what's going on right now is changing education in ways that we don't have answers to yet. It's fascinating research. Students now are so digital that they can take in so much at once, it blows our minds. I've done some animation in here you'll see as you go because our students process that much. To me, I will look away because that's overload to me, but I wanted you to have that experience because they process that quickly; they actually need all of that digital, all of that extra.

Over the past 18 years, for my typical senior, things have changed dramatically. Eighteen years ago children were still the remote control for their parents. Right? You'd go up and change it. And it was a two-dimensional world on TV. Now it's three-dimensional. Children have grown up from a very early age being able to manipulate the screen and what happens on it. That actually has done things to their brains and brain pathways that are fascinating.

Cell phones, actually not even 18 years ago, were bricks and big huge things. Now we're down to where they're tiny and we can check the internet and go all over the world. My pastor jokes that he doesn't want to get a cell phone, so he just carries around his garage door opener so it looks like he has a cell phone because it is socially acceptable that you have to have a cell phone now. Right? So garage door opener, cell phone, things have changed dramatically.

What does that mean to students today? There's a blog site out called "The Committed Sardine" with Ian Jukes who has pulled together a lot of the latest research on brain mapping that's affecting us at secondary. We've very recently been able to do brain mapping, and it's absolutely astonishing. Students actually learn differently. If they mapped the brains of my great grandfather, my grandfather, my father, and me as we did our math problems, our maps would look very, very, similar despite the difference in time. However, if I sat down with one of my freshmen and we did an algebra problem and they mapped our brain waves and our pathways, our maps would look drastically different. And that's a phenomenon that we're still trying to understand and trying to understand the implications for teaching and learning.

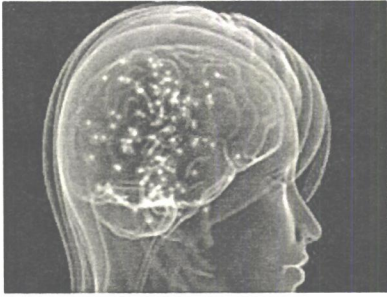


Figure 3. *Students are digital natives.*

We're starting to learn a lot more about "digital natives," and how adults have to talk to them, because we're digital immigrants. We have learned technology as it has come out; they have known nothing but three-dimensional and interactive. So we have to learn to do sensory overload because sensory overload actually helps them learn, which is fascinating to me because I still need quiet space to study.

We actually read differently. As we watch eye scans, this is a typical what-we-would-look-like when we scan a page or we are trying to read for information if we were in high school today. Do a zig-zag, we go up and start at the left and kind of go back and forth. This is current students. You'll see that their eye scans are what they call the F, they go up the left and go left to right a little bit, but right on the top; very little ever pulls them down to the bottom right. We're also learning that their eye scan will focus on color. We're very used to black and white text; students actually react better to red, pink and orange text. It blows my mind because when they turn in a paper in pink. I have a hard time reading it. They love it; it helps them.

So, we adjust, we adapt, and we're moving forward with some of this and just keeping up with the research. I've shown this to my teachers and just in the past month they've started to change their review sheets and how they organize things. Almost everything they organize in the screens now is in the top left on purpose, or at least the most important information is in the top left.

Digital learners are very, very different. They need that sensory overload. Michael talked about being able to take off all those constraints from students and teachers. I am very well-known for doing that; I have a reputation for going outside the box. The first thing I said to my staff in August was, "Okay, we know that they are digital, and they love all of this sensory overload, so instead of banning cell phones and banning MP3 players and saying take those headphones out of your ears, let's don't fight it." Just like in my school we don't fight fashion; I just give up on fashion sometimes. Let's let them put those iPods in their ears and listen to their music while they're studying and see how they do. What we're finding is they put one ear bud in; they leave the other out. They're having a conversation, doing work, listening to their music, and getting it!

When I make that same room quiet, they struggle. They get so distracted. They actually focus better with noise. Lollipops are also another really great trick because they put the lollipop in their mouth and they'll stay much more focused. It's all sensory overload to us; however, to them it actually helps them learn better. So we've had to set aside our own personal judgments and try it out and we're finding it is working.

As we move forward, we are trying to go digital. We have these great things called interactive whiteboards. I was reading some funny quotes

the other day. Back many years ago, one of the presidents said, "What are we going to do? Students are now purchasing ink down at the store. They don't know how to make their own ink, so how are they going to be able to write when they run out of ink?" We have moved with the times. We no longer use chalkboards; I don't have a single chalkboard in my school anywhere, and the old whiteboards where you write with markers are actually gone also.

We now have interactive whiteboards. They're a screen like this and if I could bring one here, I would; it just doesn't fit in my trunk. It's real big and you actually go up and touch it and manipulate it, very similar to an iPhone for those of you who have messed around with those. Students can now be interactive and use the interactive board just like they've always been able to manipulate things. It's the same type of thing.

There's also some new research out there about letting children use cell phones for research so they are getting instant answers. As their mind goes somewhere and wants to know something, they can find the instant answer. We haven't quite gone that far yet; we still have a little resistance to change.

Our students have become partners in education. As we are digital immigrants, we have learned that they know better, at least in high school, how to learn. We ask them all the time. I ask students and I sit down with students about once a month and we just start talking in the cafeteria or wherever we happen to be. Students last year said, "Miss," because that's what they just say, "Miss," because Weisskopf is too hard. "Miss, why is tutoring right after school? I've got to go home and pick up my elementary brother and sister and then I have to start dinner and so I can't get to tutoring." And I said, "Well, what time should we make it?" And they said, "Well, how about six o'clock?" And I said "Okay." So I run buses and we now tutor at night. I have more students showing up to nighttime tutoring than I do during lunch, after school, or before school combined, because that's when it works for them. When you listen to them and you talk to them and you treat them like your customer, you learn some fascinating things. They're real quick to tell me which teachers are doing a great job. The tough teachers are the ones they tell me are doing a great job.

There are a lot of emerging fields. We're not preparing our students anymore for going out there and doing jobs that we now currently know. Digital graphics and gaming are among the new emerging fields. For students coming out with their MBA, the Department of Defense is the biggest employer. You're not only finding it with Lockheed Martin, and our Department of Defense, you're also finding it in surgeries. Surgeries have gone digital and are using digital imagery. The prediction is that there will not be a company, organization or field out there that will not need someone who can do digital gaming programming for training and everything else in the future. So we're starting to go there. With my cute little animations, as we go, we're headed that way.

Secondary reform is facing all of these things, and every high school

faces a lot of what I just mentioned, but in urban education we tend to feel it a little bit larger because we have some factors that others don't have; the poverty and the other issues coming up, and just like Susan mentioned, when they continue to lose ground every summer, that's tough.

There are lots of models in our nation for elementary school reform and even some now very good ones for middle school reform. There has yet to be a proven sustained secondary model for reform for taking a low-performing school, turning it around and sustaining that change. So we're out there doing it and trying to do it the best we can. Fort Worth ISD came up with a program called PEAK a little over a year-and-a-half ago: Public Educators Accelerating Kids. They took a lot of that research and said, "You're right, we have to take the cuffs off; we have to let you do what you need to do, and we've got to be able to go out and get the absolute best teachers." Teachers are the number one influence in a student's education. If they have three years in a row of a poor teacher, that effect is felt for the next nine years. So you have to make sure that they have the best teachers possible.

When you're in a low-performing school (my campus was the lowest performing school in Fort Worth ISD when I took it over), it is very hard to recruit new teachers. I would go to a job fair and people would go line up to go apply at Paschal and at Heights and at other places, but they wouldn't come to my campus. So we had to cut that red tape. As I said, it was the lowest-performing high school in Fort Worth ISD. We took the time to hire from the ground up. We've taken all the red tape out. We've said to educators, "Do what you need to get the job done," and we talk to kids every day and ask, "What do you need, what can we do?"

So we restructured it from the ground up. We worked with those students, and I'm just going to click over and show you a little bit of the data. The culture and the climate had to change. Everybody knows if you are not working at a place that you love, you're not as productive. So we really had to change the whole campus.

Four points are statistically significant when you talk about TAKS tests across our state. Last year with the changes we did with hiring the

new staff, and with being able to go way outside the box and not come back to the box, even though they try and push me that way, we were having ten point gains in math, ten point gains in science, and in all tests students were taking. So it's a huge jump! While we're not quite a high-performing school yet, we're on our way (figure 4).

We had been missing state standards for many years in a row at South Hills High School. I want to

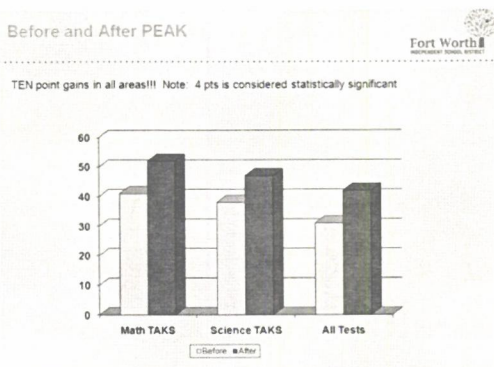


Figure 4.

show you one more data point. Part of it was the discipline. And you'll see with that one-year change, we went from 4,720 incidences of discipline and poor behavior in that campus to 1,700, which was a huge change.

My message is when you do high school reform, you need to change the way you think; you need to make sure you have the best adults, but we don't need to change the kids, because it's not them. When we make the difference and we make the change, it makes all the difference to them and they step up and perform. So I could talk forever about my campus and talk forever about those students and how wonderful they are, but I did hit my time. I would love to talk to any of you about this. Thank you.

Discussion

DR. TREVIÑO: See, didn't I tell you that you were in for a treat? I'm so motivated. We have about five minutes for questions to any of our panelists.

AUDIENCE: For anybody, why do we continue to have 180 days of school when we no longer need people to work in the fields in the summer months and we no longer have a culture of people having stay-at-home moms to go to when they get out at 3:30 or 2:30 from school? Why do we not simply extend the school year and extend the school day to give us more opportunities for success?

MR. FEINBERG: Be very careful. You're speaking logically.

MS. WEISSKOPF: Actually we do have an extended year now at South Hills. That was one of the first things we did. If you failed a core class, your school year did not end on June 6 like everyone else. You went to July, and so they did stay.

DR. TREVIÑO: Are there any legislators in the room that we could ask this question? You don't have to raise your hand. You know, there are a couple of thoughts I've had. I feel really sad because we've had some great funders who've helped us with our most at-risk kids to get that extra time because that's what they need. Mike said it and we've heard it over and over: time, extra time. For the public schools even here in Austin, there's no funding right now for tutoring or after school or summer school for just your average at-risk student in 1st through 5th grade, so I think it's an important point. I've heard many things. I've heard about the summer camps; I've heard about vacation commerce and so forth, but I think it's an economic issue. It costs money. Average daily attendance is a set formula and we've been stuck in that formula for a long time, and I think it was about the agricultural calendar.

AUDIENCE: A follow-up question: has anybody tried to quantify the cost

of not doing it? Obviously the cost of doing it is a short-term concept, the cost of not doing it is a long-term concept, and it seems to me that one could figure out which is more. Has anybody done that kind of research, the cost of not doing anything?

MR. FEINBERG: I don't know the answer to that but I do know that, unfortunately, that's not enough. A great example of that is early childhood where we have clear studies that show the value of starting earlier as opposed to building prisons on the back end, and that still hasn't motivated us to have enough political will to put enough money in there for all day pre-K. When you start trying to lengthen the school year, you make some interesting friends and you make some interesting enemies. The vacation industry can't stand the idea of a longer school day, so it's like KIPP versus Mickey Mouse.

AUDIENCE: I think the legislature would be extraordinarily receptive to these conversations.

MS. WEISSKOPF: I will say my school does have plenty of fame; that's how I can fund that. We do the nighttime, run the buses, but we had to be low-performing to get all that money to be able to do what I need to do.

DR. TREVIÑO: That is so true. That is a good point. If you are doing well and you have a good formula of extra time and your kids do well and you want to sustain that, oftentimes in public education you'll lose the money. I've just seen that. Let's take two more questions because our time is short.

AUDIENCE: What would happen in public schools if they did it anyway?

DR. TREVIÑO: If they did it anyway. Well, I will say teachers, in my experience, many of them are almost like missionaries; they really are committed to their craft. I have one sitting right here, master teacher, who will spend time with those students that need the extra help, but the issue is pay. I feel like a doctor would get paid for extra service, any professional would get paid for extra services. I consistently feel that teachers just don't get paid for one of the most important jobs, and so that's what happens. But in my experience, and anyone can comment, teachers go above and beyond because of the relationships; they know it makes a difference. One more question.

AUDIENCE: You say it's pay but my understanding at KIPP is they get about 85 cents on a dollar compared to what public schools get; yet they're doing it.

MR. FEINBERG: We're very lean on administrative costs. We don't have the assistant superintendent of left brain instruction, things like that, and

we don't have lots of assistant principals running around our schools. So all of those administrative savings at the school level and district level get pumped into the classrooms, mainly to pay the teachers.

DR. TREVIÑO: Do you have more students, Mike?

MR. FEINBERG: Yes, our average class size in elementary is about 25 as opposed to 21 or 22. In middle school it's closer to 30. If a teacher is very good at managing and teaching a class of 22 to 24, they can do 30. The only true effect we've gotten when we tinker around with that kind of stuff—like the state legislature says the mandate is no more than 24 or 23 or 22—research shows you don't really get a bang for the buck unless you go below 18. No one can afford to do that, so all we've done is when we go from like 23 to 22 is we have to hire 2,000 more teachers on the back end.

MS. WEISSKOPF: The thing they love is athletics. They may not be great on the football field, but we push them in that direction because we've learned that in order to maintain students in high school when they're a high-risk population, they have to attach to something. If they don't have a relationship or something in that building that they attach to, whether it's the fine arts, whatever it happens to be for every individual, if they don't attach, their risk of dropping out is nine-fold.

DR. TREVIÑO: Teaching to the spirit of every child.

MR. FEINBERG: And two quick things to add to that. One is that's why the focus has to be on college readiness and not just TAKS. It's important that we do have testing. We do have to measure the progress and all that, but we can't look at the ultimate goal of college readiness. If you're not focusing on the creativity aspect, then you're not preparing the kids to go to and through college. And then lastly, also the creativity goes hand-in-hand with the extended day. If we ran our schools with drill and kill with worksheets, the kids would be running for the hills. They wouldn't want to stay the longer hours every day, every week and every year, so there have to be things that feed their creative spirit, their passion, not just on the drill-and-kill time.

DR. LANDRY: I think in the early childhood area the focus used to be on a lot of art and painting and dance. We can keep all that in place, but it has to be done with a lot of discussion and input and talk, conversations around creativity, so they're learning how to communicate in combination with their creativity.

AUDIENCE: And I don't think creative thinking is limited to the arts.

MS. WEISSKOPF: We have to be creative in teaching and the practice of teaching itself has to be creative or we're not there.

DR. TREVIÑO: And I think supporting gifted and talented programming in the state is another great way to really embrace that as well. This gentleman has had his hand up. Last question.

AUDIENCE: Professions, scientific fields, all of this is good and well, what about the electricians and plumbers and everything we all need? I mean, those people have to be educated and have to get through school and have to think. Just because everybody's heading for college, doesn't mean we all won't need plumbers and electricians and painters and carpenters and so on and so forth who can do a good job.

MR. FEINBERG: I completely agree. I would say that college, in and of itself, might not be for everyone. For people that want to go be electricians and carpenters and jobs like that, the skills to be able to go college are for everyone because you don't want to hire a carpenter to work on your house who doesn't have great math skills or great creative problem-solving skills. So we need to prepare everyone for success to go to and through college. At that point, should they choose to do something else and get trained in another very specific vocational career, that's fantastic too, but that's a choice they make themselves.

MS. WEISSKOPF: We don't focus on career-ready anymore or college-ready—they're not separate. We do college- and career-ready, so as we're doing all of our different majors and our different things. The teachers are addressing both in one and in unison now.

DR. TREVIÑO: I think we all agree to get out of the factory of school and look at the individual children that are coming through. I want to close with a thought from Ralph Waldo Emerson: success is to laugh often and much and to win the respect of intelligent people and the affection of children. And so for all of those of you in this room that have in any way impacted public education, I commend you and I thank you, and I hope that you will continue on that journey because that journey is truly a successful one. We thank you for leaving this world a better place by your engagement in public education.

THE ART OF DISCOVERY

MARY ANN RANKIN, *Chair*

STEVEN WEINBERG, FRANCISCO CIGARROA, JENNIFER WEST,

DAVID DANIEL, KARL GEBHARDT

DR. RANKIN: Welcome to the Art of Discovery. In something like 20 B.C.E., Virgil said, “Happy is he who gets to know the reasons for things.” The French physiologist Claude Bernard wrote somewhat later, “The joy of discovery is the liveliest that the mind of man can feel.” I asked my husband last night why he went into science, and he said, “Well, because it’s fun.” It’s just fun to be the first to know something you’ve discovered yourself. It’s exciting—even thrilling.

The French mathematician Poincare said, “The scientist does not study nature because it is useful; he studies it because he delights in it, and he delights in it because it is beautiful.” Marie Curie said, “Science has great beauty. A scientist in his laboratory is not only a technician; he is also a child placed before natural phenomena which impress him like a fairy tale.” And Einstein—always the last word in science—wrote, “All religions, arts and sciences are branches of the same tree. All these aspirations are directed toward ennobling man’s life, lifting it from the sphere of mere physical existence and leading the individual towards freedom.” Discovery is really cool. Of course, another famous Einstein quote is, “Science is a wonderful thing if one does not have to earn one’s living at it.” And he was right there too.

The topic for the next 90 minutes is The Art of Discovery, or perhaps discovering the art of science. We have with us this morning five outstanding speakers. Actually we only have four. One is on the road from Houston in the snow, Jennifer West. We hope she will make it. She emailed me this morning saying she was leaving and hoped to be here by 11:00. So although she was supposed to go third on the program, she may go last. I will introduce her now along with the others, and we’ll hope that she’ll get here in time to participate.

You have the biographies for our speakers so I won’t go into the wonderful details that are associated with each one of these people. We have a great lineup, but let me just introduce them very briefly. We will have each one just get up and speak, one right after another, holding questions till the end, and then hopefully have a great discussion at the end.

These speakers were chosen to give you a kind of sampling of discovery and science, I mean, obviously, discovery and science are very broad

topics. We have many, many, many wonderful scientists and engineers and physicians in the state from which we have chosen these five. I think we've chosen some of the very best, but we have also tried to give you a sampling of different fields and people from different parts of the state. So I hope you enjoy this variety and I hope that it will spur some good questions and discussions later on.

Along the way perhaps we'll learn a little bit about what science is and what discovery is in its various guises, and also why people become scientists. My husband chose this path because it was fun and I agree that the fun, the excitement of discovery, is one of the most thrilling things a person can experience. But if that's the case, then why are fewer young people in this country choosing this life path than in previous decades? What are we doing wrong that we are not imparting this thrill or the opportunity to experience this thrill of discovery to our young people? Or is discovery simply no longer thrilling to the younger generation? These are questions we all need to seriously consider.

We are doing something at the University of Texas that I'm hoping will help address the problem of student interest in science. There is nothing like engaging young people in actual research and allowing them to discover new knowledge themselves, to empower them and to show them what the excitement of science is really about.

This is a young woman who took our freshman research program, a three-semester program that gets students engaged immediately, with a lot of guidance, as freshmen in true research with faculty members. She is now going to medical school, but while she was here as an undergraduate, she went to Afghanistan, using the tools and the empowerment from her freshman research experience, to do blood sampling for tuberculosis resistance in Afghanistan to help guide the country in determining where they had to use special drugs for resistant tuberculosis. She's a special example, but this is the kind of impact a research experience can have on young people.

I hope that we can find ways to impart this kind of experience and excitement to more students and draw more into science than we are currently able to do because we're certainly seeing a drop-off in interest in science and engineering in our country today, and it is a very serious problem.

Let me introduce our speakers, as I said I would. Our first speaker, Steven Weinberg, holds the Josey Regental Chair in Science at the University of Texas at Austin; he's a member of the departments of physics and astronomy. His research on elementary particles and cosmology has been honored in countless ways, numerous prizes and awards, including the 1979 Nobel Prize in Physics, and also in 1991 the National Medal of Science; he's considered by many to be the preeminent theoretical physicist alive in the world today.

Dr. Francisco Cigarroa, our second speaker, is the tenth chancellor of the University of Texas System. As you all know, I'm sure, he is a nation-

ally renowned pediatric and transplant surgeon. From 2000 until his appointment as chancellor, he served as president of the UT Health Science Center and is one of the most eminent pediatric transplant surgeons in the country.

Jennifer West, who I hope will arrive in time to be our third speaker, is the Isabel C. Cameron Professor of Bioengineering at Rice University. She got her Ph.D. at the University of Texas at Austin. She works on the use of nanoscience and novel materials in medical applications. She does fabulous work, she's a great speaker, and I pray that she arrives in time for you to hear about her work.

David Daniel is the fourth president of the University of Texas at Dallas. He also received his Ph.D. at the University of Texas at Austin, so this is starting to look like a conspiracy, and I promise I didn't do it on purpose. He was dean of engineering at the University of Illinois before he came here to take over the presidency at UT Dallas.

Karl Gebhardt is the Suit professor of Astronomy at the University of Texas at Austin. He comes to us from the northeast; he's a Yankee from Philadelphia and Rochester and then Michigan and Rutgers. He is working on one of the most interesting problems, according to *Science Magazine*, in science today: investigating the nature of dark energy, and he's going to tell us about that.

So without further ado, I will turn this over to our panel members and let them tell you about the art of discovery in their lives, starting with Professor Weinberg.

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STEVEN WEINBERG

Plato thought that the way to discover things about nature was simply to think about it. In *The Laws* there is an interesting discussion of astronomy. Plato acknowledges that it might be helpful for astronomers occasionally to look at the sky, but this he said is only to focus the mind, the way a mathematician proving a theorem in geometry might draw diagrams to focus the mind, but the real work of discovery in science would be purely intellectual. Plato was wrong about this, as about many other things.

An opposite extreme view was taken by Francis Bacon, the Lord Chancellor of England under James I. Bacon had much to say about science, which was then just barely beginning to be exciting. He thought that the work of science was purely empirical. It was necessary to do experiments, study everything you possibly could about nature in an unfocused way without preconceptions, and gradually the truth would become apparent. He, too, was wrong.

The truth, as we have learned over the centuries, is that science depends indispensably on an interaction between theory and experiment or obser-

vation, that theory is needed to direct experiments to give them a point, and to interpret the results. Experiment is needed not only to confirm or refute theory, but also to inspire theory. The two go together indissolubly.

In some fields, in particular in my own field, elementary particle physics, the two roles of scientists have nevertheless become distinct. The requirements of theoretical physics and experimental physics have become so technical and so demanding that ever since Enrico Fermi, there has really been no one who works effectively both as a theorist and an experimentalist. I am a theorist, and so I can only give you a perspective on the art of discovery as seen from theory.

As theorists, we are inspired by puzzles that present themselves to us. These puzzles are sometimes provided by experimental discoveries. Here is a classic example: At the turn of the 20th century experimentalists sought for a measurement of the effect of the earth's motion on the speed of light. The earth travels around the sun at about 30 kilometers a second; the speed of light is about 300,000 kilometers a second, so there should be about a hundredth of a percent change in the speed of light depending on whether it is summer or winter, when the earth is travelling in opposite directions. Light was supposed to be a vibration in a medium called the ether, and even if the solar system is moving through the ether, the earth can't be at rest in the ether in both summer and winter. The effect of the earth's motion was looked for, and not found. This presented physicists with a terrible puzzle, which (along with some other puzzles) finally inspired Einstein to develop a new view of space and time, the theory of relativity.

Sometimes, however, the puzzles that inspire us are internal to physical theory. For example, in the late 1950s it became apparent that we had a theory of the weak nuclear force that worked perfectly well in accounting for all existing experimental data on this force. Weak nuclear forces cause a type of radioactivity in which a particle inside the nucleus, say a neutron or a proton, changes into the other kind of particle, a proton or a neutron, and spits out a fast electron. This is also the force that produces the first step in the chain of reactions that heats the sun. Experiments on the weak nuclear force presented us with no puzzles. The problem arose when this theory was extended to other phenomena that, for technological reasons, had not been observed (one such process is the collision of very weakly interacting particles called neutrinos with other neutrinos, a process we'll probably never be able to observe). When the theory of weak interactions was applied to these processes it gave nonsensical results; it predicted probabilities that are infinite. This was not a profound statement about nature; it was just absurd. Clearly, a new theory was needed, that would preserve the successes of the previous theory, and yet not give nonsensical answers to perfectly sensible questions, even if the questions were about experiments that had not been done and might never be done. I and other theorists worked on this problem in the 1960s, and finally found such a theory. It turned out not to be just a theory of weak nuclear forces, but a unified theory of weak nuclear forces and also of the much more familiar

force of electromagnetism, and also of a new kind of weak nuclear force, which was subsequently discovered in experiments at high energy. But it was not experiment that motivated the theory.

Then sometimes we find puzzles in theories that agree with all observations, and have no internal inconsistencies, but are clearly unsatisfactory because they have too many arbitrary features. In fact, we are in that position right now. We have a theory now of both the strong nuclear forces (which hold quarks together inside the particles inside the atomic nucleus), and the electromagnetic and weak nuclear forces. The theory, known as the standard model, accounts for everything we can measure in our elementary particle laboratories, and gives perfectly finite, sensible answers when we do whatever calculations we like, and yet this theory is unsatisfactory because too many of its features just have to be assumed to be the way they are in order to fit the results of experiment. For instance, the standard model has six types of particles called quarks. Why six types, why not four or eight? No idea. Why do they have the properties they have? The heaviest of these types of quark is about a hundred thousand times heavier than the lightest type. We don't know where the difference in masses comes from; the values just have to be chosen to fit the experiment. There's nothing inconsistent about all this; the theory agrees with observation, but we clearly don't have the final answer.

There is also a rhinoceros in the corner: gravity is left out of all this. We do have a perfectly good theory of gravity. Einstein's general theory of relativity, which works perfectly well with regard to all observations that we can make and yet gives nonsensical results when pushed to extreme energies. These are energies that cannot be actually reached in our laboratories, but we can think about them, and when we do gravity presents another puzzle.

Since the 1970s we have been in the position of having a theory of weak, electromagnetic, and strong forces with too many arbitrary features, and having a theory of gravity that cannot be extended to extremely high energies. We are stuck because no new data has been coming in from elementary particle accelerators that challenges us with the kind of puzzle on which our imaginations can feed. One reason is that Congress decided not to build a large accelerator in Texas, the Superconducting Super Collider.

We're hoping for great things now from a new accelerator that is just beginning operations in Europe. It is called the Large Hadron Collider, or LHC. The LHC is a circular tunnel 17 miles in circumference, on the border between France and Switzerland, up to 500 feet below the earth's surface. In this tunnel two beams of protons will go round and round in opposite directions across the Franco-Swiss border millions of times as they're gradually accelerated, until finally the particles collide head-on. We hope that by studying what happens in the collisions we will discover new things that either help us to solve our existing puzzles or present us with new fruitful puzzles.

Just last week the first collisions were observed between these two

beams. So far the energy is not high enough to learn anything new, and there aren't enough particles in the beams to give a good rate for interesting collisions, but we have great hopes for the LHC in the coming few years.

As I said, I'm a theorist. I don't work at the LHC. I went there in July, and was shown one of the four huge particle detectors that are located at four positions around the ring where the particles are made to collide. The detector I visited, called ATLAS, was truly impressive. If you think back to the ballroom we were in last night and imagine it tipped on its side, that was the chamber in which the ATLAS detector stood. I really had the feeling of being in a cathedral.

The experimentalists who will use the LHC rely on skills that I couldn't possibly match, but I do have a large stake in what they do. I'm hoping that their discoveries will get us out of the doldrums we've been in for decades. For instance, there is an extremely attractive symmetry principle known as supersymmetry. It has occupied the attention of many theorists over the last 30 years. There is so far no shred of evidence for it (well, there is one shred, but it's not a big one). We are hoping that that the Large Hadron Collider will be able to produce new kinds of particles that are predicted by supersymmetry. One of the types of particle predicted by supersymmetry theory could have just the right properties, if it exists, to make up what astronomers tell us is five-sixths of the mass of the universe, the so-called dark matter. (Dark matter should not be confused with the even more puzzling dark energy, which Karl Gebhardt will tell us about. Unfortunately, the Large Hadron Collider will probably not tell us anything about dark energy.) If these particles are detected, it will be a triumph, I suppose, of physics in the Platonic style. We'll just have to wait and see.

So we are right now at a watershed in the history of fundamental physics. We hope above all that the indispensable cross-fertilization of theory and experiment that was so fruitful in the 1960s and 1970s, and that has lapsed since then, will again commence. Thank you.

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FRANCISCO CIGARROA

Well, for some of us, creativity is the process of experiment and theory. And in what we call the STEMM disciplines which is science, technology, engineering, mathematics and medicine, collaboration among great faculty can produce some remarkable creativity. When you put creative people together, interesting things definitely begin to happen. All you need to produce the next breakthrough is talent, time, commitment, incentive, and of this, a little money never hurts. Well, that is what we at the University of Texas System are providing. We create the means and the opportunity for talented people to work together on the challenges of our time.

More than a few people have asked, "Why, just when you were about to step down as president of the Health Science Center and return to surgery full time, would you accept the appointment as chancellor?" Well, the answer is quite simple. As a physician, my job is to save lives; as leader of the University of Texas System, I, with the great team that I have, can save even more lives.

And how do we do that? We do that through the education of the next leaders of our great state and of our nation across many disciplines, including medicine. We do that by facilitating research through the recruitment and the retention of great faculty and through the ability to build outstanding laboratories that will facilitate that research. We do that through our health science centers and our hospitals in which our physicians and our healthcare providers cannot only prevent disease, we can also have a healing hand to alleviate human suffering.

Well, let me begin and share with you stories of two or three individuals who had a profound impact on my life. They intersected my life during my training and the creativity that they fostered actually transformed how we care for so many children with certain diseases that were otherwise fatal. And these are two physicians who actually can demonstrate, I think, with great clarity, the power of translational science—that is a physician seeing a problem at the bedside, taking that problem which is not yet solved back to the laboratory, and then from the laboratory figuring it out and bringing it back to the patient's bedside with the hope that one can cure disease.

The first individual who intersected my life is a pediatric surgeon by the name of Dr. Melvin Smith. Dr. Melvin Smith, in 1995, was asked to consult on a small infant at University Hospital at Health Science Center San Antonio. That infant was diagnosed with a severe case of thoracic insufficiency syndrome, and in this case the syndrome was Jeune's Syndrome. Jeune's Syndrome is an insufficiency syndrome in which the chest wall of the baby does not grow; that is, the chest is completely encased, the lung can't grow, and the child ultimately dies of asphyxiation.

Well, the consult with Dr. Melvin Smith was not in regards to the Jeune's Syndrome. It was a simple consult, "Dr. Smith, can you please come to the neonatal unit and place a tracheotomy tube because this child needs to be on a ventilator for the rest of her life until she passes away." So Dr. Smith ended up going to the neonatal unit, examining the child, and said, "This is fairly straightforward." But the mother asked him, "I know you came here to put a tracheotomy tube in my infant, but the question that I ask for you is what can you do to save my child's life because I understand a ventilator will not save my child's life."

Let me show you the chest x-ray of an infant with Jeune's Syndrome. This is the infant who Dr. Melvin Smith saw, and in fact, after he saw the child, who was otherwise entirely normal, and after the question was asked by the mother, Dr. Smith told the mom, "I'm going to figure this out, I will place a tracheotomy tube, but I'll go a step further and I will

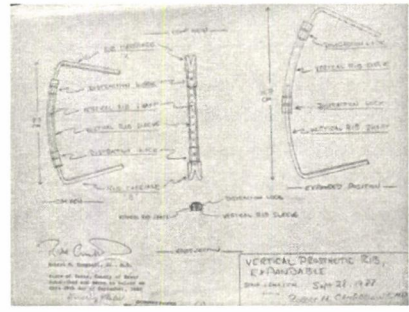
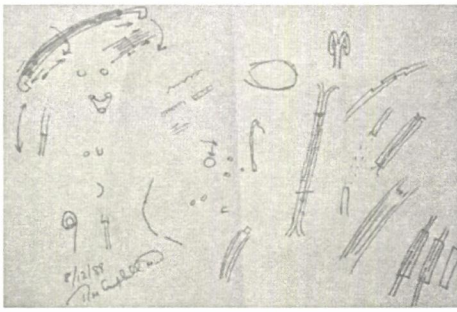


Figure 1. The napkin conceptual design.

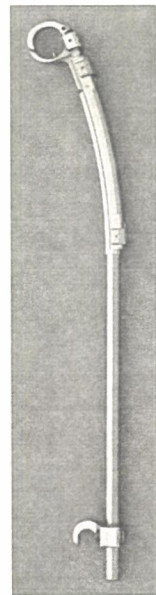
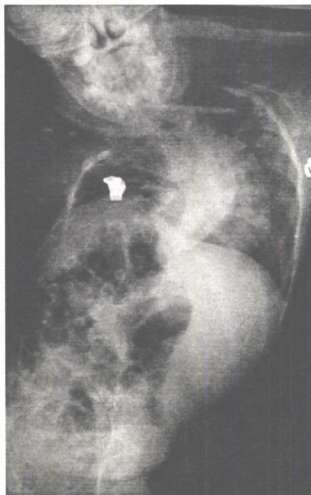
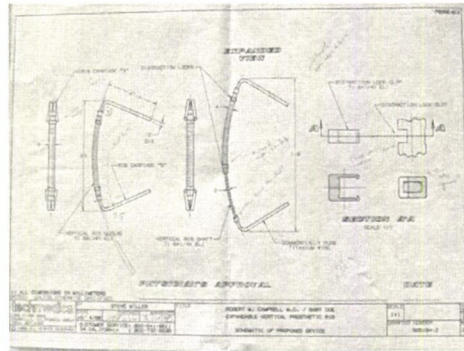


Figure 2. The ribs before and after the procedure.

figure out how to actually save your baby's life." I may add that prior to 1995, I was a fellow in pediatric surgery at Johns Hopkins Hospital and it was a referral center for many children with this type of syndrome and all we could do was palliative care.

Well, Melvin Smith actually got together with Dr. Robert Campbell. He was a young orthopedic surgeon with a background in engineering, and Melvin challenged Robert Campbell. "Come on, you can come up with an idea about how to develop an artificial rib that can expand and save this baby's life." It was almost a competitive challenge. And so they both got together every day at the cafeteria at University Hospital to try to figure this problem out.

So this is a napkin conceptual design of how this was created (figure 1). Every afternoon they'd go to the cafeteria and they would start at least formulating in their minds what a rib might look like, and then answering the question, "Well, we can put this little rib in this child but that's not going to allow the chest wall to grow, so how can we place an expandable rib?" And so they ultimately came up with the design to the far right that was ultimately patented and ended up actually being the answer of how to save hundreds of children throughout the world with severe thoracic insufficiency syndrome.

Well, in this slide you see that original chest x-ray of the baby, and then to the far right what that conceptual napkin design ultimately led to, which is really a picture of the current titanium rib that is currently placed in children with this type of syndrome (figure 2).

Here is a picture of Melvin Smith and Robert Campbell actually operating on a child with severe thoracic insufficiency syndrome and basically placing and inserting this titanium rib, which then over subsequent time can be easily expanded through a small incision over the subsequent four to six months until the lung completely re-expands. And here is the picture on the far right with the titanium ribs in position, and not only did they expand the lung cavity on the right, but it also fixed the severe case of kyphoscoliosis that this child had.

Now, in addition, when you do lung volume metrics and actually study pulmonary physiology and capacity, not only did it fix the severe thoracic insufficiency syndrome and the kyphoscoliosis, but in fact, the lung volume and the pulmonary physiology of this child completely improved. And here is a picture of an older child who had thoracic insufficiency syndrome with severe kyphoscoliosis with the titanium ribs in place, and now, to your far right, a picture of the same child with the titanium ribs in place and almost with perfect posture.

So by bringing together a physician, an engineer, the creativity of a university, Melvin Smith and Robert Campbell developed a titanium rib which is now saving thousands of lives throughout the world for a disease that was otherwise fatal. That's the beauty of translational science.

Another individual who intersected my life was Dr. Tom Starzl, and again, this is an individual who basically became very interested in an oth-

erwise fatal disease and that was severe cirrhosis of the liver. Tom Starzl actually was the father of liver transplant surgery and he really developed the surgical technique and also the techniques and the immunology that we currently use today. But his story was not straightforward.

In 1967, Tom Starzl did the first liver transplantation on a child with biliary atresia. This is a disease where the bile ducts become obliterated in the first three months of life, the child develops severe portal hypertension, severe coagulation disorders and really, without a liver transplant, these children would ultimately die. So Tom Starzl did that first operation in 1967, and he did a lot of work prior to that operation, but at that operation two things happened. They didn't predict the severe portal hypertension that this child had and they didn't predict how bad this coagulation disorder was, and the child died in the operating room within the first hour of the operation. Talking about the agony of defeat, it was a horrible moment for that surgical team.

But it did not deter Dr. Tom Starzl. They went back; they figured this out. They figured out the physiology of the coagulation cascade to be able to actually get these children through the operation, and ultimately, the next 10 or 15 children he did survived the operation. But again, there was a huge problem, most of these children would die within the first three to six months. In fact, the mortality was close to 90 percent. And in fact, they said you're going to have to stop doing this procedure because the outcomes are so bad. The unanswered problem was how to solve the problem of rejection. These children would die of acute rejection of the liver and thus these terrible outcomes.

Then comes along a young scientist by the name of Dr. Jean Borel, Jean Borel understood that there were real problems in the field of transplantation, and he worked in the laboratory with a pharmaceutical company called Sandoz Laboratories. And at that time Sandoz was trying to figure out are there medicines to try can we come up with new medicines to basically treat cancers, and in fact, can you take a look at a variety of fungi that exist throughout the world and determine to see whether we can come up with a new treatment? So they were really basically going across the landscapes trying to figure out new drugs.

Well, Jean Borel really loved Norway. He would take lots of trips and hike there. He came back one day to the laboratory with a collection of small amounts of fungi and he found, one fungi called *Tolyocladium flatum*. He began to study fungus and what he realized was that it had these incredible immunosuppressant characteristics, but one that was specific and would not immunosuppress the entire body. So he ended up actually discovering a drug called ciclosporin and it was ciclosporin that was the answer to rejection where then in 1983, liver transplantation became the therapy of choice for individuals with liver disease that otherwise would be fatal.

So now the surgical technique was prepared. We had immunosuppres-



Figure 3. Twins, one in need of liver transplant.



Figure 4. The twins in recovery.

sion but we still had a problem. Here are two identical twins. To your right is an entirely normal child; her identical twin has biliary atresia, and as you can see on the left, her little belly is very tense, full of ascites, and also you can see these little veins that are the result of portal hypertension (figure 3). The problem is that in order to be able to transplant her twin, there was a size match disparity. There really aren't a lot of individuals who become brain dead who can donate their liver to a child that size. So these children were dying in front of everybody's eyes because of a lack of adequate-size-match livers.

Here was another surgeon who told a mother: "I'm not going to let your child die in front of me. I've got an idea. The liver has different segments; each segment has an artery, vein and a bile duct; we just need to figure out how to actually resect a segment of the liver." So he got together with an anatomist and they figured this out in the laboratory, and here you see the dissection of what we do in the operating room now where you can actually resect a segment of the liver where that small segment can go into a baby and the larger segment into an adult, so one donor is now saving two lives. So here we are actually connecting the artery of that left lateral segment into a baby. Here is a picture of the twins after the procedure (figure 4). So again, it is the power of bringing a clinical problem to the bench and then taking it back to the bedside and changing the way we take care of children.

So what these examples demonstrate is the capacity of talented people to work in collaboration; the power to truly overcome remarkable challenges. And Dr. Smith, Dr. Campbell, and Dr. Starzl all worked at universities of higher education and each made tremendous contributions to our reservoir of knowledge and our capacity to save lives.

Well, as the largest university system in Texas, the University of Texas has a special responsibility to our students and to the people of Texas to provide an environment that allows this kind of creativity and innovation to take place every day. Recognizing this mission, the University of Texas System created a competitiveness initiative which is an historic \$3 billion

commitment to building the most competitive science, engineering and technology and health infrastructure in the nation and to retaining and recruiting world class faculty and students, the human capital that makes our commitment worthwhile every day when we come to work.

In the three academic years that the initiative has been in place, we have added or renovated more than three quarters of a million square feet of clinical research, classroom and laboratory space with almost six million square feet coming on line by 2013. We've completed 12 of 40 major capital projects such as the UT Austin Dell Pediatric Research Institute and the Galveston National Laboratory at UTMB.

Our institutions have already recruited or retained 200 outstanding faculty members through a Stars Initiative Program. One is a Nobel Laureate; seven are members of the National Academies, including four newly recruited faculty members. Virtually all of these faculty members are doing the kind of high-quality work that Dr. Melvin Smith or Dr. Tom Starzl have done, and they will become our future Nobel Laureates and National Academy members.

The competitiveness initiative is really the tangible manifestation of our commitment to excellence. We deserve nothing less, and it sends out the message that the UT System will accept nothing but the best for our students and we will be global leaders in the advancement of humanity and the public good.

We have a saying about the University of Texas System: nine universities, six health institutions, and unlimited possibilities. And I truly believe that because of the wonderful discoveries taking place on our campuses. We know that the impact of the University of Texas System on our world is immeasurable because of the unlimited possibilities that it creates. How can you measure that one of our physicians advanced in his or her quest to cure a young person's disease; how can you quantify that a life was saved today in a device one of our physicians developed or someone learned something that changed the way they view the world; how can you enumerate that a professor gave a word of advice that changed that student for a lifetime?

Well, we know that as we open the doors for first generation students, we are also educating the next generation of leaders and planting that seed for future Nobel Laureate discovery. We gladly accept our responsibility to inspire our students and to create and we anticipate that their achievements will in turn inspire our gratitude. It is an incredible privilege to serve as chancellor of the University of Texas because it is one of the great institutions of higher education in the world and coming to work every day with the mission of enhancing education, creating new knowledge, providing outstanding healthcare through our hospitals and through our health science centers, and of course, through community service is a mission that inspires me every day. Thank you.

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JENNIFER WEST

We have been doing quite a bit of work developing a new type of cancer therapy using particles we call nanoshells. You can see a cartoon of one here on the bottom right; it looks basically like a malted milk ball with a spherical core nanoparticle, which we can make out of any kind of non-conducting material, so silica or just glass is a very easy one. Then we need a very thin coating of a metal on the outside surface, and we generally choose gold just because of its very high biocompatibility. It's generally the most biologically acceptable of all the metals. We can make these particles and if we've designed them appropriately, we can have them very strongly absorb infrared light and convert that light to heat.

One of the reasons this is interesting is because there is a range of infrared wavelengths that are not absorbed by tissue. You can shine this light through tissue and it will pass harmlessly through. If we design our particles so that they will accumulate at a tumor site, then when we shine this light from outside of a patient's body, it passes harmlessly through the skin and all of the normal tissue, but when it gets to the tumor site, you have localized heating so that you can destroy the tumor cells in that vicinity.

When we look at what we do to try to accomplish this, we start off with the materials. These materials called nanoshells were originally invented by Naomi Halas at Rice University, and as I've said before, they're this core shell structure and what makes them special is that we have highly tunable optical properties. You saw before that when we use gold colloid, solid gold nanoparticles, we get a bright red color. That is a phenomenon called plasmon resonance, and as scientists have started to understand that phenomena, they have been able to develop a kind of the mathematical understanding of what's happening. It has created the possibility to go in and design materials; instead of just going from gold to red, you can manipulate and place the optical properties anywhere that you want them.

This is an example here where we're looking at four different batches of nanoshells that all have the same size silica core, but we grew different thicknesses of gold shell around the outside. So you can see as we go from a 20-nanometer-thick shell to a five-nanometer-thick shell, we see a change where this optical extinction curve is and that basically tells us about what color our particles were. We can also, through our particle design, control whether we have scattering, basically light reflecting off at this wavelength, or whether we have absorption, which leads to heating.

This shows what those particles actually look like, kind of translating those curves into something a little more intuitive. On the far left we again have this gold colloid, solid spherical gold nanoparticles, and then moving from there from left to right, we have a series of nanoshells where we get progressively thinner shells. We're going across the visible region of the spectrum and out where the particles start to look clear; we're out into

the infrared region of the spectrum where our rods and cones can't detect that color any longer.

I mentioned that we want to work in the infrared because of the fact that tissue is transparent there. Tissue is transparent there because you get above the absorption of chromophores, like hemoglobin and melanin, but you stay below where water starts to actually absorb light. You have this window of space here where you have very, very deep penetration of light through tissue, over 15 centimeters, and if you can make your particles have orders of magnitude higher absorption of light, you can start to pass harmless light through tissue, but generate localized heating at the particles.

When we make these particles, it's a three-step process where we start off making the silica core nanoparticles, and on the top left we have an electron microscope image of these particles. We have very nice little spheres of glass. We take these and we functionalize their surface with amine groups, and what that does is it gives us positive charges on the surface of our particles. We can use that to electrostatically absorb very small gold colloid particles. The very small gold nanoparticles have a negative charge, so when we put the two together, they'll associate and we'll have tiny spots of gold on the surface of the glass particle. We use these as nucleation sites so that we can grow additional gold onto the surface and form a complete shell. That process is shown in a series of electron microscope images where on the far left we have the particle that just has the small gold nanoparticles interacting through the positive and negative charges. As we move to the right, we're progressively reacting more gold onto the surface and those islands are growing and starting to coalesce and form a complete shell. One of the nice things here is that we have computer models that we've built that allow us to predict what size core we need and what size shell we need to get whatever optical properties we need for a new application.

When we look at cancer therapy now, the idea is that we've got particles that strongly absorb light in the infrared and we can decorate the surface of these particles with things like peptides or antibodies that will recognize markers on tumors or tumor vasculature. We can inject these particles intravenously, and allow them to circulate in areas where you have tumor growth. You have very leaky blood vessels, which helps them accumulate at that site, where they can recognize markers on the cells at that site. Once they're there, we can apply the infrared light from outside the patient's body. It passes harmlessly through the normal tissue and it hits the nanoparticles; they heat up and hopefully lead to destruction of the tumor cells.

Looking at some of the animal studies for this, we can grow human tumors in mice and then we can inject the particles intravenously into the mice. After two hours, allowing time for the particles to get to the tumor, we can shine the infrared light and hopefully treat the tumor. What we see here is an MRI of the hind end of a mouse who had two tumor sites. We

injected the particles and were shining infrared light through the whole mouse. The colors changes at the two sites were the tumors heating up. I think we'll just finish without the slides real quickly here—the two tumor sites were able to heat up and reach temperatures sufficient to allow complete destruction of the tumors. The normal tissue in between those sites didn't heat up at all and wasn't damaged by the process.

We were able to track those animals and see what happened; we saw in 100 percent of the nanoshell-treated animals that we had complete regression of the tumors and the animals continued to live for a full year, to the completion of the study, with no tumor re-growth in any of the animals. The control animals with just the tumor growth all died due to excessive tumor growth within three weeks of the treatment date. So we saw very significant results.

We've taken that now to clinical translation. We founded a company, Nanospectra Biosciences, which has built the manufacturing facilities and gone through the FDA regulatory processes and now has the nanoshell cancer therapy in human clinical trials at five different sites within Texas and Louisiana. We are hoping to be able to extend this into many different types of cancer and are hoping that this will significantly impact this disease and save lives. Thank you very much.

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DAVID DANIEL

Well, we've seen some excellent examples of discovery and the art of discovery. I'd like to talk about the infrastructure of discovery, the globally competitive environment for discovery, the race to see who wins in making the most important discoveries of the future. And because this is the Philosophical Society of Texas, I'd like to take stock of Texas's relative position competitively in contributing, I hope disproportionately, to those future discoveries.

Perhaps you've all seen this map of the world at night depicting population distribution, but obviously it's really a measure of electricity use at night. My question to you would be what would a map of the world look like if rather than looking at intensity of light, we were looking at the intensity of discovery or where the most intensive points exemplifying the art of discovery at its finest might be?

Well, Richard Florida, who wrote a book entitled, *Rise of the Creative Class*, also wrote one of my favorite articles, sort of as a counterpoint to the world is flat and he argues that the world is spiky. And in fact, the hypothesis that I'll carry forward in this talk, much like the world is spiky in terms of distribution of light, is that it's also quite spiky in terms of distribution of discovery. A few places are home to a disproportionate number of discoveries in our world. And so this map from Florida's paper shows where the scientific citations of the world are most concentrated

and you can see they're principally in the United States and Europe and a few other places. This is about a decade old, by the way, and I think if we were to somehow fast forward to a map of today, we'd see much more intensity in Asia than we see represented on this map.

Florida also compiled a map of patents because discovery doesn't only occur in universities where we write articles for the open literature. Discovery often occurs quite significantly in the private sector where proprietary discoveries occur that translate to patents that ultimately lead maybe to the infrared cancer-attacking technology such as we just heard in the last talk. But, you can see that indeed there are places around the world that are spiky, that is, where a disproportionate number of discoveries occur.

Let's look at Texas and ask ourselves the question: what is our relative competitive position in the world with respect to discovery? Well, one of the factors, I believe, that is quite important to think about is the role of the world's premier research universities. In North America the Association of American Universities, or AAU, is the "club" of most of the great research universities. I find it really interesting that this club of 60 universities is actually relatively small in terms of the total population of universities in the United States. There are more than 4,000 colleges and universities in the United States, and the 60 U.S. AAU institutions actually comprise only 1.5 percent of the universities in America.

And by the way, there are three of them in Texas. We have three of the 60 American AAU institutions in Texas, or 5 percent of the nation's total. By the way, we have 8 percent of the nation's population and growing, but we only have 5 percent of the nation's AAU universities. So we underperform in terms of being home to the great research universities of the nation. But, I find it fascinating that 57 percent of all the federal R&D in America goes to the AAU institutions, which comprise just 1.5 percent of the universities of America. These AAU universities are home to more than 80 percent of all the members of the National Academies that are in academe in the United States; 70 percent of all Americans who have won Nobel prizes are affiliated with an AAU university.

I didn't put it on the slide, but it's striking that nearly half of all the Nobel prizes ever awarded world-wide have been awarded to individuals affiliated with AAU universities. And although the AAUs are home to only 6 percent of the undergraduate students in America, they're home to 63 percent of all the National Merit Scholars. Put another way, the AAU universities are the crown jewels, if you will, of higher education in America and maybe even throughout the world.

One of the important things that we, at least in academia, don't think about very often is venture capital. Venture capital is a teeny-tiny piece of the American economy; it's only \$30 billion per year in a \$14 trillion-per-year economy. And I guess you would describe venture capital largely as the economic manifestation of the art of discovery; that is to say the intersection between discovery and actual implementation in the private sector, or the commercialization of discovery might be another way to put it.

Curiously, though, 11 percent, I think it is now, of every American who has a job works for a company supported by venture capital and 21 percent of America's gross domestic product of \$14 trillion per year comes from companies supported by venture capital, and by the way, that's up 3 percentage points from two years ago. From 2006 to 2008, job growth in companies started by venture capital grew at a rate almost ten times greater than job growth in the American economy as a whole. So if you ask the question where are the new jobs being created, to a significant extent they're being created in companies backed by venture capital. If you backtrack, well, where does it all start? I think it starts disproportionately in the spiky areas with the great universities of the nation and the world.

I've compared Texas to just a couple of other states in the bottom slide. These percentages, by the way, are percent of U.S. productivity or population. California has 12 percent of the U.S. population; it earns 18 percent of all federal R&D expenditures. Californians thank the rest of the nation for sending their tax dollars to California to fund their universities. California is home to 30 percent of all the elected members of the National Academy of Sciences, and interestingly, 50 percent of all the venture capital invested in America goes to California; 50 percent goes to California!

Massachusetts, the state that's home to only 2 percent of the American population, garners 5 percent of federal R&D expenditures. So they, too, thank the rest of the nation for sending them their tax dollars. Massachusetts is home to 15 percent of the National Academy of Sciences members and receives 11 percent of all the venture capital in America. Massachusetts: 2 percent of the population, 11 percent of venture capital.

How does Texas do? We're 8 percent of the American population and growing. We get 5 percent of federal R&D expenditures, so we underperform relative to population share. Texas is home to just 3 percent of the National Academy of Sciences members of the nation, and we only get 4.5 percent of venture capital, and falling, actually, in terms of the fraction in the U.S. We underperform, I would say, as places where the art of discovery is best practiced.

Even within the State of Texas we're spiky. Dallas-Fort Worth, for example, has 26 percent of Texas's population and produces 31 percent of Texas's gross product. Dallas-Fort Worth garners a respectable 28 percent of the venture capital. The really interesting place is Austin. Austin is the spike. Austin has 7 percent of the Texas population and produces 6 percent of Texas's gross domestic product, but it attracts 55 percent of all the venture capital invested in Texas.

Curiously, Dallas-Fort Worth, Houston, and San Antonio combined, are 70 percent of the Texas economy, but Austin gets more venture capital than DFW, Houston, and San Antonio combined. Why? The answer is very simple: UT Austin and the incredible mass of creative discoverers that one finds here in the City of Austin. And for those of us in DFW, as we take stock of what we need to continue to be competitive, it's not lost

on us that creating more great universities would be a good thing for the DFW area. So I would argue that Texas is very spiky, and thank goodness for Austin and for the discoveries and the creativity and the venture capital that comes to Austin.

One thing that some people don't realize about Texas is that as a result of having relatively very few top-quality research universities, Texas actually exports talent to other states. According to the IPEDS data, in 2008 Texas exported 11,500 high school graduates to doctoral-granting universities in other states, and we imported 3,700 students from other states to doctoral-granting universities in the State of Texas. We were a net exporter of 7,800 per students per year in 2008, which is about twice what it was in the year 2000.

So we are shipping off, disproportionately, our best and brightest young future discoverers to other states. It's wonderful that some of our children go to Harvard and Stanford and so forth, but wouldn't it also be wonderful if more of the best and brightest from around the nation and around the world came to Texas to make their discoveries right here?

Just to put the net loss of 7,800 high schools students per year to other states in perspective, the freshman class at UT Austin is a little over 7,000 and the freshman class at Texas A&M is about 8,000, so put in practical terms, we are shipping off the freshman class at either UT Austin or Texas A&M each year and every year to other states to go to their universities. Some of those kids will come back, but many of them won't.

So let's review the situation. Research and venture capital are the fuel for discovery, growth and prosperity. To create wealth, we used to invest in factories with smokestacks. Right? We'd build a new automobile factory. In today's and tomorrow's world, we invest in producing brains, that is to say people who are deeply engaged in the art of discovery. Texas is exporting our tax money to other states to fund research at their universities. Or really it would be more accurate to say those other states are earning those resources through their investments in universities. And as a result, other states are proportionately attracting more top faculty, more students, and more venture capital than is the State of Texas. In terms of promoting discovery in Texas, I simply ask the question: is this a smart investment strategy for Texas's future; does this maximize discovery in Texas?

Well, let me close with this slide. You know, things are going great in Texas and I'm so happy I'm here and not in California and not in Massachusetts. But let us realize that the world does change over time. This slide shows the 6 largest cities in America 90 years ago, in 1920, which is just one lifetime ago. The largest cities, in descending order, were: New York City, Chicago, Philadelphia, Detroit, Cleveland, and St. Louis. Things were going great in St. Louis and Detroit, and they're going great in Dallas-Fort Worth right now. But current success does not assure future prosperity. Just ask people about that today in Detroit or Cleveland.

In the past, I think the keys to prosperity were seaports in strategic locations, rail hubs, and perhaps most importantly, access to natural resources in the vicinity. I think now and in the future, the keys to pros-

perity are spikes, spikes where discovery all comes together, built around universities and medical research facilities that attract smart people, create environments where the art of discovery occurs in such beautiful manifestations such as the examples that we've already heard, and that then leads to entrepreneurship and constant reinvigoration of the economy.

So the art of discovery is wonderful for me as an engineer, for scientists, for doctors, just for its purity and beauty, but I would also argue that it may well be the single most important facet for the quality of life in this state and this nation, for our children and grandchildren. Thank you very much.

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KARL GEBHARDT

It's a pleasure to be here today and now I want to back us up a little bit. I want to back us off of our planet and out of our galaxy, and I want to talk about the universe a bit. I want to talk about a problem, a problem that we face in science now of dark energy. It's considered one of the, if not the greatest, problems that exist today.

The problem we have devised in an experiment here at Texas is called HETDEX: Hobby-Eberly Telescope Dark Energy Experiment. Our focus is dark energy, and let me connect it a bit to what we've been talking about. We've been working on this for a long time, probably close to five years now. We probably have another maybe four or five to go, so a long time frame. Why I wake up in the morning is to attack this problem. I'll explain how we're going to solve the problem here in Texas. It is a remarkable opportunity that we have.

We get lines of undergrads trying to work on this project when we have a job ad for a mechanical engineer, an electrical engineer, or a computer programmer; we get these remarkable candidates. We are choosing the best of the best. The team that we have assembled for this dark energy experiment, for this astronomical experiment, is just fantastic. I'm so excited to be a part of it, and I wish I could expand it.

And so my idea and goal is in the science, but there is a remarkable hook here, not just a hook to get people in the science, that's obvious. But the appreciation for science; the appreciation for trying to understand the universe that we are living in is remarkable to engage the public in science and to get people involved. And that is why we push what we are doing continuously throughout the state of Texas and the country.

So let me tell you about what we're doing. We have this experiment; so let me talk about dark energy for a bit. It is, as I said, one of the biggest mysteries in all of science. The problem is what we're talking about and I'll show a few plots in a moment. Dark energy may represent over 70 percent of the energy that's in the universe, and we have essentially zero idea as to what it is, and that's the remarkable thing.

So this is a program that we started here at the University of Texas. Gary Hill and I, we've been working on this for a long time now. We teamed up strongly with Texas A&M and so we have a very close collaboration now, and we have a couple of partners over in Germany and at Penn State. It's a relatively small project for what we are trying to do.

The problem is the universe is expanding and we don't understand that. The idea of the universe expanding has been around for a while, since Hubble, but in fact, it's expanding at an ever and ever faster rate; in fact, it's accelerating. So how big the universe is, how big the visible universe is and the space between the galaxies on very large scales is getting larger and larger every year; it's accelerating.

And this is the problem. I have a simplistic equation on the bottom here. And if you want to talk to me about it, I will ask you about a few of the terms here to make sure you know what we're talking about. I put this up here, not to test you, but I put this up here just to show you it's relatively easy what we are doing. And so just let me walk you through the very simplistic terms of what we are doing.

The term on the left, that's the measurement we make; that's the expansion rate. It's not that hard. You go and you look at a galaxy; you see how fast it's moving. You look at a galaxy that's a little bit farther away; you see how fast that one is moving. And you keep on and you begin to build up a picture. You begin to build a picture from, "Okay, if the universe is this big, how fast are the objects at that position; how fast are they moving away from us; how fast are the ones here, how fast are the ones here?" And it turns out that the objects that are farther away from us are moving away from us farther. The only way for that to be is the expansion of the universe, and this was talked about by Hubble back in the 1920s.

But now when we do a really fine measurement, it turns out that the expansion rate, how fast we're expanding out is changing over time. If you look at the equation on the bottom, it's pretty easy to calculate, at least we thought it was. We thought it was pretty easy to calculate how to understand the expansion rate. There's the term on the left; that's how fast you're moving. That's the observation. The first term after the equals is just the matter in the universe.

Well, so we had this idea of the Big Bang. Everything starts out as a point source in the middle. Most people have heard of the Big Bang: you take all the matter and energy in the universe, squeeze it down to a small spot in the middle, and a long time ago it explodes and things begin to move out. Well, the only thing that we know that can stop the expansion of this giant explosion early on is the mass that's inside of the universe. There is a gravitational force and the gravitational force tries to act on all the mass in the universe, and so as the universe expands out, the mass should be trying to pull it back in and slowing down that expansion. It's very easy: you have mass; you have the laws of gravity; they should be able to pull things in and cause it to slow down.

We want to know if the expansion rate is related to the amount of matter

in the universe. It's a very simple calculation; it's related to the shape of the universe. That's a detail which I don't need to talk about, but it depends if our universe is flat or has a little bit of curvature to it, It has to do if the distance between two points is a straight line or not in our universe.

And then what happens is we made this measurement: you take the observables, you calculate the amount of masses in the universe, and you say, "Aha, we've got a problem here," and the problem is that our universe is expanding much faster than we think. So we add a term on the right all the way at the very end. It's a fudge factor that Einstein invented himself; a fudge factor such as the stuff I used to do in my exams in college. If I couldn't understand my answer, I said, well, just let me stick in a factor of two or a factor of three—that's what we did; that's what Einstein did a long time ago. He couldn't understand the expansion rate so he stuck in a fudge factor.

You have the Big Bang and everything starts as a small point and things expand out. Well, as things expand out, there are the laws of gravity and mass begins to pull things back in, and so you should be able to measure the expansion rate accurately. But we don't understand that. And so there's a little blip at the very edge of the universe you can see. So the scale here is supposed to be our universe expanding out—there's a little bit of a blip at the end that's causing our universe to expand out a little bit and that's the explanation for dark energy.

It's a huge mystery as to what is causing this, our universe, to expand out a bit more, and dark energy is only a phrase. It may not be dark and it may not be energy; it may be that we don't understand something very fundamental about the universe. We said one simplistic idea for how to solve the dark energy issue is that we don't understand the laws of gravity. Right? The reason we're in this problem now is we believe we know there's mass in the universe and that it expands and the mass interacts. Well, if that interaction is not what Newton or Einstein told us, we may have a problem. We know that the laws of gravity, according to Einstein, begin to break down on very high energies in very small scales. So why not, if the universe gets extremely big, in very large scales that it begins to break down again? It's not such a stretch to think about that.

So that's one possibility. Another possibility is there is a new type of field, a new type of particle out there. I made up a cartoon sketch here of what's in the universe. You see the proton, the neutron, a dark matter particle that we still don't know what it is, and then a dark energy particle. These are just cartoon ideas of what it could be. And then I think the fundamental idea is what Einstein came up with a long time ago, that just the existence of space—it's called the vacuum energy and it's a cosmological constant—in just the existence of space itself there may be energy in space. Between both of us, between you and me, there is space. If there is somehow energy associated with that space, then what would happen as I walked away from you? I make more space; therefore, I make more

energy. Therefore, if the universe gets really big, there's a lot of space in the universe. Then the dark energy begins to take over and begins to accelerate the universe because the space has been made so big, the energy begins to dominate over everything else.

We believe we're in a state now that dark energy has won in the universe. It has beat the laws of gravity; it has beat the force of gravity. The gravitational force tries to pull things in and dark energy is pushing things out. So how we're going to solve this is we're going to use HETDEX, the Hobby-Eberly Telescope Dark Energy Experiment. So again, the fundamental problem here is that we have this thing called dark energy and the theorists—and I apologize Steve—have failed us.

We don't even know how to design an experiment to study this thing. We don't know what it is and so we don't know what to target. As an observer, I have to go back to the basics and think, "Okay, well, let's just think about the observations." The problem is the expansion rate of the universe; the only thing that we can do is to really nail down the expansion rate of the universe as well as we can. And so here what we do in HETDEX is we're going to make a remarkable map of the universe and measure where the galaxies are.

If you look at the top left, so that top left is a distribution of the galaxies in the universe when they were distributed early on in the universe; it was not a completely random distribution. They had a pattern in there. If you can map out that pattern over time, then you get the expansion rate. So we're going to make a very detailed map of the universe and then trace it out as a function of time. That will tell us the expansion rate, and then we feed that back into the models of dark energy.

I hope people have been out to McDonald Observatory; it's a phenomenal place out there. The Hobby-Eberly Telescope is out there and it's one of the biggest telescopes in the world. We're going to chop off the top of the telescope and stick on a new instrument that can observe what we need. The problem of dark energy is enormous; you have to study enormous chunks of the sky in order to understand it, so we had to modify our telescope. Now, to modify a telescope that is on the frontier already where you have lots of scientists who are trying to use it and get fantastic data is difficult. And to say, "I'm going to chop this telescope apart and put on my instrument," caused a little bit of a battle. But, thanks to my dean here, I think we've overcome that battle, so we're going to build a fantastic instrument.

So let me jump to a summary slide here. Dark energy is remarkably important and because of that, there are huge teams trying to understand this huge thing. Here I have a chart of these teams and HETDEX is the second line there. If you look at the column of institutions and you compare us to other places, you see that it's the Department of Energy and it's NASA. There are a few agencies here that represent pretty much all the countries in the world, and if you look at ours, it's the only one we

can actually point to as an institution. The University of Texas and Texas A&M team is often called the Texas Project.

And so it really is Texas against the world in this, and we are relatively cheap, \$34 million. That's a lot of money, but in terms of the other dark energy experiments, we are relatively cheap. We are fast; we are going to start in 2010 and 2011 and we'll go for three or four years. We are on schedule, on budget, and things look extremely good. And we are unique. We are looking at a chunk of the universe that none of the other experiments are looking at. We are looking at very early times in the universe and the other experiments are looking at the late times, at the times now, and the complement is what makes us extremely strong in that regard. The reason we can do this so well is because we own the telescope and we can do what we want to it.

So just let me leave you with this: *Science Magazine* had their top 100 important mysteries in all of science and dark energy is number one. So if *Science* said it, it has to be important. Thank you for listening.

Discussion

DR. RANKIN: You've heard an array of presentations from lots of different perspectives. I didn't anticipate how many different kinds of things we were going to hear this morning, so this is really exciting, lots of possibilities for discussion. I want to go back to the very beginning and just ask each of you to talk a little bit about what about discovery attracted you; what attracted you to this walk of life; what brought you into it?

DR. WEINBERG: In high school I read popular books about science, such as a book by James Jeans, *The Mysterious Universe*. I found in these books many things that I didn't understand. I remember that there was an equation in the book that said q times p minus p times q equals i times h . I couldn't understand this. I figured that q and p were symbols representing some numbers, but then how could q times p be any different from p times q ? And if they were not different, then wouldn't q times p minus p times q just equal zero, not something (whatever it was) called i times h ? Eventually in college I found out. But back in high school I was led on by the attraction of mysterious, arcane, esoteric knowledge; knowledge that could only be gained through mathematics. I thought that understanding this sort of thing would be like knowing secrets that none of the kids on your block knew.

DR. CIGARROA: Well, for me, Dean Rankin, it was the power of faculty members I was exposed to; I gave some examples. The individual who inspired me to always ask that other question was an individual by the name of Judah Folkman, a wonderful pediatric surgeon who made an observation that in the operating room tumors were surrounded by blood

vessels. He felt that he needed to take that observation to the lab and decide what that growth factor was that caused this new avascularization, and ultimately led to a new chapter in how you treat cancer.

So again, for me it was really the power of an outstanding faculty member who stated that it's not enough to be a physician; you have to ask the question *why*.

DR. WEST: I think I would second the importance of a mentor and a role model, I didn't grow up with scientists in my family or any scientists to be role models, Growing up, I didn't know that this was a career path that even existed. It was the impact of individuals as I entered into the university system: Professor Robert Langer, I started working in his lab my freshman year in college, and Bob Langer, a renowned scientist who holds more patents than any other individual in the United States, spent time with a 17-year-old kid and help her along. I think that shows the importance of not just discovery, but how we impact the lives of the students who come through our systems.

DR. DANIEL: Well, as the engineer on the panel, I'm still trying to discover why I'm interested in the art of discovery, I guess it was problem-solving. As a young boy, I'd take my electric train apart and be highly motivated to figure out how to put it back together and penalized if I couldn't. But I guess it's always been an interest in problem-solving for me which usually means you have to discover something if you're going to solve a non-trivial problem.

DR. GEBHARDT: I think that's probably the same for me. I was always pretty good in math and so I didn't know exactly what to do. I went to college and I wasn't going to do astronomy or physics, but I took a course where we studied Steve Weinberg's book, and I had no idea what he was talking about. I said, "I've got to try to figure this out," and that did it.

THE ART OF THE ARTS

ADAIR MARGO, *Chair*
PETER MARZIO, GIGI ANTONI, HENRY MUÑOZ

Ms. Margo: It is a privilege to be part of this panel on the “Art of the Arts.” After being involved with individual artists for twenty-five years, I’ve come to see just how much they can help us slow down and pay attention to things. And the greatest artist I’ve known—Tom Lea—said that what he tried to do was help people discover what was already inside them, but that they hadn’t realized before. He helped me see the place where I live through his paintings, and he helped me love our mountain—Mount Franklin.

Tom Lea also helped me discover the place where I live with his words too. He thought that his art and his words were all of one cloth. Some of his words that I love and have made my own are: “People ask me what in the world I could find so special about the dried up, bare, empty country I obviously prefer to live and work in. First I say I was born in it, and then I say, furthermore I love it for the intensity of its sunlight, the clarity of its sky, the hugeness of its space, and its revealed structure of nature’s naked primal form, without adornment.” Tom Lea’s words have helped me understand what it is I love about the place where I live. I didn’t have those words, but I’ve made them my own. I appreciate having been around artists, especially an artist like Tom Lea.

It was through the artists of Texas that I discovered my own state. I am from El Paso, but I attended university outside the state. When my family traveled, we usually went west to California. It’s closer than Houston, so we went to California. I never really knew Texas beyond what I read in books until Governor Clements appointed me to the Texas Commission on the Arts in 1987. It was then that I began traveling around the state, and that’s when I met many of you and visited your communities.

And everybody in each community was so eager to share what was theirs and what was specific about the place where they lived. They were eager to share the landscape and the things that their inhabitants enjoyed doing, both on an amateur level and a professional level. There was always a desire to share what was specific to them. And then there were museums like the Houston Museum of Fine Arts that were just filled with these vast collections from all over the world. Museums like Houston’s showed how much Texans were interested in other cultures in many parts of the world.

When I served President Bush as chairman of the President's Committee on the Arts and the Humanities, I was also appointed by Colin Powell to the U.S. National Commission for UNESCO. I traveled with Laura Bush to Paris. And I went to those UNESCO meetings, and I would hear people talk about the United States in very unflattering terms, saying things like *it's all the same...it's like McDonald's... it's crass popular culture...their wine is like Kool-Aid...*and they made it sound like we were taking over the world. And I thought, well, I'm from the United States and I know something about it, especially my state of Texas. Texas and the United States are diverse and vast and wondrous. What's more, we Texans and Americans are also very curious and interested in the diversity of your country, too. The words I heard at UNESCO and the reality of my experience just didn't match, but then people can say funny things when they are competing.

Jim Billington, the Librarian of Congress, told me on the way to Paris that we needed to get better at communicating all of the United States to all of the world. I think the arts are a major part of that, and I couldn't agree with him more. He also told me that we do no good when we go to other countries and agree with their criticism of us. It's a much better approach to be proud of our country and to want to share it with others, while also being extraordinarily interested in their countries. Art and culture are fine ways to do this.

I often heard when I was in Washington those eight years, the words of Dana Gioia, whom I enjoyed very much as chairman of the National Endowment of the Arts. Dana would say that art education is not about creating professional artists; it's about creating whole human beings. And I thought back to my days on the Texas Commission on the Arts and to some of my visits to your communities. One of these visits was to Del Rio, and I'll never forget a specific story. A young man who had been a problem—he was one of many children that didn't have a dad—always in trouble, always in detention, until a teacher, an art teacher, offered him an angel ticket to the symphony instead of going to detention. He said that he knew his *cholo* brothers wouldn't see him there.

So he went to the symphony and he said—I've never forgotten it—he said, "You know, I'd never been in a room filled with beautiful music before, and I knew when I was in that room that I was not fulfilling all that I could be as a human being." And I'll never forget his quote, he said, "You know, when those cymbals clanged, it knocked the chip right off my shoulder." And so he was there working in the arts in Del Rio. I'll never forget him in arts education.

Today we have a very special panel, comprised of people I have known and admired. When I was chair of the Texas Commission on the Arts, I was amazed that the Director of the Museum of Fine Arts, Houston, would work so hard for a tiny little bit of money from the state when the vast private support of the museum was so huge and the state's contribution was so small. But it was important for Peter and the Museum to have public support from the state. Our country is so different from

others where the state has control. But in our system a little bit of state support kind of says: good job, good and faithful servant, you are serving the public good. This generates greater private support. Peter was just spectacular.

And Gigi Antoni I know from the White House where the President's Committee gave awards once a year called Coming Up Taller Awards. They were named for a program in Hell's Kitchen, New York, run by Wille Reale, a theater artist. After watching children perform a play he said, *There is no way to fast forward and know how the kids will look back on this, but I have seen the joy in their eyes and have heard it in their voices, and I have watched them take a bow and come up taller.* So Gigi Antoni and Dallas were recognized at the White House with Laura Bush with a Coming Up Taller Award. Then when Ray Nasher, my vice chairman, hosted the President's Committee in Dallas, we focused on all the great things in Dallas and Gigi was there.

And we also have Henry Muñoz. My great friend Alice Carrington Foulz from San Antonio, who served on the President's Committee with me, would always talk about her genius friend, Henry Muñoz, and how I needed to meet him and learn about his interpretations of mestizaje. She took me to a restaurant on the River Walk where he had molcajetes on the wall that created texture. Henry used these stone bowls that were used in pre-hispanic Mexico and continue to be used today, as a decorative component.

I've learned a lot from each of our panelists, and we're going to start with Peter first.

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PETER MARZIO

I do not believe that art museums in Texas do anything that, in and of itself, is unique. Rather, the art museums here have a slightly different style of operation compared to other U.S. and European institutions, and this difference may be leading to a new type of art museum.

What do I mean? One key is to look at the annual admission fee totals of the Texas museums in the three largest cities—Houston, Dallas, and San Antonio—compared with their counterparts in New York, Chicago, and Los Angeles. During a ten-year period, the totals in Texas were less than half as much a percentage of their operating budgets as in other cities. Why is this so? There is a tradition in Texas of free admission. In Houston, the Contemporary Arts Museum and the Menil Collection are two examples. And many museums such as the Museum of Fine Arts, Houston, where I work, provide a generous number of free days. In addition, there is free admission at the MFAH for many kinds of groups, including schoolchildren and anyone age eighteen or under who has a city or county library card.

Most art museums in Texas are not located in areas where tourism is

a significant part of the economy. San Antonio is the exception. In New York, Chicago, and Los Angeles, visitors from other places are the ones who drive up the admission fee totals. Most art museums in Texas do not spend large sums of money on marketing or advertising. The exception, of course, is when there is a major blockbuster such as the Dallas Museum of Art's wonderful recent Egyptian exhibition or the Kimbell Art Museum's presentation of the Barnes Collection. This reluctance to advertise is traceable to two factors: So much of the wealth in our state comes from wholesale activities—upstream oil, agriculture, shipping, and medicine—that do not require expertise in marketing or advertising. Few of us in Texas really understand how the economics work in more retail-oriented states. The second factor that discourages advertising is the lack of tourism. This seems to make advertising ineffective.

Another aspect that makes the operation of art museums in Texas different is that here we receive very little operational assistance from state or local governments. A recent survey revealed that Texas ranks last among states and territories in per-capita funding for cultural activities. Most counties in our state contribute nothing to art while Texas cities range from being moderately progressive to stingy. The absence of these two traditional forms of income—admission fees and government subsidies—ties Texas art museums closely to the people who live in the areas of the museums. Contributions from individuals, foundations, and corporations are important to all museums, but in Texas they make up a larger share of the operating budgets. These gifts link Texas museums tightly to their communities, and as a result, the museums here reflect the values of their communities. The art museums in Texas could not survive without the communities' approval.

Some critics complain that this is a dangerous situation. They insist that if a museum's collections and exhibitions are controlled by the general population, then quality is threatened and professional standards are shattered. I suppose that could happen, but as I look around the state of Texas, I am confident that this bond between communities and art museums has made the institutions more dynamic and has driven their trustees to demand that the professional staffs find the best art and to present important exhibitions. This partnership between community and museum has led to cutting-edge art outreach and education programs for schools, libraries, hospitals, homes for senior citizens, parks, and so forth. Compare this motivation in Texas to reach out versus the priorities of museums in tourist-rich cities that do little broad-based community work.

Why is this aggressive posture of Texas museums so important? Because the primary mission of art museums is to present real works of art created by men and women throughout history. This may seem so obvious that I am sure that at least some of you just said silently to yourselves: "Well, duh."

I submit that the real, original work of art is becoming a curiosity in a society that is living increasingly in a world of "virtual reality." Why go

to an art museum and look at an old painting that hangs restfully on a wall when IMAX® theaters and video games, bigger than life-size imitation monsters breathing smoke and make-believe fire, and enormous digital reproductions of famous artworks rush at our senses from every direction? Why look at a marble or bronze statue in a museum gallery when there are computerized learning environments ready to inundate us and our children with every fact about every subject? And why would anyone look at art that requires the viewer to move and think when in the virtual world, the viewer need not budge? This is not an attack on the technological wonders of our day. It is, however, a reminder that in the beginning of any creative endeavor, there is an original idea. Art is the product of that moment. Important art, hopefully the type that we aspire to present in Texas's museums, represents only a tiny percentage of those special, original moments. It is the best of these creative moments that makes art museums important.

The original work of art requires the viewer to see with intelligence. Learning to look is a skill that everyone must master. In Texas, teaching this skill has fallen to museums almost exclusively. Most K-12 schools do not have trained art instructors. Beyond that, it is possible to go from pre-K to postdoctoral levels of education in our state without ever encountering a visual arts course. The result is that Texas is filled with brilliant people who have never learned about art. That is beginning to change, but progress is halting and it is small in scale.

Finally, I have one other vague notion that is rooted in my experiences in Houston. Like most art museums in Texas, the Museum of Fine Arts, Houston, rests upon the diverse communities that make up our city. We do not force-feed art to our audiences, but we try to listen to people in diverse communities, engage with them, and build collections of important works that reflect their cultures. In essence, the MFAH becomes their museum. This philosophy is different from that of the great museums of Europe. Imagine the Louvre in Paris without the boatloads of art that came from royal families, ecclesiastical collections, and military conquests, or the British Museum without the worldwide power that the British Empire exerted for three centuries.

European museums evolved into what they called Enlightenment or encyclopedic museums that represented cultures around the world. The people in charge controlled both the artworks and the information about them. Museum professionals believed in a hierarchy of fine art that was rooted in the art of ancient Greece. Beauty itself was judged by classical principles. Then, when societies changed in the nineteenth century from kingdoms to republics to democracies, museums emphasized more and more their educational responsibilities. The goal of these institutions was to share their knowledge of beauty with all citizens, to uplift them and to make these new nation-states civilized places. In Houston, the MFAH with its 60,000 works of art is encyclopedic, too, but in a much different way. More important than being encyclopedic is the simple fact that it is ecu-

menical. Although there are many different types of art museums in Texas, I would suggest that an ecumenical thread holds them together, and each, in its own way, reflects the vision of Texas's citizens.

This distinction between encyclopedic and ecumenical may not seem so important, but I would suggest that it goes to the roots of American philanthropy. Encyclopedic collections reflect the desire of intellectuals in powerful nations to sample the beauty that exists throughout the world. This ambition was fueled and financed by kings and popes and national governments. It was a symbol of power. The ecumenical art museum was created in Texas and other American states by the people's desire to define themselves. They looked for or created art that expressed what was important to them. Those works that expressed these visions most vividly became parts of collections in art museums. These museums and collections are symbols of communal identities. Their existence was financed by the people themselves. What does it mean to be a Texas American? A trip to your local art museums is a good first step in the quest for identity.

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GIGI ANTONI

Hello, everyone, I am so honored to be here. I've been inspired all morning long by what I've heard and what I've learned. I'm really happy and honored to be here today and to talk with you.

My name is Gigi Antoni. I live in Dallas, Texas. I grew up in South Texas and was educated in East Texas. I spent a lot of my childhood in Central Texas, but I've spent most of my adult working life in a wonderful city: Dallas, Texas. I'm going to talk to you today about the journey that my community has made as we try to grapple with issues of the arts and their place in the lives of our young people.

We've heard a lot today about how fast the future is changing and the kinds of implications that change will have on how we build our education system and how we interact with our children. At the turn of the last century, Michael Cox at the Federal Reserve in Dallas published a study about the kinds of skills and capacities that were going to be needed to fuel our economy in the 21st century. As we think about the implications of what has been fueling our economy of this information age, we see that knowledge workers were really the currency. The sorts of skills that they needed were sequential, literal, functional, textural, analytic thinking skills which, at the time, were what was valued to be successful in our economy and in our society.

And as we move into the 21st century and begin to think about the new kinds of skills and the new sorts of jobs that our workers are going to need to be prepared to do, it's almost impossible to imagine. I have a nine-year-old. By the time she's my age, there's no telling what sort of career or industry or job she might have. It probably hasn't even been

invented yet. And so how do we prepare her and children like her to be successful in a world that's changing so quickly?

This is from the Partnership for 21st Century Skills (illustration 1). These are the personal capacities that the business community believes education should be preparing our children to do as they go forward in the 21st century. As you look at this list and think about the sorts of capacities that are built when children engage in creative acts, I think it's pretty clear the connection between skills of creativity, invention, imagination, and new capacities that are needed for the 21st century.

In 1997, the Arts Commission in Dallas asked my community a very important question. They said, "We're investing tax dollars in cultural institutions and we say that part of the reason we're doing this is to promote and support education. Who's really benefitting from this investment, who's being served, and is it having any impact?"

And we actually did research to try to determine the answer to that question. The cultural institutions in our city were compiling numbers that looked as if we were serving hundreds of thousands of children. It was really the same 25,000 kids that were going everywhere and they all happened to live north of Northwest Highway—which is the more affluent part of our district.

And so once that became obvious, we banded together our school district, schools, city council, and philanthropic community in an effort to change that reality. One of the impulses to do that was because we knew that there was a growing body of evidence that arts and cultural education was actually an accelerant for children in schools and in preparation for a successful future. And there was a good civic reason for us to have this conversation.

So we came together and we built a way, a system to distribute the city's cultural assets equitably among all of our children in our public schools. We did it in such a way that we promoted and provided professional development for every classroom teacher in our system to use these assets in their classroom to encourage quality promote learning—and we measured these efforts. We did a longitudinal study with national researchers from Harvard and the Annenberg Center for School Reform at Brown to measure the impact on students when a city's cultural assets are used specifically, and with knowledge, by classroom teachers to promote learning.

I'm going to share just a little bit of that with you. This is a writing



The Evolution of 21st Century Skills

Learning and Innovation Skills

- Critical Thinking & Problem Solving
- Creativity and Innovation
- Communication and Collaboration

Life and Career Skills

- Flexibility and Adaptability
- Initiative and Self-Direction
- Social and Cross-Cultural Skills
- Productivity & Accountability
- Leadership & Responsibility

Source: <http://www.21stcenturyskills.org/>



Illustration 1.

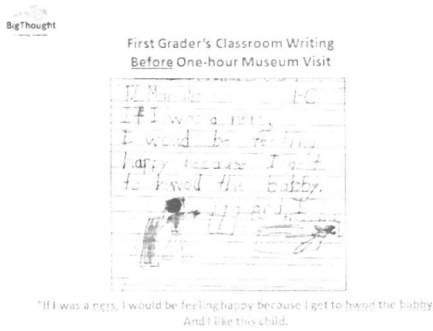


Illustration 2.



Illustration 3.

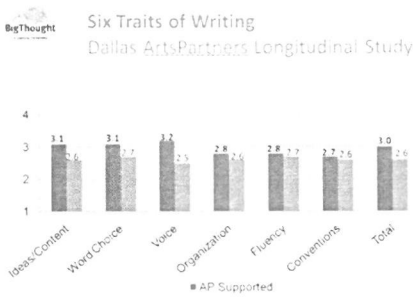


Illustration 3.

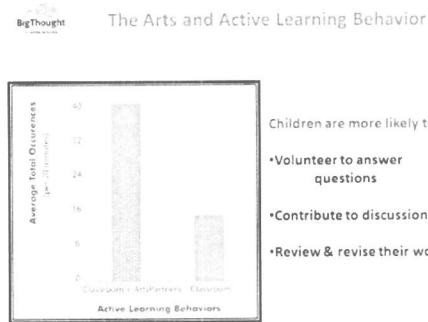


Illustration 4.

sample of a first-semester 1st grader with an open court lesson plan in Dallas Independent School District (illustration 2). The drawing features one sentence. It says, "If I were a nurse, N-E-R-S, I would be feeling happy because I get to hold the baby and I like this child." Also you can see the visual expression that partners with the sentence, which is a part of early learning literacy as well.

Within five days of this Arts Partners program (I don't know which happened first or second because it was a random sample), the same child produced this piece of work after a docent tour of the Dallas Museum of Art (illustration 3). The tour described how artists use line, color, and texture in 18th century portraiture to express feelings, which was the curriculum. Now the child says, "Being playful makes me feel like going to the park. You can see the way I look. Being happy makes me feel like I'm made up of all different kinds of colors on the inside."

This child is actually, within five days of these two writing samples, using metaphor, using complex ideas in her writing. And the reason is because she has a context in which to think and express what she's experiencing, and not just an abstract concept from a classroom, reading a sample of curriculum.

Over five years, K-6 graders provided writing samples that were triple coded by teachers in three different places in the country on this scale of ideas, content, word choice, voice, organization, fluency, and convention (illustration 4). This is the same scale and the same tool that most stan-

BigThought The Arts and Active Learning Behavior



Children are more likely to:

- Volunteer to answer questions
- Contribute to discussions
- Review & revise their work

BigThought The Arts and Quality Behaviors



Children are more likely to:

- Invest themselves in their work
- Discuss and evaluate their work
- Show work to classmates and instructors

Illustration 5.

standardized writing tests are created out of. We found statistically significant increases in ideas, content word choice and voice across all grades, across all years.

We studied these children for five years. At the end of that five years, students were no longer receiving the treatment, the infusion of arts in their classroom. So we followed them three more years and we still found that they outperformed in both writing and reading on standardized tests. This is why, as we observed these same children

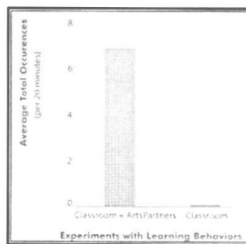
in the classroom, we found that when the arts were in schools and in the classroom, children were showing more high-level engagement in the way they were learning, in the kinds of activities that they were engaged in while the arts were in the classroom, and also in their own personal intrinsic investment in the quality of their work (illustration 5, 6, 7). These are all indicators of highly engaged children in public classroom learning.

The arts are absolute academic accelerants for learning in all areas, both in the arts and across the curriculum, because they engage children at every level, spiritually, intellectually, cognitively, kinesthetically. On every level there are so many ways that children can enter into learning when the arts are present.

So when I listened to the wonderful presentation this morning about transforming schools and I saw that picture of the Tour de France cyclist lighting the cigarette of his teammate and how we were laughing, 80 years later, about that image. So I imagine in 50 years that we might laugh at the idea that learning only takes place in a school building and it only takes place between 8:00 a.m. and 3:00 p.m., and that it's only the responsibility of schools to educate our children. When, in fact, all of our assets, our cultural institutions, our businesses, our universities—all have an important part to play in educating our children. Because when children go out into the community and have real experiences with important works of art, ideas and concepts, they come back into the classroom with positive results that we can expect to see.

Illustration 6.

BigThought The Arts and Learning Behaviors



Children are more likely to:

- Experiment with learning methods
- Explore possibilities for expressing themselves
- Actively choose the best results

Illustration 7.



The Thriving Minds System



Illustration 8.

So, there's a myth that 30 years ago we took the arts out of our schools. We really didn't. We only took it out of *some* of our schools; we took it out of our schools where children were behind, so we decided to focus on basics and built in time for those kinds of artistic and cultural activities. But what was taken away, in many instances, was the context of the enriched curriculum which supports the basics that matter for children.

This becomes much more important when we talk about the future, because now these capacities aren't just about being engaged and intrinsically motivated to learn; they are actually the capacities that are the currency of success for the 21st century. And so it begs the question: Who are going to be the kids will have the capacities to make new knowledge, make new meaning, and really shape the landscape of the future if we don't give our kids these kinds of rich, creative learning experiences as a basic part of their education?

So the organization that I work with, Big Thought, has the mission to make imagination a part of everyday learning. We envision communities where every learner in our city is immersed every day with opportunities to imagine, create and succeed through a variety of media and in a variety of environments.

Today, in concert with hundreds of private and public partners, we serve more than 300,000 children. More than half of those children receive services through this partnership every single day—so this is 150,000 children that are getting high-quality, creative learning experiences *daily* as a part of their basic education in our public school system.

We do this through a very wide-ranging partnership. This is a list of the kinds of folks that are engaged in our community in creating this system and in shaping it and managing it, financing it, and providing instruction in it. We know that our community believes that it's the relationship between a variety of experiences over a child's life in multiple environments in school, in fine arts classrooms, in general classrooms, in neighborhoods and in their community that result in these kind of outcomes that I'm talking about.

We think about the three different learning environments (illustration 8) in which kids have creative learning experiences in three different ways: one is sequential fine arts instruction in school provided by certified arts teachers every week; the other is arts integration with the city's cultural assets integrated into the classroom every day; and the third is out-of-school time learning through families, in neighborhoods, in recreation centers, libraries, after school programs, weekends and summer—covering all the time that kids are learning outside of school.

This is our strategy. We have re-established fine arts as a staple of a

quality education in our public schools; we have the policies and the funding in place. Every child in Dallas receives 45 minutes of visual art and 45 minutes of music instruction every week as a part of their minimum standards of instruction. And we're building now an out-of-school-time creative learning system embedded in our cultural institutions and our city agencies.

As we enter this new time that calls for dedicated innovation across the board, creativity is, in fact, our children's next essential literacy. I met Susan Marcus not too long ago and read her book, *The Parents' Guide to Creative Thinking*. This quote, which is on the back cover, really spoke so deeply to me about the urgency to engage in making sure that not just some children have these kinds of experiences as a basic part of their education, but they all do.

Thank you for having me here today and thank you for thinking so deeply about the future of our children, and I appreciate it.

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HENRY MUÑOZ

I'm not a genius; I'm not even a scholar. I never went to architecture school, and when I found out the history and traditions of this organization, I was a little intimidated. So on Monday I called Adair and I said, "Are you sure you have the right Henry from San Antonio?" And she said she wasn't sure but we'd give it a chance anyway. I speak a lot and I don't get nervous, but I must have been nervous because I had a nightmare last night. I don't know if I was naked or not, but I was in a room kind of like this and when I walked up somebody said, "I thought you said Henry Cisneros was speaking today."

I'm Henry Muñoz from San Antonio, Texas, and I am a person whose story is very much like the story of Texas over the course of the last several years, a generational story. My grandfather was born in Nuevo Laredo and he moved just a few blocks because he couldn't see an economic future for his family. But the few blocks was over the river and he moved to Laredo, Texas. He provided for his family in a new American industry at the time, which was the motion picture industry, so he taught himself how to be a motion picture projectionist.

And when my father got to be 17, he learned that trade and he supported his family, this time now moving about 150 miles up the road to San Antonio, Texas, by being a motion picture projectionist and a printer. But he had the opportunity to be the first person in his family who got to go to college. He graduated from St. Mary's University and went to St. Mary's Law School and decided that he would spend his life as a labor leader and an activist.

And his son went to college and had the opportunity to not only be an activist, but also to be a business owner and to be given opportunities to

affect conversations that are taking place not only about how the State of Texas will look in this new century, but how the United States will look in the 21st century as well. So for me, the idea of how Latinos or Hispanics will imprint the State of Texas began as a personal adventure in the 1990s after I had spent about four years in state government serving in a volunteer position as well, during a time in the history of the state when South Texas and the border region felt like it had been underfunded and underserved.

You might remember that there was a period when the South Texas Border Region struggled to encourage the state that more investment had to flow to infrastructure and to schools and to universities. During that period of time, I looked at the buildings we were built and thought they didn't look like who I was or who the children were that we were hoping to inspire to walk in the doors. The buildings we were built didn't look like them either. So how would you deal with an issue of how the universities of the state might have a responsibility for inspiring their market before they ever even walked in the door of those schools?

I looked around trying to find examples of where that existed, and to be honest, I didn't find a lot. But where I did find a lot of inspiration was in the neighborhoods of South Texas along the border. I fell in love with this building, which is not that far from where Ricardo Romo grew up and where his family had a grocery store, and I just loved the idea that this building was painted this bright color of green and was a combination tire shop and fruteria. The way that people went about displaying things and the blurring of the space between the indoors and the outdoors was a very Texas phenomenon.

I found so many beautiful examples of this kind of thinking, aesthetic thinking that happened outside of the proper buildings of Texas, that I decided maybe there was an opportunity to do that within the doors of these institutions. I also found that while it wasn't being thought about a lot in architecture, it was being thought a lot by individual artists.

This actually is a botanica, a performance arts space that no longer exists that existed for a number of years in San Antonio that was curated on a daily basis by an artist named Franco Mondini-Ruiz, a guy who would consider himself a mestizo because he's half Mexican-American and half Italian. He was chosen shortly after this botanica was started to become one of the artists in the Whitney Biennial of that period, and so this is a picture of Franco actually recreating that botanica experience outside of the walls of the Whitney in the 1990s. This is a picture of the botanica reinstalled three years ago within the walls of the Museo Alameda in San Antonio. Within the period of ten years, an informal kind of individual idea that then was accepted not necessarily because he was a Latino, but because he was one of the dynamic emerging artists to be recognized on the international arts scene then transitioned into being formally accepted, honored, and elevated within the walls of a museum.

That was a part of what I will call this great act of cultural activism that is known in San Antonio and South Texas as the Alameda, that really began in the 1940s by a man named Tano Lucchese who built this theater at a time when San Antonio was segregated. If your last name was Muñoz or Guerra or Romo and you wanted to go see a movie in downtown San Antonio, you had to sit in the colored balcony. But Mr. Lucchese believed in that period of time, particularly with the return of veterans, that in the future nobody should be denied access to a place to live or to sit next to the rest of his neighbors in San Antonio. So he created the Alameda, which was intended to be one of the movie palaces that was on a par with the great movie palaces of the United States (figure 1). This theater became the gateway to create a museum in San Antonio which was opened three years ago. I'm very happy to say it was the first formal affiliate of the Smithsonian Institution outside of Washington, D.C. Today there are about 140-plus affiliations in 40-plus states round the country, and it all began here in San Antonio. I say it's the second time that Mexicans pitched a tent in front of the Alamo and won.



Figure 1. Alameda Theater.

We brought the secretary of the Smithsonian at the time to San Antonio when the Smithsonian was celebrating its 150th anniversary. You may remember there was this wonderful opening of that exhibition in Houston with the president of the United States, and then the secretary came to San Antonio. The purpose of that conversation with him was to say that not every child in the United States will ever have the luxury or the opportunity to travel to Washington, D.C. to experience their museum, and so why does everything that the Smithsonian does have to happen within the beltway? He got up that night at this beautiful dinner that the Daughters allowed us to have on the grounds of the Alamo and he announced that there would be a permanent physical presence of the Smithsonian in San Antonio, and that's the Museo Alameda.

Today, three years later, as the museum struggles to sustain itself, the kinds of issues that Peter has brought up are central to our existence. We feel that the Museo would be wrong to charge admission—to take an object out of a neighborhood, to install it in a museum, put it in a case, and then charge people \$8 to come and see that object. For us, when we read

the logs that exist outside of every gallery of this museum, we see comments like, "This is the first museum I've ever been to," "Thank you, this is the first exhibit where I can see myself in this exhibit." The comments describe so many changes generationally for people who understand that there is a beauty about the way that we live and the huge impact that it has had on the State of Texas, but who have never had it formalized within the walls of a museum such as this.

And this has given way now to the establishment of a charter school in San Antonio that is called the Alameda Academy of Art and Design, the first art and design high school in San Antonio. It is a charter school that actually doesn't compete with the inner city school district in San Antonio, but is in partnership with the inner city school district, the San Antonio Independent School District. It is the first charter school in the State of Texas to have that kind of partnership because they both need each other. The inner city school district needs to be innovative in the way that they are thinking about retaining attendance in these schools and the charter school needs to have access to the kids who live in these neighborhoods.

But that wasn't enough either, and so it became a cultural activism to look not only at formalized institutions, but also the kinds of conversations that could happen in communities, in particular along the Texas-Mexico border where these issues of cultural identity are so important to our future.

So this is a performing arts center in a little town called Edcouch, about 20 miles from Edinburg, Texas. It was a very inexpensive project, but in this case the idea of allowing the students and the teachers and the communities to themselves design the identity of the school was central to the building. In this part of South Texas there is a phenomenon called corridos; there was a gentleman by the name Americo Paredes who was the foremost scholar of this kind of phenomenon. Corridos are basically stories set to music. They have a very specific structure and they are very much a part of the folkloric history of Texas. This community had the idea that because they have their own corrido which is called *La Machina Amarilla*,

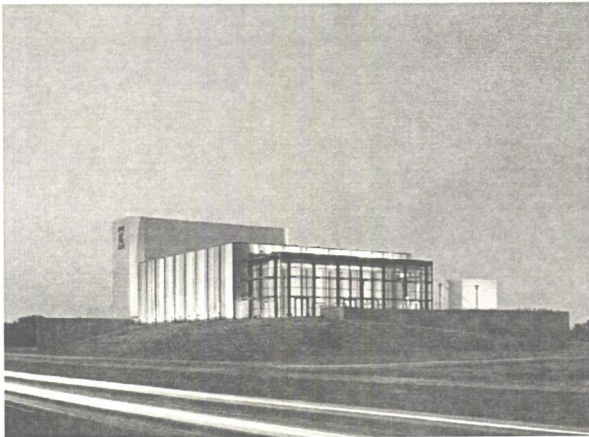


Figure 2. Edcouch performing arts center.

The Yellow Machine, that the building's artistic statement ought to look like this corrido, and so the mural is actually the sound waves that are emitted when you play *La Machina Amarilla* (figure 2).

This is Birth, a project with the National Design Museum, the Cooper Hewitt in New York City, which is now taking this building and using it as the centerpiece of

a program called A City of Neighborhoods that allows students to understand that there is beauty in all of the things that are in their own neighborhoods, even when it is a poor neighborhood.

A few miles down the road you talked a lot about the responsibilities of universities in playing a role in the artistic development of young people. This is the University of Texas Pan American; this is an education building. On the exterior walls of the building it looks very much like the rest of the university, but when you get inside of the building, it is symbolic of the main mission of the building. This school educates more bilingual educators than any other school in the United States. And so the building is a conceptual piece of architecture that has two languages, and that at its centerpiece actually takes dichos that were curated by the professors themselves and makes it the central experience of the building. It has this beautiful light chimney so that it is illuminating and it is transcended from one floor to the next with the light becoming brighter as you reach the third floor (figure 3).

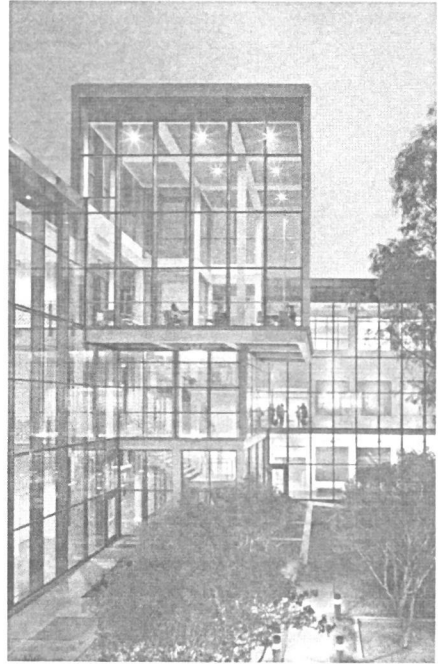


Figure 3. UT Pan American education building.

I believe that what is happening all over the State of Texas 2.0 is an activism that in many cases is formal and in some cases is informal, that the attitudes of Latinos are shifting from that of outsiders to insiders, and that what we do in the State of Texas is important not only to our own state but to the dialogue of identity in the future. When I first started this, we started talking about it as a *mestizaje*, or a blending of people, because one of the things that makes Texas different is that we recognize, in a friendlier fashion, that we are blended. Adair probably drives down the block and has her breakfast tacos and listens to Tejano music, but her last name is Margo. Texas is different and the way that we display that to the rest of the country is incredibly important.

My new job is to chair a presidential commission to study whether there should be a National Museum of the American Latino on the mall in Washington, D.C. There is a very, very vigorous conversation about whether there should be any distinction and one more ethnic museum of the Smithsonian or whether the Latino experience should be integrated into all of the museums of the Smithsonian that already exist. And so in our initial meetings, what we have decided is that whatever happens, our efforts will end up in a place that will illuminate the American story for all people. And that is the Latino Experience of Texas 2.0.

Discussion

AUDIENCE: Peter, I think you made the point that the major institutions in Houston are primarily funded by foundations and the individuals that are there in the community, which is all well and good, but do you think that the institutions wouldn't benefit more by some additional public funding? And if so, how can we engage the major institutions in helping making that happen?

DR. MARZIO: I'm probably not the right person to ask. As Adair mentioned, in the '80s we worked really hard here in Austin to see if there were ways to get the state to take arts funding seriously, and we tried setting up an endowment fund which since has been taken away, and it was too hard a battle. It wasn't worth the time to me to do it. It was more productive for me to spend time in New York and Chicago and Los Angeles to raise money than it was in Austin. And it's a weird thing to say, but it may not be bad.

That's the other thing. Just because there's a model elsewhere that has a lot of state tax-based funding—it's worked there; the citizens seem to agree with it. Even in severe economic times, in California, for example LA County, while it got a reduction in its county funding, it still got enormous amounts of money. So it's just a matter of values. And what I've found in our state is that private citizens want to keep government small. They also understand that the responsibility, therefore, on their part is to provide funds in many areas, where in other states it's the state that provides the funds, and they do it and they do it seriously. So I basically backed away from trying to work real hard. Now, there are lots of other people still working at it and I hope that they succeed, but I thought it was in the DNA of my fellow citizens, making it very difficult to overcome. Many of you may disagree with me, but that was my instinct.

AUDIENCE: One of my favorite quotes is from Dante who said, "Nature is the art of God," and I wonder if in this emphasis on arts for children, which I'm very supportive of, if attention has been given to current interest of getting more children out into nature, the nature-deficit disorder that's been identified by Richard Louv. I'm particularly interested if in Dallas they're incorporating nature as a source for not only inspiration and creativity in children, but also that they would be involved with their art program.

MS. ANTONI: We actually had a conversation as a community about what we meant by arts and arts education and fine arts—it's complicated. We've taken the approach of a much more expanded sort of definition of what we call—we don't even actually call it arts education—creative learning, and we think about it in this way that you're describing. Everything that I've

heard here today and anyone who could hear anybody who has spoken at this podium today would say the root of everything every speaker has said has been an impetus to imagine something new, to pursue and solve the problems, to create it, and to make it real in the world.

And for us, it's that process that we want in many different ways, whether it's through science, through nature, through the arts, through studying other cultures, through service learning, through a variety of ways that we want to give kids that opportunity every single day to exercise that muscle in as many different ways as we can. So we definitely include partners like the Arboretum, the Nature Science Center, our new Audubon Society facility, beautiful things that help us move forward.

MS. MARGO: One thing I've heard from artists is that when you're always trying to create in your own head, sometimes you can run dry. But in looking out at nature, how it's always renewing itself and it's always alive and it's always changing, you get inspiration. I think that's really a very, very good point that we don't want to forget the main inspiration for art.

AUDIENCE: I want to commend you all very much. We all know that creation and recreation is really the highest level of thinking, so very important. But I wanted to ask you about the children. How do you engage the parents, when maybe this wasn't part of their world, to instill art in their children?

MS. ANTONI: In our work we engage parents at every level of our partnership, both as influencers to activate them to understand why it's important and they should ask for it and ask our public officials for it, also training parents to access these sorts of experiences for their kids in out-of-school time. Every option from parent classes and engagement to family creative learning experiences where kids and families have these experiences together, and also through schools, through engagement during the school year should be used. We talk about children and families as our target beneficiaries. That's who we want to engage at every level, understanding that it isn't just kids; it's families as well. And kids live in families, so it isn't just schools that have to change; it's all of the places that children learn and a big part of that is at home.

DR. MARZIO: I think the other part of it is that from a museum point of view: when you visit a museum, you can't fail the museum. A visit to the museum is not a test. A child's observation about a work of art is every bit as legitimate as an adult's, so you don't have that hierarchy of superiority that comes with so much of teaching. Good museums all through the state have so many tools for visitors, from simple cards that adults and children play with as they go around the museum to find works of art to endless workshops. I think if you look around at the membership enrollment of

most museums around the state, many of them have the equivalent of family membership categories, and I'll bet you anything that that is the highest enrollment within the categories of each museum.

I think Texas museums are, frankly, doing a pretty good job. The key is to reach the middle income and lower income families. Most of us have to work for a living and you can't go with your child during the day. Being open in the early evening some time during the week gives parents a chance to visit the museum with their children. I know in Houston it's this way. You will see construction workers with their kids in each hand, still dressed like they were on the job site, coming to the museum. It happens all the time.

THE ART OF EXPRESSION

EVAN SMITH, *Chair*

LAWRENCE WRIGHT, NAOMI SHIHAB NYE, RICHARD LINKLATER

MR. SMITH: I am a member of the Texas Philosophical Society, I am also the CEO and editor in chief of the *Texas Tribune*, the former editor of *Texas Monthly*, the host of *Texas Monthly Talks* on PBS stations, and a couple of other things I don't need to bore you with. But for purposes of today, I am here as an advocate for and as a practitioner, occasionally, of the art of expression. Mike Gillette was kind to ask me, along with other members of the committee, to think about programs that would be appropriate to your visit to our fair city today.

Those of you who are not from Austin, we certainly welcome you and invite you to take advantage of all the opportunities to see the many creative things that go on here. One of the things that I consider to be most important about Austin's self-identity, its self-definition, is the number of people who express themselves through writing. We're blessed to have a city that reads and writes, consumes content in all forms. On stage with me today we have three people who are extraordinary in presenting content in a variety of forms, and I think do justice to Austin and Texas, two at least who do justice to Austin as residents, and one who, in her frequent visits here, we claim her as our own even if she's not, in fact, an Austinite.

As I said, the theme of the program you're about to hear is the art of expression, which takes many forms. We're going to focus for the next hour-and-a-half specifically on written expression, but even written expression itself takes many forms: poetry, fiction and nonfiction, song writing—a big feature of what life in Austin is like, not represented on this stage—screen writing, blogging, tweeting, which is probably a practice less of this audience than some others in Austin.

Today, in any case, we're honored to be joined by three of my favorite and our favorite practitioners of the art of expression, three who have succeeded in honing their great skills at the highest levels of their particular expertise. We're going to visit with them individually a bit up here on stage and then engage all three in a conversation about both art and craft, and then we'll use the balance of our time to take questions from all of you. I know all of you will have great questions about this topic.

To my immediate left is Lawrence Wright, also a member of the Texas

Philosophical Society in good standing. Larry, as so many of you know, has been a staff writer at *The New Yorker* since 1992. It's hard to think that it has been that long, but it has. He is a screenwriter and a playwright and the author of seven books, most recently *The Looming Tower: Al-Qaeda and the Road to 9/11*, which was nominated for the National Book Award and won the Lionel Gilbert Award for Nonfiction, the Los Angeles Times Award for history, the J. Anthony Lucas Book Prize, the New York Public Library Helen Bernstein Book Award for Excellence in Journalism, and then saving the best for last, the Pulitzer Prize for General Nonfiction.

Born in Dallas, Larry is a graduate of Tulane University and the American University in Cairo. Although he spent this fall in New York as a fellow at NYU, at NYU Law School specifically, I gathered from the dinner table chatter last night that he is about to head off to another adventure overseas. He is allegedly, with his wife, Roberta, a resident of Austin, although we see him so rarely these days that I could challenge that on factual basis.

To Larry's left is Naomi Shihab Nye, a St. Louis native and proud San Antonian, who is an extraordinarily accomplished poet. Her first collection of poems, *Different Ways to Pray*, was published nearly 30 years ago. Her other books include the poetry collections *19 Varieties of Gazelle: Poems of the Middle East*, *Field Trip and Fuel*, the collection of essays *Never in a Hurry*, and the semi-autobiographical young adult novel *Habibi*. She has also edited several anthologies of poems, most recently *Is This Forever, or What?: Poems and Paintings from Texas*.

A graduate of Trinity University, Naomi has won four Pushcart Prizes, the Jane Addams Children's Book Award, and the Paterson Poetry Prize, among too many other accolades to list.

To Naomi's left is Richard Linklater, the Academy Award nominated screenwriter and director and the person most single-handedly responsible for Austin's status as a white-hot center of film-making these last twenty years. He would decline that accolade; he's very modest, but I'll say it if he won't, that he is largely responsible for the independent film scene in Austin and in Texas as much as anybody else.

From his debut film *Slacker* in 1991, up through a string of memorable releases that constitute, taken together, a short course in the modern history of independent film, *Dazed and Confused*, *Before Sunrise*, *Waking Life*, *A Scanner Darkly*, *Fast Food Nation*, Rick has consistently produced work that is distinct, robust, and innovative, that nods respectfully to both the traditions of film-making and the cutting edge of storytelling. His most recent film, *Me and Orson Welles*, opened in New York and Los Angeles the day before Thanksgiving and will soon be in theaters in Texas. Having now seen it twice, I can tell you it is absolutely magnificent.

Born in Houston, Rick attended Sam Houston State University, and as the legend goes, saved the money he earned working on an offshore oilrig to buy his first Super 8 camera and film equipment.

Please join me in welcoming Larry and Naomi and Rick. So now as I sit with these three, I'm going to ask in each case for our panelists to

talk about their inspiration because expression takes many forms, and of course, it begins with inspiration. Let me begin with my old friend, Larry, with whom I did not, sadly, overlap at *Texas Monthly*. I think we went through the revolving door at exactly the same moment, but in opposite directions.

You have been at the *The New Yorker*, as I said, since 1992. You've done seven books now in total. Is there a difference for you, as a writer, between setting out to do a long magazine story and doing a book of the sort that you've now come to be known for?

MR. WRIGHT: In many ways it's a very similar process for me, but I guess the most mysterious thing about the writing, the artistic process for me, is knowing what to write. The process is something you can learn, you can train yourself, but inspiration is the hardest part—why something resonates inside your mind and demands that you devote yourself to it. That is, to me, the big, the dark energy—to use a phrase we heard earlier—the mysterious unknown proton, or whatever it is, that's floating out in the universe.

My process, when I start anything, whether it's a screenplay or a play, is that I start taking notes on note cards, just like a 1960s graduate student. In the process of writing my last book, *The Looming Tower*, I compiled 17 boxes of these note cards. If I put it on a note card, that means I'm a little bit interested in it. I intuitively begin to outline the project. And if I'm writing a screenplay, I write down ideas for scenes or character things and it just builds up in a pile, and then one day I close the door to my office and turn off the phones and just start laying them out into three acts and finding where the story moves. I often do that with articles as well.

MR. SMITH: So almost in film-making terms, you're story-boarding the work that you're doing.

MR. WRIGHT: I started out as a journalist and the information I got from journalism naturally carries over into the other things. When I started writing movies and learning the importance of character and scenes, that really helped my journalism because they both work together; it's all storytelling. And if you can find a great character, no matter through what means you're trying to tell it, that character becomes like a donkey on which you can load all this other information that otherwise might be just didactic. But if you have a great character that the reader is in love with and therefore wants to know what's going to happen to him, you can make that character your beast of burden for all the information.

And then if you put him in a scene where the tension of what's going to happen is highly present, you can pause at that moment. This is what a friend of mine called the rubber band theory of narration; if you pose a problem, don't solve it immediately. Just pull it out as long as you can, and you can fill that space with all the information that the reader needs to

fully appreciate the consequences of this character entering the scene, and the tension builds and that's what causes the pages to turn. And so that's a skill that I learned mainly, I think, from writing movies and plays, but it's been very fortunate for me to be able to put them into journalism.

MR. SMITH: Before you can get to character and before you can get to plot line, you have to get to story; you have to decide that a story or even a subject above story is worth exploring. So in the case of *The Looming Tower*, that was obviously the narrative of our lifetimes, or certainly one of the narratives of our lifetimes, but I am curious about some of the things you've written about that are less tied to the news. When you have to develop something over time, you might have to put it away or think about it as an evergreen and eventually come back to it, something that's much less present than a subject like 9/11 or the war on terrorism.

MR. WRIGHT: Well, one example of that for me was twins. I was always fascinated by identical twins. I'm not one, although I might have been one and not known it, but the fact that sometimes twins disappear is really mysterious because there are many more twin conceptions than there are twin births. So once again, what happens? And sometimes one twin absorbs the other and there are all sorts of fascinating and ghoulish things that go on inside the womb, and I was always really intrigued by that.

But there was no occasion to write about it and when Tina Brown came to *The New Yorker* and asked what do you want to write next, I said, "Well, twins." The macabre always appeals to her and I told her some of these stories of one twin absorbing the other and there are even instances where an individual can have two blood types; that is an example of a fraternal twin absorbing the other one, "Oh, that's hot, hot!" So I went off and wrote this article about twins of 8,000 words, and she said, "You know, I love it, I want you to expand it to 20,000 words and I want it to be in two parts, one part about identical and one part about fraternal twins." Okay, and I did that. And then she read it and she said, "You know, on balance, I think I want to make it a talk, 800 words." And there was this whiplash.

MR. SMITH: Expression takes many forms, There's the long form and there's the short form.

MR. WRIGHT: She did finally run it at, I think, 12,000 words, but in the journalism business it's always good to have a news peg, as you know, and it makes it a lot more likely that you'll get the whole article published and that it will be published.

MR. SMITH: Indeed. Well, speaking of short form, Naomi, we go from the length of a book like the ones that Larry writes to the work that you do, and I want to ask about your particular—the same question of you that I

asked of Larry—your inspiration, When you're sitting down to write the great poems that you do, where does that come from?

Ms. NYE: Well, thanks, Evan. You're very generous, very kind. I have to say I was fascinated by Larry's piece on twins. It answered secret curiosities I had on the subject. As a poet who started writing as a little child, for me the inspiration and the interest always came from voices around me. And living in Texas, inspiration continues to come from the voices around me in communities, the voices of children I've worked with for 35 years as a visiting writer in schools, reading, and listening to conversations, all of the accents, all the ways people tell stories around dinner tables, and the stories that seem to get cut off midstream. I'm also a big fan of Rick's movies and I feel a similar generous igniting impulse in his movies as well. We're drawn into so many things around us; we barely have the chance to explore a tiny percentage of them.

And so as a poet, I guess I'm the person sometimes satisfied with the note card itself. The note card is such a precious item—we just keep working on new note cards. But I certainly have worked, as Larry has, with writing down little notes everywhere I went, some of them actually growing into poems with revision, shaping, and reading out loud to myself. A lot of my energy in recent years has been spent helping people around me in schools and other places discover their own material, whatever it is, and of course, that becomes inspiring to me as well. If you're trying to inspire others, you get inspired along the way. There's never been any dearth of that active energy flow.

I do feel this is the perfect audience for an anthology I made that still seems one of my most undercover, undiscovered books: *Is This Forever or What? Poems and Paintings from Texas*. I wish I had brought every one of you one as a present because you're the people who appreciate the voices of our wonderful state and the visual artists as well. I had that gathering impulse from childhood, to collect other people's voices and put them in anthologies to be shared. That's been something that's been with me, thanks to one great teacher, since 2nd grade.

MR. SMITH: On the subject of anthologizing other people's work; when you encounter other people's work, what about it appeals to you? When do you look at something and think to yourself, this is something I think I want to share with other people?

Ms. NYE: It's just a subjective electric charge. That great feeling when something has just caused you to pause, to spend a little moment of deeper thinking with a poem or piece of art. It's visceral and profoundly human. This poem speaks to me, calls something forth. Then I start asking, well, analytically, what is it *exactly* that I like about this piece? And so forth.

MR. SMITH: You derive your own poems from where? What exactly

speaks to you and makes you think “This is something worthy of my own creative work”?

MS. NYE: Voices and the myriad stories of mixed cultures, as Henry so beautifully described, the blended cultures of all of our places, and the little frictions that inevitably come up. Many of the pieces that Larry has worked on in recent years have affected me deeply. Having had an Arab father, I’m always looking at how other people view cultures or regions... putting bits and pieces together all the time.

I’ve always thought that Texas is lucky to have bigger margins on our cities and spaces—horizons, vast skies and the whole sense of movement. Just driving in from Dallas at sunset last night, feeling the highway whoosh, cars in motion in such big space—it’s never been a surprise to me that so much wonderful art would spring forth from Texas because we have so much space in which to look at things and think about things.

MR. SMITH: Now, Rick, let me move this over to you. You’re in an odd place between these two in that you sometimes traffic in fiction and sometimes in nonfiction. Your current film is about a real figure in our modern cultural history, but many of your films are obviously things that are made-up whole-cloth. When you are setting out to work on a film, either you’re writing a script or co-writing a script, or just simply directing the work of somebody else, what specifically inspires you or speaks to you that says this is a story worth bringing to the public?

MR. LINKLATER: Well, first, I just want to thank Larry Wright. His twin studies became a book, *Twins*, and when I had identical twin daughters five years ago, he gave me a copy of it. Thus inspired by his book and the eternal nature/nurture mystery, I currently have one kid having a normal upbringing and another that we slide food under her closet door every day. When they turn 18, I’m going to invite Larry to come over and possibly do an addendum to his book.

Once I discovered film was the prism through which I filtered the world, my art form, I never looked back. When I was in 5th grade through high school, I wanted to be a novelist. By college I wanted to be a playwright, but once I really started seeing movies in my early 20s, that’s when I discovered it—sometimes it takes you a while, I think, to find your channel, but I think I always had that need to express myself somehow and was ultimately more in the observational/contemplative mode than extrovert mode.

I might actually have been more fulfilled in other art forms because a lot of the things I’m trying to express are really hard to express in cinema, so I feel that I’m always looking for a way to tell a story, sometimes to push the narrative boundaries of storytelling and what you can maybe express in a medium, but it’s all over the map. Every movie you do you feel like you’re kind of getting your master’s in that subject. Just recently, I

did a master's thesis on the Mercury Theater, Orson Welles' theater of the '30s, via this new movie. It's all the research, all the re-imagining and re-creation—all the fun without being judged really, academically speaking,

I find myself just going through the world in a very similar way to what Larry described. I take a lot of notes. I have massive files on different subjects, many of which I'll never get around to finding a narrative story that will ever fully take off. A lot of these subjects would naturally lend themselves to documentaries, but I don't really have the patience to do documentaries, even though I've done a few—they take years and years and I like working with actors.

So a story gets its hooks into you, or maybe just a subject, and I've had these lengthy gestation times thinking about a story that still hasn't quite worked in my mind. You know, I'm always making the film in my head and if I can complete it in my head and it's done and it's not that interesting, I kind of move on. But it's the ones that are always in process that are still kind of interesting to me. I'm still reading books about that subject or cutting out articles; that subject matter compels you to keep going. That's the true litmus test of what's worthy of exploration. Because it's so much effort, so many years of your life—it better be a really deep well that keeps you forever mystified and constantly discovering. It's got to be something that compels you. That's how I think I find the subject.

MR. SMITH: And in the last 20 years, you've done, including *Me and Orson Welles*, 15 or 16 films?

MR. LINKLATER: I think 15 feature length films.

MR. SMITH: Fifteenth feature length films, and of those, just knowing your work as I do, I'm going to guess about half are stories and about half are ones that you originated.

MR. LINKLATER: Yes, I would say about half are original screenplays and those tend to be, for me, somewhat autobiographical. I don't think I'm that imaginative. I'm taking elements of my own life, my own personal experience or thought process and making a story out of that somehow or another. The other ones can originate in any number of areas. This new movie is based on a novel, a historical fiction. Robert Kaplow, the author, often writes for young adults and it was just a very charming novel. The adaptation was done by colleagues of mine here in Austin: Holly and Vince Palmo.

So sometimes you're collaborating with a screenwriter, or you're co-writing a screenplay, *Fast Food Nation* was a nonfiction book that we made a fictional movie out of. I've done a couple of plays adapted into movies, but I don't really differentiate. It's the same process; once the subject matter gets to you, you kind of bring the same process to it.

MR. SMITH: Naomi, I'm interested to hear Rick talk about the autobiographical nature of some of his films because I'm sure his fans would not necessarily see him personally in his films, but in your case, you have done some writing that has been intensely personal.

MS. NYE: Well, it might seem intensely personal, but I always imagine that I am writing about someone else even when it seems intensely personal. I was thinking about something you just said; that you didn't see yourself as being highly imaginative but you had developed this strategy of putting things together, letting curiosities accumulate. I was thinking this morning how the kind of conjunction that might lead to a piece of writing a year from now would be the fact that last night, over here at the AT&T Hotel I stayed, in possibly the most high-tech room ever. The phone greeted me by name on its little screen—I've never had that happen in any hotel in the world, but the coasters on the desk quoted Henry David Thoreau, my favorite philosopher. I kept thinking, what would he think about all of the capabilities of this room? That's the kind of quirk I'll be thinking about for a long time.

MR. SMITH: Naomi, I want to push you back on this question; you dismissed a little bit the idea of writing autobiographically. You say that you imagine other people when you write, but so much of your life experience does become reflected in your work.

MS. NYE: Well, it does, but it also suggests that you see your own life as being more interesting than other people's lives, which I do not.

MR. SMITH: A rare quality for some writers.

MS. NYE: I've written about my own life because it was the life I knew. I wrote about a Palestinian father because I didn't have a Chinese father. One thing I've tried hard to convey to students is, whatever material we have around us, whatever story we're born into is just as rich as someone else's. It depends on the way we're look at it, the curious perspective we approach it from. How do we notice little unobtrusive details that one week from now we might have forgotten?

I think that's something all three of us probably do in our own ways—collecting little tidbits and glimmers, a single line that shines out of a whole hour's talk. We're always taking notes; we're always sticking them in our pockets, piecing stories together. So to have faith in the very acts of gathering and writing is something that I think becomes our most crucial autobiography.

MR. SMITH: Larry, let me ask you to pick up on what Naomi just said about that. The fact is, we laugh, but there are a lot of writers who make their money profiting from telling their own story over and over and over

in different ways, trying to disguise the fact that they're telling their own story over and over and over. In your case, because you're doing nonfiction journalism, either magazine form or book form, you're often telling somebody else's story by definition. You've not done very much personal work that I'm aware of, and I wonder to what degree you feel an obligation to make that kind of personal connection. Even if it's not about you, how much does it have to impact you personally before it becomes something you want to write about?

MR. WRIGHT: Well, I did write a memoir about growing up in Dallas, so I am guilty.

MR. SMITH: It's the exception, though, of the work you've done.

MR. WRIGHT: That's right, When I started out writing, I started as the race relations reporter; we were forbidden to use the first person pronoun, and so there developed a sort of electrical charge around it, On the other hand, when I started *The Looming Tower*, the question was how do you take this massive human tragedy of 9/11 and make it understandable and emotionally relatable to the reader. I thought you would have to tell individual stories; you have to find the characters whose lives would embody in some way the story, the narrative that I wanted to tell.

And so that was the only thing I started with. If you remember, I was here in Austin and I couldn't get to New York because the planes were all grounded, so how do I get into the story and where do I start? I started looking at obituaries that were streaming online, and on the *Washington Post* site I found the obituary of this guy named John O'Neill who had been the head of counter-terrorism for the FBI in New York. He had been dismissed for taking classified information out of the office in a briefcase and had gotten a new job as the head of security at the World Trade Center and had died that day. I thought he was the guy in charge of getting bin Laden, and instead, bin Laden got him.

The obituary made him sound like a disgrace. I didn't know if he was a hero or not, but he certainly was that burro I was talking about, the donkey who you can put all the information on his back and he can take you through the world of counter-terrorism and why we failed. And I knew bin Laden would be a character, but the Saudis wouldn't let me in for nearly a year-and-a-half, so I had to go to Egypt instead. I discovered Ayman al-Zawahiri, the number-two guy in al Qaeda who turns out to be the brains behind the organization. Had the Saudis let me in, I probably wouldn't have discovered him, but it helped me understand al Qaeda in a whole different way. And then when I finally got to Saudi Arabia, I realized that all my Arabs were villains, so that was problematic.

But I ran into Prince Turki al Faisal who was the head of intelligence, the Saudi intelligence, prior to 9/11 and had worked closely with bin Laden in Afghanistan, and of course, was a member of the Saudi royal family; he

was another great donkey because the whole Saudi apparatus, the royal family, the conspiracy to work with these terrorists in Afghanistan, all of that was in his story. So if you put these four characters together and blend their lives together, you get one version of what happened on 9/11.

MR. SMITH: I love the answer because of the detail you went into. I want to come back to this question, though, of you and of your own place in the story, because I'm thinking as an American who, along with all other Americans, suffered so greatly on that day, to then put some distance between your emotion, your personal feelings, and this story had to be have been quite a challenge. You had to dispassionately gather and then present to all of us the facts of this thing that impacted all of us in ways large and small. So from your perspective, how did you manage that balance?

MR. WRIGHT: Honestly, Evan, it wasn't always so dispassionate, I was traveling a lot in Egypt and Saudi Arabia and Pakistan and Afghanistan right after 9/11. There were practically no other Americans or even Westerners visible anywhere, and so a lot of people were very angry at America, and I was pissed off myself, so I wasn't always the impartial reporter that I had always imagined myself to be. Sometimes when those fingers would wag under my nose, I thought "I'm going to snap that off." There were moments such as the last day I was in Cairo in 2002, the head of the Muslim Brothers had just gotten out of prison and he was in a bad mood and I was in a bad mood and we just had the worst argument of my professional career; it was very ugly. So sometimes I wasn't that person that you imagine that I was.

But then you come upon a character in whom you can recognize some of yourself, like John O'Neill, who was both a disgrace and a hero; I loved that about him. Beyond the fact that he had taken this classified information out, I found early on in my research that there were three women who thought that they were engaged to him, and he was married and had two children, and they all met at his funeral—the catastrophe that he was trying to forestall. And as a man I just thought that must be the worst thing that could ever happen to you.

MR. SMITH: But as a journalist you say, thank you, God. Right? You just think to yourself it's never going to get any better than this.

MR. WRIGHT: I did have that feeling.

MR. SMITH: Rick, let me ask you about technology since Thoreau was invoked and the high-tech nature of this hotel was invoked. You have been making films now for 25 years, more or less, and obviously in our lifetimes and in that 25 years we've had change and then more change and then more change to the point now that rather than running technology, technology runs many of us. Many of our professional lives are so much

determined by technology. How has your life and your ability to express your creative impulses changed by technology, for good and for ill?

MR. LINKLATER: Well, I think it's overall positive, I mean film is, by definition, a technological medium, It came into existence in 1895; it's a part of the Industrial Age, so technology defines this medium more than other art forms. For all its current digital bells and whistles, it's still fundamentally a 19th century medium, with film going through a camera, or a projector. That's slowly changing in distribution with digital projection, but technology has defined post-production for generations. I see technology as a tool to assist us in our communication. If what we're trying to do here is communicate, then it's simply another tool to help improve our storytelling and help us share our passions. I think that's the upside of technology.

On this recent film I was able to recreate 1937 New York, mostly in London and the Isle of Man, via green screens and architectural CGI work, so I see that as a positive thing that's there to assist me in trying to tell a story. And it's democratized the medium itself in that a filmmaker starting out has a much easier time of it. It used to be a very expensive, prohibitive medium. When I was starting out it was just a dream that everyone should be able to make a film like everyone should be able to write a novel or write a play or paint a painting, but there was this prohibition just from a sheer resource perspective. You needed a lot of money, and because of the technology that number has dropped significantly. Almost anyone can make a movie now in that there's so much less preventing you. I'm not saying everyone should make a movie.

MR. SMITH: Well, I wonder about that. Is the democratizing of film-making a consequence of technology necessarily all good? Probably not.

MR. LINKLATER: Well, I think if you're running a film festival and you used to get 200 submissions and now you get 8,000, that's probably not good; it's a lot more work. But I think it's good for us as a community, as people trying to communicate, as potential artists; it's just good to find out, I think, if film is your medium. In other generations it was sort of an upper class thing; most movies were made by people who had some kind of advantage, so I'm glad that's gone away. I think people can now discover if it's their medium more quickly. As an industry, I don't know. It's hard to get any of that work seen or to share that work with a larger audience.

MR. SMITH: In fact, on this new film, there's a little back story. This was a film that after the number of films you've made and the celebrity you've enjoyed, you essentially had to self-finance the creation of this film because the economics of the film business have really turned on their head.

MR. LINKLATER: Yes, but I think that's more financial and not technological in nature. Our particular industry was going through kind of an

upheaval, particularly the middle ground that I usually occupy, the indie world, the specialized releases, but I think it's the bigger economy as well as our own specific film economy. I don't think that technology has much to do with the fact that the big studios' films have gotten so expensive and technologically advanced, so roller-coaster-ride, these 150-plus million dollar films are the norm now. I remember when my first movie, *Slacker*, came out, it shared the opening weekend with the first \$100 million film, *Terminator II*.

MR. SMITH: *Slacker* cost by comparison?

MR. LINKLATER: It was about \$23,000. That was sort of the story on July 4 weekend '91; you could make 4,000 movies for that. I was like, "Who would want 4,000 of these movies?" I liked *Terminator II*. They cost the same at the box office.

MR. SMITH: Pay eight bucks to see yours; pay eight bucks to see theirs.

MR. LINKLATER: Exactly. If you think about that, that's pretty remarkable. But that same filmmaker has a film coming out next week that cost \$350 million.

MR. SMITH: And *Me and Orson Welles* cost?

MR. LINKLATER: Fifteen, sixteen, which was a lot.

MR. SMITH: The rates have gone up, but still proportionately.

MR. LINKLATER: And you know what? The thing is if you were investing in the film industry, the \$350 million film is a much more sure investment than my \$15 million film because that has all the marketing behind it and it's a much easier film to sell. It feels like we're in the golden age of studio marketing. They've figured it out, and those films are getting bigger and bigger, and the audience, the mentality, is getting younger and younger. There are full-blown kid's films, and then there are the more mature films, which used to be adult, but are now pitched to about a 13-year-old mentality.

MR. SMITH: It's who the audience is.

MR. LINKLATER: And Hollywood will deliver the product until it is compelled by the numbers not to.

MR. SMITH: Naomi, I wanted to ask you about technology and also the economics and marketing of poetry, which I suspect is a different question than film-making.

MS. NYE: Technologically, I think it's incredible that a high school student in Arlington, Texas, can post a poem one night on a website of teen poetry and the next morning come to class and say she had 53 responses and take that for granted. Many published writers have never had 53 responses to an entire book! Or that a student in a small town could read a lot of Iranian poetry in translation overnight and come in comparing the American and British poetry they've been reading to Iranian poetry that connects to up-to-the-minute current events study. That's an incredible gift that technology has given the world of poetry.

This morning I was at the Badgerdog event here in Austin—Youth Voices in Ink of Fall 2009. There were 339 Austin students participating in this. I've seen their anthologies over the years. Thanks to technology they're getting more beautiful, more cleanly presented, and it's easier to make more copies for more students. That's all very positive. At the same time, in so many classrooms I visit, I'd like to encourage an ongoing relationship with hand tools—pencils and pens. Students do seem interested when I tell them that every day I still write by hand. Why is it important? We need hand skills. Penmanship. We need a certain slowness of physical relationship to the page.

So both things are good. Technology helps us all with everything and certainly helps young people with writing and revision. At the same time, we shouldn't give up physical relationships with the tools that got us all started.

MR. SMITH: Larry, you want to say something on this question of technology?

MR. WRIGHT: At the same time that technology is so wonderful, it's also destroying a lot of the income for artists everywhere. Everything that's digitalized is being completely undermined, and the movie business, the music business...

MR. SMITH: I'm going to decline to say anything about the negative aspects of digital journalism.

MR. WRIGHT: Evan is going to create the new model for us. I always felt that I was secure because I was diversified. I write movies; I write plays; I write books; I write magazine articles. They all crashed at the same moment, but the whole reason for the crash, except in theater—which is the one place where you can only get the authentic experience right there at that moment—the digitalization of all those forms of art. We just haven't figured out how artists can recoup, and I think it's a great challenge. I love what you can do with technology, but the question remains, how can you make a living?

MR. SMITH: Rick, in the case of pirating of films, how can you stop others from profiting off of your work?

MR. LINKLATER: Yes, that's true, I just found out a film that I did a few years ago, *A Scanner Darkly*, a science fiction story by Philip K. Dick, has been downloaded over a million times free on Bit Torrent.

MR. SMITH: And you're enjoying no proceeds from any of that activity and interest in your film.

MR. LINKLATER: Oh, of course not. Part of me goes, "Well, that's cool, there's a million geeks out there watching this," but then on the other hand, "Well, my producers still don't consider that movie profitable I believe." So Larry's right; everything is kind of free, I think music is certainly that. If there was a musician up here, they would be more vocal than we are.

MR. SMITH: Well, they'd be complaining about the exact problem you're describing: the appropriation of their work for free.

MR. LINKLATER: Right. And then you have an audience that just thinks all music should be free. If all movies are free, and poetry is free, everything is free, that sounds great but it undercuts pretty directly the structure that could possibly produce it in the first place.

MR. SMITH: Larry, let me ask you this question which is to Rick's point earlier about the democratization of the art form in which you work. We hear a lot about citizen journalism these days. I personally think about that as walking into a restaurant and having somebody off the street cook my dinner; I want an expert, not an amateur. I wonder whether there has been too much democratization of the art of expression as a result of technology and the opportunity to get anybody who wants to get in the game, in the game. Do you see that as a threat to your own art?

MR. WRIGHT: I don't see it as a threat. I like the idea of the blogosphere and I like the fact that anybody can add their thoughts. I like the fact that an event happens in Lithuania and suddenly—let's say in Chechnya, even, a very controlled environment—people report, "I saw this and I've got pictures on my phone!" Suddenly the world is much more transparent thanks to that.

MR. SMITH: The Iranian election, for instance. The reporting on it was, of course, transformed by social media.

MR. WRIGHT: A perfect example. So I'm in favor of that. I think it adds to the conversation. But the problem is you don't know where this information is coming from. It hasn't been vetted, there's no editor, and also, for the most part, the blogosphere is opinion. Having lived a lot in the Arab world, when I finally got to Saudi Arabia, they wouldn't let me in as a

journalist so I had to take a job. I got a job mentoring these young reporters in bin Laden's hometown in Jeddah so I got to be very familiar with the Arab press. You can say whatever you want as long as you don't talk about the royal family, but facts are a different matter; facts are carefully controlled. And that's very much like the blogosphere. The blogosphere and the Arab press have a lot in common and I don't think it's anything to emulate.

You need to still have the vigorous press where the reporters are being paid; they go out; they go to the school boards. And nobody is paying bloggers to go sit; Time Warner is not. When Google takes over—and I love Google—they're not going to have people reporting on the city council. It's going to be reporters who are paid to do that and then editors who are helping to guide them and get their facts straight and make sure they talk to everybody, and somebody who is responsible at the end of the line for what they say. That's what the press is; that's not the blogosphere.

MR. SMITH: Naomi, you came today prepared to talk about, and I'm eager for you to talk about, your work with kids. In fact, each of you has, in the course of your work, mentored the next generation of practitioners of your particular form. So Naomi, let me ask you to talk about the work you're doing with students a little bit. Rick, I'm going to ask you to talk about the Film Society and the work you do and then Larry, the work you've done with young reporters. And then we're going to have one little special treat before we open it up for questions.

MS. NYE: Thank you, Evan. You're a wonderful moderator, by the way. You're excellent. Well, I wanted to say that I've never been any place in all these years where poetry didn't live, and that's been a beautiful surprise to me. The most remote communities, places where other people might say, "Oh, I don't think you're going to find any poets there"—I've never found that place. There have been poets popping up literally out of the woodwork every place I have been privileged to work. In my early years working in Texas through the Texas Commission on the Arts, in many rural communities, I used to stay with families, often on ranches, which would add to the amount of material I was able to discover by being with them. In fact, I was once given a horse to ride to school. I said, "But I don't ride horses and I don't know where the school is." And the family said, "The horse knows." That was a poem.

I so much appreciated what Gigi was saying in the last session about thinking: the importance of arts education, how desperately we need it in schools. I think there's even more urgency now among students to discover and share their own voices than there was 35 years ago when I started working with them. They have seen spent so much time preparing for these standardized tests. By the way, I've never yet met one kid or teacher who likes standardized tests in any state or who thinks they're really helping anything.

Anyway, as an arts educator, a challenge is, how can I keep encouraging students to discover their voices no matter what the official measurable curriculum is at that moment in their class? I've gotten fond of the phrase "sneak it in." You don't have to have hours to work on your creative writing, even seven minutes a day could help you have a deeper relationship to your own writing and thinking. In the fast-paced world we live in, that goes for a lot of adults as well. Sneak it into your days no matter how much else is going on.

I was hiking with my husband and son some years ago. We were down at the Pecos River on Highway 90 between San Antonio and Big Bend where the eagles nest by the water. We'd been out of our car maybe 20 minutes watching some eagles. By the time we got back to our car up on the road, a border drug agent was standing there with his weapon drawn and a dog. He shouted at us, "Put your hands up!" I said, "Are you joking? Look at us; we're a family." And he said, "No, put your hands up! Get over here and take every single thing out of this car."

We were stunned. Because we were going camping in Big Bend, the car was very full, not a car you really want to unpack before you have to. But we started slowly unpacking it and I noticed he was staring at me with a strange expression. All of a sudden he said, "Is there any chance you ever came to the Comstock High School Library to talk about poetry, like around 24 years ago?" And I said, "Yes, there is." He said, "You liked my poems!" And I said, "No, I *loved* your poems." And he said, "You can put everything back in your car."

MR. SMITH: That's great. Difficult to follow that, but, Rick, one thing we did not mention in the intro I offered for you is that you founded and continue to serve as artistic director of the Austin Film Society. You founded it in 1986, I believe.

MR. LINKLATER: 1985.

MR. SMITH: This organization's purpose has been to support film and film-making. As we like to say on the board of the Film Society, we are viewing and doing: we have the opportunity to watch great films and to help emerging film-makers perfect and get out into the world their own art. Talk a little bit about the work you've done with emerging film-makers because, indeed, as we look to the next generation of people who practice your art and craft, it's important to understand how they're getting their work out in the world.

MR. LINKLATER: In addition to, I think, helping film-makers and young film-makers, I think what I'm most proud of in the Film Society is the culture we've cultivated: that we see film as art; it's worthwhile, and you're supposed to watch movies in theaters as a communal experience. We've

been talking a lot about the blogosphere and technology and all that, and I think that's kind of a problem, really, in relation to a public art form like cinema. If you're watching feature-length films exclusively on your computer or your iPhone, it's a vote against community. We all, of course, watch films at home, but what can't be lost is the notion that the ideal environment is on a large screen with other people around. As open and democratic as it is, the computer is also alienating against community when it comes to many traditional art forms.

And it's like Naomi was saying about writing. I think anything that promotes keeping it very physical, very present, is a good thing. Since Thoreau is with us today, I think a lot about him and am compelled to turn it all off and become unwired and offline. Where do your good ideas come from? It usually comes from out of a vacuum, not over-stimulation. I get mine from an empty kind of clarity that isn't over-stimulated; it's under-stimulated. It's searching and trying to be aware; it can differentiate a good idea from a bad one.

But the Film Society is really a cultural organization first. And you have to just appreciate art—that's the first thing, accept it as an art form, as a means of communication, as the wonderful medium that it is. It's the same with every art form, and it's not the means to an end, I tell most people you probably won't make much of a living at this—the odds are not great. The Film Society was started just to see movies; it was just a part of me as an aspiring writer-director. My roommates at the time really just loved movies and wanted to see more of them. We felt Austin was a town that kind of shared that passion. Just at the moment film societies around the country and university film societies were dying, we somehow took off.

MR. SMITH: To this point, how much money has the Film Society given to emerging film-makers to support their own art of expression?

MR. LINKLATER: When the NEA—the program that had given me a grant back in 1989—closed down its regional grant program about 15 years ago, we started our own grant program to fill that void. Last year we gave out our one millionth dollar to Texas film-makers.

MR. SMITH: Isn't that great?

MR. LINKLATER: I second your funding for the arts. I have friends who are schoolteachers; I have a lot of kids in my world, and yes, testing, you can't really test for the arts. It's not so quantifiable, so we all have strong opinions about that. So does that mean it's not meaningful? If you can't test for it, it's not as important, and my fear, my paranoia, is we're turning out generations of technologically proficient workers who don't really see the arts as important in their lives. It's like there's something out there trying to kill that spirit, so it'd be great if that emphasis could shift.

MR. SMITH: Well, that's a great answer, actually. Speaking of not making very much money, what do you tell young aspiring journalists these days for which the prospect of leaving school and entering the workforce is dim indeed, Larry?

MR. WRIGHT: Well, first of all, I want to say something about Rick's enterprise, and to some extent yours. I was thinking while we were talking, why am I here; why are you here; why is Steve Harrigan here? Well, we all came because of *Texas Monthly*. It was a magazine that became a cultural node, and so many writers came not just from Texas, but from outside of the state and they still live here and they still enrich the state because of this one little institution that has paid all these amazing cultural dividends since then. And then you think about Austin being the Live Music Capital and all that sort of thing; it all goes back to Clifford Antone coming to town and starting a nightclub and letting blues musicians spend the night and it became a place to come. And other people started opening up clubs and musicians started going and out of that you had a cultural node that a whole culture came out of.

And I think what Rick is doing with the Film Society now, you can look at how potent the Austin film-making community has become in the last decade. It's really wonderful to see all the film and how much artistic creation is coming out of that. I'm hopeful that the *Texas Tribune* will become that similar kind of node where you'll figure out a way of creating a nexus for other writers and for Texans to start understanding their political culture better, but it takes that singular individual, I think, who wants to follow a passion and other people come.

In many ways, those few cultural nodes have come to define our city, and I think it's also responsible for the venture capital and everything that comes streaming into the city. People recognize it as an artistic city, but if you abstract it back to its origins, it's just a few people with singular visions who have been able to steer the culture in their direction.

As for journalists, it's really difficult when I talk to young journalists now because they're entering a profession where many more people are leaving it than are entering it and swimming upstream; the tide is coming against them. Oddly enough, a lot of journalism schools are getting more applicants than they did in the past. I think to some extent that might be explained by reporters who have lost their jobs and are going back to graduate schools and so on. But for the most part, it's very difficult for me to encourage young reporters at a time when the major metropolitan dailies are dying or becoming, like we were saying about the *Dallas Morning News* where they've turned over some of their departments to the ad department to run, corrupted in spirit because they're so broken that they don't know anymore how to make a way in the world.

And I worry about that a lot because these are the roots of journalism. People often say they get their news on the internet, but they don't give much thought to where that news originates, and most of the real news

comes from newspapers or wire services and those are the roots that are being pulled up. What you'll get on the internet is more blog, more opinion. The real news will disappear and I'm very concerned about it.

MR. SMITH: Well, it's a sad note to end our portion of the conversation on. We're going to open it up for questions in just a second, but we have a treat. As I said, Rick's magnificent new film is open in New York and Los Angeles, but will not yet be open in Texas for a little while. We'll let you see about five or six minutes of this wonderful film, *Me and Orson Welles*, that Rick has loosed onto the world, and then we'll come back and we'll open the program up for questions from the audience. [Whereupon, the film clip was shown.]

One of the great quirks of this film that you'll discover, if you see the full film, is the actor who plays Orson Welles, named Christian McKay, has not done a film before. Rick, is that true?

MR. LINKLATER: Yes, it's his first film.

MR. SMITH: His first film. One of the great things about the art of expression is that it gives rise to the art of discovery, and in the case of this actor, he's quite remarkable.

Let's open up. Mike informs me that we have ten minutes for questions with the audience, and so we have mikes going around, and let's go there and then let's go over here. Is that Chase? How are you, Chase?

Discussion:

AUDIENCE: Good to see you, Evan. A question for the two panelists who are film-makers or have done film: with the exception of specialty films like we've just seen, it's my impression that Hollywood, for the most part, is creative only in technology; that the plots and characters are very formulaic, very predictable. I wonder to the degree this is true and to the degree that the creative impulse is deadened by the force of studios or expectations in Hollywood that stories have to be told a particular way.

MR. LINKLATER: I don't know, I mean, it's always felt that way on the ground. If you read reviews from the late '60s or '70s, these periods that seem like golden ages in retrospect, at the time it's always been how the commerciality has won; that there's nothing but crap being made; the bean-counters are running the studio system. But I never really rag on Hollywood too much just because at the end of each year, somehow or other, there's 20 or so films that you really like, that were totally worth it, that were made somewhere near that system.

But yes, there's bigger, better technology, and this collision of art and

money kind of makes it a fascinating industry, I think. People are interested in it because it's such a big clash.

Do you have anything to add to that, Larry? I don't know if I'm answering your question. It's always a struggle, but I'm just saying it's definitely worse now but it's always been bad.

MR. WRIGHT: I'm doing a lot more theater because it's easier to tell some stories in that way than in movies, but the only script I'm working on now is for Ridley Scott and it's exactly one of those kinds of movies, so I'm very hopeful.

AUDIENCE: My name is Dr. Shine and I would like to thank you very much for a terrific panel. In your various genres and as you do your work, to what extent is either meaning or message part of your thought process in terms of the creative act?

MS. NYE: I would say meaning and message are always present, an awareness of them, a consideration of them. Maybe in the initial writing, a less conscious thought process about them, but the minute you step back and start revising your work or become editor for your own work, you think—how clear is the meaning; is it muddled? I would say I think more about meaning than message, but I am curious how something might move someone, how rhythm might invite them in, and all the places they might go. Of course, the message is always open to interpretation, and as poets, we're hopeful there might sometimes be more than one, a variety of interpretations.

MR. WRIGHT: When you asked that question, I was thinking about when I was working on my *Looming Tower* book and it took nearly five years and I was away from home a lot of that time and I missed a lot of my family and birthdays and stuff like that. While I was in Pakistan, a friend of mine died and I couldn't go to his funeral. I was feeling really lonely and sad. There was a hotel that had a nice swimming pool and one night I went out and got into the pool. I started thinking maybe I should try religion again. I was thinking what do I do in a moment like this? I was in that dark water in that lonely spot, I had this kind of mantra burst in my mind that says your job is not to find meaning; it's to create it. And I kind of think that's what art is. You don't know what it means but it means something if it holds together and it tells a story that people relate to.

MR. LINKLATER: Yes, meaning and message... I'm trying to communicate in whatever way possible, in as clear a way as possible, the same mystery or intrigue that I feel. I think we would all share this. What compels us toward a subject is usually what you're trying to convey specifically to your audience and all that entails, whatever complexity or depth or humor. Whatever that is, I think you're trying to do it in a direct way.

AUDIENCE: My name is Michael White. I'm a member of the society and I teach here at the University of Texas. I teach ancient literature, and specifically ancient religious literature, and I've come to believe very firmly that it's a lot about storytelling and drama more than anything else, at least that's the way the message and so on is delivered. And it's a question largely directed at Rick, but I hope the others can respond as well, and it's how we see the products that you make; they're wonderful. We see them as end products and that's the real art, but I firmly believe that a lot of the creativity and the expression is the behind-the-scenes work of putting it together.

And just as an example: I have a suspicion, although you'll tell me if I'm correct or not, that when to cut away in the taxi scene, was that something you thought about several different times? The reading of the *Ambersons* passage before you cut it away until you took it up again in the scene? My point is that how and where we edit these works over time and the creative process of editing and re-editing, which is something we can actually think about in literature, is really one of the more interesting creative processes and outcomes. I'd like to hear more about that part of it since we've been hearing more about the final product.

MR. LINKLATER: To me it's all process. The final product is what it is, but I'm very process-oriented. You kind of have to be, I think, in most art forms. There's certainly writing, but film-making for sure, I mean, if your middle name isn't Delayed Gratification, you shouldn't be involved because it's a long slog, but you have to love every bit of it.

So you mentioned that one scene, yes, I shot more in the car of him. He reads the next passage. But then I was in the editing room thinking, "Okay, well, we don't need to repeat all of it; by this point the audience will know that he's quoting what he just read, and so when he gets to a passage we didn't hear in the ambulance, they will know that that's just the next part of the *Magnificent Ambersons* quotation." I didn't totally know where that point was until editing, but I knew it was going to be in there somewhere. And near the end of the movie we show the play itself, Welles' famous *Julius Caesar* from 1937, this anti-fascist interpretation of Caesar. We filmed a lot of the play, but I wasn't exactly sure how much we would need for the final version.

So it's just following your instincts. I feel very alive in the day-to-day process, I love it all; it's all equally important too. Where I feel completely disconnected is about this time of the process when it's being released into the world. If I could just make movies and they never come out, that would be okay with me.

I used to be a baseball player and I loved hitting baseballs. I loved running around the outfield grass, throwing, catching and if I could just practice and do that and never play a game that would probably have been okay, too. I just sort of love the game, but the competition part was more fraught. Unfortunately the arts, which in their creation are about as

far from competitive as you can get, often get turned into a horse race if it's at all humanly possible. At some point in this last generation the media adopted opening weekend box office results, as an official story, a seemingly quantifiable subject that seemed like a competition that was worth making a story out of. Everybody now rallies around the results but that particular playing field is completely uneven of course, with vastly different advertising budgets and number of screens. It would never fly as an agreed upon competition, but there it is, looming in our money-obsessed culture. Even when your film is number one at the box office, which has happened to me once, it feels more like you've found yourself in the World Wrestling Federation than the NFL.

MR. SMITH: We are out of time on this program, which I must say, as loosey-goosey as it may have seemed, I thought came together magnificently. I think our panelists were wonderful. Larry Wright, Naomi Shihab Nye, and Rick Linklater, thank you very much.

ROUNDTABLE

BETTY SUE FLOWERS, *Moderator*

Good afternoon. When we were planning this meeting, we decided to try something different this year for the roundtable discussion. We noticed that most members leave before the Sunday morning business meeting and discussion roundtable and so miss what have often been lively discussions. So we thought we'd move the discussion to the end of Saturday afternoon—but we neglected to take the football game into account! So now, once again, those who are left will have to be twice as philosophical for the ones that we've lost. I've also been asked, "Who's on the roundtable?" *You're* the people on the roundtable; this is the philosophy part of the philosophical discussion.

I want to thank Mike for what I think is a wonderful putting-together of this program. Now, Mike is so modest, he'll probably stand up and thank Ima Hogg—so thank you, Ima Hogg. As you can see, he's clapping for her now.

We have heard so much today and so many different things on many different themes. I'm guessing that at some point during the day, you've probably wished to say something in relation to a point made by a speaker. Normally, conducting a discussion in a classroom, I would want to make sure it stayed on topic and that if Person A said something, that Person B's response should have something to do with that. Those won't be the ground rules here. There is one rule, however, and that is that you will kindly keep your comments to a reasonable length so that other people have a chance to talk.

One of the issues we faced in thinking about the programming is that there are so many members of the Philosophical Society who could just as easily have been up here on one of the panels. Many of them are sitting out here in the audience today. I was thinking of Bill Wright, for example, a photographer and writer. I would have liked to know what he thought about some of the questions Evan asked. There are just so many people out there who could have been up here.

So now is your chance. When you raise your hand, one of the three microphones will be given to you. Also, would you stand up so we can see you, and identify yourself? That would be very helpful.

AUDIENCE: My name is Tom Palaima, I'm a professor at the University of Texas and a member of the society, a very happy member of the society.

One of the constant themes here has been the impact of technology on every subject that we've looked at. Larry Wright mentioned what I really want to get at because it even goes back to some of the talks we heard on education. We saw with the medical talks as well, that technology can usher in a lot of good, but it can also bring in a lot of ill. So what Larry was saying is the impact on how news is delivered—if we don't have news institutions that fact-check, that keep reporters on topics, that cover things honestly, well, how do we know what kind of information we're getting?

And this is the question I want to ask to the educators who were talking about using technology in the classroom. To me, the idea that students will be able to go immediately to cell phones and get information—well, what information are those students getting? Even to establish as a paradigm, to go quickly to the internet for information. For example, every website on the Middle East, whether it's pro-Israeli or pro-Palestinian, will talk about truth in information, or neutral information when, in fact, most of the websites are highly biased.

So the question is how do you control the technology? And then the second question, too, is that I really wonder if there is such a thing as a new mind that we're supposed to work with, or if this is not almost a self-fulfilling way of looking at things. I was actually really troubled by the image of how we now read a page, left to right, down the page, taking in all the information. Now we're told that students in the classroom only look at the perimeter and the upper left, and so that the solution to that is to load all the information in the upper left. But once they leave the classroom, they're going to still be presented with information on full pages, and so what are we doing by essentially playing to a way that these students are being guided by technology? Technology is not a thinking thing; technology is being manipulated by forces like computer providers and so forth. I know I've just blown the idea of a short question, but there it is.

DR. FLOWERS: Thank you, I thought that was very interesting.

AUDIENCE: Larry Speck, I'm a member of the society and a faculty member of the School of Architecture here. I was so taken with your talk about the way the brain is changing and brain waves are changing. There's a fantastic book called *Everything Bad Is Good For You*. It's a terrible name for a book, but it's actually a pretty good scholarly book on the way that technology has changed our brains, and especially not our brains, but our kids' brains, because developmentally they're exposed to so much more. What we see as noise—actually, the brain is capable of absorbing that.

But the evidence I have for that is that I've been teaching this large lecture class for years at the university, and part of it is visual identification. I'm trying to get these kids to see and to then test if they are. I used to give the same damn way of measuring that 20 years ago, and you know, 60 percent of the class would see. And I do it now, and I can't get a bell curve out of it; 100 percent, they all see. They see so much better than kids did

even ten years ago. It's phenomenal, and it's because they're so visually aware. They've been playing those video games where you had to see that little rabbit over here half an hour ago to know that was going cue you into this little clue. They're just accustomed to pulling in visual information in a phenomenal way.

Now, if we don't take advantage of that, if we don't understand their brains are better able to do some things, we're stupid. I mean, we need to keep doing the same things we've been doing, traditional ways of learning, but these kids have brains that can do things that are phenomenal, and we need to address that.

AUDIENCE: Ken Shine, a member of the society. I have responses to the two previous comments and then a question. Professor Palaima, we've learned in medicine, for example, our house staff, interns, and students all carry PDAs; they know what the accepted sites are, where to get information about drugs. We tell our patients what sites to use when they need to get information about diabetes. There's no reason why students can't have access to all kinds of instant information, and our failure has been to help guide them as to where to look so they don't make random kinds of decisions.

And secondly, and this goes to Professor Speck's comment. We still hear people talking about seminars and the need for face-to-face with small numbers of students, but watching kids on chat rooms, that experience is just as real as if they were in a classroom. Higher education, in my opinion, has been really derelict in its willingness to take on the use of technology. In, for example, the chat room approach, there are now courses that have been taught in neuroscience where the class never meets, but where the students can learn 24/7. They ask their professors questions, the professors answer those questions before they go to bed at ten o'clock at night, and they answer them to all of the students. And the fact is that, in my view, higher education has been extremely slow to do what Nancy has been talking about.

We heard from some remarkably outstanding people about good programs; we've been hearing about that for 25 years. There are around this country extraordinary people like Nancy who are charismatic, who are knowledgeable, who work 24 hours a day, who put in enormous amounts of energy, and we never can scale it up. We don't see evidence that we can reproduce this in a meaningful way for large numbers of kids. And when she goes on to become the president of some university, who will do this? And my question is how do you go up from KIPP and from Nancy and from others? How do you go from there? What has to happen to make an educational system K-12 work in this country?

DR. FLOWERS: Yes, and that's related to our questions about the political will to increase the class day and number of class hours.

AUDIENCE: Bob Inman here. First, Nancy, I thought yours was one of the most exciting sessions of the entire day, and particularly because they're staying in school, in a place where we lose so many of them without ever getting them on to what Tom is worrying about. I'm worrying about how do we keep them in school and keep them learning and then hope they'll get to the other things as time goes on.

The other is we need to walk away from fear of change; accept the change that's there; and find how we can adapt it to be the most effective. I was listening to how they can be sure about the data they're getting, and I immediately thought of the paper of record. When it corrects its many ongoing current mistakes, it's always buried on the second page, but never corrected in the database, so when you try to call up that source, what you still get is the original incorrect data. So we have a very imperfect system now, even as we need to try to find ways to make the oncoming system better.

AUDIENCE: My name is still Lloyd Lochridge. My concern is this—and there's been reference to it in this program—and that is, our newspapers in this country, some of them have failed already. Some of them are in weak condition. I have the feeling that the newspapers have been the backbone of our news, and I don't think I'm seeing that replaced by the technology, if you will.

I don't represent a newspaper, but my father started out as a newspaper man and had the *Austin Statesman*, a sister was a journalist, and a nephew has been a journalist, so perhaps that's the interest. But this is my personal interest: I'm worried about who is going to publish the in-depth criticisms and the information that is vital, I think, for the public. Can you all tell me something optimistic that will happen to keep these newspapers going, the good ones in particular? That's my concern.

DR. FLOWERS: I'm sorry Evan had to leave because he's trying to respond to that concern in his new enterprise.

AUDIENCE: James Galbraith. I teach here, and I'm a member of the society, and I find that as I get older, I've gotten more oppositional, and my dean, Bob Inman, is surprisingly tolerant of this. I've spent my whole career here, almost 25 years now, teaching against a stifling orthodoxy in my field—I'm an economist, of all things, something that I've gotten some mileage out of in the last couple of years because the central issue was whether the kind of crisis that we just experienced is possible or not.

The topic of today's session was creativity. It seems to me one of the essential elements in creativity is the ability to disturb and to shock, to find the courage to challenge an established view or a sensibility. And there's obviously an enormous tension between cultivating that and fostering it and having an orderly system of education and harmonious society. But as I listened this afternoon, I didn't find myself disturbed or shocked by anything that I heard, and I found that somewhat disturbing.

So I wanted to ask those who are also educators if someone perhaps has wrestled with this problem. How do you go about balancing the concerns that have been expressed here about accuracy in technology and all these important things with also the need to make sure that the truly creative talent, which is always quite distinctive, gets fostered, doesn't get suppressed, gets recognized, and ultimately gets encouraged so that we have truly a creative state going forward?

AUDIENCE: Thank you, Betty Sue. I'm Gail Thomas from Dallas, a member, and I'm addressing this question about the way we are creating a new brain. I am remembering a book that's just been published by Joshua Cooper Ramo called *The Age of the Unthinkable*. He has done brain studies with students in China, graduate students, and students here in the United States, and the brain. When a Chinese student is focusing at a picture, the studies show that the eye focuses on many things around the center of the picture first and then goes *later* to the very center of a subject. Say it's a horse in a field. In America, our students look immediately to the horse, immediately to that central one subject. And his point is that the art of the Chinese is landscape painting, poetry, and so on. The texture, the landscape of the education of the Chinese, he said, is to look at the surroundings and then focus, zero in to some center focus. Whereas, our students, he says, have been educated to look at one thing and then they lose the ambiance and all of that particularity of what is surrounding it.

And yet, what I'm hearing today is that perhaps all of the surrounding environment is filling in what we've been doing in the past, focusing on one center thing. So it helped me understand, Nancy, what might be taking place in this shift that's going on. And, also, I couldn't help but think that it's an education through nature that would bring back, fill in this need that we have to be taught. Nature teaches from everything, every aspect of our being and our soul and our history and our future. It's all there in the intelligence that's in nature, and so we're not able to focus literally, as we have when we've concentrated on professional studies and one item, one area, and so on. That was my comment.

AUDIENCE: My name is Israel Galvan. I'm from League City. I want to preface my question by two very short comments. I read once, and I don't know if it's apocryphal or not, that when books became readily available and cheap, that Oxford University and Cambridge thought about shutting down because now that books were readily available, they didn't need any more professors. Perhaps we're on a similar kind of thing here now with the modern technology. But in 1936, Robert Maynard Hutchins wrote a slim book whose exact title I don't recall, but it was criticizing the American educational system with a thin-veiled attack on John Dewey. John Dewey appropriately responded in a criticism of the book, and this debate went on for about ten years in popular magazines.

The question I have for educators, especially university presidents, is if the American university system is changing, or is it changing fast enough,

or does there have to be a major readjustment in order to accommodate what we perceive to be a very rapidly changing landscape? Thank you.

DR. FLOWERS: No one is willing to tackle that one. I can't believe the Philosophical Society has run out of things to say—or perhaps there just aren't any of our Society's university presidents in the audience at the moment.

AUDIENCE: My name is Jack Shale. I'm from Temple, and I'm not sure if I should be speaking because I'm a guest, but I would like to respond to two threads that I've heard, and I think Mr. Galvan added to them. Professor Palaima talked about technology being out of control and the idea that the blogosphere has mushroomed, and Mr. Lochridge talked about what's happened to newspapers, and maybe we should save at least the good ones.

How to control it—control makes me very nervous. Probably the single greatest freedom we have in this country is the freedom of speech, and I get real nervous about who's going to choose which of the good newspapers we're saving? *Quis custodiet custodes? Who will guard the guards?* And I would lean toward taking the chance that that debate will go on for ten years, and this is a transitional period where newsprint is being replaced by digital methods of passing on information, and it will shake itself out. Mr. Murdoch has said that free news can't be free, so he's going to start charging for it, and people will start going where they can get news that they're willing to pay for. I would be very, very cautious about any kind of controls.

AUDIENCE: My name is Steve Sonnenberg. I'm Professor Palaima's guest, so I want you all to consider my comments as a way of saying "thank you" for a lovely day. Without going into too much detail about my discipline, I do want to tell you definitively that the brain of our next generation is no different than the brain that each one of us has. It takes millions of years to change a brain. What we may be doing is emphasizing new brain skills, new brain potentials that were always there. We emphasize one set of potentials, perhaps like the example that Larry Speck gave, students can recognize images much more readily now because they spend so much time looking at screens that change very rapidly.

We also need to ask what skills might be lost that previous generations had—previous generations that sat in libraries, went into the stacks, and didn't have computers. Remember the stacks at Princeton? You didn't know what you were looking for, you just found things. You encountered a book, and suddenly, surprise! A whole new idea. And what I want to emphasize is that creativity involves the capacity to experience surprise. And what I want to just say, finally, what concerns me about the technology is that there's so much stimulation that there's a loss of the capacity to stop and experience surprise.

DR. FLOWERS: Maybe that's a kind of answer to Jamie's question about shock or creativity and surprise. And that makes me wonder whether

writers like Larry Wright or Steve Harrigan—to what extent do you think in your own creative work you need to surprise or shock? I'm actually calling on you, Steve.

AUDIENCE: Steve Harrigan. This is scary. Well, there're a lot of interesting things that have been brought up. While this conversation was going on, I was thinking about our two-year-old grandson. About a year ago I showed him a photograph of one of the family members, and he did this [*gesturing*]; he tried to stretch it with his fingers.

DR. FLOWERS: I don't know if all of you could see what Steve was doing. That gesture he made is what you do to stretch a picture on an iPhone.

AUDIENCE: And so that was almost inbred in him, that instinct. But yes, I think shock and surprise is something that is sometimes overvalued in art, but it's sometimes undervalued in an individual artist. I think you need to keep shocking and surprising *yourself*—horrifying yourself even, with stuff that you dredge up from your sub consciousness. But I think that the sort of deliberate attempt to shock the bourgeoisie has been going on for so long, it's a cliché. And so to me, it's always a fine balance between finding what's new within *you* and also what's new that you can present to the world at large.

AUDIENCE: Hi, I'm Kathy Supple. Today's discussions reminded me of several things that—oh, somebody spilled their coffee. Sorry.

DR. FLOWERS: That's what being a president's wife is all about!

AUDIENCE: Always worried about the rug! Years ago, I taught high school English, and I did a couple of essay assignments that really remind me of what we're talking about today. One of the assignments that I used to give was to ask them to write about something that they thought that in 50 to 100 years, people would look back at 2009, or whatever year, and say, "Oh, my God, did you know what those people did back then?" I'd give my high school students examples like the car. When my grandmother was a kid, she had to go by horse wherever she went—those kinds of things.

But the really revealing one to me was when I said to my kids, "Describe something that when you were a child, you didn't understand, but you made up your own explanation for it. I gave them an example that was so revealing to me. I was driving down the road with my three-year-old son, and we stopped for a red light. And he said, "Mom?"—You know how kids ask a million questions. "What, Paul?" I said. "Why are we stopped in the middle of the street?" I said "There's a red light." "Mom, what's a red light?" And I thought to myself, this child—all these years he'd been going down the street with his mother stopping every once in a while. Did he think I was thinking about philosophy or something?

So I told these students to think of something they tried to explain when

they were a child that they didn't understand. This one student wrote a wonderful essay about being a child in New York City. His parents had emigrated from Greece, and the grandparents got left behind. But when he was about eight years old, they brought the grandparents over. The grandparents spoke no English, but they lived in a community where there were lots of Greeks, and so all the people who were, say, 70 and above, spoke Greek. Of course, he didn't understand it. And so in his mind he decided that when you got to be old, there was a secret language everybody knew.

DR. FLOWERS: That may still be true. Is there someone else who hasn't spoken?

AUDIENCE: Cheryl Fleming, North Zulch. Yes, Jon and I are from North Zulch, and it is close to College Station. I want to thank Mike Gillette and the members of your committee for putting together what I think has been an amazing survey of the human condition from the beginning—to educate and to learn, to explore and to discover, to express and to communicate. I think it's been a marvelous revelation of what is the art of life. We are all alive; we are all creative; we all attempt to communicate.

How do we communicate? We label things. We're going to move and express, and we're going to call that dance; we're going to organize sound, and we're going to call that music; we're going to put together images, and we're going to call that visual art. But at the root, we are exploring, discovering, reaching out to one another to find new essence of life, the art of life, to be creative and to be who we are, humans, and express our humanity. And I think this session on creativity today has been a magnificent exploration into our own humanity, and as we educate and learn, as we seek and explore, as we express and communicate with one another, we are the most human at that point. So Mike and everybody, thank you from North Zulch.

AUDIENCE: Tom Palaima again. Well, there was one question that was asked that I think is extremely important. That was how to take all of the successful educational programs, the sort of experimental programs, and make them general. Is Michael Feinberg here still, or did he leave? Because with the KIPP program, I think I remember correctly, he said that what he was aiming at was 10 percent, and there's this tipping point theory. In other words, you have to get to a certain scale, so at least he thinks it's 10 percent.

And I wanted to also tie into this question about what happens with institutions like newspapers—and this is leaving aside whether it's run by Rupert Murdoch or run by the *New York Times* or *Washington Post*. That problem has always existed. And this ties into what Jamie was saying. One of the most revelatory books in the last 20 years in ancient Greek history had to do with creating the barbarian, and it's a known phenomenon. We've had it in the United States ourselves; we know who we are

as long as there's an enemy out there. We had that in the Cold War, and we've been rather rudderless since the end of the Cold War. The Greeks had the same deal. But in many ways, this is, I think, a follow-up to what Jamie is saying. If creativity really is breaking down orthodoxy, or challenging orthodoxy, what is going to happen if we don't have the standard sources that define for us what the orthodox is? In other words, if there's just the kind of Tower of Babel effect out there with blogospheres and un-checkable news sources, and we don't have a common trough, what will happen?

Steve Sonnenberg and I have a piece appearing in tomorrow's *Austin American-Statesman* in the "Insight" section about the impact of war violence on the general population and what the civilian population can do to help essentially defuse the toxicity of the violence of war—so look for that tomorrow. But one of the things we had inserted in it is that the difference between what's going on now and what went on during the Vietnam War was that during Vietnam, we had three national television stations, all of which really did take seriously the responsibility to get some form of standard news. Now, whether you were on the far left or the far right, whether you were in New York City or Topeka, Kansas, you were watching these three stations, and they were the starting point of information for discussions in your community. Again, you could have very different takes, but at least you had a standard to go by.

So there are two serious questions connected with this news source: do we have the standards that allow us all to feed from the common trough and then talk to one another; and secondly—and I think it's related to your question, Jamie—if you don't have orthodoxy, how do you have the creativity that challenges orthodoxy. So essentially, ironically, orthodoxy is like the enemy, the Persians for the ancient Greeks, in many ways.

DR. FLOWERS: Well, maybe there's an opportunity there to define ourselves by our relationships and not by our enemies—that's just a thought. Is there another comment or question? Does anyone want to hear from someone that you're willing to call on?

AUDIENCE: I was struck also by the quality of the program, but as you pointed out, there's a lot of diversity of knowledge and experience, and I just wonder, for purposes of future programs, whether the planning committees might want to consider some portion of the program, one or two parts of it, to take the form of point-counterpoint kinds of conversations. That is, where there is a perspective of different views posed in which there would be real opportunities for representation of members who have experience or knowledge in a particular area to debate, in fact, in some depth, some of these important questions.

It's perfectly reasonable to have the general discussion, but in some cases, it seems to me—and technology is a good example where there are both pluses and minuses—a structured debate about impact. There are

obviously ethical issues associated with many of these things and that might make for an interesting kind of program.

DR. FLOWERS: I know we have one future president here in the room, so I'll pass that suggestion along. I think we want to hear you. Could you identify yourself, also?

AUDIENCE: Yes, we've done this before. I remember when we had capital punishment and the prison systems, and that is a really good thing to do. We had a couple who talked about "This should be done, and the people should be electrocuted"—this was a while ago—and others said "People shouldn't." I think it's a great idea.

DR. FLOWERS: Anyone else with any questions, comments? Thank you all.

DR. GILLETTE: Thank you, Betty Sue and everyone.

Now we come to the passing of the baton or gavel. And I'd just like to say as I hand the gavel to Mark McLaughlin that it has been a great pleasure for me to have this opportunity and the honor that you have bestowed. To me, this organization is really the best conversation in Texas and every time I go to a meeting I simply do not have enough time to have all of the rich conversations that I want to have because there are so many of them and so many people you want to see.

I deeply appreciate the chance to shape the program this year, but more than that the chance to interact with you and to get to know the other members of the board. That has really been a very special experience for me to share the governing of the organization with members who have guided it for so many years, and I've learned a great deal from them and I appreciate their support, all the support that they have given me. I am really looking forward to next year and not having the responsibility of planning a meeting but just simply enjoying it.

So thank you so much. I appreciate it.

MEMORIALS

WILLIAM WAYNE JUSTICE
1920-2009

William Wayne Justice was a Texan of the highest order; born in Athens in 1920, he died in Austin in 2009, just four months shy of his 90th birthday. He attended the University of Texas as an undergraduate and for law school, and no one was a bigger fan of UT football. He seemed destined to follow the law; when he was only seven, his beloved father changed the name of his law firm to "W. D. Justice & Son." Wayne was appointed judge in the Eastern District of Texas in 1968 by President Lyndon Johnson, two months after Dr. King's murder. Tumult lay ahead. In 1998 he took senior status and moved from Tyler to Austin, where he continued to sit as a judge in the Western District until shortly before his death. He is survived by his wife, the former Sue Rowan, his daughter Ellen Justice, her husband Eric Leibrock, his granddaughter Jane Justice Leibrock, and a large family of devoted former law clerks.

Judge Justice loved to attend annual meetings of the Philosophical Society, whatever the topic. When he was no longer able to zip around the state in his snappy sports car (usually driving too fast), a friend and I had the privilege of driving him to the meetings, where we enjoyed his insatiable curiosity and insightful commentary during the sessions, his wit and charm during the social hours. He was a charming raconteur whose stories recounted remarkable chapters of Texas history.

No federal district judge has had a bigger impact on the State of Texas than William Wayne Justice. In his more than forty years on the bench, Judge Justice worked courageously to protect civil rights, uphold constitutional freedoms, and ensure equal justice for all. He safeguarded the rights of minorities, the poor, and the politically powerless. In a birthday tribute to his beloved colleague, Judge Keith Ellison praised Judge Justice, "He has always shown a gentle identification with the oppressed and a towering rage against the oppressor." All would agree that he lived up to the destiny of his name, "Judge Justice."

The landmark decision, *Ruiz v. Estelle*, is regarded by many as the most successful prison reform case in the country. Judge Justice also presided over a statewide suit to enforce *Brown v. The Board of Education* in Texas. He upheld the concept of one-person-one-vote, a ruling that corrected the dilution of voting rights in the state.

In addressing the rights of the accused, Judge Justice promoted the due-process model of criminal justice, insisting that if individual rights are taken away from criminal defendants, they can also be taken away from lawyers, clergy, businessmen, and journalists. Judge Justice's rulings required desegregation in public housing, protected civil rights in employment, and abolished unnecessary institutionalization of the mentally retarded.

He considered his most important decision to be the ruling that children of undocumented aliens are entitled to a tuition-free education under the equal protection clause, stating that "it is senseless for an enlightened society to deprive any children of an elementary education." For more than thirty years, millions of children have received an education because of this courageous ruling in *Plyler v. Doe*.

Although his rulings were often controversial, he has been widely celebrated for his diligent protection of civil liberties and constitutional rights. Former Lt. Governor Bill Hobby wrote, "Judge Justice dragged Texas into the 20th century. God bless him. He was very unpopular, but he was doing the right thing." The University of Texas School of Law has established the William Wayne Justice Center for Public Interest Law; the national law firm of Skadden Arps presented him with its first prestigious Morris Dees Award. His many contributions to human dignity and civil rights have been recounted by Frank Kemerer in *William Wayne Justice: A Judicial Biography*.

Judge Justice has written a remarkable chapter in the jurisprudence of this state; this modest, courteous, and gentle man was an unassuming "giant in Texas history." Happily he has been memorialized in the Texas State Cemetery for the benefit of future students of Texas history. Judge Ellison delivered this fitting eulogy: "No one else cared as much, no one else did as much, no one else mattered as much as William Wayne Justice...Wayne strapped to his slender back all that was best in our system of laws and in ourselves, and pushed upwards, through sunshine and shadow, towards a higher and finer concept of justice...." Yes, destiny was in the name.

B.A.S.

ELMER STEPHEN KELTON

1926-2009

At the founding meeting of the Texas Institute of Letters in Dallas in 1936, J. Frank Dobie reminded his audience that "great literature transcends its native land, but there is none that I know of that ignores its own soil." That could certainly be said of Elmer Kelton's writing. He never forgot his native soil of West Texas and the world is richer for that and Texas literature is somehow smaller now that he is gone.

Elmer Kelton was born at the Horse Camp on the Five Wells Ranch outside of Andrews Texas, where his grandfather was foreman, and raised

on the McElroy Ranch near Crane, Texas, where his father, Buck Kelton, was foreman. Although he was raised in a family of cowboys and on a ranch and learned about the cattle business, Elmer Kelton was always bookish and according to him, not much of a cowboy. There is a very telling photograph of him as a boy sitting under a wagon reading a book while ranch activity swirls around him. "My three younger brothers were all better cowboys than I was. I got lost a lot—turns out I was nearsighted. We'd go out to gather cattle and if they were 100 yards away I'd miss 'em. Dad told me pretty early I'd better find some other way to make a living." Elmer wrote in his autobiography, "Dad gave me every chance to learn to be a cowboy. I was probably the greatest failure of his life. I was always better at talking about it, and writing about it, than I ever was at doing it."

When Elmer suggested that he wanted to be a writer and attend the University of Texas to become a journalist, Buck Kelton, according to Elmer, gave him a look that would kill Johnson grass and replied, "that's the way it is with you kids nowadays—you all want to make a living without having to work for it." Thank goodness Buck relented, for Texas literature would be less without the work of Elmer Kelton just as Texas would be less without Elmer Kelton the man.

Elmer attended The University of Texas at Austin from 1942–44, went into the U. S. Army, serving in Europe, where he met his Austrian-born wife, Ann. He returned to The University of Texas from 1946–48, and earned a degree in journalism. He would in 2002 be declared a Distinguished Alumnus of The University of Texas, the highest alumni award given by the university, but Buck, unfortunately, would not live to see his bookish son receive that honor. Nor would he live to see Elmer receive two honorary doctorates from Hardin-Simmons University and Texas Tech University. Elmer said that Buck did help him in his writing with details on matters from windmill raising to castrating a colt. Elmer also listened to the stories told by the cowboys. He loved Westerns as a child, reading everything from Zane Grey to Roy Rogers, but "I knew the difference between fantasy and the reality I saw around me all the time. The reality was muddy and bloody and hot and cold. I wanted to write about cowboy life as I saw it to be."

Elmer made his living as a journalist with the *San Angelo Standard-Times* for fifteen years, five years as editor at *Sheep and Goat Raiser Magazine* and twenty-two years as editor of *Livestock Weekly*, from which he retired in 1990. His articles have also appeared in *Texas Monthly*, *The Writer* and *Roundup*. Though Elmer was not a cowboy, he knew much about the business. As he traveled Texas gathering news about the livestock business, he also gathered insights and stories that helped him create tales about Texas. While he was plying his trade as a journalist, he was also a part-time novelist. This "part-time novelist" wrote more than 60 books, including the text for art books by western artists.

His body of work places him with the major writers of his time, includ-

ing literary works that happened to have the West as a setting. He won several coveted Western Heritage Awards from the National Cowboy Hall of Fame in Oklahoma City for *The Time It Never Rained*, *The Good Old Boys*, *The Man Who Rode Midnight* and the text for *The Art of Howard Terpning*. He won an astounding seven Spur Awards—the equivalent of a Pulitzer with Western writers—from Western Writers of America for *Buffalo Wagons*, *The Day the Cowboys Quit*, *The Time It Never Rained*, *Eye of the Hawk*, *Slaughter*, *The Far Canyon* and *The Way of the Coyote*. *The Good Ole Boys* was made into a television movie in a project by Tommy Lee Jones, who wrote the screen play, directed and starred in the movie. Elmer's other awards include the Saddleman Award from Western Writers of America, their highest honor, for his distinguished body of work. He received the Distinguished Achievement Award from the Western Literature Association and the Lon Tinkle Award for a lifetime of excellence in letters from the Texas Institute of Letters, among many other honors.

Although he was originally considered a "Western" writer, his work began being viewed as more universal. Elmer often characterized his characters as "people like me; common people, usually, not overly brave and certainly not foolhardy. Louis L'Amour's characters are 8 feet tall and invincible. Mine are 5 feet 8 and nervous." His characters also come to life on well-crafted pages. Judy Alter, one of his publishers, wrote that he began to "use the western setting as a vehicle for studying mankind, rather than as an end in itself," in novels that "are characterized thematically by the moral complexities wrought in men's lives by change and stylistically by narrative voice that speaks clearly of West Texas."

"My primary theme has always been change and how people adapt to it or don't adapt," says Kelton. He resists the temptation to write happy endings for characters who cannot change with the times. "My dad told me the history of a lot of the ranches and ranch operators in the Midland-Odessa country," says Kelton. "He knew most of them and cowboied for a lot of them in his youth. No matter how funny Dad's story was, it usually tended to end on a sad note. Invariably the rancher seemed to have gone broke eventually and lost it all."

All through Kelton's work is his love of West Texas. He loved the land in spite of its droughts and sometimes hardscrabble harshness. He writes in *The Day the Cowboys Quit*, "Some people would never understand the hold this land could take on a man if he stayed rooted long enough in one spot to develop a communion with the grass-blanketed earth, to begin to feel and fall in with the rhythms of the changing seasons. There was a pulse in this land, like the pulse in a man, though most people never paused long enough to sense it."

His novels were always well researched for historical accuracy, and one thing about them, they were always clean enough for any member of the family to read. A long-time member of the Texas Folklore Society and the Texas State Historical Association, Elmer rarely missed the meetings, always sitting attentively listening and taking notes as papers were given. He also gave papers of his own and numerous speeches to writing

groups. One of his favorites to give was titled "Fiction Writers Are Liars and Thieves," in which he confesses, "someone has said that fiction by definition is a lie. By extension this means that fiction writers are liars. In that context, I will admit to it, and go a step further. I will say that fiction writers are liars and thieves."

Elmer Kelton remained always a "genuine, unaffected, kind and gentle man, the sort who, in person, makes you want to hunker down and listen to his stories, his voice, and his wisdom," writes Judy Alter. He was generous with his time and knowledge, always having time to talk about books and writing, and what was going on in everyone's lives. One of the songs played at his funeral was "The Eyes of Texas." The last song played was "Happy Trails," a most fitting note to send Elmer out on.

Elmer is survived by his wife of 62 years, Ann Kelton of San Angelo, sons Gary Kelton of Plainview and Steve Kelton of San Angelo, with wife Karen McGinnis, and daughter Kathy Kelton, also of San Angelo and companion Pat Hennigan. He and Ann have four grandchildren, five great-grandchildren, and one great-great grandchild. He is also survived by his brothers, Merle and wife Ann of May, Texas, Bill and wife Pat of Atlanta, Texas, and Eugene and wife Peggy of McCamey, and a host of friends who followed his work and loved Elmer and Ann.

F.B.V.

LOWELL H. LEBERMANN, JR.

1939 - 2009

*Presented at
Memorial Services*

*Lyndon Baines Johnson Library
Austin, Texas*

July 16, 2009

*Larry R. Faulkner, President Emeritus
The University of Texas at Austin*

It is a special privilege for me to have been asked to contribute here today. Distinguished friends of Lowell have already spoken—friends who knew him for decades and were witnesses to many chapters in his life. By comparison, I was a latecomer.

I can recall exactly the moment when Lowell and I first met. It was at the Adolphus Hotel in Dallas in the fall of 1997. He was a Regent and was chair of the search committee for a new president of The University. I was a candidate, making my first face-to-face contact with the committee. Things evolved from there; and in the end, Lowell was—for better or worse—stuck with me.

From the beginning, Lowell treated Mary Ann and me with grace and generosity and wisdom. He taught us patiently. He was a loyal and trustworthy ally. We will always remain indebted to this remarkable man.

• • •

What does any of us see in the mind's eye when we think of Lowell Lebermann? The images and memories swirl: A marvelous sense of style and grace. The very epitome of panache. As close to an aristocratic manner as becomes any American—almost a "Texas Count." Where did he acquire all that? No matter. He brought it off naturally and combined it perfectly with a daring sense of humor.

Did you ever meet anyone like him anywhere else? I think not.
Have you wished you could pull it off, too? I imagine so.
Don't try.

• • •

I associate other qualities, too, with Lowell:

Courage is at the fore. Every single person here must have admired his lion-like commitment never to give in to the limitations of his blindness. Each of us can recall little and big manifestations of that commitment: Like always being in the stands at football games. Like serving with distinction as the fundraising leader for the Suida-Manning Collection of paintings and drawings. Like bringing energy and enthusiasm to architectural reviews. What personal strength it must have taken to follow through, time after time, never to give in.

Brilliance is the second quality I want to cite, for it took brilliance indeed to organize in a manner that could support a life with such impact: The special logistics, the system of aides, the manner of using the aides—all of that made it possible for him to sustain the energetic participation that we all saw.

But there was more. I will always remember the admiring comment made by UT's great chemist Allen Bard, who served on Lowell's 1997 presidential search committee. "He has to keep it all in his head," Al marveled, noting the scale and detail of knowledge that Lowell had to command first-hand, while the rest of us referred to notes and files and photos and computer records. Lowell could not have achieved anything near the impact of his life without brilliance of mind and organization.

• • •

Our friend, Lowell Lebermann, was as complex and flavorful as a fine Bordeaux. He was as luminous and expressive as a Monet. As elegant and sparkling as a Chopin waltz. His civility nudged his colleagues toward wiser, truer, and more generous actions. He believed firmly in a better future and in the importance of great institutions to that future—his university high among them. He put strong effort where his beliefs were. We have all been fortunate beneficiaries of this great soul, the like of which we shall not see again.

• • •

Farewell, good friend. The eyes of Texas are misty today with loss, as we honor you with love and gratitude for a life lived splendidly among us.

L.R.F.

JOHN DEAN MOSELEY
1915-2009

John Dean Moseley, educational leader and president emeritus of Austin College, passed from this life on March 11, 2009. Universally called "John D." by his thousands of friends, students, colleagues, and associates, he was born in Greenville, Texas on November 17, 1915. Dr. Moseley spent his youth there before graduating in 1936 from what is now Texas A&M University at Commerce. He earned a doctor of law degree from the University of Texas, also receiving an M. A. in public administration from that same school in 1942. Active as a layperson in church activities starting in his adolescent years, he was particularly involved with the Presbyterian Youth Council while a university student. It was as a leader in that organization that he met his wife Sara Bernice, with whom he would forge a sixty-eight year partnership in educational leadership, church involvement, and civic accomplishment.

The early years of World War II found Dr. Moseley in Washington, D.C. where he served as a member of the mobilization team that organized the Office of Price Administration, eventually becoming director of administrative services for that organization. During the postwar years, he returned to Texas where Governor Allan Shivers appointed him as the first director of the newly-founded Texas Legislative Council in Austin. This state agency was designed to provide research support and information for the legislature and state government. One of his first projects was to conduct a full-scale review of higher education in Texas which resulted in the creation of the State Higher Education Coordinating Board. Dr. Moseley also continued his role as a church lay leader, serving as director of a special committee instituted by the Synod of Texas to study the Presbyterian schools in the state.

These activities, in part, resulted in his becoming president of Austin College in Sherman, Texas in 1953, a position he would hold until his retirement from that post in 1978, continuing an additional three years as chancellor. During his career at Austin College, Dr. Moseley reshaped that institution into one of the premier private liberal arts colleges in the nation. He embarked on an aggressive program of faculty development, curricular innovation, and co-curricular advancement that attracted national attention. He excelled at finding significant support for his many changes at the college, in the process attracting major organizations such as the Ford Foundation, the Mellon Foundation, and others as benefactors. He also greatly expanded the relationship between Austin College and the philanthropic community of the greater Southwest.

Dr. Moseley was instrumental in the forming of the Independent Colleges and Universities of Texas and also active in securing legislation to create the Texas Tuition Equalization Grant. He served as chair of the Association of American Colleges, on the board of directors of the American Council on Education, and on the Commission on Standards for Colleges and Universities of the Southern Association of Colleges and Schools. He

was president of the Association of Texas Colleges and Universities, an officer and on the board of directors of the National Association of Independent Colleges and Universities, and the executive director of the National Congress on Church-Related Colleges and Universities. Moseley received numerous local, state, and national awards for his leadership in higher education and in the Presbyterian Church.

By the time Dr. Moseley left the presidency of Austin College, over three-quarters of the buildings on campus had been constructed or significantly remodeled. The college's liberal arts curriculum had transformed the institution into a trend-setting innovator in the undergraduate study of the arts and sciences. Many of the interdisciplinary programs he put into place became models for other colleges and universities. He entered full retirement in 1981 when he stepped down as chancellor of Austin College, although he continued to serve as an active consultant on educational development across the nation until ill-health slowed his pace in recent years.

As one of his Austin College faculty members later recalled of Dr. Moseley: "He thought big, he acted big, and he expected everyone around him to have optimistic visions of the future. That was very much his hallmark. He was always thinking at least ten years into the future and ahead of everyone else around him." John D. Moseley is survived by his wife, Sara Bernice Moseley, and their three children: Sara Caroline Moseley of Dallas; John Dean Moseley Jr., and Alice Butler of Irving; and Rebecca Moseley Gafford and her husband, Ron, also of Dallas; four grandchildren; and five great-grandchildren.

L.T.C.

DORMAN HAYWARD WINFREY

1924-2009

Dorman Hayward Winfrey—prolific Texas historian, TSHA president, and Director and Librarian of the Texas State Library and Archives for nearly a quarter century—died on March 28, 2009, at the age of eighty-four.

Born on September 4, 1924, in Henderson, Texas, Winfrey loved reading and writing history from an early age, publishing his first article, "New Birmingham, Texas," in the *Junior Historian* (Vol. III, January 1943). In the work, TSHA Director H. Bailey Carroll detected a budding historian and told Winfrey, before the young man left for service with the 69th Infantry Division in World War II, to "come see me" after he returned. Winfrey did and Carroll put him to work on the *Southwestern Historical Quarterly* and the *Handbook of Texas* for twelve years (1946-1958) while Winfrey earned both baccalaureate and master's degrees in History at the University of Texas. Carroll subsequently supervised Winfrey's doctoral study, completed in 1962.

Winfrey was recruited to become state archivist in 1958 after the dis-

missal of the previous holder of that position, which began his career of being called on to bring stability and calm in the wake of upset and tension resulting from personnel problems. University of Texas Chancellor Harry H. Ransom hired him two years later to take charge of the University Archives in similar circumstances. Finally, the Texas Library and Historical Commission concurred with Governor Price Daniel, who developed a close friendship through talking Texas history with Winfrey, and selecting him to resolve the difficulties in the leadership of the Texas State Library and Archives by appointing him the Director and Librarian. In its first meeting after Winfrey began the job on January 1, 1962, the commission officially thanked him for instituting the congenial leadership it sought. Winfrey retired from the position on November 30, 1986.

Being a Texas historian defined Dorman Winfrey. A dedicated and active supporter of the Texas State Historical Association from his days as a Junior Historian and TSHA staff member, Winfrey was elected a Fellow, served on Council and as President (1971–1972), and wrote *Seventy-Five Years of Texas History: The Texas State Historical Association, 1897–1972* (1975). In addition to preparing numerous articles for the *Handbook of Texas* while on the TSHA staff, he edited *The Texas Indian Papers* (4 vols.; 1959–1961) while State Archivist and co-edited a fifth volume (1966) with James M. Day. His “A History of Rusk County” (1961) and “Julien Sidney Devereux and his Monte Verdi Plantation” (1964) each won an Award of Merit from the American Association for State and Local History. He contributed to seven Texian Press books on the *Heroes* (1964), *Missions* (1965), *Frontier Forts* (1966), *Battles* (1967), *Flags* (1968), *Rangers* (1969), and *Capitols* (1970) of Texas. Among his most widely quoted articles is “The Texan Archive War of 1842,” *Southwestern Historical Quarterly* 64 (October 1960).

A life-long aficionado of music, Winfrey wrote “Arturo Toscanini in Texas: The 1950 NBC Symphony Orchestra Tour” (1967) and was a founding member of the International Festival Institute at Round Top. Sought after to fill leadership positions, he was elected to the Councils of the Society of American Archivists (of which he was a fellow) and the American Association for State and Local History. He served the Philosophical Society of Texas not only as Secretary, but also as historian, writing *A History of the Philosophical Society of Texas, 1837–1987* (1987). He was a member the Texas Institute of Letters and the Texas Library Association.

In 1948 at the beginning of Winfrey’s career, Walter Prescott Webb wrote of his service on the TSHA staff that, “The cheerful Dorman Winfrey is the general factotum who does about everything any of the others asks him to do, does it cheerfully and well.” By the end of his career, he had become, in TSHA Historian Richard McCaslin’s analysis, a prime example of the dedicated member who has sustained the TSHA throughout its life. Winfrey and his wife Ruth Carolyn were honored in 1990 when the Association established the Dorman H. and Ruth Carolyn Winfrey

Junior Historian Award, which is given to a chapter sponsor who inspires students in the research and writing of Texas history.

Dorman H. Winfrey is buried in his ancestral Welch Family Cemetery in Henderson.

David B. Gracy II

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For the Year 2009

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PAST PRESIDENTS

* Mirabeau Buonaparte Lamar	1837-59
* Ira Kendrick Stephens	1936
* Charles Shirley Potts	1937
* Edgar Odell Lovett	1938
* George Bannerman Dealey	1939
* George Waverley Briggs	1940
* William James	1941
* George Alfred Hill Jr.	1942
* Edward Henry Cary	1943
* Edward Randall	1944
* Umphrey Lee	1944
* Eugene Perry Locke	1945
* Louis Herman Hubbard	1946
* Pat Ireland Nixon	1947
* Ima Hogg	1948
* Albert Perley Brogan	1949
* William Lockhart Clayton	1950
* A. Frank Smith	1951
* Ernest Lynn Kurth	1952
* Dudley Kezer Woodward Jr.	1953
* Burke Baker	1954
* Jesse Andrews	1955
* James Pinckney Hart	1956
* Robert Gerald Storey	1957
* Lewis Randolph Bryan Jr.	1958
* W. St. John Garwood	1959
* George Crews McGhee	1960
* Harry Hunt Ransom	1961
* Eugene Benjamin Germany	1962
* Rupert Norval Richardson	1963
* Mrs. George Alfred Hill Jr.	1964
* Edward Randall Jr.	1965
* McGruder Ellis Sadler	1966
* William Alexander Kirkland	1967
* Richard Tudor Fleming	1968

* Deceased

*Herbert Pickens Gambrell	1969
*Harris Leon Kempner	1970
*Carey Croneis	1971
*Willis McDonald Tate	1972
*Dillon Anderson	1973
*Logan Wilson	1974
*Edward Clark	1975
*Thomas Hart Law	1976
*Truman G. Blocker Jr.	1977
*Frank E. Vandiver	1978
*Price Daniel	1979
*Durwood Fleming	1980
Charles A. LeMaistre	1981
*Abner V. McCall	1982
*Leon Jaworski	1983
Wayne H. Holtzman	1983
Jenkins Garrett	1984
Joe R. Greenhill	1985
William Pettus Hobby	1986
*Elsbeth Rostow	1987
John Clifton Caldwell	1988
J. Chrys Dougherty III	1989
*Frank McReynolds Wozencraft	1990
William C. Levin	1991
*William D. Seybold	1992
Robert Krueger	1993
Steven Weinberg	1994
*William H. Crook	1995
*Charles C. Sprague	1996
Jack S. Blanton Sr.	1997
William P. Wright Jr.	1998
Patricia Hayes	1999
A. Baker Duncan	2000
Ellen C. Temple	2001
George C. Wright	2002
J. Sam Moore Jr.	2003
Alfred F. Hurley.	2004
Harris L. Kempner	2005
S. Roger Horchow	2006
Isabel B. Wilson	2007
Boone Powell	2008
Michael L. Gillette	2009

*Deceased

MEETINGS

of The Philosophical Society of Texas

- 1837—Founded at Houston,
December 5
1840—Austin, January 29
1936—Chartered, January 18
1936—Reorganizational meet-
ing—Dallas, December 5
1937—Meeting and inaugural
banquet—Dallas, January 29
1937—Liendo and Houston,
December 4
1938—Dallas
1939—Dallas
1940—San Antonio
1941—Austin
1942—Dallas
1943—Dallas
1944—Dallas
1945—Dallas
1946—Dallas
1947—San Antonio
1948—Houston
1949—Austin
1950—Houston
1951—Lufkin
1952—College Station
1953—Dallas
1954—Austin
1955—Nacogdoches
1956—Austin
1957—Dallas
1958—Austin
1959—San Antonio
1960—Fort Clark
1961—Salado
1962—Salado
1963—Nacogdoches
1964—Austin
1965—Salado
1966—Salado
1967—Arlington
1968—San Antonio
1969—Salado
1970—Salado
1971—Nacogdoches
1972—Dallas
1973—Austin (Lakeway Inn)
1974—Austin
1975—Fort Worth
1976—San Antonio
1977—Galveston
1978—Houston
1979—Austin
1980—San Antonio
1981—Dallas
1982—Galveston
1983—Fort Worth
1984—Houston
1985—College Station
1986—Austin
1987—Kerrville
1988—Dallas
1989—San Antonio
1990—Houston
1991—Galveston
1992—Dallas
1993—Laredo
1994—Austin
1995—Corpus Christi
1996—Dallas
1997—Houston
1998—Abilene
1999—Austin
2000—San Antonio
2001—Austin
2002—Fort Worth
2003—El Paso
2004—Denton
2005—Galveston
2006—Dallas
2007—Houston
2008—San Antonio
2009—Austin

PREAMBLE

W e the undersigned form ourselves into a society for the collection and diffusion of knowledge—subscribing fully to the opinion of Lord Chancellor Bacon, that “knowledge is power”; we need not here dilate on its importance. The field of our researches is as boundless in its extent and as various in its character as the subjects of knowledge are numberless and diversified. But our object more especially at the present time is to concentrate the efforts of the enlightened and patriotic citizens of Texas, of our distinguished military commanders and travelers,—of our scholars and men of science, of our learned members of the different professions, in the collection and diffusion of correct information regarding the moral and social condition of our country; its finances, statistics and political and military history; its climate, soil and productions; the animals which roam over our broad prairies or swim in our noble streams; the customs, language and history of the aboriginal tribes who hunt or plunder on our borders; the natural curiosities of the country; our mines of untold wealth, and the thousand other topics of interest which our new and rising republic unfolds to the philosopher, the scholar and the man of the world. Texas having fought the battles of liberty, and triumphantly achieved a separate political existence, now thrown upon her internal resources for the permanence of her institutions, moral and political, calls upon all persons to use all their efforts for the increase and diffusion of useful knowledge and sound information; to take measures that she be rightly appreciated abroad, and acquire promptly and fully sustain the high standing to which she is destined among the civilized nations of the world. She calls on her intelligent and patriotic citizens to furnish to the rising generation the means of instruction within our own borders, where our children—to whose charge after all the vestal flame of Texian liberty must be committed—may be indoctrinated in sound principles and imbibe with their education respect for their country’s laws, love of her soil and veneration for her institutions. We have endeavored to respond to this call by the formation of this society, with the hope that if not to us, to our sons and successors it may be given to make the star, the single star of the West, as resplendent for all the acts that adorn civilized life as it is now glorious in military renown. Texas has her captains, let her have her wise men.

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FOR THE YEAR 2009
(NAME OF SPOUSE APPEARS IN PARENTHESES)

ABOUSSIE, MARILYN (JOHN HAY), chief justice retired, Texas Third Court of Appeals, *Austin and San Angelo*

ADAMS, PHIL, board of regents, Texas A&M University; director, American Momentum Bank; Texas Public Policy Foundation Board, *Bryan*

ALLBRITTON, JOE LEWIS (BARBARA), lawyer; investor; chairman Perpetual Corporation, *Houston*

ALLISON, SHARON WILSON (SAM), former president of board of International Planned Parenthood Federation/Western Hemisphere Region, member of Governing Council of International Planned Parenthood Federation. Serves on boards of Guttmacher Institute, Americans for UNFPA, board of visitors for Johns Hopkins School of Public Health and Pathfinder International. Serves on the College of Liberal Arts Advisory Council at The University of Texas at Austin, *Waco*

ARNOLD, DANIEL C. (BEVERLY), private investor, *Houston*

ASHBY, LYNN COX (DOROTHY), former editor, editorial page, *Houston Post*; member, Houston Philosophical Society; author, columnist, *Houston*

ATLAS, MORRIS (RITA), lawyer; senior partner, Atlas and Hall, *McAllen*

BABCOCK, CHARLES L. (Nancy), general counsel, Texas Association of Broadcasters; chairman, Texas Supreme Court Advisory Board Committee, *Houston*

BARNES, SUSAN J., reverend, assistant rector, St. Matthew's Episcopal Church, *Austin*

BARNETT, LYNN (RANDY), director, Abilene Cultural Affairs Council, *Abilene*

BARNHILL, JOHN W. (JANE), member, The University of Texas Board of Regents; Chairman of the Bank of Brenham; Board of Directors

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BARTLETT, RICHARD C. (JOANNE), vice chairman, Mary Kay Inc.; chairman, National Environmental Education & Training Foundation; member of board, National Council for Science & the Environment, NatureServe, The Nature Conservancy; member, Governor's Environmental Flows Advisory Committee, *Carrollton*

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BEAUMONT, J. PENNY (ROGER), retired associate director, formerly Texas Transportation Institute, Texas A&M System; president, Foundation for Women's Resources, *Bryan*

BELL, PAUL GERVAIS (SUE), retired general contractor, *Houston*

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BLANTON, JACK S., JR. (LESLIE), chairman, Nicklos Drilling Company; former chairman & CEO ADCOR-Nicklos Drilling Company; Chairman & CEO JEM Group, *Houston*

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- BROWN, MICHAEL S. (ALICE), professor of molecular genetics and director, Jonsson Center for Molecular Genetics, the University of Texas Southwestern Medical Center at Dallas; 1985 Nobel laureate in physiology or medicine, *Dallas*
- BROWNELL, BLAINE A. (MARDI), former provost, University of North Texas; former president, Ball State University; higher education consultant and author, *Charlottesville, VA*
- BRYAN, J. P. (MARY JON), CEO, Torch Energy Advisors Inc.; former president, Texas State Historical Association, *Houston*
- BURKA, PAUL J. (SARAH), senior executive editor of *Texas Monthly*, co-creator of biennial Best and Worst Legislators feature; former attorney with the Texas Legislature, *Austin*
- BURNS, FRED C. (PAT), retired chairman, John L. Wortham & Son; president, Wortham Foundation, Inc.; board of directors, JP Morgan Chase Bank of Texas, *Houston*
- BURTON, W. AMON JR. (CAROL), attorney; adjunct professor, The University of Texas School of Law; National Conference of Bar Examiners' Multistate Professional Responsibility Examination, *Austin*
- BUSH, GEORGE W. (LAURA), former president of the United States of America, *Dallas*
- BUSH, LAURA WELCH (GEORGE), former first lady of the United States of America, founder of the Texas Book Festival, *Dallas*
- BUTT, CHARLES C., chairman of the board and chief executive officer, H. E. Butt Grocery Company, *San Antonio*
- CALDWELL, JOHN CLIFTON (SHIRLEY), rancher; former chairman, Texas Historical Commission; former president, Texas State Historical Association, *Albany*
- CALGAARD, RONALD KEITH (GENIE), Chairman and trustee, Ray Ellison Grandchildren Trust; president emeritus, Trinity University, *San Antonio*
- CAMPBELL, RANDOLPH "MIKE" B. (DIANA SNOW), Regents Professor of History, University of North Texas, *Denton*
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- CAPPER, JOYCE PATE (ROBERT), founder, Abraham Lincoln Appreciation Society; honorary consular, Grand Duchy of Luxembourg; organized first Edna Gladney Auxiliary in 1965; opened Pate Museum of Transportation in Cresson, Texas, *Fort Worth*

- CAPPER, ROBERT S. (JOYCE), president, Fort Worth Chapter of the American Heart Association; vice chairman, Harris Methodist Health Foundation, *Fort Worth*
- CARLSON, PAUL H., professor of history, Texas Tech University; director, Texas Tech Center for the Southwest; author *The Plains Indians*, *Pecos Bill: A Military Biography of William R. Shaffer*, and *Empire Builder in the Texas Panhandle: William Henry Bush, Ransom Canyon*
- CARLETON, DON E. (SUZANNE), executive director, Dolph Briscoe Center for American History, The University of Texas at Austin, *Austin*
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- CAVAZOS, LAURO E. (PEGGY ANN), former U.S. secretary of education; former president, Texas Tech University and Texas Tech University Health Sciences Center, *Port Aransas*
- CHEW, DAVID WELLINGTON (MANDY), Chief Justice, Eighth Court of Appeals, 2006 to present; 8th Court of Appeals Justice, 1996-2007; past representative, City Council of El Paso; practicing attorney specializing in immigration and nationality law; former Lieutenant Commander, United States Navy; *El Paso*
- CIGARROA, FRANCISCO (GRACIELA), chancellor, The University of Texas System; pediatric and transplant surgeon, *Austin*
- CIGARROA, JOAQUIN G., JR. (BARBARA), physician, internal medicine and cardiology, *Laredo*
- CLEMENTS, WILLIAM P., JR. (RITA), former governor of Texas; former chairman, SEDCO, Inc.; former U.S. deputy secretary of defense, *Dallas*
- COERS, DONALD, Provost, Vice President, Academic Affairs, Angelo State University; award winning author and international expert on the works of John Steinbeck; state president, Texas Council of Faculty Senates, *San Angelo*

- CORMIER, RUFUS (YVONNE), attorney and partner in the Houston office of Baker Botts L.L.P., *Houston*
- CORNYN, JOHN (SANDY), U.S. Senator sworn into the U.S. Senate on December 2, 2002. Senator Cornyn serves on five key Senate committees: Armed Services; Judiciary; Budget; Small Business and Entrepreneurship; and the Joint Economic Committee. He chairs the Judiciary Committee's subcommittee on Immigration, Border Security and Citizenship and the Armed Services Committee's subcommittee on Emerging Threats and Capabilities, *San Antonio and Washington, D.C.*
- COX, PATRICK (BRENDA), assistant director, Dolph Briscoe Center for American History, The University of Texas at Austin; historian; writer, *Austin*
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- CRUTCHER, RONALD A. (BETTY), provost and executive vice president for academic affairs, Miami University; cellist, *Oxford, OH*
- CRUZ, R. TED (HEIDI), former Solicitor General of Texas; Partner, Morgan, Lewis & Bockius LLP; Adjunct Professor of Law, The University of Texas School of Law, *Austin*
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- CUNNINGHAM, WILLIAM H. (ISABELLA), former president, The University of Texas at Austin; former chancellor, The University of Texas System, *Austin*
- CURTIS, GREGORY (TRACY), editor, *Texas Monthly, 1981-2000*; author, *Austin*

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- DAVIS, D. JACK (GAIL), professor of Art, University of North Texas; director, North Texas Institute for Educators on the Visual Arts, *Denton*
- DAVIS, RAMONA, executive director, Greater Houston Preservation Alliance, *Houston*
- DE WETTER, MARGARET BELDING, artist and poet, *El Paso*
- DEAN, DAVID A. (JEAN), lawyer; former secretary of state, Texas, *Dallas*
- DECHERD, ROBERT W. (MAUREEN), chairman, president, and chief executive officer, A. H. Belo Corporation, *Dallas*
- DE LA TEJA, JESÚS E. (MAGDALENA), Appointed first Texas Historian 2007 by the Governor; Department of History Chair, Texas State University; former president, Board of Directors, Texas State Historical Association, *San Marcos*
- DELCO, WILHELMINA (EXALTON), former member, Texas House of Representatives; civic leader; adjunct professor, Community College Leadership Program, The University of Texas at Austin; and chair, Board of Trustees, Huston-Tillotson College, *Austin*
- DENIUS, FRANKLIN W. (CHARMAINE), lawyer; former president, The University of Texas Ex-Students' Association; member, Constitutional Revision Committee; Distinguished Alumnus, The University of Texas at Austin; decorated veteran of World War II, *Austin*
- DENTON, P. LYNN (MARK), director of the Public History Program at Texas State University, founding Director of the Bob Bullock Texas State History Museum; Past-President, Texas Association of Museums, *Dripping Springs*
- DEWHURST, DAVID, lieutenant governor of Texas, veteran, businessman, rancher, *Austin*
- DICK, JAMES, founder-director, International Festival-Institute at Round Top; concert pianist and teacher, *Round Top*
- DJEREJIAN, EDWARD P. (FRANCOISE HAELTERS), Founding and present Director of the James Al Baker III Institute for Public Policy at Rice University, former U.S. Ambassador to Israel and former U.S. Ambassador to the Syrian Arab Republic, *Houston*
- DOBIE, DUDLEY R., JR. (SAZA), successor trustee, Clayton Foundation of Research; shareholder, Brorby & Crozier, P. C., *Austin*

- DOUGHERTY, J. CHRYS, III, retired attorney; former Honorary French Consul in Austin; former president, State Bar of Texas; former trustee, St. Stephen's Episcopal School, Austin; former trustee, The University of Texas Law School Foundation; trustee, Texas Supreme Court Historical Society, The Austin Project; Administrative vice-chair, Texas Appleseed, *Austin*
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- DUNCAN, CHARLES WILLIAM, JR. (ANNE), chairman, Duncan Interests; former secretary, U.S. Energy Department; deputy secretary, U.S. Defense Department; president, The Coca-Cola Company; chairman, Rotan Mosle Financial Corporation, *Houston*
- DUNCAN, JOHN HOUSE (BRENDA), businessman; chairman, board of trustees, Southwestern University, *Houston*
- EARVIN, LARRY L., president, Huston-Tillotson College; former dean, School of Arts and Sciences, Clark Atlanta University, *Austin*
- EMANUEL, VICTOR LLOYD, naturalist and founder of Victor Emanuel Nature Tours, *Austin*
- FARABEE, KENNETH RAY (MARY MARGARET), former vice-chancellor and general counsel, The University of Texas System; former member, Texas Senate, *Austin*
- FAULKNER, LARRY R. (MARY ANN), president emeritus, The University of Texas at Austin, *Houston*
- FEHRENBACH, T. R. (LILLIAN), author; historian; former chairman, commissioner emeritus, Texas Historical Commission; former chairman, Texas Antiquities Committee; fellow, Texas State Historical Association, *San Antonio*
- FISHER, RICHARD (NANCY), recipient of Service to Democracy Award & Dwight D. Eisenhower Medal for Public Service from the American Assembly; president & CEO, Federal Reserve Bank of Dallas; member, Federal Open Market Committee; former vice chairman, Kissinger McLarty Associates; former deputy, U.S. trade representative; Laureate, Dallas Junior Achievement Business Hall of Fame, *Dallas*
- FLATO, EDWARD C. (KATY), architect, Lake/Flato, *San Antonio*

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- FLEMING, CHERYL (JON), operatic soprano, director & producer; former Dean of Margaret Petree School of Performing Arts in Oklahoma City; former Managing Director of the Tulsa Opera; advisor-consultant of the Metropolitan Opera, National Endowment for the Arts, and the National Endowment for the Humanities; award winning poet, writer on Arts education, children's books author, *North Zulch*
- FLEMING, JON HUGH (CHERYL), educator; consultant; businessman; former president, Texas Wesleyan College; former member, Governor's Select Committee on Public Education, *North Zulch*
- FLORES, DIONICIO, Texas State University Board of regents; executive vice president and editor, *El Paso Times, El Paso*
- FLOWERS, BETTY SUE, former director, Lyndon Baines Johnson Presidential Library, *Austin*
- FRANCIS, JAMES B. JR. (DEBBIE), president, Francis Enterprises, Inc; board of directors, Silverleaf Resorts, Inc; trustee, Southwest Research Institute, *Dallas*
- FRANCIS, L. FREDERICK "RICK" (GINGER), vice chairman, director, Bank of the West; board of directors, Western Refining Inc; Board of Regents Chairman, Texas Tech University System; board of managers, El Paso Workforce Collaborative, *El Paso*
- FRAZIER, DONALD (SUSAN), professor of history, McMurry University; fellow and executive director, Grady McWhiney Research Foundation, *Abilene*
- FROST, PAT (KELLEY), president, Frost National Bank; serves on over ten non-profit boards in San Antonio, *San Antonio*
- FROST, TOM C. (PATRICIA), chairman emeritus, Frost National Bank, *San Antonio*
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- GALVIN, CHARLES O'NEILL (MARGARET), centennial professor of law, emeritus, Vanderbilt University, Nashville; of counsel, Haynes and Boone, L.L.P., Dallas; distinguished professor of law emeritus, Southern Methodist University, *Dallas*

- GARCIA, JULIET VILLARREAL (OSCAR E.), president of The University of Texas at Brownsville and Texas Southmost College, *Brownsville*
- GARNER, BRYAN ANDREW (PAN), author; lecturer; lawyer; president, LawProse, *Dallas*
- GARRETT, JENKINS (VIRGINIA), lawyer; former member, board of regents, The University of Texas System; former chairman, board of trustees, Tarrant County Junior College; distinguished alumnus award, The University of Texas at Austin, *Fort Worth*
- GARWOOD, WILLIAM L. (MERLE), judge, U.S. Court of Appeals, Fifth Circuit, *Austin*
- GEORGE, ROGER JAMES, JR. (CHERYL), trial lawyer, founding partner of George & Donaldson, LLP, *Austin*
- GILLETTE, MICHAEL L. (LEANN), director, Humanities Texas; retired, National Archives, *Austin*
- GILLIS, MALCOLM (ELIZABETH), president, Rice University, *Houston*
- GLICKMAN, JULIUS (SUZAN), past chair, Chancellor's Council, The University of Texas System; past chair, Development Board, The University of Texas; board of directors, Jack S. Blanton Museum of Art; chair, Texas Humanities Council; Advisory Board of Directors, UT Health Science Center; Recipient of pro Bene Meritus, College of Liberal Arts Univ. of Texas; Liberal Arts Council, Univ. of Texas; Recipient of Leon Jaworski Award for Public Service from the Houston Bar Auxiliary; Past Chairman of the Board and President, Houston Public Television; Past Director, Executive Committee, Houston Symphony; Past Director, Greater Houston YMCA; *Houston*
- GOETZMANN, WILLIAM H. (MEWES), Jack S. Blanton Sr. Endowed Chair in History and American Studies, The University of Texas at Austin; Pulitzer Prize-winning author, *Austin*
- GOGUE, GEORGE J. (SUSIE), Chancellor, University of Houston System; President, University of Houston; board of directors, Greater Houston Partnership; member, Texas International Education Consortium, *Houston*
- GOLDSTEIN, JOSEPH L., professor of medicine and molecular genetics, The University of Texas Southwest Medical Center; Nobel laureate in medicine or physiology, *Dallas*
- GORDON, WILLIAM EDWIN (ELIZABETH B.), distinguished professor emeritus, Rice University; foreign secretary (1986-1990), National Academy of Sciences, *Houston*
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- GRANT, JOSEPH M., chairman emeritus, Texas Capital Bancshares, Inc., *Dallas*
- GREENHILL, JOE R. (MARTHA), lawyer; former chief justice, Supreme Court of Texas, *Austin*
- GRUBEN, WILLIAM C. (MARILU), vice president, senior economist, Federal Reserve Bank of Dallas; director, Bank's Center for Latin American Economics; adjunct professor, Department of Economics, Southern Methodist University, & Department of International Studies, University of Texas at Dallas, *Dallas*
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- GUEST, WILLIAM E., attorney; chairman, American Capitol Insurance Company, *Houston*
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- GUTHRIE, JUDITH K., United States Magistrate Judge, U.S. District Court, Eastern District of Texas, *Tyler*
- HAMILTON, ANN THOMAS, senior grant officer, Houston Endowment Inc.; vice-president, Jacob W. & Terese Hershey Foundation, *Houston*
- HAMM, GEORGE FRANCIS (JANE), president emeritus, The University of Texas at Tyler, *Tyler*
- HARDESTY, ROBERT L. (MARY), former president, Southwest Texas State University; former assistant to the president of the United States; former chairman, board of governors, United States Postal Service; former vice-chancellor, The University of Texas System, *Austin*

- HARRIGAN, STEPHEN MICHAEL (SUE ELLEN), author; contributing editor, *Texas Monthly, Austin*
- HARTE, CHRISTOPHER M. (KATHERINE STODDARD POPE), investments, *Portland, ME*
- HARTE, EDWARD HOLMEAD, former publisher, *Corpus Christi Caller-Times, Corpus Christi*
- HAY, JESS, Retired Chairman and CEO, Lomas Financial Group; chairman, Texas Foundation for Higher Education; former member, board of regents, University of Texas System, *Dallas*
- HAYES, PATRICIA A., retired CEO, Seton Healthcare Network, *Austin*
- HECHT, NATHAN LINCOLN, justice, Supreme Court of Texas, *Austin*
- HERSHEY, TERESE TARLTON "TERRY," civic leader; Houston Parks Board; National Association of Flood Plain Managers Foundation; National Recreation and Park Association; Texas Women's Hall of Fame; former board member, National Audubon Society; Trust for Public Lands, Texas Parks and Wildlife Commission; Lady Bird Johnson Wildflower Center; Frances K. Hutchison Medal for distinguished service to conservation, Garden Club of America, *Houston*
- HEYER, GEORGE STUART, JR., professor emeritus, history of doctrine, Austin Presbyterian Theological Seminary, *Austin*
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- HILL, LYDA, president, LH Holdings and Seven Falls Company, *Dallas*
- HINES, GERALD DOUGLAS (BARBARA), chairman, Hines Interests, *Houston*
- HIXON, SARITA A. (ROBERT), Board of Directors, Texas State Historical Association, appointed to Texas Historical Commission 2005, past chair of San Jacinto Museum of History; elected Kenedy County Commissioner, Precinct 3 2008, *Houston*
- HO, JAMES C. (ALLYSON), Solicitor General of Texas; Of Counsel, Gibson, Dunn, & Crutcher, LLP, Dallas; Law Clerk, U.S. Supreme Court Justice Clarence Thomas; Chief Counsel, U.S. Senator John Cornyn, *Dallas*
- HOBBY, DIANA (WILLIAM), *Houston*
- HOBBY, WILLIAM PETTUS (DIANA), lieutenant governor of Texas, 1973-

1991; Radoslav A. Tsanoff Professor, Rice University, 1989–present; Sid Richardson Professor, Lyndon Baines Johnson School of Public Affairs, The University of Texas at Austin, 1991–1997; chancellor, University of Houston System, *Houston*

HOLLAMAN, ELIZABETH E., former head, Trinity Episcopal School, educational consultant; president, Calvalry Consulting, *Galveston*

HOLTZMAN, WAYNE H. (JOAN), professor emeritus of psychology and education; past president, Hogg Foundation for Mental Health, University of Texas at Austin, *Austin*

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HOWE, JOHN P., III, physician; president and CEO, Project Hope, *Washington, D.C.*

HUDSON, EDWARD R. JR. (ANN FRASHER), independent oil producer; board member, Kimbell Art Foundation, Burnett Foundation, Modern Art Museum of Fort Worth, Aspen Art Museum, and Aspen Center for Physics, Friends of Art and Preservation in Embassies, *Fort Worth*

HUEY, MARY EVELYN (GRIFFIN), president emerita, Texas Woman's University, *Denton*

HUFFINES, JAMES R. (PATTY), former chairman of the Board of Regents of the University of Texas System and current vice chairman of the Board of Regents; Chairman, Central & South Texas for Plains Capital Bank, *Austin*

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- INMAN, BOBBY R. (NANCY), admiral, U.S. Navy (retired); investor, *Austin*
- JACK, JANIS GRAHAM (WILLIAM DAVID), U.S. district judge, *Corpus Christi*
- JACKSON, LEE, chancellor, University of North Texas System; former member, Texas House of Representatives; four-time Dallas County Judge, *Dallas*
- JACOBS, GARY, (JESSIE), chairman, Cabo Capital, Advisors, Ltd., *Laredo*
- JAMAIL, JOSEPH D. JR., attorney; philanthropist, *Houston*
- JAMES, THOMAS N. (GLEAVES), cardiologist; Professor of Medicine, Professor of Pathology, Inaugural Holder of the Thomas N. and Gleaves T. James Distinguished Chair in Cardiological Sciences, former president, The University of Texas Medical Branch at Galveston, *Galveston*
- JOHNSON, CLAY III (ANNE), Former Deputy Director, Management, Office of Management and Budget, *Washington D.C.*
- JOHNSON, LUCI BAINES (IAN TURPIN), chair, LBJ Asset Management Partners, *Austin*
- JORDAN, BRYCE (BARBARA), president emeritus, Pennsylvania State University, *Austin*
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- KECK, RAY M. (PATRICIA), president, Texas A&M International University, former provost & vice-president for Academic Affairs, *Laredo*
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- KELLY, DEE J. (JANICE), attorney, *Fort Worth*
- KELSEY, MAVIS PARROTT SR., retired physician; founder and former chief, Kelsey-Seybold Clinic, *Houston*
- KEMPNER, HARRIS L., JR. (HETTA), trustee, H. Kempner; president, Kempner Capital Management, Inc., *Galveston*
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- LABOON, ROBERT BRUCE (RAMONA), of counsel, Locke Lord Bissell & Liddell LLP, *Austin*
- LANE, NEAL (JONI), Malcolm Gillis University professor and senior fellow, James A. Baker III Institute for Public Policy, Department of Physics and Astronomy, Rice University; former director, White House Office of Science and Technology Policy; former director National Science Foundation, *Houston*
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- LEE, ELIZABETH MAXWELL (WILLIAM), head of school, Columbus School for Girls, Columbus, Ohio; former executive director, Foundation for the Education of Young Women; founder, Irma Rangel Leadership School for Young Women, *Dallas*
- LEEBRON, DAVID W. (Y. PING SUN), president, Rice University, former dean Columbia University School of Law, *Houston*
- LEMAISTRE, CHARLES A. (ANDREA), president emeritus, the University of Texas System Cancer Center M. D. Anderson Hospital and Tumor Institute, *San Antonio*

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- LIVINGSTON, WILLIAM S. (LANA), senior vice president, The University of Texas at Austin, *Austin*
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- LOCKE, JOHN PATRICK (RAMONA), president, Locke Holdings, Inc., *Dallas*
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- LOW, GILBERT, lawyer, *Beaumont*
- LOWE, RICHARD (KATHY), Regents Professor, University of North Texas; author and recipient of Jefferson Davis Award of the Museum of the Confederacy for *Walker's Texas Division, CSA: Greyhounds of the Trans-Mississippi*, author of several books, *Denton*
- LOWMAN, ALBERT T. (DARLYNE), past president, Texas Folklore Society, Book Club of Texas, Texas State Historical Association; managing partner, Lowman Ranch, Ltd., *San Marcos*
- MACKINTOSH, PRUDENCE M. (JOHN), author; member, Texas Institute of Letters, *Dallas*
- MACON, JANE (LARRY), attorney, city and trial attorney, City of San Antonio, *San Antonio*
- MADDEN, WALES H., JR. (ABBIE), attorney; former member, board of regents, The University of Texas System, *Amarillo*
- MARCUS, NANCY CAIN, professor, Southern Methodist University, former professor at University of Dallas and American Academy in Rome. Serves on boards of Dallas Center for the Performing Arts Foundation, Trinity Trust, Dallas Committee on Foreign Relations, and Dallas Institute of Humanities and Culture. Appointed to Commission on 21st Century Colleges and Universities and to Humanities Texas Board of Directors. Received presidential appointment as a United States Public Delegate to the United Nations General Assembly in 2001, *Dallas*

- MARGO, ADAIR WAKEFIELD (DONALD R. "DEE"), owner, Adair Margo Gallery; member, Texas Higher Education Coordinating Board; State Advisory Council, Texas Book Festival; chairman, President's Council on the Arts and Humanities, *El Paso*
- MARK, HANS (MARION), professor of aerospace engineering, The University of Texas at Austin, *Austin*
- MARSH, GWENDOLYN "WENDY" O. (STANLEY), civic volunteer active in arts and education, *Amarillo*
- MARTIN, JAMES C., former associate director, Center for American History, The University of Texas at Austin; former executive director, San Jacinto Museum of History, Houston; Department of Special Collections, The University of Texas; Arlington; and the Texas State Historical Association, Austin, retired, *Austin*
- MARTIN, ROBERT S. (BARBARA), former director, Institute for Museum and Library Services; former director, Texas State Library, *Dallas*
- MARTINEZ, PHILIP, United States District Judge, Western District of Texas; former Judge of the 327th District Court; member American Law Institute; former director El Paso Legal Assistance Society, El Paso Holocaust Museum, El Paso Cancer Treatment Center, and Hispanic Leadership Institute, *El Paso*
- MARTINEZ, VIDAL G. (DEBORAH), partner, Franklin, Cardwell, & Jones; Chairman, Texas Public Education Reform Foundation, *Houston*
- MARZIO, PETER CORT, director, the Museum of Fine Arts, Houston, *Houston*
- MATTHEWS, JUDY JONES, president, Dodge Jones Foundation, *Abilene*
- MATTHEWS, KATHLEEN SHIVE, Stewart Memorial Professor, Biochemistry and Cell Biology, Wiess School of Natural Sciences, Rice University; elected to American Association for the Advancement of Science, *Houston*
- MCCOMBS, B. J. "RED" (CHARLINE), owner, McCombs Enterprises, *San Antonio*
- MCCORQUODALE, ROBIN HUNT; novelist, *Houston*
- MCCOWN, F. SCOTT (MAURA POWERS), executive director, Center for Public Policy Priorities, retired judge, 345th District Court, Travis County, Texas, named by *Texas Monthly* as one of "The 25 Most Powerful People in Texas Politics," *Austin*

- MCDERMOTT, MARGARET (EUGENE), The University of Texas at Austin Distinguished Alumna; patron of the arts, education, and medicine in various community involvements; member, International Council of Museum of Modern Art in New York and the Dallas Shakespeare Club; honorary alumnus of the Massachusetts Institute of Technology, *Dallas*
- MCFADDEN, JOSEPH M., president emeritus, professor of history, University of St. Thomas, *Houston*
- MCHUGH, M. COLLEEN, member, Board of Regents, The University of Texas System, *Corpus Christi*
- MCKNIGHT, JOSEPH WEBB (MIMI), professor, Southern Methodist School of Law; legal historian; law reformer, *Dallas*
- MCLAUGHLIN, JOHN MARK (AMY), manager, Double M Ranch, Ltd; lawyer; chairman, Texas State Bank, San Angelo, *San Angelo*
- MCNEILL, LARRY, past president, Texas State Historical Association; president, Texas Supreme Court Historical Society; president, Clark, Thomas & Winters, P.C., *Austin*
- MCREYNOLDS, JIM (JUDY), member, Texas House of Representatives; former faculty member, Stephen F. Austin State University; owner, Chaparral Energy, Inc., *Lufkin*
- MENDELSON, JOHN (ANNE), president of The University of Texas M.D. Anderson Cancer Center in Houston since 1996, board member of Greater Houston Partnership, Houston Technology Center, BioHouston and Houston Forum, *Houston*
- MIDDLETON, HARRY J. (MIRIAM), director emeritus, Lyndon B. Johnson Presidential Library and Museum; executive director, Lyndon B. Johnson Foundation, *Austin*
- MILLER, CHARLES (BETH), *Houston*
- MONDAY, JANE CLEMENTS (CHARLES), author; former regent, Texas State University System; former mayor, City of Huntsville, *Huntsville*
- MOORE, J. SAM, JR. (GRETA), retired lawyer; former chairman, Texas Committee for the Humanities; former member, Texas Law Review Association, *El Paso*
- MOSLE, PAULA MEREDITH, life trustee, former chairman, Hockaday School; former dean of women, Rice University; former governor, current trustee advisor, Rice University; trustee, The St. Michael Foundation, *Dallas*

- MULLINS, CHARLES B. (STELLA), executive vice chancellor for Health Affairs Emeritus; Ashbel Smith professor emeritus; consultant, Southwestern Medical Center, *Dallas*
- MURDOCK, STEVE H. (MARY ZEY), professor, Department of Sociology, Rice University. Presidential appointee to head United States Census Bureau; Allyn and Gladys Cline chair in Sociology, Rice University; State Demographer of Texas, *San Antonio*
- MURPHY, EWELL E., JR., lawyer, retired partner, Baker & Botts L.L.P.; distinguished lecturer, University of Houston Law Center, *Houston*
- NATALICIO, DIANA S., president, The University of Texas at El Paso; member, Texas Women's Hall of Fame; author, *El Paso*
- NEWTON, W. FRANK (NANCY JO), president of the Beaumont Foundation of America, a national resource for education in the field of technology. Past President of the State Bar of Texas and former Dean and Professor of Law at Texas Tech Law School, *Beaumont*
- NICKLAUS, HELEN CAROL (TED), The University of Texas Liberal Arts Foundation Advisory Council, recipient of the Jim Veninga Award for Excellence in Humanities, Texas Council for the Humanities, *Amarillo*
- NYE, ERLE A. (ALICE), chairman emeritus, TXU Corp; former chairman, current regent, Texas A&M University System, *Dallas*
- O'CONNOR, MACONDA B., philanthropist, scholar, and public activist, *Houston*
- OLSON, LYNDON L., JR. (KAY), former U.S. Ambassador to Sweden, *Waco*
- OSHINSKY, DAVID M. (JANE), Jack S. Blanton Chair in History at The University of Texas at Austin; won Pulitzer Prize for History 2006 for *Polio: An American Story*; specialist in 20th century U.S. political and cultural history; frequent contributor to *NY Times* and other national publications, *Austin*
- O'TOOLE, THOMAS F. (JANE), managing partner, Glenhest, Ltd; Director, National Alliance for Mental Illness, *Dallas*
- OXFORD, PATRICK CUNNINGHAM (KATE), Chairman, Bracewell & Giuliani LLP; board of regents, University of Texas Systems; board member, M.D. Anderson Outreach, Inc. & Texas Medical Center, *Houston*
- PALAIMA, THOMAS G., professor of Classics at The University of Texas at Austin, *Austin*

- PAREDES, RAYMUND A., Commissioner of Higher Education, Texas Higher Education Coordinating Board; board of directors, Texas Cultural Trust; board of trustees, Mercy College, New York, *Austin*
- PATTERSON, PATRICIA M., president, Patterson Investments, Inc; board of directors, Hockaday School, *Dallas*
- PFEIFFER, FRED N. (ANN MARIA), professional engineer; attorney; former General Manager, San Antonio River Authority, *San Antonio*
- PHILLIPS, JEANNE JOHNSON (DAVID), senior vice president, Corporate Affairs and International Relations, Hunt Consolidated, Inc., Hunt Oil Company, Inc., *Dallas*
- PHILLIPS, THOMAS ROYAL (LYN), attorney, Baker Botts, LLP, *Austin*
- POPE, JACK (ALLENE), former chief justice, Supreme Court of Texas, *Austin*
- PORTER-SCOTT, JENNY LIND (LAWRENCE E.), poet and educator, former poet laureate of Texas, *Austin*
- POWELL, BOONE (DIANNE), president, Ford, Powell, & Carson, Architects; College of Fellows, American Institute of Architects; former president, Texas Society of Architects; peer professional, U.S. General Services Administration, *San Antonio*
- POWERS, WILLIAM C. (KIM HEIBRUN), president, The University of Texas at Austin, Hines H. Baker and Thelma Kelly Baker Chair, University Distinguished Teaching Professor, *Austin*
- PRADO, EDWARD C. (MARIA), U.S. Circuit Judge, U.S. Court of Appeals; former U.S. District Court Judge, Western District of Texas; former U.S. Attorney, Western District of Texas, *San Antonio*
- PRESSLER, H. PAUL, III (NANCY), justice (retired), Court of Appeals of Texas, Fourteenth Supreme Judicial District, *Houston*
- PROTHRO, CAREN H. (C. VINCENT), member of board of Dallas Museum of Art, Dallas Center for the Performing Arts Foundation, and Southwestern Medical Foundation, *Dallas*
- RAMEY, TOM B., JR. (JILL), lawyer; chief justice, Twelfth Court of Appeals, *Tyler*
- RAMIREZ, MARIO E. (SARAH), physician; past member, board of regents, the University of Texas System; vice-president for South Texas Initiatives University of Texas Health Science Center San Antonio, *Rio Grande City*
- RANDALL, EDWARD, III (ELLEN), private investor, *Houston*

- RANDALL, RISHER (FAIRFAX), former senior vice president and director, American General Investment Corporation; manager, family trusts, investments, and real estate, *Houston*
- REASONER, HARRY MAX (MACEY), lawyer; senior partner, Vinson & Elkins, *Houston*
- REAUD, WAYNE A., attorney and philanthropist; member of The University of Texas System Chancellor's Council, *Beaumont*
- REAVLEY, THOMAS M. (CAROLYN DINEEN KING), judge, U.S. Court of Appeals, Fifth Circuit, *Austin*
- REYNOLDS, HERBERT H. (JOY), president emeritus, Baylor University; Air Force/NASA psychologist and neuroscientist, 1948-1968, *Waco*
- RHODES, CHARLOTTE W. (ALEC), patron, Shakespeare at Winedale; chancellor's council, The University of Texas at Austin; Harry Ransom Humanities Research Center Advisory Council, The University of Texas at Austin, *Dripping Springs*
- RITTER, GRETCHEN, Vice provost and professor of government at The University of Texas at Austin. Former Director of the Center for Women and Gender Studies and former co-chair of the Gender Equity Task Force at UT Austin. Serves on Program Committee for the Foundation of the Ann Richards School and the Intercollegiate Women's Athletics Committee for Y Sports, *Austin*
- ROACH, JOYCE G., fellow, Texas State Historical Association and Texas Folklore Society; Carr P. Collins prize for non-fiction, Texas Institute of Letters; president, Horned Lizard Conservation Society, *Keller*
- ROBINSON, MARY LOU, U.S. district judge; former state appellate and trial judge, *Amarillo*
- RODRIGUEZ, EDUARDO ROBERTO, attorney, Rodriguez, Colvin & Chaney, L.L.P., *Brownsville*
- RODRIGUEZ, RAÚL (LORENA), managing director and CEO, North American Development Bank, *San Antonio*
- ROGERS, ELIZABETH, Assistant Federal Public Defender, Western District of Texas since 1984, board of directors, State Bar of Texas 2005-2008, *Alpine*
- ROGERS, JESSE W. (KAREN), president, Midwestern State University; Commissioner, Southern Association of Colleges and Schools, *Wichita Falls*
- ROMO, RICARDO (HARRIETT), president, The University of Texas at San Antonio, *San Antonio*

ROVE, KARL C., Fox News Contributor, Columnist for the *Wall Street Journal* and *Newsweek*, *Washington, D.C.*

RUTFORD, ROBERT HOXIE (MARJORIE ANN), Excellence in Education Foundation Chair in Geoscience, The University of Texas at Dallas; former president, The University of Texas at Dallas; former director, Division of Polar Programs, National Science Foundation; president, Scientific Committee on Antarctic Research, *Richardson*

SANSOM, ANDREW (NONA), executive director, River Systems Institute and Research Professor of Geography at Texas State University San Marcos; former executive director, Texas Parks & Wildlife Department; executive director, Texas Nature Conservancy; founder, The Parks and Wildlife Foundation of Texas, *San Marcos*

SCHRUM, JAKE B. (JANE), president, Southwestern University, *Georgetown*

SCHWITTERS, ROY F. (KAREN), S. W. Richardson Regents Chair in Physics, The University of Texas at Austin; former director, Super Conducting Super Collider, *Austin*

SELDIN, DONALD W., William Buchanan and The University of Texas System Professor of Internal Medicine, The University of Texas Southwestern Medical School, *Dallas*

SHERMAN, MAX RAY (GENE ALICE), professor and dean emeritus, Lyndon Baines Johnson School of Public Affairs, The University of Texas at Austin; former president, West Texas State University, *Austin*

SHILLING, ROY B., JR. (MARGARET), president emeritus, Southwestern University, *Austin*

SHINE, KENNETH I. (CAROLYN), Executive Vice Chancellor for Health Affairs at The University of Texas System Administration, *Austin*

SHIPLEY, GEORGE (DONNA), president and chief executive officer, Shipley & Associates, Inc., *Austin*

SHIVERS, ALLAN "BUD", JR., chairman, Shivers Group, Inc.; chairman, Seton Fund, *Austin*

SMITH, BEA ANN, Texas Court of Appeals in Austin, Adjunct Professor, The University of Texas School of Law, *Austin*

SMITH, CULLEN (MICKEY), attorney, former president of the State Bar of Texas; member, Advisory Council, College of the Arts and Sciences, Baylor University, *China Spring*

- SMITH, EVAN (JULIA), member, board of directors, Austin Film Society; board of directors Jack S. Blanton Museum of Art, Headliners Club, Trinity Episcopal School & Matinee Media, *Austin*
- SMITH, FRANK C., JR. (KATHERINE), electrical engineer; specialist in data processing and geosciences, *Houston*
- SMITH, STEVEN ESCAR (NATALIE), director and C. Clifford Wendler Professor, Cushing Memorial Library and Archives, and associate dean for advancement, Texas A&M University Libraries, *College Station*
- SPECK, LAWRENCE W., W. L. Moody Centennial Professor in the School of Architecture at The University of Texas at Austin, Dean School of Architecture 1992-2001, principal in Page Southerland Page, and American Institute of Architects Fellow, *Austin*
- SPECTOR, ROSE (MORRIS), former Texas Supreme Court Justice, trial judge, and District Judge, *San Antonio*
- SPIVEY, BROADUS A. (RUTH ANN), past president, State Bar of Texas, shareholder, Spivey & Ainsworth P.C., *Austin*
- STALEY, THOMAS (CAROLYN), director, Harry Ransom Humanities Research Center; Harry Ransom Chair of Liberal Arts; professor of English, The University of Texas at Austin, *Austin*
- STARK, LOIS E. (GEORGE), author and film producer; trustee of The Alley Theatre, Texas Children's Hospital, St. John's School, Sarah Lawrence College, Texas Humanities, Texas Commission on the Arts, and the Harry Ransom Center; and a Fellow of American Leadership Forum. *Houston*
- STEINER, FREDERICK (ANNA), dean, School of Architecture, The University of Texas at Austin; Henry M. Rockwell Chair in Architecture, *Austin*
- STEPHENS, F. L. "STEVE" (POLLYANNA), former chairman, CEO, and co-founder, Town & Country Food Stores, Inc., *San Angelo*
- STEVES, EDWARD GALT (NANCY), CEO, Steves & Sons, Inc., *San Antonio*
- STEVES, MARSHALL T. (JANE), president and CEO of Crest Doors, Inc.; member, McDonald Observatory Board of Visitors; past managing partner, Mathews and Branscomb; past clerk, Federal Judge John H. Woods, *San Antonio*
- STOBO, JOHN D. (MARY ANN), senior vice president for health sciences and services for the University of California, *Oakland, CA*

- STOREY, CHARLES PORTER, JR. (GAIL), physician; author; Executive Vice-President American Academy of Hospice and Palliative Medicine, Palliative Care Consultant, Colorado Permanente Medical Group, *Boulder, CO*
- STRAYHORN, CAROLE KEETON (ED), former Comptroller of Public Accounts; former Texas Railroad Commissioner; Mayor of Austin; president, Austin Community College Board of Trustees; president, Austin Independent School District Board, *Austin*
- STREAM, KATHRYN SHEAFFER (RICHARD), former senior vice-president and director of the National Center for Human Performance, Texas Medical Center, Houston; advisor to the National Center for Human Performance and the Women's Health Network; Kathryn S. Stream Leadership Award; Board of the Schull Institute Foundation, *Denton*
- STRONG, LOUISE CONNALLY (BEEMAN), professor of medical genetics; Sue and Radcliffe Chair, The University of Texas System Cancer Center; Phi Beta Kappa, *Houston*
- STUART, ANN, Chancellor & President Texas Woman's University, past President, Rensselaer at Hartford, Connecticut, *Denton*
- STUART, CLAUDIA (HAROLD), professor of Sociology, Criminal Justice, and Sports and Exercise Sciences at West Texas A&M University; author, *My Private Stock, Expressions, All Along Life's Journey* and *Living Out Loud, An Anthology of Poetry*, co-author *Sociology--The New Millennium*, second edition, *Amarillo*
- SULLIVAN, TERESA A. (DOUG LAYCOCK), 'provost & executive vice president, Academic Affairs, University of Michigan; professor, Sociology, College of Literature, Science & the Arts, University of Michigan, *Ann Arbor, MI*
- SUTTON, JOHN E. (NANCY), A. W. Walker Centennial Chair in Law Emeritus, The University of Texas at Austin; former dean, The University Texas Law School; former practicing attorney, San Antonio and San Angelo, *Austin and San Angelo*
- TAYLOR, LONN (DEDIE), board member, Texas State Historical Association; former Historian, National Museum of American History, Smithsonian Institution, *Fort Davis*
- TEMPLE, ELLEN C. (ARTHUR "BUDDY" III), former member and vice-chair, board of regents, The University of Texas System; publisher, Ellen C. Temple Publishing, Inc., *Lufkin*
- TEMPLE, LARRY (LOUANN), lawyer; former chairman, Texas Higher Education Coordinating Board, *Austin*

- THOMAS, GAIL GRIFFEN (ROBERT), president, The Trinity Trust Foundation, Dallas; founder, CEO, Cities Alive, *Dallas*
- THOMASSON, CHARLES W. (WILLA), lawyer, *Corpus Christi*
- TOBIN, DON, (PEGGY), former president, American Association of Petroleum Geologists, *Bandera*
- TOTTEN, HERMAN LAVON, dean, School of Library & Information Sciences, University of North Texas; member, National Commission on Library & Information Science; former president, Texas Library Association, *Denton*
- TRAUTH, DENISE (JOHN HUFFMAN), president, Texas State University; writer, *San Marcos*
- TROTTER, BILLY BOB (PEGGY), pathologist; emeritus director, Laboratories of Hendrick Medical Center, *Abilene*
- TYLER, RON C. (PAULA), director, Amon Carter Museum, Fort Worth; former director, Texas State Historical Association and the Center for Studies in Texas History; former professor of history, The University of Texas at Austin, *Fort Worth*
- UNTERMAYER, CHASE (DIANA), U.S. vice chairman of Strategic Real Estate Advisors, former United States Ambassador to Qatar, former Assistant Secretary of the Navy, served as Director of Presidential Personnel under George H. W. Bush, former vice president for government affairs and professor of public policy at the UT Health Science Center, *Houston*
- VENINGA, JAMES F. (CATHERINE WILLIAMS), associate professor and chair, Wisconsin Institute for Public Policy and Service, *Wausau, WI*
- VENNEMA, DIANE STANLEY (PETER), author and illustrator, *Houston*
- VICK, FRANCES BRANNEN, former director and co-founder, University of North Texas Press; past president, Texas Institute of Letters; past president, Texas State Historical Association, *Dallas*
- VON ESCHENBACH, ANDREW C. (MADELYN), former Commissioner, US FDA; former Director, National Cancer Institute; former Executive VP and Chief Academic Officer, UT M.D. Anderson Cancer Center; Roy M. and Phyllis Gough Huffington Clinical Research Distinguished Chair in Urologic Oncology, UT M.D. Anderson Cancer Center in Houston; instructor, urology, University of Pennsylvania School of Medicine; Lieutenant Commander (ret.), US Navy, *Montgomery*

- WAINERDI, RICHARD E. (ANGELA), president and CEO, Texas Medical Center, *Houston*
- WARNER, DAVID C. (PHYLLIS), professor, Lyndon B. Johnson School of Public Affairs, University of Texas at Austin, *Austin*
- WEDDINGTON, SARAH RAGLE, lawyer; adjunct professor, The University of Texas at Austin; former member, Texas House of Representatives; former assistant to the president of the United States; former general counsel, U.S. Department of Agriculture; author, *Austin*
- WEINBERG, LOUISE (STEVEN), Holder of the William B. Bates Chair for the Administration of Justice and professor of law, The University of Texas at Austin, *Austin*
- WEINBERG, STEVEN (LOUISE), Josey-Welch Foundation Chair in Science and Regental Professor, University of Texas at Austin; Nobel Prize in physics; research and publications in physics and astronomy, *Austin*
- WHITE, L. MICHAEL, Ronald Nelson Smith Endowed Chair in Classics, Founder of Religious Studies Program, Professor of Religious Studies, The University of Texas at Austin, *Austin*
- WHITMORE, JON S. (JENNIFER), president, San Jose State University, *San Jose, CA*
- WHITTENBURG, GEORGE (ANN), lawyer; member, Council of the American Law Institute; Life Fellow, American Bar Foundation, *Amarillo*
- WILDENTHAL, C. KERN (MARGARET), president, Southwestern Medical Foundation, *Dallas*
- WILHELM, MARILYN, founder-director, Wilhelm Schole International; author, *Houston*
- WILSON, ISABEL BROWN (WALLACE S.), board of trustees: The Brown Foundation, Houston; Smith College, Northampton, MA; chairman, Museum of Fine Arts, Houston; board of visitors, The University of Texas M.D. Anderson Cancer Center; advisory board, J.P. Morgan Chase Bank, Texas, *Houston*
- WILSON, ROSINE MCFADDIN, historian and author; former president, Texas Historical Foundation; vice-chairman, Texas Historical Commission; president of the board, McFaddin-Ward House Museum; trustee, McFaddin-Ward Foundation; trustee, San Jacinto Museum of History, *Beaumont*
- WINTERS, J. SAM (DOROTHY), attorney, *Austin*

- WITTLIFF, WILLIAM DALE (SALLY), typographer and publisher; president, Encino Press; movie scriptwriter and film producer; councilor, Texas Institute of Letters, *Austin*
- WOOD, JANE ROBERTS, English professor, Dallas County Community College District, Fiction Writing, SMU; fellow, National Endowment of the Arts, National Endowment of Humanities; recipient, Texas Institute of Letters Short Story Award, *Argyle*
- WOODRUFF, PAUL B. (LUCIA), professor of philosophy, The University of Texas at Austin; author, *Austin*
- WRIGHT, GEORGE CARLTON (VALERIE), president, Prairie View A&M University, *Prairie View*
- WRIGHT, JAMES S. (MARY), architect; senior partner, Page Southerland Page, *Dallas*
- WRIGHT, LAWRENCE GEORGE (ROBERTA), author; staff writer, *The New Yorker*; screenwriter, *Austin*
- WRIGHT, WILLIAM P. "BILL", JR. (ALICE), investments, author, photographer, former chairman, Western Marketing, Inc.; former member, National Council on the Humanities; former chairman, Texas Council on the Humanities; board of managers, School of American Research, Santa Fe; director, National Trust for the Humanities; The University of Texas Press Advisory Council; commissioner, Texas Commission on the Arts, *Abilene*
- WYNN, WILLIAM PATRICK, former Mayor of Austin; President, Civitas Investments; member, Urban Land Institute; chair, Energy Committee, US Conference of Mayors; Energy Executive of the Year, Association of Energy Engineers; Local Public Official of the Year, National Association of Social Workers, *Austin*
- YEAGER, ELIZABETH, director, secretary, Perkins-Prothro Foundation; chairperson, Harry Ransom Center Advisory Council; member, Foundation and System Board, Cook Children's Healthcare System, *Wichita Falls*
- YEAGER, KATHLEEN "KAY" (FRANK), former mayor, Wichita Falls, *Wichita Falls*
- YOUNG, BARNEY T. (SALLY), founding partner, Rain, Harrell, Emery, Young, and Duke; of counsel Locke, Liddell & Sapp, *Dallas*
- YOUNG, JAY T. (LAURIE), director, Business Development, Perot Systems Corp; Lt. Commander, US Naval Reserve; board of directors, Admiral Nimitz Foundation; book reviewer, Dallas Morning News, *Plano*

ZAFFIRINI, JUDITH (CARLOS), senator for the twenty-first district of Texas; owner, Zaffirini Communications, *Laredo*

*Life Member

** Honorary Member

IN MEMORIAM

(Date indicates year of Proceedings in which memorial is published.)

- SAMUEL HANNA ACHESON (1971)
NATHAN ADAMS (1966)
CLAUDE CARROLL ALBRITTON JR.
(1997)
JAMES PATTERSON ALEXANDER
(1948)
AUGUSTUS C. ALLEN
WINNIE ALLEN (1985)
DILLON ANDERSON (1973)
ROBERT BERNERD ANDERSON
(1990)
ANNE LEGENDRE ARMSTRONG
(2008)
THOMAS D. ANDERSON (2007)
JESSE ANDREWS (1961)
MARK EDWIN ANDREWS (1992)
THOMAS REEVES ARMSTRONG
JAMES WILLIAM ASTON
WILLIAM HAWLEY ATWELL (1961)
KENNETH HAZEN AYNESWORTH
(1944)
BURKE BAKER (1964)
HINES HOLT BAKER
JAMES ADDISON BAKER (1941)
JOSEPH BAKER
KARLE WILSON BAKER (1960)
WALTER BROWNE BAKER (1968)
CLINTON STANLEY BANKS (1991)
EDWARD CHRISTIAN HENRY
BANTEL (1964)
REX GAVIN BAKER JR. (2004)
EUGENE CAMPBELL BARKER (1956)
MAGGIE WILKINS HILL BARRY
(1945)
WILLIAM BARTHOLOMEW BATES
(1974)
DEREK H. R. BARTON (1998)
WILLIAM JAMES BATTLE (1955)
WILLIAM BENNETT BEAN (1989)
HENRY M. BELL JR. (1999)
WARREN SYLVANUS BELLOWS
(1966)
HARRY YANDELL BENEDICT (1937)
JOHN MIRZA BENNETT JR. (1993)
LLOYD M. BENTSEN (2006)
GEORGE JOHN BETO (1991)
JOHN HAMILTON BICKETT JR.
(1947)
WILLIAM CAMPBELL BINKLEY
(1970)
JOHN BIRDSALL
CHARLES MCTYEIRE BISHOP (1949)
WILLIAM BENNETT BIZZELL (1944)
JAMES HARVEY BLACK (1958)
ROBERT LEE BLAFFER (1942)
TRUMAN G. BLOCKER JR. (1984)
ROBERT LEE BOBBITT
MEYER BODANSKY (1941)
HERBERT EUGENE BOLTON (1953)
CHARLES PAUL BONER (1979)
CHARLES M. BONJEAN (2008)
GEORGE W. BONNELL
JOHN GUTZON DE LA MOTHE
BORGLUM (1941)
HOWARD TANEY BOYD (1991)
PAUL LEWIS BOYNTON (1958)
EDWARD T. BRANCH
EDWARD N. BRANDT (2007)
LEO BREWSTER (1980)
GEORGE WAVERLEY BRIGGS (1957)
ALBERT PERLEY BROGAN (1983)
GEORGE RUFUS BROWN (1983)
JOHN R. BROWN (1994)
ANDREW DAVIS BRUCE (1968)
JAMES PERRY BRYAN (1975)
LEWIS RANDOLPH BRYAN JR. (1959)
BOB BULLOCK
JOHN W. BUNTON
RICHARD FENNER BURGESS (1945)
WILLIAM HENRY BURGESS (1946)
EMMA KYLE BURLESON (1941)
JOHN HILL BURLESON (1959)
DAVID G. BURNET
CHESTER R. BURNS (2006)
I. W. BURTON
GEORGE A. BUTLER (1992)
JACK L. BUTLER (1990)
CHARLES PEARRE CABELL (1970)
CLIFTON M. CALDWELL
GEORGE CARMACK (2002)
JOHN WILLIAM CARPENTER
EVELYN M. CARRINGTON (1985)

- PAUL CARRINGTON (1989)
 H. BAILEY CARROLL (1966)
 MARY JO CARROLL (1994)
 EDWARD HENRY CARY (1954)
 ALBERT V. CASEY (2004)
 CARLOS EDUARDO CASTAÑEDA
 (1958)
 THOMAS JEFFERSON CHAMBERS
 ASA CRAWFORD CHANDLER (1958)
 MARION NELSON CHRESTMAN
 (1948)
 EDWARD A. CLARK (1992)
 JOSEPH LYNN CLARK (1969)
 RANDOLPH LEE CLARK (1993)
 TOM C. CLARK
 WILLIAM LOCKHART CLAYTON
 (1965)
 THOMAS STONE CLYCE (1946)
 CLAUDE CARR CODY JR. (1960)
 HENRY COHEN (1952)
 HENRY CORNICK COKE JR. (1982)
 MARVIN KEY COLLIE (1990)
 JAMES COLLINSWORTH
 ROGER N. CONGER (1996)
 JOHN BOWDEN CONNALLY JR.
 (1994)
 TOM CONNALLY (1963)
 ARTHUR BENJAMIN CONNOR
 C.W.W. "TEX" COOK (2003)
 JOHN H. COOPER (1993)
 MILLARD COPE (1963)
 CLARENCE COTTAM (1974)
 MARGARET COUSINS (1996)
 MARTIN MCNUITY CRANE (1943)
 CAREY CRONEIS (1971)
 WILLIAM H. CROOK (1997)
 JOSEPH STEPHEN CULLINAN (1937)
 NINA CULLINAN
 ROBERT B. CULLOM
 MINNIE FISHER CUNNINGHAM
 THOMAS WHITE CURRIE (1943)
 JEAN HOUSTON BALDWIN DANIEL
 (2003)
 PRICE DANIEL (1992)
 WILLIAM E. DARDEN (1998)
 HERBERT DAVENPORT
 MORGAN JONES DAVIS (1980)
 GEORGE BANNERMAN DEALEY
 (1946)
 JAMES QUAYLE DEALEY
 MICHAEL ELLIS DEBAKEY (2008)
 EVERETT LEE DEGOLYER (1957)
 GILBERT DENMAN (2004)
 EDGAR A. DEWITT (1975)
 ROSCOE PLIMPTON DEWITT
 ADINA DEZAVALA (1955)
 FAGAN DICKSON
 CHARLES SANFORD DIEHL (1946)
 FRANK CLIFFORD DILLARD (1939)
 J. FRANK DOBIE (1964)
 EZRA WILLIAM DOTY (1994)
 GERRY DOYLE (1999)
 HENRY PATRICK DROUGHT (1958)
 FREDERICA GROSS DUDLEY
 KATHARYN DUFF (1995)
 J. CONRAD DUNAGAN (1994)
 CLYDE EAGLETON (1958)
 DWIGHT DAVID EISENHOWER
 JAMES A. ELKINS (2006)
 EDWIN A. ELLIOTT
 ALEXANDER CASWELL ELLIS (1948)
 JOE EWING ESTES (1991)
 HYMAN JOSEPH ETTLINGER (1986)
 LUTHER HARRIS EVANS
 WILLIAM MAURICE EWING (1973)
 WILLIAM STAMPS FARISH (1942)
 SARAH ROACH FARNSWORTH
 RALPH D. FEIGIN (2008)
 CHARLES W. FERGUSON
 WILLIAM CARRINGTON FINCH
 (2007)
 JOE J. FISHER (2000)
 STERLING WESLEY FISHER
 LAMAR FLEMING JR. (1964)
 LAWRENCE DURWOOD FLEMING
 (2007)
 RICHARD TUDOR FLEMING (1973)
 FRED FARRELL FLORENCE (1960)
 JAMES LAWRENCE FLY
 PAUL JOSEPH FOIK (1941)
 LITTLETON FOWLER
 CHARLES INGE FRANCIS (1969)
 JOE B. FRANTZ (1993)
 LLERENA BEAUFORT FRIEND (1998)
 JESSE NEWMAN GALLAGHER (1943)
 HERBERT PICKENS GAMBRELL
 (1983)
 VIRGINIA LEDDY GAMBRELL (1978)
 WILMER ST. JOHN GARWOOD
 (1989)
 MARY EDNA GEARING (1946)
 SAMUEL WOOD GEISER (1983)
 EUGENE BENJAMIN GERMANY
 (1970)
 ROBERT RANDLE GILBERT (1971)
 GIBB GILCHRIST (1972)
 JOHN WILLIAM GORMLEY (1949)
 MALCOLM KINTNER GRAHAM
 (1941)
 HOWARD DWAYNE GRAVES (2003)
 IRELAND GRAVES (1969)
 MARVIN LEE GRAVES (1953)
 WILLIAM FAIRFAX GRAY
 LEON A. GREEN (1979)
 NEWTON GRESHAM (1996)
 DAVID WENDELL GUION (1981)

- NORMAN HACKERMAN (2007)
 CHARLES WILSON HACKETT (1951)
 WALTER GARNER HALL (2000)
 JOHN HENRY HANNAH JR. (2003)
 RALPH HANNA
 HARRY CLAY HANSZEN (1950)
 FRANKLIN ISRAEL HARBACH (1998)
 THORNTON HARDIE (1969)
 HELEN HARGRAVE (1984)
 JAMES M. HARGROVE (2004)
 HENRY WINSTON HARPER (1943)
 MARION THOMAS HARRINGTON
 GUY BRYAN HARRISON JR. (1988)
 TINSLEY RANDOLPH HARRISON
 JAMES PINCKNEY HART (1987)
 HOUSTON HARTE (1971)
 WILLIAM C. HARVIN III (2007)
 RUTH HARTGRAVES (1995)
 FRANK LEE HAWKINS (1954)
 WILLIAM WOMACK HEATH (1973)
 ERWIN HEINEN (1997)
 JACOB W. HERSHEY (2000)
 J. CARL HERTZOG (1988)
 JOHN EDWARD HICKMAN (1962)
 GEORGE ALFRED HILL JR. (1949)
 GEORGE ALFRED HILL III (1974)
 GEORGE W. HILL (1985)
 JOHN L. HILL JR. (2007)
 JOSEPH M. HILL (1999)
 MARY VAN DEN BERGE HILL (1965)
 ROBERT THOMAS HILL (1941)
 JOHN E. HINES (1998)
 OVETA CULP HOBBY (1995)
 WILLIAM PETTUS HOBBY (1964)
 ELA HOCKADAY (1956)
 PHILIP G. HOFFMAN (2008)
 WILLIAM RANSOM HOGAN (1971)
 IMA HOGG (1975)
 THOMAS STEELE HOLDEN (1958)
 EUGENE HOLMAN (1962)
 JAMES LEMUEL HOLLOWAY JR.
 PAUL HORGAN (1997)
 A. C. HORTON
 EDWARD MANDELL HOUSE (1939)
 ANDREW JACKSON HOUSTON
 (1941)
 SAM HOUSTON
 WILLIAM VERMILLION HOUSTON
 (1969)
 WILLIAM EAGER HOWARD (1948)
 LOUIS HERMAN HUBBARD (1972)
 JOHN AUGUSTUS HULEN (1957)
 WILMER BRADY HUNT (1982)
 FRANK GRANGER HUNTRESS (1955)
 PETER HURD
 HOBART HUSON
 JOSEPH CHAPPELL HUTCHESON JR.
 JUNE HYER (1980)
 JULIA BEDFORD IDESON (1945)
 FRANK N. IKARD SR. (1990)
 R. A. IRION
 WATROUS HENRY IRONS (1969)
 PATRICK C. JACK
 HERMAN GERLACH JAMES (1966)
 LEON JAWORSKI (1982)
 JOHN LEROY JEFFERS (1979)
 JOHN HOLMES JENKINS III (1991)
 HERBERT SPENCER JENNINGS
 (1966)
 CLAUDIA T. JOHNSON (2007)
 LYNDON BAINES JOHNSON (1973)
 WILLIAM PARKS JOHNSON (1970)
 MARGUERITE JOHNSTON (2005)
 ANSON JONES
 CLIFFORD BARTLETT JONES (1973)
 ERIN BAIN JONES (1974)
 EVERETT HOLLAND JONES (1996)
 HOWARD MUMFORD JONES
 JESSE HOLMAN JONES (1956)
 JOHN TILFORD JONES JR. (1993)
 MARVIN JONES (1977)
 MRS. PERCY JONES (1978)
 JOHN ERIK JONSSON (1996)
 JACK S. JOSEY (2004)
 WILLIAM WAYNE JUSTICE (2009)
 DAVID S. KAUFMAN
 PAGE KEETON
 HERBERT ANTHONY KELLAR (1955)
 ROBERT MARVIN KELLY (1958)
 ELMER STEPHEN KELTON (2009)
 LOUIS WILTZ KEMP (1956)
 HARRIS LEON KEMPNER SR. (1987)
 RUTH LEVY KEMPNER (2008)
 THOMAS MARTIN KENNERLY
 (1966)
 DANIEL E. KILGORE (1995)
 WILLIAM JACKSON KILGORE (1993)
 EDWARD KILMAN (1969)
 FRANK HAVILAND KING
 WILLIAM ALEXANDER KIRKLAND
 (1988)
 ROBERT JUSTUS KLEBERG JR. (1974)
 DOROTHY W. KNEPPER (1998)
 JOHN FRANCIS KNOTT
 GEORGE KOZMETSKY (2003)
 LAURA LETTIE SMITH KREY (1985)
 ERNEST LYNN KURTH (1960)
 POLYKARP KUSCH (1993)
 LUCIUS MIRABEAU LAMAR III (1978)
 MIRABEAU B. LAMAR
 FRANCIS MARION LAW (1970)
 THOMAS H. LAW (2006)
 F. LEE LAWRENCE (1996)
 CHAUNCEY DEPEW LEAKE (1978)
 LOWELL H. LEBERMANN (2009)
 AMY FREEMAN LEE (2004)

- UMPHREY LEE (1958)
 DAVID LEFKOWITZ (1956)
 MARK LEMMON (1975)
 J. HUGH LIEDTKE (2003)
 JEWEL PRESTON LIGHTFOOT (1950)
 DENTON RAY LINDLEY (1986)
 EUGENE PERRY LOCKE (1946)
 JOHN AVERY LOMAX (1948)
 WALTER EWING LONG (1973)
 JOHN TIPTON LONSDALE (1960)
 BEN F. LOVE (2006)
 EDGAR ODELL LOVETT (1957)
 H. MALCOLM LOVETT
 ROBERT EMMET LUCEY (1977)
 WILLIAM WRIGHT LYNCH
 ABNER VERNON MCCALL (1995)
 JOHN LAWTON MCCARTY
 JAMES WOOTEN MCCLENDON
 (1972)
 L. E. MCCOLLUM (1996)
 CHARLES TILFORD MCCORMICK
 (1964)
 IRELINE DEWITT MCCORMICK
 MALCOLM MCCORQUODALE JR.
 (1990)
 JOHN W. MCCULLOUGH (1987)
 TOM LEE MCCULLOUGH (1966)
 EUGENE MCDERMOTT
 GEORGE CREWS MCGHEE (2005)
 JOHN HATHAWAY MCGINNIS (1960)
 ROBERT C. MCGINNIS (1994)
 GEORGE LESCHER MACGREGOR
 (2001)
 STUART MALOLM MCGREGOR
 ALAN DUGALD MCKILLOP (1974)
 BUKNER ABERNATHY MCKINNEY
 (1966)
 HUGH MCLEOD
 LEWIS WINSLOW MACNAUGHTON
 (1969)
 AYLMER GREEN MCNEESE JR.
 (1992)
 ANGUS MCNEILL
 JOHN OLIVER MCREYNOLDS (1942)
 JACK R. MAGUIRE (2001)
 HENRY NEIL MALLON
 GERALD C. MANN (1989)
 STANLEY MARCUS (2001)
 JOHN L. MARGRAVE (2005)
 FRANK BURR MARSH (1940)
 HARRIS MASTERSON III (1997)
 WATT R. MATTHEWS (1997)
 MAURY MAVERICK (1954)
 ROY M. MERSKY (2008)
 BALLINGER MILLS JR. (1992)
 BALLINGER MILLS SR. (1947)
 MERTON MELROSE MINTER (1978)
 PETER MOLYNEAUX
 JAMES TALIAFERRO
 MONTGOMERY (1939)
 DAN MOODY (1966)
 DAN MOODY JR. (2000)
 BERNICE MILBURN MOORE (1993)
 FRED HOLMSLEY MOORE (1985)
 MAURICE THOMPSON MOORE
 TEMPLE HOUSTON MORROW
 JOHN D. MOSELEY (2009)
 JAMES M. MOUDY (2004)
 WILLIAM OWEN MURRAY (1973)
 FRED MERRIAM NELSON
 CHESTER WILLIAM NIMITZ (1965)
 PAT IRELAND NIXON (1965)
 MARY MOODY NORTHEN (1991)
 JAMES RANKIN NORVELL (1969)
 CHILTON O'BRIEN (1983)
 DENNIS O'CONNOR (1997)
 CHARLES FRANCIS O'DONNELL
 (1948)
 JOSEPH GRUNDY O'DONOHUE
 (1956)
 LEVI ARTHUR OLAN (1984)
 TRUEMAN EDGAR O'QUINN (1989)
 JOHN ELZY OWENS (1951)
 WILLIAM A. OWENS (1991)
 LOUIS C. PAGE (1982)
 GLORIA HILL PAPE (2002)
 JUBAL RICHARD PARTEN (1993)
 ADLAI MCMILLAN PATE JR. (1988)
 ANNA J. HARDWICK
 PENNYBACKER (1939)
 HALLY BRYAN PERRY (1966)
 NELSON PHILLIPS (1966)
 GEORGE WASHINGTON PIERCE
 (1966)
 EDMUND LLOYD PINCOFFS (1991)
 BENJAMIN FLOYD PITTINGER
 KENNETH S. PITZER
 GEORGE FRED POOL (1984)
 CHARLES SHIRLEY POTTS (1963)
 HERMAN PAUL PRESSLER JR. (1996)
 CHARLES NELSON PROTHRO (2000)
 HARRY MAYO PROVENCE (1996)
 MAURICE EUGENE PURNELL
 CHARLES PURYEAR (1940)
 CLINTON SIMON QUIN (1956)
 COOPER KIRBY RAGAN
 HOMER PRICE RAINEY (1985)
 CHARLES WILLIAM RAMSDELL
 (1942)
 EDWARD RANDALL (1944)
 EDWARD RANDALL JR. (1970)
 KATHARINE RISHER RANDALL
 (1991)
 LAURA BALLINGER RANDALL
 (1955)
 JO STEWART RANDEL (2002)

- HARRY HUNTT RANSOM (1976)
 EMIL C. RASSMAN
 FANNIE ELIZABETH RATCHFORD
 SAM RAYBURN (1961)
 JOHN SAYRES REDDITT (1972)
 HERBERT H. REYNOLDS (2007)
 LAWRENCE JOSEPH RHEA (1946)
 WILLIAM ALEXANDER RHEA (1941)
 JAMES OTTO RICHARDSON
 RUPERT NORVAL RICHARDSON
 (1987)
 JAMES FRED RIPPY
 A.W. "DUB" RITER (2003)
 SUMMERFIELD G. ROBERTS (1969)
 FRENCH MARTEL ROBERTSON
 (1976)
 CURTICE ROSSER
 JOHN ELIJAH ROSSER (1960)
 ELSPETH DAVIS ROSTOW (2007)
 JOSEPH ROWE
 JAMES EARL RUDDER (1969)
 THOMAS J. RUSK
 MCGRUDER ELLIS SADLER (1966)
 JEFFERSON DAVIS SANDEFER (1940)
 MARLIN ELIJAH SANDLIN
 HYMAN JUDAH SCHACHTEL (1991)
 EDWARD MUEGGE "BUCK"
 SCHIWETZ (1985)
 VICTOR HUMBERT
 SCHOFFELMAYER (1966)
 ARTHUR CARROLL SCOTT (1940)
 ELMER SCOTT (1954)
 JOHN THADDEUS SCOTT (1955)
 WOODROW BRADLEY SEALS (1991)
 TOM SEALY (1992)
 GEORGE DUBOSE SEARS (1974)
 WILLIAM G. SEARS (1997)
 ELIAS HOWARD SELLARDS (1960)
 WILLIAM DEMPSEY SEYBOLD (2004)
 DUDLEY CRAWFORD SHARP
 ESTELLE BOUGHTON SHARP (1965)
 JAMES LEFTWICH SHEPHERD JR.
 (1964)
 MORRIS SHEPPARD (1941)
 JOHN BEN SHEPPERD (1989)
 STUART SHERAR (1969)
 PRESTON SHIRLEY (1991)
 ALLAN SHIVERS (1985)
 RALPH HENDERSON SHUFFLER
 (1975)
 RALPH HENDERSON SHUFFLER II
 (2002)
 D.J. SIBLEY (2005)
 JOHN DAVID SIMPSON JR.
 ALBERT OLIN SINGLETON (1947)
 JOSEPH ROYALL SMILEY (1991)
 A. FRANK SMITH JR. (1993)
 A. FRANK SMITH SR. (1962)
 ASHBEL SMITH
 FRANK CHESLEY SMITH SR. (1970)
 HARLAN J. SMITH (1991)
 HENRY SMITH
 HENRY NASH SMITH
 THOMAS VERNON SMITH (1964)
 HARRIET WINGFIELD SMITHER
 (1955)
 ROBERT S. SPARKMAN (1997)
 RALPH SPENCE (1994)
 JOHN WILLIAM SPIES
 TOM DOUGLAS SPIES (1960)
 CHARLES C. SPRAGUE (2005)
 STEPHEN H. SPURR (1990)
 ROBERT WELDON STAYTON (1963)
 ZOLLIE C. STEAKLEY (1991)
 RALPH WRIGHT STEEN (1980)
 IRA KENDRICK STEPHENS (1956)
 MARSHALL T. STEVES (2001)
 CHARLES PORTER STOREY (2008)
 ROBERT GERALD STOREY (1981)
 GEORGE WILFORD STUMBERG
 HATTON WILLIAM SUMNERS (1962)
 JEROME SUPPLE (2004)
 ROBERT LEE SUTHERLAND (1976)
 HENRY GARDINER SYMONDS (1971)
 MARGARET CLOVER SYMONDS
 (2001)
 WILLIS M. TATE (1989)
 JAMES U. TEAGUE (1996)
 ROBERT EWING THOMASON (1974)
 J. CLEO THOMPSON (1974)
 BASCOM N. TIMMONS (1987)
 LON TINKLE (1980)
 CHARLES RUDOLPH TIPS (1976)
 MARGARET LYNN BATTS TOBIN
 (1994)
 VIRGIL W. TOPAZIO (1999)
 JOHN G. TOWER (1991)
 HENRY TRANTHAM (1961)
 FRANK EDWARD TRITICO SR. (1993)
 ROBERT S. TROTTI (2005)
 GEORGE WASHINGTON TRUETT
 (1944)
 RADOSLAV ANDREA TSANOFF
 (1976)
 EDWARD BLOUNT TUCKER (1972)
 WILLIAM BUCKHOUT TUTTLE
 (1954)
 FRANK E. VANDIVER (2005)
 THOMAS WAYLAND VAUGHAN
 (1952)
 ROBERT ERNEST VINSON (1945)
 LESLIE WAGGENER (1951)
 AGESILAEUS WILSON WALKER JR.
 (1988)
 EVERETT DONALD WALKER (1991)
 RUEL C. WALKER
 THOMAS OTTO WALTON
 FRANK H. WARDLAW (1989)

- ALONZO WASSON (1952)
 WILLIAM WARD WATKIN (1952)
 ROYALL RICHARD WATKINS (1954)
 WALTER PRESCOTT WEBB (1963)
 HARRY BOYER WEISER (1950)
 PETER BOYD WELLS JR. (1991)
 ELIZABETH HOWARD WEST (1948)
 CLARENCE RAY WHARTON (1941)
 JOHN A. WHARTON
 WILLIAM H. WHARTON
 JOHN ARCHIBALD WHEELER (2008)
 WILLIAM MORTON WHEELER
 (1937)
 GAIL WHITCOMB (1994)
 JAMES LEE WHITCOMB
 FRED N. WHITE (2006)
 WILLIAM RICHARDSON WHITE
 (1977)
 C.G. WHITTEN (2001)
 WILLIAM MARVIN WHYBURN
 (1972)
 HARRY CAROTHERS WIESS (1948)
 DOSSIE MARION WIGGINS (1978)
 PLATT K. WIGGINS
 DAN C. WILLIAMS (2001)
 JACK KENNY WILLIAMS (1982)
 ROGER JOHN WILLIAMS (1987)
 LOGAN WILSON (1992)
- DORMAN H. WINFREY (2009)
 JAMES BUCHANAN WINN JR. (1980)
 STUART WOLF (2005)
 JAMES RALPH WOOD (1973)
 DUDLEY KEZER WOODWARD JR.
 (1967)
 WILLIS RAYMOND WOOLRICH
 (1977)
 BENJAMIN HARRISON WOOTEN
 (1971)
 SAM PAUL WORDEN (1988)
 JOS. IRION WORSHAM (2008)
 GUS SESSIONS WORTHAM (1976)
 LYNDALL FINLEY WORTHAM
 FRANK MCREYNOLDS
 WOZENCRAFT (1993)
 FRANK WILSON WOZENCRAFT
 (1967)
 WILLIAM EMBRY WRATHER (1963)
 ANDREW JACKSON WRAY (1981)
 CHARLES ALLEN WRIGHT (2000)
 RALPH WEBSTER YARBOROUGH
 RAMSEY YELVINGTON (1972)
 HUGH HAMPTON YOUNG (1945)
 SAMUEL DOAK YOUNG
 STARK YOUNG
 HENRY B. ZACHRY (1984)
 PAULINE BUTTE ZACHRY (1998)