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The 2005 National Academies report, “Rising Above the Gathering Storm,” describes how improving science and technology research will help the United States sustain its economic viability in the future while industries become increasingly global. One major component of the report is the diminishing quality of K-12 science and math education. The mission of the conference, co-sponsored by the Baker Institute and The Academy of Medicine, Engineering and Science of Texas (TAMEST), is to seek input from stakeholders to assist in the formulation of guidelines with the goal of making Texas a model state for science and math education. The event will serve as an initial and groundbreaking attempt to assess Texas’ strengths as they relate to the National Academies recommendations, to document programs and, just as importantly, to identify significant areas where Texas needs to improve its policies or programs.
The Academy of Medicine, Engineering and Science of Texas (TAMEST)

The Academy of Medicine, Engineering and Science of Texas was established in 2004 to strengthen Texas’ research community by providing broader recognition of the state’s top achievers in medicine, engineering and science, and to build a stronger identity for Texas as an important destination and center of achievement in these fields. Senator Kay Bailey Hutchison and Nobel Laureates Michael Brown and the late Richard Smalley initiated the effort to launch the Academy with the support of leaders from the Texas academic, nonprofit and business communities. Academy members include 10 Nobel Laureates and more than 200 members of the National Academy of Sciences, National Academy of Engineering, and the Institute of Medicine. The annual meeting of The Academy is a two-day event, bringing together the state’s top researchers, university chancellors and presidents, and corporate leaders to foster collaboration and to highlight important developments in science, engineering and medicine.

TAMEST Education Steering Committee

William R. Brinkley, Ph.D. (Co-Chair)
TAMEST Education Committee Co-chair, Dean, Graduate School of Biomedical Sciences, and Senior Vice President, Graduate Sciences, Baylor College of Medicine

Mary Ann Rankin, Ph.D. (Co-Chair)
Dean, College of Natural Sciences, The University of Texas at Austin

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Nobel Laureate and Regental Professor, The University of Texas Southwestern Medical Center

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Senior Fellow in Science and Technology Policy, James A. Baker III Institute for Public Policy, and Malcolm Gillis University Professor, Rice University

Bettie Sue Masters, Ph.D., D.Sc.
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Kurt Swogger
Vice President, Business Development, Dow Chemical Company

Richard Tapia, Ph.D.
Maxfield-Oshman Professor in Engineering, Rice University

Beth Henderson
Executive Director, TAMEST

Gail McGee
Education Project Manager, TAMEST
The James A. Baker III Institute for Public Policy

The mission of the Baker Institute is to help bridge the gap between the theory and practice of public policy by drawing together experts from academia, government, media, business and nongovernmental organizations. By involving policymakers and scholars, as well as students (tomorrow’s policymakers and scholars), the institute seeks to improve the debate on selected public policy issues and to make a difference in the formulation, implementation and evaluation of public policy, both domestic and international. The Baker Institute is an integral part of Rice University, one of the nation’s most distinguished institutions of higher education. The efforts of Baker Institute fellows and affiliated Rice faculty focus on several ongoing research projects, details of which can be found on the institute’s Web site, http://bakerinstitute.org.

The Science and Technology Policy Program

The mission of the Science and Technology Policy Program is to provide a space for policymakers and scientists to engage in substantive dialogue. Through this program the Baker Institute sponsors a series of workshops, lectures, research projects and conferences designed to address a broad range of policy issues that affect scientists and their research as well as the application of science for the public good. Issues addressed by the program include space, health and medicine, energy and the environment, national and domestic security, science education, and the federal government’s support of science and technology. The program is run by Dr. Neal Lane, senior fellow in science and technology policy, and Dr. Kirstin Matthews, science and technology program manager. Details and descriptions of the projects can be found on the program Web site at http://science.bakerinstitute.org.
Improving Science and Math Education: Texas Confronts the Gathering Storm

Acknowledgements

Support for this program has been generously provided by:

The Dow Chemical Company Foundation

The Dow Chemical Company and its Foundation support educational initiatives around the world. Through partnerships with leading educational organizations and the involvement of our employees as volunteers, Dow is committed to improving students’ understanding of math, science and technology.

The Greater Texas Foundation

The Greater Texas Foundation supports excellence in education in the state of Texas through initiatives that enhance math and science education at all levels; increase access to higher education for all students; provide skill enhancement and induction-program opportunities for teachers; and encourage parental and community involvement in education.

We would like to thank the following people for their hard work and efforts to help organize this conference, including Drs. Laurie Connor, Siva Kumari, Kirstin Matthews, Nancy Moreno, Carolyn Nichol, Bill Thomson and Bill Brinkley. We would also like to thank the staff at the Baker Institute for their assistance, including Sonja Fulbright, Melissa Leuellen and Whitney Smith, and the staff of The Academy of Medicine, Engineering and Science of Texas, including, Julie Addington, Cathy Irons, Jan Long and Christine McCoy. We would like to acknowledge the contributions from Senator Hutchison’s office, specifically Lindsay Parham and Matt Mackowiak.
Agenda

Saturday, October 13, 2007
James A. Baker III Hall
Rice University, Houston, Texas

7:30 am  Registration and Continental Breakfast

8:00 am  Welcome and Introductions
Neal Lane, Ph.D.
Senior Fellow in Science and Technology Policy, James A. Baker III Institute for Public Policy, and Malcolm Gillis University Professor, Rice University

Kay Bailey Hutchison
United States Senator from Texas

William R. Brinkley, Ph.D.
TAMEST Education Committee Co-chair, Dean, Graduate School of Biomedical Sciences, and Senior Vice President, Graduate Sciences, Baylor College of Medicine

8:30 am  Keynote Addresses
STEM Exemplary Teacher Recognition
Dixie Ross
AP Calculus Teacher, Pflugerville High School

Math and Science Education for All: A Challenge to the Greatness of Texas
Richard A. Tapia, Ph.D.
Maxfield-Oshman Professor in Engineering, Rice University

Morning Session I: The Texas Snapshot - A Look at the Data
Moderator: William Thomson, Ph.D., Professor and Director, Center for Educational Outreach, Baylor College of Medicine

8:55 am  Steve H. Murdock, Ph.D.
Allyn R. and Gladys M. Cline Professor of Sociology, Rice University
Improving Science and Math Education: Texas Confronts the Gathering Storm

Darvin M. Winick, Ph.D.
Chair, National Assessment Governing Board, and President, Winick & Associates

Timothy Scott, Ph.D.
Director, Math and Science Education, and Associate Dean, Undergraduate Programs, College of Science, Texas A&M University

9:55 am Coffee Break

Morning Session II: Closing the Gap between Texas Schools, Higher Education and the Workforce
Moderator: Nancy Moreno, Ph.D., Associate Professor and Senior Associate Director, Center for Educational Outreach, Baylor College of Medicine

10:15 am Michael Marder, Ph.D.
Co-director, UTeach Natural Sciences Program, and Associate Dean, K-12 Education, College of Natural Sciences, The University of Texas at Austin

Brenda Wojnowski, Ed.D.
Program Officer, T-STEM Initiative, Texas High School Project

Laurie Bricker
Member, Texas Higher Education Coordinating Board, and Associate Director, DEPFA First Albany Securities

Jeanne L. Becker, Ph.D.
Associate Director, National Space Biomedical Research Institute

Morning Session III: Creating a Culture Intent on the Expansion of STEM Education
Moderator: Philip “Uri” Treisman, Ph.D., Professor of Mathematics and Executive Director, Charles A. Dana Center, The University of Texas at Austin

11:30 am Alan J. Friedman, Ph.D.
Consultant, Museum Development and Science Communication, and Former Director and CEO, New York Hall of Science

Rebecca L. Lucore
Executive Director, Bayer Foundation

12:30 pm Lunch
Rice Memorial Center
Lunch Session: Assuring Equity and Excellence in STEM Education for Texas

Moderator: Richard Griffin, Ed.D., Executive Director, Center for School Governance, Executive Leadership and Fiscal Accountability, Harris County Department of Education

12:45 pm  Rod Paige, Ed.D.
Former Secretary of Education, U.S. Department of Education, and Chairman, Chartwell Group

Rob Eissler
Texas State Representative, District 15, Chair, House Committee on Public Education, and President, Eissler and Associates

Florence Shapiro
Texas State Senator, District 8, and Chair, Senate Education Committee

Afternoon Session I: Effective Teaching: Why It's Missing and How to Get It Back

Moderator: Mary Ann Rankin, Ph.D., TAMEST Education Committee Co-chair, and Dean, College of Natural Sciences, The University of Texas at Austin

1:45 pm  Ann Best
Executive Director, Teach for America, Houston

Lawrence D. Abraham, Ed.D.
Professor and Chair, Curriculum and Instruction, and Co-director, UTeach Natural Sciences Program, The University of Texas at Austin

Peter O’Donnell, Jr.
Chairman of the Board, O’Donnell Foundation

Carol Fletcher, Ph.D.
Assistant Director and Research Development Coordinator, Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching, The University of Texas at Austin

Philip “Uri” Treisman, Ph.D.
Professor of Mathematics and Executive Director, Charles A. Dana Center, The University of Texas at Austin

3:00 pm  Coffee Break
Afternoon Session II: Embracing Change: Collaborations, Partnerships and the Next Generation of Innovators in Texas
Moderator: Siva Kumari, Ed.D., Associate Dean, Glasscock School of Continuing Studies, and Advisor to the Provost, K-12 Initiatives, Rice University

3:20 pm  Alexander Khachatryan, Ph.D.
President and CEO, Reasoning Mind, Inc.

Jeff Morgan, Ph.D.
Professor and Chair, Department of Mathematics, University of Houston

Michele Pola, Ed.D.
Chief of Staff for the Superintendent, Houston Independent School District, and Former Executive Director, Houston A+ Challenge

Christopher Barbic
Founder and Head, YES College Preparatory Schools

4:45 pm  Closing Remarks
Larry R. Faulkner, Ph.D.
President, Houston Endowment Inc.

5:00 pm  STEM Teacher Appreciation Reception
Improving Science and Math Education: Texas Confronts the Gathering Storm

Speaker Biographies

Lawrence D. Abraham, Ed.D.
Professor and Chair, Curriculum and Instruction, and Co-director, UTeach Natural Sciences Program, The University of Texas at Austin

Lawrence D. Abraham is professor and chair of the department of curriculum and instruction in the College of Education at The University of Texas (UT) at Austin, a position he has held since 2000. This department is the largest in the College of Education and provides core courses for all students seeking teacher certification, as well as graduate courses for teachers and others interested in advanced study in teaching and learning. He is jointly appointed as professor in the department of kinesiology and health education and has been on the faculty of UT Austin since 1975, with research leaves in 1980-81 at the National Institutes of Health and in 1987-88 at the University of Massachusetts at Amherst. He currently holds the Catherine Mae Parker Centennial Professorship in Education. Abraham serves as a graduate faculty member in programs in movement science (kinesiology), biomedical engineering, neuroscience, science and math education, and curriculum and instruction. In 2002, as an associate dean for teacher education, he spearheaded a major initiative in instructional technology featuring a one-to-one computer laptop program for future teachers. Since 2003 he has served as a co-director of the UTeach Natural Sciences Program for preparing secondary science and mathematics teachers.

Christopher Barbic
Founder and Head, YES College Preparatory Schools

Christopher Barbic is currently the founder and head of schools of YES College Preparatory Schools. In 1998, Barbic founded YES Prep, an open-enrollment State of Texas charter school for grades six through 12. Students at YES Prep are required to gain acceptance into a four-year college or university in order to receive a high-school diploma. YES Prep has grown to five campuses serving 2,100 students and is in the process of creating a public school system in Houston that prepares low-income students for college graduation. YES Prep-Southeast was recently ranked 38th in Newsweek’s issue of the top 100 high schools in the nation. Barbic was appointed to President Bush’s Advisory Commission on Educational Excellence for Hispanic Americans in 2001, received The Gleitsman Foundation’s 2004 Citizen Activist Award (former recipients include Ralph Nader and Vice President Al Gore), and he received the 2006 Vanderbilt University Peabody College Distinguished Alumnus award. Barbic graduated from Vanderbilt University in 1992, with a bachelor’s degree in both English and human development. Upon graduation, he joined Teach for America and taught for six years in the Houston Independent School District.

Jeanne L. Becker, Ph.D.
Associate Director, National Space Biomedical Research Institute

Jeanne Becker is vice president and associate director of the National Space Biomedical Research Institute (NSBRI) and also functions as the chief scientist of the institute. She holds a faculty appointment in the departments of obstetrics, gynecology and surgery at Baylor College of Medicine in Houston. Becker is a member of the National Advisory Committee for the Women’s Health Research Coalition, a Washington, D.C.-based advocacy network of leaders in academic medical, health and scientific institutions, and she currently serves as the chair of the coalition. Becker also serves on the Council for the Organization for the Study of Sex Differences, chairing the Public Policy Committee. She is a member of Anousheh Ansari’s Global Education Initiative and chairs the Space Education Committee. Becker is a member of the Society for Gynecologic Investigation and sits on the board of directors for Bioserve Space Technologies. She serves on several NASA boards and committees and is a recipient of the NASA Space Life Sciences Directorate Professional Achievement Award. Becker received her bachelor of science from the University of Florida and her doctorate in medical sciences from the University of South Florida College of Medicine.
Improving Science and Math Education: Texas Confronts the Gathering Storm

Ann Best
Executive Director, Teach for America, Houston

Ann Best is the executive director of Teach for America in Houston. Upon graduating from college, she was accepted into Teach for America and was assigned to teach kindergarten at Ed White Elementary School in Houston. She taught for four years and while teaching held several leadership positions. Best moved from the classroom to the staff of Teach for America in 2000. She began her work at Teach for America as a program director, where she worked directly with Teach for America corps members to support them in the classroom and ensure they reached their ambitious goals for students. She was the region’s first managing director of the program and was promoted to the role of executive director in 2004. Best has a passion for ensuring that children growing up in low-income communities have the opportunity to attain an excellent education. Her work with Teach for America in the Houston community allows her to work toward making that vision a reality on a daily basis. Best graduated from Oakwood College in 1996 with a bachelor’s degree in communications.

Laurie Bricker
Member, Texas Higher Education Coordinating Board, and Associate Director, DEPFA First Albany Securities

Laurie Bricker is an associate director for DEPFA First Albany Securities, working in public finance. Bricker is a former teacher and educational consultant. In July 2004 she was appointed by Gov. Rick Perry to the Texas Higher Education Coordinating Board. She also serves on the boards of Leadership Houston, Neuhaus Education Center, Friends of HSPVA, University of Texas Library Board, the Greater Houston Collaborative for Children, Holocaust Museum in Houston and Southwest Houston 2000’s advisory boards. Bricker is a senior fellow of the American Leadership Forum and is a member of the University of Texas Commission of 125. She was a member of the Houston ISD Board of Education for more than eight years, and she served as president of the board in both 1999 and 2002. She was president of the Bonham Elementary PTO and Milne Elementary PTA, as well as on the boards of Welch Middle School, High School for the Performing and Visual Arts and Westbury High School. Bricker is a founder of Jewish Women International’s Annual Prejudice Awareness Summit. She is a graduate of The University of Texas, with a bachelor of education degree, and a graduate of the University of Houston, with a master of education degree in curriculum and instruction.

William R. Brinkley, Ph.D.
TAMEST Education Committee Co-chair, Dean, Graduate School of Biomedical Sciences, and Senior Vice President, Graduate Sciences, Baylor College of Medicine

William R. Brinkley, Ph.D., is senior vice president for graduate sciences and dean of the Graduate School of Biomedical Sciences at Baylor College of Medicine, Houston. He is a Distinguished Service Professor in the department of molecular and cellular biology and serves as co-director of the W.M. Keck Center for Computational Biology. He received his doctorate from Iowa State University in 1964, served as a National Institutes of Health postdoctoral trainee at The University of Texas M.D. Anderson Cancer Center and as assistant and associate professor of biology until 1972, when he accepted a position as professor and director of cell biology in the department of human biological chemistry at The University of Texas Medical Branch at Galveston. In 1976, he moved to Baylor College of Medicine as the director of the Division of Cell Structure and Function in the department of cell biology. In 1985, he moved from Texas to become chairman of the department of cell biology and director of the Gregory Fleming James Cystic Fibrosis Center at the University of Alabama at Birmingham. He returned to Baylor College of Medicine in his present position in 1991. Brinkley is the recipient of a Merit Award from the National Institutes of Health, National Cancer Institute, where he has received continuous funding for more than 35 years for his research on cell division and genomic instability in tumor cells.

Rob Eissler
Texas State Representative, District 15, Chair, House Committee on Public Education, and President, Eissler and Associates

Rob Eissler is the president of Eissler and Associates, an executive recruiting firm, and a Texas state representative from District 15, elected in 2002. In his third session in the Texas House, he was appointed to serve as chairman of the Public Education Committee. He also serves on the Human Services Committee. He has been named
Legislator of the Year by the Texas Council of Special Education Administrators, received the Texas Foreign Language Association’s Distinguished Public Service Award, The Texas Art Education Association’s Governmental Award for Meritorious Service in the Arts, The Texas Music Educators Association Distinguished Service Award and the Fighter for Free Enterprise Award by the Texas Association of Business twice. In May 2005 Rep. Eissler was named one of the Top Texas Legislators of the 79th Legislative Session by Capitol Inside. He was presented with the Star Award by Texans Standing Tall in recognition of his efforts during the 79th Legislature to reduce and prevent the consequences of underage alcohol use and binge drinking. In February 2006 Eissler was given a Champion of Free Enterprise Award by the Texas Association of Business and received the STAR award from the Texas Classroom Teachers Association. He was recently listed as Honorable Mention in Texas Monthly magazine’s Ten Best Legislators issue. He has spent 22 years dedicated to the public education system of Texas, 18 of which were on the Conroe Independent School District Board of Trustees, including two terms as president. He received a bachelor of arts in architecture from Princeton University, and then served his country as a carrier-based attack pilot on the U.S.S. John F. Kennedy in the United States Navy.

Larry R. Faulkner, Ph.D.
President, Houston Endowment Inc.

Larry R. Faulkner is president of Houston Endowment Inc., a private philanthropy established by Jesse H. and Mary Gibbs Jones. He is also president emeritus of The University of Texas at Austin. Faulkner served on the chemistry faculties of Harvard University, the University of Illinois, and The University of Texas. At Illinois he was also head of the department of chemistry, dean of the College of Liberal Arts and Sciences, and provost and vice chancellor for academic affairs. In 1998, he returned to The University of Texas at Austin as the 27th president, where he served until 2006. Faulkner became president of Houston Endowment on February 1, 2006. He is a member of the American Academy of Arts and Sciences and currently serves as chair of the National Mathematics Advisory Panel by designation of the U.S. president. He also serves on the boards of Temple-Inland, Sandia National Laboratories and Guaranty Bank. He was chairman of the board of trustees of Internet2 for a five-year period ending in 2007.

Carol Fletcher, Ph.D.
Assistant Director and Research and Development Coordinator, Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching, The University of Texas at Austin

Carol Fletcher is the assistant director and research and development coordinator for the Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching (TRC) at The University of Texas at Austin. In this capacity, Fletcher oversees the day-to-day operations of a statewide network of 59 P–16 partnerships focused on improving science and mathematics teacher content knowledge, pedagogical skills and student achievement. Using a combination of federal Math and Science Partnership funds along with corporate support, the TRC has served more than 10,000 P–12 science and math teachers since 2005. In 2001, Fletcher was elected to the Pflugerville ISD (PISD) Board of Trustees, a diverse student school district totaling more than 20,000 students near Austin, and she is active in legislative and school finance issues through the Texas Association of School Boards’ (TASB) School Board Advocacy Network, Legislative Advisory Council and Delegate Assembly. Fletcher was elected by her fellow trustees as board president in 2006 and continues to serve in that capacity during her third term on the board. In addition to her work with the TRC and PISD, Fletcher currently serves as the program co-chair for the Science Teachers Association of Texas 2007 Conference for the Advancement of Science Teaching, the largest state science teaching convention in the country. Fletcher’s research interests focus on program evaluation where she has made significant contributions to improving the evaluation of professional development and its impact on student achievement in Texas.

Alan J. Friedman, Ph.D.
Consultant, Museum Development and Science Communication, and Former Director and CEO, New York Hall of Science

Alan J. Friedman is a consultant in museum development and science communication. For 22 years he served as director of the New York Hall of Science, New York City’s public science-technology center. Under his leadership the hall won special recognition for encouraging new technologies, creating models for teacher training, serving...
an extraordinarily diverse audience, and evaluating the effectiveness of informal science learning. His work has been recognized by the American Association for the Advancement of Science's Award for Public Understanding of Science and Technology, the Association of Science–Technology Centers' Fellow Award, the American Institute of Physics' Andrew Gemant Award, the National Science Teachers Association's Distinguished Informal Science Education Award, and the New York City Mayor's Special Recognition Award for Excellence in Science and Technology. Before coming to New York, Friedman served as Conseiller Scientifique et Muséologique for the Cité des Sciences et de l’Industrie, Paris, and was the director of astronomy and physics at the Lawrence Hall of Science, University of California, Berkeley, for 12 years. Friedman received his doctorate in physics from Florida State University and his bachelor of science in physics from the Georgia Institute of Technology.

Richard Griffin, Ed.D.
Executive Director, Center for School Governance, Executive Leadership and Fiscal Accountability, Harris County Department of Education

Richard Griffin is the executive director of the Harris County Department of Education’s Center for School Governance, Executive Leadership and Fiscal Accountability. He has earned three master’s degrees and two doctorate degrees and has served public education for more than 40 years as teacher and principal at both the elementary and secondary levels, director of special education, assistant superintendent and superintendent for several districts in Texas and New Mexico. He was also professor and chair of the Center for Prescriptive Education at Northwestern State University of Louisiana. Griffin has written articles and research documents for numerous state, national and international publications and has made more than 200 presentations to conferences and conventions across the country. He was awarded the Texas Outstanding Partnership Award from The Texas Alliance for Science, Technology, and Mathematics Education in 1990 and the Distinguished Science Administrative/Leadership Award in 1986 and the Outstanding Service Award in 2005, both by the Science Teachers Association of Texas.

Kay Bailey Hutchison
United States Senator from Texas

Kay Bailey Hutchison is the first woman to represent Texas in the U.S. Senate. As chairman of the Republican Policy Committee, she is the fourth-highest ranking Republican senator. Sen. Hutchison serves on the Committee on Commerce, Science and Transportation and is ranking member of the subcommittee which oversees the National Aeronautics and Space Administration (NASA) and science issues. She also sits on the powerful Senate Appropriations Committee, where she is ranking member of the Subcommittee on Military Construction and Veterans Affairs and a member of the Subcommittee on Defense Appropriations. Since she was first elected to the Senate in 1993, Senator Hutchison has established a well-deserved reputation as one of the Senate’s leading advocates for science, education and competitiveness. Most recently, she helped pass the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science (COMPETES) Act of 2007, which will increase federal investments in these critical areas. She was instrumental in establishing The Academy of Medicine, Engineering, and Science of Texas (TAMEST) and serves as its chairman. During Hutchison’s tenure in the Senate, Texas has moved to rank third in the nation in receipt of federal research and development expenditures. Sen. Hutchison was born in Galveston, Texas, and she is a graduate of The University of Texas at Austin and The University of Texas Law School.

Alexander Khachatryan, Ph.D.
President and CEO, Reasoning Mind, Inc.

Alexander Khachatryan is the president and CEO of Reasoning Mind. Between 1984 and 1989, he served as senior research scientist at the Institute for Control Sciences, the former Soviet Union’s leading research center for computer and information technologies. Between 1990 and 1993, Khachatryan was a visiting assistant professor at Texas A&M University, teaching applied mathematics and doing research as project leader of the Artificial Intelligence Laboratory at the petroleum engineering department. In 1992, Khachatryan founded and became president of Russian Petroleum Consultants Corporation, a company delivering engineering, management and information technology solutions to the petroleum industry. Starting in 1999, while still managing projects carried out by the Russian Petroleum Consultants, Khachatryan served as vice president of Operations of Logexoft, Inc., a company specializing in state-of-the-art information technology solutions for large manufacturers. In this period, his interests gradually shifted toward K-12 education reform. Between 1999 and 2002, Khachatryan developed the concepts behind the Reasoning Mind educational
environment, founded the Reasoning Mind organization, and worked diligently on making the concept a reality, an effort he continues to this day. Khachatryan received his bachelor of science and master of science degrees in applied mathematics from the Moscow Oil and Gas Institute and holds a doctorate in physics and mathematics from Moscow State University.

Siva Kumari, Ed.D.
Associate Dean, Glasscock School of Continuing Studies, and Advisor to the Provost, K-12 Initiatives, Rice University

Siva Kumari is the associate dean of the Glasscock School of Continuing Studies, where she leads the school’s Teacher Professional Development and Information Technology Programs. She also holds a position as an advisor to the provost on K-12 Initiatives at Rice University. She led the Advanced Placement (AP) Institute at Rice to become one of the largest in the country, serving more than 2,300 teachers from over 300 school districts. She also started the International Baccalaureate (IB) Diploma Level Professional Development Program at Rice, making Rice the only university in the country that educates both AP and IB teachers. In addition, she created the Academies model of Professional Development for AP and IB Teachers in order to connect higher education faculty with teachers, so they can focus on current content and research in their fields of teaching. She created the Advanced Placement Digital Library for Biology, Physics and Chemistry with funding from the National Science Foundation's Digital Library program. Kumari serves on the Professional Development Advisory Panel for the College Board and on the International Professional Development Committee for the IBO. She also administers the Rice for High School program that admits area students into college courses during summer school. Before her current duties at Rice, Kumari was a research assistant professor in the graduate program in curriculum and instruction at the University of Houston. Kumari received her doctorate in education from the University of Houston, her master of arts from the University of Cincinnati, and her bachelor of science from St. Joseph's College in India.

Neal Lane, Ph.D.
Senior Fellow in Science and Technology Policy, James A. Baker III Institute for Public Policy, and Malcolm Gillis University Professor, Rice University

Neal Lane is senior fellow in science and technology policy at the James A. Baker III Institute for Public Policy, and the Malcolm Gillis University Professor and professor in the department of physics and astronomy at Rice University. Prior to returning to Rice University, Lane served in the federal government as assistant to the president for science and technology and director of the White House Office of Science and Technology Policy (OSTP) from August 1998 to January 2001, and as director of the National Science Foundation (NSF) and member (ex officio) of the National Science Board from October 1993 to August 1998. Before his post with NSF, Lane was provost and professor of physics at Rice University; a position he had held since 1986. He first came to Rice in 1966, when he joined the department of physics as an assistant professor. In 1972, he became professor of physics and space physics and astronomy. He left Rice from mid-1984 to 1986 to serve as chancellor of the University of Colorado at Colorado Springs. In addition, from 1979 to 1980, while on leave from Rice, he worked at the NSF as director of the division of physics. Lane received his doctorate, master of science, and bachelor of science in physics from the University of Oklahoma.

Rebecca L. Lucore
Executive Director, Bayer Foundation

Rebecca L. Lucore joined Bayer Corporation in 1994 and presently serves as executive director of the Bayer Foundation and manager of community affairs for Bayer Corporation. She is responsible for directing Bayer Corporation’s Corporate Social Responsibility programs, including the company’s STEM education partnerships and flagship program Making Science Make Sense® (MSMS). Bayer’s MSMS program was honored in 2000 by President Clinton with the President’s Service Award and in 2006 by Secretary of Commerce Gutierrez with the Ron Brown Award. Lucore has worked with several school districts across the United States to assist them in partnering with local nonprofits and corporations to implement systemic science education reform. She is a board member of Achieving Student Success through Excellence in Teaching Inc. in Pittsburgh and an advisory committee member of the National Governors Association’s Science, Technology, Engineering, and Math Center Grant Program. In addition, Lucore is responsible for overseeing the Bayer Foundation, Bayer Corporation’s single source of philanthropic giving in the United States, and is a member of the Advisory Board for the Bayer Center for Nonprofit Management at Robert Morris University in Pittsburgh. Lucore received her bachelor’s degree in public relations from Duquesne.
University where she also received a master's degree in corporate communications. She is pursuing a certificate in corporate community relations from the Center for Corporate Citizenship at Boston College and also is a member of the Conference Board's Corporate Citizenship and Sustainability Council.

Michael Marder, Ph.D.
Co-director, UTeach Natural Sciences Program, and Associate Dean, K-12 Education, College of Natural Sciences, The University of Texas, Austin.

Michael Marder is the associate dean for K-12 education in the College of Natural Sciences at The University of Texas at Austin. He is a co-director of UTeach, the university program for preparation of secondary mathematics and science teachers, which helps introduce active learning techniques into undergraduate teaching and runs a program to help low-income, grade-school children prepare for careers in mathematics and science. His professional preparation is in physics and mathematics, and he is a member of the Center for Nonlinear Dynamics, internationally known for its experiments on chaos and pattern formation, and for many years ranked first in the nation by US News and World Report.

Nancy Moreno, Ph.D.
Associate Professor and Senior Associate Director, Center for Educational Outreach, Baylor College of Medicine

Nancy Moreno is associate professor for the School of Allied Health Sciences, and senior associate director of the Center for Educational Outreach, Baylor College of Medicine (BCM). Moreno's research interests focus on developing effective collaborations among scientists and educators for the improvement of science education. Her activities involve leading the development, evaluation and dissemination of interdisciplinary science and health educational materials for students; the development of partnership programs to promote systemic change in science teaching and learning in schools and most recently, the application of Web-based technologies for teacher support and professional development. Currently, she is principal investigator and director of science education partnerships funded by the National Institutes of Health, the Howard Hughes Medical Institute and the National Science Foundation. In addition, she is the editorial director of BioEd Online, a comprehensive Web-based biology teaching resource that serves more than 5,000 users daily. Prior to coming to BCM, Moreno, served as an investigator and editor of the Flora of Veracruz Project in Mexico. She received her bachelor of science degree in botany from the University of Wisconsin-Madison and her doctorate in biology from Rice University.

Jeff Morgan, Ph.D.
Professor and Chair, Department of Mathematics, University of Houston

Jeff Morgan is a professor and department chair in the department of mathematics, and the director of the Center for Academic Support and Assessment at the University of Houston (UH). Morgan’s research work focuses on a number of projects in mathematical biology, including a Whole Cell Modeling project which is currently funded by NSF. He is a passionate educator who currently serves as co-director of the teachHOUSTON project at UH, director of the Houston Area Calculus Teachers Association, director of the UH High School Mathematics Contest, director of the Online Practice AP Calculus Testing at UH, a regular speaker at AP Calculus Workshops, and a strong advocate of online live instruction. He received his doctorate in mathematics from UH in 1986 and subsequently served as a professor of mathematics at Texas A&M University until he returned to UH in 2002.

Steve H. Murdock, Ph.D.
Allyn R. and Gladys M. Cline Professor of Sociology, Rice University

Steve H. Murdock is the Allyn R. and Gladys M. Cline Professor of Sociology at Rice University. He has also been nominated to head the U.S. Census Bureau and awaits Senate confirmation. Prior to his appointment at Rice, he was the Lutcher Brown Distinguished Chair in Demography and Organization Studies at The University of Texas at San Antonio (UTSA) and the director of the Institute for Demographic and Socioeconomic Research. Before UTSA, Murdock was a Regents Professor and head of the
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department of rural sociology at Texas A&M University. He is also the official state demographer of Texas. He was appointed to this position by Gov. Rick Perry and is the first person to occupy this position. Murdock earned his Ph.D. in demography and sociology from the University of Kentucky and is the author of 12 books and more than 150 articles and technical reports on the implications of current and future demographic and socio-economic change. He is the recipient of numerous honors and awards. These include the Faculty Distinguished Achievement Award in Research from Texas A&M University, the Excellence in Research Award from the Rural Sociological Society, and the Distinguished Alumni Award from the department of sociology at the University of Kentucky. He was named one of the 50 most influential Texans by Texas Business in 1997 and as one of the 25 most influential persons in Texas by Texas Monthly in 2005. He is a member of the Phi Beta Kappa, Phi Kappa Phi, and Phi Eta Epsilon national honor societies.

Peter O’Donnell, Jr.
Chairman of the Board, O’Donnell Foundation

Peter O’Donnell, Jr., is chairman of board of the O’Donnell Foundation and chairman of Advanced Placement (AP) Strategies, Inc., a nonprofit organization he created to manage and implement AP Incentive Program (APIP) in Texas schools. O’Donnell founded the APIP that has increased the number of students, especially Hispanic and African American students, who pass college-level exams in math, science and English while still in high school. The incentive program is now in 19 school districts in Texas and serves as the model for both the State of Texas and the federal APIP. Additionally, O’Donnell is chairman of the O’Donnell Foundation of Dallas, a private foundation that develops and funds model programs designed to strengthen engineering and science education and research. In June 2005, O’Donnell was appointed to the National Academy of Sciences committee that produced a report to Congress, “Rising above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future,” recommending the priority actions the United States should take to ensure its ability to compete and prosper in the global economy of the 21st century. Previously O’Donnell served as a member of President Reagan’s Foreign Intelligence Advisory Board, as commissioner of the Texas National Research Laboratory Commission, and was appointed to the Texas Select Committee on Higher Education. He is a member of The Presidents’ Circle of the National Academy of Science; a founding member of the Academy of Medicine, Science and Engineering of Texas; a member of the National Innovation Initiative Council of the Council on Competitiveness; and a trustee of the Cooper Institute.

Rod Paige, Ed.D.
Former Secretary of Education, U.S. Department of Education, and Chairman, Chartwell Education Group

Rod Paige, former U.S. secretary of education (2001-2005), has assembled a team of independent, strategic advisors — individuals with deep-rooted academic and business experience and a shared passion for improving the future for children by improving the way they learn — to co-found the Chartwell Education Group. In addition to his time as chairman at Chartwell, Paige, in his quest to improve the quality of education, is an active member of several boards, including the Thomas B. Fordham Foundation, News Corporation, The Broad Foundation and the National Council on Economic Education’s Commission on the Skills of the American Workforce. As secretary of education, Paige was an advocate of student achievement, employing “best of breed” solutions to achieve results geared toward the Department of Education’s goal of raising national standards of educational excellence. He earned his reputation for seeking out and implementing innovative approaches to systemic academic improvement when he served as dean of the College of Education at Texas Southern University, where he established the university’s Center for Excellence in Urban Education. He has also shown a knack for inclusive leadership, first as a trustee and then as superintendent of the Houston Independent School District, the nation’s seventh largest district. Paige, who served as a Public Policy Fellow at the Woodrow Wilson International Center for Scholars, brings a global perspective to his work and a desire to export the best practices and products for education that the United States has to offer and to import those that have been successful in other countries in an effort to improve the state of education for all.
Michele Pola, Ed.D.
Chief of Staff for the Superintendent, Houston Independent School District, and Former Executive Director, Houston A+ Challenge

Michele Pola is the chief of staff for the Superintendent of the Houston Independent School District. Pola is also the former executive director of the Houston A+ Challenge, a position to which she was named in 2004. The mission of the Houston A+ Challenge is to promote an academically rich and purposeful education for more children and to demonstrate how such an education could become possible for all children. From 2002 to 2004, she served as associate director of the Houston A+ Challenge. From 1999 to 2002, she acted as the director of programs for the Houston A+ Challenge. As program director, Pola managed the $60 million Annenberg Challenge initiative for 88 schools in the Aldine, Alief, Houston, Humble, North Forest, and Spring Branch Independent School Districts. She designed and facilitated the first-ever District Leaders Learner retreats in the Houston area and led the design and implementation of Houston’s first two-year Leadership Academy for school leaders. She also created Houston's first Peer Review Accountability Process for assessing public schools. Pola holds a bachelor of science degree from Lesley College, a master of science from University of Houston-Clear Lake, and a doctorate in education from NOVA Southeastern University.

Mary Ann Rankin, Ph.D.
TAMEST Education Committee Co-chair, and Dean, College of Natural Sciences, The University of Texas at Austin

Mary Ann Rankin has served as dean of the College of Natural Sciences at The University of Texas (UT) at Austin since September 1994. Prior to her term as dean, she was chairman of the Division of Biological Sciences at UT from September 1989 to August 1994. She came to UT in January 1975 as assistant professor of zoology and was subsequently promoted to associate professor in 1981 and professor in 1986. As dean she has overseen, along with her administrative team, the development of numerous new interdisciplinary research initiatives, construction of five new science buildings and the establishment of several successful programs for undergraduates including the UTeach program for math and science teacher preparation, the UT Discovery Learning initiative, the Texas Interdisciplinary Plan and the UT Austin Freshman Research Initiative. Rankin received her bachelor of science degree in biology and chemistry from Louisiana State University in New Orleans, served as a National Science Foundation pre-doctoral fellow at the University of Iowa and Imperial College Field Station, Ascot, England, and was awarded a doctorate in physiology and behavior from the University of Iowa in 1972. She then served as a National Institutes of Health postdoctoral fellow at Harvard University until joining the faculty at UT.

Dixie Ross
AP Calculus Teacher, Pflugerville High School

Dixie Ross teaches AP Calculus at Pflugerville High School in Pflugerville, Texas. She has served as an AP consultant for summer institutes and other teacher professional development workshops since 1994 and has been a reader for the AP calculus exam. Ms. Ross was on the Math Vertical Teams Guide development committee, the Building Success development committee and the AP advisory council for the southwest region of the College Board. She received the College Board’s AP special recognition award in 1992, the Siemens Award for Advanced Placement, and the Texas Excellence Award for outstanding high school teachers.

Timothy Scott, Ph.D.
Director, Math and Science Education, and Associate Dean, Undergraduate Programs, College of Science, Texas A&M University

Timothy Scott is associate dean for undergraduate programs in the College of Science at Texas A&M University. He holds faculty appointments in the biology department at Texas A&M and in the department of human anatomy and medical neurobiology at the College of Medicine in the Texas A&M University System Health Science Center. He also serves as a co-director of the Center for Mathematics and Science Education in the College of Science at Texas A&M University. In addition to these duties, Scott serves as a co-principal investigator (CoPI) for the Texas Collaborative for Excellence in Teacher Preparation, a five-year National Science Foundation (NSF) grant. Through this grant, Scott constructed the University’s Math and Science Scholars Program to address the shortage of teachers in mathematics and science. He serves as assistant director of the NSF-funded Information Technology in Science Center for Teaching and Learning, a center shared by the College of Science and the College of Education at Texas A&M University.

Texas A&M University. He is also a CoPI on a Science, Technology, Engineering and Mathematics Talent Expansion Program and has a Teacher Professional Continuum Grant from NSF. Scott has contributed to mathematics and science education projects that have been awarded more than $20 million of external funding. He has been involved in both State of Texas Mathematics and Science Initiatives and assisted with oversight of biology and science textbook review processes. Scott received an undergraduate degree in biology and chemistry from Louisiana College and holds both a master’s and doctoral degree from Texas A&M University.

Florence Shapiro  
Texas State Senator, District 8, and Chair, Senate Education Committee

Florence Shapiro was elected to the Texas Senate in 1993. As a champion for children, she passed landmark legislation to protect against sexual predators. These laws, which began in 1995, were national benchmarks, and Sen. Shapiro continues to dedicate herself to improving the safety and security of Texas children. In 2003, she became chair of the Senate Education Committee, where legislation was recently passed to overhaul the state’s school finance system. Her landmark House Bill 1 significantly lowers property taxes, provides more money for schools — along with a teacher pay raise and the first-ever incentive pay program. It also provides for educational reforms at the high school level to promote college readiness and curb dropouts, and promotes better accountability for schools. Today, she serves as co-chair of the Education Policy Taskforce for the National Council of State Governments, as well as on the Southern Regional Education Board, and the Education Commission on the States — coalitions of elected officials and education leaders — that addresses issues such as long-range planning, policy proposals, and the advancement of education among the states. She is also a member of the Standing Committee on Education for the National Conference of State Legislators. A graduate of The University of Texas at Austin, Shapiro holds a bachelor’s degree in secondary education.

Richard A. Tapia, Ph.D.  
Maxfield-Oshman Professor in Engineering, Rice University

Richard A. Tapia is University Professor and Maxfield-Oshman Professor in Engineering in the department of computational and applied mathematics at Rice University. Tapia is internationally known for his research in computational and mathematical sciences and is a national leader in education and outreach programs. He has authored or co-authored two books and more than 100 mathematical research papers. In addition to his faculty positions, he is also director of the Center for Excellence and Equity in Education. Tapia’s honors include election to the National Academy of Engineering in 1992 for his seminal work in interior point methods; the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring from President Clinton in 1996; appointment by Clinton to the National Science Board, also in 1996; and the Lifetime Mentor Award from the American Association for the Advancement of Science in 1997. Two national conferences have been established in his name: the Blackwell Tapia Conference, which also honors mathematician David Blackwell; and the Tapia Celebration of Diversity in Computing. In 2004 Tapia was inducted into the Texas Science Hall of Fame. In 2007 he joined the boards of Math for America and The Academy of Medicine, Engineering and Science of Texas. Tapia earned his bachelor of arts, master of arts, and doctoral degrees in mathematics from the University of California, Los Angeles.

William Thomson, Ph.D.  
Professor and Director, Center for Educational Outreach, Baylor College of Medicine

William A. Thomson is a professor of allied health sciences and family and community medicine, director of the Center for Educational Outreach (CEO) and deputy director of the Center for Collaborative and Interactive Technologies. For the past 25 years, he has directed numerous educational projects focusing on health-related issues funded by the Robert Wood Johnson Foundation, the U.S. Department of Education, the Health Resources Services Administration and the National Space Biomedical Research Institute (NSBRI). The Center has produced award-winning science and health related materials (the nervous system and environmental health) for children and the general public, funded by the National Institutes of Health. In addition to serving as director of the Center, Thomson also serves as lead for the NSBRI Education and Public Outreach team. He received his doctorate in administration and health education from Texas A&M University, College Station.
Philip "Uri" Treisman, Ph.D.
Professor of Mathematics, and Executive Director, Charles A. Dana Center, The University of Texas at Austin

Philip "Uri" Treisman is professor of mathematics and public affairs at the University of Texas at Austin. He is the founder and executive director of the Charles A. Dana Center, an organized research unit in the university's College of Natural Sciences. Treisman chairs the steering committee of the Urban Mathematics Leadership Network — a coalition of 15 large urban districts seeking to improve pre-K–12 mathematics teaching and learning. He is a member of the leadership team and chair of the design team of the Strategic Education Research Partnership, which is focused on creating new knowledge to solve urgent problems of American education. He is a founding board member of the National Center for Public Policy in Higher Education, a board member of the New Teacher Project and an active advisor to many nonprofit organizations committed to improving American education. He serves on the National Advisory Board of the Military Child Education Coalition and has served as chief juror for a Department of Defense sponsored study of mobility in military families and its effects on their children's education. From 1995 to 2004 he served as president of the board of the Consortium for Mathematics and its Applications. For his work on nurturing high achievement in mathematics among minority students he was named a MacArthur Fellow in 1992. In February 2006 he was named Scientist of the Year by the Harvard Foundation of Harvard University for his outstanding contributions to mathematics.

Darvin M. Winick, Ph.D.
Chair, National Assessment Governing Board, and President, Winick & Associates

Darvin M. Winick is chair of the National Assessment Governing Board. He is also president of Winick & Associates, an organizational research and consulting organization, and a senior research fellow in the College of Education at The University of Texas at Austin. Previously, Winick was an advisor to the 1984 Texas Select Committee on Public Education. He also helped organize the Texas Business and Education Coalition and Texans for Education. He was Chairman of the Research Advisory Committee of the Texas Educational Economic Policy Center that set out the framework for the current Texas public school accountability system. Winick has served as volunteer chief of staff for the Texas Governor's Task Force on Education, vice chair of the Governor's Focus on Reading Task Force and a member of the Education Commissioner's Committee on Accountability. He co-authored “Four-Star Schools of Texas,” a report on public school campus performance, and has edited reports on education accountability, early reading instruction and teacher preparation. Winick is a certified management consultant and a founding member of the Institute of Management Consultants. In 1957, he helped organize LWFW, a psychological research and organizational consulting firm and served as its president and managing principal. He has served as director and chairman of the executive committee of Intermedco, Inc., director of Vallen Corporation, director and member of the executive committee of Stewart & Stevenson Services, Inc., and director and chairman of the executive committee of MaximBank, Inc. Winick holds a doctorate in organizational psychology from Purdue University.

Brenda Wojnowski, Ed.D.
Program Officer, T-STEM Initiative, Texas High School Project

Brenda Shumate Wojnowski, an award-winning teacher, taught at the elementary, middle and secondary school levels, as well as served as a high school curriculum administrator. In her current capacity as program officer for the T-STEM Initiative of the Texas High School Project, she is responsible for the oversight and development of STEM academies and technical assistance support centers across the state of Texas. Prior to beginning work with the National Inventors Hall of Fame Foundation where she was president of Inventive Education, Inc., Wojnowski was associate director of the Science House at North Carolina State University. She has also served as assistant director of the Mathematics and Science Education Network, based at University of North Carolina (UNC) at Chapel Hill, and as director of science and mathematics outreach from the College of Education at UNC at Greensboro. Wojnowski is on the editorial board of the National Science Education Leadership Association for the Educator Journal and is on the manuscript review panel for the National Science Teachers Association publication, The Science Teacher. She has presented numerous workshops and invited talks as well as having served in a senior-level capacity on many grants and contracts from the National Science Foundation, the U.S. Department of Education and private foundations. She holds a doctorate in curriculum and teaching, a master of arts in middle grades education and an undergraduate degree in biology with a minor in secondary education.
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Honored Teachers

Todd Abronowitz
John Paul II High School, Plano

Todd Abronowitz is the science department chair at John Paul II High School in Plano, Texas. Since starting his teaching career in 1990, he has taught chemistry from the regular to the Advanced Placement level. He believes that a holistic approach to learning motivates students, increases their retention of material and provides a foundation for future learning. Since he is certified in social studies, mathematics and science, he tries to incorporate this broad base of knowledge into every lecture, activity and demonstration he performs.

Amalia Alcoriza
Carnegie Vanguard High School, Houston ISD

Amalia Alcoriza is with Carnegie Vanguard High School teaching integrated physics and chemistry, AP environmental science and AP biology. She has been teaching at the high school level for 17 years. A native of the Philippines, she came to the United States in 2001 and has been with Houston Independent School District since then. Her teaching philosophy is based on the belief that her fundamental responsibility is to mold her students into informed decision makers and responsible stewards of the earth. Alcoriza likes playing devil’s advocate with her students because she wants them to realize that they need to constantly evaluate the information that they are bombarded with.

Ellen Alexander
Learning Team Coach, Grand Prairie ISD

Ellen Alexander has been in the Grand Prairie Independent School District for the past 21 years. Currently, she is one of six Learning Team Coaches in her district. She has taught first, second, fourth and fifth grades and has served the district in many capacities ranging from implementing the mathematics Texas Essential Knowledge and Skills (TEKS) test to new teacher orientation. Alexander was a contributing author to the book, “Mathematics Standards in Grades 3-5.” Alexander demands that her classroom is always “buzzing” with productive activity and learning; has high expectations; and exudes a warm and inviting environment. Her class is a place where students enjoy learning because it is meaningful, risk-free and, most of all, fun and exciting.

Linda Antinone
R. L. Paschal High School, Fort Worth ISD

Linda Antinone is the mathematics department chair at Paschal High School in Fort Worth, Texas. Since starting her teaching career 22 years ago, she has taught AP physics, AP calculus and honors precalculus. Her teaching philosophy revolves around the ideas of engaging students actively in real-world math and science situations, teaching students how to work cooperatively to solve problems and building students’ confidence in their ability to solve difficult problems. She works to help students develop strong problem-solving skills by utilizing technology, showing them organizational techniques and encouraging them to find solutions in as many ways as they can. She hopes that by giving students a strong foundation in high school, they will have the skills, desire and confidence to pursue university degrees in mathematics and science.
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Kris Botterman
Grapevine/Colleyville ISD

Kris Botterman teaches sixth grade math and pre-AP math in the Grapevine/Colleyville Independent School District. She has also taught preschool, second, third and fifth grades. She tries to build students’ confidence in their math skills by breaking down the concepts into small steps that they can understand. She uses manipulatives as often as possible and challenges the students to work in groups to solve problems that relate to their daily lives. She recognizes that a learning environment with mutual respect is essential in enabling the students to grow both academically and socially.

Kit B'Smith
Pflugerville Middle School, Pflugerville ISD

Kit B'Smith teaches at Pflugerville Middle School in Pflugerville, Texas. With 22 years of experience, his courses include sixth grade math and pre-AP math. He recognizes that what he knows and understands is not as important as what his students come to know and understand. He believes in teaching students to take control of their own thinking and learning in order to foster the creativity and ingenuity that promote refinement of their thoughts and ideas. He subscribes to the philosophy that with collaboration, learning becomes a process that is active, dynamic and productive.

Cindi Beenken Carroll
Bowie High School, Austin ISD

Cindi Beenken Carroll is in her 10th year teaching geometry and statistics at Bowie High School in Austin. Prior to teaching at Bowie, she taught eighth grade math at Burnet Middle School, also in Austin, Texas. She believes that teaching is about facilitating students’ learning of concepts and skills. Furthermore, she thinks that teachers are responsible for helping students not only grow by learning new information but also by learning skills important for their future success in school and beyond. Finally, she believes that quality teaching requires constant reflection and continued growth in both pedagogy and content knowledge.

Naveen Cunha
Stephen F. Austin Middle School, Bryan ISD

Naveen Cunha teaches at Stephen F. Austin Middle School in Bryan, Texas. During his 16-year career as an educator, he has primarily taught science. Currently Cunha is teaching at the sixth grade level. He strongly believes that it is his job to create and develop lifelong learners. He covers the science curriculum through rich experiences both in and out of the classroom and strives to have a classroom without walls. His primary technique is hands-on and problem-based learning activities in the classroom, but he supplements these activities with simulations, electronic fieldtrips and computer research.

Barbara Currier, Ph. D.
Greenhill School, Addison

Barbara Currier has taught upper school mathematics at Greenhill School in Addison, Texas for the past 23 years. She is currently teaching eighth grade honors geometry, AP calculus, vector calculus and differential equations. She firmly believes that the role of a good teacher is very much like the role of a good movie director: the director is there to guide, mold, encourage and refine, but in the end the students determine the success of the endeavor. She emphasizes that students learn best not by watching or listening, but by doing — by grappling with problems, by learning to interchange words and mathematics and by digging deeper for the underlying concepts and the essential meaning.
Robert Dennison
Lee High School, Houston ISD

Robert Dennison has taught all levels of biology during his 28 year teaching career in Houston, Texas. He currently teaches AP biology and AP environmental science. He also serves as the AP sciences lead teacher for the Houston Independent School District. He has presented at local, state, national and international science conferences, received numerous teaching awards, and published many articles on teaching biology. Additionally, he has garnered much acclaim over the past 15 years throughout the United States, Canada and England for his portrayal of Charles Darwin.

D’Ann Douglas
JASON Alliance of Southeast Texas, Beaumont

D’Ann Douglas is a retired classroom teacher currently employed as the executive director of the JASON Alliance of Southeast Texas, an organization providing JASON Project curriculum and teacher training to Region 5 Education Service Center teachers. She also acts as a lead teacher for the Center for Creativity, Innovation and Leadership at Lamar University. Douglas believes that as a teacher, the most important task is to encourage students to be problem solvers and lifelong learners. Additionally, she embraces the philosophy that an outstanding teacher provides a comfortable environment for students and encourages them to take academic risks.

Denise Ekberg
The University of Texas at Austin

Denise Ekberg works with induction and apprentice teachers in the Austin Independent School District and the UTeach program at The University of Texas at Austin. During her 17 years as a teacher, she has primarily taught biology, chemistry and physics. Her experiences teaching at-risk children in New Orleans showed her that math and science could be taught effectively to all students through the use of an integrated and experiment-driven curriculum. Ekberg strongly believes that if teachers have a deep and rich content base, then they can enhance the learning experience for their students beyond a standardized test or textbook.

Priscilla Elliott
St. John’s School, Houston

Priscilla Elliott currently teaches biology and science research and design at St. John’s School in Houston, Texas. She has been with St. John’s School for 14 years, where she has also taught courses in marine biology and ecology. Prior to joining the faculty of St. John’s, she worked at Booker T. Washington High School in Tulsa, Oklahoma, and at Tomball High School in Tomball, Texas. Elliott believes that a successful science education depends on three main qualities: making science relevant to daily life, giving students opportunities to discover the experimental nature of science through hands-on laboratory experiences and presenting the processes of science enthusiastically as puzzles to be solved.

Dolores Gende
Parish Episcopal School, Dallas

Dolores Gende currently teaches college preparatory physics, AP physics and astronomy at the Parish Episcopal School in Dallas, Texas. She has taught science and math for more than 23 years in various countries including Belgium, Mexico and the Netherlands Antilles. Gende believes that every student is a unique individual who needs a secure and stimulating atmosphere in which to grow and learn. She desires to help students achieve their fullest potential by providing an environment that is safe, supports risk-taking and invites a sharing of ideas. To her, a teacher’s role is to provide access to information rather than to act as a primary source. Additionally, Gende believes that developing a curriculum around student interest fosters intrinsic motivation and stimulates a passion to learn.
John R. Hamilton
Paschal High School, Fort Worth ISD

John R. Hamilton currently teaches at Paschal High School in Fort Worth, Texas. A veteran educator, he began his career at Paschal 46 years ago, during which time he has taught every mathematics course offered at the high school and has served as the mathematics department chair. His teaching philosophy emphasizes inclusiveness in that he strongly supports making pre-AP and AP classes available to a broad range of students, rather than to just a handful.

Sharon A. Hamilton
Fort Worth Country Day School, Fort Worth

Sharon Hamilton serves as the science department chair at Fort Worth Country Day School, where she also teaches Honors Pre-AP biology and AP biology. As a College Board consultant, Hamilton has presented at workshops throughout the Southwest. She firmly believes that biology is an essential subject because it requires her to be a lifelong learner alongside her students. She finds herself invigorated by her students’ connections between the curriculum and their daily lives, current discoveries, environmental concerns and ethical issues. The more she learns about and teaches science, the more she understands the idea that everything is connected.

Sara Hawkins
Manor New Technology High School, Manor ISD

Sara Hawkins currently teaches biology at Manor New Technology High School in the Manor Independent School District, a Texas Science Technology Engineering and Math Initiative (T-STEM) school. As a T-STEM school, Manor uses a completely project-based learning system that not only teaches students course content, but also develops a 21st century skill set that promotes critical thinking, technological literacy and collaboration.

Barbara Hoover
Dime Box High School, Dime Box ISD

Barbara Hoover currently teaches algebra II, precalculus, calculus, graphic arts, accounting and computer-based business classes at Dime Box High School in Dime Box, Texas. She has been a full-time teacher for 25 years, during which time she has taught grades six through twelve. Her teaching philosophy includes a strong belief that all children want to learn and are capable of learning more than they realize. She sets her expectations high and encourages her students to challenge themselves. Additionally, Hoover strives to provide her students with as much hands-on experience as possible.

Bill Humphries
The University of Texas at Austin, College of Natural Sciences

Bill Humphries works at The University of Texas at Austin in the College of Natural Sciences, where he teaches beginning courses in teacher preparation. In the past, he worked with the UTeach program at The University of Texas at Austin and taught for 19 years at the secondary and community college levels. Humphries believes that whenever it is practical, lessons should be presented in a format that encourages inquiry and discovery; he acknowledges that while some students can learn through lecturing, many cannot. Through his experience, he has found that students learn ideas more thoroughly and retain their learning longer through discovery.
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**Tim Johnson**  
Stephen F. Austin High School, Houston ISD

Tim Johnson teaches AP physics and dual credit chemistry at Stephen F. Austin High School in Houston, Texas. He began his teaching career in 1975 in Luling, Texas, where he taught physical science, chemistry and physics, and has been with the Houston Independent School District since 1985. He believes that the most important attribute that an effective teacher must possess is compassion for his or her students. Johnson also believes that an effective teacher must have a zeal and excitement for his or her particular discipline, and must set high expectations for both students and for themselves.

**Carol Leibl**  
Madison High School, North East ISD

Carol Leibl has been teaching AP biology and pre-AP biology at James Madison High School in San Antonio since 1985. She started out her 27-year career teaching AP biology at Killeen High School. She believes that science education is most beneficial when it is based on observation and experimentation. Leibl embraces the idea that students should “do science” rather than simply learn facts, and will thus become excited by science and develop a natural curiosity for the content. Finally, she emphasizes that it is important to prepare students for the challenges that lie ahead and provide them with an intellectual basis to make sound decisions that will impact their lives and their environment in the years to come.

**Melissa Matsu**  
Carnegie Vanguard High School, Houston ISD

Melissa Matsu teaches pre-AP biology at Carnegie Vanguard High School, HISD’s magnet high school for gifted and talented students. Her professional objective is to make everyone a better biologist, not just her students. She believes sharing biological knowledge with the public is one of a biologist’s most critical duties, since everyone takes part in the field whether they realize it or not. For her students in particular, Matsu tries to impart that not only does information about biology matter in their lives but that in the context of making real-life decisions, the sources of the information have an impact as well.

**Courtney Mayer**  
Winston Churchill High School, North East ISD

Courtney Mayer teaches AP environmental science at Winston Churchill High School in San Antonio, Texas. She has worked in the San Antonio area for 15 years, and has been with Churchill High School for the past seven years. In addition to teaching her current course, she serves as a reader for the AP environmental science exam. Her teaching philosophy can be summed up in one sentence: “Tell me and I will forget, show me and I may remember, involve me and I will understand.”

**Lyneille Meza**  
Guyer High School, Denton ISD

Lyneille Meza teaches algebra I at Guyer High School in Denton, Texas. Before moving to the high school level, she taught mathematics at the middle school level for 12 years. She has taught all middle grade levels and held leadership roles in the mathematics department. She keeps up with the most current methods in teaching mathematics by attending trainings at the local, state and national levels, as well as by taking graduate-level courses. Meza has improved the parent-school relationship by implementing a family math night that has been picked up by other middle and high schools in the district.
Deborah B. Preston
Keystone School, San Antonio

Deborah Preston teaches AP calculus and seventh grade pre-algebra at the Keystone School in San Antonio, Texas. She has been in education for 23 years, 19 of which have been at the Keystone School. As a College Board national consultant, she has presented at numerous AP summer institutes, as well as taught at mathematics summer institutes. Preston constantly looks for new ways, including the effective use of technology, to help her students experience the power and beauty of mathematics. She finds that the thrill of teaching is renewed each time she learns from her students. Finally, she strives to do her best to ensure that all of her students remain active in the field of mathematics, even after they have left her classroom.

Dorinda Rickels
Advanced Placement Strategies, Dallas

Dorinda Rickels works in Dallas as the director of mathematics programs for Advanced Placement Strategies, where she plans and conducts training for AP and pre-AP teachers, and works with AP teachers and students in several Texas school districts. She has 35 years of experience as a mathematics teacher, including all levels of high school mathematics and AP calculus. As the mathematics department chairwoman at DeSoto High School for 20 years, she led one of the first vertical mathematics teams in the state of Texas. She believes that successful teaching is about high expectations and support systems. Further, Rickels believes that the best teachers continually challenge their students to move beyond their academic comfort zone and to achieve at levels they did not even know they were capable of.

Peter Rispin
Stony Point Ninth Grade Center, Round Rock ISD

Peter Rispin is a seventh grade science teacher who currently teaches biology at the Stony Point Ninth Grade Center in Round Rock, Texas. He studies plant genetics at the University of Texas at Austin and strives to incorporate this research into his teaching. Rispin believes that the most important element of teaching is to provide students with the opportunity to practice careful scientific and critical thinking. In addition, he places a strong emphasis on leadership in the classroom and views the content that he teaches as the simplest element of what he does.

Dixie Ross
Pflugerville High School, Pflugerville ISD

Dixie Ross teaches AP calculus at Pflugerville High School in Pflugerville, Texas. She has taught mathematics in Texas public schools for 23 years and has been actively involved in teacher training efforts for about 13 years. She believes that providing all students with rigorous and accessible mathematics instruction is one of the greatest challenges facing education and society today, due to the lack of high-quality instructors. Ross recognizes that students who are not taught effectively will find many educational and career opportunities closed to them, thus severely limiting their ability to succeed and contribute to the future of the state of Texas.

Wanda Savage
Klein Forest High School, Klein ISD

Wanda Savage teaches AP calculus, dual credit precalculus, and independent study English at Klein Forest High School in Houston, Texas. She has been a teacher for 27 years, and is the chair of the mathematics department. She also spends much of her time counseling, mentoring and guiding the teachers in her department. Each year she finds herself excited by the challenges of getting her students prepared for the AP calculus examination. She feels that it is her job to build their confidence in their ability to master this difficult, demanding course. Savage knows that her students can be successful and does her best to convince them of that fact.
Nancy Schunke  
Dunbar Middle School Math and Science Academy, Lubbock ISD

Nancy Schunke teaches seventh and eighth grade pre-AP science and engineering at Dunbar Middle School Math and Science Academy in Lubbock, Texas. She began her teaching career in Meadow, outside of Lubbock, and two years later began teaching for Lubbock Independent School District. Schunke does her best to fill her classroom with tools for discovery and to create a curious, inquisitive environment. She believes that hands-on activities are a necessary component of the classroom. As a teacher, she tries to utilize the curiosity and desire of her students to get them excited about learning science.

Lief Sigren  
East Early College High School, Houston ISD

Lief Sigren has taught science in Houston for 22 years and currently teaches biology as well as dual credit integrated physics and chemistry at East Early College High School. The ideological basis of East Early College High School is that students should be allowed to work at a self-ascribed pace and be able to attempt college-level classes as soon as they are ready. The ultimate goal of the school is to produce a greater number of minority college graduates. Sigren tries to see his classroom from the viewpoint of the student and to treat students the way he would like to be treated. He believes that by actively involving students in a variety of experiences, the educational process is enhanced and becomes more interesting.

David Tetteh  
E.L. Furr High School, Houston ISD

David Tetteh teaches AP biology at E.L. Furr High School in Houston, Texas. A native of Ghana, he later moved to England, where he taught mathematics and science at a state comprehensive school in Buckinghamshire before moving to the United States. His teaching philosophy is that every child, irrespective of race, background, creed or ethnicity, can learn and acquire knowledge and achieve his or her highest potential. In short, Tetteh espouses the following view: “We teach, we learn, we succeed.”
Improving Science and Math Education: Texas Confronts the Gathering Storm

TAMEST Charge

Charge to The Academy of Medicine, Engineering and Science of Texas Education Committee

Throughout the 20th century, the State of Texas achieved remarkable success in medicine, engineering and related science disciplines. This can be seen in the breadth of research and education conducted by our universities and academic health centers, and in our development of industrial and space technology.

Texas scientists and engineers have reached significant milestones and won prestigious awards, including Nobel prizes and election to membership in the National Academies. This remarkable growth and vitality stands in stark contrast to the current state of science and math education in grades K-12 in our public schools. In the 2006 report “Rising Above the Gathering Storm,” the National Academies identified alarming trends and worrisome indicators in science education in America’s public schools. These trends threaten the future of the nation — its competitiveness and pre-eminence in science and technology are at risk. To remain competitive, Texas must lead the way in developing new educational methods that draw its youth into the fields of science, engineering and mathematics.

With a rapidly changing global economy, fueled by the accelerated growth of science and technology throughout the world, communication is instant and based on the “click of a mouse.” Our state’s children must not only keep abreast of these changes, they must also be trained to develop and lead them.

Before Texas can develop tomorrow’s leaders, it must address today’s crisis in education. An alarming 35 percent of the state’s students who entered high school in 2002-2003 left school without graduating, according to a report from the Intercultural Development Research Association. This cannot continue. Texas’ pre-eminence in science, technology, engineering and medicine (STEM) rests on its ability to not only keep these children in school, but also to insure they are literate in these critical fields. For their best interest, as well as our state’s, we must encourage Texas’ students to consider STEM as career paths.

If our children and grandchildren are to inherit a Texas that is secure and thriving and enjoy options for a challenging career in a technology-driven society, we must maintain and enhance our state’s role as a leader and model. We must respond not only to the challenges laid out in the National Academies report but also to the special needs of our state with its rich and diverse culture.

Therefore, I ask The Academy of Medicine, Engineering and Science of Texas, through its newly appointed Education Committee, to examine the factors that negatively impact and affect K-12 science and mathematics education in Texas and provide a report to me in September of 2008. Specifically, I ask the committee to consult with teachers, public school administrators, academic and corporate leaders, and education experts in Texas and throughout the nation, and make recommendations for substantial improvements that might be put in place over the next five to ten years to significantly improve STEM education in the state. Through this charge, it is my hope and anticipation that Texas will take the lead and become a model state with its response to “Rising Above the Gathering Storm.”

Senator Kay Bailey Hutchison