BIOGRAPHICAL SKETCHES

Bruce Alberts served president of the National Academy of Sciences and chair of the National Research Council from 1993 to 2005. The National Academy of Sciences, together with the National Academy of Engineering and the Institute of Medicine form the National Academies.

A respected biochemist recognized for his work in biochemistry and molecular biology, Alberts is known for his extensive molecular analyses of the protein complexes that allow chromosomes to be replicated. He joined the faculty of Princeton University in 1966, moving to the medical school of the University of California, San Francisco in 1976. In 1980, he was awarded an American Cancer Society lifetime research professorship. In 1985, he was named chair of UCSF's department of biochemistry and biophysics. He was elected NAS president in 1993.

Alberts is one of the original authors of ***The Molecular Biology of the Cell,*** now in its fourth edition, considered the leading advanced textbook in this field and used widely in U.S. colleges and universities. His most recent text, ***Essential Cell Biology,*** now in its second edition, is intended to present this subject matter to a wider audience.

Alberts is committed to improving science education at all levels. He helped to create City Science, a program for improving science teaching in San Francisco elementary schools. At the National Academies, he formed the Center for Education to provide strong support for an evidence-based, continuously improving system of public education in the United States.

As NAS president, Alberts focused on promoting science-based decision making throughout the world. During his tenure as president, he was co-chair of the InterAcademy Council, a new organization governed by the presidents of science academies from 15 nations, designed to provide science advice to the United Nations and other international organizations.

Mohamed Shareef Bacchus is an eighth grade math teacher at Hilsman Middle School in Athens, Georgia where he teaches gifted seventh- and eighth-grade students. Prior to this, he served as a math instructor at the Teachers Training College in St. Lucia, West Indies for a period of two years. Before going to St. Lucia, he taught Calculus, Advanced Algebra, and Trigonometry for 12 years at The Richard Ishmael Secondary School, in Guyana, South America. Mr. Bacchus has a B.A. in Mathematics as well as a post-graduate diploma in Mathematics Education from the University of Guyana. Additionally, he has a M.A. in mathematics education from the University of Georgia. He received a Presidential Award for Excellence in Mathematics and Science Teaching (2001) and is the coach of a top placing Mathcounts team. His philosophy of education includes high expectations for all students and his emphasis is decidedly mathematical, challenging students to solve problems in different ways and to explore mathematical ideas.

Ellen Bueschel started her career in education as an elementary teacher in Indiana and Ohio. She has served as elementary principal and as superintendent of schools in districts in Massachusetts, Illinois, Ohio and Indiana. Ellen received her undergraduate degree in Elementary Education, 1963 at Ball State University, Muncie, Indiana, her Master of Ed degree in Elementary Administration, 1973 at Miami University, Oxford, Ohio and her Ph.D., Educational Leadership,

1980. After serving many years in administrative positions she has returned to Miami University, Oxford, Ohio where she currently serves as Associate Professor, Educational Leadership. In addition to her teaching responsibilities, Ellen is working with the grant project Schools that Learn and Teacher Leadership.

Wanda Bussey is the mathematics department chair and a teacher of International Baccalaureate Higher Level Mathematics at Rufus King High School in Milwaukee, Wisconsin where she has taught since 1979. She assisted the school in instituting and developing its IB program and is an IB Senior Teacher. She has also served as an assistant examiner for the IB Examinations Office. Her work as an assistant examiner has entailed curriculum development, modeling her school's program for others, and presentations at IB workshops around the country. She has served on many district panels and committees including those related to providing algebra for all students and improving state and district mathematics assessment results, and most recently served on the committee for the development of IB's portfolio evaluation process. She has taught calculus at Marquette and the University of Wisconsin. She is a Tandy Technology Scholar Teacher award winner. She received her MS degree in Mathematics from the University of Wisconsin at Milwaukee. She was a valued member of the NRC Committee on Programs for Advanced Study of Mathematics and Science in American High Schools.

Peggy Carlisle, a third and fourth grade teacher at Pecan Park Elementary School in Jackson, Mississippi is the NSTA Shell Science Teacher Award Teacher of the Year (2002), a National Board Certified Teacher in Early Childhood (Generalist) and a recipient of the 1999 Presidential Award for Excellence in Mathematics and Science Teaching. She recently was named to the All-USA Teacher First Team by *USA Today* and has been selected as a Fulbright Memorial Fund Scholar Program recipient. In addition, she has been named 2000-2001 Jackson Public School District Teacher of the Year; Mississippi Science Teachers Association 2000 Outstanding Elementary Science Educator; 2002 NSTA/Lysol Science and Your Health Challenge Awardee; and the1998 Metro Jackson Outstanding Teacher. She served as a national validator and an assessor for the National Board for Professional Teaching Standards, was appointed to the Mississippi State Department of Education committee to formulate the state elementary science assessments, and serves as a district science teacher leader and mentor to new science teachers. Peggy also serves as district mentor to National Board candidates and trainer to district elementary science teachers.

Elizabeth Carvellas is a teacher and co-chair of the science department at Essex High School in Essex Junction, Vermont. She is currently in her 35th year of teaching, having taught students from grades 7-12. Her professional service includes work at the local, state, and national levels. She served as co-chair of the Science and Mathematics Education Committee of the Council of Scientific Society Presidents and is a past president of the National Association of Biology Teachers. She is currently on the Board of Directors of the Biological Sciences Curriculum Study. In 1984, she received the Presidential Award for Excellence in Science and Mathematics Teaching. In 2001, she was selected for the NSF funded TEA program, Teachers Experiencing Antarctica and the Arctic. Her interests include interdisciplinary teaching, connecting "school" science to the real world, traveling with students on interdisciplinary field studies, and bringing inquiry into the science classroom.

Ruth Casey currently teaches mathematics at Anderson County High School in Lawrenceburg, Kentucky. She is a National Board-certified mathematics teacher, who is very active with both the National and Kentucky Councils of Teachers of Mathematics (NCTM, KCTM). Ms. Casey was a 1993 recipient of a Presidential Award for Excellence in Teaching Mathematics and a 1994 Tandy Scholar. She is also a Christa McAuliffe Fellow. She is immediate past-president of KCTM and is President-Elect of the Beta Epsilon chapter of Alpha Delta Kappa, a sorority for women educators. In addition to her teaching responsibilities, she conducts many conferences and workshops for mathematics teachers. Mrs. Casey was the keynote speaker at the 1997 Spring Conference of the Middle Tennessee Mathematics Teachers. Her interests include the use of technology in mathematics education and she has made numerous presentations at national meetings on this topic. She is a member of the standards setting committee of the Kentucky Department of Education.

Lyn Countryman graduated from Iowa State University in 1980 with a B.S. in Zoology and Secondary Education. She received her Masters degree and PhD. from the University of Iowa in Science Education. In 1994, she became one of the first 81 teachers in the nation to gain National Board Certification as an Early Adolescent Generalist. She received the 1999 Presidential Award for Excellence in Mathematics and Science Teaching and the 1998 Tandy Award for outstanding teaching. Dr. Countryman has served as the president of the Iowa Science Teachers Section of the Iowa Academy of Science. She teaches seventh grade science, eleventh grade biology, and mentors undergraduate education majors at Malcolm Rice Laboratory School on the campus of the University of Northern Iowa. Dr. Countryman participated in the NRC A Voice for Teacher's Workshop in August 2002.

Linda Emm is an educational specialist with Miami Dade County Public Schools, in the Department of School Career Preparation. Prior to accepting this new challenge, she was the Theatre Arts teacher in Cutler Ridge Middle School's Ridge Arts Program. Ms. Emm has also been actively involved in building and sustaining learning communities in schools, both locally and nationally, through the National School Reform Faculty and the Annenberg Institute for School Reform. For the past few years, she has been a charter member of the Teacher Leader Network, a virtual learning community of educators from around the country, and as served as one of the first group of Washington Mutual Teacher Fellows for this organization.

Linda believes strongly in the capacity of teachers to transform the schools in which they work, to create space for the adults in the building, and the children with whom they work, to become deeply engaged in the process of continuous reinvention and lifelong learning. Taking action to enable districts, faculties, students, and parents to do this work is at the heart of her efforts, wherever she is.

Megan Franke is an associate professor at the University of California Los Angeles. Her current research interests focus on understanding the role of teacher knowledge in the teaching of elementary school mathematics. Specifically of interest is understanding the relationship between teacher knowledge and classroom practice for teachers attempting to change their mathematics teaching. Dr. Franke received her Ph.D. in educational psychology from the University of Wisconsin, Madison.

Javier Gonzales is a mathematics teacher and department chair at Pioneer High School in Whittier, California. He is the creator of the Pioneer Math Academy, a six-week summer math program that serves over 700 students each year. The Academy teaches math principles by means of students' active participation in math-related projects, which, along with his other enrichment classes, are designed to foster students' mastery and self-confidence in mathematics. During the school year Mr. Gonzalez also serves as a mentor teacher and the coordinator of Pioneer's gifted and talented education program. In addition, he is the advisor to the Pioneer Leo Club, a program affiliated with the Lions Club that provides opportunities for young people to perform community service activities. He currently serves on the Whittier School Board. He was named the 1996 State Teacher of the Year, is a recipient of a Presidential Award for Excellence in Mathematics and Science Education and a Milken Family Foundation awardee. Mr. Gonzalez was appointed by Secretary Richard Riley to serve on the National Commission on Mathematics and Science Teaching for the 21st Century.

Cheryl Hayes is the Founder and Executive Director for The Finance Project. She is a respected national expert on financing for education, family and children's services and community building and development. Ms. Hayes has more than 30 years of experience in public policy research, development and technical assistance. Before launching The Finance Project, she served as Executive Director of the bi-partisan National Commission on Children, which developed a broad national policy agenda for America's children and families on behalf of Congress and the President. Prior to her Commission appointment, Ms. Hayes directed the policy research program on children and families at the National Academy of Sciences/National Research Council. She serves as an advisor and consultant to government agencies, private foundations, non-profit corporations and community organizations on strategic planning, financing and sustainability. She also is the author and editor of numerous books and articles on public policies for children and families and on human services financing. Ms. Hayes received an MBA from The Wharton School at the University of Pennsylvania, a MA in American Family Studies from Georgetown University and a BA from Skidmore College.

Gail Hood is a Director at LessonLab, a Pearson Education Company. She has co-authored and implemented professional development on-line courses including TIMSS Video Studies: Explorations of Algebra Teaching, Lesson Study through a Mathematics Lens and Mathematics and Science methods courses for Western Governors University. In this role, Gail has been responsible for designing, piloting and implementing facilitator training for the face-to-face, blended and online delivery of LessonLab courses. Previously, in Australia, she has developed and presented a variety of educational programs both online and face-to-face at Universities, taught mathematics and computer science at Universities and K-12 schools, and designed and delivered professional development course for teachers at all levels.

Tom Keller is the state science specialist for the Maine Department of Education. As such, he is responsible for helping educators review and improve their K-12 science curriculum, instruction, and assessment program. He directs the state science assessment program as well as providing direction for local assessment systems. He also oversees the implementation of Title II A and B of the No Child Left Behind Act. This title is commonly know as the 'Teacher Quality' provision and provides funds for professional development to all public local educational agencies. Tom also oversees a state-funded professional development program.

Dr. Keller holds a doctorate in education from the University of Massachusetts at Amherst in curriculum and instruction. He is a member and past president of the Council of State Science Supervisors and was a member of the National Research Council's Committee on Science Education K-12. He has presented at the local, state, regional and national levels and has modeled good and bad professional development.

Caroline Kiehle is the Program Manager for "Middle School Science Systemic Change Partnership", a Local Systemic Change project of the National Science Foundation. From 1985-1996 Caroline taught science and math for grades 6-10 in the Seattle region, and was the state's Middle School Science Teacher of the Year in 1994. from 1990-1996 she co-developed and led a teacher institute at the University of Washington's Department of Molecular Biotechnology, that partnered scientists with middle grade teachers to design investigations for students to learn challenging, fundamental science concepts. This work evolved into the vision and plan for the current middle school systemic program. Five regional school districts are working collaboratively to build a strong science program for 6th, 7th, and 8th grade students, to complement their elementary school standards-based inquiry science program. Caroline has a Master in Education degree from the University of Washington and a Teaching Certificate in secondary math and science for the state of Washington.

Michael Klentschy is currently the Superintendent of Schools of the El Centro School District in El Centro, California. He has served in this capacity since February 1994. He has also served in teaching and administrative positions in the Los Angeles Unified School District from 1966 to 1985 and the Pasadena Unified School District from 1985 to 1994. He received his doctorate degree in educational research and evaluation from the University of California, Los Angeles.

He is also currently the Principal Investigator for the NSF funded Valle Imperial Project in Science LSC and Co-Director of the California Science Subject Matter Project Regional Center in Imperial Valley and the California Regional LASER Center. Dr. Klentschy served as Co-PI on several NSF funded elementary science initiatives with CAPSI at the California Institute of Technology. He serves on several advisory boards including CAPSI, National Science Resources Center-LASER, Center for Assessment and Evaluation for Student Learning, and the Exploratorium.

Dr. Klentschy also serves as an instructor at San Diego State University Graduate School of Education, teaching and conducting research on alternate forms of assessment in elementary science. Dr. Klentschy is also part of a university research team studying the longitudinal effects of inquiry-based science programs on student achievement. He is also currently working with Dr. James Stigler from the University of California, Los Angeles in the development of video-based technology for preservice, professional development and lesson study applications.

Dr. Klentschy was named the Southern California Superintendent of the Year by the Association of California School Administrators in 2001. The California Science Teacher's Association also acknowledged his efforts by naming him the Administrator of the Year in 2001.

Jay Labov has been the study director and responsible staff officer for the NRC reports, *Evaluating and Improving Undergraduate Teaching in Science, Mathematics, Engineering, and Technology* (in press); *Learning and Understanding: Improving Advanced Study of Mathematics and Science in U.S. High Schools* (2002); *Educating Teachers of Science, Mathematics, and Technology: New Practices for the New Millennium* (2000); *Transforming Undergraduate Education in Science, Mathematics, Engineering, and Technology* (1999)*; Serving the Needs of Pre-College Science and Mathematics Education: Impact of a Digital National Library on Teacher Education and Practice* (1999); and *Developing a Digital National Library for Undergraduate Science, Mathematics, Engineering, and Technology Education* (1998). He also has served as Director of the Center's Committee on Undergraduate Science Education and oversees the NRC's and National Academy of Science's efforts to improve the teaching of evolution in the public schools.

Prior to assuming his position at the NRC in August 1997, Dr. Labov was a member of the faculty in the Department of Biology at Colby College (ME), where he served two terms as Chair of the Division of Natural Sciences, Associate Chair of the Department of Biology, and as a member of numerous college committees and panels. He taught courses in Introductory Biology, Mammalian Anatomy and Physiology, Animal Behavior, and Neurobiology. His research and publications in the life sciences have dealt with physiological and behavioral aspects of reproduction in mammals. He was responsible for developing and overseeing a partnership program for Colby scientists and teachers in four local school districts. Dr. Labov also has worked with many national organizations and professional societies to improve science education for both pre-college and undergraduate students. He received a B.S. in Biology from the University of Miami and a M.S. in Zoology and Ph.D. in Biological Sciences from the University of Rhode Island.

Ann Lieberman is an emeritus professor from Teachers College, Columbia University. She is now a Senior Scholar at The Carnegie Foundation for the Advancement of Teaching. She was president of the American Educational Research Association (AERA) in 1992. She is widely known for her work in the areas of teacher leadership and development, collaborative research, networks and school-university partnerships, and on the problems and prospects for understanding educational change. Her recent books include: *Inside the National Writing Project: Connecting Network Learning and Classroom Teaching* with Diane Wood and *Teacher Leadership* with Lynne Miller recently published by Jossey-Bass.

Her many books and articles have been used by schools and universities alike. She has helped to bring research to the field and helped to popularize the perspective that learning from the field is another way to build important conceptions and knowledge about teaching and learning.

She has worked with teacher unions, state and federal departments, reform groups and at all levels of schooling. In addition she has run two school university partnerships and created the National Center for Restructuring Education, Schools and Teaching (NCREST) with Linda Darling-Hammond at Teachers College.

She is on numerous national and international advisory boards as she brings multi-perspectives - that of a teacher, researcher, reformer, writer and academic. As a researcher she is currently

working on deepening the field's understanding of different structures that support school transformation including, most recently networks, partnerships and coalitions and an expanded view of teacher leadership. As co- director of the k-12 program at the Carnegie Foundation for the Advancement of Teaching, she and her colleagues are currently working on the creation of accomplished teachers' multi-media web-sites to be used in both pre and inservice education.

Her unique contribution has been that she has been able to go between school and university - embracing the dualities that plague our field - theory/practice; process/content; intellectual/social-emotional learning; policy/practice - helping to build a more comprehensive understanding of teachers and schools and what it will take to involve them in deepening their work. To do this she has fashioned a way to be both a scholar and an activist, a practitioner and a theoretician.

Dr. Lieberman received her BA and Ed.D. at UCLA, and her Masters Degree at California State University at Northridge, where she is the only alumnae to receive an honorary doctoral degree.

Valdine McLean teaches physics, chemistry, biology, and leadership classes to students in grades 9–12 at Pershing County High School in Lovelock, Nevada. She also teaches students via distance learning. She holds National Board Certification in the area of Adolescent and Young Adult Science, and was NTTI Teacher of the Year in 1998. Understanding that science is not always easily accessible to students, she frequently develops cooperative projects with colleagues in art, shop, English, and computer science. The "pumpkin catapult" activity that she leads every fall involves more than half of the student body, as well as parents, businesspeople, and others from throughout the community and the region. She designs hands-on projects to nurture skills in cooperation, teamwork, tolerance, and friendly competition. The first teacher in her school to use computers in her classroom, she has created a technology-rich environment that has proven particularly effective for English language learners and special needs students. Her awards include Pershing County Teacher of the Year, 2000; Nevada Teacher of the Year, 2001; Horace Mann Teaching Excellence Award, 2001; and NEA Foundation for Improving Education Teaching Excellence Award, 2001.

Martin E. Orland is director of the Center for Education (CFE) of the National Academy of Sciences. The Center is the locus of all education-related activities at the NRC, serving as host to a variety of expert boards and committees whose activities and products inform the pursuit and application of scientific knowledge for improving educational policy and practice in the United States.

Immediately prior to becoming CFE Director, Dr. Orland was special assistant to the director in the U.S. Department of Education's Institute of Education Sciences (IES), and acting director of the Office of Reform Assistance and Dissemination.

From 1996 through 1999, Dr. Orland was associate commissioner with the National Center for Education Statistics where he was responsible for many of the major program initiatives coming out of the Center including its annual statistical compilations (the Condition of Education, Digest of Education Statistics, and Projections of Education Statistics), longitudinal studies of early childhood education, household surveys on a variety of education-related topics (e.g., school

crime, student civic involvement, adult education and training), and international education comparisons. Particularly noteworthy was his management of the release of the Third International Mathematics and Science Study (TIMSS) for U.S. fourth, eighth, and twelfth grade students, which has proven to be among the most important and influential federal education studies produced in the last decade.

Prior to joining NCES, Dr. Orland spent two years as a senior fellow with The Finance Project, an independent nonprofit initiative created to design innovative and comprehensive strategies for financing and delivering education and other supports and services for children and their families. Before that he spent over three years as a senior official with the National Education Goals Panel (including two stints as its acting director) where his role included producing an annual progress report on attainment of the national education Goals, spearheading efforts in support of voluntary national education standards and aligned assessment systems, and developing useful technical support materials to encourage local communities to implement goals-based education reform agendas. Earlier in his career, Dr. Orland served as government project officer for a number of evaluation studies of the ESEA Title I program, and managed analyses documenting the relationship between concentrations of poverty in the schools and student achievement.

Dr. Orland received his Ph.D. from Syracuse University's Maxwell School, and has taught Political Science at the Pennsylvania State University. He is the author of several dozen articles, research papers, and government reports in the areas of education and children's policy, finance, governance, and assessment, including publications in, Educational Evaluation and Policy Analysis, the Politics of Education Association Yearbook, the Journal of Educational And Psychological Consultation, and the Journal of Education Finance.

Bob Rice has served as a teacher, principal, and director of academics and superintendent of public schools in Iowa, Louisiana and Maryland. He recently finished a stint as the Interim Superintendent of Schools for the District of Columbia Public Schools. Dr. Rice interrupted his school administrative service prior to joining the District of Columbia Public School spending seven years in the private and non-profit sector. A supporter of quality student academic and career opportunities he is an advocate of the Career Academies. Dr. Rice received his degrees from Iowa State University and the University of Northern Iowa.

Brenda Terry is currently Education and Public Outreach Specialist with the National Space Science and Technology Center at the University of Alabama in Huntsville. She has been active in elementary education since 1987 and has been a facilitator for elementary science education reform since 1992. She has taught both third and fourth grades. For two years, Brenda worked as a science resource specialist for the University of Alabama at Huntsville Institute for Science Education's HASP (Hands on Activity Science Program) project. Her HASP responsibilities included planning and facilitating professional development activities that promoted the implementation of hands-on, inquiry-centered science in five northern Alabama school districts involved in an NSF-funded LSC grant. As a consultant for Carolina Biological Supply Company's Science and Technology for Children (STC) division, Brenda conducts workshops for local school districts and for state, regional, and national science teachers' associations. She has also trained teachers in Linköping, Sweden. She is a certified 4MAT (learning styles) trainer.

Brenda serves as the Associate Director of Alabama LASER. Her academic training includes a B.S. from Winthrop University, an M.A. in Elementary Education and an Ed.S. in Educational Leadership from the University of Alabama at Birmingham. She serves as an adjunct instructor for the UAB School of Education off-campus M.A. program.