

Biographical Sketches

Workshops 1B and 2B

Jill Andrews

Jill Andrews is Director, Research Education and Outreach, School of Information, and Director of the Office of Engineering Outreach and Engagement (OE)², at the University of Michigan. She is a trained journalist with a professional background that spans over 23 years as an academic administrator, educational outreach specialist and corporate liaison. Her work focuses on building relationships and working partnerships among academicians, practicing professionals, formal and informal educators and students, government representatives, media reporters and writers, filmmakers, and the general public. Her work for the University of Michigan includes supporting faculty, students and staff who wish to advance understanding of science, engineering and new technologies to increase public understanding of scientific and technological issues. Andrews is founder and former chair of the Local Educators Network (LEN) in the Los Angeles region, which brings together secondary school educators to articulate collective needs to research scientists and engineers. In Southeastern Michigan, she is leading a similar effort to establish long-term partnerships with Ypsilanti Public School District, Southfield Public Schools, and selected Detroit area schools. She is current chair, lead author of a strategic plan and recipient of two NSF grants to develop a website (www.neo-sphere.org), and run the NRCEN Conference 2007. She participates in the NSF-funded Network Between Civil Engineers and Science Museums, sits on the Board of Advisors for the UM Exhibit Museum of Natural History, and is a member of the UM Museum Studies Program Steering Committee. She is a member of the UM College of Engineering's Diversity and Outreach Council (DOC).

Lorelle Meadows

Dr. Lorelle Meadows is Coordinator of Academic Affairs for the College of Engineering, as well as an Assistant Research Scientist working in the area of applied ocean physics. In the former role, Lorelle coordinates the activities of the Diversity and Outreach Council for the College of Engineering at the University of Michigan (<http://www.engin.umich.edu/admin/adaa/diversity/index.html>) and leads initiatives based on the goals of the Council and the College.

Jim Shackelford

Associate Director for Education, Center for Biophotonics Science & Technology
University of California, Davis

James F. Shackelford has BS and MS degrees in Ceramic Engineering from the University of Washington and a Ph.D. in Materials Science and Engineering from the University of California, Berkeley. He is currently a Professor in the Department of Chemical Engineering and Materials Science at the University of California, Davis. For many years, he served as the Associate Dean for Undergraduate Studies in the College of Engineering and currently serves as the Director of the Integrated Studies Honors Program, an invitational, residential program for first-year students from a wide spectrum of majors. Dr. Shackelford also serves as an Associate Director for Education for the National Science Foundation-funded Center for Biophotonics Science and Technology (CBST). He teaches and conducts research in the areas of materials science, the structure of materials, nondestructive testing, and biomaterials. A member of the American

Ceramic Society and ASM International, he was named a Fellow of the American Ceramic Society in 1992 and received the Outstanding Educator Award of the American Ceramic Society in 1996. In 2003, he received a Distinguished Teaching Award from the Academic Senate of the University of California, Davis. He has published over 100 archived papers and books including Introduction to Materials Science for Engineers now in its 6th Edition and The CRC Materials Science and Engineering Handbook now in its 3rd Edition.

Margaret E. M. Tolbert

Senior Advisor, Office of Integrative Activities, National Science Foundation.

Dr. Margaret Ellen Mayo Tolbert earned her doctorate degree (1974) in biochemistry from Brown University in Providence, RI. Her M.S. degree (1968) was earned in analytical chemistry from Wayne State University in Detroit, MI. In 1967, she received her B.S. degree in chemistry with a minor in mathematics from Tuskegee University in Tuskegee, AL. Dr. Tolbert is a member of the Senior Executive Service of the Federal government. On September 22, 2002, she officially began her tenure as Senior Advisor in the Office of Integrative Activities (OIA). OIA supports the Office of the National Science Foundation (NSF) Director in carrying out a number of cross-organizational activities and provides policy support for these activities. Dr. Tolbert serves as a senior-level agency spokesperson to further promote NSF efforts to increase the participation of underrepresented minority groups, women, and persons with disabilities in science and engineering research and education particularly across all NSF centers and facilities programs. She provides leadership in the oversight of the Congressionally-mandated Committee on Equal Opportunity in Science and Engineering while acting as its Executive Secretary and as NSF's Executive Liaison to the Committee. As Senior Advisor, Dr. Tolbert provides leadership and oversight for mission-critical NSF-wide programs. She manages the multi-million dollar Science and Technology Centers Program (NSF 03-550). Also, she is responsible for ensuring that policies and procedures focus on enhancing customer service and program performance and that activities support objectives of the Government Performance and Results Act.

Prior to joining the NSF staff, Dr. Tolbert was the first African American and the first female to serve as Director of the U.S. Department of Energy's New Brunswick Laboratory. This laboratory is located in Argonne, Illinois, and it is a nuclear analytical chemistry laboratory, which has a predominance of chemists on its staff. Her work involved management functions and policy issues pertinent to the U.S.A. nuclear energy programs. She was responsible for directing the laboratory in its various functions (i.e., to prevent the spread of nuclear materials, prepare and certify nuclear reference materials for use in the standardization of instruments, evaluate the measurement capabilities of different nuclear laboratories worldwide, and measure the amount of nuclear material in samples from various sources throughout the world). From May to August of 2001, she served as Acting Associate Director of the U.S. Department of Energy's Office of Laboratory Operations and Environment, Safety and Health. Among Dr. Tolbert's other significant accomplishments are the following: the first African American female to serve as Director of the Division of Educational Programs at Argonne National Laboratory; the first African American to serve as Special Assistant to the Vice Chairs of the Presidential Committee on Education and Technology of the Federal Coordinating Council for Science, Engineering, and Technology; the first female to serve as Director of the Research Improvement in Minority Institutions Program of NSF; and the first female to serve as Director of the Carver Research Foundation of Tuskegee University, which is the research foundation established in 1940 by Dr. George Washington Carver. During her tenure as Director of the Carver Research Foundation, she served for a few months as a member of the University of Alabama System Board of Trustees. This was followed by her appointment as a Director of the Federal Reserve

System Board - Birmingham Branch (1985-1987). From 1988 to 1990, she was the highest-ranking African American female employed at the BP America Research Center at Warrensville Heights in Ohio. There she served as Senior Planner and Senior Budgets & Control Analyst. In academia, she has served as Visiting Associate Professor of Medical Sciences (Brown University in Providence, Rhode Island), Professor of Chemistry and Associate Provost for R&D (Tuskegee University in Tuskegee, Alabama), Instructor in Mathematics and Science (Opportunities Industrialization Center in Providence, Rhode Island), and Associate Dean of the School of Pharmacy and Professor of Pharmaceutical Science (Florida A&M University in Tallahassee, Florida). For a short period, she was assigned by TeleSec, Inc. to the Howard Hughes Medical Institute (Chevy Chase, Maryland) to review scientific proposals submitted to its International Program. Prior to and following this tenure, she served on proposal review panels and Committee of Visitors to several Federal agencies (e.g., National Science Foundation) and private sector organizations (e.g., National Research Council). Also, she has served as Guest Scientist at the International Institute for Cellular and Molecular Pathology in Brussels, Belgium. Dr. Tolbert has completed tours of duty in such countries as Ghana, Liberia, Libya, Sudan, South Africa, Senegal, Austria, and Belgium. For scientific and educational purposes, she has established national and international linkages among scientists, science administrators, and educators.

Dr. Tolbert is a member of the American Chemical Society, the American Association for the Advancement of Science (AAAS), New York Academy of Sciences, and the Institute of Nuclear Materials Management.

She has received numerous awards for her contributions to society. The AAAS honored her with an appointment of AAAS Fellow in 1988. Also included among her awards are the following: Women of Color in Government and Defense Technology Award in Managerial Leadership (July 2001); Letter of Congratulations on Winning the Award in Managerial Leadership (Secretary Spencer Abraham - July 13, 2001); Performance Awards for fiscal years 1999, 2000, and 2001 from the Chicago Operations Office of the U.S. Department of Energy; Performance Award for fiscal year 2005 from the National Science Foundation; Chicago-Tuskegee Alumni Club President's Merit Award (1999); Secretary of Energy Pride Award for Community Service (1998); and Certificate of Distinguished Service to the Federal Reserve System and excellent contributions to the Bank and to the economic progress of the Sixth Federal Reserve District (1987).

Her biography appears in several publications including Who's Who in America (2000 to Present), US Black Engineer & Information Technology (June/July 2001), Notable Black American Scientists (K. Krapp, Gale Research, 1999), Black Women Scientists in the United States (Wini Warren, Indiana University Press, 1999), Journal of College Science Teaching (1998), American Men and Women of Science, Outstanding Young Women of America, Journal of Nuclear Materials Management (C. Pietri, INMM, 1997), and Distinguished African American Scientists of the 20th Century (J.H. Kessler, et al., Oryx Press, 1996). From January until March of 2000, she was included among the scientists in the Black Creativity Exhibit titled "African American Women in Science and Technology" held at the Museum of Science and Industry in Chicago, Illinois. Additionally, she was featured in a Chicago Tribune article titled "Lab Coats and Space Suits" (February 2, 2000; Section 8, Pages 1-2). Dr. Tolbert has served as invited speaker at numerous conferences and meetings and has published papers on scientific as well as non-technical topics in peer-reviewed journals (e.g., *Journal of Biological Chemistry*, *Metabolism*, *Journal of Nuclear Materials Management*, *Journal of the National Technical Association*, and *Journal of College Science Teaching*). She continues to serve as a mentor for students interested in science and mathematics. Dr. Tolbert was born in Suffolk, Virginia, to the

late Mr. & Mrs. Clifton J. Mayo.