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UNDERSTANDING INTERVENTIONS THAT ENCOURAGE MINORITIES TO PURSUE RESEARCH CAREERS: MAJOR QUESTIONS AND APPROPRIATE METHODS

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UNDERSTANDING INTERVENTIONS THAT ENCOURAGE MINORITIES TO PURSUE RESEARCH CAREERS: MAJOR QUESTIONS AND APPROPRIATE METHODS

Biographical Sketches

CO-CHAIRS

Anthony L. DePass, *Long Island University*

Anthony L. DePass is the Associate Dean of Research and Associate Professor of Biology at the Brooklyn campus of Long Island University. Originally trained as a plant biologist, Dr. DePass currently directs a funded research program that explores cancer related gene regulation. His laboratory provides training for students at the high school, undergraduate, and masters levels, and has consistently placed students (many from underrepresented minorities in the sciences) in competitive doctoral programs. Additionally, Dr. DePass is a Co-PI (LIU award) and a member of the Administrative Core of a NIH-NCI funded partnership between Long Island University and Columbia University. This partnership promotes and funds collaborations between LIU-Brooklyn and Columbia University faculty in cancer research. Dr. DePass' background in the areas of student and faculty development is quite extensive. He was the Principal Investigator and Co-Director of the Multimedia and Interactive Learning (MIL) project. The MIL Project trained Math and Science faculty from five institutions in the New York Metropolitan area in the development and utilization of multimedia applications designed to enhance the active role of students in the learning process. As chair of the Minority Affairs Committee for the American Society of Plant Biology and a member of the equivalent committee of the American Society for Cell Biology, Dr. DePass has coordinating several programs aimed at strengthening the pipeline through development at various level, including a visiting professors program to facilitate collaborations between minority-serving and research institutions, travel awards, mentoring activities, and training faculty and science coordinators at the K-12 levels. He has also served on several grant review panels at the NIH, NSF and other federal agencies.

Larry V. Hedges, *Northwestern University*

Larry V. Hedges is the Board of Trustees Professor of Statistics and Social Policy at Northwestern University, the university's most distinguished academic position. He is also a Faculty Fellow with the Institute for Policy Research at Northwestern. He was previously the Stella M. Rowley Professor of Education, Psychology, and Sociology at the University of Chicago. Hedges' research straddles sociology, psychology, and educational policy and is best known for his work to develop statistical methods for meta-analysis (a statistical analysis of the results of multiple studies that combines their findings) in the social, medical, and biological sciences. Examples of some his recent studies include: understanding the costs of generating systematic reviews, differences between boys and girls in mental test scores, the black-white gap in achievement test scores, and frameworks for international comparative studies on education. He has authored or co-authored numerous journal articles and five books, including the seminal *Statistical Methods for Meta-Analysis: A Practical Guide to Modern Methods of Meta-Analysis* (with I. Olkin) and *The Handbook of Research Synthesis* (with H. Cooper). He has been elected a member or fellow of numerous boards, associations and professional organizations, including the National Academy of Education, the American Statistical Association, the American Psychological Association, and the Society of Multivariate Experimental Psychology and chairs the Technical Advisory Group of the U.S. Department of Education's What Works Clearinghouse. Dr. Hedges holds a B.A. in mathematics from the University of California, San Diego, and an M.A. in statistics and Ph.D. in Mathematical Methods in Educational Research from Stanford University.

MEMBERS

Daryl E. Chubin, *American Association for the Advancement of Science*

Daryl E. Chubin became Director of the new AAAS Center for Advancing Science & Engineering Capacity at the American Association for the Advancement of Science in August 2004. Prior to that, he served 3+ years as Senior Vice President, Research, Policy & Programs, at the National Action Council for Minorities in Engineering (NACME) Inc., in White Plains, New York, after nearly 15 years in federal service. Government posts included three years (1998-2001) as Senior Policy Officer for the National Science Board at the National Science Foundation (NSF); Division Director for Research, Evaluation and Communication in NSF's Directorate for Education and Human Resources (1993-98); and (on detail) Assistant Director for Social and Behavioral Sciences (and Education) at the White House Office of Science and Technology Policy (1997). He began his federal career in 1986 at the congressional Office of Technology Assessment.

Dr. Chubin earned a Ph.D. in sociology from Loyola University (Chicago) in 1973. He has served on the faculty of four universities, including Georgia Tech, where he was promoted to full professor. He has published eight books and numerous policy reports, articles, and commentaries on issues in science policy, human resource development, program evaluation, and engineering education. Among Chubin's honors are: AAAS Fellow, Past Chair of the AAAS section on Societal Impacts of Science and Engineering, Fellow of the Association for Women in Science, member of the National Academy of Engineering Committee on Diversity in the Engineering Workforce, Integrator for BEST (Building Engineering and Science Talent), and co-recipient of the American Society of Engineering Education Wickenden Award for best paper published in the 2003 volume of *The Journal of Engineering Education*.

Howard H. Garrison, *Federation of American Societies for Experimental Biology*

Howard H. Garrison has been the Director of the Office of Public Affairs at the Federation of American Societies for Experimental Biology (FASEB) since the office was created in 1996. He is also FASEB's Deputy Executive Director for Policy. He previously directed FASEB's Office of Policy Analysis and Research and was Group Manager for the Survey and Evaluation Services Unit for Aspen Systems Corporation, staff officer for the Institute of Medicine's Committee on Biomedical and Behavior Research Personnel, and Statistician with the Federal Personnel and Compensation Division for the U.S. General Accounting Office. Trained as a sociologist, Dr. Garrison has experience in biomedical research policy, statistical analysis, scientific workforce analysis, program evaluation and surveys for agencies including NSF and NIH. He is currently Vice President and member of the Board of Directors for the Commission on Professionals in Science and Technology, past President of the District of Columbia Sociological Society, and a former member of the NIH Minority Access to Research Careers Study Advisory Group. Dr. Garrison earned his A.B. from the University of Michigan and M.S. and Ph.D. from the University of Wisconsin-Madison.

Carol B. Muller, *MentorNet*

Carol B. Muller is the Founder, President, and Chief Executive Office of MentorNet, *The E-Mentoring Network for Diversity in Engineering and Science*. MentorNet (www.MentorNet.net) is a nonprofit organization headquartered in San José, CA. Founded in 1997, its mission is to further the progress of women and others underrepresented in scientific and technical fields through the use of a dynamic, technology-supported mentoring program; and to advance individuals and society, and enhance engineering and related sciences, by promoting a diversified, expanded and talented global workforce. She is responsible for establishing and implementing the vision for the organization and its programs, developing needed resources, and managing those resources with the help of staff, volunteers, and partners to produce services of high quality and deliver results. In addition to serving as MentorNet's President and CEO, she is a consulting Associate Professor of Mechanical Engineering at Stanford University. Both Dartmouth's campus-wide Women in Science Project, which Dr. Muller co-founded and developed when she served as associate dean for Thayer School of Engineering, and MentorNet have been recognized with the Presidential Award for Excellence in Science,

Mathematics and Engineering Mentoring. She earned a bachelor's degree in philosophy and English from Dartmouth College, and masters and doctoral degrees in education administration and policy analysis from Stanford University.

Karen Kashmanian Oates, *Harrisburg University of Science and Technology*

Karen Kashmanian Oates is the Provost at Harrisburg University of Science and Technology. She previously spent fifteen years on the faculty at George Mason University after a successful career as a research scientist in both private industry and at the National Institutes of Health/National Cancer Institute where her research focused on the active effects and characterization of thymic hormones in immune restoration and cancer therapy. During her tenure at George Mason, Oates held several key leadership positions, including as associate dean for College of Integrative Studies (New Century College). Oates is co-PI for the National Center for Science and Civic Engagement, co-PI for Science Education for New Civic Engagements and Responsibilities, and senior science advisor for the International Women in Science and Engineering. She conducts faculty development workshops on topics including assessment strategies, service learning, community- and discovery-based undergraduate research, using research to inform curricular design, and pedagogies associated with learning communities. Dr. Oates was previously senior science fellow for the Association of American Colleges and Universities. She received her B.S. in Biology from Rochester Institute of Technology and her Ph.D. in Biochemistry from George Washington University.

STAFF

Adam P. Fagen, *Board on Life Sciences, National Research Council* (Study Director)

Adam P. Fagen is a Program Officer with the Board on Life Sciences of the National Research Council. He came to the National Academies from Harvard University, where he most recently served as Preceptor on Molecular and Cellular Biology for the 300-student undergraduate genetics course. He earned his Ph.D. in molecular biology and education from Harvard, working with physicist Eric Mazur on issues related to undergraduate science courses; his thesis focused on mechanisms for assessing and enhancing the introductory science course in biology and physics to encourage student learning and conceptual understanding. Fagen also received an A.M. in molecular and cellular biology from Harvard, based on laboratory research in molecular evolutionary genetics, and a B.A. from Swarthmore College with a double-major in biology and mathematics. In addition to genetics and molecular biology, he is interested in improving undergraduate and graduate science education and other scientific workforce and policy issues. He served as co-director of the 2000 National Doctoral Program Survey, an on-line assessment of doctoral programs organized by the National Association of Graduate-Professional Students and supported by the Alfred P. Sloan Foundation.

Since coming to the National Academies, Fagen was study director for *Bridges to Independence: Fostering the Independence of New Investigators in Biomedical Research* (2005) and co-study director for *Treating Infectious Diseases in a Microbial World: Report of Two Workshops on Novel Antimicrobial Therapeutics* (2006). He is study director or staff officer for several ongoing projects including the National Academies Summer Institute on Undergraduate Education in Biology, A Leadership Summit to Effect Change in Teaching and Learning: Undergraduate Education in Agriculture, the National Academies Human Embryonic Stem Cell Research Advisory Committee, Biomolecular Materials and Processes, and Frontiers of Science at the Interface of the Physical and Life Sciences.

Tova G. Jacobovits, *Senior Program Assistant, Board on Life Sciences*:

Tova G. Jacobovits is a Senior Program Assistant with the Board on Life Sciences of the National Research Council. She joined the National Academies with an interest in science policy after an internship at the Department of State in the Office of Science and Technology Policy to the Adviser. At State, her

research focused on the methods used by the U.S. government to monitor international human subjects research. Jacobovits was first introduced to science policy through an internship with the American Association for the Advancement of Science (AAAS, in the Science, Freedom, Responsibility and Law Program) shortly after she graduated from the University of Wisconsin–Madison where she earned her B.S. degree in Biology and Hebrew Language.

Since coming to the National Academies in January 2006, Jacobovits has helped support numerous projects and reports. She is currently assisting the U.S. National Committee within the International Brain Research Organization, providing aid to neuroscientists in developing countries. She is also supporting the activities for a future NRC report, *Defining and Advancing the Conceptual Basis of Biological Sciences for the 21st Century*.

Jacobovits will soon leave the Academies to pursue a Ph.D. in nutrition at the University of Maryland. Her research interests include energy regulation, metabolism, and obesity; food and drug interactions; food safety and domestic food and agricultural policies.

Jay B. Labov, *Center for Education, National Research Council*

Jay B. Labov serves as a Senior Advisor for Education and Communications for the National Research Council. He also served for three years as Deputy Director for the NRC's Center for Education and was the study director and responsible staff officer for the NRC reports, *Evaluating and Improving Undergraduate Teaching in Science, Mathematics, Engineering, and Technology* (2003); *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 has served as Director of the Center for Education's Committee on Undergraduate Science Education, Committee on Science Education K-12, and the National Academies' Teacher Advisory Council. Dr. Labov is currently the co-PI for a multiyear grant from the National Science Foundation to the Center for Education and an NSF grant to offer workshops to grantees of the NSF's Math/Science Partnership Initiative that will enable them to better understand and implement the recommendations in NRC reports on education. He also currently oversees the NRC's and National Academy of Science's efforts to improve the teaching of evolution in the public schools and a recently expanded effort of the National Academies to work more closely with disciplinary and professional societies on education issues..

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.