STEM

science, technology, engineering & mathematics

Conference Program Journal

Building Toward Equity and Excellence

November 3-4, 2011

Crowne Plaza Albany

SUNY The State University of New York

Sponsored by the
Office of Diversity, Equity and Inclusion
SUNY System Administration

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The State University of New York (SUNY) Office of Diversity, Equity and Inclusion (ODEI) was established in August of 2007. The office, which is headed by the Associate Provost and Associate Vice Chancellor for Diversity, Equity and Inclusion and reports to the Executive Vice Chancellor for Academic Affairs and Provost, provides leadership and strategic direction to all SUNY campuses for developing and implementing a portfolio of diversity programs.

In close collaboration with campuses, ODEI enhances academic excellence by promoting the integration of diversity-related instruction and policy-oriented research. The link between academic excellence and diversity is indispensable in the modern university. Recent studies show that diversity in thought increases organizational strength, creativity, innovation and productivity—and there is significant evidence that people's identity groups matter when it comes to diversity in thinking.

Through the creative marshaling of resources, strategic investments and consultation with chief diversity officers system-wide, ODEI develops a focused approach to enhance access, success, diversity and academic excellence at SUNY. The fundamental academic mission of ODEI is to help SUNY fulfill its responsibility to create knowledge that will benefit society and prepare a new generation of public and corporate leaders, as well as a highly skilled and technically proficient workforce, that can work effectively in a culturally diverse environment.

ODEI administers four programs that were enacted by the state legislature almost twenty years ago to promote access, equity and diversity at SUNY: the Faculty Diversity Program, the Graduate Diversity Fellowship Program, the Empire State Diversity Honors Scholarship Program and the Native American Initiative. These programs were designed to help SUNY realize its mission of providing a quality education "with the broadest possible access, fully representative of all segments of the population."

Office of Diversity, Equity and Inclusion

State University Plaza, T501
Albany, New York 12246
(518) 320-1189

WELCOME LETTERS

BUILDING TOWARD EQUITY AND EXCELLENCE

November 3, 2011

Dear Friends,

It is my pleasure to welcome you to SUNY's biennial conference on diversity and STEM education, sponsored by our Office of Diversity, Equity and Inclusion. As SUNY moves forward with implementing its strategic plan, *The Power of SUNY*, the success of economically disadvantaged and historically underrepresented populations in the STEM fields is of paramount importance.

For SUNY, the nurturing of STEM disciplines also presents opportunities for New York to revitalize itself in the new knowledge economy. The industries that will grow our economy into the next decade are largely in the fields of science, technology, engineering and mathematics. New York's future, then, lies in the hands of its future workforce, which SUNY proudly educates and trains.

The stakes have never been higher, but I am confident that SUNY can begin to erase the stereotype that math, science, and technology aren't fields for women or minorities. It will take time, but the systemic change that SUNY can drive will positively impact not only future scientists, researchers, and innovators but society as a whole.

Nancy L. Zimpher
Chancellor
The State University of **New York**

November 3, 2011

Dear Attendees:

I am pleased to welcome you to this seminal statewide conference on Science, Technology, Engineering, and Mathematics (STEM) education, organized by the State University of New York (SUNY) Office of Diversity, Equity, and Inclusion. Since its inception, the SUNY system has steadfastly supported research and development in the STEM fields, enriching our understanding of the world as well as enhancing our daily lives. This conference will uphold and build upon this tradition, bringing together our nation's leading minds at the forefront of innovation and research. Our society depends on your work as we aim to improve our quality of life and remain competitive in the global marketplace, and this conference will surely contribute to this vital mission.

As a member of the House Committee on Science, Space and Technology and the Subcommittee on Research and Science Education, I am inspired by the potential of this esteemed gathering to shape the future of STEM fields. The sustained progress of our work depends on an education system that motivates and informs the next generation of excited STEM thinkers. I thank you for your commitment to this charge of paramount importance.

I wish you all the best over the next two days as you work together to lay the groundwork for continued success in STEM disciplines, which, with your guidance, will remain cornerstones of our economy and society.

Paul D. Tonko

United States Congressman

November 3, 2011

Dear Participants,

As we move further into the twenty-first century, our society will need greater levels of scientific, technological and numeric literacy among its citizens if it is to compete economically across the globe. More than a competitive advantage, however, such knowledge is necessary to solve the most pressing social problems we face. For example, our success in developing the critically important fields of biotechnology, environmental management and renewable energy sources will determine the quality of life in the decades ahead. Equally important, we know that continuing the historic inequalities in educational attainment will inevitably extend the patterns of racial and ethnic discrimination that have been so prominent a part of our national history, resulting in large numbers of our citizens being denied access to full participation in their society and culture.

The notion that we can, should, indeed must, handle these issues together has become the guiding principle of much of what we in SUNY seek to accomplish through greater educational emphasis in the STEM fields. First, we must do everything possible to stop the leaks in what we call the "educational pipeline," that pathway of classes that leads students from pre-K through successful completion of advanced degrees. Then, we need to guarantee that every student, and especially those who come from the traditionally disadvantaged groups, has had every encouragement to enter into and contribute to the STEM fields.

For all of us in SUNY, this conference, "Building Toward Equity and Excellence," fits well with our distinctive mission to provide educational experiences that serve larger public needs. The conference offers a unique opportunity for us to meet, to learn, and then to take back to our campuses examples of what has worked elsewhere.

On behalf of all the members of the SUNY University Faculty Senate, I commend the conference organizers and extend to them whatever support we can provide. By sharing our work as we "spread the news" to one another, we remind ourselves once again of the important and enduring differences our work can make in the lives of our students and in our communities.

Kenneth P. O'Brien
President, University Faculty Senate
The State University of **New York**

November 3, 2011

Dear Conference Participants,

I am pleased to welcome you to our biennial conference on diversity and STEM education. The 2009 conference marked the beginning of the Office of Diversity, Equity and Inclusion's project to highlight the programs in SUNY and across the nation that increase the participation and graduation of low income and underrepresented minority students in science, mathematics and technological fields. This year, the conference organizers have developed a program that will inform participants of national efforts and continue our dialogue within SUNY directed to replicating and building upon our own successes.

This conference and the work of our faculty and staff to promote opportunities for students in fields that are critically important to our state's and nation's economic vitality are splendid examples of what SUNY is doing to attain our strategic plan goals. Working together to provide a series of opportunities for students that involve an increasing number of campuses truly exemplifies the Power of SUNY.

We hope that you will gain useful information and insight from this conference, that you will meet new colleagues and find ways that you and your colleagues can enhance our students' experience and potential for satisfying careers that contribute to the greater good.

David K. Lavallee

Executive Vice Chancellor for Academic Affairs and Provost
The State University of **New York**

BUILDING TOWARD EQUITY AND EXCELLENCE

November 3, 2011

Dear Conference Participants,

I am pleased to welcome you to The State University of New York's Science, Technology, Engineering and Mathematics (STEM) conference. This exciting conference is centered upon a topic that is critical to the future of economic revitalization and growth in the 21st century—excellence and equity in STEM education. As Senior Vice Chancellor for Community Colleges and the Education Pipeline at SUNY, I have seen firsthand the tremendous work underway across the state to carry out the important goals in SUNY's strategic plan to strengthen the education pipeline.

The leaders of SUNY's 64 campuses are working in collaboration with Pre-K-12 educators, other higher education institutions, business and industry partners, government leaders, community leaders, and others on cradle-to-career initiatives to help more students graduate from high school and college prepared to succeed in the 21st century workforce. We are also working with partners across the state and the nation to strengthen the preparation of teachers and support greater recruitment and retention efforts in high-need disciplines. Central to the success of this effort is the work we do together to promote excellence and equity in the STEM fields. This conference highlights many strategic initiatives and best practices now in place to further these goals, including, for example, innovative approaches to cultivate student interest in STEM; strategies for diversifying the professoriate to reflect changing demographics; and opportunities for breaking through the barriers and expanding opportunities for all students to be successful in STEM-related fields and to be prepared for high-tech and high-demand careers.

Thank you for your leadership and commitment to STEM education. Your participation in this conference is a very powerful and positive step toward helping more students and faculty, particularly those from historically underrepresented groups, to discover opportunities for leadership in STEM fields. Like you, I am looking forward to learning more about the work underway at SUNY and across the state to promote excellence and equity in STEM. By working together, learning from one another, and advancing best practices and new ideas, we can have a tremendous impact on the future of our students, our STEM workforce, and New York's future in a competitive global economy.

Have a great conference!

Johanna Duncan-Poitier

Senior Vice Chancellor for Community Colleges and the Education Pipeline
The State University of **New York**

November 3, 2011

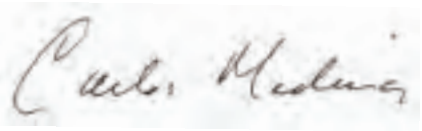
Dear Conference Participants,

On behalf of the State University of New York, Office of Diversity, Equity and Inclusion (ODEI), I am pleased to welcome you to our biennial conference on diversity and STEM education. I am proud to serve as the coordinator of this SUNY-wide conference and work with such talented and committed people who constitute this year's executive planning committee. These dedicated committee members are some of your colleagues from across SUNY, representing the cross section of faculty, staff and administrators.

The President of the National Academy of Engineering indicated that the nation's economic leadership and national security would likely decline if higher education fails to increase the participation of minorities in STEM fields; and henceforth, ODEI has prioritized this endeavor. Through this seminal conference, you will have an opportunity to learn about best practices, listen to national experts and come away with information you can readily utilize upon your return to campus.

ODEI, which promotes equal access and holistic integration of New York's underrepresented and economically disadvantaged populations into the academic culture of higher education at all levels, has considerable experience in STEM-related activities. In 2009, ODEI hosted its first STEM conference, *Yes We Have: A Showcase of Successful Programs Dedicated to Educating Diverse STEM Students in SUNY and Beyond.* The conference initiated a system-wide effort to examine, evaluate and replicate successful STEM education programs in SUNY, specifically those that increase recruitment and graduation rates of minority and low-income students. ODEI also initiated the SUNY Doctoral Diversity Fellowships in STEM, represented SUNY in the Governor's Working Group on STEM Education and collaborated with Purchase College in the development of a project to build bridges between high schools and SUNY campuses to increase the number of underrepresented students in college science degree programs.

Today's conference entitled *Building Toward Equity and Excellence* promises to continue the work of the first conference and build on SUNY's role as a leader in the field. It is my hope that you get as much useful information as you can and make the necessary contacts you need to improve your work as you continue to make a difference in the lives of our students. Enjoy!



Carlos N. Medina

Associate Provost and Associate Vice Chancellor for Diversity, Equity and Inclusion
The State University of **New York**

BUILDING TOWARD EQUITY AND EXCELLENCE

November 3, 2011

Dear Colleagues,

It is our pleasure to welcome you to the 2011 State University of New York (SUNY) Science, Technology, Engineering and Mathematics (STEM) Conference, held at the Crowne Plaza Hotel, Albany, New York, November 3-4, 2011. The conference theme, *Building Toward Equity and Excellence,* expresses our mission to increase the numbers of academically prepared and successful students in STEM. Although considerable progress has been made in broadening participation in STEM, we still have a long way to go to help under-represented populations and underserved communities throughout New York State achieve in STEM. Beyond the issues of equity and access, the full engagement of underrepresented groups is critical to sustaining and enhancing our technological workforce. Hence, this conference is part of a New York State and national effort to enhance our nation's scientific discovery and technological innovation through the engagement of diverse talent. Such efforts are essential for our nation's competitiveness in a world that is increasingly dependent on scientific and technological advancements.

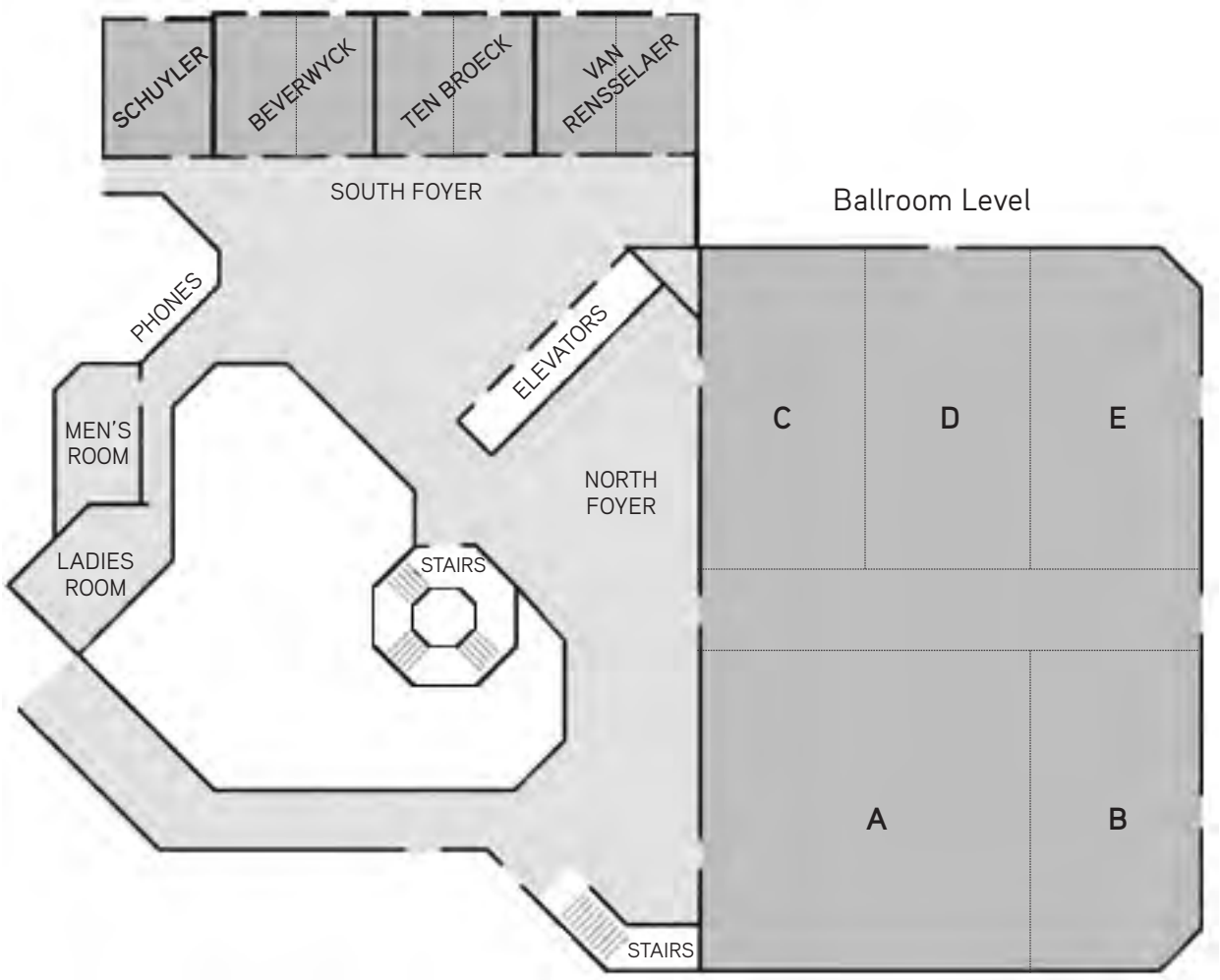
Building upon the success of our 2009 SUNY STEM conference, this meeting will showcase the accomplishments of experts who will present the best means to increase the numbers of diverse students in STEM disciplines and professions. Those programs that demonstrate success in increasing access, retention, and graduation of diverse student populations in STEM will be well represented.

As in our previous conference, you will have opportunities to network with colleagues from a variety of SUNY institutions. The conference agenda includes poster presentations and a welcome reception on Thursday evening that will include greetings from our SUNY Provost, Dr. David K. Lavallee, and other dignitaries dedicated to STEM education. Our conference day on Friday will feature a number of presentations dedicated to best practices in STEM education.

This conference could not happen without generous support of the SUNY Office of Diversity, Equity and Inclusion (ODEI) and your enthusiastic participation. Join us as we look forward to networking with friends and colleagues, old and new, in our quest for STEM equity and access in New York State.

David Ferguson and Letitia Thomas
STEM Committee Co-Chairs

CONFERENCE FLOOR PLAN



Event	Location
Registration/Poster Presentations	North Foyer
Reception/Breakfast/Lunch	Ballroom AB
Keynote Speakers	Ballroom AB
Plenary Session	Ballroom AB
Planning Committee Meeting	Beverwyck AB
Workshops #1, 7, 13	Ballroom C
Workshops #2, 8, 14	Ballroom D
Workshops #3, 9, 15	Ballroom E
Workshops #4, 10, 16	Beverwyck AB
Workshops #5, 11, 17	Ten Broeck AB
Workshops #6, 12, 18	Van Rensselaer AB

THURSDAY, NOVEMBER 3

4:00 p.m. - 6:00 p.m.

Poster Presentations/Registration (North/South Foyers)

University at Albany
Enhancing the Academic Performance of Women and Historically Underserved Minority Populations in STEM Fields-Impacts of a Well-Trained Peer Tutor Workforce

Buffalo State College
Which Button Do I Push?

SUNY Cobleskill
How Do We Increase Success in Freshman Science Courses with a Population of Underprepared Students?

Empire State College
Bringing the Science Laboratory Home

SER/VE (The STEM Exploratory Real/Virtual Environment) and the Engagement of Urban Youth

Farmingdale State College and Stony Brook University
Sustained LAIR/ITIM Expression is Linked to C1Q Mediated Dendrictic Cell (DC) Differentiation Arrest at the Monocyte to DC Interface

Farmingdale State College
Steroid-Inducible Baby Boom System for Development of an Efficient Plastid Transformation Protocol in Arabidopsis Thaliana

Evaluation of Low Temperature Slurry Catalyst, Copper Zinc Oxide, in the Conversion of Carbon Monoxide in Biomass Synthesis Gas Using Water Gas Shift Chemical Reaction

SUNY Fredonia
Partnership with the Technology Incubator of SUNY Fredonia

SUNY Geneseo
A Time for Choosing: The Audacity of "Knowing"

SUNY New Paltz
Increasing the Retention of UREP STEM Students at SUNY New Paltz

Old Westbury
Promoting STEM Education to Diverse Student Populations in Long Island: Long Island STEP and CSTEP Consortium

College at Oneonta
On a Trajectory to High Need Science Teaching: Learning to Teach Science Through High Quality Experiences

Stony Brook University
Center for Inclusive Education at Stony Brook University

Collaboration and the Women in Science and Engineering Program at Stony Brook University

6:00 p.m. - 9:00 p.m.

Evening Reception (Ballroom AB)

Welcome:
Carlos Medina
Associate Provost and Associate Vice Chancellor for Diversity, Equity and Inclusion

Remarks:
David Lavallee
Executive Vice Chancellor for Academic Affairs and Provost

Johanna Duncan-Poitier
Senior Vice Chancellor for Community Colleges and the Education Pipeline

Kenneth O'Brien
President, University Faculty Senate

Introduction of the STEM Committee Co-Chairs:
David Ferguson
Letitia Thomas

Introduction of the STEM Committee Members

Entertainment provided by Jazz/Latino, Inc.

FRIDAY, NOVEMBER 4

7:30 a.m. - 8:30 a.m.

Registration (North Foyer)
Breakfast (Ballroom AB)

8:30 a.m. - 9:45 a.m.

Welcome/Introductions/Keynote Address (Ballroom AB)

Welcome:
Carlos Medina
Associate Provost and Associate Vice Chancellor for Diversity, Equity and Inclusion

Speaker:
Nancy Zimpher
Chancellor

Keynote Speaker:
Irving McPhail
President and Chief Executive Officer, National Action Council for Minorities in Engineering, Inc. (NACME)

9:45 a.m. - 10:00 a.m.

Break

CONFERENCE SCHEDULE

10:00 a.m. - 11:15 a.m.

Concurrent Presentations (Session I)
See complete workshop descriptions on pages 16-17

WORKSHOP #1 (Ballroom C)
Binghamton University's Collaborative Efforts to Recruit, Retain and Release UREP STEM Students

Shanis Kent, Beth De Angelo, Florence Margai
Steven Revello and **Anna Tan-Wilson**
Binghamton University

WORKSHOP #2 (Ballroom D)
Alliance for the Graduate Education and the Professoriate (AGEP) at Stony Brook University

Alexandra Corrales de Eilers and **Leo Gafne**
Stony Brook University

WORKSHOP #3 (Ballroom E)
Synergistic Model for Increasing Student Diversity Through Increasing Women Faculty Representation and Advancement in STEM: The NSF ADVANCE Program Model

Webe Kadima, Rhonda Mandel, Lisa Langlois
and **Preety Tripathi**
SUNY Oswego

WORKSHOP #4 (Beverwyck AB)
STEP/CSTEP: The Student Pipeline to Success

Catherine Santos, Cleane Medeiros, Barbara Dahn
Darshini Roopnarine and **Nakeia Chambers**
SUNY Oswego

WORKSHOP #5 (Ten Broeck AB)
Expanding the Engineering Pathway for Underrepresented Minorities

Aileen Walter and **Raluca Cocianga**
National Action Council for Minorities in Engineering, Inc. (NACME)

WORKSHOP #6 (Van Rensselaer AB)
Increasing Retention of Women and Historically Underserved Minority Populations in STEM Fields - Lessons Learned From an NSF-Sponsored STEP Grant

Rabi Musah
University at Albany

11:15 a.m. - 11:30 a.m.

Break

11:30 a.m. - 12:45 p.m.

Concurrent Presentations (Session II)
See complete workshop descriptions on pages 17-18

WORKSHOP #7 (Ballroom C)
STEM and Afterschool: Powerful Partners for Building Capacity, Engagement, and Achievement

Lisa Mielke and **Jennifer Siaca**
The After-School Corporation (TASC)

WORKSHOP #8 (Ballroom D)
Building Bridges in STEM: Expanding SUNY's Collaborations Among Community Colleges and Four-Year Institutions

Joseph Skrivanek
Purchase College and
T. Jeffrey Scott
SUNY Office of Diversity, Equity and Inclusion

WORKSHOP #9 (Ballroom E)
Leveraging Grant-Funded Science, Technology, Engineering and Mathematics (STEM) Undergraduate Programs to Optimize Student Success

Candice Foley and **Nina Leonhardt**
Suffolk County Community College

WORKSHOP #10 (Beverwyck AB)
K-12STEM@SUNYIT

Elizabeth Rossi, Daniel Benincasa and **Robert Payne**
SUNYIT

WORKSHOP #11 (Ten Broeck AB)
STEM Smart: Partnerships Providing a Pathway to STEM Careers

Christine Veloso and **Paul Seigel**
Stony Brook University

WORKSHOP #12 (Van Rensselaer AB)
Professional Science Master's Degrees: Partnerships Between STEM, Higher Education and Business

David King
SUNY Oswego

12:45 p.m. - 2:00 p.m.

Lunch/Networking/Keynote Address (Ballroom AB)

Keynote Speaker:
Lorelle Espinosa
Director of Policy and Strategic Initiatives, Institute for Higher Education Policy (IHEP)

2:00 p.m. - 2:15 p.m.

Break

CONFERENCE SCHEDULE

2:15 p.m. - 3:30 p.m.

Concurrent Presentations (Session III)
See complete workshop descriptions on pages 18-19

WORKSHOP #13 (Ballroom C)
Partnering for Greener and Sustainable Design-Related STEM Curriculum: Improving Outcomes for Women and the Environment

Karen Pearson and **Elaine Maldonado**
Fashion Institute of Technology

WORKSHOP #14 (Ballroom D)
21st Century Building Bridges to Success in STEM and Social Sciences

Tamu Chambers
Hudson Valley Community College

WORKSHOP #15 (Ballroom E)
Closing the Loop: A Case Study in the Use of Formative Program Evaluation to Direct the Successful Modifications in an Intensive Summer Research Program

Karen Singer-Freeman, Ronnie Halperin and **Joseph Skrivanek**
Purchase College

WORKSHOP #16 (Beverwyck AB)
Exploring Information Systems, Exploring Yourself: Setting the Stage for Success

Diane Shichtman and **Patricia Wheeler**
Empire State College

WORKSHOP #17 (Ten Broeck AB)
SER/VE (the STEM Exploratory Real/Virtual Environment): Connecting Science Education and Urban Youth, Virtually

Eileen O'Connor
Empire State College

WORKSHOP #18 (Van Rensselaer AB)
Retention of a Diversified STEM Workforce Through Mentoring and Undergraduate Research Activities at SUNY Oswego

Shashi Kanbur, Cleane Medeiros and **Lorrie Clemo**
SUNY Oswego

3:30 p.m. - 3:45 p.m.

Break

3:45 p.m. - 5:00 p.m.

Plenary Session (Ballroom AB)
The Future of STEM Education

STEM education is of the utmost importance to all students and is critical to U.S. competitiveness. This has been recognized since World War II and was reiterated by President Obama in a recent town hall event on Facebook's Palo Alto campus. Government agencies and private foundations have supported countless numbers of programs aimed at improving STEM education. In particular, there have been emphases on programs that use new pedagogies as well as those that target underrepresented minorities and women. Yet, despite all of these efforts, the STEM workforce in the U.S. still lags behind other nations. This plenary session has gathered together three experts in science education from two government agencies and a private foundation to discuss what we must do to produce a larger, more productive, and diverse STEM workforce.

Speaker/Moderator:
Margaret Ashida
Director, Empire State STEM Learning Network

Introduction of Plenary Panel Members:
Susan Hixson
Program Director, National Science Foundation (NSF)

A. Frank Mayadas
Senior Advisor, Sloan Consortium

Clifton Poodry
Director, National Institutes of Health (NIH)

Co-Chairs will close out conference

5:00 p.m. - 5:30 p.m.

Questions/Next Steps/Closing Comments

STEM CONFERENCE EVALUATION

Thank you for attending the STEM Conference. We value your opinion and would like to know what you thought about the format, various presentations and speakers. Please take a few moments to complete the survey by going to http://www.suny.edu/provost/stem/. Your responses will be key to planning future events.

KEYNOTE SPEAKER

Irving P. McPhail

President and Chief Executive Officer
National Action Council for Minorities in Engineering, Inc. (NACME)

Irving Pressley McPhail was named the sixth President and Chief Executive Officer of the National Action Council for Minorities in Engineering, Inc. (NACME) on September 1, 2009 (*www.nacme.org*). He joined NACME in 2007 as Executive Vice President and Chief Operating Officer. Prior to that, he founded and served as principal of The McPhail Group LLC. He served 15 years as a college president or chancellor at The Community College of Baltimore County, St. Louis Community College at Florissant Valley, and LeMoyne-Owen College. Under his leadership, The Community College of Baltimore County was named one of *12 Vanguard Learning Colleges in the U.S. and Canada* in 2000 by the League for Innovation in the Community College; won the *Bellwether Award* in the category of Planning, Finance and Governance in 2000; and was awarded the *PBS O'Banion Prize for Leading the Way to Change in Teaching and Learning* in 2003. Dr. McPhail also served as Chief Operating Officer of the Baltimore City Public Schools. He has held tenured full professorships at three colleges and universities, and served as an affiliate or visiting professor at the University of Maryland at College Park, the University of Pennsylvania, and Morgan State University.

Working at the nexus of practice, policy, and research in literacy education, post-secondary student success, community college leadership, and STEM education, Dr. McPhail is the co-editor of *Teaching African American Learners to Read: Perspectives and Practices*, published by the International Reading Association in 2005, and the author of more than 50 journal articles, chapters, monographs, and technical reports. He earned a bachelor's degree in development sociology at Cornell University and a master's degree in reading at the Harvard Graduate School of Education. He earned the doctorate in reading/language arts at the University of Pennsylvania as a National Fellowships Fund Fellow. He was awarded the Honorary Doctor of Engineering degree at the 155th Commencement of Polytechnic Institute of New York University on May 18, 2010.

Dr. McPhail was an American Council on Education Fellow in Academic Administration at The Johns Hopkins University, and he completed the Presidents Academy Summer Institute at the American Association of Community Colleges and the Institute for Educational Management at Harvard University. His many awards include the *Ira D. and Rubye Hibler Hall Endowed Heritage Lecture Series Award* from Langston University, the *Alumni of Color Achievement Award* from the Harvard Graduate School of Education, and the *Pioneer Award* from the National Council on Black American Affairs of the American Association of Community Colleges.

Dr. McPhail serves on the board of the Society of Manufacturing Engineers Education Foundation and the National Council on Black American Affairs/Northeast Region [an affiliate council of the American Association of Community Colleges].

KEYNOTE SPEAKER

Lorelle L. Espinosa

Director, Policy and Strategic Initiatives
Institute for Higher Education Policy (IHEP)

Lorelle L. Espinosa, Ph.D., is the Director of Policy and Strategic Initiatives at the Institute for Higher Education Policy (IHEP). In addition to policy expertise, Espinosa establishes and manages collaborative external partnerships and initiatives to meet key organizational objectives for advancing college access and success for all students, with particular attention paid to underrepresented groups at the pre-college and college levels. Included in this directive is her management of the Pathways to College Network and Coalition for College Completion.

An expert on various higher education topics, Dr. Espinosa is well versed (as both a practitioner and researcher of higher education) on issues of postsecondary access and persistence of underrepresented groups. She has published on the transition and advancement of underrepresented minority students in science, technology, engineering, and mathematics (STEM) postsecondary education, with a current emphasis on women of color in STEM. Espinosa is a featured blogger for *Diverse: Issues in Higher Education* (STEM Watch) where she writes about the national imperative of building and sustaining a diverse STEM pipeline.

Dr. Espinosa's doctoral dissertation, *Pipelines and Pathways: Women of Color in STEM Fields and the Experiences that Shape Their Persistence*, was recently cited for excellence by the Association for the Study of Higher Education and has been recently published in the *Harvard Educational Review* as part of its symposium issue, *Unraveling the Double Bind: Women of Color in STEM*.

Dr. Espinosa serves on the advisory boards for the American Association for the Advancement of Science Access to and Diversity in STEM Fields: A Policy Initiative project, and the Association of Public and Land-Grant Universities Minority Males in STEM initiative.

Dr. Espinosa holds an M.A. and Ph.D. in Education from the University of California, Los Angeles. She received her B.A. from the University of California, Davis and her A.A. from Santa Barbara City College. Prior to her graduate work and arrival at IHEP, she worked in the areas of student affairs and undergraduate education at the University of California, Davis, Stanford University, and the Massachusetts Institute of Technology.

Margaret Ashida

***Director*, Empire State STEM Learning Network**

Margaret Ashida directs the Empire State STEM Learning Network, a statewide community-led collaborative advancing the interdisciplinary teaching and learning of science, technology, engineering and mathematics (STEM) to prepare all students across New York State for college and career success.

Previously an executive at IBM, Margaret's experience includes leadership in global diversity and workforce programs, workforce management strategy and execution, university relations, collaborative innovation, e-business transformation, marketing operations, customer support operations, financial planning and operational analysis. She began her career at the Xerox Corporation, moving to ROLM coincident with its acquisition by IBM.

Margaret currently chairs the Board of Directors of LEAP (Leadership Education for Asian Pacifics, Inc.) and is a Trustee Emeritus of the Anita Borg Institute for Women and Technology, past co-chair of the National Center for Women and IT (NCWIT) Workforce Alliance and past chair of the MentorNet Advisory Board. She holds a B.A. from the University of Rochester and an M.B.A. from the Stanford Graduate School of Business.

Susan Hixson

***Program Director* National Science Foundation**

Dr. Susan Hixson is a Program Director in the Division of Undergraduate Education, within the Directorate for Education and Human Resources, at the National Science Foundation (NSF), a position that she has held since 1992. Her current major responsibilities include serving as Program Lead for the Science, Technology, Engineering, and Mathematics Talent Expansion Program (STEP), and for the Science, Technology, Engineering, and Mathematics Talent Expansion Program Centers (STEP Centers).

Previously Dr. Hixson served as Lead for the Higher Education Centers for Learning and Teaching (HE-CLT), the Adaptation and Implementation Track of the Course, Curriculum, and Laboratory Improvement Program (CCLI-A&I), the Undergraduate Faculty Enhancement Program (UFE), and the Systemic Changes in the Undergraduate Chemistry Curriculum Initiative (Chemistry Initiative).

Prior to coming to the NSF, Dr. Hixson was a faculty member in the Department of Chemistry at Mount Holyoke College for 20 years, and she also served as Chair of the Program in Biochemistry for six years during that period. Her research program at Mount Holyoke focused on the photoaffinity labeling of enzymes with aryl azide reagents.

Dr. Hixson received her Ph.D. degree in biochemistry from the University of Wisconsin-Madison, and her B.S.Chem. degree from the University of Michigan-Ann Arbor.

A. Frank Mayadas

Senior Advisor
Sloan Consortium

A. Frank Mayadas has served as a Senior Advisor to the the Alfred P. Sloan Foundation since 2010, advising the Foundation on its continuing grants in the Anytime, Anyplace Learning Program. From 1992 to 2009, he served as a Program Director, helping craft the Foundation's grantmaking strategy in online learning, globalization, industry studies, and career choice in technical fields.

Prior to coming to the Sloan Foundation, Dr. Mayadas spent 27 years at the IBM Corporation. He was Vice President, Research Division, Technical Plans and Controls from 1991 to 1992; Vice President, Technology and Solutions Development, Application Solutions Line of Business, from 1989 to 1991; General Manager, University and College Systems, IBM Personal Systems Line of Business, from 1988 to 1989; Secretary of IBM's Corporate Management Board and the IBM Management Committee, from 1987 to 1988; and the IBM Management Committee, from 1987 to 1988; IBM Research Division Vice President and Director, Almaden Research Center, San Jose, California from 1983 to 1987; and an IBM Research Division Director, Technical Planning and Controls, from 1981 to 1983.

Dr. Mayadas received a Ph.D. in Applied Physics from Cornell in 1965, and a B.S. from the Colorado School of Mines in 1961. He has more than 35 published papers in *Systems, Devices, and Solid State Physics*, and holds several patents and awards from IBM. He is a fellow of the IEEE, a member of the American Physical Society, and a past Director of the Society of Engineering Science. He has served as a member of the National Advisory Board for Georgia Tech, and the Advisory Board of the College of Engineering, University of Illinois at Urbana-Champaign. He is currently a member of the Advisory Board for the College of Engineering, University of Florida.

Clifton A. Poodry

Director
National Institutes of Health

Clifton A. Poodry, Ph.D., is Director of the Minority Opportunities in Research (MORE) Division at the National Institute for General Medical Sciences (NIGMS), NIH. He is responsible for developing and implementing NIGMS policies and plans for minority research and research training programs. He also serves as a liaison between NIGMS and NIH, other federal agencies and the scientific community.

Prior to assuming this position in April of 1994, Dr. Poodry had been a Professor of Biology at the University of California, Santa Cruz where he also served in several administrative capacities. As professor, Dr. Poodry was involved with minority student development through the NIH sponsored Minority Biomedical Research Support (MBRS) and Minority Access to Research Careers (MARC) Programs. As Program Director for Developmental Biology at the National Science Foundation, Poodry developed the minority supplement initiative that was copied widely at NSF and later at NIH. In his current position he developed an innovative program, the Institutional Research and Academic Career Development Award in which postdocs, as part of mentored training, teach at minority serving institutions. He also developed a new research program designed to understand the efficacy of interventions and thus inform future planning of student development initiatives.

Dr. Poodry is a native of Tonawanda Seneca Indian Reservation in Western New York. He earned both a B.A. and an M.A. in Biology at The State University of New York at Buffalo, and received a Ph.D. in Biology from Case Western Reserve University. He was the 1995 recipient of the Ely S. Parker Award from the American Indian Science and Engineering Society for contributions in science and service to the American Indian community. In 1999, he received an Honorary Doctor of Science Degree from The State University of New York.

WORKSHOP DESCRIPTIONS

Workshop #1 (Ballroom C)

Binghamton University's Collaborative Efforts to Recruit, Retain and Release UREP STEM Students

Shanis Kent, Beth De Angelo, Florence Margai, Steven Revello and **Anna Tan-Wilson**, Binghamton University

Binghamton University (BU) is dedicated to increasing the number of diverse students in STEM disciplines and professions. Through the efforts of various programs and offices at BU, we collaborate to recruit, retain, and release underrepresented (UREP) student populations in STEM majors. Our combined efforts have resulted in a high first year retention rate (90%) as determined by the Education Trust. These figures also indicate that BU's six-year graduation rates for UREP students are consistently high (80% for African-Americans, 70% for Hispanic Americans) ranking in the top 5 of peer institutions serving similar students. This workshop will highlight the collaborative activities between the programs that contribute to these outcomes. The proposed workshop will be interactive, including a discussion of the signature pieces of these programs and their collective success in broadening UREP participation in STEM disciplines. We will also discuss the institutionalization of these efforts and the best practices for promoting successful partnership across three levels: i) among the eight entities noted above; ii) partnership across the campus with other university offices; and iii) externally across alliances within SUNY and beyond.

Workshop #2 (Ballroom D)

Alliance for the Graduate Education and the Professoriate (AGEP) at Stony Brook University

Alexandra Corrales de Eilers and **Leo Gafne**
Stony Brook University

The Alliance for the Graduate Education Program at Stony Brook University (AGEP-SBU) has been an agent of change for the community and the climate of underrepresented minorities at Stony Brook University. Stony Brook University has been the participant of the SUNY Alliance and recipient of an NSF AGEP award since 1999. The program objective was to increase the number of STEM underrepresented minorities that graduated and enters the professoriate. AGEP students benefit from a rich portfolio of programming activities and services designed to promote the recruitment, mentoring, retention and professional development of underrepresented graduate students in STEM on our campuses. We host an annual Summer Research Institute for undergraduate students in any STEM discipline. The AGEP program at Stony Brook has initiated an intensive evaluation to measure impact, identify best practices and refine the theoretical model to increase diversity on the Stony Brook campus. The program evaluation uses qualitative and quantitative data from activities and programmatic assessments of AGEP-SBU.

Workshop #3 (Ballroom E)

Synergistic Model for Increasing Student Diversity through Increasing Women Faculty Representation and Advancement in STEM: The NSF ADVANCE Program Model

Webe Kadima, Rhonda Mandel, Lisa Langlois and **Preety Tripathi**
SUNY Oswego

This workshop will focus on the impact of the status and presence of women STEM faculty—with special attention given to women of color—on the recruitment, retention and successes of diverse student populations, and particularly those from underrepresented groups in STEM areas. The first part of the workshop will cover strategies used by the NSF to increase representation and status of women in STEM disciplines through the ADVANCE program. In the second part, we will explore the connections between the outcomes of ADVANCE programs and increasing access, retention, and graduation of diverse student populations in STEM majors using empirical data. The third part will focus on SUNY Oswego's experience with the NSF ADVANCE program. SUNY Oswego received a $200,000 NSF ADVANCE IT Catalyst grant in 2010 for our program OsWeGo Advance. We will share practical information on the preparation of a successful ADVANCE IT Catalyst proposal. Furthermore, we will elaborate on the strategies we plan to use to connect the success of women faculty in STEM with increases in the success and diversity of student populations in STEM.

Workshop #4 (Beverwyck AB)

STEP/CSTEP: The Student Pipeline to Success

Catherine Santos, Cleane Medeiros, Barbara Dahn, Darshini Roopnarine and **Nakeia Chambers,** SUNY Oswego

The presenters of this session are from the Central New York 1 region and representative of the STEP/CSTEP programs at the high school, community college, four-year public and private, and graduate school levels. After presenting an historical overview of STEP/CSTEP, each presenter will discuss the ways in which their programs are an integral component to the "pipeline of success." These components include the services and programs offered at the institutional level, collaborative efforts both as a region and statewide association, and the impact of the program throughout New York State. Materials and information documenting the impact and accomplishments of the STEP/CSTEP program will be provided.

Workshop #5 (Ten Broeck AB)

Expanding the Engineering Pathway for Underrepresented Minorities

Aileen Walter and **Raluca Cocianga**, National Action Council for Minorities in Engineering, Inc. (NACME)

With rapid progress in science and technology in developing countries, our nation must act quickly to maintain a leadership position in STEM and innovation. Yet the challenge of the increased diversity of U.S. college students has yet to be adequately addressed, especially in engineering fields. NACME's vision is to create "An Engineering Workforce That Looks Like America," via increased recruitment and degree completion rates of underrepresented minority (URM) students. The session will address the "Partnering and Pipelining" focus by sharing partnerships, best practices and data-driven strategies with the goal of integrating programs along the engineering pathway, from middle school through workforce entry. More specifically, we will highlight NACME's college and university partnerships to increase the graduation-to-retention rates of URM students in engineering as well as the cultivation of middle, high school and community college students' success in STEM.

Workshop #6 (Van Rensselaer AB)

Increasing Retention of Women and Historically Underserved Minority Populations in STEM Fields - Lessons Learned From an NSF-Sponsored STEP Grant

Rabi Musah, University at Albany

In 2008, the University at Albany received a grant from the National Science Foundation to create the Center for Achievement, Retention and Student Success. The primary goal of the center is to increase the graduation rates of students in STEM fields at UAlbany through a combination of interventions, including but not limited to: 1) the permanent establishment of the Center; 2) provision of peer tutoring and mentoring; 3) the creation of learning communities; and 4) the establishment of a robust project evaluation plan that enables the project management to respond in real time to adjustments that need to be made in order to meet program goals. Additionally, a focus of the program is to increase graduation rates of subpopulations of STEM majors, most notably female students, and students from historically underserved minority populations. The project, now entering its fourth year, has yielded important information on types of interventions that have a high positive impact, and others that do not. This workshop will explore both of these elements and provide detailed information on scalable and transferable best practices that can be tailored to different institutional climates and structures.

Workshop #7 (Ballroom C)

STEM and Afterschool: Powerful Partners for Building Capacity, Engagement, and Achievement

Lisa Mielke and **Jennifer Siaca**, The After-School Corporation (TASC)

The After-School Corporation (TASC) launched Frontiers in Urban Science Explorations (FUSE) in 2007. Its purpose was to create a culture shift in New York City by increasing stakeholders' interest and confidence in the delivery of STEM learning activities in the after-school hours. FUSE employs a two-fold approach to changing minds, influencing culture and shaping practice. First, "grass-tops" activities engage educational leaders, government officials, science organizations, policy makers and funders in awareness-raising activities in order to build enthusiasm and capacity for inquiry-based STEM learning in the after-school hours. Second, "grass-roots" activities provide frontline after-school staff and supervisors with the content knowledge and instructional skills to deliver high-quality Informal Science Education (ISE). This presentation will briefly investigate the results and evolution of the FUSE model, and how it is being adapted to reach communities across the state. Participants will then learn strategies for building partnerships and engaging community leaders in informal STEM education as well as working through the challenges of implementing high-impact STEM education in after-school programs with training and technical assistance. The types of STEM curricula that are most productive in informal education settings and the benefits of including after-school STEM in strategies in an in-school improvement plan will also be explored.

Workshop #8 (Ballroom D)

Building Bridges in STEM: Expanding SUNY's Collaborations Among Community Colleges and Four-Year Institutions

Joseph Skrivanek, Purchase College and **T. Jeffrey Scott**, SUNY Office of Diversity, Equity and Inclusion

Over the last eleven years, Purchase College has implemented the Baccalaureate and Beyond Community College Mentoring Program with major funding from the National Science Foundation, the National Institutes of Health, PepsiCo Foundation, and private donors and corporations. The goal of the program is to aid underrepresented minority, financially disadvantaged, and first generation community college students in completing a Bachelor's degree in various fields of the liberal arts and sciences. The program uses three strategies to achieve this goal: 1) Participation in an intensive summer research program coupled with intensive academic advising; 2) The development of programs to foster innovative pedagogy in introductory STEM courses; and 3) The development of mentoring and tutoring programs at Purchase College. In the 11 years of the Baccalaureate and Beyond Mentoring Program, 300 students have participated. Of this population, 83% have completed associates degrees (compared to 30% nationally), 71% have completed baccalaureate degrees (compared to 13% nationally), 42% have transferred to Purchase, and 33% are pursuing post-baccalaureate work. Last year we took the first steps toward replicating this program within the SUNY system. With grants from the SUNY Provost's Office and the SUNY Office of Diversity, Equity and Inclusion, we sponsored a conference on replication, "Building Bridges in STEM: Expanding SUNY's Collaborations among Community Colleges and Four-Year Institutions." The conference was attended by two-person teams from nearly 30 SUNY two and four-year institutions. Thirty two-year and four-year institutions have agreed to work on this project and have been grouped into four regions. The workshop will begin with a brief overview of the Purchase program followed by details from the conference and the progress that has been made thus far on the replication process, as well as the plans for the future of this exciting partnership

Workshop #9 (Ballroom E)

Leveraging Grant-Funded Science, Technology, Engineering and Mathematics (STEM) Undergraduate Programs to Optimize Student Success

Candice Foley and **Nina Leonhardt**, Suffolk County Community College

Programs that attract more people to STEM fields, including STEM teaching, are critical to our nation's continued growth. These programs should also reflect the changing demographics in the U.S. Therefore, how should STEM academic programs be redesigned to encourage more of today's student body to pursue STEM careers? Since 2007, Suffolk County Community College has been leveraging grant funded Science Technology, Engineering and Mathematics (STEM) undergraduate programs including local, state, NSF and business and industry resources to maximize our STEM scholars' success and to provide summer research internships for our STEM students. Our current research is examining the impact of these enhanced student experiences on their continued progression through their academics and career aspirations. This workshop will

describe the results of our research to date and implications for STEM education. Grant funded STEM programmatic collaborations at Suffolk County Community College that develop a sense of community have been shown to increase the number of people, especially from underrepresented groups, choosing STEM careers, including STEM teaching. Collaborative inter-programmatic academic support services including research internship placements will increase the likelihood of student success in STEM majors.

Workshop #10 (Beverwyck AB)

K-12STEM@SUNYIT

Elizabeth Rossi, Daniel Benincasa and **Robert Payne**, SUNYIT

In SUNYIT's K-12 STEM programs, engineers from local industry work side by side with SUNYIT faculty and professionals to deliver both STEM professional development for K-12 teachers and direct exploratory STEM programming with teens. Children attend on-campus learning events several times a year; the Mohawk Valley Technology Education and Pre-Engineering Showcase in March; Summer Teens academic day camps in July and August; FLL (FIRST LEGO League) and JrFLL (Jr. FIRST LEGO League) in December. Our workshop will offer planning documents, mind-maps and resource guides for other educational entities who seek to create active partnerships with local engineers, school groups, ad hoc STEM learning groups, K-12 educators, and college innovators.

Workshop #11 (Ten Broeck AB)

STEM Smart: Partnerships Providing a Pathway to STEM Careers

Christine Veloso and **Paul Seigel**, Stony Brook University

For more than 40 years, Stony Brook University (SBU) has been involved in serving the needs of historically underrepresented (UREP) and economically disadvantaged student populations and has hosted a wide variety of equity and access initiatives specifically aimed towards helping these students prepare for careers in science, technology, engineering and mathematics (STEM). Much of the success has come as the result of building powerful collaboratives that include schools, colleges and universities, STEM departments and an array of institutionally, state and federally, supported programs for enhancing diversity in STEM. A clear demonstration of Stony Brook's expertise and commitment to providing services to underrepresented populations regarding STEM is the development of a new model for coordinated program services through the STEM Smart umbrella outreach program. The programs within STEM Smart draw from both Stony Brook, state and national resources and all STEM Smart students have special mentoring relationships with Stony Brook faculty, including internship and research opportunities. In fact, opportunities to collaborate abound within STEM Smart. The proposed presentation will highlight STEM Smart and address the special secondary school and undergraduate programs that collaborate to effectively create a seamless pathway for UREP students to progress toward careers in STEM.

Workshop #12 (Van Rensselaer AB)

Professional Science Master's Degrees: Partnerships Between STEM, Higher Education and Business

David King, SUNY Oswego

The PSM degree is a hybrid degree combining STEM disciplines with business skills that has grown substantially at universities across the country over the past decade. The SUNY PSM Consortium of 16 SUNY campuses is developing 25-30 of these new degrees designed to promote economic and workforce development in interdisciplinary and cutting-edge careers. The PSM degree is a professional degree that has strong appeal for underrepresented groups and women because it offers solid career prospects and higher starting salaries working for tech and pharmaceutical companies and many other businesses in the STEM fields. This workshop will focus primarily on an overview of the PSM degree and the unique "PLUS" course components, the development of regional internship placements, and the role of business advisory boards in supporting each PSM degree program.

Workshop #13 (Ballroom C)

Partnering for Greener and Sustainable Design-Related STEM Curriculum: Improving Outcomes for Women and the Environment

Karen Pearson and **Elaine Maldonado**, Fashion Institute of Technology

For the proposed SUNY-STEM workshop, the Principal Investigator and Co-Principal Investigator for this collaborative project, Advancing Design-related *Technological Education: A Three-way Partnership* (NSF# 1003034) will share accomplishments, findings and lesson learned after one year. These include: 1) documenting the creation of curricular modules for Earth Science and Physical Sciences—developed as a result of industry, career department and high school collaboration; 2) implementation of joint faculty development for high school teachers and college faculty that covers topics such as the Reflective Teaching Portfolio and infusing existing curriculum with real-life projects; 3) application of teaching methodologies that draw on active and inquiry-based models, targeting the needs of female science students who represent 85% of the student population at FIT; and 4) analysis of strategies for nurturing effective collegial and industry partnerships. The presenters will also provide an overview of the activities timeline, the various challenges they've encountered along the way and facilitate a discussion on the importance of institutional buy-in and fundraising that can expand both project scope and benefit.

Workshop #14 (Ballroom D)

21st Century Building Bridges to Success in STEM and Social Sciences

Tamu Chambers, Hudson Valley Community College

The primary aim of this seminar is to demonstrate a framework for teaching across the disciplines. The secondary purpose is to increase interest and representation of traditionally underrepresented groups in the STEM curriculum in secondary education classrooms and lecture halls in higher education. A holistic approach is essential to

assist in recruitment and retention of economically disadvantaged students. An integrative, multidisciplinary framework for teaching across disciplines includes the significance of social sciences, more specifically acknowledges interrelatedness of the sociological imagination to enhance creativity and critical reflection about the interconnectedness of STEM classes. Micro-level sociological perspectives include an examination of symbolic interaction between students and faculty. Examples of successful methodologies for integrating strategies and best practices begin in elementary education preparation for greater success in higher education and the workplace. The seminar examines methods to encourage faculty to identify their impact, and more fully understand attitudes and values that affect positive results for the successful implementation of underrepresented groups in the STEM disciplines.

Workshop #15 (Ballroom E)

Closing the Loop: A Case Study in the Use of Formative Program Evaluation to Direct the Successful Modifications in an Intensive Summer Research Program

Karen Singer-Freeman, **Ronnie Halperin** and **Joseph Skrivanek**, Purchase College

For five years, beginning in 2005, funds from an NSF STEP grant enabled the inclusion of non-minority students interested in science, technology, engineering and mathematics. To date, the summer program has enrolled more than 200 students. Of these students, 83% have received AA or AS degrees (compared to 30% nationally), 71% have completed BA or BS degrees in the sciences (compared to 13% nationally), and 33% are currently pursuing post-baccalaureate work. The success of the summer research program is largely the result of our use of program evaluations to direct and then assess program innovations. This workshop will demonstrate how closing the loop with formative evaluation can be a central tool in building a successful program. We will discuss key elements to be included in formative evaluations as well as methods by which formative evaluations can direct program development. Finally, we will lead an activity in which workshop participants use real findings from formative evaluations to brainstorm about program modifications that close the loop.

Workshop #16 (Beverwyck AB)

Exploring Information Systems, Exploring Yourself: Setting the Stage for Success

Diane Shichtman and **Patricia Wheeler**, Empire State College

In the Center for Distance Learning at SUNY Empire State College, we offer students an opportunity to gain a broader perspective of the computing and information-related disciplines in order to prepare them for their concentrations in information systems and related disciplines. We do this through an educational planning course that explores the major professional areas of the discipline, looks beyond the technical skills to determine what other kinds of learning are necessary for success as an information systems professional, develops strategies for keeping up in the field, and encourages an appreciation of what makes a person "educated." In this workshop, in brief, we will share the content, approaches, and outcomes of the exploration course. Specifically, we will discuss the individual and group activities developed for an online environment. To be empowered to make the most of their education, students need to understand how their studies contribute individually and collectively to their concentrations and careers. Throughout the course, the students explore their future profession in ways that help them understand the roles of the various components of their studies.

Workshop #17 (Ten Broeck AB)

SER/VE (the STEM Exploratory Real/Virtual Environment): Connecting Science Education and Urban Youth, Virtually

Eileen O'Connor, Empire State College

This workshop and poster presentation for the 2011 SUNY STEM (science, technology, engineering, mathematics) Conference focuses primarily on: the evolution of SER/VE (the STEM Exploratory Real/Virtual Environment), a three-dimensional, avatar-driven STEM learning environment; the rationale for the development of SER/VE; the work that has been piloted to date within high-needs K12 teaching and teacher education using SER/VE; and, the plans and needs for the further development of SER/VE. The need for SER/VE itself came from the experiences of Dr. Eileen O'Connor as a science-education faculty member within a clinically-based and largely online (the "academic" portion), alternative-certification, teacher-education program. This virtual learning environment has become an emerging focal point for her work with pre-service and in-service teachers and has the potential to bring novel and motivational, scalable, sustainable STEM resources, materials, and experiences to K12 students in high-need areas.

Workshop #18 (Van Rensselaer AB)

Retention of a Diversified STEM Workforce Through Mentoring and Undergraduate Research Activities at SUNY Oswego

Shashi Kanbur, Cleane Medeiros and **Lorrie Clemo,** SUNY Oswego

We describe existing and new initiatives to diversify the STEM workforce at SUNY Oswego including: 1) The Possibility Scholarship; 2) The McNair and CSTEP programs; 3) The Summer Research Institute; 4) The Global Laboratory; 5) The NSF STEM grant; and 6) A summer Math Camp for incoming STEM majors. Another program, the NSF ADVANCE project will be covered in another workshop. This workshop will provide some measures of STEM diversity currently at SUNY Oswego. We will then describe each of these recently started programs and their current status. We close with a discussion of future prospects. The Possibility Scholarship is a partnership between SUNY Oswego and the Syracuse and Oswego City School districts which aim to provide a completely free STEM education to socioeconomically disadvantaged groups. The McNair and CSTEP programs at SUNY Oswego are well established TRIO programs that aim to increase the number of economically disadvantaged students in graduate school. The Summer Research Institute, Global Laboratory are our undergraduate research experiences designed to engage students in the scientific research and thus aid retention. The Math Camp is a summer bridging program designed to increase students' mathematical skills before they get to college.

CONFERENCE COMMITTEE

Tamu Chambers
Professor of History, Philosophy and Social Sciences
Hudson Valley Community College
518.629.7431
t.chambers@hvcc.edu

David Ferguson
Distinguished Service Professor and Chair, Department of Technology and Society
Stony Brook University
631.632.8763
david.ferguson@stonybrook.edu

Barbara Hardman
Administrative Assistant
Office of Diversity, Equity and Inclusion
SUNY System Administration
518.320.1189
barbara.hardman@suny.edu

Veronica Henry
Executive Assistant to the President and Chief Diversity Officer
Farmingdale State College
631.420.2622
henryv@farmingdale.edu

Nina Leonhardt
College Associate Dean for Continuing Education
Suffolk County Community College
631.451.4607
leonhan@sunysuffolk.edu

Carlos Medina
Associate Provost and Associate Vice Chancellor for Diversity, Equity and Inclusion
SUNY System Administration
518.320.1189
carlos.medina@suny.edu

Phillip Ortiz
Area Coordinator and Mentor, Natural Sciences
Center for Distance Learning
Empire State College
518.587-2100 Ext. 2716
phillip.ortiz@esc.edu

Bonnie Proctor
Associate Director for Enrollment Services
SUNY System Administration
518.320.1236
bonnie.proctor@suny.edu

Edelmira Reynoso
Diversity Research Assistant
Office of Diversity, Equity and Inclusion
SUNY System Administration
518.320.1851
edelmira.reynoso@suny.edu

Joseph Skrivanek
Professor and Chair of Chemistry and Biochemistry
Purchase College
914.251.6631
joe.skrivanek@purchase.edu

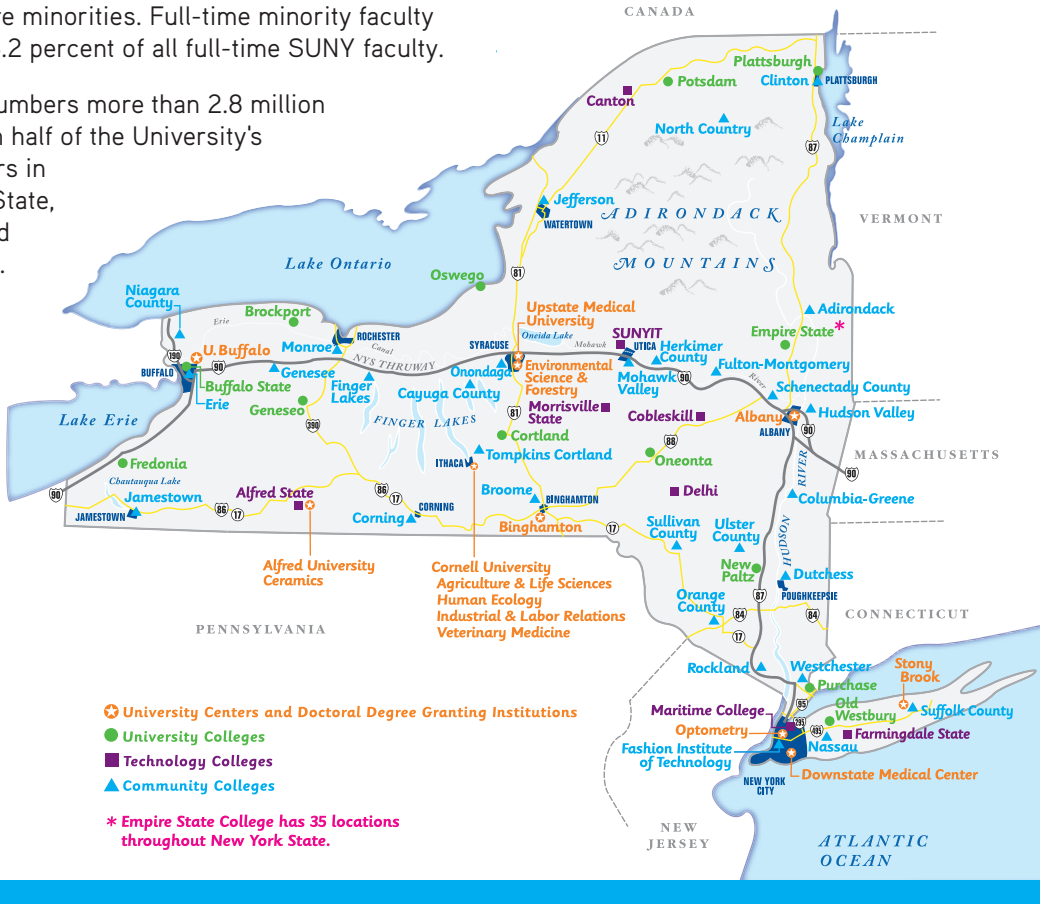
Barbara Streets
Assistant Professor, Department of Counseling and Psychological Services
SUNY Oswego
315.312.3298
streets@oswego.edu

Letitia Thomas
Assistant Vice Provost and Director, Cora P. Maloney College
University at Buffalo
716.645.3071
lthomas@buffalo.edu

The State University of **New York** (SUNY)

The State University of New York's 64 geographically dispersed campuses bring educational opportunity within commuting distance of virtually all New Yorkers and comprise the nation's largest comprehensive system of public higher education.

- The State University of New York's 64 campuses are divided into four categories, based on educational mission, the kinds of academic opportunities available, and degrees offered. They are: Community Colleges, Technology Colleges, Comprehensive Colleges, Research and University Centers.
- SUNY offers students a wide diversity of educational options: short-term vocational/technical courses, certificate programs, associate degree programs, baccalaureate degree programs, graduate degrees and post-doctoral studies. The University offers access to almost every field of academic or professional study somewhere within the system—some 7,342 degree and certificate programs overall.
- With a total enrollment of more than 467,500, students are pursuing traditional study in classrooms and laboratories or are working at home, at their own pace, through such innovative institutions as the SUNY Learning Network and Empire State College.
- SUNY students are predominantly New York State residents, representing every one of the state's 62 counties. SUNY students also come from every other state in the United States, the District of Columbia, from four U.S. territories, and 160 foreign countries.
- SUNY enrolls 40 percent of all New York State high school graduates, and its total enrollment of more than 467,500 (full-time and part-time) is approximately 37 percent of the state's entire higher education student population.
- SUNY students represent the society that surrounds them. In fall 2010, 22.2 percent of all students were minorities. Full-time minority faculty members made up more than 14.2 percent of all full-time SUNY faculty.
- As of fall 2010, the University numbers more than 2.8 million graduates on its rolls. More than half of the University's alumni reside and pursue careers in communities across New York State, contributing to the economic and social vitality of New York State.
- SUNY is committed to bringing its students the very best and brightest scholars, scientists, artists and professionals. SUNY campuses boast nationally and internationally recognized faculty in all the major disciplines. Their efforts are regularly recognized in numerous prestigious awards and honors.



Academic Excellence Through Diversity

The Office of Diversity, Equity and Inclusion (ODEI) was established in August 2007 and reports to the Executive Vice Chancellor for Academic Affairs and Provost.

Vision:

ODEI aspires to situate diversity as an integral component of academic excellence at the State University of New York (SUNY) and in the process to establish the university as a national leader in preparing its students for success in a culturally and racially diverse society. ODEI envisions the SUNY of the future as a preeminent public university that is truly representative of the rich array of human and intellectual diversity that is the hallmark of New York State. The principle of engagement through inclusion will be a core value. This office will promote new partnerships, within the 64-campus SUNY System and beyond, that embrace the inseparable connection between academic excellence and diversity.

Mission:

ODEI is responsible for devising and implementing a range of programs to promote the diversity of SUNY's academic human resources. The office promotes the integration of diversity-related instruction and research into ongoing SUNY system-wide initiatives to enhance academic excellence. ODEI partners with baccalaureate, doctoral granting institutions and community colleges to achieve the holistic integration of New York's underrepresented and economically disadvantaged populations into the academic culture of higher education. The office strengthens SUNY's ability to create knowledge of benefit for society and educate students for leadership positions in a culturally diverse and globalized society.

SUNY The State University of New York