Student Mentoring and Career Development: 
Campus-Based Pipeline Programs for Women In 
STEM (WIS) and Underrepresented Minorities (URM)
What does PRODI-G stand for?

Promoting Recruitment,
Opportunity,
Diversity, Inclusion – Growth

- Focused on increasing the number of
- SUNY URM and WIS faculty over the next decade,
- Faculty Hiring
- Pipeline Building
This workshop will focus on examples within SUNY of Pipeline Building in both STEM and other disciplines

Speakers
- Joseph Skrivanek, Distinguished Service Professor, and Director of the Bridges to the Baccalaureate at Purchase College and Coordinator of STEM Programs, SUNY Office of Diversity, Equity and Inclusion
- Shanise Kent, Assistant Dean University at Albany and Co-PI of SUNY Louis Stokes Alliance for Minority Participation (LSAMP)
- Monica Majors, Director of Diversity in Engineering, Binghamton University
- Meylin Andares, Director of Enrollment Management & Student Success, SUNY
Supporting a Pipeline

Middle School – High School – Community College – College – Graduate School – Post-doctoral – Early Faculty – Tenured Faculty
Programs

- Middle School/High School
  - NYSED STEP
  - NYSED Liberty Partnership
- Community College/College
  - SUNY Educational Opportunity Program
  - NYSED CSTEP
  - NIH Bridges to the Baccalaureate
As students move on, programs

- College/Graduate School
  - NIH MARC U-STAR
  - USDED Ronald E. McNair Post-baccalaureate Achievement Program
  - LSAMP (NSF)
Programs

- Graduate School
  NIH Bridges to the Doctorate
  NIH PREP
- Postdoctoral
  NIH IRACDA
- Early Faculty
  NIH NRMN
ACADEMIC PIPELINE

- PRE-COLLEGE
- POSTBAC
- POSTDOC

→ ACADEMY

- COLLEGE
- GRAD/PROFESSIONAL
- FACULTY
Pre-college programs within New York

Science Technology Entry Program (STEP) Promise Zone
Upward Bound and Upward Bound Math-Science Talent Search
Gear Up

Pathways in Technology Early College High School (P-Tech)
4-H Robotics
Dual Enrollment Programs
Project Lead the Way Promise Zone
Programs for Success

Upward Bound participants:

- Earned more non-remedial high school credits in math;
- Were more likely to remain in school (35% vs. 28%) 
- Were more likely to receive financial aid to attend college (33% vs. 30%)
- Earned more non-remedial credits at postsecondary institutions (6.8 vs. 5.7).

Pre-College Outreach

- **Informational Outreach:** Primarily information dissemination and advising; little or no academic intervention in the way of actual instruction.
- **Career-Based Outreach:** Early Talent Identification - Academic, motivational, and informational interventions designed around a student’s career aspirations and intended to link those aspirations with college majors.
- **Academic Support:** STEM Gateway Courses - Instructional services designed to increase student performance in college preparation classes or to improve students’ opportunity to enroll in such classes.

Best Practices

Programming

- Consistent & scheduled interventions
- Purposeful Collaboration
- Parent and Community Participation (e.g. Advisory Committee)
- Academic and Psychosocial support

Administration

- Visibility and Branding
- Physical Space
- Community participation
- Reporting
Impediments

Organizational/System Level
- Resource allocation
- Sustainability
- Collaboration and support

College/Department/Team Level
- Top-down buy in
- Bandwidth and Human Capital Development
- Social Network and Collaboration

Family and Individual
- Social Capital
- “Disappearing Parent”
- Motivation and achievement orientation
- Growth Mindset
Evaluation and Assessment

- Formative and Summative Evaluation
- Report to stakeholder
- Revise logic model
- Benchmarking
- Qualitative and Quantitative data analysis
- Logic Model
- Data Management Plan
- Formative and Summative Evaluation
Composition of U.S. High-school Graduates, by Race/Ethnicity
Student Success Timeline

**JUNE**
- High School Graduation

**JULY**
- New Student Checklist

**AUGUST**
- Student success program/
  EOP Summer Institute

**SEPTEMBER**
- Start of fall semester
25 Partnerships

- Student Leadership Network
- New Visions
- NYGEAR UP
- Eagle Academy
- New York Foundling
Initiatives

- SUNY Senior Send – Off Events
- Men of Color Initiatives
- Non-traditional student engagement
- SUNY Smart Track / Financial Literacy
- Student Leader Partnerships
Why STEM, why now?

- 71% of the NYS high school class of 2008 graduated — and 29% did not
- 92% graduated in wealthy districts
- 73% in rural school systems
- 50% in large city districts
- 74.4% of NYS 9th graders graduate from high school and go directly to college
- 57.8% graduate college within 6 years
- 24.4% graduate community college within 4 years
- Low income and under-represented minority group members comprise a majority of high school graduates but have not kept pace in college enrollment
Engage to Excel (2012)

- Nationally, less than 40% of students entering a STEM field complete a degree.

- Most of the students who leave STEM fields switch to non-STEM majors after taking introductory science, math and engineering courses.

- Many of the students who leave STEM majors are capable of the work, making the retention of students who express initial interest in STEM subjects an excellent group from which to draw some of the additional one million STEM graduates.

President’s Council of Advisors for Science and Technology (PCAST)
Background

- 50% of all undergraduates begin their college careers at a community college
- Two-Year institutions are the “entry point for most first-generation college students, particularly those from low-income, minority, and immigrant backgrounds”
- Less than 30% of STEM graduates who attend community college earn an associate’s degree
- 27% of STEM entrants complete Bachelor’s degrees in five years
High Impact Practices to Improve Student Success

*Support Services* (tutoring, mentoring, cohort building)

Summer Research Programs
Baccalaureate and Beyond Community College Mentoring Program
Purchase College, SUNY

- Founded in 2000 with an initial grant from the NIH Bridges to the Baccalaureate Program

- Other funders have included:
  - National Science Foundation
  - PepsiCo Foundation
  - Private Individuals
  - SUNY Office of Diversity, Equity and Inclusion
BRIDGES TO THE BACCALAUREATE SUMMER PROGRAM

- 6 Week Intensive Research Experience
- Community Building Events
- Professional Development Programs
- Networking Opportunities
- On-campus Housing
Major Components

- Recruitment and advising at two-year institutions
- Six-week summer research program
- Opportunities for community college students to interact with Purchase faculty and students
- Academic and financial support for students when they transfer to Purchase (NSF S-STEM)
Purchase College Bridges to the Baccalaureate

2018 Summer Research Program
B&B

• Interdisciplinary course on Identity
  ◦ Co-taught by psychology and journalism professors
  ◦ Independent study project
  ◦ Upper level 3 credit course
  ◦ Develops writing and critical thinking skills
• Free tuition
• Free housing
Summer Program

- Small group research
- 40 hours/week
- Stipend, discounted housing
- Areas of research include: psychology, math/computer science, chemistry, biology, and environmental science
A Day in the Life...

Bridges/RSVP

Morning
Work in lab/field

Afternoon
Work in lab/field

Evening
Workshops and Group Events

B&B

Class

Meet with faculty mentors & work in library
PROGRAM SUCCESS

*Our Students...*

- 65% Underrepresented Minorities
- 83% Receive AA/AS Degrees
- 71% Complete BA/BS Degrees
- 40% Pursuing Postbaccalaureate Work
- To date: 13 MS, 2 Ph.D’s, 4 MD’s
PRESIDENTIAL AWARD FOR EXCELLENCE IN SCIENCE, MATHEMATICS AND ENGINEERING MENTORING
JD, MBA, BA Political Science (University at Buffalo ‘06, ‘02)
Assistant Dean, Office of Graduate Education, University at Albany

- Career and professional development for all graduate students
- Diversity funding & initiatives
  - Director of the Carson Carr Graduate Diversity Fellowship Program & Graduate Opportunity Program (SUNY)
  - Co-Principal Investigator, SUNY Louis Stokes Alliance for Minority Participation (LS-AMP) (NSF)

Previously at Binghamton University

- Inaugural Director of Diversity Programs & Initiatives, Thomas J. Watson School of Engineering
  - Principal Investigator, Upward Bound Math Science (US Department of Education)
  - Principal Investigator, Science & Technology Entry Program (NYSED)
  - Co-Principal Investigator, LS-AMP & LS-AMP Bridge to the Doctorate

- Associate Director (Research Foundation) of the Ronald E. McNair Post-Baccalaureate Achievement Program & LS-AMP
Impediments to Graduate School Transition

- Early Intervention with Undergraduate Students
  - Career options, mean earnings, unemployment hiring
  - Funding opportunities, application process, timeline
- Admissions Expectations
  - Holistic review of applicants
  - Funding URM and women graduate students
- Cultures of Departments, Colleges/Schools, Campuses, Cities
  - Positive experiences for undergraduates often encourage graduate pursuits
  - Graduate student satisfaction improves retention and recruitment
  - How are URM and women faculty and staff are treated?
Growing SUNY’s Pipeline Efforts
Makes a Difference to
Student Success

THANK YOU!