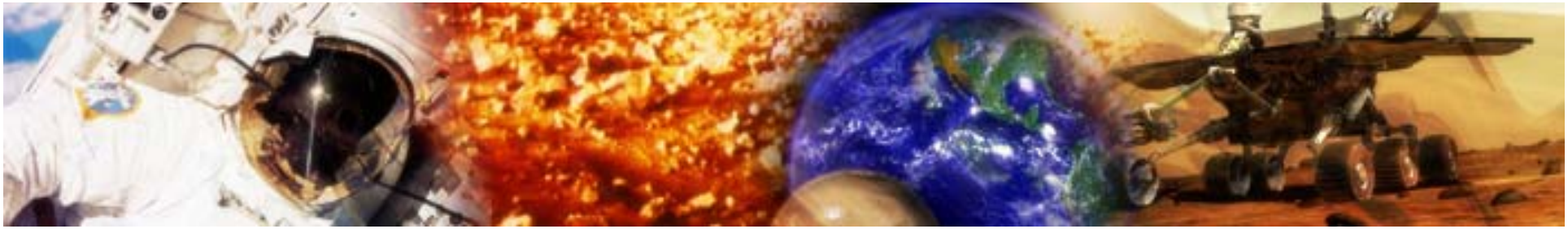


New York Space Grant Community College Partnership Program

Tim Paglione

CUNY York College & AMNH

Goals

- Increase the number of women & minorities completing their STEM degrees and/or transferring to four-year colleges for STEM
  - ➡ Build their sense of belonging by immersing them in the research environment
  - ➡ Mentoring, CC faculty support
  - ➡ Prep course: *Methods of Scientific Research*
  - ➡ Remove as many other barriers as we can
    - Scholarships, fellowships, travel support

Context & history

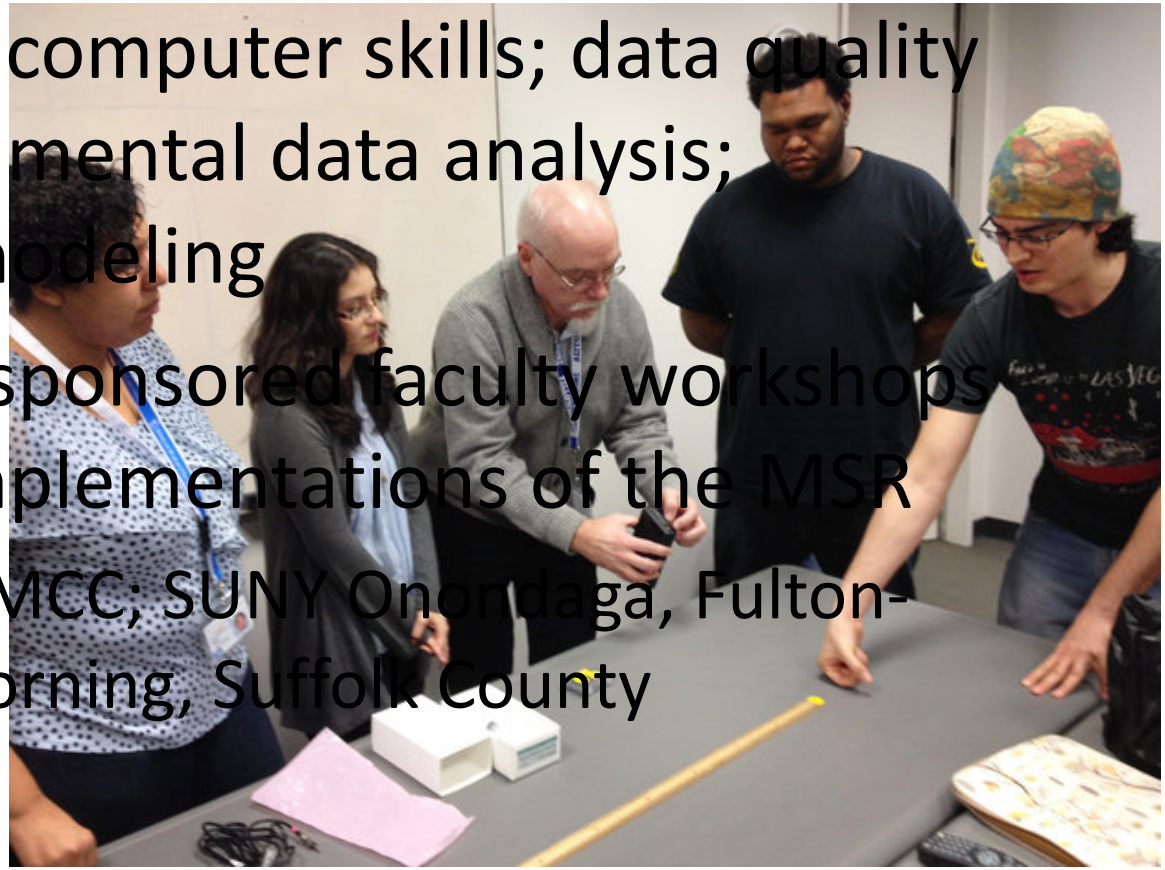
- NSF PAARE program
  - ➡ Partner CUNY (MSIs, CCs, undergrad insts.) with AMNH & Columbia (research insts.)
  - ➡ Grew from very successful and long-running AMNH/CUNY REU program, augmented by NYSG…

Context & history

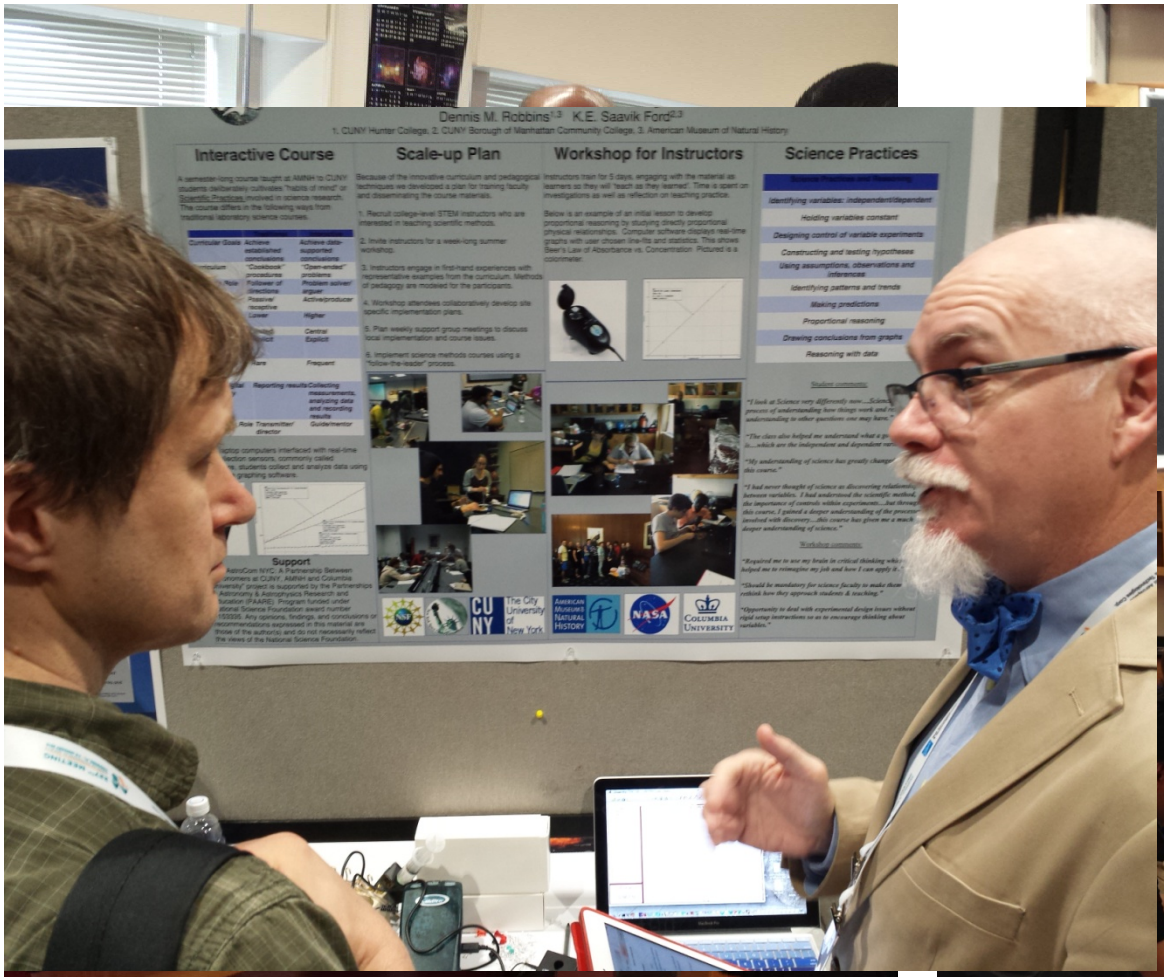
- CUNY/AMNH REU
  - ➡ Many of our students were not:
    - up to that nationally competitive level research-wise
    - as comfortable in that working environment
    - advanced majors
  - ➡ AstroCom NYC was created to change that
- The REU program grew quickly and became very welcoming and inclusive anyway!
- Expanding to all STEM and throughout NYS was an incredible opportunity to build

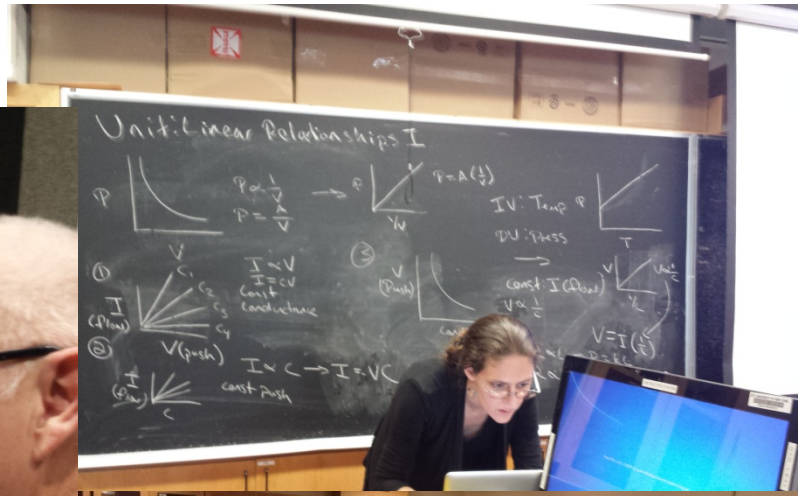
Methods of Scientific Research

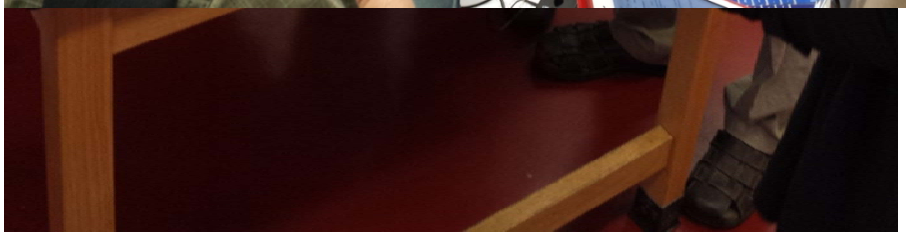
- Spring semester before summer research
- Scientific, analogical, and proportional reasoning; basic computer skills; data quality judgment; fundamental data analysis; statistics; data modeling
- The NYSG CCPP sponsored faculty workshops to foster local implementations of the MSR
  - ➡ AMNH; CUNY BMCC; SUNY Onondaga, Fulton-Montgomery, Corning, Suffolk County



Methods of Scientific Research







Mentoring

- Career
  - ➡ Academic advisement & transfer assistance
  - ➡ Career models, peer counseling
  - ➡ Scholarship and other info
  - ➡ Longitudinal support
- Research
  - ➡ Summer & sometimes academic year research
- Local, plus overseen & contributed to by project administration and NYSG affiliates

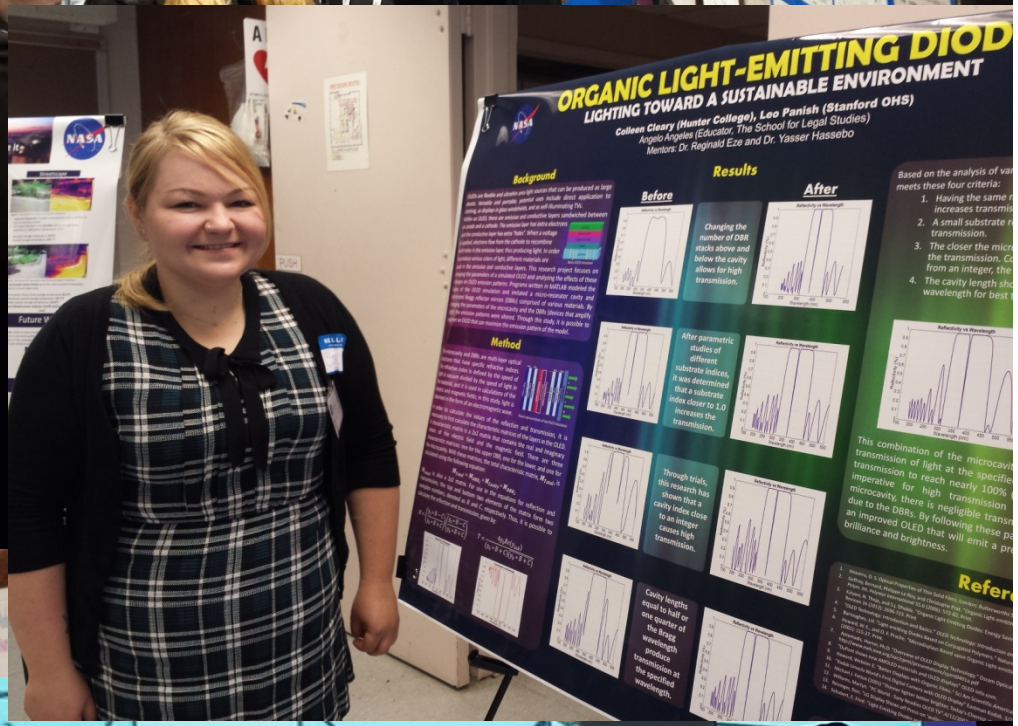
Year 1

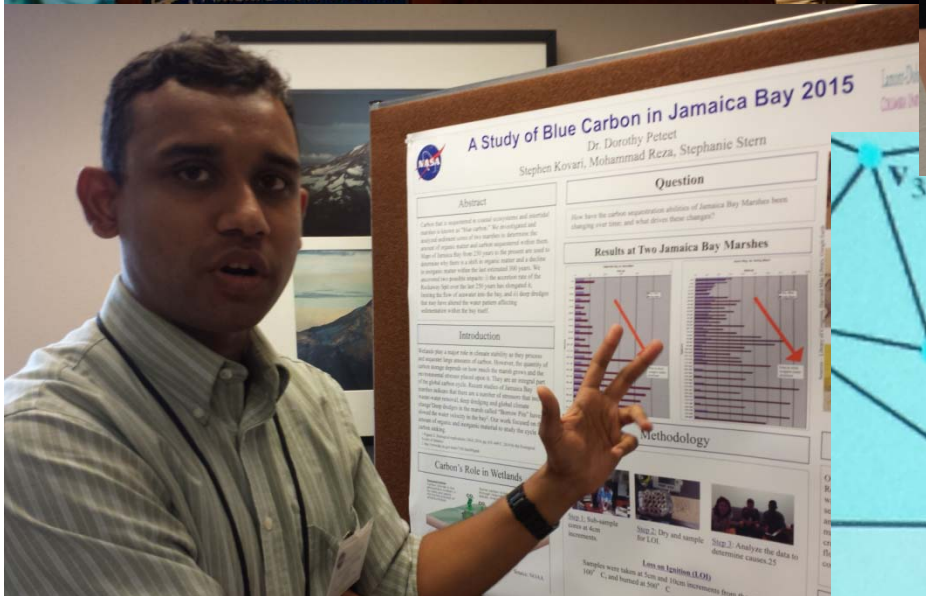
- 13 diverse STEM majors, mostly CUNY
- Summer research around the country
  - In the City & at NASA Centers (AFRC, GSFC, GISS)
  - Black hole binaries, Martian glider, OLEDs, marsh sedimentation, lunar cubesats, apps for blind, etc.
- Two MSR sections, and 2 faculty workshops
- All students successfully transferred to Columbia, Michigan, Texas A&M, Rutgers, SUNY, CUNY…

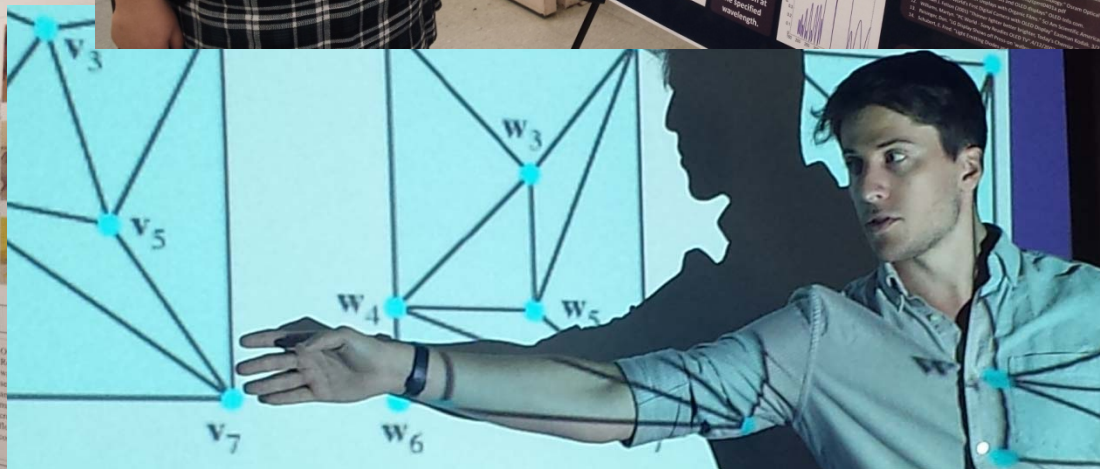
Year 1

TELEDYNE IMAGING SEN

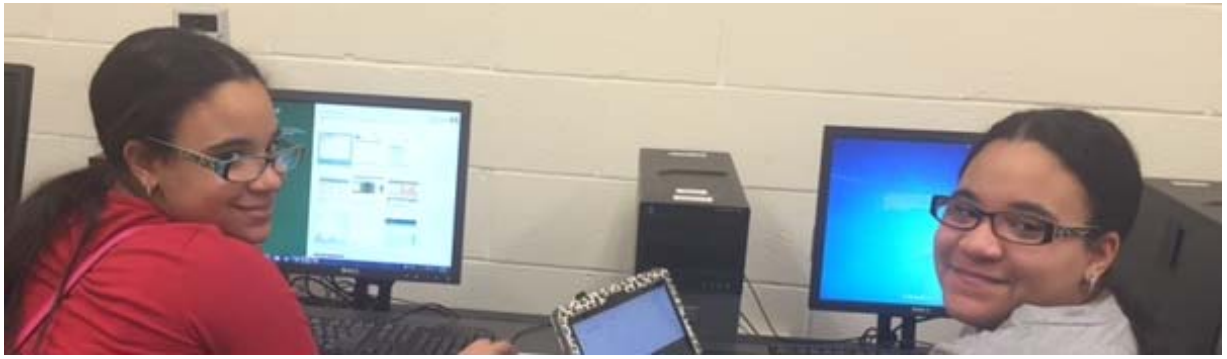
AMERICAN MUSEUM


ORGANIC LIGHT-EMITTING DIOD
LIGHTING TOWARD A SUSTAINABLE ENVIRONMENT
Colleen Cleary (Hunter College), Leo Panish (Stanford OHS)
Angelo Angeles (Educator, The School for Legal Studies)
Mentors: Dr. Reginald Eze and Dr. Yasser Hassebo
Background
Method
Results
Before
After


A Study of Blue Carbon in Jamaica Bay 2015
Dr. Dorothy Peteet
Stephen Kovari, Mohammad Reza, Stephanie Stern
Question
Abstract
Introduction
Results at Two Jamaica Bay Marshes
Methodology
Carbon's Role in Wetlands

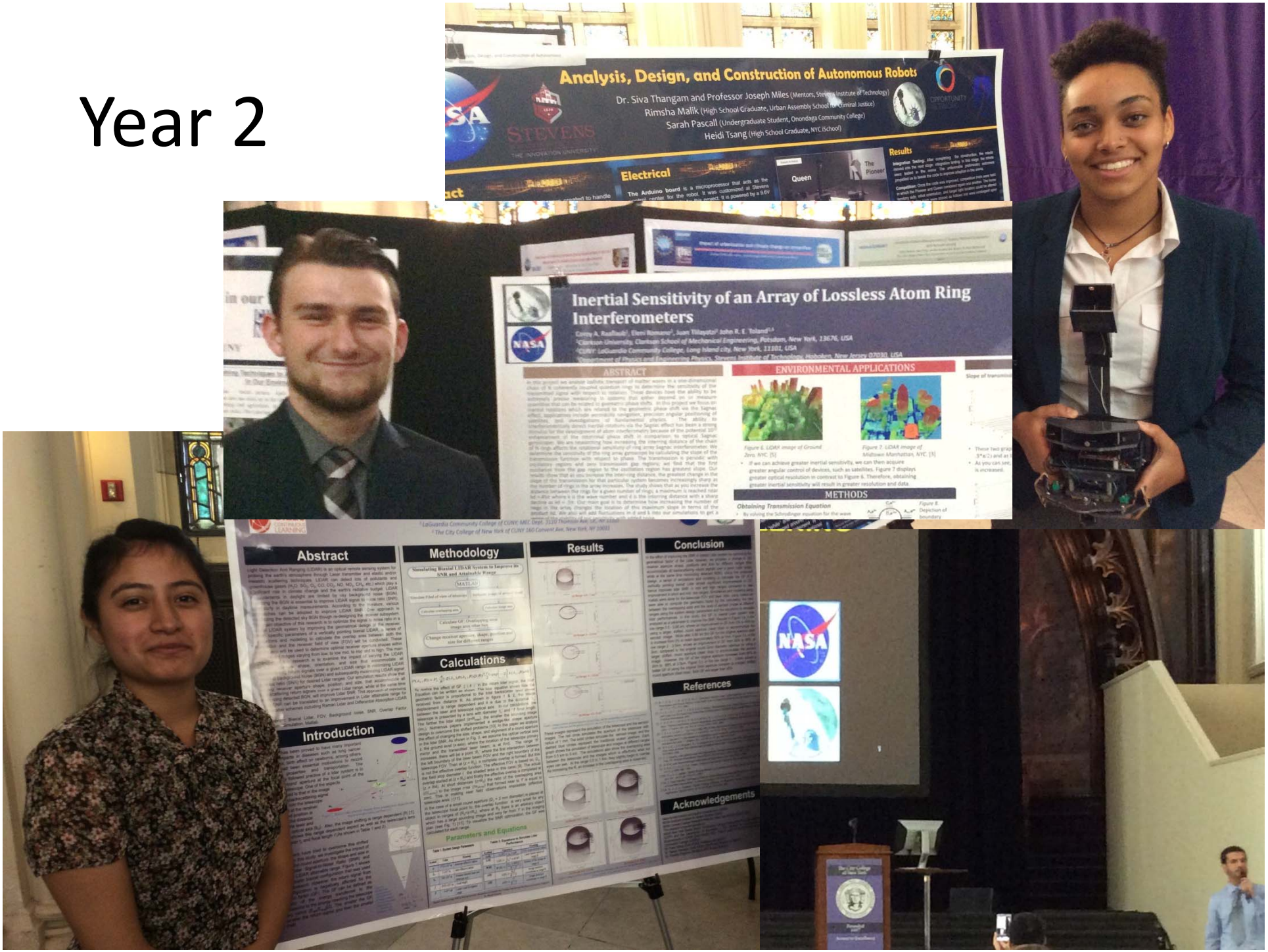

v3
w3
v5
w4
w5
v7
w6

Year 2



- 25 diverse STEM majors, majority upstate
  - ➡ Improved demographics: 52% women, 72% URMs
- Summer research was a resounding NYSG partnership success
  - ➡ NASA GISS, RPI, Berkeley, NJSG
  - ➡ NYSG affiliates including industry
- *Four* MSR sections throughout NYS
- 6 CC faculty directly supported by NYSG CCPP
- Over half now transferred to four-year schools (Clarkson!), the rest expected this year.

Year 2


Analysis, Design, and Construction of Autonomous Robots
Dr. Siva Thangam and Professor Joseph Miles (Mentors, Stevens Institute of Technology)
Rimsha Malik (High School Graduate, Urban Assembly School for Criminal Justice)
Sarah Pascall (Undergraduate Student, Onondaga Community College)
Heidi Tsang (High School Graduate, NYC iSchool)
STEVENS
Electrical
Queen
The Pioneer
Results
Inertial Sensitivity of an Array of Lossless Atom Ring Interferometers
ABSTRACT
ENVIRONMENTAL APPLICATIONS
METHODS
Abstract
Methodology
Results
Conclusion
Introduction
Calculations
References
Acknowledgements
Parameters and Equations

Year 3…?

- Could readily recruit another 15 diverse STEM majors from our now vast & well established network of dedicated & engaged CC faculty
- Add more upstate & CUNY MSR sections, with credit-bearing status
- Connect more marginalized students with NASA STEM opportunities for which they are well qualified
- Facilitate innovative & supportive CC faculty

NYSG CCPP - thank you

- Questions and discussion