GRAD-MAP: A Diversity Initiative
Overview, Updates, and Future Directions

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Why GRAD-MAP?

1. **URMs in physics are much more likely to do undergraduate work at community colleges, MSIs, and/or HBCUs.** In fact, the University of Maryland is the only non-HBCU to graduate 3+ African Americans with Bachelor’s degrees in physics from 2008-2010. These institutions are historically underfunded/under-resourced and generally have no, or very small, undergraduate research programs.

2. **The Mid-Atlantic region is rich with minority-serving physics/STEM departments.** Students and faculty are at these institutions, but the students are often not going to graduate school (at least not at UMD), and the faculty are not collaborators with UMD faculty.
Why GRAD-MAP?

3. As an R1 institution in the center of one of the most diverse regions in the country, with large communities of majority Black or Latinx people, UMD has an opportunity and a responsibility to connect better with those communities. The state of Maryland is 30% Black and 12% Latinx, with the ratios significantly higher in Prince George’s County.

4. Applying a “deficit model” to URM students is insufficient, and potentially harmful. The diversity problem will not be solved by simply infusing a department with minority students and giving them computing skills or remedial physics courses ahead of time. Science identity needs to be fostered in the students, and faculty need to have frank discussions with one another about the role of HBCUs, experiences of students, and instances of bias and discrimination in the academic system.
Program Goals

1. **Improve representation of and climate for minorities** in the UMD Physics and Astronomy Programs

2. **Build a diverse collaborative community** amongst the Physics and Astronomy faculty, graduate students, and undergraduate students at UMD and nearby Minority Serving Institutions (MSIs)

3. **Provide graduate students mentoring experience** with a diverse group of students and experience developing and implementing a program that improves diversity.
Graduate Resources Advancing Diversity with Maryland Astronomy and Physics

- **Fall Collaborative Seminar Series**
  - Visit local HBCUs and MSIs
  - **Sep - Nov**

- **Winter Workshop**
  - Ten-day workshop at UMD
  - **January**

- **Spring Symposium**
  - One-day research conference at UMD
  - **April**

- **Summer Scholars**
  - Research experience for Winter Workshop alumni
  - **June - Aug**
Graduate Resources Advancing Diversity with Maryland Astronomy and Physics

Sep - Nov

Fall Collaborative Seminar Series

- Visit mid-Atlantic HBCUs and MSIs
- Research talks by UMD professors (one physics, one astronomy)
- Grad students discuss:
  - preparing for grad school
  - grad school life
  - career paths with PhD
- Time for informal discussions, networking (and ice cream!)

Schools visited:
Baltimore City Community College
Delaware State University
Howard University
Montgomery College
Morgan State University
Norfolk State University
Prince George’s Community College
January Winter Workshop

- Ten days at UMD
- Application required (reviewed by team in Nov.)
- Tutorials on:
  - research basics (including Python)
  - professional development
  - preparing for grad school
- Research project with UMD advisor
- Field trip: Green Bank Telescope

Cohorts:
2014: 7 Students
  - 7 African/African-American
2015: 8 Students
  - 4 Af/AfA, 2 Latino/a, 2 Asian)
2016: 12 Students
  - 3 Af/AfA, 4 L, 2 As, 2 White women
• Bring faculty and students together from UMD, partner MSIs, and other local institutions/labs
• Plenary lecture, short research talks, poster presentations
• Facilitated, separate, faculty and student discussions about student experiences and what progress looks like

Future Plans:
• rotate host institution?
Graduate Resources Advancing Diversity with Maryland Astronomy and Physics

Summer Scholars

June-Aug

- 10-week summer research program hosted at UMD
- First year: students worked with Suvi Gezari and her time-domain astronomy group
- Weekly check-in meetings
- Final research presentations
- Partner in NASA HQ’s DCA STARS network of summer cohorts

Future Plans: open to any faculty (in either department) with funding for a summer student, will still have cohort check-ins and events.
GRAD-MAP as Step 1 in Inclusion Pipelines

1. National Astronomy Consortium (NAC)
   • GRAD-MAP sends students to apply for NAC cohorts and helps prepare them to be competitive applicants.
   • Three students went on to NAC so far: Jonathan Barnes, Kevin Gima, Jackie Erazo

2. University of Maryland S-STEM (NSF Scholarships in STEM)
   • Help retain promising students in genuine financial need
   • Provide mentoring, research course in freshman/sophomore year, then large scholarships in junior/senior year

3. DCA STARS
   • Started by Kartik Sheth this year, hosted out of NASA HQ
   • Meant to complement NAC, but is regionally-based and broad STEM disciplines
   • First cohorts at UMD and Goddard this year, hoping to expand both sites and disciplines

4. Your summer research program?
   • Especially outside of astrophysics
Student and Program Successes

• First GRAD-MAP alum enrolled in graduate school in 2015-16 (Jonathan Barnes); many of our students are applying to graduate school this fall
• Most students get summer internships the summer after completing the Winter Workshop
• 2015-16 Winter Workshop applications doubled from prior year
• Budding partnership with JHU astronomy/physics graduate students

Alum Francisco Martinez gave a TEDx talk at Georgia State!
Graduate Resources Advancing Diversity with Maryland Astronomy and Physics

NEW website: www.umdgradmap.org

We’re on Facebook

We’re on Twitter

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