



Faculty Handbook

Mentoring Underrepresented Minority (URM) STEM Students

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Purpose of the Handbook:

The purpose of the handbook is to serve as a resource for Idaho EPSCoR faculty in mentoring underrepresented minority (URM) students participating in EPSCoR research activities. This handbook is focused on mentoring and diversity and is designed to accompany Idaho EPSCoR's URM Mentoring workshop that expands on the topics presented. This faculty resource will help the mentor and student benefit from a more enjoyable, productive mentoring experience.

Mentoring Defined

Effective URM STEM student mentoring equips students with self-advocacy skills, demystifies STEM university culture and decodes STEM discipline-specific language and norms. Mentors would do well to reflect upon their own mentorship experiences to help guide their mentorship approach. *How did you learn of and participate in STEM research opportunities? What crucial conversations with faculty and/or student support services staff empowered and inspired you to pursue STEM graduate education?*

Faculty mentors should bear the following in mind as they interact with URM STEM student mentees:

- **Clarify** – specify your research expectations of your student mentee.
- **Define** – denote criteria that characterize research excellence.
- **Develop** – create a “research schedule” with student mentees to track research progress toward meeting benchmarks.
- **Establish** – cultivate an atmosphere of mutual respect within your lab group by setting “ground rules” for group discussion and explain your discussion participation expectations.
- **Facilitate** – promote student mentee professional development by providing additional lab procedure training, sample curricula vitae/résumés, cover letters, conference abstracts/proposals and posters.
- **Model** – foster collegiality by encouraging student mentees to participate in study groups, access tutoring services, or serve as a tutor.

- **Network** – encourage student mentees to identify and cultivate positive professional relationships with other mentors who may be faculty, emeriti, alumni, staff and/or graduate students.
- **Share** – inform student mentees of research techniques and models that have proven useful while at the same time encouraging their intellectual creativity.

Mentoring Guidelines

The following “checklist” provides a general outline of a “mentoring timeline” and may be modified according to individual faculty-URM student mentee needs:

1. **Initiate contact** – Once a student research opportunity offer has been made, faculty mentors should initiate ***e-mail and telephone*** contact with URM student mentees. This initial meeting should be somewhat informal and focus upon welcoming the student to the faculty’s research group. While faculty will certainly need to include some program-specific details, this initial contact establishes the tone of future interactions and need not overwhelm students with too much information. At this time, it may prove useful for faculty to establish a standing “appointment” with mentees whether via e-mail, telephone, Skype, etc. complete with a “mini-agenda” which will help track “benchmarks” for future conversations. Such appointment setting also serves to help URM STEM students become accustomed to professional accountability and ensures that communication between faculty mentor and mentee is consistent and purposeful.
2. **Designate lab space** – Part of establishing a positive “first impression” for ALL student researchers involves designating lab space and/or a desk, even if that space is shared. While student research and work space may be limited and scant resources need to be shared, providing URM students with a well-thought-out “plan” reassures students that their scholarly contributions are valued. Convening a meeting with lab group members will permit current students to welcome an incoming URM student researcher. At that time, a lab work schedule may be devised whereby students may maximize their research time and address any issues regarding work space and equipment use overlap. Faculty mentors may

encourage current mentees to devise their prospective work schedules in advance of this meeting, realizing that each person will need to make concessions for the benefit of all.

3. **Create work schedule** – Faculty mentors should define both short-term and long-term research goals for URM student mentees. Short-term goals may include tasks to be completed within a week-long timeframe. Long-term goals will likely describe research completion outcomes, including papers, posters, and presentations.
4. **Schedule meetings** – Mentors may designate a weekly “one-on-one” meeting with URM STEM mentees. While URM mentees will undoubtedly participate in lab group meetings, such individualized attention permits students to address academic and personal concerns in a confidential setting. Such meetings may be brief, especially if the faculty mentor and mentee together devise a “mini-agenda.” These meetings should be purposeful and allow mentees to receive answers to specific questions and require that mentees come prepared to provide academic and research updates. Again, such interactions permit URM students to hone their skills in meeting research deadlines and completing “benchmark” tasks. Faculty mentors may elect to require student mentees to submit a brief synopsis of the meeting discussion via e-mail within 24 hours as a means of establishing a permanent discussion record.
5. **Provide feedback** – Faculty mentors must decide upon feedback format and frequency. Faculty may choose to provide student mentees with feedback via e-mail and thus establish a documented chronology of student mentee research progress.
6. **Define research product(s)** – STEM student mentees’ final research products will vary and may include papers, posters, and/or presentations. Faculty mentors must explicitly describe their format expectations of student mentees’ research results.
7. **Explain research presentation norms and standards** - Faculty mentors may assist student mentees in preparing their research results for publication submission and/or national/regional conference presentation.

Additional Resources

In addition to encouraging URM STEM student participation in discipline-specific academic and professional societies and conferences, faculty mentors may do well to learn about and encourage URM student participation in national organizations specifically devoted to fostering URM STEM scholarship and professional workforce participation. The American Indian Science and Engineering Society (AISES), the Annual Biomedical Research Conference for Minority Students (ABRCMS), the National Society of Black Engineers (NSBE), the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE), the Society of Hispanic Professional Engineers (SHPE), the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS), and the Society of Women Engineers (SWE) organizations offer URM students opportunities to participate in formal presentations and network with a variety of faculty and professionals. Faculty mentors who choose to accompany URM student mentees to such conferences also benefit from opportunities to expand their professional networks and strengthen their mentor-mentee relationship. Appendix A provides a list of the aforementioned URM STEM national student organizations.

With URM STEM graduate education goals in mind, partnering with colleagues at tribal colleges and universities (TCUs), historically Black colleges and universities (HBCUs) and Hispanic serving institutions (HSI) will establish a “pipeline” between sister institutions whereby promising URM graduate student applicants may benefit from a mentoring relationship while still enrolled at their “home” institution. Such relationship-building underscores the value individual faculty and the larger institution place upon fostering URM STEM graduate education and ameliorates the “wait-and-see” approach to URM applicant review processes. Appendix B provides a list of TCU, HBCU, and HSI colleges and universities.

Faculty establish the “tone” and nature of mentor-mentee interactions and are responsible for modeling professional collegiality. To this end, informal meetings with members of URM STEM student organizations and their faculty advisors may facilitate a URM STEM student’s smooth transition into research and eventually STEM graduate education. With this end goal in mind, the Indiana University-Bloomington Midwest Crossroads *Alliance for*

Graduate Education and the Professoriate (AGEP) Resource Manual for STEM Departments provides the most comprehensive URM STEM graduate student recruitment, retention, mentoring, and funding manual to date. Appendix C provides a list of additional resources devoted to creating a URM STEM graduate student “pipeline” for faculty and institutions committed to fostering intellectual inclusion.

Multicultural and STEM Student Organization Contact Information:

STATE UNIVERSITIES		
Boise State University	College Assistance Migrant Program (CAMP) http://education.boisestate.edu/camp/	Scott Willison, Director: swillis@boisestate.edu (208) 426-3292 Janine Balfour, Math-Science Coordinator: JanineBalfour@boisestate.edu (208) 426-2863
	Louis Stokes Alliance for Minority Participation (LSAMP) http://academics.boisestate.edu/undergraduate/student-success/lamp/	Emily Flores, LSAMP Coordinator: emilyflores@boisestate.edu (208) 426-1701
	McNair Scholars Program http://education.boisestate.edu/mcnair/	Gregory Martinez, Director/TRIO College Programs: gregorymartinez@boisestate.edu (208) 426-3684
	Multicultural Student Services http://culturalcenter.boisestate.edu/	Francisco Salinas, Student Diversity and Inclusion Director: franciscosalinas@boisestate.edu (208) 426-5950
	STEM Station http://stem.boisestate.edu/home.html	Patricia Pyke, STEM Station Director: ppyke@boisestate.edu (208) 426-1987
	Women's Center http://womenscenter.boisestate.edu/	Jess Caldwell-O'Keefe, Director: jesscaldwellokeefe@boisestate.edu (208) 426-4256
	Society of Hispanic Professional Engineers	Contact Person: Silvino Jimenez silvinojimenez@u.boisestate.edu
	Society of Women Engineers	Contact person: Danielle Torres, danielletorres@u.boisestate.edu
	STEM Educators of BSU	Contact Person: Brian Zuber, brianzuber@u.boisestate.edu
Idaho State University	Diversity Resource Center http://www.isu.edu/drc/index.shtml	James H. Yizar, Jr., Director: yizajame@isu.edu (208) 282-3545
	Native American Academic Services http://www.isu.edu/drc/naas/index.shtml	Johanna Jones, Director: jonejoha@isu.edu (208) 282-4429
	Janet C. Anderson Gender Resource Center: http://www.isu.edu/andersoncenter/index.shtml	General Contact Information: gndrctr@isu.edu 208-282-2805
	Society of Women Engineers	Advisor: Mary Hofle hoflmary@coe.isu.edu

		208-282-3148
University of Idaho	Idaho Experimental Program to Stimulate Competitive Research (EPSCoR) www.idahoepscor.org	Rick Schumaker, Project Administrator rschumak@uidaho.edu 208-885-5742 Sarah Penney, Project Manager sarahp@uidaho.edu 208-885-2345
	College Assistance Migrant Program (CAMP) http://www.uidaho.edu/studentaffairs/oma/camp	Yolanda Bisbee, Director: yobiz@uidaho.edu (208) 885-5173 Jesse Martinez, Assistant Director: jessem@uidaho.edu (208) 885-5283
	Native American Student Center (NASC) http://www.uidaho.edu/nativeamericancenter	Steven Martin, Director: smartin@uidaho.edu (208) 885-4237
	Native American Tribal Liaison	Arthur Taylor, Tribal Liaison ataylor@uidaho.edu (208) 885-6448
	Office of Multicultural Affairs: http://www.uidaho.edu/studentaffairs/oma	Mark Edwards, Director medwards@uidaho.edu OMA Office: (208) 885-7716
	University of Idaho McNair Program: http://www.uiweb.uidaho.edu/mcnair/	Vicki Trier, Program Director: vtrier@uidaho.edu (208) 885-6748
	Women's Center: http://www.uihome.uidaho.edu/default.aspx?pid=64714	Heather Shea Gasser, Director: hgasser@uidaho.edu (208) 885-6616
	American Indian Science and Engineering Society (AISES)	Advisor: Aaron Thomas, amthomas@uidaho.edu
	National Society of Black Engineers (NSBE) http://www.nsbe-uidaho.org/aboutus.aspx	
	Society of Hispanic Professional Engineers (SHPE): http://stuorgs.uidaho.edu/search/org.php?id=744	Advisor: Carmen Suarez, csuarez@uidaho.edu (208) 885-4285
Society of Women Engineers (SWE): http://stuorgs.uidaho.edu/search/org.php?id=382	Advisor: Aicha Elshabini, elshabini@uidaho.edu (208) 885-6470	
OTHER IDAHO COLLEGES		
Lewis Clark State College	Native American/Minority Student Services: http://www.lcsc.edu/student-services/minority-programs/index.htm	Bob Sobotta, Director: bsobotta@lcsc.edu 208-792-2812
College of Southern Idaho	Multicultural and International Student Services: http://www.csi.edu/international/index.asp	
College of Western	Latinos Unidos College Hispanic Association (LUCHA) student organization	Luis Caloca, Student Services Enrollment Specialist: luiscaloca@cwidaho.cc ,

Idaho		(208) 562-2002 Sam Galan, Student Services Enrollment Specialist: samgalan@cwidaho.cc , (208) 562-3228
Eastern Idaho Technical College	EITC Tutoring Center: http://www.eitc.edu/tutoring.cfm	Lindsay Gardner, Academic Support Coordinator: lindsay.gardner@eitc.edu (208) 524-3000, ext. 3621
North Idaho College	American Indian & Minority Student Support Services: http://www.nic.edu/websites/index.asp?dpt=6	Evanlene Melting Tallow, Advisor: Evanlene_MeltingTallow@nic.edu (208) 769-3365
Tribal College/University (TCU):		
Northwest Indian College (NWIC)	Nez Perce Tribe Location: http://www.nwic.edu/group/nez-perce	Renee Roman Nose, Outreach Coordinator: rromannose@nwic.edu , (360) 631-3441
	Northwest Indian College Space Center (NWIC-SC): http://blogs.nwic.edu/spacecenter/	Gary Brandt, IT/Robotics Faculty and NWIC-SC Director: gbrandt@nwic.edu (360) 392-4318

Appendix A –

URM STEM National Organizations

- ▶ American Indian Science and Engineering Society (AISES):
<http://www.aises.org/>
- ▶ Annual Biomedical Research Conference for Minority Students (ABRCMS):
<http://www.abrcms.org/index.html>
- ▶ Indigenous Women in Science Network (IWSN): <http://iwsnetwork.org/>
- ▶ National Society of Black Engineers (NSBE): <http://www.nsbe.org/>
- ▶ National Organization for the Professional Advancement of Black Chemists and Chemical Engineers (NOBCChE): <http://www.nobcche.org/>
- ▶ Society of Hispanic Professional Engineers (SHPE):
<http://oneshpe.shpe.org/wps/portal/national>
- ▶ Society for the Advancement of Chicanos and Native Americans in Science (SACNAS): <http://sacnas.org/>
- ▶ Society of Women Engineers (SWE):
<http://societyofwomenengineers.swe.org/index.php>

Appendix B –

**Tribal College/University (TCU)
Historically Black Colleges and Universities (HBCU)
Hispanic Serving Institutions (HSI) Directory**

- ▶ American Indian Higher Education Consortium Tribal Colleges and Universities (TCUs) Roster: <http://www.aihec.org/colleges/TCUroster.cfm>
- ▶ Historically Black Colleges and Universities (HBCUs) by State: http://www.edonline.com/cq/hbcu/c_state.htm
- ▶ Hispanic Association of Colleges and Universities (HACU) Member Hispanic Serving Institutions (HSIs): <http://www.hacu.net/assnfe/CompanyDirectory.asp?STYLE=2&COMPANYTYPE=1,5>

**Appendix C –
Faculty Mentoring Resources**

- ▶ Alliance for Graduate Education and the Professoriate (AGEP) Resource Manual for STEM Departments:
<http://www.indiana.edu/~grdschl/agep/AGEP%20Resource%20Manual%20for%20STEM%20Disciplines%202010.pdf>

- ▶ Empowering the Faculty: Mentoring Redirected and Renewed:
<http://www.ntlf.com/html/lib/bib/95-3dig.htm>

- ▶ Faculty Mentor Training Project:
<http://www.csun.edu/eop/htdocs/fmtp.pdf>