STEM Diversity and Outreach Workshop
Fall 2015
Offered Under GWS 393
Weekly Course Meeting: Wednesdays 5-6:30, GWS 100

Instructor Information
Name: Jill Williams
Office Location: GWS 202A
Telephone number: 520-626-9152
E-mail address: JillMWilliams@email.arizona.edu
Office Hours: TBD

**NOTE: For the fall 2015 semester, course credit is being offered through GWS 393-Internship. To register for the course you must complete a paper add form, have it signed by the course instructor, and submit it to the registrar’s office.**

Description of Course
This workshop-based course examines issues of diversity in the fields of science, technology, engineering, and math (STEM), while also providing students with the opportunity to building on the knowledge they gain in the classroom by directly engaging in community efforts to promote and increase access to STEM programming. Course readings will focus on a wide-range of topics including: the status of diversity in STEM fields; why diversity is important; the political, economic, and cultural factors that lead to more/less diverse STEM communities; strategies for increasing STEM diversity; and the relationship between science, diversity, and social justice. Students will also receive hands-on training in STEM lesson planning, inter-active workshop design, and program evaluation provided by the STEMAZing Program of the Pima County Superintendent’s Office and other community organizations. In addition to attending weekly 1½ hour class meetings and 3 workshops over the course of the semester, students will be placed with a community organization or school program to assist in designing and implementing STEM programming. Students are expected to work with their organization for an average of 8-10 hours per week.

Course Objectives and Expected Learning Outcomes
By the end of this course, student will have:
- Gained a broad understanding of the demographic composition of various STEM fields
- Developed an understanding of the political, cultural, social, and economic factors that shape the demographic characteristics of STEM disciplines in academia and the workforce
- Developed an understanding of the political, economic, and cultural reasons why greater diversity in STEM fields is desirable
- Gained a thorough understanding of various strategies and approaches to increasing diversity in STEM fields
- Mastered basic skills in age- and developmentally-appropriate lesson-planning and workshop design that incorporates strategies for increasing diversity in STEM
- Developed project evaluation skills to assess the strengths and weaknesses of existing STEM outreach programs and make targeted recommendations for
community partners

Required Texts and other materials

- Course materials (e.g., articles, videos, blog posts) will be made available through the course D2L site.

Course Schedule

NOTE: All readings should be completed before you come to class on the day they are listed under.

August 26: Introduction to course

September 2: Introduction to STEM Diversity—What is diversity, why does it matter, and how diverse are STEM fields?

Readings (completed before coming to class):
- Five Numbers that Explain Why STEM Diversity Matters to All of Us
  http://www.wired.com/2015/05/5-numbers-explain-stem-diversity-matters-us/

September 9: What factors influence who participates in STEM fields?

Reading (completed before coming to class):
- Campbell et al. Views from the Trainees—Talking about what matters in efforts to diversify the STEM workforce”
- Dasgupta and Stout. Girls and women in science, technology, engineering and mathematics: STEMing the Tide and broadening participation in STEM careers.

Optional Reading:
- Inoculating Against Stereotypes

September 16, 23: Training Days

September 30: Structural ‘-isms’ versus Prejudice and Intersectionality

Readings (to be completed before coming to class):
- Tatum, “Defining Racism”
- “Intersectional Feminism: What the hell is it?”
- “Study finds sexism in STEM hits women of color the hardest.”
Optional Reading:
  o Three reasons why feminists need to talk about race.

October 7, 14: Training Days

October 21: The Deficit Model of Education

Reading (to be completed before coming to class):
  o “Learning with Urban Youth.” In *Teaching Science for Social Justice* by Calabreses Barton et al. pg. 19-45

Optional Reading:
  o “Overview: Youth Lives and Youth Science.” In *Teaching Science for Social Justice* by Calabreses Barton et al. pg. 1-19

October 28: The Margin as a Site of Knowledge

Reading (to be completed before coming to class):
  o “Living in the Borderland.” In *Teaching Science for Social Justice* by Calabreses Barton et al. pg. 46-65

Nov. 4: What’s Marx got to do with it? Political Economy and STEM Diversity

Readings/watchings (to be completed before coming to class):
  o Holingsworth. “Is the path out of poverty the path right back into poverty?”
  o Why is STEM Education important to American Prosperity? [http://stemeast.org/stem_education_important_to_american_prosperity/](http://stemeast.org/stem_education_important_to_american_prosperity/)

Nov. 11: No Class, Veterans Day; Training day Saturday Nov. 14

Nov. 18: Is Science Racist?

Reading (to be completed before class):

Nov. 25: Is Science Eurocentric? (No Class, electronic discussion)

Reading:

Dec. 2: Is Science Eurocentric Follow-up
Readings (to be completed before class):
  o “Astronomy ‘Progress’ Is Not Universal”
    https://storify.com/elakdawalla/astronomy-progress-is-not-universal
  o How a Hawaiian mountaintop became a battleground between native activists and astronomers
  o World’s Largest Telescope Faces Opposition from Native Hawaiian Protesters
  o Seeking Stars, Finding Creationism
  o We Live in the Future, Come Join Us
    https://hehiale.wordpress.com/2015/04/03/we-live-in-the-future-come-join-us/

Dec. 9: Course Wrap-up

**Grading and Assessment:** Your final grade for this course will be based on the following criteria:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>In-Class Attendance/Participation</td>
<td>15%</td>
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<tr>
<td>Site-placement Worklog</td>
<td>5%</td>
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<tr>
<td>Weekly Reflections</td>
<td>20%</td>
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<tr>
<td>Site Supervisor Evaluations</td>
<td>20%</td>
</tr>
<tr>
<td>Lesson Plan</td>
<td>10%</td>
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<tr>
<td>Workshop Design</td>
<td>10%</td>
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<tr>
<td>Final Project</td>
<td>20%</td>
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<tr>
<td><strong>Total</strong></td>
<td>100%</td>
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**Attendance and Participation 15%:**
Attendance and participation in course discussions and workshops is key to your success in this course. Students are required to attend all class meetings, workshop sessions, and agreed-upon meetings at their project site unless they have received approval from the course instructor and/or site supervisor.

- Students are allowed 2 unexcused absences from class meetings throughout the semester; 5% of the participation grade will be deducted for each additional unexcused absence.
- 5% of the participation grade will be deducted for each unapproved/unexcused absence from workshop sessions and site meetings.

We will learn from each other and draw on everyone’s experiences at their program sites as a way to more fully engage and draw on assigned course readings. In turn, you are expected to not just physically be present at class meetings and workshops, but to actively engage in discussion and other in-class activities. At the beginning of the semester we will collectively set guidelines and expectations for what we all expect from each other in terms of active class participation and respectful discussion.

**Site-Placement Worklog 5%:**
Each week, you will have to submit a worklog of the number of hours completed at your site placement and the general activities done. *Please use the “Site Placement Worklog Form”*
available under the “Course Documents” section of Laulima as the format to submit your weekly log.

**Weekly Reflection Logs 20%:**
Each week you will be given a prompt that asks you to reflect both on your experience at your program site as well as assigned course readings or other materials. These reflection logs are important for not only communicating your experience to the course instructor (e.g., issues you’re having at your site, questions you have about the course materials or concepts), but also for providing an opportunity for you to actively and intentionally think through your experience at your site in relation to the issues, concepts, and theories that are discussed in the more ‘academic’ readings that are assigned as part of the course. Weekly reflection logs will be due by mid-night the day before class meetings.

**Site Supervisor Evaluations 20%:**
Your site supervisor will provide feedback on your performance at your site. The criteria for evaluation may vary slightly from placement to placement, but will largely focus on attendance/timeliness, engagement, and follow-through.

**Lesson Plan 10%:**
You will have to design a lesson-plan for a STEM-related activity based on the criteria and guidelines covered in the Lesson Planning Workshop. Additional guidelines on this assignment will be provided later in the semester.

**Workshop Design 10%:**
In a group, you will have to design a workshop to be delivered in a one-hour timeslot at a STEM event for either middle school or high school aged students. Additional details and guidelines on this assignment will be provided later in the semester.

**Final Project—Poster 20%:**
For your final project in the course you are required to produce a poster either individually or in a group that connects the activities you participated in at your site placement to course themes, topics, and materials. Additional details and guidelines will be provided by week 10 of the semester.

**Grading Policy and Scale**

In fall 2015, this course will be graded on a pass/fail scale. However, in order to assess whether or not you pass the course, percentage/letter grades will be given on all assignments and a final grade calculated on the above criteria. In order to receive a “pass” for the course, you must receive a minimum of a C- or 70% in the course. Anything grade below this will receive a “fail” for the course. Those who receive a 93% or above will be awarded a “superior” for their performance in the course.

**Grading Scale**

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A+</td>
<td>98-100</td>
</tr>
<tr>
<td>A</td>
<td>93-97</td>
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Superior
The University policy regarding grades and grading systems is available at: [http://catalog.arizona.edu/2014-15/policies/grade.htm](http://catalog.arizona.edu/2014-15/policies/grade.htm) Requests for incompletes (I) and withdrawal (W) must be made in accordance with university policies which are available at [http://catalog.arizona.edu/2014-15/policies/grade.htm#I](http://catalog.arizona.edu/2014-15/policies/grade.htm#I) and [http://catalog.arizona.edu/2014-15/policies/grade.htm#W](http://catalog.arizona.edu/2014-15/policies/grade.htm#W) respectively.

**Honors Credit**

Students wishing to contract this course for Honors Credit should email me to set up an appointment to discuss the terms of the contract and to sign the Honors Course Contract Request Form. The form is available at [http://honors.arizona.edu/documents/students/ContractRequestForm.pdf](http://honors.arizona.edu/documents/students/ContractRequestForm.pdf)

**Late Work Policy**

As a rule, work will not be accepted late except in case of documented emergency or illness. You may petition the professor in writing for an exception if you feel you have a compelling reason for turning work in late.

**Attendance Policy**

Participating in course and attending lectures and other course events are vital to the learning process. As such, attendance is required at all discussion session meetings and course workshops. Students who miss class due to illness or emergency are required to bring documentation from their healthcare provider or other relevant, professional third parties. Failure to submit third-party documentation will result in unexcused absences.

The UA’s policy concerning Class Attendance and Administrative Drops is available at: [http://catalog.arizona.edu/2014-15/policies/classattend.htm](http://catalog.arizona.edu/2014-15/policies/classattend.htm)

The UA policy regarding absences on and accommodation of religious holidays is available at [http://deanofstudents.arizona.edu/policies-and-codes/accommodation-religious-observance-and-practice](http://deanofstudents.arizona.edu/policies-and-codes/accommodation-religious-observance-and-practice)

Absences pre-approved by the UA Dean of Students (or Dean designee) will be honored.
**Classroom Behavior**

To foster a positive learning environment, students may not text, chat, make phone calls, play games, read the newspaper or surf the web during lecture, discussion, and other course meetings. Students are asked to refrain from disruptive conversation with people sitting around them during lecture. Students observed engaging in disruptive activity will be asked to cease this behavior. Students who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students.

The use of personal electronics such as laptops, iPads and other such mobile devices is distracting to the other students and the instructor. Their use can degrade the learning environment. Therefore, students are not permitted to use these devices during the class period.

The Arizona Board of Regents’ Student Code of Conduct, ABOR Policy 5-308, prohibits threats of physical harm to any member of the University community, including to one’s self. See: http://policy.web.arizona.edu/~policy/threaten.shtml.

**Accessibility and Accommodations**

It is the University’s goal that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so that we can discuss options. You are also welcome to contact Disability Resources to establish reasonable accommodations: 1224 East Lowell Street, Tucson, AZ 85721, (520) 621-3268, FAX (520) 621-9423, email: uadrc@email.arizona.edu, http://drc.arizona.edu/. For additional information on Disability Resources and reasonable accommodations, please visit http://drc.arizona.edu/

If you have reasonable accommodations, please plan to meet with me by appointment or during office hours to discuss accommodations and how my course requirements and activities may impact your ability to fully participate.

Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

**Student Code of Academic Integrity**

Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: http://dos.web.arizona.edu/uapolicies/.

The University Libraries have some excellent tips for avoiding plagiarism available at: http://www.library.arizona.edu/help/tutorials/plagiarism/index.html
Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor’s express written consent. Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA email to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student email addresses. This conduct may also constitute copyright infringement.

Confidentiality of Student Records

Please consult the following website for details on university wide policies regarding student records: http://www.registrar.arizona.edu/ferpa/default.htm

Subject to Change Statement

Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.

Additional Resources for Students

UA Non-discrimination and Anti-Harassment policy:
http://policy.arizona.edu/sites/default/files/Nondiscrimination.pdf

UA Academic policies and procedures:
http://catalog.arizona.edu/2014-15/policies/aaindex.html

Student Assistance and Advocacy information is available at:
http://deanofstudents.arizona.edu/students-assistance/students/student-assistance