DTS Workshop Series: Strategies That Increase the Retention and Academic Performance of Underrepresented Students on Campus: A Step-by-Step Approach Towards Achieving Success

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Collaborate

- Eat lunch!

- Catch up!

- Discuss with your group the results of your "assignment".
  - Identify one area where your department or program can improve recruitment efforts.

April Focus

- Evaluation: Why Is This Important and How Do You Do It?

- Administrative Buy-In: How Do You Obtain It?

Evaluation Workshop

Objectives:

1. Explain how to plan an evaluation using MERIT/MIST as example

2. Support you in developing an initial evaluation plan for your program or course

3. Provide information on IRB, evaluation resources, and administrative buy-in

What is evaluation and why do we evaluate?

A Guiding Evaluation Framework:
A Values-Engaged, Educative Approach
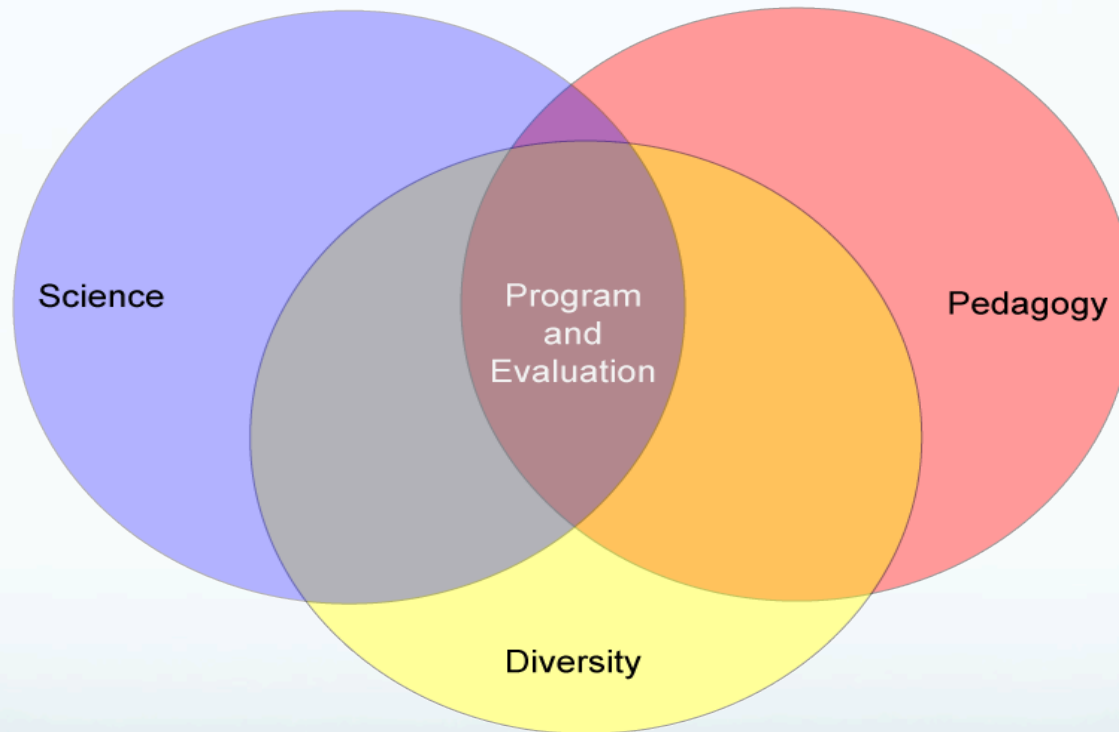
Greene, J.C., DeStefano, L., Burgon, H., and Hall, J. (2006). An educative, values-engaged approach to evaluating STEM educational programs. New Directions for Evaluation. 109, p. 53-71.

Evaluation Planning

1. Program/course
2. Evaluation purpose, audience(s), and use(s)
3. Evaluation questions
4. Design and methods
5. Judging quality of program/course
6. Sharing the results

1. Program/Course

Consider:	MERIT/MIST:
Primary goals or objectives?	1) Increase # of STEM graduates 2) Train current and future teachers at the high school and college levels to implement their own MIST-style programs 3) Develop accessible, on-line resources and discussion boards
Who participates?	Undergraduate students Undergraduate and graduate teaching assistants High school and community college teachers
Who are the staff and/or instructors?	STEM faculty, instructors, and graduate student TAs
Main activities?	• Student activities • Summer teacher workshops • Develop and maintain online resources and discussion boards
Anything else?	Funded by the National Science Foundation

2. Evaluation Purposes, Audiences, and Uses

- Why evaluate your program/course?
  - Ex: Understand stakeholder perspectives on program and assess progress towards achieving objectives

- Who cares about the evaluation?
  - Ex: MERIT staff, participating students, NSF

- How do you or others plan to use the results?
  - Ex: Make improvements to program each year, report to NSF

- What is the program/course you'd like to evaluate?

- Why evaluate it? Who cares about the evaluation? How will you use the results?

3. Evaluation Questions

- Formative (i.e. modify the program/course):
  - Ex: *Which program components are working well? How might they be improved?*

- Summative (i.e. outcomes and impact):
  - Ex: *What student and faculty outcomes are associated with program or course participation? How do these compare with baseline measures?*

Ex: MERIT/MIST Evaluation Questions

1. To what extent and in what ways <u>did the MIST program increase the number of the UIUC STEM participants</u> (within the courses and overall majors) and STEM graduating participants? *(Objective 1)*

2. According to the MIST participants, how were they <u>impacted by the program</u>? What, if any, changes (i.e., in study habits, career aspirations, and perceptions/attitudes toward STEM subjects and careers) occurred as a result of their participation? *(Objective 1)*

3. To what extent is the <u>training provided through the MIST program effective</u> at improving current and future teachers' use of Merit-style pedagogical techniques and knowledge about STEM subjects? *(Objective 2)*

4. According to current and future teachers, what was the <u>quality of the online resources and activities</u> provided by the MIST program? *(Objective 3)*

4. Design and Methods

- Mixed methods design:
  - Observations – instruction and student engagement
  - Pre/post learning assessment – changes in content knowledge
  - Structured surveys – student views on program/course
  - Individual and group interviews – in-depth student experiences

- MERIT/MIST Mixed Methods Design:
  1) A quasi-experimental, non-equivalent comparison of students *who participated* and *did not participate* using data from student empirical database
  2) Participant surveys (for students, TAs, and Summer Teacher Workshop participants) with close-ended and open-ended questions
  3) Former participant group and/or individual interviews

- What are the main questions you want to answer?

- What design and methods address these questions?

5. Judging Program Quality

How will you know if your program/course is successful?
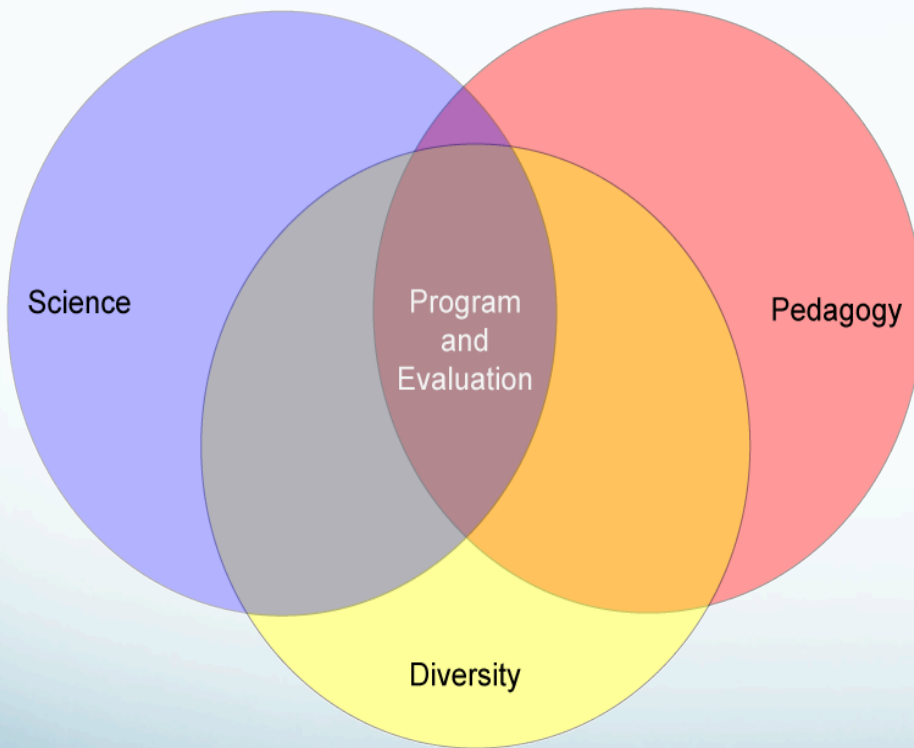
- Changes in participant content knowledge
- Participant satisfaction and engagement with program/course
- Provides access and positive experiences for students from underrepresented groups

6. Sharing the Results

- Ex:
  - *Share full report with key staff and funding agency*
  - *Create short memo with key highlights to share with stakeholders*
  - *Meet with stakeholders to discuss findings and potential changes to course/program*
  - *Share findings with students and let them know what changes you plan to make*

- How will you know if your program/course is successful?

- How will you share the results?

Institutional Review Board (IRB)

- Mandatory policies for conducting ethical research with human subjects
  - Confidentiality
  - Consent

- Online training *required* prior to submitting application

- IRB approval takes 4 weeks on average

Resources

Campus consulting:

- QUERIES – research and evaluation: http://education.illinois.edu/edpsy/areasofstudy/queries/consulting

- ATLAS – survey design and analysis: http://www.atlas.illinois.edu/services/stats/surveys/

- Center for Teaching Excellence: http://cte.illinois.edu

- Illinois Science, Technology, Engineering, and Mathematics Education Initiative (I-STEM): http://www.istem.illinois.edu

Evaluation planning:

- W.K. Kellogg Evaluation Handbook https://www.wkkf.org/resource-directory/resource/2010/w-k-kellogg-foundation-evaluation-handbook

- NSF Handbook for Project Evaluation http://informalscience.org/documents/TheUserFriendlyGuide.pdf

- Better Evaluation website: http://betterevaluation.org

- What challenges do you face regarding administrative buy-in?

- What strategies might you use to address these challenges?

Assignment

- In what areas do you need administrative support? Develop a realistic strategy to obtain it.

See you on May15th!

- Plan-of-Action (Guided Working Session)

- Resources and Moving Forward