Session Title, Time, and Location
Techniques, Tips, and Tools for Engaging
　　Undergraduates in Research
1:30-3:00pm Monday, June 15th
Location: MYBK 100 (ISSRM 2015)

Session Organizer(s)
Brian W. Eisenhauer, Plymouth State
　　University
Courtney G. Flint, Utah State University

Session Abstract
Involving undergraduate students in research offers many pedagogical benefits for students and expands opportunities for their faculty mentors. For students, research engagement has been asserted to impact student retention, increase the likelihood that students pursue graduate study, result in cognitive learning gains, improve the acquisition of research knowledge and skills, and provide students with positive experiences. Faculty or other mentors of undergraduate researchers not only have more people for getting work done, but also benefit from the creativity and enthusiasm of new researchers. Despite these many benefits, engaging undergraduates in research is often challenging in institutions of higher education due to a lack of institutional support, the time commitment given other demands on faculty, and other factors. In this panel discussion a group of faculty experienced in engaging undergraduates in research will discuss various models for structuring the research, best practices for ensuring a high quality research project and a positive student experience, and other techniques for successfully creating research opportunities for undergraduates.

Speakers/Panelists
Brian W. Eisenhauer, Office of Environmental Sustainability, Plymouth State University
Courtney G. Flint, Department of Sociology, Social Work, and Anthropology, Utah State
　　University
Joan M. Brehm, Department of Sociology and Anthropology, Illinois State University
Carla Trentleman, Department of Sociology, Weber State University
Rebecca Schewe, Department of Sociology, Syracuse University
Stuart Carlton, Texas Sea Grant College Program, Texas A&M University at Galveston
Tania Schusler, Institute of Environmental Sustainability, Loyola University Chicago
Linda Prokopy, Department of Forestry and Natural Resources, Purdue University
Rita Yembilah, Instructor, Mount Royal University, Calgary

Panel Session Outline
- Thanks and introduction to the panel
    - Purpose
    - Panelists
- Structure: Interactive!
    1. Introduce each topic with feedback from panelists and audience on white board / flip chart
    2. Response from panelists
    3. If time allows, topic specific Q&A
- Conclude with moderator's summary

Topics:

- *What are the major benefits of engaging undergraduates in research?*
    - Engagement in research as teaching vs. engagement as mentoring
    - Benefit for teaching
    - Value in faculty role: can blend teaching, research, and service

Notes:

- Can support community service (University PR/Media loves this)
- Partnering across institution (can propel students); ie: big school-little school linkages.
- Mentor learning
- Full class research: learning and skill building
- Can open up participants for social science research when they are in more traditional NR fields; can bring students into the social sciences.
- University Undergraduate research program and funds may be available to support this.
- Can engage students at the periphery
- Can support larger research efforts, 'pay it forward'
- Chance to work with enthusiastic students.
- Opportunities for some unique funding to work with undergraduates
- Can lead to better job opportunities for students (skill sets)
- Mandates from the institution may bring financial support

- *What are the major challenges to engaging undergraduates in research?*
    - Lack of institutional support, including role in P&T
    - Time commitment given other demands on faculty
    - The challenges of working with students – "Is this help, or more work?"
        - Selecting students – how?
        - Student preparation and guiding them through the research process
        - Student commitment
    - Funding challenges
        - What institutional resources may help?
    - Creating / finding / identifying a project
        - How to spot a good study
        - What the research is for - how the findings will be disseminated, to whom, and for what reason
            - Project reports
            - Publishing with undergrads

NOTES:
- IRB challenges

- Student groups/dynamics can be difficult to manage
- Can fail.
- More work that anticipated or prepared for.
- Hard to find the right 'community partners' and not get their hopes too high.
- Short time frame (if a semester project)
- Students can't invest as much time and their expectations may be unrealistic
- Opportunity-cost re: other course content
- Can be hard to recruit on certain topics
- In class projects can be difficult to assess and evaluate
- Natural/physical science bias in UG research programs
- Multi-student challenges.

- *What are the models for structuring the research engagement?*
    - Choice of model can help narrow the challenges that need to be addressed
    - Project purpose ("what the research is for" questions above) are a key consideration
    - Faculty-led or student led?
        - Pros and cons
        - Challenges to each
    - Entire class model
        - Pros and cons
            - What is best model for work? Class paper? Individual paper?
        - Essential considerations for success
    - Project team model (both undergrads only and "mixed" student levels)
        - Pros and cons
        - Essential considerations for success
    - Individual researcher model (professor as mentor)
        - Pros and cons
        - Essential considerations for success

Notes:

- Recognize the importance of context.
- Different modes: class project, hired on a research project, student-led project, etc…
- Cultural context considerations
- Need training resources, especially on data management
- Need assessment metrics for engaged learning.
    - NACTA article on learning outcomes (with scales)
    - U of GA Office of student learning
- Community partnerships can be key, but take care with these.
- Consider international undergraduate research (Virginia Tech: support and goal); Belize, Botswana
- Consider partnerships with library, stats departments.

- *What are the most important best practices for ensuring a high quality research project and a positive student experience you'd want to share with others starting this type of work?*
  - Suggestions from panel, may be useful to respond to challenges identified in discussion of topic 1

Notes:

- Be prepared to fail
- Capture all output/products/documents for tenure/promotion materials.
- Match skills with expectations
- Adjust time commitments
- Focus on the scope and keep it realistic.
- Think about the appropriate mentor/career stage – how much time can you invest?
- Think about how to "spin" the project to get credit for tenure/promotion. Get help/advice from those in your own department and on your own campus.
- Make students take lots of notes.
- Treat it like it is a job – put it all in writing!
- Use job descriptions for students and put their job arrangements in writing.
- Be honest with students about realities and limitations.
- External clients can be very helpful motivators – get them to articulate their needs directly to the students.
- If a class project, think through ALL the parts for the entire project. Plan and plan again.
- If a class project, consider peer assessments and share those with students.
- Sequence classes to properly prepare students for the work.
- Safety training
- Clear protocols on conduct etc…
- Reiterate process and commitment to students and allow an 'out'.
- Involve graduate and post-doc students as mentors and team leaders.
- Have a clear 'code of conduct'
- Have all students complete IRB training and sensitivity training (make time for this)
- Distribute the effort
- Assess the risk level and involve students accordingly.
- Screen potential students carefully.
- Consider a probationary period for the work.

IASNR Teaching Support and Resources:

- Syllabi
- Assessment rubrics
- Reading lists with commentary

- Video library (multi-media)
- Methods (concise readings for non-social scientists especially)
- Dillman – how to create surveys (update)
- Group activities
- Case studies/examples of real world applications
- Previous class project examples
- Papers by undergraduates with commentary
- Research outcomes/products to demystify the process.
- Add diversity

Conclusion, summary and thanks