

## Doing Your Own Classroom Research

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Jill Nelson, PhD, has been teaching for 15 years. At Mason, she regularly teaches undergraduate courses ECE 201, 220 (signals & systems), ECE 460 (digital & analog communications) & graduate course ECE535 (digital signal processing).

Dr. Nelson's research focus is in statistical signal processing. Her work on target detection and tracking is funded by the Office of Naval Research.

In 2014, she received Mason's 2014 Teaching Excellence Award.

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Jessica Rosenberg, PhD is Director, STEM Accelerator, GMU. She has been teaching for 12 years. She regularly teaches PHYS 260, ASTR 402/602 & ASTR 115 at Mason. In addition to her research in astronomy, she also has conducted educational research, and developed STEM curricula for K-12, undergraduate, and graduate education. She has worked with science teachers at a variety of levels.

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### Our Classroom Research

### What We're Exploring

### Best Practices & Tips

#### Jill I have studied...

- students' understanding of concepts in a grad-level class when their primary assignments were project based vs. traditional homework.
- how students transferred mathematical knowledge from foundational math courses to engineering courses in which those foundations were applied.
- the different way students engage with the material, the instructor, and each other in a course with a heavy active learning element.
- I have also helped other faculty design and conduct classroom research through SIMPLE faculty teaching development groups.

#### Jessica I have studied...

- how students spend a significant fraction of class time solving problems at the board in small groups.
- strategies to prepare students to have a full class debate.
- mini collaborative projects with presentations. These are exercises done in groups of 2-4 that have to be presented to the class at the end of the given time.

#### Jessica and Jill are exploring together:

- How do learning assistants (LAs) affect student learning?
- How does serving as a learning assistant affect the LA's own understanding and his/her career and educational aspirations?
- How does an ongoing training program affect how LAs operate in their teaching roles?
- In the absence of formal training, what do LAs draw upon to inform their teaching?

- **Engage the students!** Give them opportunities to actively work with the content, the instructor, and each other.
- **Assess how well your classroom practices are working!**
- **Teaching is collaborative!** Talk to and work with colleagues as you develop and redevelop your teaching efforts.

# Faculty Conversations About Teaching: Doing Your Own Classroom Research

**Bess Dieffenbach, Human Subjects Program Manager,  
Office of Research Development, Integrity, and Assurance (RDIA)**



Bess Dieffenbach is Human Subjects Program Manager in the Office of Research Development, Integrity & Assurance (RDIA) at George Mason University. As the Institutional Review Board (IRB) manager at Mason, she can address your questions about IRB issues related to and surrounding classroom research, particularly if faculty are using their own students as research participants.

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## GMU Office of Research Development, Integrity and Assurance Website Resources

*" RDIA is responsible for Mason's program for promoting excellence in all aspects of research with humans. A fundamental principle of RDIA's program is that all research with human subjects must be reviewed prior to a project's initiation. Ethical review of projects will either be conducted by RDIA staff or members of the Institutional Review Board (IRB). The IRB is a committee composed of faculty, staff, and community members who are trained in issues related to protecting human participants in research. "*

- RDIA Human Subjects Website

Information which outlines the IRB review process and houses all of the SOPs: <https://rdia.gmu.edu/topics-of-interest/human-or-animal-subjects/human-subjects/human-subjects-sops/>

Human Subjects Policies, Procedures & Guidelines:  
<https://rdia.gmu.edu/topics-of-interest/human-or-animal-subjects/human-subjects/human-subjects-policies-procedures-forms-instructions/human-subjects-policies-procedures-guidelines/>

**Note: All researchers must receive written approval from RDIA prior to conducting a research project involving human subjects.**

**Questions? Please e-mail: [irb@gmu.edu](mailto:irb@gmu.edu)**

*RDIA also offers walk-in assistance to human subjects investigators each Tuesday from 2-4pm in Research Hall*

11/2018

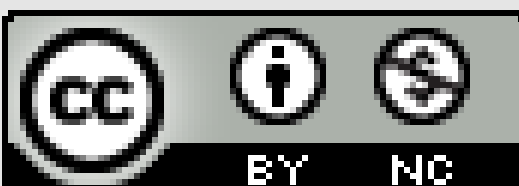
**How might you apply these ideas, tips & best practices to a course you are currently teaching?**

**What additional information or resources might you need in order to try it?**

**For info and guidance, please contact the Stearns Center for Teaching & Learning (4th Floor, Innovation Hall)**



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