

PROJECT NExT
NEW EXPERIENCES IN TEACHING
2009-2010 FELLOWS

Workshop held in Pittsburgh, PA
August, 2010

A program of

THE MATHEMATICAL ASSOCIATION OF AMERICA

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**Project NExT: New Jobs, New Responsibilities, New Ideas
Program for the Workshop in Pittsburgh, Pennsylvania
August 2010**

**Location: Second Floor of the Marriott Pittsburgh City Center
The registration area for Project NExT is in the Grand Foyer**

TUESDAY, AUGUST 3

8:00 - 10:00 pm Social Event for 2009-10 and 2010-2011 Project NExT Fellows and presenters – **Marquis C Ballroom**

10:00 pm - ? INFORMAL SOCIALIZING

WEDNESDAY, AUGUST 4

8:15 - 9:30 am TWO concurrent sessions

A. *Motivating the Unmotivated: Getting Students to Buy Into Your Course, the Next Course, and the Math Major*

A City Center

Panelists: Jozsi Jalics, Youngstown State University
Daniel M. Look, St. Lawrence University
Michael Starbird, University of Texas at Austin
J. Douglas Wright, Drexel University

Mathematics seems beautiful, useful, and important – to us, and to many people. For example, the Wall Street Journal recently reported that many of the jobs with which employees reported very high levels of job satisfaction are, in fact, jobs related to the mathematical sciences. Why, then, is it so challenging to motivate students -- from the students looking to satisfy a mathematics requirement to potential math majors who are good at computations but find proof-based courses to be much more difficult? Panelists will discuss tips for increasing "buy-in" in your mathematics courses, with the goal of making your course more appealing for students who will not take another mathematics course, increasing the likelihood of getting strong students to take "the next" mathematics course, and making the transition to proof-based courses easier for your committed mathematics students.

Organizers: Camillia Smith Barnes, Sweet Briar College
Jeff Hamrick, Rhodes College
Adriana Salerno, Bates College
Elizabeth Zollinger, Hiram College

WEDNESDAY, AUGUST 4

8:15 - 9:30 am B. *Panel on Scholarship of Teaching and Learning* Marquis C Ballroom

Panelists: Thomas Banchoff, Brown University
Kyeong Hah Roh, Arizona State University
TJ Murphy, Northern Kentucky University
Stan Yoshinobu, Cal Poly San Luis Obispo

This panel will discuss the Scholarship of Teaching and Learning (SoTL), meaning research done by teachers about student learning (especially college students). We hope to learn about starting to ask these kinds of research questions, finding support for this kind of work, overcoming the differences between this kind of research and disciplinary research, figuring out how SoTL fits into the larger world of academe, and learning from others' inquiries into the classroom.

Organizers: Hannah L. Callender, University of Portland
Eric B. Kahn, Bloomsburg University
Brian P. Katz, Augustana College
Jessica Mikhaylov, United States Military Academy, West Point

9:35 - 10:05 am BREAK – Grand Foyer

10:10 - 11:25 am TWO concurrent sessions

A. *Mathematics for the Liberal Arts* A City Center

Panelists: Julie Barnes, Western Carolina University
Annalisa Crannell, Franklin and Marshall College
Sarah Mabrouk, Framingham State College

This session has two purposes, united by the broader theme of how mathematics fits within the framework of liberal arts education. First, we address the "Math for Liberal Arts" course offered by many colleges and universities for students who are generally not math or science majors. When we teach such a course, we often face an audience with a wide variety of backgrounds. Thus, one question we must address as instructors is how to use our students' strengths in areas like writing and the arts to help make the mathematics in the course more accessible. We will also discuss the special challenges one faces when teaching mathematics majors at a liberal arts college. Accessibility is less of a concern in this setting, and so the question becomes how one can enhance a student's experience learning mathematics. Students at a liberal arts college often have a broad range of interests and are used to a variety of courses and pedagogies. Consequently, we hope to generate ideas on how to use the context of liberal arts education in novel ways to shape our approach to teaching mathematics courses across the curriculum.

Organizers: Jan Cameron, Vassar College
Jonas D'Andrea, Westminster College
Laura L. Hall-Seelig, Merrimack College
Stacey O. Nicholls, Anne Arundel Community College

WEDNESDAY, AUGUST 4

10:10 - 11:25 am B. *Organizing REUs/summer programs and finding funding*

Marquis C Ballroom

Panelists: Patrick Bahls, University of North Carolina Asheville
Neil Calkin, Clemson University
Laura Taalman, James Madison University

So you want to start an REU/ RET at your home institution. What are the different formats currently used to organize these types of programs? How do you find funding for your Research Experience for Undergraduates, or Teachers, program? How do you recruit participants? How can you help students choose a topic and write a paper suitable for submission to a journal? What are the important components that increase participation and desired outcomes? Come listen to the advice of some seasoned veterans who will share the pros and cons, ups and downs of running an REU/ RET program.

Organizers: Jimin Lee, University of North Carolina Asheville
Marta T. Magiera, Marquette University
Omayra Ortega, Arizona State University
Stephanie Vance, Adams State College

11:30 am - 12:15 pm Small Group Discussions with other Project NExT Fellows

[This session is organized by research area. Please attend the group that best matches your current research interests.]

Group A: Algebra, Group Theory – **Marquis C Ballroom**

Group B: Analysis – **Marquis A Ballroom**

Group C: Applied Mathematics, Mathematical Biology, Operations Research – **Marquis B Ballroom**

Group D: Combinatorics, Graph Theory, Discrete Mathematics – **Salon 5 Grand Ballroom**

Group E: Differential Equations, Dynamical Systems – **A City Center**

Group F: Geometry, Algebraic Geometry – **Salon 6 Grand Ballroom**

Group G: Linear Algebra, Number Theory – **B City Center**

Group H: Mathematics Education, History of Mathematics – **Salon 1 Grand Ballroom**

Group I: Probability, Statistics – **Pittsburgh Room (10th floor)**

Group J: Topology, Set Theory, Logic – **The Three Rivers Conference Center (1st floor)**

12:15 - 1:30 pm LUNCH – Grand Foyer

WEDNESDAY, AUGUST 4

1:35 - 2:50 pm TWO concurrent sessions

A. *Supervising Senior Research/Capstone Projects*

A City Center

Panelists: Judy A. Holdener, Kenyon College
Tamara Lakins, Allegheny College
Steven Schlicker, Grand Valley State University

Many mathematics programs require their majors to complete a thesis or capstone experience during their senior year. Such projects typically include some element of student research. This panel discussion will address finding suitable project ideas, the differences (if any) between work on a capstone project and other undergraduate research activities, and suggestions for effectively guiding students as they complete the various phases of their project or experience.

Organizers: Michael D. Barrus, Black Hills State University
Daniel W. Cranston, Virginia Commonwealth University
Paula Federico, Capital University
Christopher S. Frayer, University of Wisconsin-Platteville

B. *Preparing pre-tenure materials*

Marquis C Ballroom

Panelists: Antonia Cardwell, Millersville University of Pennsylvania
Su Doree, Augsburg College
John P. Holcomb, Jr., Cleveland State University
Jim Lewis, University of Nebraska-Lincoln

Navigating the tenure process is a challenging and stressful experience for most recently hired faculty. As we transition into "experienced" faculty members at our institutions, we will be expected to prepare annual reviews and materials for the tenure process. The panelists will discuss the preparation of such pre-tenure materials and offer their views on the tenure process. The panelists represent different types of institutions and include some with experience reviewing the tenure materials of recently hired faculty.

Organizers: David Offner, Westminster College
TaraLee Mecham, College of Mt. St. Joseph
Thomas P. Wakefield, Youngstown State University
Helen M. Wong, Carleton College

3:25 - 3:55 pm BREAK – **Grand Foyer**

3:55 - 5:25 pm Closing Session – **Salons 2-4 Grand Ballroom**
Recognition of 2009-10 Fellows
Presentation: *Finding Your Niche in the Profession*
Joseph Gallian, University of Minnesota Duluth

6:00 – 7:30 pm Mathfest Opening Reception (cash bar) – **William Penn Ballroom/
Sternwheeler/ Riverboat, Omni William Penn Hotel**

(more on Wednesday overleaf)

WEDNESDAY, AUGUST 4

7:30 - 9:30 pm Mathfest Opening Banquet – **Grand Ballroom, Omni William Penn Hotel**

9:30 pm - ? INFORMAL SOCIALIZING

THURSDAY AND FRIDAY, AUGUST 5 AND 6

Project NExT Courses During the Mathfest: Four-hour courses meeting in the **Omni William Penn Hotel** on Thursday and Friday, August 5 and 6.

[See information for assignments. Please attend only the course to which you are assigned.]

- A. *Low Tech Visualization Techniques for Undergraduate Mathematics Classes* – Julia Barnes, Western Carolina University, 1:00 - 3:00 pm, **Lawrence Welk Room, Omni Hotel**
- B. *Math Courses for Future Elementary and Middle School Teachers* – Maria Fung, Worcester State College, 1:00 - 3:00 pm, **Shadyside Room, Omni Hotel**
- C. *Undergraduate Research – How to Make It Work* – Aparna Higgins, University of Dayton, 1:00 - 3:00 pm, **Oakmont Room, Omni Hotel**
- D. *What? You Want Me To Teach the Intro Stat Course?* – Robin Lock, St. Lawrence University, 3:15 - 5:15 pm, **Lawrence Welk Room, Omni Hotel**
- E1. *Applying for Grants from the National Science Foundation/Getting Your Research Off to a Good Start* – Dean Evasius, National Science Foundation, and Joseph Gallian, University of Minnesota Duluth, 3:15 - 5:15 pm, **Oakmont Room, Omni Hotel**
Thursday, Dean Evasius (on grants), and Friday, Joe Gallian (on research)
- E2. *Applying for Grants from the National Science Foundation/Getting Your Research Off to a Good Start* – Dean Evasius, National Science Foundation, and Joseph Gallian, University of Minnesota Duluth, 3:15 - 5:15 pm, **Shadyside Room, Omni Hotel**
Thursday, Joe Gallian (on research), and Friday, Dean Evasius (on grants)

We thank green09 Project NExT Fellows Rachele Bouchat, Slippery Rock University, and Pace Nielsen, Brigham Young University, for coordinating the planning of the green09 (2009-10) Fellows' sessions.

Project NExT (New Experiences in Teaching) is a professional development program of the Mathematical Association of America for new or recent Ph.D.s in the mathematical sciences who are interested in improving the teaching and learning of undergraduate mathematics. It addresses the full range of faculty responsibilities in teaching, research, and service.