

Breakout Sessions: Friday 1:30 - 2:30

Room: Capitol

Presenters: Deborah Hughes Hallett, University of Arizona

Title: *Interdisciplinary Links: Pitfalls and Payoffs*

Abstract: We will discuss the nuts and bolts of constructing and maintaining links between mathematics and other departments, and the advantages it can bring for faculty and students. We will discuss the pros and cons of courses with an interdisciplinary flavor (or interdisciplinary instruction) for majors and non-majors.

Room: Goodtime

Presenters: Dan Willis, Loras College

Title: *Math for Elementary School Teachers*

Abstract: The speaker will discuss his involvement in several projects designed to develop the mathematics content knowledge of elementary school teachers.

Three years ago (with the help of a colleague in the Education department) he designed and piloted a new Math content course for pre-service Elementary Education majors. This course has been very successful. Don Marxen and Rob Keller also frequently teach it and have contributed to its development.

Room: Ben Bolt

Presenters: Andy Long, Northern Kentucky University

Title: *The creation, care and feeding of an undergraduate-centered mathematical and statistical consulting center*

Abstract: Dr. Andy Long and Dr. Jim McKenney (in collaboration with many others) started Northern Kentucky University's undergraduate-centered Mathematical and Statistical Consulting Center (MSCC) in August 2001. The majority of projects handled by the MSCC are NKU-related (faculty and student) but a sizeable minority are from the community (particularly projects involving area schools). The MSCC employs student consultants (almost exclusively undergraduates) who have benefited from working with real-world problems and who have had the opportunity to participate in such activities as contests and presentations at professional meetings.

Room: J.S. Deluxe, 4th Floor

Presenters: Jim Fulmer and Tom McMillan, University of Arkansas at Little Rock

Title: *Assessing the Undergraduate Major in Mathematics – A Department Model*

Abstract: Assessment of degree programs at the University of Arkansas at Little Rock has been an ongoing campus-wide project in all colleges and departments for several years. Our case study involves assessment of the undergraduate major in mathematics. For the last year, we have participated in an MAA workshop, "Strengthening Undergraduate Assessment of Mathematics (SAUM)". This talk will describe how we have adapted our assessment process to the assessment cycle developed at this workshop.

A primary concern in the development of our assessment plan has been: "To make it work, keep it simple". The steps in developing and adapting our assessment plan included developing a program mission statement consistent with the university's mission; articulating program goals and relating them to specific student learning objectives; and developing assessment criteria and methods for measuring the student learning objectives. After applying our assessment tools that measure how well we are meeting the student learning objectives, we complete the feedback loop by examining the assessment results and making determinations on how the program (or assessment process) can be improved.

Our plan involves a cycle of assessment activity to find out: What should our students learn, how well are they learning, and what should we change so that future students will learn more and understand it better? Our talk will provide details of our assessment plan, its implementation, the process by which we developed it, plans for improving the assessment plan, and ideas for the future.

Breakout Sessions: Friday 3:00 - 4:00

Room: Capitol

Presenters: Dan Shapiro, Ohio State University

Title: *Analyzing the Problem Sets from the Ross Mathematics Program*

Abstract: Participants in this session will examine some of the Ross Program problem sets, considering the structure of various mathematical threads running through those sets. In addition we can discuss appropriately vague ways to respond to student questions, and whether tests can be used as capstone experiences rather than evaluations.

Room: Goodtime

Presenters: Roger Waggoner, Victor Schneider, Kathleen Lopez, University of Louisiana at Lafayette

Title: *Opportunities Related to Developing a Mathematics/Biology Option for Undergraduates*

Abstract: For five years the Mathematics Department at University of Louisiana at Lafayette has been posting monthly problems for high school students on its web page. This has enhanced the lines of communication between the Department and secondary teachers and students.

One of the former top problem-solvers is now part of a small group of UL undergraduates participating in a three-semester NSF funded project in mathematical biology. The students are learning the mathematics involved in modeling population dynamics. They will test and refine their models by doing mark and recapture field work with green tree frogs found in ponds at the National Wetlands Center in Lafayette. The Department is committed to creating a mathematics/biology option for its majors.

Finally, the LA/MS Section of the MAA has been most successful in promoting student participation at its annual meetings. The UL Lafayette student group already has big plans for next year, including at least two presentations about mathematics and frogs.

Room: Ben Bolt

Presenters: Geoffrey Martin, University of Toledo

Title: *Management of Developmental Mathematics at the University of Toledo.*

Abstract: Creating student success in development mathematics at large urban institution is a multifaceted enterprise that has significant impact on the overall retention rate of the institution. A successful program must adequately address the issues of proper placement, selection and development of the instructional staff, and course management. The discussion will examine methods for handling these problems and use as a starting point the approach that used at the University of Toledo.

Topics will include statistical analysis of internal placement test data, syllabus construction and courses management, hiring and training of teaching faculty. Outcomes that we have had in the past may be special to our particular institution and region, but our methods may serve as useful starting point for constructive discussion on these topics.

Room: J.S. Deluxe, 4th Floor

Presenters: Jeremy Teitelbaum, University of Illinois at Chicago

Title: *Proofs as a unifying principle in the major*

Abstract: Several of us at UIC are grappling with the problem of unifying our pure math major around the principle of rigorous argument. Essentially, we want all our pure math courses after Calculus to center on proofs. Is this a quixotic notion? If not, how can it be done effectively in practice?

Breakout Sessions: Saturday 1:30 - 2:30

Room: Arizona

Presenters: Michael Starbird, University of Texas at Austin

Title: *Abandoning Dead Ends: Presenting Mathematical Masterpieces to all students*

Abstract: "Education is what survives when what has been learned has been forgotten."—B.F. Skinner. The vast majority of our students soon forget the vast majority of the mathematical details they learn in class—(sometimes, in fact, before the final). But mathematical analysis has produced some of the greatest triumphs of human thought and creativity. We can design our courses and curricula for majors and non-majors so that what survives in our students, after they forget, clearly improves their lives. Let's make students' mathematics course the most important course they take to help them develop their ability to think.

Room: Kehl

Presenters: Margaret M. Robinson, Mount Holyoke College

Title: *The operation and funding of an REU program and the Mount Holyoke Laboratory in Mathematical Experimentation*

Abstract: This session will describe the details of operating a summer REU program and of writing a grant to fund a REU site. It can also incorporate more details about the REU's influence on department research, curriculum, and pedagogy. I will bring copies of student papers and of the department's book from the Laboratory course that grew out of the REU program.

Room: Mary Alexis

Presenters: Barbara M. Moskal and Graeme Fairweather, Colorado School of Mines

Title: *The Design of a Departmental Assessment Plan*

Abstract: According to the Mathematics Association of America's (MAA) Committee on the Undergraduate Program in Mathematics (CUPM) in collaboration with the MAA's Assessment Subcommittee, assessment is a cycle that consists of the following five phases: 1) articulating goals and objectives, 2) developing strategies for reaching goals and objectives, 3) selecting instruments to evaluate the attainment of goals and objectives, 4) gathering, analyzing and interpreting data to determine the extent to which goals and objectives have been reached, and 5) using the results of assessment for program improvement. When the final phase is reached, the assessment cycle begins again. The phases within this cycle provide a framework for developing a departmental assessment plan.

The Mathematical and Computer Science Department (MCS) at the Colorado School of Mines (CSM) has developed and implemented a departmental assessment plan based on the above described framework. This plan was initially implemented in the academic year of 1998-1999, and thus, has been tested through several assessment cycles. As a result of MCS's departmental assessment efforts, a great deal of information has been collected concerning our students' knowledge and this information has been used to improve the department's curriculum and programs.

The purpose of the proposed break-out session is as follows:

1. To review the framework that has been developed for undergraduate assessment of mathematics by the CUPM and the MAA;
2. To illustrate how this framework has been used by MCS to develop a departmental assessment plan;
3. To share assessment tools and resources that have been developed by MCS and others for departmental assessment purposes;
4. To provide an open-discussion concerning the challenges of departmental assessment.

Breakout Sessions: Saturday 3:00 - 4:00

Department Team Meetings Departments teams will meet together with other departments. Departments have been divided into these three groups by the size of undergraduate population. Please feel free to switch groups if you feel your team will benefit more in a different group.

Room: Arizona

Group I

Avila University
Colorado School of Mines
Lansing Community College
Loras College

University of Maryland Eastern Shore
University of New Haven
University of South Carolina Spartanburg

Room: Kehl

Group II

Clark Atlanta University
Clayton College and State University
Northern Kentucky University
Purdue University Calumet

University of Arkansas at Little Rock
University of North Dakota
University of Wisconsin - Whitewater

Room: Mary Alexis

Group III

Louisiana State University
New York University
University of Illinois at Chicago
University of Iowa

University of Louisiana at Lafayette
University of North Dakota
University of Toledo