



Twenty-Fifth Annual

Pi Mu Epsilon

Regional Undergraduate Math Conference

November 5 – 6, 2010

Featured Speaker: Judy Holdener

Kenyon College

Funding for this conference is provided by NSF grant DMS-0846477 through the MAA Regional Undergraduate Conferences program, www.maa.org/RUMC.

Please contact John Frohlinger at john.frohlinger@snc.edu for more information.

Judy Holdener

Judy Holdener is a professor in the Department of Mathematics at Kenyon College, where she has been teaching since 1997. Initially planning to major in art, she declared her math major as a junior after realizing she could not stop taking math courses. In 1987 she earned a B.S. Summa Cum Laude in Mathematics at Kent State University. In 1994, she received her Ph.D. in Mathematics from the University of Illinois in Urbana (having taken drawing and painting courses along the way,) and then taught for three years at the U.S. Air Force Academy in Colorado Springs, CO.

Judy's primary research interests are in the areas of algebra and number theory, although she is eager to work in other areas when an interesting question arises - especially if the question is accessible to undergraduates. Judy has collaborated with students on research projects relating to algebra, number theory, dynamical systems, and mathematical biology; this work has culminated in research publications and presentations at national and international math conferences. In 2008, Judy was awarded the Mathematical Association of America Ohio Section Distinguished Teaching Award and in 2003, she was awarded Kenyon's Tomsich Science Award, as well as the Board of Trustees Junior Teaching Award. Currently she is holding the John B. McCoy Banc One Distinguished Teaching Chair at Kenyon, and she is the Chair of Kenyon's Mathematics Department. Judy continues to have a strong interest in art, and she views visualization and mental imagery as critical issues in the teaching of mathematics.

The Spiraling Art of Mollusks

Are mollusks artists? Anyone observing the spiraling seashells they sometimes produce might believe they are! In this talk we will reproduce the art of mollusks using a fairly elementary mathematical model of seashell form. The model is based on the observation that most shells grow isometrically, meaning they retain the same shape as they enlarge. With the help of the computer algebra system MAPLE, we will then employ iterative models to render the surface patterns commonly found on seashells. In doing so, we will not only apply mathematics to obtain the beauty found in nature, we will illustrate the beautiful nature of applied mathematics.

Spiraling Integer Patterns via Painting

Prime numbers are mysterious and intriguing figures. At one level, they are fundamental; they are the most basic building blocks of our number system. At another level, they are deeply complex. Inextricably tied to ancient open problems in number theory, they are also at the heart of what is considered to be the biggest open problem in mathematics today. We will introduce these mysterious prime figures, examine some spiraling patterns exhibited by the integers, and show how one could use paint and canvas in an attempt to visualize these integer patterns. In this way, mathematical patterns can be shared with mathematicians and nonmathematicians alike.

Again this year: **Face Off! The Mathematics Game Show**

What is it? Face Off is a mathematics quiz show with questions from the broad realm of mathematics. And we mean broad! Teams of 2-4 students representing their schools compete to answer these questions. For more information, visit the Face Off website.

http://www.uwosh.edu/faculty_staff/szydliks/faceoff.htm

Face Off Organizers: Dr. Ken Price (pricek@uwosh.edu, (920)424-1057),
 Dr. Steve Szydlik (szydliks@uwosh.edu, (920)424-7346)

Please contact one of the **Face Off** organizers if you would like to enter a team. Any (undergraduate) student who has taken or is enrolled in Calculus I is eligible to join a Face Off team representing their school. If a school doesn't have enough interested students, contact the organizers anyway – we can combine interested students to form hybrid teams. Space will be limited, so form a team soon and let us know of your interest!

TENTATIVE SCHEDULE

FRIDAY, NOVEMBER 5, 2010

- 5:00 p.m. Cookies and Registration in Cofrin Hall
5:30 p.m. Student Talks
- 7:30 p.m. **Judy Holdener** “The Spiraling Art of Mollusks”
- 8:30 p.m. Face Off! The Mathematics Game Show

Pizza Social to follow immediately.

SATURDAY, NOVEMBER 6, 2010

- 8:30 a.m. Conference Registration and Continental Breakfast in Cofrin Hall
9:00 a.m. Student Talks
- 11:00 a.m. **Judy Holdener** “Spiraling Integer Patterns via Painting”

This conference is free and open to anyone interested in undergraduate mathematics. Any full-time student who has not yet earned a master's degree is welcome to give a student talk.

ACCOMMODATIONS

Kress Inn	SNC campus--across the street from Cofrin Hall A block of rooms at the Kress Inn is being held at \$72.95 each until at least October 5. Mention the math conference!	(800) 221-5070 or (920) 403-5100
Sleep Inn	1600 Lawrence Dr., De Pere	(920) 338-8800
Comfort Inn	2841 Ramada Way, Green Bay	(920) 498-2060
Country Inn & Suites	2945 Allied St., Green Bay	(920) 336-6600
Exel Inn	2870 Ramada Way, Green Bay	(920) 499-3599
Fairfield Inn	2850 S. Oneida St., Green Bay	(920) 497-1010
James Street Inn	201 James St., De Pere	(920) 337-0111

St. Norbert College has received a \$2250 grant from the MAA and the NSF for the purpose of enhancing our undergraduate research conference in mathematics. Some of this **MONEY** will be used to **support** the **travel** of undergraduate student speakers from schools other than SNC.

Student speakers (through their faculty sponsors) will receive 20 cents per mile for the round-trip travel to SNC (up to a total of 800 miles per school). There is typically a limit of one mileage grant per school. If there is money left at the application deadline (November 1) the unallocated money will be used to increase the mileage amount up to 40 cents per mile or where the \$1100 runs out, whichever comes first. For the housing allowance, we will reimburse up to \$70 per room for up to 2 rooms per school and no more than the number of speakers from that school.

All travel money will be set aside in the order in which student speakers pre-register.
All travel support will be paid (through the MAA) after the conference. Please save relevant receipts!

In order to apply for travel support, please sign the form near the bottom of the next page or submit the form via e-mail.

Please encourage your students to speak. The more student speakers we have this year, the more likely we are to receive funding again next year.

PRE-REGISTRATION FORM

School Affiliation _____

Contact Person _____

Address _____

Phone Number _____

E-Mail _____

Name	Attending:				
	Housing?*	Gender	Fri/Sat/Both	Pizza?	Speaking?
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

*A limited number of students from schools not receiving lodging support will be able to stay overnight in an SNC dorm. Please bring sleeping bags and pillows – you might be sleeping on the floor!

We welcome student presentations on any topic and any undergraduate mathematics level. Sources could include: class projects, interesting solutions to problems, REU results, senior projects, or anything else that might appeal to undergraduate math students.

Name of Speaker: _____

Title of Talk: _____

Length of Talk (check one): 15 minutes (preferred) 30 minutes (if necessary)

Time Preference (check one): Friday night ; Saturday morning ; No preference

Brief Abstract:

Our institution is applying for **travel support**: _____ (Signature of Faculty Sponsor)

(See previous page for more information.)

Duplicate this form as necessary and mail to:

John Frohlinger

(or, preferably, respond by e-mail)

St. Norbert College

100 Grant Street

De Pere, WI 54115

DEADLINE: November 1, 2010, at 3:00 De Pere time (Central time)!

Any questions? Contact: John Frohlinger (920) 403-1339; FAX: (920) 403-4098; e-mail: john.frohlinger@snc.edu