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# A f t e r m a t h

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## Ndahoo'aah

by Bob Palais

For the past several summers, members of the math department have participated in a unique collaboration with the Monument Valley schools. Ndahoo'aah, which translates roughly as "Re-learning/New Learning", is a summer program in design, mathematics, and traditional crafts at Monument Valley High School in Utah. By bringing together community elders and school teachers, the program seeks to teach, respect, and jointly develop traditional and modern skills. Students learn concepts from geometry and computer programming using the language LOGO, used in artificial intelligence research, to design their own traditional Navajo rugs and baskets, which they then learn to craft in traditional ways. These designs, both old and new, exhibit many classical symmetries, as well as some Escher-like self-similar patterns. Examples of student projects, insights from participating elders, and other information about the project may be viewed at

[www.math.utah.edu/~clemens/overview.html](http://www.math.utah.edu/~clemens/overview.html)

Herb Clemens has nurtured the project from its inception and left an experienced team of teachers from Monument Valley and supporting institutions such as the University of Utah. This fall, math department chair Graeme Milton, Andrej Cherkaev, and Bob Palais travelled to Monument Valley to meet with the teachers and principal at MVHS, to learn how the project can be best adapted to meet the evolving needs of the students and the community. While there, they enjoyed the legendary local culture and scenery that has always been an added bonus for visiting participants in the program.

In addition to renewing the successful summer program, we hope to develop a mentoring relationship between students and faculty from the university and Monument Valley students throughout the school year. This will be built through personal visits to Salt Lake and Monument Valley, as well as via the UEN's

remote campus technology which can link MVHS and the U. The College of Science is hoping to develop the support for the program, which has been generously provided in the past by the Michael Foundation, to include other sources to take over funding provided by the local school district and to address additional technological needs.

Students who would like to be involved in this project are encouraged to contact Bob Palais, [palais@math.utah.edu](mailto:palais@math.utah.edu).

## Library Funds

The James H. Case Mathematics Library Memorial Fund has recently been reinvigorated by faculty donations. This fund will be used to purchase books for the Mathematics Library. Books may be of interest to undergraduate students, graduate students, or faculty members. If you wish to contribute to this fund, donations may be given to the University Development Office, and directed to the "James H. Case Mathematics Library Memorial Fund," or they may be brought to the department office.

Contributions to the Vince Frederick Memorial Library Fund are also still being accepted at the Math Department office.



**Undergraduate  
Scholarship  
Applications**  
are now available

[www.math.utah.edu/ugrad/scholarships](http://www.math.utah.edu/ugrad/scholarships)

The application deadline is  
**March 15, 2003**

# Math Center

The Spring Semester hours of the T. Benny Rushing Mathematics Student Center are:

## Tutoring

Monday - Thursday 8:00 AM - 8:00 PM  
Friday 8:00 AM - 4:00 PM

## Computer Lab

Monday - Thursday 8:00 AM - 8:00 PM  
Friday 8:00 AM - 6:00 PM

Group tutoring sessions may be arranged through the Mathematics Tutoring Center. Students may request a group tutoring session or find out more about this service at the tutoring center.

# Funds for HS Programs

The Math and Science Education Foundation (MASEF), which supports programs that affect high school students in Utah, has donated \$1,000 each to the Summer Mathematics Program for High School Students and the UU Math Circle, to be used over two years. In addition, it has also donated \$200 to the Mathematics Education program which will be used to bring in guest speakers. The department would like to thank Marilyn Keir for her help in applying for and receiving these funds.

# Just For Fun...

A statistics professor plans to travel to a conference by airplane. When he passes the security check, a bomb is discovered in his carry-on luggage. Of course, he is hauled off immediately for interrogation.

"I don't understand it!" the interrogating officer exclaims. "You're an accomplished professional, a caring family man, a pillar of your parish – and now you want to destroy all that by blowing up an airplane!"

"Sorry," the professor interrupts him. "I never intended to blow up the plane."

"So, for what reason did you try to bring a bomb on board?!"

"Let me explain. Statistics show that the probability of a bomb being on board an airplane is 1/1,000. That's quite high if you think about it – so high that I wouldn't have any peace of mind on a flight."

"And what does this have to do with you bringing a bomb on board?"

"You see, since the probability of *one* bomb being on my plane is 1/1,000, the chance that there are *two* bombs is 1/1,000,000. So, if I already bring one, I am much safer . . ."

# Upcoming Events

**Monday, January 20** – Martin Luther King, Jr. holiday (University closed).

**Tuesday, January 21** – Last day to add classes, to elect CR/NC option, or to audit a class.

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*[www.math.utah.edu/newsletter](http://www.math.utah.edu/newsletter)*

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Please email article submissions or ideas to her at [gardiner@math.utah.edu](mailto:gardiner@math.utah.edu).