

Mathematics News

UNIVERSITY OF IDAHO

“UNIVERSITY SECURES ABLE MAN FROM WISCONSIN”

This was the headline for the September 22, 1920, Argonaut article announcing that Eugene Taylor “lately assistant professor of mathematics at the University of Wisconsin has been named head of the University of Idaho’s Mathematics Department.”

“Taylor’s always clear,” declared the head of the Wisconsin mathematics department. “He is always skilled and clever in the use of his and the student’s time and is able to keep a class going full steam ahead – with enthusiasm and energy. His students are immensely fond of him, and they always found him courteous and square.”

Professor Taylor was the first person to head the Mathematics Department. He received his B.A. and M.A. from DePauw University and did extensive graduate work at Harvard University. He served as head of the Math Department until he retired in 1950. His family has instituted a scholarship fund in memory of him and his wife Osa.

ONE MILLION DOLLARS, MATHEMATICS AND A BOOK

Have you read Apostolos Doxiadis’s novel “Uncle Petros and Goldbach’s Conjecture”? Have you heard of Goldbach’s Conjecture? Could you use one million dollars?

In 1742 Christian Goldbach wrote a letter to Leonhard Euler claiming that every even integer greater than 2 can be written as the sum of two prime numbers. For instance, $4 = 2 + 2$, $26 = 23 + 3$. Most mathematicians believe that the conjecture is true. Combining mathematics and computers, mathematicians have been able to show that the conjecture is true to about 400 trillion but have yet to show that it is true for all even integers.

In the novel a young mathematics student has discovered that his uncle had been a child prodigy in mathematics and had become obsessed with trying to prove Goldbach’s conjecture. The story relates the uncle’s obsession and the nephew’s search for his own role as a mathematician. Mathematicians who have read the book say that it is interesting and realistic. The British mathematician Michael Atiyah said “It is brilliantly written—a mathematical detective story of great charm-- and it certainly captures much of the spirit of mathematical research.”

Now if you find the solution you win a prize. The British publisher of the book, Faber and Faber, have announced that they will give \$1 million to the first person to submit a correct proof of Goldbach’s conjecture before March 15, 2002.

To read a review of the book (and several other books on mathematics) go to the home page of the Mathematical Association of America, at www.maa.org and click on [Read This!](#)

There are seven other million dollar prizes for solving math problems. The Clay Math Institute has recently announced that it is offering \$ 1 million prizes for the solution to any of seven longstanding problems. You can find out more at www.claymath.org. Of course none of the problems are easy.

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QUESTION ABOUT ACTUARIES

WHAT DOES IT TAKE TO BECOME AN ACTUARY?

Insurance companies and actuarial consulting firms look for students who have a good command of mathematics and statistics and who are effective communicators. Students are expected to have passed one or more exams from the Society of Actuaries. After they are employed they are expected to continue to pass the exams.

HOW MANY EXAMS ARE THERE?

You must pass six exams to become an Associate of the Society of Actuaries. After becoming an Associate there are two exams and two other requirements before you become a Fellow of the Society of Actuaries. The requirements and designations for the Casualty Actuarial Society are similar and the first four exams are the same. Being an Associate or a Fellow is a professional designation similar to being a licensed professional engineer for an engineer or a member of the bar for a lawyer.

WHAT DO THE EXAMS COVER?

The first exam tests your knowledge of calculus and probability theory in the setting of risk and insurance. The second exam is on interest theory, economics, and finance, again in the setting of risk and insurance. Exams three and four are on actuarial models and actuarial modeling. Exam five is on applications of actuarial principles and exam six is on finance and investments. In addition candidates must complete the Associateship Professional Course. This half-day course is on professionalism, ethics and legal liability.

HOW CAN I PREPARE FOR THESE EXAMS AS AN UNDERGRADUATE?

The courses in the UI Applied Math: Actuarial Science option prepare you to take Exam 1 and Exam 2 and provide background for subsequent exams. For Exam 1 you need Math 170, 175, 275 and Math 451. The exam is difficult. In the fall semester we offer the review seminar, Math 255, to help you review calculus questions from previous exams. In the spring semester we offer the review seminar, Math 455, to help you review probability questions from previous exams. Econ 201, 202 and Bus 301 will prepare you for the economics and finance on Exam 2. The other courses in the curriculum will give you background in probability and statistics that you need for Exams 3 and 4. The actual material in the exams is learned through a study program at an insurance company or through formal course work at a university that offers an M.S. in Actuarial Science.

HOW DO I FIND OUT MORE INFORMATION ABOUT THE EXAMS, THE REQUIREMENTS, AND BEING A MATH MAJOR?

See Ralph Neuhaus in 302 Brink Hall. He can give you a copy of the Society of Actuaries Basic Education catalog which contains forms and other useful information. He can also give you a card so that you can receive free copies of *CONTINGENCIES*, an interesting magazine published by the American Academy of Actuaries. Additional information can be found at www.soa.org. Click on Education and Examinations.

WHEN AND WHERE ARE THE EXAMS GIVEN? WHAT ARE THE DEADLINES?

The exams are given twice each year, in early November and in late May. All exams can be taken at the University of Idaho. Applications can be obtained from Ralph Neuhaus in 302 Brink Hall or at www.soa.org. Applications for the November session must be received by the Society of Actuaries by October 1.

ARE SUMMER JOBS AVAILABLE?

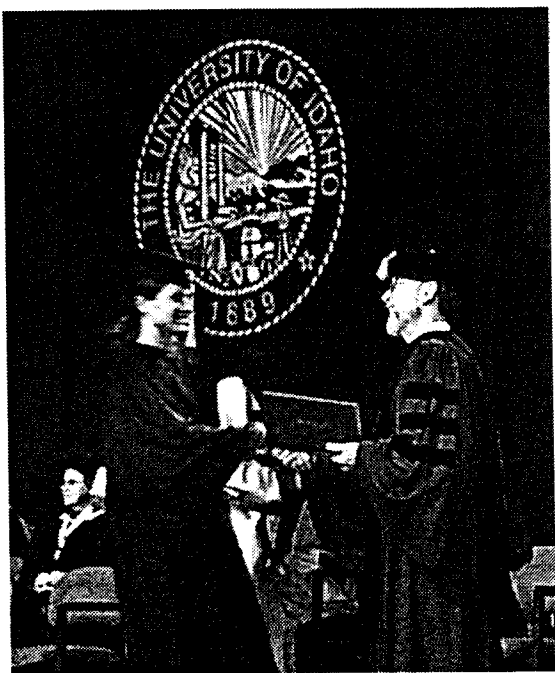
Internships are available with several companies. Many companies like to make these decisions in January; therefore you should apply in December. The internships are competitive so students who have passed an exam are usually given preference.



Dean's List

Each semester the Dean of the College of Letters and Science lists those students who have received a grade point average of 3.3 or better and have taken at least 14 credits for a letter grade. The Mathematics majors on the Spring 2000 Dean's List are:

ELIZABETH ALFORD
 CRAIG BEISEL
 MATTHEW BENKE
 JAYNE BIRD
 KENNETH BRANDT
 DANIEL BRODOCK
 DANIEL BURTON
 RONALD CLOUGH
 TRINA ELLIOTT
 FORREST FRENCH
 TIMMOTHY GARRISON
 CHRISTOPHER HIATT
 TIMOTHY HOUSEHOLDER
 ANDREW LONG
 SARAH MCINTOSH
 LEE NEWBILL
 GRANT NOLLMANN
 MELISSA NORGD
 PATRICK O'CONNELL
 JAMES OLIVER
 BRIAN ORR
 TIMOTHY PAULITZ
 JAIMOS SKRILETZ
 ROY TROMBLE
 RITA TURNER
 BRANDY WIEGERS



Jaimos Skrieltz receives his diploma from Dean

Putnam Results

JAIMOS SKRILETZ did very well in the 1999 Putnam Competition, sponsored by the Mathematics Association of America. He placed in the top 15% of the 2,900 undergraduate mathematics students participating nationwide. ROY TROMBLE, MUEEN NAWAZ, and ZACH SAUL placed in the top 50%.

The University of Idaho team ranked 56th out of 431 colleges competing in the competition. The best undergraduate mathematics students from more than 400 Colleges and Universities in the United States and Canada participated in this year's competition.

The questions are always difficult. Students who have had a variety of mathematics courses and enjoy tough problems are invited to participate. A seminar in preparation for the exam will be offered this semester. See Ralph Neuhaus in room 302 of Brink Hall for details.

Congratulations on a Job Well Done!

Student News

PAUL WHEELER received an Outstanding Senior Award from the ASUI. These awards are based on scholarships and activities.

BRANDY WIEGERS received the Individual Community Service Award and was also inducted into the Silver Lance Honorary because of her leadership.

ZACH SAUL and ROY TROMBLE were initiated into the Phi Beta Kappa honor society in April.

RICK GIAMPIETRI has been accepted into the Euro-NATO Joint Jet Pilot Training Program.

BRANDY WIEGERS studied Mathematical Biology at a Research Experience for Undergraduates (REU) this summer at Pennsylvania State University, The Behrend College. For the fall semester she has a fellowship for undergraduate research at the Bermuda Biological Station for Research at St. George's, Bermuda.

Recent Graduates



ALLEN BAILEY graduated in December with a Ph.D. in Mathematics. His dissertation was on "Rings whose Krull dimensions are larger than their cardinalities". Willy Brandal was his major professor. He will be an Assistant Professor of Mathematics at the University of Maine in Farmington.

HARRY STEVE MILLS graduated in August of 1999 with a Ph.D. in Mathematics. His dissertation was on "Positive solutions to differential equations with a second order boundary value conditions". His major professor was Larry Bobisud. He will be a Visiting Assistant Professor of Mathematics at Western State College of Colorado in Gunnison.

LIXIN HUANG graduated in May with a Ph.D. in mathematics. His dissertation was on "Generators of the Symmetric and Alternating Groups". Arie Bialostocki was his major professor. He is continuing at UI as a candidate for an M.S. degree in Computer Science and will have an internship with Cylant Technology.

ARIUN ISHDORJ graduated in May with an M.S. in Mathematics. She will be a graduate student in Economics at Iowa State University in Ames, Iowa.

MOMO DAHLE graduated in May with a B.S. in Applied Mathematics.

MATT MACKAY graduated summa cum laude in December 1999 with a B.S. in Mathematics. He has been commissioned an Ensign in the U.S. Navy.

JAY MORROW graduated in May with a B.S. in Mathematics and Psychology.

GRANT NOLLMAN graduated in May with a B.S. in Applied Mathematics. He will be a graduate student in Accounting at the UI.

MELISSA NORGARD graduated in May with a B.S. in Applied Mathematics and will work for Micron Technology in Boise.

BRIAN ORR graduated in May with a B.S. in Applied Mathematics. He is working for Regence Blue Shield in Lewiston as an actuary trainee.

DAVID PRESTWICH graduated in December with a B.S. in Mathematics.

ZACH SAUL graduated in May with a B.S. in Mathematics. He also earned a B.A. in French and a B.S. in Computer Science. He received an Honors Certificate from the University Honors Program. He was named as a Fulbright Scholar to conduct research in France on a genetic programming system dealing with improved communication among security programs. He will work for Cylant Technology in Bend, Oregon.

JARED SCHOLTEN graduated in May with a B.S. in Applied mathematics.

JAIMOS SKRILETZ graduated in May with a B.S. in Mathematics.

PAUL WHEELER graduated in May with a B.S. in Mathematics. He received an Honors Certificate from the University Honors Program.

MING LONG WU graduated in May with an M.S. in Mathematics. He also received an M.S. in Computer Science. He will continue at the UI as a Ph.D. candidate in Mathematics.

DARREN GABRIELSEN graduated in December 1999 with an M.A.T. in Mathematics. He is a high school teacher living in Hayden Lake, Idaho.

ALAN HAIN graduated in August 1999 with an M.A.T. in Mathematics. He is a Lecturer in Mathematics at UI.

SUSAN HARRINGTON graduated in August 1999 with an M.A.T. in Mathematics. She is the Idaho State coordinator for the Science and Mathematics Consortium for Northwest Schools with the Idaho Department of Education.

RYAN ADAMS graduated cum laude in December 1999 with a B.S. in Applied Mathematics. He also earned a B.S. in Computer Science. He has become an officer in the U.S. Air Force.

KATIE CHRISTENSEN graduated in May with a B.S. in Mathematics. She will be a graduate student in Mathematics at UI.

(from left to right)

*Paul Wheeler, Grant Nollman,
Momo Dahle, Melissa Norgard,
Jared Scholten, and Brian Orr*



*Some of our
Math Graduates
before the
ceremony.*



Past Graduates



JEFF ALMEIDA is a Unix Systems administrator for the Connecticut State University System Office. He earned an M.S. in Mathematics from UI in 1994.

BRAD DIRKS has been appointed Assistant Vice-President of Actuarial and Rating at Regents Blue Shield of Idaho in Lewiston. He graduated from UI in 1992 with a B.S. in Mathematics and became an Associate of the Society of Actuaries in 1994. He has been serving as the manager of the group underwriting department.

TERRY MEERDINK is the new Coordinator of Mathematics at Highline Community College in Des Moines, Washington. She received her M.S. in Mathematics in 1991 and her Ph.D. in Mathematics in 1998 from the UI.

CORY MISTEREK is working as a health and welfare actuary in Seattle for Towers Perrin, an actuarial consulting firm. He became an Associate of the Society of Actuaries this year. He graduated from the UI in 1993 with a B.S. in Applied Math.

DORIAN OWEN is resident director of Hansen Hall at South Dakota State University in Brookings South Dakota. She graduated from U of I in 1999 with a B.S. in Mathematics.

NATHAN PREWETT is an instructor in mathematics at Pellissippi State Community College in Knoxville, Tennessee. He earned his M.S. in Mathematics at U of I in 1998.

LES VEAL is Vice-President of Marketing Sales for Infinite Technology Corporation in Dallas. He graduated from the UI in 1973 with a B.S. in Mathematics.

New Graduate Students

EDUARD GLUSHCHENKO earned a bachelors degree in Mathematics from Odessa State University, in Odessa, Ukraine. He will be a candidate for an M.S. in Mathematics and a Teaching Assistant in Mathematics.

PETKO KITANOV earned a M.Sc. Degree in Physics from the University of Sofia. He has taught mathematics at Southwest University in Blagoevgrad, Bulgaria. He is a candidate for an M.S. in Mathematics and a Teaching Assistant in Mathematics.

VLADIMIR MININ received a bachelors degree in Mathematics from Odessa State University in June. He will be a candidate for an M.S. in Mathematics and a Teaching Assistant in Mathematics.

ANDREW SKRYZHYNsky earned a bachelor degree in Mathematics from Odessa State University. The last summer he was a camp counselor in Florida. He will be a candidate for an M.S. in Mathematics and a Teaching Assistant in Mathematics.

ROBERT WILLIAMSON earned a B.S. in Mathematics and History from Dickinson State University, Dickinson North Dakota. He has taught high school in Jerome Idaho. He will be a candidate for an M.S. in Mathematics and a Teaching Assistant in Mathematics.

SCOTT DOUTHIT earned a B.S. in Physics from Washington State University in 1999. He will be a candidate for an M.S. in Mathematics.

KATIE CHRISTENSEN earned a B.S. in Mathematics in May from U of I. She will be a candidate for an M.S. in Mathematics and a Teaching Assistant in Mathematics.



The reception for the Math graduates and their guests following graduation.

News of Faculty and Staff

In June WILLY BRANDAL attended the joint meeting of the American Mathematical Society with several Scandinavian mathematical societies in Odense, Denmark. The meeting was held on the island on which he was born.

In March ARIE BIALOSTOCKI attended the Memorial Conference in honor of Paul Erdos. The meeting was held in Memphis.

In May MARK NIELSON spoke at the Washington Community College Math Retreat held in Wenatchee, Washington. He also spoke to high school math classes in Cour d' Alene, Gennese, Orfino, Wieser and Pierce.

In April GAIL ADELE attended the annual meeting of the National Conference of Teachers of Mathematics held in Chicago.

In March PAUL JOYCE gave talks at Oxford University, Reading University, Grims Institute in Bristol, England and at a special session of the Royal Statistical Society in London.

STEVE KRONE gave a talk at the Workshop on Complex Interacting Particle Systems in Mathematics, Biology and Physics at Rineberg Castle in Germany in February. At the end of February he gave a talk at the joint

Mathematics and Biology Seminar at the University of Utah. In March he attended the Seminar on Stochastic Processes in Salt Lake City.

PAUL JOYCE and STEVE KRONE have received a three year grant from the National Science Foundation. They will develop stochastic models in Population Genetics and Ecology.

PAUL HOWARD will be a lecturer in Mathematics this semester. He received his B.S. in Mathematics from the UI in 1996. He has been a campus minister at WSU.

ARIE BIALOSTOCKI and DAN SCHAAL, a former student of Professor Bialostocki at UI, conducted a Research for Experience for Undergraduates this summer. Five undergraduate mathematics students from various universities spent eight weeks at UI investigating new results in combinatorics.

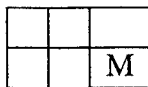
DARREN KEARNEY joined us in May as our new office specialist. He is replacing BARB OLSEN who is now working for the Statistics Department.

VIJAY MIKKILI will be a Lecturer in Mathematics this semester. He has a bachelor's degree in Mathematics and Physics from the Osmania University in Hyderabad, India. He is a graduate student in Electrical Engineering.

MATH PUZZLER SOLUTION # 1

THE CHOCOLATE SOLUTION:

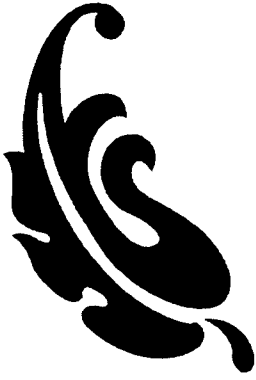
Go backwards from a winning position. If player A faces a $1 \times k$ bar, he/she should break off $k - 1$ squares. This is a winning position. So player A wants player B to leave a $1 \times k$ or a $k \times 1$ bar. Now, if player B faces a 2×3 bar,



player A wants player B to break off the first row, or the first two columns, but player B can break off the first column, leaving player B with a winning position. Hence, leaving player B with a 2×3 bar or a $2 \times k > 2$, for that matter is not a good idea. Analyzing the possibilities, you should conclude that the best strategy for any player is to always leave the opponent with a square bar.

CHECK OUT OUR WEB SITE:

www.uidaho.edu/LS/Math/



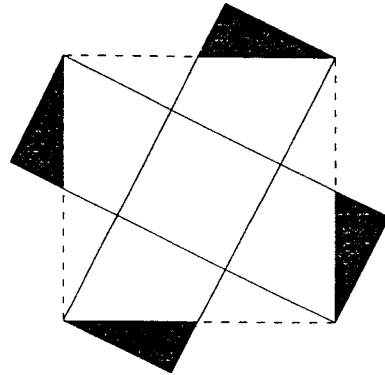
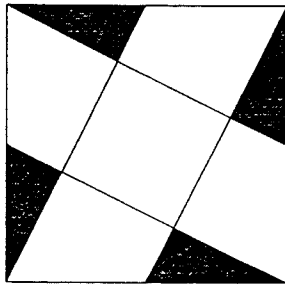
You'll find:

- * information on the undergraduate program
- * information on the graduate program
- * information on teaching assistantships
- * time schedule of classes.
- * a two year schedule of courses beyond Calculus
- * course handouts
- * information on the people
- * information on the MSAC

Math puzzler Solution # 2

THE SQUARE SOLUTION

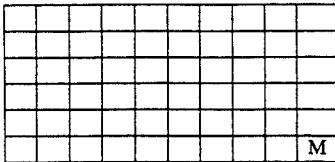
The area of the interior square is $\frac{1}{5}$ the area of the larger square.



MATH PUZZLERS

1 — THE CHOCOLATE GAME

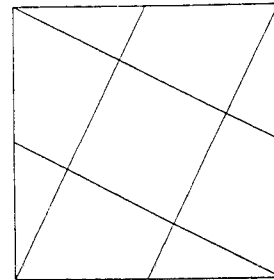
A chocolate bar is partitioned in squares. Unfortunately one square in the corner is moldy. Two players alternate breaking off at least one column from the left side, or at least one row from top, and eating the piece broken off. The player that is left with the moldy piece loses the game. A player may make only one break per turn, breaking off as many adjacent rows or adjacent columns as desired. If a $1 \times k$ piece remains, the player can break off anywhere from 1 to $k - 1$ pieces. If the bar originally has 6 rows and 10 columns, is there a winning strategy for the first player? (This problem appears in "Another Fine Math You Have Got Me Into" by Ian Stewart.) If the bar has 6 rows and 6 columns, is there a winning strategy for the first player?



(Solution found on page 6)

2 — THE SQUARE

A square is one unit long on a side. From each corner a line is drawn to the midpoint of the opposite side as in the diagram. What is the area of the square in the middle?



(Solution found on page #2)



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