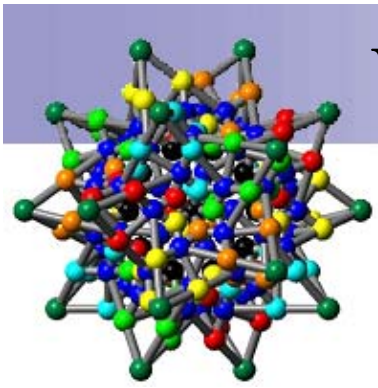


University of Idaho Mathematics News

2007-2008 Academic Year

Letter from the Chair

The year 2007 was a year of transition for the Department of Mathematics. With Ralph Neuhaus' retirement, the last of the group of mathematicians who joined the faculty in the sixties has retired. As their legacy, they leave behind a department that cares about its students and distinguishes itself as a creator of cutting-edge research. During 2007, three new faculty members were finishing their first year on the faculty and three others joined the faculty. Each of these new people have shown that they have the desire and ability to make our department one that supports student success, cares about its students past, present and future as well as to greatly enhance the research reputation of the department. In our last newsletter, we introduced Matthew Rudd, Hirotachi Abo and Zaid Abdo to you. This newsletter introduces you to Jennifer Johnson-Leung, Lyudmyla Barranyk and Rob Ely. These six faculty members bring new energy and experience from many wonderful academic cultures that include institutions that are among the very best in the country. The future of our department looks very bright! Another wonderful new development for the department comes by way of major gifts from some people who are associated with our past. Arnold R. and V. Kay Misterek have established *The Arnold Misterek Family Endowment* which will be used to provide scholarships to attract and retain outstanding graduate students. Also, Clancy and Barbara Potratz have funded a scholarship program designed to encourage excellent math students to pursue careers as secondary school teachers. Both of these scholarships address important needs of our department and will be helping University of Idaho students far into the future. Beyond the scholarships themselves, the support of these individuals and all of you who have contributed your support to our department is a great inspiration to our students and faculty members. In this newsletter you will also find articles about our wonderful students. The outstanding job that our Putnam team did this year and the great participation of students in our Pi day activities (including the integration bee) are examples of why I am so proud of our students and the work of our faculty who are dedicated to making the student experience at the University of Idaho one that is truly transformational.

Monte Boisen, Mathematics Department Chair since 2001

Monte Boisen

Chair of the Department of Mathematics

Inside this Issue

U of I Putnam Team ranks 46th In the Nation!

Article prepared by Matthew Rudd

Having grown up in Alabama, I learned the deep significance of the third Saturday of October at a young age; this is, of course, the day of the Tennessee-Alabama football game (Go Vols!). When I got a little older, I learned that the first Saturday of December is a day of similar importance; on this day every year, hundreds of undergraduates spend six hours wrestling with the twelve problems of that year's William Lowell Putnam Mathematics Competition, better known as the *Putnam Exam*. Each problem on the exam is worth 10 points, and perhaps the most telling statistic related to the exam is the median score of all of the participants: ***zero***. Doing well on the Putnam Exam requires the kind of ingenuity and doggedness necessary to win a Nobel Prize: the famous physicist Richard Feynman was one of the winners in 1939, for example. We can therefore expect great things from the members of the University of Idaho's Putnam team, as they placed 46th among all 516 participating institutions this year. This is a fantastic achievement, and team members Bryan Wilson, Jason Fitch and Jonathan Gaffney deserve special recognition for their remarkable performances. Logan Evans, Brian Faulkner, Ross Finlayson, Ryan Lease, Gunnar Miller, Ben Tschida and Niu Yang also took the exam this year, and it is worth emphasizing that our students' scores had both a positive mean and a positive median! Congratulations! Thanks to Dora and Arie Bialostocki who served with me as faculty mentors for the participants.

An Interview With Professor Ralph Neuhaus

Article prepared by Mark Nielsen

Professor Ralph Neuhaus retired in May 2007 after 40 years as a member of the UI Math faculty. Professor Neuhaus came to Moscow directly from earning his PhD at the University of Iowa in 1967, the first of what became a significant contingent of UI math faculty from Iowa. (He had shared an office in graduate school with Bill Royalty, Bill Voxman, and Mary Voxman, little knowing that all four would end up at Idaho a few years later!) Ralph is originally from Davenport, Iowa, and has always been proud of his Iowa roots, pointing out that his address while in graduate school was "123 Iowa Avenue, Iowa City, Iowa".

The late 1960's were a time of much change in the UI Mathematics Department, much as the past few years have been. Professors Christenson, Dierker, and Potratz were recent hires at that time, and Professors Calvert, Bobisud, and Barbut all joined the faculty in 1967 along with Professor Neuhaus. Together with a few others (Professors Royalty, Goetchell, Cobb, and Voxman) that would be hired over the next few years, this group formed the core of the Mathematics Department in Moscow for decades. As he is the last of that group to retire, this occasion defines somewhat of a landmark for the department. It seems appropriate on this occasion to gather some of Professor Neuhaus' observations on his years at Idaho as well as advice on how to continue the success the department has enjoyed.

Question: *How would you describe the changes you've seen over 40 years in the math department?*

One thing is that I think we're attracting more students whose interests are in math and then something else -- CS or Business or Physics or Biology. I think there are a lot of good students coming out of high school who are very much interested in mathematics even though they're going to major in something else, and we've been able to accommodate them.

Question: *What changes do you see in the ways that we teach mathematics?*

To me, it's still the same -- I still want to use a blackboard!

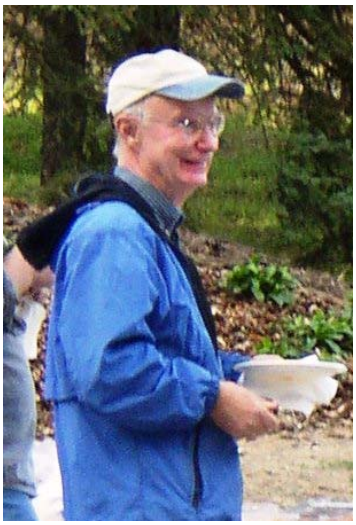
Question: *What do you think is the quality that most defines the Mathematics Department.*

The characteristic among the faculty is certainly collegiality. We have worked together and sometimes fought, but we've always come together and seen that we produce good teaching and good research.

Question: *You are the last to retire from a large faculty cohort that defined the department for many years. We're in the process right now of creating a new faculty cohort that will likewise dominate department life for many years. What advice would you give to this new group?*

You must remember that your job is to teach University of Idaho students. You must teach the students you have and not the students you used to have or the students you would like to have. This is the same advice I give to our graduates who leave here to become teachers elsewhere.

As for advice in running the department, I can only say that when I came here almost all of the faculty had been hired in a six year period of time, and we were all roughly the same age. There wasn't really any group of senior faculty to tell us "you can't do that" or “that may not work”. We felt we were revolutionaries and we wanted to change the system. I thought then that people with new PhDs knew absolutely everything. After three of four years, my opinion became that you needed a new PhD plus three or four years experience. My opinion now, of course, is that experience is the only thing that counts!



Question: *What aspect of your work in the department have you found most rewarding.*

I'm sure it's just the contact with students -- in class, or as an advisor, or in the Putnam team. The rewarding part is to see my students be successful and learn to enjoy mathematics.

Question: *What has been your least favorite part of your job?*

Probably writing the Math News! That involved doing something that I'm not particularly good at -- I'm not good at writing. I wouldn't say I didn't enjoy it, and I thought it was something that should be done. But at times it became a chore.

Question: *When and how did you come up with the idea*

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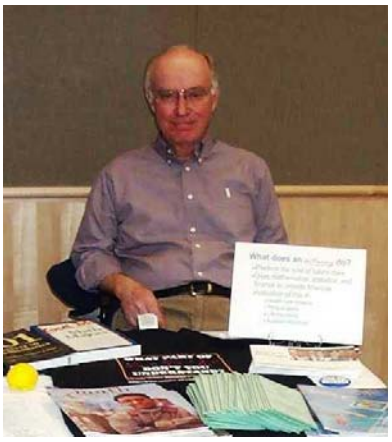


for having a "cookie theorem" in your courses?

When I was teaching calculus and I was talking about the Fundamental Theorem of Calculus, I wanted to impress on the students how important it was. I didn't think students appreciated how momentous this result is. So I thought one way to convey that was to have a celebration. I thought I could bring cookies that day to celebrate this important theorem, and that they'd remember it that way. I have expanded on that since, and now in each course I try to find a theorem that students should think is important and we celebrate that. (Least Squares Approximation Theorem in Linear Algebra, The Quadratic Reciprocity Theorem in Number Theory, ...)

Question: *What is your favorite class to teach?*

I don't have a favorite. I've been fortunate to have been assigned to teach courses almost all of which I've enjoyed. Some of the ones I've especially enjoyed are Survey of Calculus, Calculus II, Linear Algebra, Number Theory, Abstract Algebra, and our introduction to proofs class.

Question: *What would you most want students to remember from your courses?*

What they should remember is that they did a lot of work, that they learned a lot, and that they enjoyed the mathematics. One of the things I've been doing for the past few years is that on the final exam I've asked what topic from the semester has been most interesting or most useful. I want to see what they think is interesting. Also, I want them to acknowledge that they have found something in mathematics that is useful and interesting.

Question: *What do you plan on doing now?*

I'm retired! This summer I went to my 50th high school reunion in Davenport. I'm chairman of a university-level committee, which has taken a little time. And in the spring semester I am teaching one course, Number Theory. I am looking forward to going to Peru this summer. But mostly, I've come to the realization that retirement means that when I get up in the morning I get to pick and choose what I'm going to do that day.

New Faculty Interviews

Lyudmula Barannyk joined the faculty in the fall of 2007 filling our Differential Equations position.

* BIRTHPLACE – Poltava, Ukraine
* RESEARCH AREA – Applied Mathematics, Differential Equations, Numerical Analysis, Fluid Dynamics, Asymptotic Analysis
* EDUCATION - PhD from New Jersey Institute of Technology, 2003
* FAVORITE LIVING MATHEMATICIAN – my father, Leonid Barannyk
* FAVORITE DEAD MATHEMATICIAN - Euler
* FAVORITE THEOREM – Divergence Theorem (Gauss-Ostrogradsky Theorem)
* FAVORITE AREA IN MATHEMATICS – Applied Mathematics, Fluid Dynamics
* FAVORITE FOODS – Portuguese, Brazilian, Indian and of course Ukrainian
* FAVORITE MOVIE / TV SHOW / BOOK – Pulp Fiction / O'Reilly Show, Dancing with Stars / The Da Vinci Code
* FAVORITE SPORT - swimming
* IN MY SPARE TIME I LIKE TO – spend my time with my baby son
* PEAK EXPERIENCE – birth of my son
* I CAN'T STAND – being late, but I often do....
* I WISH I KNEW – no regrets so far...
* FUN FACT ABOUT ME – I love dancing Salsa
* I WOULD MOST LIKE TO MEET – just to be with my family

Rob Ely joined the faculty in the fall of 2007 filling our Mathematics Education position.

* BIRTHPLACE: South Holland, IL
* RESEARCH AREA: Mathematics Education
* EDUCATION: is a great thing to research! I received my PhD doing Math Ed research at the University of Wisconsin
* FAVORITE LIVING MATHEMATICIAN: I dunno... John Conway, or Anna Sfard (math education)
* FAVORITE DEAD MATHEMATICIAN: Archimedes
* FAVORITE THEOREM: Fundamental Theorem of Calculus
* FAVORITE AREA IN MATHEMATICS: Computability Theory
* FAVORITE FOODS: Tacos!
* FAVORITE MOVIE / TV SHOW / BOOK: Patton / uh...Lost? / Brothers Karamazov

(Continued on page 4)

(Continued from page 3)

* FAVORITE SPORT: Whittlin'
* IN MY SPARE TIME I LIKE TO: play Irish tunes
* PEAK EXPERIENCE: I'm not sure what a peak experience is, but this thing happened to me once. I was camping in a tent in the Catlins Forest in New Zealand, and at sunrise I awoke to the sound of flutes off in the distance, playing a melody in a bizarre scale in counterpoint with one another. When some other "flutes" joined in above my head, I groggily realized that these were birds. This music's alien-ness made it indescribable and transcendent; I started scrambling around in my tent looking for my tape recorder. When I remembered I had left it at home, I lamented this for awhile, until I thought, I'm so busy trying to capture this moment that I'm forgetting to enjoy it.
* I CAN'T STAND: on my head
* I WISH I KNEW: Italian

Jennifer Johnson-Leung joined the faculty in the fall of 2007 filling our Algebra position.

* BIRTHPLACE: Oxnard, CA
* RESEARCH AREA: Number Theory/Arithmetic Geometry
* EDUCATION: BS - Chemistry and Math, College of William and Mary, 1998 PhD - Caltech, 2005
* FAVORITE LIVING MATHEMATICIAN: John Tate

* FAVORITE DEAD MATHEMATICIAN: Hmm..this is even harder. I'll choose Riemann.
* FAVORITE THEOREM: GAGA (due to Serre) - even the name is cool.
* FAVORITE AREA IN MATHEMATICS: Finally an easy one...NUMBER THEORY!
* FAVORITE FOODS: Chocolate, fresh bread, Chow Foon.
* FAVORITE MOVIE / TV SHOW / BOOK: The Dark Crystal/Project Runway/The Color Purple
* FAVORITE SPORT: Track and Field
* IN MY SPARE TIME I LIKE TO: spare what? Play with my kids, run, read, go to cities
* PEAK EXPERIENCE: Walking the Camino de Santiago with my husband
* I CAN'T STAND: bad grammar
* I WISH I KNEW: More Math (lame I know, but honestly the first thing that came to my head)
* FUN FACT ABOUT ME I took boxing lessons, was the editor of a satire mag, and attended the Great Went.
* I WOULD MOST LIKE TO MEET: um, I guess Elizabeth II

Mathematics REU² Students Summer 2007

Article prepared by Program Mentors

Research Experience for Undergraduates Undecided about Pursuing Science (REU²) is a program for freshman and sophomore students considering pursuing a science or engineering field of study. The main purpose of this program is to give motivated and talented freshman and sophomore students an opportunity to learn the process of doing scientific research.

In summer 2007, Bryan Wilson and Jason Fitch were among those who participated in this program from the Department of Mathematics. They spent a large portion of their time working on their research projects suggested by their advisors. A brief description of each project can be found below:

Bryan Wilson:

Bryan is in his third year of his Mathematics degree and plans on pursuing a Ph.D after graduation next year. Outside of class he enjoys watching and playing nearly every sport, his favorites being badminton and racquetball. He can't wait for the year to be over so he can visit his family back in Boise. Bryan was teamed with Mathematics Faculty member Hirotachi Abo for his REU² project described below:

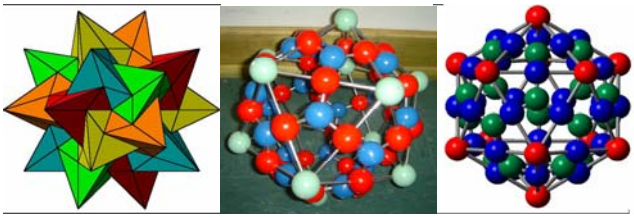
In many applications, the collected data can be represented as elements, which have more than two indices. (For example, facial images = people x views x illuminations x pixels.)

Such high order equivalents of vectors and matrices are called tensors. In the REU2 program, Bryan Wilson studied algebraic geometry of tensors. He wrote very nice Maple codes and was able to prove that a novel conjecture about the so-called typical tensor rank holds for a special case.

Jason Fitch:

Jason came to the University of Idaho after attending Centennial High School (with Bryan) in Boise, ID. He is currently in his junior year, working towards majors in mathematics (gen. opt.) and mechanical engineering, and a minor in Japanese. This is his seventh year of studying Japanese and he is hoping to study abroad at Hiroshima University in Japan for one year (this coming year) before returning to finish his last year of engineering. His interests (other than math and engineering) include: foreign languages, badminton, chess, and dance.

Jason's REU² project involved creating virtual and actual models of abstract groups and discovering new ways to illustrate important properties of groups with these models. His faculty advisor was Monte Boisen. Jason gave a joint talk with Professor Ezra Brown of Virginia Tech at the national Mathematical Association of America meeting in San Jose California.



Several of the models created by Jason can be found throughout the newsletter and will hopefully be used in coming department publications!

Math Club Annual Pi Day Celebration

The UI Math Club's 2008 Pi Day Celebration was held March 6. (Pi Day, of course, is March 14 -- we have to hold ours early because March 14 is always during spring break!) We set a record for attendance with over 90 people packing the Brink Hall Faculty Lounge for pie, pi-related fun, and the ever-popular Integration Bee. The pi paper chain (made from ten colors -- one for each numeral 0 through 9) was completed out to 700 digits -- we started the paper chain last year and will continue adding to it each year. Over 40 students competed in the Integration Bee, with the eventual winners being Long Li (first), Bryan Wilson (second), and Eric Rico (third). Long won it by correctly solving the integral below -- see if you can do it!

The Judges: Dora, Judi, and Gary

The Room: Packed from end to end.

The Winners: (left to right) Eric, Long, and Bryan

The Winning Problem, can YOU integrate it?

$$\int \sqrt{1+\sqrt{x}}\,dx$$

Student Honors Spring 2007

Outstanding Seniors: At the Spring commencement reception **Nathan Bialke**, **Shannon Grant** and **Christopher Tockey** were each given the 2007 Outstanding Senior Award in Mathematics. This award is presented annually to the seniors that have shown exceptional mathematical talent. Each student honored is given a cash award and is recognized on an engraved plaque in the Mathematics Department office.

Nathan Bialke

Shannon Grant

Christopher Tockey

Elna Grahn Polya Scholar Award: At the Spring commencement reception **Benjamin Tschida** received the Elna Grahn Polya Scholar Award. The University of Idaho derives great pride from providing the state with such a talented and dedicated young person.

Ben Tschida

This award was initiated by Professor Elna Grahn and two other donors to recognize a student who has demonstrated excellence in and commitment to the application of technology in the teaching of Mathematics. Thanks to the gifts of three major donors, we are about a third of the way to our $20,000 goal for this scholarship fund.

Elna Grahn retired in 1969 from UI as a Professor Emeritus of Mathematics. She had taught here for 22 years and was a pioneer in the use of television in teaching. Through her efforts, a tutorial lab was established for students taking Mathematics classes. It was the precursor to the current Polya Mathematics Learning Center. Elna taught mathematics at the high school, junior college, and university levels. She was one of the first officers in the Women's Army Corp in WWII, leaving the service as a Major.

Jodi Frost

Michelle Jeitler

Outstanding Teaching Assistant Award: At the Spring commencement **Ryan Bauer**, **Jodi Frost** and **Michelle Jeitler** received the Outstanding Teaching Assistant Award.

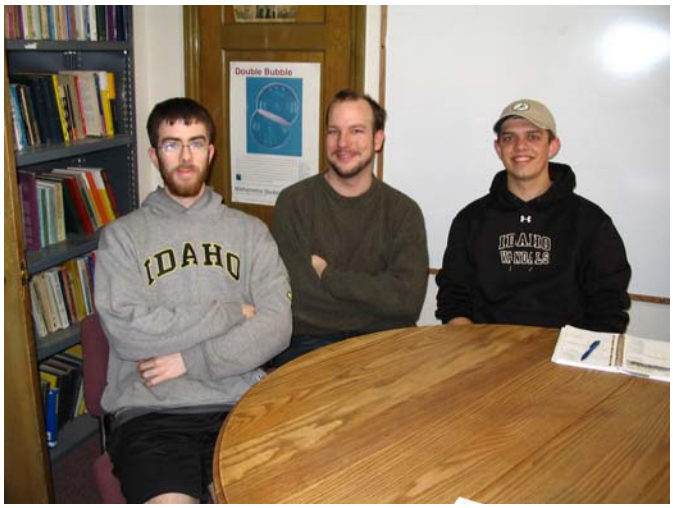
Ryan Bauer

Math Club

Article prepared by Mark Nielsen

The Math Club's activities for the fall semester included a campus scavenger hunt (with hints on the locations to be visited hidden in mathematics puzzles), a movie night (viewing the new animated adaptation of the classic "Flatland"), a game night, and a holiday party (making tree ornaments in the shapes of the five Platonic solids from classic Greek geometry). They had a great Spring semester of activities including the ever-popular Integration Bee and Pi Day observance in March.(Pi Day proper -- March 14 -- fell within spring break, as it always does. This year we accepted 3.06 as an approximation of pi and did our celebration on March 6.)

This year's club officers are Tim Karr, Bryan Wilson, Nicole Hochstrasser, and Richard Pendegraft. Tim (our president) is exceptionally active in student leadership this year, as he also serves as student representative on the search committee for the Dean of the College of Science.



Math Club officers Bryan Wilson (left) and Tim Karr (right) with advisor Professor Rob Ely (center).

Spring 2007 Graduates

Craig Beisel received his **M.S.** in Bioinformatics and Computational Biology.

Regan Benson received her **M.A.T.** in Mathematics.

Nathan Bialke received his **B.S. (Magna cum laude)** in Mathematics General Option.

Amanda Bonner received her **B.S.** in Mathematics.

Blair Carter received his **B.S.** in Mathematics Applied Computation Option.

Tucker Curley received his **B.S.** in Mathematics.

Steven Dodd received his **B.S.** in Mathematics and Mathematics Applied Computation Option.

Joel Gongora received his **B.S.** in Mathematics.

Shannon Grant received her **B.S. (Magna cum laude)** in Mathematics Applied Actuarial Option.

Sean Haler received his **M.S.** in Mathematics.

John Hamilton received his **B.S.** in Mathematics Applied Statistics Option

Zachariah Markiss received his **B.S.** in Mathematics and Mathematics Applied Statistics Option

Julie Moore received her **B.S.** in Mathematics General Option.

Remington Reid received his **B.S.** in Mathematics.

Mary Roletto received her **M.A.T.** in Mathematics.

Diana Rudeck received her **B.S.** in Mathematics Applied Modeling Option

Holly Steel received her **B.S.** in Mathematics General Option.

Christopher Tockey received his **B.S. (Cum laude)** in Mathematics General Option.

Charles Von Tagen received his **B.S.** in Mathematics General Option.

Summer 2007 Graduates

Colin Carver received his **B.S.** in Mathematics.

David Major received his **B.S.** in mathematics.

Tyler Meservy received his **B. S.** in Mathematics Applied Actuarial Science Option.

Fall 2007 Graduates

Jonathan Allen received his **B.S.** in Mathematics General Option.

Jennifer Coffey received his **B.S.** in Mathematics Applied Actuarial Option.

Graciela Elia received his **M.A.T.** in Mathematics.

Ross Finlayson received his **B.S.** in Mathematics General Option.

Michael Harrison received his **M.A.T.** in Mathematics.

Frederick Hole received his **B.S.** in Mathematics Applied Actuarial Option.

Katie Larsen received her **B.S.** in Mathematics Applied Actuarial Option.

Stanley Rhodes received his **B.S.** in Mathematics Applied Scientific Option.

Gilberto Tellez received his **B.S.** in Mathematics Applied Computation Option.

Ben Tschida received his **B.S.** in Mathematics General Option.

Jeff Verschell received his **M.A.T.** in Mathematics.

Niu Yang received his **B.S. (Cum Laude)** in Mathematics General Option.

Mathematics Department Annual Picnic

Article prepared by Mark Nielsen

Each year in late August or early September the Math Department holds its annual fall picnic. "Picnic" is used loosely here, and indicates only that it takes place outside, for pizza is the usual fare. The 2007 picnic was well attended and provided a nice way for undergraduate and graduate students to mix with faculty in an informal setting. It was also an opportunity for the host of recently retired math faculty and the slate of new faculty to get acquainted. Finally, the fall picnic is the traditional kick-off event for the Math Club. Math Club President Tim Karr took the stage following dinner to rally enthusiasm for the coming year's Math Club events.


Math Club President Tim Karr


Steve Krone


Rob Ely

Spring 2008 Expected Graduates

Christine Angelos is expected to complete her **B.S. (Cum laude)** in Mathematics Applied Actuarial Option.

Jennifer Bennett is expected to complete her **M.A.T**. in Mathematics.

Mary Bird is expected to complete her **M.A.T.** in Mathematics.

David Brewer is expected to complete his **M.A.T.** in Mathematics.

Peter Brown-Hayes is expected to complete his **B.S.** in Mathematics Applied Computation Option.

Mary Buchanan is expected to complete her **M.A.T.** in Mathematics.

Erin Casey is expected to complete her **B.S.** in Mathematics General Option

Wade Copeland is expected to complete his **B.S.** in Mathematics General Option.

RoeAnn Davis is expected to complete her **M.A.T.** in Mathematics.

Julie Donald is expected to complete her **M.A.T.** in Mathematics.

Logan Evans is expected to complete his **B.S.** in Mathematics General Option.

Lori Evans is expected to complete her **M.A.T.** in Mathematics Option.

Nathan Fanning is expected to complete his **B.S.** in Mathematics General Option.

Jonathan Gaffney is expected to complete his **B.A. (Summa cum laude)** in Mathematics.

Linette Gregg is expected to complete his **M.A.T.** in Mathematics General Option.

Galen Heffern is expected to complete his **B.S.** in Mathematics General Option.

Brent Jacobs is expected to complete his **B.S.** in Mathematics General Option.

Matthew King is expected to complete his **B.S.** in Mathematics.

Ryan Lease is expected to complete his **B.S.** in Mathematics General Option.

Fabian Librado is expected to complete his **B.S.** in Mathematics Applied Modeling Option.

William Munge is expected to complete his **B.S.** in Mathematics Applied Modeling Option.

Jay Northam is expected to complete his **B.S.** in Mathematics General Option.

Dustin Norton is expected to complete his **B.S.** in Mathematics General Option.

Matthew O'Dell is expected to complete his **B.S.** in Mathematics General Option.

Sarah Quint is expected to complete her **B.S.** in Mathematics Applied Actuarial Option.

Matthew Schug is expected to complete her **B.S.** in Mathematics Applied Computation Option

Josh Southerland is expected to complete her **B.S.** in Mathematics General Option

Douglas Torrance is expected to complete his **M.S.** in Mathematics.

Jesse Walson is expected to complete his **B.S.** in Mathematics Applied Actuarial Option

Kristopher Watts is expected to complete his **B.S.** in Mathematics Applied Computation Option

Wei Wei is expected to complete her Ph.D. in Bioinformatics and Computational Biology.

Niu Yang is expected to complete his **B.S. (Cum laude)** in Mathematics Applied Statistics Option

Jinghe Zhang is expected to complete her **M.S.** in Mathematics.

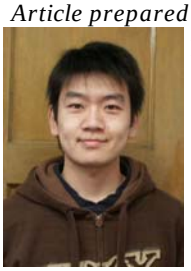
Erkan Buzbas Receives Best Presentation At Evo-WIBO

Paul Joyce's Bioinformatics and Computational Biology student, Erkan Buzbas, received an award for Best Student Presentation at Evo-WIBO*: Evolutionary Biologist of the Northwest Conference in Port Townsend Washington on April 18-20.

*Evo-WIBO stands for Evolutionary Biologists of Washington, Idaho, British Columbia and Oregon.

New Graduate Students

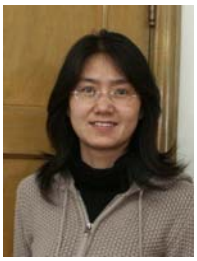
Article prepared by



Lixing Jin is a Ph.D. candidate in Mathematics, having graduated from Zhejiang University (China) in 2006.

Igor Khaykin received both his Master's Degree in Applied Mathematics and his Bachelor's Degree in Economics from Nizhniy Novgorod State University (Russia) in 2004. He is an M.S. candidate in Mathematics.

Junmin Li is working on her Ph.D. in Mathematics. She earned her Bachelor's Degree in Mathematics from Shanghai University in 2007.



YanLing Peng received her Master's and Bachelor's Degrees in Mathematics from Qinghai Normal University (China) in 1998 and 1989, respectively. She is pursuing a Ph.D. in Mathematics.

Charles von Tagen received his Bachelor's Degree in Mathematics from the University of Idaho in May 2007 and is now an M.S. candidate in Mathematics.

Andrzej Wojtowicz received his Master's Degree in Economics from Maria Curie Sklodowska University in Lublin (Poland) in 2000 and is now an Ph.D. candidate in Bioinformatics and Computational Biology teamed with Paul Joyce.

Past Graduates—Where are they now?

Article prepared by Ralph Neuhaus

BRIAN DORGAN earned an M.S. in Chemical Engineering at UI this December. He graduated from UI in 2005 with a BS in Mathematics.

CHRISTOPHER TOCKEY earned an M.S. in Mechanical Engineering this December. He graduated from UI in May 2007 with a BS in Mathematics.

RYAN MULLEN received his Ph.D. in Mathematics from the University of Connecticut in May. His thesis was in functional analysis and Fourier analysis and was written under the direction of Professor Stuart Sidney. He is now an assistant professor of Mathematics at Sacred Heart University in Connecticut. He graduated from UI in 1998 with a BS in Mathematics and in 2001with an MS in Mathematics.

ZIA UDDIN is now an assistant professor of Mathematics at University of Wisconsin- Platteville. He got his Ph. D. degree from the University of Florida in 2004. He was an assistant professor of Mathematics at Lock Haven University of Pennsylvania from 2004 till 2007. He graduated from UI with a BS in Mathematics in 1997.

NEWMAN FISHER retired 5 years ago from San Francisco State University. He has been editing some translations of papers by Euler for the 300th anniversary. He also gives talks about mathematicians whose contributions have been significant both in and outside mathematics, such as Jacques Hadamard, Abraham Robinson and Vito Volterra. He was the first Ph.D. in Mathematics from the University of Idaho, graduating in 1963.

After serving as chair of the Mathematics department at the University of Arkansas at Little Rock for several years**, THOMAS MCMILLAN** became Dean of Arts and Sciences at the State University of New York Institute of Technology in 2005. After two years, his department at Little Rock asked him to return as department chair. Since he wanted to be a mathematics chair again, he returned to UALR in 2007. He graduated from University of Idaho in 1971 with a BS in mathematics.

WALT "Wally" RUSSELL married Sarah Tintori on 6/28/06. He notes that the date is composed of "perfect numbers". He is a Mathematician for the USDA Agricultural Research Service in southern California. He graduated from UI in 1975 with a BS in Mathematics.

JOHN THURBER is the chair of the Pacific Northwest Section of the Mathematical Association of America for 2007-2008. He is a professor of Mathematics at Eastern Oregon University. He graduated from UI in 1989 with an M.S. in Mathematics.

CHRIS HIATT earned his Ph.D. in Mathematics from the University of Southern California in May. He is now an assistant professor of Mathematics at the University of Texas of the Permian Basin. His thesis was in hyperbolic geometry under the direction of Professor Francis Bonahon. He graduated from the University of Idaho with a BS in Mathematics in 2001.

CORY MISTEREK has become an Associate of the Society of Actuaries. He is a consultant with Towers Perrin in Irvine California. He graduated from UI in 1992 with a BS in Mathematics.

MATTHEW PETERSEN is teaching at Montrose Academy in Moscow. He graduated from UI in 2005 with a BS in Mathematics.

TIM SPRANO is teaching at Francis Marion University in Florence, South Carolina. He graduated from UI in 2006 with a Ph. D. in Mathematics.

PAUL HOWARD is teaching at Cascade College in Portland, Oregon. He says that teaching is a blast. He is also working toward a doctorate in Mathematics Education at Portland State University. He has finished his course work and is now taking comps. He received his MS in Mathematics from UI in 2002.

SEAN HALER is working for the Department of Defense in Washington, D. C. He graduated from UI with a BS in Mathematics in 2003 and with an MS in Mathematics in 2007.

UI Math Reunion at the San Diego Meetings in January 2008

Article prepared by Mark Nielsen and Ralph Neuhaus

A group of current and former faculty and alumni of the UI Math Department gathered for lunch at the MAA/AMS Joint Mathematics Meetings in San Diego this past January. Dr. Neuhaus always has a soft spot for all things Irish, so the lunch was held at an Irish Pub near downtown. Attending were current faculty members Hirotachi Abo and Mark Nielsen, the recently retired Ralph Neuhaus, former faculty member Sam Stueckle, and alumni Tom and Linda McMillan, Ryan Mullen, Chris Hiatt, Robin Cruz, and Brandy Wiegers. We're planning to make such a reunion lunch a permanent feature of the January meetings, at least when the meetings are held in the west. If you're planning to attend the meetings in a future year, drop us an email to let us know you'll be there!

Left to right: Tom McMillan, Hirotachi Abo, Ralph Neuhaus, Linda McMillan, Sam Stueckle, Ryan Mullen, Chris Hiatt, Robin Cruz.

Diana Johns named to the College of Science Advisory Board

Article prepared by Ralph Neuhaus

Dr. Diana Cordwell Johns has been named to the College of Science Advisory Board. She graduated from UI in 1977 with a B. S. in Mathematics. She received an M.S. in Computer Science from University of Denver in 1982. She married Joseph Johns, a UI graduate in Chemistry, who was a medical student at the University of Nevada Reno. Realizing that most of their friends were doctors, and they mostly talked medicine, she decided to go to medical school. She earned her M. D. degree from University of Nevada Reno in 1994. She has been a clinical professor of Internal Medicine at the University of Nevada at Reno. She has long been a great friend to our department. She has contributed generously her financial resources and her wonderful sense of humor. She has also served the university as a member of the Board of Directors of the University of Idaho Foundation. She and her husband now reside in Coeur d'Alene. We look forward to the leadership she will undoubtedly contribute to the important work of the advisory board.

Clancy and Barbara Potratz Scholarship

Article prepared by Monte Boisen

Clancy and Barbara Potratz have generously established an annually-funded scholarship in our department. The scholarship will be available to full time students majoring in the Department of Mathematics. Students with sophomore, junior, or senior standing are eligible. First preference will be given to students preparing for a career teaching mathematics at the middle through high school levels. This scholarship continues Clancy's life-long commitment to improving math education in Idaho's public schools. During the time that Clancy was on the faculty of the Mathematics Department of the University of Idaho (1966-1994), he conducted numerous workshops to enrich the quality of Idaho's in-service teachers (particularly in the area of statistics) and made important contributions to the preparation of pre-service teachers on campus. He is well known and admired by math teachers across the state. That he and Barbara have set up a scholarship to continue this work into the future is quite appropriate and very much appreciated.

We would like to hear from you!

If you have some news/information about yourself that you would like printed in the next Math News, please send your information to math@uidaho.edu or to: Department of Mathematics, University of Idaho, PO Box 441103, Moscow, ID 83844-1103.

Please include as much of the following as possible:

- *Name*
- *Year you graduated from UI*
- *Degree and Major at UI*
- *Current Occupation*
- *News about yourself*
- *Comments, corrections, additions for newsletter*

The Arnold Misterek Family Endowment

Article prepared by Monte Boisen

The Arnold Misterek family has endowed an important scholarship to help our department attract and retain high quality graduate students. Arnold Misterek was born in St. Maries, Idaho but was raised and spent most of his life living in the Spokane Valley. He received his BA in Education from Eastern Washington University in 1954. While there, he met his future wife Kay Royce, a 1956 Eastern Washington education graduate who taught high school language arts and home economics and then was a homemaker raising their three children. Arnold received his Masters in Natural Science from the University of Idaho in 1965. For 25 years, Arnold taught ninth-grade math and science in West Valley School District in the Spokane Valley. Arnold and Kay have always understood the value of a good education and encouraged their three children to pursue higher education. Two are also University of Idaho graduates: Andrea Misterek-Benson a 1988 graduate in computer science and mathematics and Cory Misterek a 1993 graduate in economics and mathematics. Cory has become an Associate of the Society of Actuaries (see the article about graduates in this issue of the newsletter).

Scholarships Awarded for 2008-2009

Several scholarships are available to mathematics majors. The Taylor, Botsford, Wang and Hower scholarships are awarded to mathematics majors entering their junior or senior year. Total awards for these scholarships are $500, $1500, and $2500. The Mathematics Department Scholarship has no class restrictions. All mathematics majors are automatically considered for a scholarship. Non-mathematics majors are eligible if they change their major to Mathematics or add mathematics as a second major. The selection is made by the faculty of the department in March.

Eugene and Osa Taylor Mathematics Scholarship

This scholarship was established in 1979 by the family and friends of the first head of the department, Eugene Taylor and his wife Osa. He directed the department from the time he came to the department in 1920 until he retired in 1950. In 1981, his family donated many of his personal mathematics books to the University of Idaho library. This scholarship is based on merit and is awarded to mathematics majors entering their junior or senior year. The recipients of the Taylor Scholarship this year were:

Eric Bryant, Ben Cote, Brian Faulkner, Tim Karr, Michael Logsdon, Johann MacDonagh, Heather Wethington, and Bryan Wilson

Linn Hower Honor Scholarship

This scholarship was established in 1991 by Mildred and Loyal L. Hower, parents of Linn Hower, who graduated from the University of Idaho in 1979 with a B.S. in Mathematics. This scholarship is awarded to junior and senior applied mathematics majors, preferably from rural Idaho, with a high potential for success in a mathematics or scientific field. It is based on merit.

***Michael Eldredge* is this year's recipient.**

Ya Yen Wang Memorial Scholarship

A long-time member of the Mathematics faculty, Ya Yen Wang died in January of 1995. Acting on her wishes, her family established the Ya Yen Wang Memorial Scholarship. This scholarship is intended for a junior or senior in Mathematics, preferably to be awarded to a woman. It is based on merit.

***Laken Top* is this year's recipient.**

Mathematics Department Scholarship

This scholarship is supported by annual contributions of friends of the department and is awarded primarily to freshman and sophomore mathematics majors. It is based on merit. The recipients this year were:

Justin Ash, Stephanie Blake, Kayla Friedley, Jill Jacobs, Nishelle Klinkhamer, Maria Perez Barrios, Mitch Phillips, Rebecca Poulson, Tonya Rugg, and Meredith Sargent

J. Lawrence Botsford Scholarship

This scholarship was established by the family of J. Lawrence Botsford who was a member of the department from 1949 until his retirement in 1970. He also served as head of the department from 1950 to 1954. This scholarship is based on merit and is awarded to mathematics majors entering their junior or senior year.

***Jonathan Marler* is this year's recipient.**

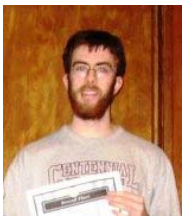
Clancy and Barbara Potratz Math Education Scholarship

This scholarship was established by Clancy and Barbara Potratz. Clancy was on the Mathematics Department faculty from 1966 to 1994. He served as head of the department from 1990 to 1994. The scholarship will be available to full time students majoring in the Department of Mathematics. Students with sophomore, junior, or senior standing are eligible. First preference will be given to students preparing for a career teaching mathematics at the middle through high school levels. This scholarship is based on merit.

***Faith Snyder* is this year's recipient.**

Goldwater Scholarship awarded to Bryan Wilson

Bryan Wilson, a mathematics major from Boise, is one of two UI students for 2008 to receive the nationally prestigious Barry Goldwater Scholarship. The scholarship pays up to $7,500 per year to students who plan a career in mathematics, natural sciences or engineering. Applications for the Goldwater Scholarship emphasize research experience, and since mathematics research is less accessible to undergraduates than other fields in science and engineering, it is sometimes difficult for even the best mathematics students to compete for the award. Bryan, however, has engaged in several research projects as an undergraduate. In his application essay for the Goldwater Scholarship, Bryan chose to focus on a project he initiated himself to investigate the famous "Goldbach Conjecture" from number theory. This conjecture claims every even integer greater than 2 can be written as the sum of two primes. "Bryan's approach to the problem is unlike anything I've ever seen", said Dr. Mark Nielsen. "It's really quite creative – just more evidence of Bryan's natural talent in mathematics."



Faculty News

Hirotachi Abo talked about his work on secant varieties at the special session on "Numerical and symbolic techniques in algebraic geometry and its applications" at the AMS 2007 Fall Central Section Meeting at DePaul University. He co-organized the special session on "Secant varieties and related topics" at the 2008 Joint Mathematics Meetings in San Diego and then gave a talk at the Macaulay2 conference at Cornell University in March 2008, where he discussed the computer-aided proof of the existence of certain varieties.

Frank Gao attended the Frontier Probability Days 2007 in Colorado Springs in May 2007, where he gave an invited talk on "Metric Entropy Estimate of some shape-constrained function classes and its small ball connection."

Jennifer Johnson-Leung gave a talk in the Special Session on Iwasawa Theory at the Canadian Mathematical Society meeting in London, Ontario.

Paul Joyce presented some of his recent results in the Probability Seminar at UBC (March 2008), at the Center for the Investigation of Mathematics (Guanajuato, Mexico, March 2008), and at the NIH-NSF PI meeting on the Ecology and Evolution of Infectious Diseases in Albuquerque, New Mexico (December 2007). Paul served on the Joint NSF-NIH Mathematical Biology Panel in December 2007, received an Undergraduate Research Grant in May 2007 and hired two undergraduate students to work with him, and has continued support from both an NSF grant and an NIH grant.

Mark Nielsen accepted an appointment as Interim Associate Dean of the College of Science for the 2007-8 academic year. In January, he attended the Joint Mathematical Meetings in San Diego and gave a talk on a paper he did with Arie Bialostocki.

Matthew Rudd gave talks at meetings at Northern Arizona University (May 2007) and at the University of Alabama at Birmingham (November 2007), delivered the departmental colloquium at Western Washington University in November 2007, attended the Joint Meetings in San Diego (January 2008), and gave a talk at Wake Forest University in May 2008 while visiting some research collaborators.

Hong Wang received a research grant from the NSA in 2008 and talked about his work on "Disjoint Cycles in Graphs" in the UI departmental colloquium on March 20, 2008.

I want to support students and faculty in the Department of Mathematics!

My Gift of $_____ is enclosed (Please make checks payable to University of Idaho Foundation, Inc.)

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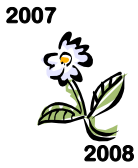

Prize Problems

1) Let f be a nonconstant polynomial with positive integer coefficients. Prove that, if n is a positive integer, then f(n) divides f(f(n) +1) if and only if n =1. (This was Problem B1 on the 2007 Putnam Exam; see the story on Page 1.)

2) How many real numbers x satisfy the equation x = 100sin(x) ?

3) Find two noncongruent similar triangles with sides of integral length such that the lengths of two sides of one triangle equal the lengths of two sides of the other triangle.

Solve one of the three Prize Problems and you win a prize!!! Some problems may appear hard or impossible, but all have a clear solution if you approach them in the right way. Prizes will be awarded while supplies last. Show or send your written solution to Matthew Rudd.

Rules for participating:

1. You must be an undergraduate, an alumnus, or an alumna.
2. You must solve one of the problems, giving a full explanation.
3. One prize per person.

You can learn more about the UI Math Department and see a full color version of the newsletter by visiting our website:

www.uidaho.edu/math