Mathematics Alumni Newsletter

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Greetings From The Chair

Most of us reading this newsletter have had our lives changed by mathematics. The question is, why did we choose to study it? Often, a member of the faculty was able to make a connection, to exert an influence at a crucial moment which, though it may have appeared small at the time, turned out to be decisive. Underlying these interactions, however, was the ability of the professor to bring out, and the ability of the student to appreciate, the power and beauty of mathematical ideas.

Not every DU student has been so lucky as to be exposed to the real appeal of mathematical ideas. Of course, science students get a full dose when they take the calculus sequence. But liberal arts students are able to complete a curriculum which includes only a single quarter of mathematics, and many choose to fulfill even that requirement with the lowest-level course.

In response to this situation, and with the important assistance of the Marsico Initiative, the Mathematics Department has begun to develop a suite of seminars. The seminars were designed with liberal arts students in mind. They cover topics in discrete mathematics and probability, which are more important than calculus in the Arts, Humanities, and Social Sciences. The topics are chosen to be interesting and challenging, but to require only a high school mathematics

This newsletter is published semiannually and your submissions are welcome.

If you have an article, a picture, or information that might be of interest to other alumni and you would like to have it published in the newsletter, please send it to:

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Please include your name, mailing address, and email address so we can contact you.

This newsletter may be read on-line at www.math.du.edu

If you would prefer to receive an email notification when each edition is published rather than a printed copy, please let us know by sending an email to dopplige@du.edu.

Ruth Hoffman

Ruth Hoffman

Since the previous newsletter, we received word that Ruth Hoffman died in Honolulu last spring at the age of 90. Dr. Bill Dorn, a colleague of Ruth's provided the following memories of Ruth.

"There are those who claim she served as the model for the Energizer Bunny, but I don't think that is so. You see, she never beat her own drum. Yet there is no denying that to many of us she seemed indestructible. Her energy and optimism were legendary. That is why it came as such a shock when we learned that Dr. Ruth Irene Hoffman died on March 30, 2005 exactly one week after her 90th birthday.

"Ruth Hoffman was a giant in the field of mathematics education. Professor Herbert Greenberg recalls walking into the lobby of the convention headquarters at a meeting of the National Council of Teachers of Mathematics, the

Greetings From The Chair (continued)

background. In addition, these courses are required to include a nontrivial computer science component. The courses are taught in small sections, usually 15 students to a class, to permit an informal, discussion-type atmosphere that encourages discovery, reasoning, and effective communication. By the end of the current academic year, these courses will have covered topics such as Cryptography, the Mathematics of Voting, Patterns and Symmetry, Mathematical Art, and The Heart of Mathematics.

Reaction to the pilot seminars has been extremely positive, both on the part of the students who have taken them and the faculty members who have taught them. This is particularly interesting in light of the fact that they are a good deal more demanding than the lowest-level Foundations course they replace. The Department would like to complete this replacement, and has a proposal pending to do just that.

It is not the function of the Mathematics Department to make every student a math major. But it is our job to see that each one gets the mathematical training most relevant to him or her. Now we can also hope to give every DU student at least a glimpse of the power and beauty of the subject.

Ruth Hoffman (continued)

premier mathematics education organization, and literally bumping into a very large billboard screaming "TONIGHT! Dr. Ruth Irene Hoffman will speak on …. ". It is fair to say that everybody, and I literally mean everybody, in the field of mathematics education knew Ruth Hoffman at least by reputation.

"She was a pioneer in the creation of mathematics laboratories. Indeed, she was responsible for the first such laboratory to be created west of the Mississippi River when in 1966 she was the moving force behind the Mathematics Laboratory of the University of Denver. And this from a woman who started her career as a public school teacher and principal. Versatility was another of her attributes.

"Among other things, Professor Hoffman was at the forefront in the use of calculators, including programmable calculators, in the classroom. She authored more than 150 papers on mathematics education and lectured in numerous other countries including Chile, Germany, Israel, Italy, and the former Soviet Republic. She was a prolific grant getter garnering more than $3 million in grants. And that was at a time when a million dollars was real money!

"One of my favorite stories about my favorite colleague was told to me by Dr. Loren Haskins, now professor emeritus at Carleton College. Skip, as some of you may remember him, was working installing elevators eight hours a day and trying to complete his undergraduate degree at the same time. He took evening classes and often arrived directly from work having had no dinner, covered in grime and grease, and dead-tired. He was taking a calculus course taught by Ruth Hoffman who had worked all day herself at being a school principal. With chalk dust flying, she literally leapt on the desk and managed to keep the to-be-PhD student awake and interested. It is safe to assume that without her encouragement and enthusiasm that Loren would not have become a graduate student in mathematics. How many other students were affected in the same way, we will never know. She was truly a remarkable and admirable woman. The world in general, and in particular the world of mathematics, lost one of its pioneers in 2005."

Honors and Awards

We were pleased to be able to award Hammond Scholarships to a number of students this year. Ms. Hammond, who passed away in 2001, earned a Bachelor of Fine Arts degree in 1938 at DU. She was an artist and a musician who loved mathematics, and the department is honored to be able to perpetuate her memory.

Students receiving Hammond Scholarships were: Stephanie Angle, Mackenzie Frank, Chelsea Dauwalder, Skyler Braden, Ashley Brewer, Denis Lapitski, Alicia Oberle, Taryn Dukellis, Siyin Wang, Marin Iliev, Amanda Johnson, and Holly Bau.

We were also able to award two Mike Martin Scholarships this year. The Mike Martin Scholarships were established in 2002 in honor of Professor Mike Martin, a member of the math faculty from 1971 to 2001. We are pleased to announce that this year's award recipients were Mackenzie Frank and Ashley Brewer. Donations to the Mike Martin Scholarship may be made by check made out to the University of Denver and mailed to University of Denver, Office of Institutional Advancement, Denver, CO 80208. Please note on the check that it is for the Mike Martin Scholarship Fund.

Alumni Recollections

We are really pleased that our alumni continue to share their memories of DU with us and that they let us know what they have been doing since leaving DU. Below are two letters that we received since our Summer Newsletter.

Anita West (B.A. 1960, M.A. 1962, Ph.D. 1969) writes:

"Thought you might like some reminiscences from the 1950s.

When I was working on my bachelor's degree in 1958 the math department was quartered in University Hall and consisted of Chairman Ken Noble, Dr. Albert Recht and Fred Bruntz. In 1960 Herb Smith and Al Ritter had been added to the faculty and Dr. Ruth Hoffman, then a DPS principal, taught a few evening classes. When I earned my master's degree in math in 1962 I had to find a faculty advisor in electrical engineering for my thesis on special eigenvalue problems.

"I can remember sitting in Al Ritter's Advanced Calculus class when someone from the math office came in to inform us that Dr. Recht had just had a fatal heart attack. I had 2 preschool children at the time who I sometimes had to take with me to class and I remember how kind Dr. Recht was to them (and to me) and how he charmed the children so that they sat quietly totally entranced by the professor who did magical number tricks and then took them to the DU Observatory for special private sightings. (Those two children now have doctorates from DU.) In 1969, having taken every math class then offered I received a PhD in Higher Education with a cognate in math since the department did not yet have PhD granting status.

"I spent most of my career (after a 3 year stint at the Martin Company - now Lockheed Martin) at DU at the Denver Research Institute where I was a Senior Research Scientist, a Division Head and eventually Acting Director in 1986. I'm now retired and active in the DU retiree organization."

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Irwin Hoffman (BS 1953, MA 1958, PhD 1971) writes:

"I truly enjoyed your last newsletter and certainly remember Dr. Recht. Other professors that impacted my life include Ruth Hoffman, Bill Dorn and Herb Greenberg. My undergraduate classrooms (1949 – 1953) were mostly in "Old Main" – really old in those days – still there and getting older. I attended "Tramway Tech" on a tennis scholarship. Our tennis team was coached by a member of the mathematics faculty, Fran Garth. It is interesting that two DU math professors served as University tennis coaches (the other being Dr. Lewis). I received my BS in mathematics in 1953 and simultaneously received a commission in the Air Force through the DU ROTC program. The Korean war needed weathermen so I was sent to UCLA to study meteorology. For the next three years I practiced meteorology during my duty shifts and when off duty taught mathematics, on three separate bases, for the University of Maryland.

"I took advantage of the GI bill to fund my MS (mathematics) and PhD (Cognate in mathematics) degree programs at DU – my tenure as a student at The University covered over ten years. Sputnik motivated me to teach in the Denver Public Schools, serendipitously giving me time to spend summers as the tennis professional at Green Gables County Club.

"In the late 1950s and early 1960s a fledgling computer science department at DU was staffed by PhD candidates in the mathematics department. In the early 60s the computer science department offered to share their facilities with local high schools. Within this outreach program I developed the first high-school based computer mathematics curriculum offerings in the United States. I continued developing curricula in this area and in 1984 was recognized by the periodical "*Electronic Education*" as the 'father' of computer-based education in the country. In 1983 I was sent (representing Colorado) to Washington DC to receive President Reagan's award for Excellence in Mathematics Education. I also served on the Board of Advisors for the directorate of the National Science Foundation that dealt with mathematics and science education.

"I retired from George Washington High School in 1988 to become a national consultant for IBM on the use of computers to teach mathematics in K12 education. Two years ago I was inducted into the Colorado Tennis Hall of Fame. In 2006 I am retiring from GGCC after 50 years as their tennis professional. I am grateful beyond words for the education and opportunities afforded me by my alma mater."

We always like to get news from our alumni. If you have memories you would like to share or would simply like to let us know what you have been doing, please send us a few paragraphs. Send information to: Don Oppliger, DU Math Dept., 2360 S. Gaylord, Denver, CO 80208 or email to: dopplige@du.edu

Hockey Night 2006

Last year the Denver Pioneers repeated as NCAA Division I champions. In the title game, Denver defeated North Dakota 4 to 1. This was the seventh national championship for the hockey team. Hockey Night 2006 will feature a re-match of the Pioneers and North Dakota.

The event is set for Saturday, February 25, 2006 at 7:07 and tickets are available to math alumni for the discounted prices of $5.00 for the first two tickets and $12.00 each for additional tickets. Flyers, with a form for ordering tickets, were sent to alumni in the Colorado Front Range for whom we have addresses. Last year we had over 100 alumni, faculty, staff, and guests. Just prior to the game, alumni pick up tickets and join us for refreshments in John Greene Hall. It's a wonderful opportunity to see old friends and make new acquaintances. We will also be featuring displays created by students in our new Math History class as well as a display honoring the late Ruth Hoffman, math faculty member from 1963 to 1990.

If you haven't received a flyer, but would like to attend the game, please contact Don Oppliger at (303) 871-3072 or by email to dopplige@du.edu by February 20. Act now! Tickets are limited and go quickly.

The Personal Side Of DU History

Professor Emeritus Bernard Spilka from the DU Department of Psychology is currently writing a book that will provide some history of the University of Denver. We have spoken with him and exchanged some information. His approach to this history is different than what one often finds in many dry historical accounts. We asked him about it, and here is his description in his own words.

"The current published history of the University of Denver is basically a work on chancellors, programs, and buildings. It fails to tell us about faculty who often dedicated their lives to making the University what it should be. In my 40 plus years here, I have known many who wanted to convey to their students a love of learning and scholarship. They should not be forgotten. Since I could never realize this ambition for the entire University, I am emphasizing what I call "The Heart of the University: A Human History of the Arts, Humanities, and Sciences.

"I want to describe those who are no longer with us. Students rarely appreciate professors as human beings. We simply didn't know their accomplishments or what they were outside of the classroom. Unfortunately, time and poor record keeping limits what I can relate. In so many instances I have been able to interview former students who provided information going back literally 70 to 80 years. The University has been blessed with many truly outstanding scholars and teachers.

"Mathematics is a case in point. Herbert Howe's 46 years teaching Math and Astronomy is an inspiring tale. Albert Recht, another 40 plus year man, also left an impressive heritage. I always felt that Kenneth Noble's courses were presented so well that you could fall asleep in his classes and still learn. Who can forget the brilliance, warmth, and personality of Ruth Hoffman in her Geometry and Topology courses? These are a sampling of a much larger group of committed scholars who did much more than lecture. They made their topic live for so many who later increasingly valued what they gained in their classes."

Bernie would like to hear from you anything that shows the human side of these people, especially old timers like George Gorrell, Arthur Lewis, Kenneth Noble and others. His e-mail address is bspilka@nova.psy.du.edu. Phone 303-757-7051.

Math Puzzler

The previous puzzler asked … A cylinder 48 cm high has a circumference of 16 cm. A string makes exactly 4 complete turns around the cylinder while its two ends touch the cylinder's top and bottom as shown. How long is the string in cm?

Solution: The key here is to consider the cylinder to be unrolled into a rectangle with dimensions 48 cm by 16 cm as shown at the right. The string thus creates 4 diagonal lines whose measure can be found out by considering the right triangles they form:

- The base of a triangle is 16 cm and the height is 1/4 of 48 or 12 cm. From these, we can get the measure of one diagonal line as 20 cm [i.e., $(16^2 + 12^2)^{1/2}$]. Therefore, the whole string measures 4X20 cm= 80 cm.

We received a number of solutions to this puzzler and some of the responses included comments which we are including here. Answers were received from: Anthony Arlotta, Greg Metzel, Alice Ellis (BA '73, MA '86), Craig Raisig (BA '65), Mary Krimmel (MA, '70), David Gwinn (BA '73), Niel Hayes (who said: "So I was at my girlfriend's grandma's house and she had this newsletter of yours and it had a math question, so I tried to exercise my atrophied math muscles and came up with something."), Don Bryant (BS, 64), Paul E. Williams (BA, 52) (who said: "I graduated in 1952 with a BA, major in Mathematics and minor in Philosophy. I was the chief designer of a Hospital Information System in the early 1970s which is still used today. With it physicians entered their orders, nurses charted, etc. I found that Philosophy was at least as useful as math in these early computer days but appreciated math, of course."), Anthony V. Ercolano (BS Math '81) (He said, "I tried this with a roll of paper towel. It seemed to work."), Lee DeRaud (MS '74), Bill Brown (BA '66), and Joshua Smith.
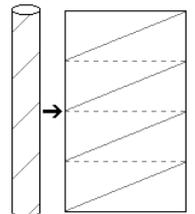
Thanks to the Web site www.syvum.com for the above puzzler.

For the next puzzler …

You are blindfolded before a table. On the table are a very large number of pennies. You are told 128 of the pennies are heads up and the rest are tails up. How can you create two subgroups of pennies, each with the same number of heads facing up?

Send answers to sbutz@math.du.edu.