

# PRIME BITS

Department of Mathematics Newsletter  
University of Colorado, Boulder, Colorado 80309-0395

Fall 2002

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## Departmental Highlights

### Mathematics Dept. to unveil art exhibit Jan. 24

"...Euclid alone

Has looked on beauty bare. Fortunate they  
Who, though once only and then but far away,  
Have heard her massive sandal set on stone."

(Edna St. Vincent Millay)

A Mathematics Art Exhibit created by the Department of Mathematics faculty and office staff can be viewed at the University Memorial Center (Broadway and Euclid) on the Boulder campus with the opening reception on January 24, 2003 from 5 to 8 p.m. and with regular viewing hours January 27-28 from 9 a.m. to 9 p.m.

A primary goal of the Mathematics Art Exhibit is to demonstrate the effectiveness of mathematics as a vehicle for the pursuit of truth and beauty. We hope to dispel the view that mathematics is a purely cerebral discipline, having no room for artistic expression that comes from the heart and soul. We believe that mathematics (created by mathematicians) can reveal beauty and harmony. The art work shown in our exhibit unites us all: people creating art as well as mathematics.

Participating artists: C. Farsi, E. Herreria, J. Malitz, R. Rockne, R. Roth, M. Shernick, A. Spina and W. Taylor.

### Adele Leonhardy Memorial Scholarship

An endowment fund for the Adele V. Leonhardy (B.A. 1924) Memorial Scholarship was recently established in the University of Colorado Foundation by a gift of \$306,278 from the estate of the late Ms. Leonhardy.

Income from the endowment, about \$12,000 per year, will provide annual scholarships to be awarded to outstanding graduate students or upper-division A&S undergraduate students majoring in mathematics. All recipients must have demonstrated excellence in their studies and must be preparing to teach mathematics.

Adele Leonhardy was born at Carbondale, Colorado in 1900 and grew up in the small town of Fruita near Grand Junction. She was a student at the University of Colorado from 1917 until 1924 when she received a B.A. degree in mathematics. Adele taught elementary school in Boulder during these seven years in order to pay for her college expenses.

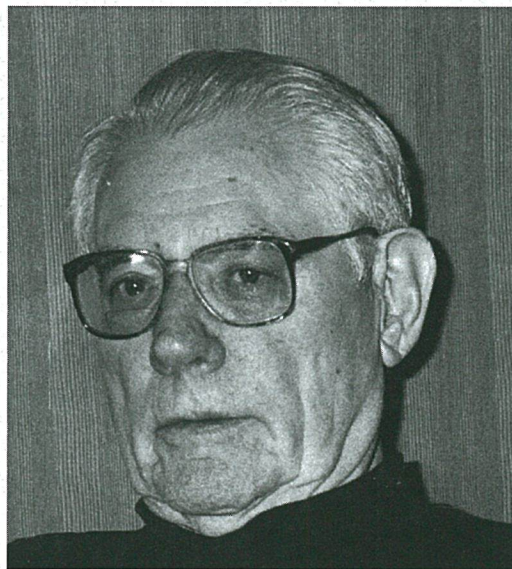
After leaving Boulder she did graduate work at the University of Chicago and the University of Missouri before joining the faculty of Stephens College where she taught mathematics until her retirement in 1967.

Adele knew how difficult it is to work one's way through college. She also knew the value of education and she dedicated her life to the teaching profession. Her gift of the scholarship endowment will enable students in all future generations to prepare themselves for teaching mathematics.

### Kempner Colloquium Fund exceeds initial goal of \$50,000

A gift of \$25,000 from UCB alumnus William J. LeVeque (B.A. 1944, summa cum laude) together with a matching gift of \$10,000 from the College of A&S (thanks to Peter D. Spear, Dean) has brought the Kempner Colloquium Endowment Fund over the initial goal of \$50,000

(continued on p. 3)



Dr. William J. LeVeque

## 2001, 2002 DeLong Lectures presented

The DeLong lectures for 2001 were given by **Jeff Cheeger**, Professor of Mathematics at the Courant Institute of Mathematical Sciences. The general topic of his three lectures was *From Metric Spaces to Einstein Spaces*.

Cheeger received a B.A. from Harvard in 1964 and a Ph.D. from Princeton in 1967. Before going to the Courant Institute in 1989 he had professorial positions at UC-Berkeley, U. Michigan and SUNY Stony Brook.

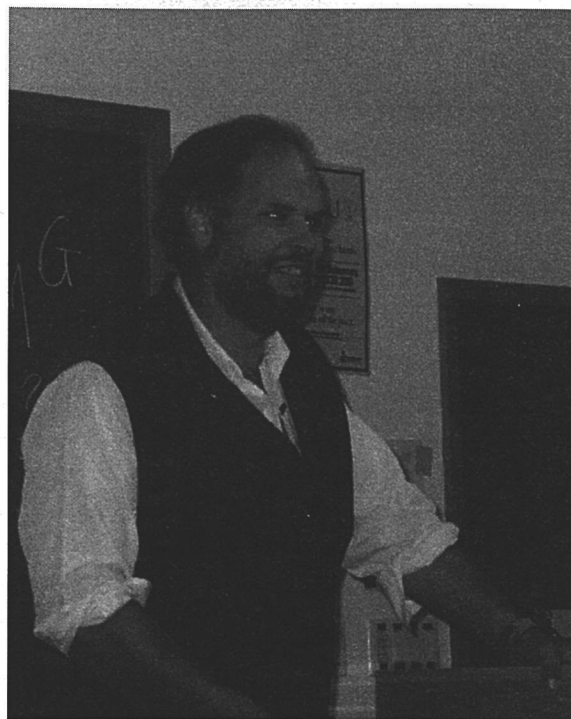
Cheeger has been the recipient of many honors including a Max Planck Award from the Alexander von Humboldt Society in 1991 and the Oswald Veblen Prize in geometry from the American Mathematical Society in 2001. He is a member of the U.S. National Academy of Sciences and a foreign member of the Finnish Academy of Science and Letters.

During the week of February 11-15, 2002 the thirty-eighth annual series of **DeLong lectures** were presented by **Vaughan F. R. Jones**, Professor of Mathematics at the University of California, Berkeley. The general topic of his lectures was *the Theory of Subfactors: The Early Years, The 1990's and Today*.

A native of New Zealand, Jones obtained his education at the U. of Auckland and then in Geneva, Switzerland the Ecole de Physique and the Ecole de Mathematiques. Before going to UC-Berkeley in 1985 he was a member of the faculty of UCLA, 1980-81 and the U. Pennsylvania, 1981-1985.

Jones received the Vacheron Constantin Prize in 1980, the Fields Medal in 1990, the New Zealand Government Science Medal in 1991 and the Onsager Medal of the University of Trondheim, Norway in 2000. He was elected a Fellow of the Royal Society

in 1990, the American Academy of Arts and Sciences in 1993, the U.S. National Academy of Sciences in 1999 and the Norwegian Royal Society of Letters and Sciences in 2001. Jones holds honorary doctorates from The U. of Auckland and the U. of Wales and he is an honorary Vice-President for Life of the International Guild of Knot Tyers.



**Vaughan F. R. Jones**

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### PRIME BITS

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Department of Mathematics

**Editor:** William B. Jones  
**Production Editor:** Kathleen H. Jones

### BOOK DRIVE FOR KABUL UNIVERSITY

*More than 2,400 books collected*

The Mathematics Department faculty and students recently collected four large boxes of mathematics text books to help replenish the library of the University of Kabul in Afghanistan which the Taliban had almost completely destroyed.

This effort was part of a project headed by Clovis Morrisson for the Colorado Chapter of the United Nations Association of the USA. Altogether 2,484 books were gathered by the UNA-USA and transported to Afghanistan by the U.S. Air Force.

## **Undergraduate Program**

### **Undergraduate research program**

The Program for Undergraduate Research in Mathematics is reported by Keri Kornelson to be a resounding success with lots of mathematics majors pondering research projects during the summers of 2001 and 2002.

### **Kempner Colloquium**

(Continued from p. 1)

established in the 1995 agreement with the University of Colorado Foundation.

The first \$15,000 in the fund was obtained from gifts by alumnae/alumni, faculty and friends of the Mathematics Department. Donations came from Africa, Canada, France, Germany and many states in the US. Distributable income from the endowment fund is used to pay travel expenses and a small honorarium for colloquium speakers who are not on the UCB mathematics faculty. Lectures in the colloquium series on topics of broad interest help maintain a vibrant learning environment for faculty, students and visitors from the community.

William J. (Bill) LeVeque was born in Boulder, Colorado August 9, 1923 and educated in the Boulder school system. At the University of Colorado his principal contact was Dr. Kempner from whom he took almost all of his mathematics courses. The most influential was a one-quarter course in the theory of numbers, which Bill and the other two students in the course persuaded Kempner to continue for two more quarters.

After the B.A. from UCB, Bill obtained M.A. and Ph.D. degrees in mathematics from Cornell. This was followed by a distinguished career first with a Benjamin Peirce Instructorship at Harvard, then professorships at the University of Michigan and the Claremont Graduate School and eleven years as Executive Director of the American Mathematical Society.

On April 16, 2001 Dr. LeVeque presented a Kempner Colloquium on "Reminiscences of Aubrey Kempner or Life as an Undergraduate at CU in the 1940's." He began his lecture with an expression of his great affection for Aubrey Kempner and the tremendous pleasure he had in helping to perpetuate Kempner's name at the University of Colorado. For more on the Kempner Colloquium Endowment please see Mathematics Department Endowments.

### **William Lowell Putnam**

#### **Mathematical Competition (WLPMC)**

Every year about 2,500 undergraduate students from more than 400 colleges and universities in the USA and Canada participate in the WLPMC, an event that represents the Intercollegiate National Championship in Mathematics.

Some universities actually have programs to recruit promising math students similar to the way American universities recruit athletes. What a concept!

The WLPMC is administered by the Mathematical Association of America (MAA), results are reported in its national publication, the *Amer. Math Monthly*, and national rankings are given to college teams and to individuals. For many years Professor Gordon Brown has served as the CU-Boulder team coach.

Following are results reported by Coach Brown: For 2001 the three students scoring highest and receiving prizes from the Math. Dept. were first place Dima Sinapova and tied for second and third place were Kimberly Brown and Bruce Swihart. For 2002 the prize winners were first place Brett Beckman, second place Cynthia Barber and third place Dima Sinapova.

#### **Math Career Night**

Math career night, sponsored by the CU-Boulder Mathematics Department on Nov. 15, 2001, brought together a panel of mathematics graduates from CU and elsewhere to speak about their own professional experiences and about how their studies in mathematics have been of use in their careers.

The panelists were Neil Ensley (Systems Analyst for Ball Corp.), Tressa Fowler (Statistician for the National Center for Atmospheric Research), Robin Newman (Computer Programmer for Eclipse Inc.), John Schunck (former Teacher at the New Orleans Center for Science and Mathematics) and Eric Unger (Actuarial Analyst for Watson Wyatt Worldwide).

#### **Problem of the Month**

In 2001 Professors Keith Kearnes and Sergei Kuznetsov initiated a Math Department Problem of the Month Competition for CU undergraduates.

Rules for the competition allow for solutions by individuals or by teams submitted in writing or by e-mail at Po @ euclid.Colorado.edu.

Prizes of \$50 and \$25 are given to first and second solutions received.

# Graduate Program

**AMY CHAMBERS** was the recipient of a 2001-2002 Graduate School Teaching Award. During the past year Amy has been the Lead Graduate Teacher for the Math Department.

For those of you who don't know what this is, here is Amy's explanation: "I am hired by the Graduate Teacher Program and work with them as well as with the Math Department. I am here to help the new TAs get acquainted with the department and to help them feel more comfortable about their teaching positions. I will be assisting with orientation in August. I plan on leading some workshops during the fall and spring semesters, ...."

**ADRIANA GOMEZ**, being the first student to receive a Thron Fellowship, has given Prime Bits the following report on work supported in part by the fellowship. "The year I was granted the Thron Fellowship I started to work on Dynamical Systems under Professor James Meiss from the Applied Math Department. The work has been focused on conservative systems; i.e., measure-preserving systems. The research performed during that year yielded the paper, 'Volume-preserving maps with an invariant' already published in *Chaos, Vol. 12* (June 2002). I'm very grateful to the encouragement and honor that being the Thron fellowship first recipient meant to me. Doctor Meiss kindly accepted being my thesis advisor and I have continued working on topics related with those previously developed. Hopefully I would be able to finish (a Ph.D.) no later than August 2003."

**JOHN MASSMAN** for over a year has been a volunteer with Recording for the Blind and Dyslexic, a national organization with more than 50,000 titles on tape available to the disabled. For general information see [www.rfd.org](http://www.rfd.org).

Every Monday John drives to Denver and spends two hours reading books onto tape; books on mathematics, accounting and marketing. John reports that this is very rewarding and exciting work but requires a lot of concentration to describe accurately even the quadratic formula. He enjoys working with the other volunteers and has recently been elected Treasurer for the Denver unit.

## **BURTON W. JONES TEACHING EXCELLENCE AWARD**

In 1994 an endowment in the CU Foundation was established for the Burton W. Jones Teaching Excellence Award. Under the leadership of the late William E. Briggs, funds for the endowment were obtained by gifts from the Mathematics Department faculty in memory of our distinguished colleague, Burton W. Jones. Each year income from the

endowment is awarded to a Math. Department graduate student who is chosen by the faculty as the outstanding teaching assistant. For more about the Jones Award, please see Math Endowments, p. 20.

Recent awardees (and runners up) are the following:

1999-2000 Keri Kornelson (Lynn Schooley)

2000-2001 Suzanne Caulk (Chris Brown and John Davenport)

2001-2002 Christine Jerrits (Bob Cohen).

## **FRANCES C. STRIBIC FELLOWSHIPS**

An endowment for the Frances C. Stribic Fellowship was created in the CU Foundation by a single gift from her dear friend and CU faculty colleague, Happy Martin, in honor of the many contributions of Professor Stribic in the CU Boulder Mathematics Department.

Fellowships are granted each semester from endowment income to two female graduate students chosen by the faculty for excellence in mathematical scholarship. To read more about the Stribic Fellowship, please see Math Endowments, p. 20.

Recent recipients of the Stribic Fellowship have been:

2001-2002 Suzanne Caulk and Emily Silverman

2002-2003 Emily Silverman and Christine Jerrits.

## **W. J. THRON FELLOWSHIPS**

In 1999 Professor Emeritus Wolfgang J. Thron established an endowment in the University of Colorado Foundation to finance fellowships for third- or fourth-year graduate students in the Mathematics Department based entirely on excellence in mathematical scholarship. The income from the endowment fund is about \$8000 per year. For more information about the Thron Endowment, please see Math Endowments, p. 20 and In Memoriam, p. 19.

Recent recipients of Thron Fellowships have been:

2000-2001 Adriana Gomez

2001-2002 Bret Simon

2002-2003 Chris Seaton.

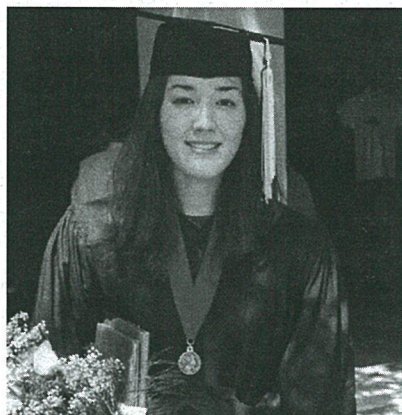
## **SLOW PITCH COLLOQUIUM**

The Slow Pitch Colloquium is a weekly seminar in which students, and occasionally profs, give talks on mathematics. The talks are geared to a general audience at the level of a beginning graduate student. The student chairs for the Slow Pitch assume a lot of responsibility since they must recruit speakers, publicize and moderate the talks and provide pre-colloquium refreshments. For AY 2001-2002 the student chair of the Slow Pitch Coll. was Noel Segullo and for 2002-2003 the co-chairs are Hugh Denoncourt and Veronika (Vera) Furst.

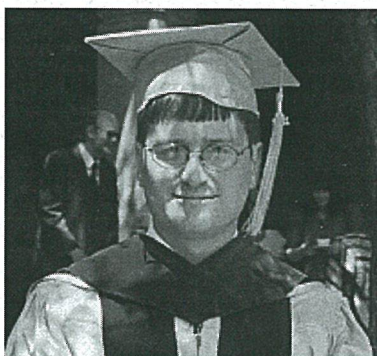
## May 2001 Graduation



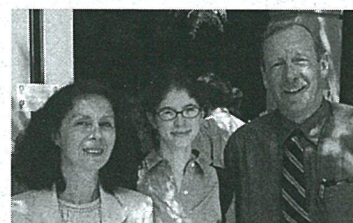
2001 graduates at May reception



Virginia Lorenz, BA, Magna Cum Laude



Joel Glenn, Ph.D.



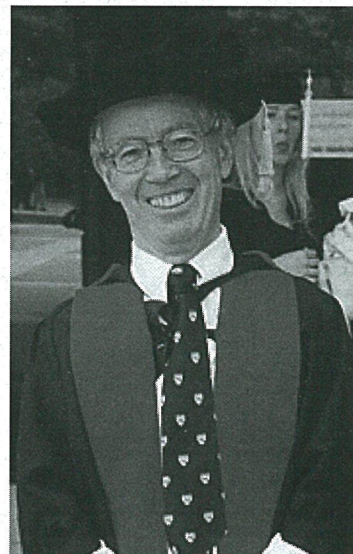
Juliane and Veronika (MA) Furst, with Professor Karl Gustafson



Martha Crabb, BA, with Distinction

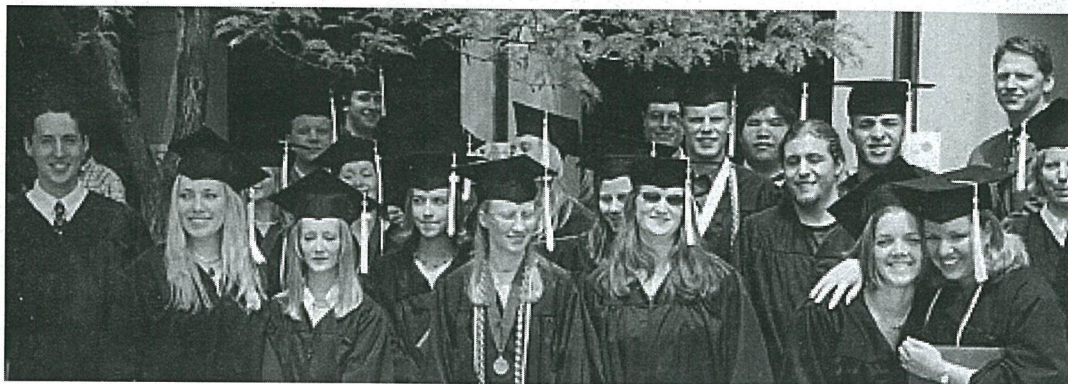
### ***Math Honor Graduates***

Math majors receiving honors at the May 11, 2001 graduation were: Martha Crabb -- with Distinction, Virginia Lorenz -- Magna Cum Laude, and Tim Schumacher -- with Distinction and Phi Beta Kappa.

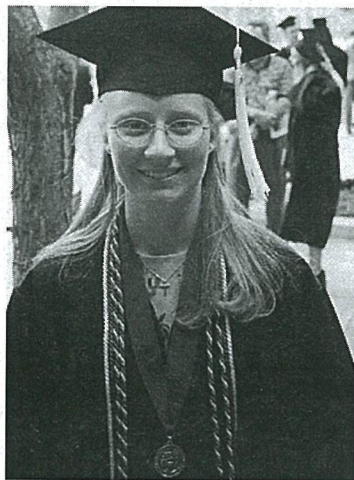


Professor P.D.T.A. Elliott, Chair, presiding over Mathematics Department reception for May 2001 graduation

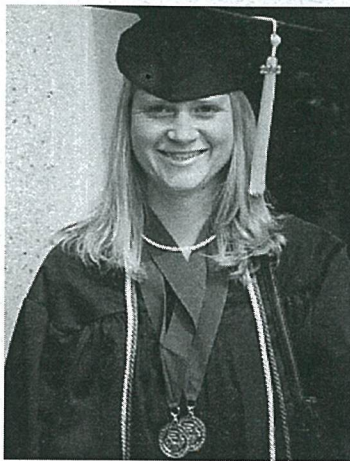
**May 2002 Graduation**



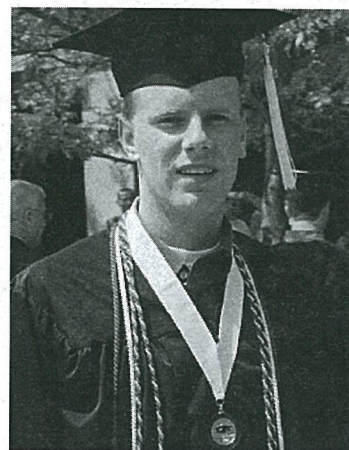
**2002 Graduates**



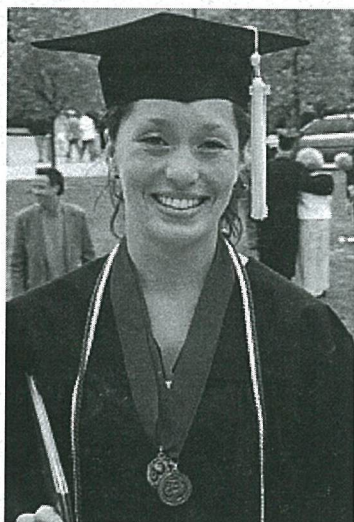
**Kelly Crane BA, Phi Beta Kappa, Golden Key Society, with Distinction**



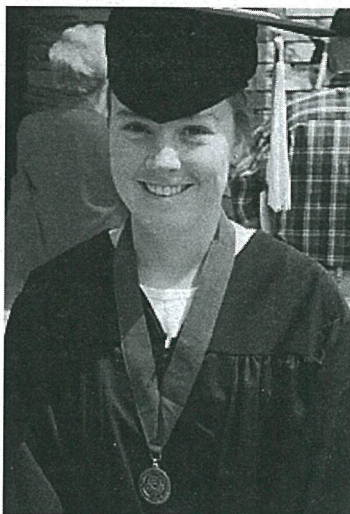
**Diana Hill BA, Summa Cum Laude, Phi Beta Kappa with Distinction**



**Gregory George BA, Phi Beta Kappa, Mortar Board, Golden Key Society**

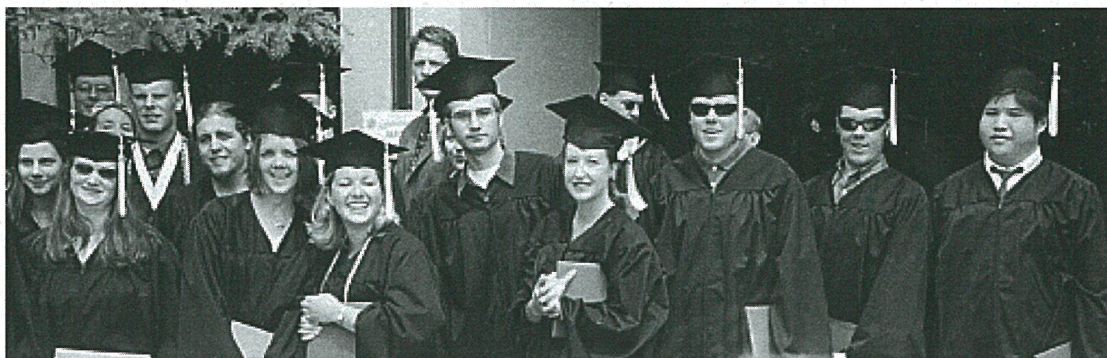


**Gadalia Weinberg BA, Summa Cum Laude, with Distinction**

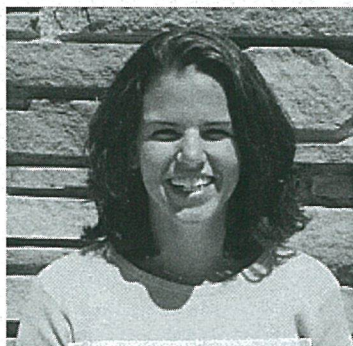


**Kim Brown BA, with Distinction**

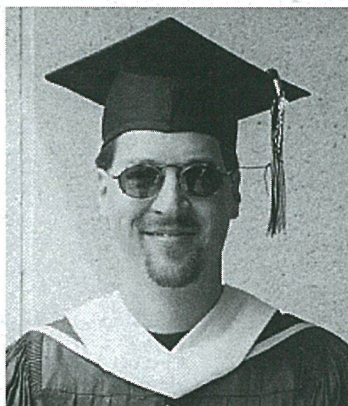
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2002 Graduates



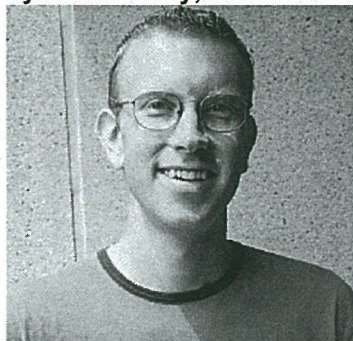
Lynn Schooley, MA



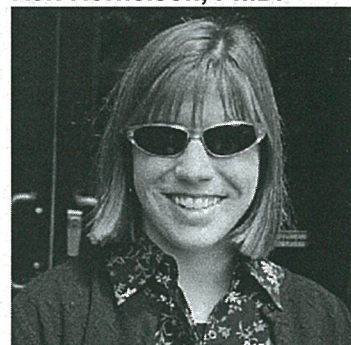
Craig McBride, MA



Keri Kornelson, Ph.D.



David Tuller, Ph.D.



Suzanne Caulk, Ph.D.

## GRADUATE DEGREES AWARDED

The following students received graduate degrees in Mathematics between December 2000 and August 2002. They are listed by NAME, degree and (faculty advisor).

### December 2000

Joel GLENN, Ph.D. (A. Ramsay)  
 Todd KANASTER, M.S. (L. Baggett)  
 Lynn SCHOOLEY, M.A. (R. Holley)

### May 2001

Jennifer HORNE, M.A. (J. Mycielski)  
 Christine JERRITTS, M.A. (R. Holley)  
 Matthew GARDNER, M.A. (E. Stade)  
 Elida NOSENZO, M.A. (R. Holley)  
 Craig TENNENHOUSE, M.A. (L. Baggett)

### August 2001

Keri KORNELSON, Ph.D. (L. Baggett)  
 Veronika FURST, M.A. (D. Grant)  
 Curtis CARAVONE, Ph.D. (L. Baggett)

### December 2001

Karen CHUNG, M.A.

### May 2002

Suzanne CAULK, Ph.D. (L. Walling)  
 Anne CERVINO, M.A. (J. Clelland)

### August 2002

Craig McBRIDE, M.A.  
 Douglas NORRIS, Ph.D. (R. K. Goodrich)  
 David TULLER, Ph.D. (W. Schmidt)

## FACULTY-STAFF SPOTLIGHTS

# Meet Our New Faculty Members

### ALEXANDER

**GOROKHOVSKY** became the newest faculty member of the CU-Boulder Mathematics Department in the fall of 2002.

He came to Colorado after spending three years as an Assistant Professor at the University of Michigan at Ann Arbor. His research area is Noncommutative Geometry in the sense of Alain Connes.

Gorokhovsky was born in Kiev, USSR, a city that is now the capital of Ukraine, an independent state. For two and a half years he was a student at the Moscow State University. When the family immigrated to Israel he became a student at the Technion, Haifa. After one year at Haifa he entered the Graduate School of the Ohio State University, receiving a Ph.D. in 1999 with advisor Professor H. Moscovici.

Gorokhovsky's wife, Julia, also has a Ph.D. in mathematics and computer programming skills. They have two children, 3.5 years and 15 months old. Among his non-mathematical interests are reading history-related books and outdoor activities with his family.

**JUDITH PACKER** rejoined the department in January 2002 after being away for awhile (ten years!) at the National University of Singapore.

Judy's research area is operator algebras, and more recently she has become intrigued by the relationship between operator algebras and the abstract theory of wavelets.

Judy received her Ph.D. from Harvard in 1982 under the direction of George Mackey. After spending an NSF postdoc at MSRI in Berkeley, she worked in Singapore from 1983 to 1989.



**Judy Packer with son, Aaron**

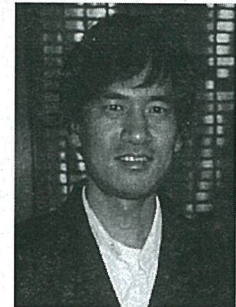
Judy was a member of the CU-Boulder Mathematics Department from fall 1989 until 1992 when she returned to Singapore. She is currently teaching Basic Real Analysis for graduate students



and Calculus 1 for undergraduate students. You can read more about Judy and her interests (math, movies and mystery books) at her home page in the department, <http://spot.Colorado.edu/~packer>.

Judy is married to James Jesudason, a sociologist who is a member of the Liberal Arts and International Studies Division of the Colorado School of Mines in Golden. They have two sons, Adam, 11 and Aaron, 9. All four members of the family are kept very busy by a recent addition, a golden retriever puppy named Rajah (a.k.a. "Bad Dog", "No!") who likes to chew.

**SIYE WU** joined the CU-Boulder mathematics faculty in fall 2001. He earned a B.S. degree from Fudan University, China in 1985 and a Ph.D. from the Massachusetts Institute of Technology in 1990. Before coming to the University of Colorado Wu held faculty



positions at the following universities: U. Adelaide (1996-2001), U. Cal., Santa Barbara (1999-2000) and Columbia U. (1990-1995). He has held half-year memberships at the following: Inst. for Advanced Study, Princeton; MSRI-Berkeley and the International Center for Theoretical Physics, Trieste, Italy. Wu's mathematical interests are differential geometry, topology and mathematical physics. In Boulder he has been very active in teaching, scholarly writing, public speaking and organizing scientific conferences. Some of his first activities were revising the graduate course: *Intro. to Differential Geometry* and organizing a weekly seminar on Analysis and Geometry. Wu was a co-organizer of a conference on Topics in Symplectic Analysis at CU-Boulder in October 2001 and a workshop on Non-commutative Geometry, K-theory and String Theory at the Institute for Geometry and Applications at Adelaide, Australia in January 2002. He is a co-editor of a book, *Geometric Analysis and Applications to Quantum Field Theory* published by Birkhauser Boston in 2002. Since joining our faculty, in addition to seminar talks, Wu has given a Kempner Colloquium, a Slow Pitch Colloquium and a conference talk in Boulder and conference talks at: Adelaide (Australia), MIT, an AMS meeting at U. California, Santa Barbara, the Fields Institute in Toronto and the International Congress of Mathematicians at Beijing. He was a member of the Scientific Committee for a conference on String Theory at Hangzhou, China in August 2002. In addition to mathematics, Siye Wu also enjoys classical music.



## Faculty in the news...

**LAWRENCE BAGGETT**, together with seven other mathematicians from six universities, has been awarded a Focused Research Grant from the National Science Foundation for research on Wavelets, Frames and Operator Theory. This three-year grant is designed to enable small groups of researchers working in a common area to collaborate by getting together for workshops and such. The grant includes support for graduate student research assistants. Larry's busy schedule has also included a book on Analysis of Functions of a Single Variable (to be published), meetings of the American Mathematical Society and invited lectures at two European conferences in summer 2002; one at Zakopane, Poland, the other at Istanbul, Turkey. In March 2002 Larry and Christy became first time grandparents with the birth of a grandson, Guthrie, born to daughter Alice.

### **RICHARD**

**CLELLAND** was one of four UCB faculty members to receive the 2002 Teacher Recognition Award at a ceremony in the Old Main chapel on May 7, 2002. Awards of \$1500 for each recipient are funded by the CU Parents Association and the CU Alumni Association's Director's Club. The award selection process is organized by students with help from the Alumni Association. The Teacher Recognition Awards have been distributed annually to faculty and teaching assistants since 1962.



**CARLA FARSI** has recently created a new course, Art and Mathematics, that allows non-mathematics majors to satisfy their A&S mathematics requirement. Listed as QRMS 101 and MATH 1012, the course introduces students to mathematical concepts through the study of visual arts. Topics covered include: symmetry groups of patterns, Shiori-like paper cuttings, mandalas and their symmetry groups, origamis, Euler characteristics and paper constructions of surfaces, perspective through window taping, golden ratio and computer art. Carla conducts hands-on workshops, practicum sessions and some group assignments. The textbook for the course is *Symmetry, Shape and Space* by L. Kinsey and T. Moore, KEY. In addition to the text Carla uses visual aids that can be found on the web. Carla has also been instrumental in organizing the Mathematics Department Art Exhibit (see

DEPARTMENTAL HIGHLIGHTS of this issue) and she continues to perform with the Ukrainian folk-dancing group called Postoley.

**KARL GUSTAFSON**, during the past two years, has given invited mathematical lectures at numerous international conferences and workshops throughout Western Europe and Scandinavia. His lecture topics have varied from the history of mathematics to numerical analysis to quantum mechanics. Lectures were given at: U. Bordeaux and Luminy, France; Neuchatel, Switzerland; Brussels, Belgium; Levico Terme, Italy; Delphi, Greece; Roskilde U., Copenhagen, Denmark; the Norwegian U. of Science and Technology in Trondheim, Norway; Uppsala U., Sweden; Vaxjo and Karskrona, Sweden; and U. Tampere, Finland. Professor Gustafson also presented a mathematical paper at the international conference on the "Analytic Theory of Continued Fractions, Orthogonal Functions, Approximation Theory and Related Topics" at Mesa State College, Grand Junction, Colorado in August 2001.

**KEITH KEARNES** has served the department as the organizer of the Kempner Mathematics Colloquium that meets each Monday afternoon and the annual series of DeLong Lectures. He has also been instrumental in organizing regular seminars on logic and foundations of mathematics and he gave technical assistance for the conference honoring retiring Professor Jan Mycielski.

**JAN MYCIELSKI** was honored at a three-day conference in June 2002 hosted by the Mathematics Department in honor of his 70<sup>th</sup> birthday and recent retirement. Seventeen speakers came to honor Jan from eleven states in the USA and from Japan, Hungary and the Czech Republic. They spoke on a wide range of topics including axiomatic set theory, paradoxical decompositions, graph theory and general algebra. Jan himself spoke on a theoretical (logical) view of applied mathematics.

Boulder participants included *graduate students*: Veronika Furst, Jennifer Horne, Erich McAlister, Allan Mann, Sheila Miller and Sid Smith; *alumnae/alumni*: Janet Barnett, Gary Brenner, Ed Hamada, Ralph McKenzie and Rene Schipperus; and *frequent visitors*: Ken Driessel, Siemion Fajtowicz, Bill Lampe and Mati Rubin.

The conference banquet at the Orchid Pavilion had about sixty in attendance including Jan and his wife, Emilia and their two children Marek and Marysia. There were many warm expressions of regard for Jan and all that he has given to us over the years. The banquet ended with the presentation to

(continued on p. 10)

## **Faculty** (continued from p. 9)

Jan of a beautiful glass plaque inscribed with a paradoxical decomposition of the hyperbolic plane (due jointly to Mycielski and Wagon).

The conference ended with a spirited hike to the Royal Arch on the last afternoon, with rain holding off until just after our return to town. The conference received support from the Mathematics Department and the College of Arts and Sciences. Organizers were Professors Richard Laver and Walter Taylor with technical assistance from Professor Keith Kearnes. The able assistance of Marysia Mycielski was essential to the success of the conference.

Conference speakers: Andreas Blass, U. Michigan; Ron Brown, U. Hawaii; Randall Dougherty, Ohio State U.; Siemion Fajtlowicz, U. Houston; Matthew Forman, U. California, Irvine; Andras Hajnal, Rutgers U.; Charles Holland, Bowling Green State U.; Joan Hutchinson, Macalester College; Thomas Jech, Czech Academy of Science; Miklos Laczkovich, Renyi Institute, Budapest; Dan Mauldin, U. North Texas; Ralph McKenzie, Vanderbilt U.; George McNulty, U. South Carolina; Kenzi Sato, Tamagawa U.; Stanislaw Swierczkowski, U. Colorado, Boulder; John Steel, U. California, Berkeley; Stan Wagon, Macalester College.

**ARLAN RAMSAY**, with Carla Farsi and former CU professor Gouliang Yu organized the West Coast Operator Algebra Symposium at CU-Boulder October 12-13, 2002. Lectures on topics of current interest were given by eight invited speakers. Financial support for the symposium was provided by the University of Colorado and the NSF. After 35 years at CU Arlan has announced his intent to retire in May 2003 but to continue research and writing in mathematics. He expects that the absence of committee meetings and paper grading will enhance the other aspects of academic life.

**ROBERT TUBBS** has been elected President-elect of the Rocky Mountain Section of the Mathematical Association of America. His two-year term as President begins in April 2003. Currently he is co-authoring (with Ulam Visiting Professor Edward Burger) a book on transcendental number theory to be published by Springer-Verlag.

**LYNNE WALLING** has just returned from two years in Washington, DC working as a Program Officer for the Algebra, Number Theory and Combinatorics Program within the Mathematical Sciences Division of NSF. Lynne reports that the experience was extremely interesting and educational. Not only did she learn more about current areas of mathematics and about how NSF operates, but she participated in the management

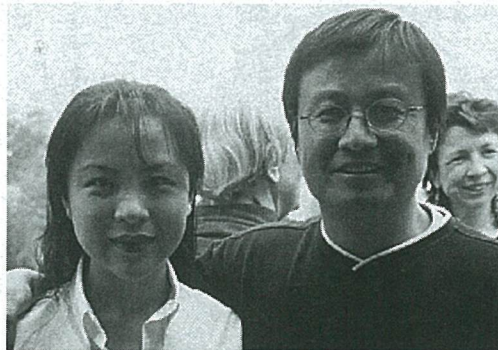
teams for several special programs such as VIGRE, CAREER AND FRG and was encouraged by the Division Director to look for opportunities to enhance and enrich our community's activities and experience.

Returning this year to CU-Boulder, Lynne has become chair of the department's Graduate Program and with the Graduate Committee has developed new ways to enhance our graduate students' educational experiences. Using the Thron and University Fellowship funds, they have created 5 summer research fellowships to begin in summer 2003. The 2003 Thron Fellowship (\$8000) will be awarded to Christofer Seaton and University Summer Research Fellowships (\$6400 each) will go to Christofer Catone, William Kirwin, John Massman and Erich McAlister.

**MARTY WALTER** has been invited to speak and to be a panelist on Mathematics for the Environment at the ANNUAL MEETING of the AMS/MAA, JANUARY 15-18, 2003 in Baltimore, MD. He has also been invited to give the Phi Beta Kappa Lecture at the University of the Redlands in April 2003 and to lecture at the Denver School of the Arts on his course, Mathematics for the Environment, taught each semester at CU Boulder. Walter reports that "Prospects for 'mainstream' publication of the book written from 1992 to 2002 remain problematical. The interdisciplinary nature of the book has so far been an obstacle to publication, as has been the chapter on media analysis, which unfortunately is truthful about the range of debate currently covered in the mainstream media outlets." For more information about Marty's book, Mathematics for the Environment, write to him at walter @ euclid.colorado.edu.

**BIN WANG** and his wife, Jesse, became first-time parents on November 9, 2002, with the arrival of Lawrence Wang, an energetic boy.

A baby shower and tea party was hosted in the home of Marty and Joy Walter in October and Bin's parents are traveling from China to Boulder to help celebrate the occasion.



**Bin Wang and wife, Jesse**

## RETIRED FACULTY

**WILLIAM B. JONES** was honored on the occasion of his 70th birthday by an international conference on the Analytic Theory of Continued Fractions, Orthogonal Functions, Approximation Theory and Related Topics held at Mesa State College, Grand Junction, CO in August 2001.

Organized by Catherine M. Bonan-Hamada and Phil Gustafson, with technical assistance from Ed Bonan-Hamada, the conference official title was "2001: A Mathematical Odyssey." The proceedings of the conference are to be published as a special issue of the *Rocky Mountain Journal of Mathematics*.

There were 27 participants representing six countries. Six of the participants were former Ph.D. students of Bill, all from the USA: Cathy Bonan-Hamada (1994), Sandy Clement-Cooper (1988, co-advised at CSU with Arne Magnus) Cathleen Craviotto (1995), David Field (1971), Brian Hagler (1997) and Walter M. (Doc) Reid (1978). Other participants: From BELGIUM-- Adhemar Bultheel, Walter Van Assche, Annie Cuyt and Brigitte Verdonk. BRAZIL: Eliana X. L. De Andrade and A. Sri Ranga. CANADA: Alan G. Law. GERMANY: Hans-Joachim Runckel. NORWAY: Lisa Lorentzen, Olav Njastad, Vigdis Petersen, Haakon Waadeland and Ragnhild J. Rensaa. USA: Phil Gustafson, Karl Gustafson (Phil's uncle), W. J. Thron, Peggy Magnus, Tom Pickett, Xin Li and L. J. (Jerry) Lange. Also attending the conference were Bill Jones, his wife Martha, daughter Beth Hadley Jones and families of other participants.

In retirement Bill continues to be Editor of *Prime Bits*, to do mathematical research, and he is currently writing a *Handbook of Continued Fractions* with Cathy Bonan-Hamada, Annie Cuyt, Vigdis Petersen, Haakon Waadeland and Brigitte Verdonk. He and Martha also enjoy music, reading, camping, hiking, biking and traveling.

**BURNETT C. MEYER** continues his long-time service to the American Math. Society by contributing reviews to the AMS *Mathematical Reviews*. In recent months he has experienced some illness but is looking forward to returning to the campus before long.

**JAN MYCIELSKI** recently retired from teaching but continues to be active in research and in directing the Ph.D. thesis of Sidney Smith. The thesis topic is an analog of the lattice of chapters of mathematics which has been studied by many authors. Smith is studying a lattice which is closer to mathematical theories as they are developed in mathematical practice than the original lattice of chapters.

**RICHARD ROTH**, recently retired, traveled in France (Paris) and The Netherlands during September 2002. He has recently accepted the position of secretary for the Retired Faculty Association.

**WOLFGANG SCHMIDT** retired from the University of Colorado in 2002 but continues to be active in mathematics. He will present a public lecture on "Mathematics and Art" at 5:00 p.m. January 31, 2003 in Math 100, the large lecture hall on the south side of the Mathematics Building.

**REBEKKA STRUIK** has become a representative of the Retired Faculty Association on the CU Personnel Committee that meets monthly on the CU-Denver Campus. She is active in the League of Women Voters and in Boulder recycling and environmental concerns.

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### Annual math major party

The annual math major party took place on October 24, 2001 in the Math Conference (Math 350). The party was organized by Professor Rick Clelland.

### Graduate Outreach Program

The Graduate Committee is now sponsoring our graduate students to give talks to undergraduates at neighboring institutions in order to give them valuable experience, make connections with mathematicians outside CU and help with our recruiting.

The Graduate Committee is also expanding and improving the description of our graduate program on our web pages. In the spring of 2003 a new graduate course will be offered on educational issues that will qualify students for a Teaching Certificate through the Graduate Teaching Certification Program. Finally the Graduate Committee is sponsoring a contest among graduate students to design a department coffee mug.

## STAFF NEWS

**ERIKA A. HERRERIA** joined the Mathematics Department in July 2002 as an Accounting Tech II. She is a CU alumna with a B.A. in Environmental Studies and a minor in Geology. In her role as an Accounting Technician, her primary responsibility is to make sure that all employees of the department are paid correctly and on time. She is also responsible for accounting, budgeting and purchasing for faculty and staff.



Before joining the Mathematics Department, Erika worked at the CU Recreation Center as a student employee and in the Geology Department as a lab assistant while working toward her undergraduate degree. Following graduation from CU she worked for several years as an environmental geologist with Tetra Tech EM Inc., an environment company in Denver. After working at many hazardous sites across the country, a company-wide layoff provided her with an opportunity to return to work at CU Boulder.

Erika enjoys traveling, reading, quilting, crocheting and going to movies. In February she returned from a month-long vacation in Spain.

### **MARYSIA**

**MYCIELSKI** joined the department in October 2000, first as a temporary staff person and soon after as the front desk Administrative Assistant III. Working at the front desk is a very important job since it means that she



is the first (and sometimes the only) person that people meet who contact the Mathematics Department either in person or by phone. Marysia is also responsible for scheduling all mathematics courses taught by our faculty and many other critical functions of the department.

She enjoys working with students, parents and the broader community outside the university as well as other members of the staff, faculty, graduate students and other student workers. Marysia particularly enjoys organizing receptions for special events such as graduations, retirements, DeLong lectures, etc.

Marysia received a B.S. degree in Human Development and Family Studies from Colorado State University in 1998. She enjoys time spent with her parents and brother, babysitting, pet sitting, being with friends and spending time in her new condominium. Chosen from many applicants to be part of the Boulder Campus Prospective Program, Marysia feels fortunate to have the opportunity to learn about the University of Colorado from a variety of campus groups and administrators, including the chancellor and vice-chancellor.

**ELIZABETH STIMMEL** retired from her position as technical typist for the Mathematics Department in May 2002, after 19 years of faithful and productive service. During these years she has typed a very large number (just slightly less than infinity) of exams, official letters and reports, research proposals, research papers and scholarly (technical) books. No mathematical formula or equation, regardless of the number of subscripts of subscripts of..., was beyond her ability to type in a clear and accurate form. Her presence in the department is greatly missed by many, not only for her skilled work but also for her friendly, cheerful nature.

For the department reception in honor of her retirement, Liz wrote the following: "I leave the Mathematics Department with mixed emotions. In the final analysis, I find myself agreeing with Jan (Mycielski): Mathematics is beautiful. I will not soon forget you all!"

For more than a decade Liz has had a vision of another vocational calling beyond the Mathematics Department. While working full-time she has completed the academic requirements for two degrees: a B.A. in psychology from CU Boulder in 1997 and an M.A. in Specialized Ministries from the Iliff School of Theology in Denver in May 2002. Liz is now prepared for a second career as a hospital or hospice chaplain.

While waiting for her call she is doing some part-time typing for the department. We wish for Liz the very best for the years ahead.

**CAROL DECKERT** will be celebrating her eighth year working for the Mathematics Department on February 6, 2003 and she says "It has been a wild ride." She loves being the Graduate Program Assistant, more often called the Graduate secretary. Most of her joy in this job comes from our students. Because of the length of time it takes to receive a graduate degree (PH.D., M.A. or M.S.) she gets to know our students very well. Carol finds it exciting to see students arrive with great hopes and then leave

(continued on p. 13)

## Staff (continued from p. 12)

with credentials that will give opportunities to fulfill their dreams.

Carol is planning to retire from the University of Colorado in July 2004. Her dream for retirement is to write, travel and garden but, realistically, she expects to do substitute teaching in the Boulder Valley School System.

**MARTHA SHERNICK.** While the primary mission of the department consists of teaching and mentoring our students and doing scholarly work, the office staff plays an essential supportive role that enables students and faculty to carry out these responsibilities.

Martha's job as Office Manager is to select and supervise staff members who will work together with each other, with faculty, with students and with parents in a friendly spirit of cooperation. Since she assumed this position in August 2000, Martha has brought an extraordinary amount of energy, enthusiasm and commitment to make the Math Dept. a vibrant and welcoming place for our students and faculty.

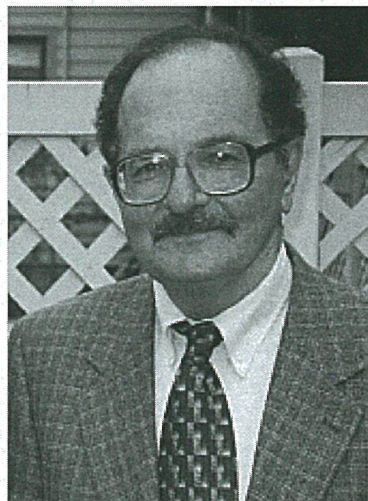
A new tradition introduced by Martha is live entertainment at retirement receptions making use of her background in literature and theater (see Retirement Receptions, pp. 13-15). She will also contribute a piece to the Mathematics Department Art Exhibit in January 2003.



**Retirement reception, April 2001, faculty, staff, students, family, friends**



**Jerry and Susan Malitz at the retirement reception in April 2001. Professor Malitz was a member of the faculty from 1969 to 2001.**



**Richard Roth at the April 2001 retirement reception. Professor Roth was a member of the faculty from 1963 to 2001.**



**Martha and Marysia**



**Peter Elliott accompanying the chorus**



**New Tradition Chorus: John Massman, Liz Stimmel, Marysia Mycielski, Martha Shernick, Carol Deckert and Carrie Muir. The MC, Michael Shernick, is not shown.**

## Retirement receptions: a new tradition

What began as a good-natured joke resulted in the establishment of a new tradition for Mathematics Department retirement receptions. For over two years, faculty member Jerry Malitz had jokingly requested that “dancing girls” be invited to faculty meetings and events. In response to his persistent requests for entertainment at such functions, office manager Martha Shernick decided to arrange a presentation by the staff in honor of that year’s retirees Jan Mycielski, Richard Roth, and Jerry Malitz.

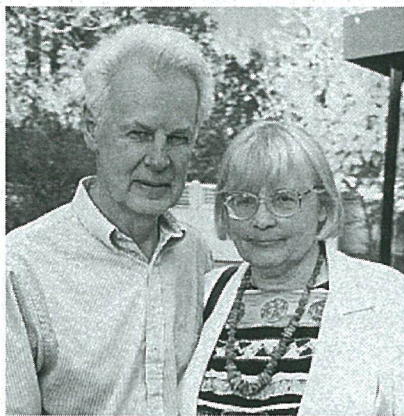
Shernick chose the song, “Three Little Maids” from Gilbert and Sullivan’s “The Mikado,” altering the lyrics appropriately. She then persuaded her staff to rehearse in secret in preparation for the reception, and the Math Department Chair, Peter Elliott, agreed to arrange the music and serve as accompanist for

final rehearsals and the performance at Koenig Alumni Center April 16. Michael Shernick served as emcee for the event. The chorus line made their entrance wearing silk butterflies in their hair and carried homemade paper fans as props. The performance was a surprisingly successful addition to the format for the evening, and a new tradition was born.

For the spring 2002 retirement reception, staff were joined by Undergraduate Advisor Carrie Muir and graduate student John Massman and they performed selections from “Damn Yankees,” and the group was again accompanied by Peter Elliott on piano, with Michael Shernick as emcee and member of the chorus. Please see photos of the performers and of the retirees in 2001 and 2002.



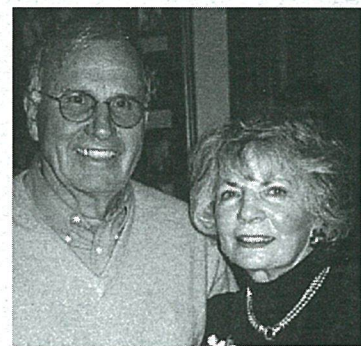
**Retirement reception, May 2002, faculty, staff, students, family and friends**



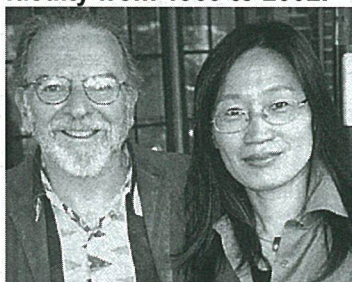
**Jan and Emelia Mycielski at retirement reception in May 2002. Professor Mycielski was a member of the faculty from 1969 to 2002.**



**Elizabeth Stimmel was a member of the staff from 1983 to 2002.**



**Jerrold and Charlene Bebernes at reception for retirement from Applied Math Department. Jerry was a CU faculty member from 1962 to 2002 and he served as chair of the Mathematics Department from 1976 to 1978**



**Jay and Anne Wolkowsky at retirement reception in May 2002. Professor Wolkowsky was a member of the faculty from 1967 to 2002.**



**Presentation to Liz Stimmel by Peter Elliott, Math Department chair.**

## ALUMNAE/ALUMNI NEWS

**DAVID P. AMBROSE** (M.A. 1964) writes: "I last taught mathematics at this university (National University of Lesotho, Africa) in 1989. At that point a former student became head of the department, and I thought I might be more useful doing other things. I have subsequently been attached to one of the university's research institutes, but I have not been doing mathematical research, just occasionally using some mathematics in other areas such as demography and cartography. The last 12 years have been rewarding and have resulted in a number of Lesotho-relevant books (some written or edited in collaboration with others) in areas as diverse as paleontology, ornithology, history, water resources, environmental law and biodiversity. The most difficult job I undertook was the compilation of the Lesotho 1:250,000 map, a challenging task about which a whole book could be (but has not been) written."

David also described the "Scourge of HIV/AIDS, which in southern Africa now affects about one-third of all adults. (And also many children infected before birth.) ...much can be done if funds are available. The Friends will channel them to the hospital. If you can help, please send cheques made out to St. Joseph's Hospital Appeal Fund to David Ambrose (Treasurer) at our address (National University of Lesotho, PO Roma 180, Lesotho, Southern Africa). Our banks will not accept cheques of less than L100 or \$100, but smaller amounts will still be welcome. In this case make cheques out to David personally. He will then bank them and credit the Friends with the equivalent. Those who prefer to send funds straight to the account can do so by telegraphic transfer. The account (name as above) is at Lesotho Bank (1999) and the a/c number has the very long 13-digit number 01400 20014901."

**JOSEPH C. BELL** (B.A. 1962) communicated the following message in January 2001 to the late Professor Emeritus W. J. Thron (Please see IN MEMORIAM). "Dear Professor Thron: I recently saw mention of your activities on behalf of the University and the Mathematics Department (in Prime Bits). One of my significant memories at the University was your class in analysis, but perhaps even more important was the example you set as a person and a teacher. That was over 40 years ago now, but I just wanted to say thank you once again for having helped to make my experience at the University the special time that it was." Joseph Bell is a partner in the law firm Hogan & Hartson L.L.P., Columbia Square, 555 Thirteenth Street, NW, Washington, DC 20004-1109.

**JANET H. BARNETT** (M.A. 1988, Ph.D. 1990) was recently elected Secretary/Treasurer/Newsletter Editor for 2002-2005 of the Rocky Mountain Section of the Mathematical Association of America. She is a member of the mathematics faculty at the University of Southern Colorado in Pueblo.

**JAMES BURLING** (Ph.D. 1965) retired in 1995 from the Mathematics Department at the SUNY College at Oswego, NY but has continued to teach each spring semester until 2001. He writes that "I thought I would stay only a couple of years at Oswego, and suddenly I found myself retiring." Dr. Burling obtained a B.A. from Grinnell College and an M.A. from SUNY at Albany. He resides at 2301 County Road 7, Oswego, NY 13126.

**SUZANNE CAULK** (M.A. 1997, Ph.D. 2002) and **STEPHEN CAULK** (M.A. 1998) are parents of a son, Caleb (6 lbs, 15 ounces, 19.75 in.), born April 13, 2002. Stephen is working as an actuary.

**JONATHAN P. DOWLING** (M.S. Applied Math. 1981, Ph.D. Math. Physics 1988) is a principle scientist and supervisor in the Quantum Computing Technologies Group at the Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA. Dr. Dowling has received a Scientific Fellowship from the Italian Ministry of Foreign Affairs and a U.S. Army Achievement Award. He is a Fellow of the Institute of Physics. Memories of CU include bad jokes he would tell in Dave Rearick's number theory class and fun he had TA-ing for Kent Goodrich. Rearick was his M.S. thesis advisor and Asim Baruk his Ph.D advisor. Mail stop: 126-347, 4800 Oak Grove Drive, Pasadena, CA 91109.



**DAVE EBERLY** (Ph.D. 1984) returned to the CU campus for the retirement of his thesis advisor, Jerry Bebernes. Appearing with Dave is his wife, Shelly, and former CU math faculty member Gary Meisters.



**GEORGE F. ESTABROOK** (M.A. 1968) wrote that he is in his 31<sup>st</sup> year as a Professor of Botany at the University of Michigan in Ann Arbor. He enclosed a recent reprint of his research involving botany and discrete mathematics. His major professor at CU was Stan Ulam. e-mail: [Estabrook@umich.edu](mailto:Estabrook@umich.edu).

**ROBERT E. GAINES** (Ph.D. 1967) died April 26, 2001 in Fort Collins, CO. He received bachelor's and master's degrees in mathematics from the University of Illinois and a Ph.D. in applied mathematics in 1967 from CU-Boulder under the direction of Professor Jerry Bebernes. He began teaching at Colorado State University (CSU) in 1967, served as Chair of the Mathematics Department for 20 years and later became vice-provost for Faculty Affairs. He was a Visiting Professor at the Wharton School of Economics in fall 1994 and at The Catholic University of Leuven, Belgium in spring 1983 and in fall 1995. Bob received a Distinguished Service Award from CSU in 1981 as an outstanding department chair.

**DOUG GARNETT** (B.A. 1982 with Distinction) was a recipient of the Van Ek Award, Phi Beta Kappa and 2<sup>nd</sup> place in the Putnam competition. In 1998 he founded Atomic Direct, LLC, a marketing company that specializes in introductions of new consumer goods and high tech products and in creating "direct response television" advertising. Doug wrote "OK, not sure how I got from 2 math degrees to marketing and advertising, but..." He remembers three CU math professors: Kent Goodrich (mentor for the Van Ek Award), Edie Stevenson and Jack Hodges. In 1994 he married Judith Quinn Garnett, an artist and graphic designer. With their two children they live at 8875 SW Hazelvern Way, Portland, OR 97233.

**GARY HACKER** (B.A. 1963) recalls Professor William E. Briggs as his major professor at CU. His reminiscences of Boulder are Tulagi's and The Sink. Gary obtained an M.A. degree from the University of Denver and a J.D. from Baylor University. He is currently practicing law in Abilene, Texas and enjoying skiing and golf in his spare time. He resides at 200 Steamboat Drive, Tuscola, TX 79562.

**KIM KOKKONEN** (B.A. 1973) is currently working part-time as a computer programmer while also working on a Ph.D. dissertation ("Database Retrieval of Non-homogeneous Textured Images") in Computer Science at CU-Colorado Springs. Kim and wife Anita live at 660 Winding Hills Rd., Monument, CO 80132.

**KEN HURVITZ** (M.S. Applied Math 1968) is in his seventh year as a mathematics teacher at Calabasas High School in Calabasas, CA, following 25 years in

the software industry. His B.S. in Math is from Tulane and M.S. in Computer Science from the W. Coast U. Ken recalls great enjoyment of Dr. Rearick's classes and fun renting with 3 other grad. students Dr. Monk's home while he was on leave. Address: 2993 E. Ave. de Los Arboles, Thousand Oaks, CA 91362.

**RALPH MCKENZIE** (B.A. 1963, Ph.D. 1966) RECENTLY HONORED BY AN INTERNATIONAL CONFERENCE. Ralph McKenzie obtained his Ph.D. in our Mathematics Department in 1966 under the direction of Professor Donald Monk. Today he is the unquestioned world leader in the field of general algebra and is possibly the most distinguished alumnus of this department. Moreover, he was the thesis advisor of two current faculty members of our department: Professors Richard Laver and Keith Kearnes. Ralph retired from a professorship at Berkeley in about 1992 and has since been a Distinguished Professor of Mathematics at Vanderbilt University in Nashville, Tennessee. His lifetime achievements -- and the specific occasion of his sixtieth birthday -- were recognized by a conference in Ralph's honor held at Vanderbilt during the third week of May 2002. There were five days of talks, often in three parallel sessions, and speakers came from around the world. For more detailed information see: <http://atlas.math.vanderbilt.edu/~algcon02/>. The Boulder Mathematics Department was represented at the conference by four professors (Kearnes, Laver, Monk and Taylor), by three graduate students (Luz Fernandez, Alan Mann and Matthew Nickodemus) and by one alumna (Jennifer Hyndman).

**STEPHEN N. PATZMAN** (B.A. 1964) is a Vice President and Corporate Actuary at USAA Life Insurance Company, San Antonio, TX and a Fellow of the Society of Actuaries. **NOTICE:** Stephen is interested in knowing of other CU alums who have become Actuaries and gotten their FSA. Address: 10111 N. Manton Lane, San Antonio, TX 78213-1932.

**ROGER A. PIELKE, JR.** (B.A. 1990) is currently a scientist at the National Center for Atmospheric Research (NCAR) at Boulder, CO working in the Environmental and Societal Impacts Group. With a math B.A. and a Ph.D. in Political Science from CU, he focuses his research on the relation of scientific information and public and private sector decision making. He is a recipient of the Sigma Xi Distinguished Lectureship Award and currently chairs the Amer. Meteorological Soc. committee on Societal Impacts and serves on the Science Steering Committee of the World Meteorological Organization's World Weather Research Program.

(continued on p. 18)

## **Pielke (continued from p. 17)**

He is a co-author/co-editor of three books, most recently; *Prediction: Decision Making and the Future of Nature* (Island Press, 2000).

E-mail: rogerp@ucar.edu.

**BILLY F. REYNOLDS, JR.** (B.A. 1985) is currently the Director of Integration Development at the Dynamic Information Systems Corporation in Boulder, CO. He wrote: "Our family has recently moved to the western slope to Delta County where we are enjoying open country living. I'm splitting my time telecommuting and in the office in Boulder." Memories of CU-Boulder are nice weather, beautiful campus, tough classes (yet challenging in the good way!), great friends! Major professor: Burnett Meyer. Address: 1230 NW Cedar Avenue, Cedaredge, CO 81413.

**DAVID M. RODVOLD** (B.A. 1982) and (M.B.S. 1987 at UCCS) is currently a Senior Associate with Booz, Allen and Hamilton in Colorado Springs. He obtained a Doctor of Computer Science degree from Colorado Technical University, Colorado Springs in 2000. Dr. Rodvold married Stephany Kozak Rodvold (B.S. Math, UCCS 1985) and they have one son. He remembers Professor John Hodges as a mentor and the gorgeous campus and setting and

excellent libraries. Favorite math courses were calculus, linear algebra and non-Euclidian geometry. Least favorite math course was differential equations. Address: 6124 Montarbor Drive, Colorado Springs, CO 80918-4870.

**PAMELA K. SCHWERER** (B.A. 1992) is a mathematics teacher in the Boulder Valley Schools at Broomfield High School. She recently started an Advanced Placement Statistics course at BHS. Pamela wrote: "Still single and still looking." Memories of CU-Boulder: "Started out as a Psych. major but it was my Psych. statistics class that got me interested in mathematics. I never had Jack Hodges as a teacher, but I will never forget his encouragement and positive attitude when I went to his office for help. I hope I can have the same impact on students, inside and outside the classroom. Thanks Jack...enjoy retirement!" Address: 1099-A Milo Circle, Lafayette, CO 80026.

**RONALD O. WILLIAMS** (B.S. Applied Math 1964) wrote: "I am saddened to learn of the passing of Ben Kriegh. He was one of my Advanced Calculus professors at U C Denver and one of three Senior Seminar professors of mine at U C Boulder." Address: 7504 W. Quarto Ave., Littleton, CO 80128-4372.

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## **CU Boulder to host 2003 AMS, MAA meetings**

The Boulder campus of the University of Colorado will host a regional meeting of the **American Mathematical Society** October 2-4, 2003.

Several local faculty members will be chairing sessions at this conference including: Keith Kearnes, Agnes Szendrei and Walter Taylor in *Logic/Algebra*, David Grant in *Applications of Number Theory and Algebraic Geometry to Coding*, Jeanne Clelland in *Geometric Methods in Partial Differential Equations*

and Larry Baggett and Judy Packer in *Groupoids in Analysis and Geometry*.

The annual Math Fest of the **Mathematical Association of America** will be held on the Boulder campus from noon July 30 through August 2, 2003.

Two local faculty members will be chairing sessions: Carla Farsi will chair a session on *Mathematics and Art* and Marty Walter will chair one on *Mathematics and the Environment*.

## **Edward Burger returns to CU as Ulam visiting professor**

**EDWARD BURGER**, Professor of Mathematics at Williams College, has returned to our department for a third visit, this time as the Ulam Visiting Professor. Burger works in diophantine analysis and is the author of more than 25 articles and 7 books including CD-ROM video texts. He has received many honors including: the 2001-2003 George Polya Lecturer for the MAA; the 2001 Robert W. Hamilton Book Award; the 2001 Cecil and Ida Green Honors Professorship at Texas Christian U.; the 2001 Genevieve W. Gore Distinguished Resident at Westminster College; the 2001 MAA Deborah and

Franklin Tepper Haimo National Award for Distinguished College or University Teaching of Mathematics. Burger is an Associate Editor of the American Mathematical Monthly. During his sabbatical year at CU-Boulder he is working on several book projects, continuing his research in number theory and teaching calculus and pre-calculus to nearly 300 students.

## IN MEMORIAM

**WATSON BRYAN FULKS**, a retired member of the CU-Boulder Mathematics Department, died on December 22, 2001 in Las Angeles after a long struggle with cancer.

Watson was born in White County, Arkansas on January 24, 1919, the son of Bryan Fulks and Nora Langford Fulks. He married Gloria Besser on August 7, 1943.

Fulks earned a B.A. degree from Arkansas State Teachers College, an M.A. from the University of Arkansas and a Ph.D. from the University of Minnesota in 1949

From 1949 to 1950 he worked under the direction of A. Erdelyi as a Research Assistant on the Bateman Manuscript Project that produced the three volume treatise on *Higher Transcendental Functions*. Fulks

left a position at Oregon State University in 1963 to become a Professor of Applied Mathematics at the University of Colorado at Boulder. He brought with him a student, R. B. Guenther (Ph.D. 1964), who received the first Ph.D. in Applied Mathematics from CU. He served as an interim chairman of the Applied Mathematics Department in 1965 and of the newly merged Department of Mathematics in fall 1966.

Watson Fulks authored a number of mathematical textbooks for undergraduate and graduate students including: *Advanced Calculus* (1<sup>st</sup> ed. 1961 and 3<sup>rd</sup> ed. 1978), *Fourier Analysis* (with Larry Baggett, 1979) and *Complex Variables* (1993).

Watson was a popular but demanding teacher drawing students from many disciplines into his classes.

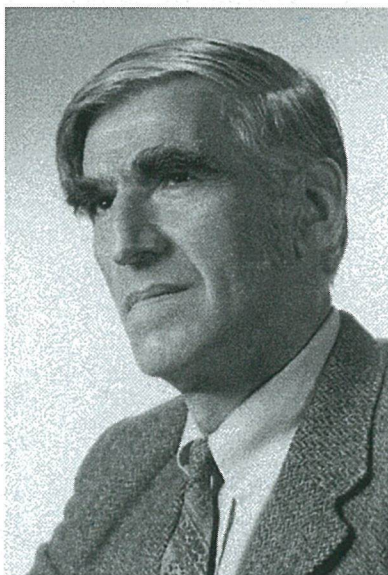
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**WOLFGANG JOSEPH THRON** (or "Wolf" to his friends) died of emphysema at his home in Boulder on August 21, 2001.

Wolf was a mathematical scholar, educator and researcher in classical analysis, topology and history of mathematics. For more than half a century he served as an advisor, mentor and role model for students and colleagues and he devoted much of his life promoting cooperation and mathematical collaboration among faculties and students in the U.S., Germany, India, Norway and the Philippines.

Wolf was the younger of two children of Ludwig and Annemarie Joseph Thron, born on August 17, 1918 in Ribnitz, Germany. Due to political events in Germany, he studied at the ETH in Zurich in the summer of 1936 before enrolling at Princeton in the fall. He received an A.B. degree after three years. On weekends at Princeton he encountered many scientists and mathematicians in the home of his uncle, Hermann Weyl, and aunt, Helene Joseph Weyl.

A teaching fellowship brought him to Washington State University at Pullman for one year where, away from the ivory tower atmosphere of Princeton, he made two important discoveries: he liked America and he liked teaching. Wolf enrolled as a graduate student at Rice Institute in 1940 and received a Ph.D. three years later. A three-year instructorship at Harvard was interrupted in 1944 by a call from Uncle Sam and Wolf served in the U.S. Army until the end of the war. One advantage of being drafted was becoming eligible for U.S. citizenship which he received shortly after induction.



In 1946 Wolf began an eight-year period on the mathematics faculty of Washington University in St. Louis, during which time he published his first mathematical text, *The Theory of Functions of a Complex Variable*, a concise but self-contained treatment of the subject.

Wolf and Ann Lukach met and became friends at the 1949 work camp orientation in New York and subsequent work camps. They were married in 1953, the day after Ann completed her M.D. at New York University.

Wolf Thron's long and productive career at the University of Colorado began in 1954 and, although formal retirement was taken in 1985, he continued lecturing, collaborating and publishing mathematical research until the late 1990's when health problems made this no longer possible. In the Colorado years he authored two books: *Topological Structures* in 1966 and *Continued Fractions: Analytic Theory and Applications* (with W. B. Jones) in 1980. He served as chair of the department from 1972 to 1974 and was the thesis advisor for 21 Ph. D. students.

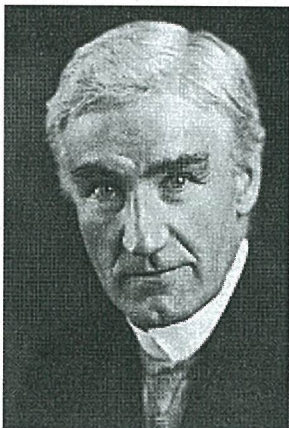
In 1980 W. J. Thron was elected to the Royal Norwegian Society for Science and Letters for his outstanding creative research in mathematics and for his inspiration for others to do creative work. At his retirement in 1985 he was awarded the University of Colorado Medal for outstanding contributions to the University and for his distinguished career as a scholar, teacher and research mathematician. In recognition of his leadership role in developing the

# MATHEMATICS DEPARTMENT ENDOWMENTS

## **IRA M. DELONG LECTURES, UNDERGRADUATE PRIZES**

The DeLong Lecture Series and undergraduate prizes are funded by an endowment given to the CU Mathematics Department by Professor Ira M. DeLong, who came to the university in 1888 at the age of 33.

Professor DeLong essentially became the Mathematics Department by teaching not only the college subjects but also the preparatory courses as well. He also became a prominent citizen of the community of Boulder: president of the Mercantile Bank and Trust Company, organizer of the Colorado Education Association and president of a commission that gave Boulder the city manager form of government in 1917.



**Ira M. DeLong**

After his death in 1942, it was decided that the bequest he made to the Mathematics Department would accumulate interest until income became available to fund DeLong prizes for undergraduate participants in the Putnam Competition and outstanding mathematicians to present the DeLong Lectures each year. The first DeLong lecture was given in 1963 by Paul Halmos and the list of subsequent speakers is almost a "who's who" in mathematics.

Contributions to this endowment can be made by returning the enclosed form: Mathematics Department 2002 Annual Fund.

### **Thron (continued from p. 19)**

analytic theory of continued fractions and related topics in classical analysis, an international conference was held at CU-Boulder to celebrate his 70<sup>th</sup> birthday in 1988 and another for his 80<sup>th</sup> in 1998.

In 1999 Wolf made a gift to the University of Colorado Foundation which established the W. J. Thron Mathematics Fellowship awarded each year to an outstanding graduate student in the Mathematics Department. With this gift he expressed his faith in and commitment to the University of Colorado - its faculty and its students.

## **BURTON W. JONES TEACHING EXCELLENCE AWARD**

Burton W. Jones was a graduate of Grinnell College and received his Ph.D. at the University of Chicago in 1928. He taught in the Mathematics Department at Cornell University from 1930 until his appointment at the University of Colorado where he served as chairman of the Mathematics Department from 1949 to 1963.

Under his leadership the department grew to a position of national leadership. He served as chairman again in the spring of 1967.

Professor Jones received the Distinguished Service Award from the Mathematical Association of America (MAA) in 1971 and an honorary doctorate from Grinnell college in 1973. In 1998 the Rocky Mountain Section of the MAA re-named its distinguished teaching award the Burton W. Jones Teaching Excellence Award. The endowment of the Burton W. Jones Teaching Excellence Award was established with the CU Foundation in 1984 by gifts from the mathematics faculty in memory of our distinguished colleague.

Contributions to this fund can be made by returning the enclosed form: Mathematics Department 2002 Annual Fund.



**Aubrey Kempner and Burton Jones in  
Kempner's home, 1952**

## **KEMPNER MATHEMATICS COLLOQUIUM**

The Kempner Colloquium was initiated in 1963 in honor of Aubrey J. Kempner who served as Head of the UCB Mathematics Department from 1925 until his retirement in 1949. Professor Kempner gave the inaugural lecture for the colloquium series on reminiscences of the University of Goettingen where he received a Ph.D degree in 1911 under Edmund Landau.

(continued on p. 21)

## **Kempner (continued from p. 20)**

Kempner continued to take an active interest in the department until his death in 1973.

Currently the endowment fund will provide income of about \$2000 per year. While this is a great help to the department, much more is needed to support a Weekly colloquium. Thus the second phase of the Kempner Colloquium Endowment Fund drive is to raise another \$50,000 by gifts from faculty, alumnae/alumni and friends of the department. To help us meet this challenging goal please send a tax deductible gift to the CU Foundation for the Kempner Mathematics Colloquium Endowment Fund. See the enclosed form for the Mathematics Department 2002 Annual Fund.

Your help can make a difference. Please join in building this endowment for the future of the University of Colorado.

## **ADELE V. LEONHARDY MEMORIAL SCHOLARSHIPS**

Please see the related article on page 1. Contributions to this fund can be made by returning the enclosed form: Mathematics Department 2002 Annual Fund.

## **WILLIAM N. REINHARDT MEMORIAL LECTURES**

The first annual William N. Reinhardt Memorial Lecture was given on September 10, 2001 by Professor Vann McGee from the Philosophy Department at the Massachusetts Institute of Technology on the subject, "Private Meanings, Shared Truths," in which a distinguished logician takes on the problem of "peculiar egocentrism of semantics."

Professor Reinhardt was a member of the CU Boulder mathematics faculty from 1967 until his untimely death on June 22, 1998 at age 59. Professor Reinhardt was interested in the foundation and philosophy of mathematics and he sometimes taught courses in the CU Philosophy Department.

An endowment for the Reinhardt lecture series was established in the CU Foundation by gifts from his family, colleagues and friends. Further contributions can be made to this endowment by returning the enclosed form: Mathematics Department 2002 Annual Fund.

## **FRANCES C. STRIBIC FELLOWSHIPS**

Frances Stribic was born in Nebraska and grew up in Wahoo, a small town north of Lincoln. She received bachelor's and master's degrees from the University of Nebraska in 1920 and 1921 and

completed all requirements for a Ph.D. except for a thesis.

She served as chair of the Department of Mathematics and Physics at Buena Vista College at Storm Lake, Iowa and then on the mathematics faculty at Wilson College in Pennsylvania. After recovering from an illness for two years, she accepted an Instructorship in 1926 from Professor Aubrey Kempner in the CU Mathematics Department faculty. Finding a need for someone in the department to teach statistics, she prepared herself in that subject and not only taught it for a number of years but also did research applications of statistics on joint projects with Professor Dorothy (Happy) Martin in the Psychology Department.

Professor Stribic retired in 1965 because of health. She was said to have been an outstanding teacher, well respected by her students and faculty colleagues.

The Stribic Scholarship Endowment fund was established in 1990 by her long-time friend and colleague, Dorothy Martin. Contributions to this fund can be made by returning the enclosed form: Mathematics Department 2002 Annual Fund.

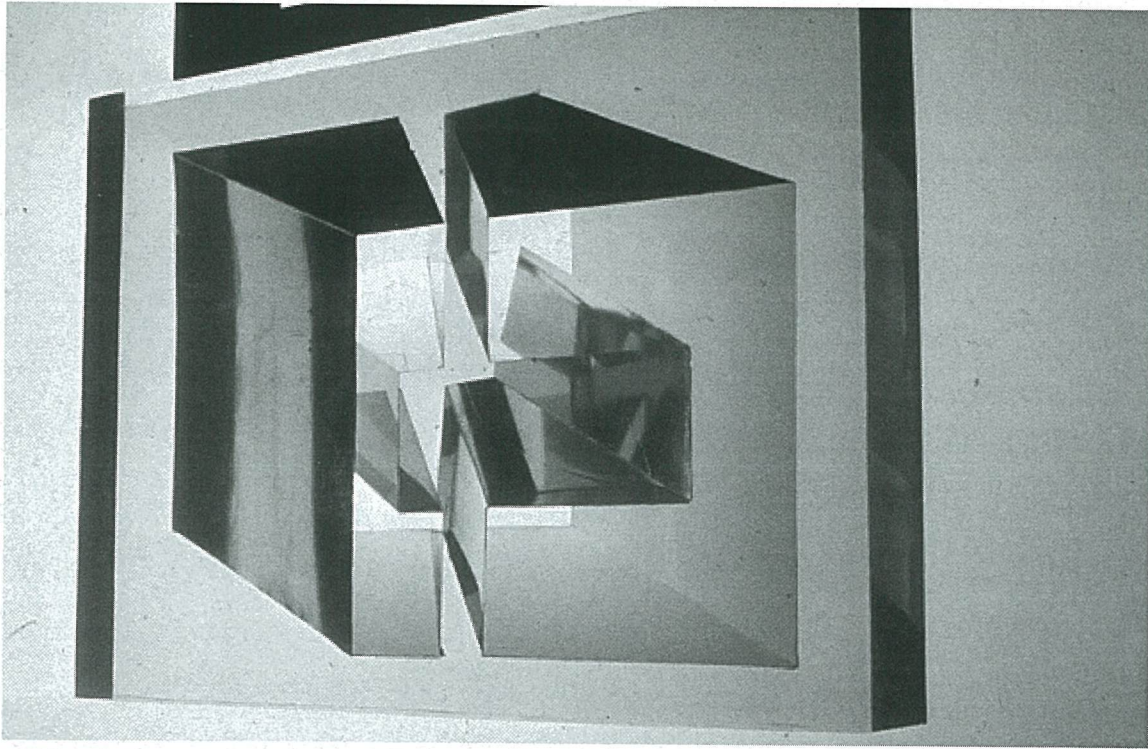


**Frances Stribic and Dorothy Martin**

## **WOLFGANG J. THRON MATHEMATICS FELLOWSHIP**

Professor Emeritus W. J. Thron made a gift to the CU Foundation to establish the Thron Mathematics Fellowship Endowment Fund in 1999. Please see IN MEMORIAM for more information about the late W. J. Thron. Contributions to the Thron Fellowship Endowment can be made by returning the enclosed form: Mathematics Department 2002 Annual Fund.

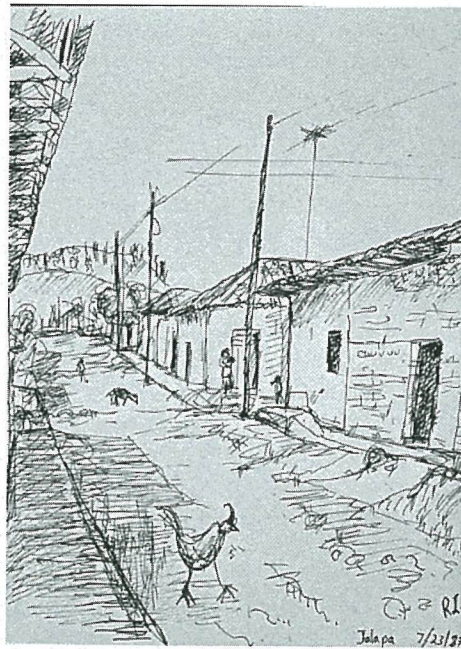
**Artwork to be featured in the Math Department Art Exhibit**



**"Untitled," by Jerry Malitz**



**"Roving Triangles," by Carla Farsi**



**"Jalapa, Nicaragua," Boulder's Friendship City, by Richard Roth**

# Letter from the editor

Fall 2002

Dear Alumna/Alumnus,

With this letter you are receiving the sixth issue of the Math Department newsletter, Prime Bits, the first one having appeared in 1990. From the time I began teaching at CU Boulder in 1963 until my retirement in 1996, I felt a strong relationship among my faculty colleagues, our students, our office staff and our alumnae/alumni family; a relationship based on a common thirst for knowledge and a strong desire to pass our knowledge and wisdom on to future generations of students.

Although I am not paid to write Prime Bits, it is for me a very rewarding activity. This is mainly due to the interesting variety of responses received from you and partly because it keeps all of us in touch with the wonderful things happening now in the CU Boulder Mathematics Department. I hope that this issue of Prime Bits will give you a sense of life in the mathematics community at your alma mater as it is today.

I urge you to give your support to the University of Colorado by sharing with us some news about your life and work, some memories from your time here on the Boulder campus and some financial support to help the Math Department carry out its mission in a time when funds for education are very limited.

Please complete the enclosed form, Staying in Touch, with news about yourself and return it to me, the Prime Bits Editor, at the Department of Mathematics, University of Colorado, Boulder, CO 80309-0395. I would also be very grateful if you would fill out the enclosed Mathematics Department 2002 Annual Fund Questionnaire and return it to the CU Foundation.

Sincerely yours,

William B.  
Professor Emeritus

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## Contributors to the Mathematics Department 2000 Annual Fund

### ALUMNA/ALUMNUS (degree) State or country

David Ambrose (M.A. 1964) Lesotho, S. Africa  
Nancy S. Anderson (B.A. 1952) Virginia  
Timothy G. Binkley (B.A. 1965, M.A. 1966) New York  
Catherine Bonan-Hamada (Ph.D. 1994) Colorado  
Barbara B. Brown (B.A. 1953) Idaho  
Robert A. Burkhardt (B.A. 1987) Maryland  
James P. Burling (Ph.D. 1965) New York  
Robert Carlson (B.A. and B.S. Applied Math 1981) Iowa  
Gail A. Carpenter (B.A. 1970) Maryland  
Frederick J. Clare (M.A. 1968, Ph.D. 1973) Colorado  
Carolyn H. Coolbaugh (B.A. 1951) Colorado  
Douglas S. Garnet (B.A. 1982) Oregon  
Gary L. Hacker (B.A. 1963) Texas  
Richard A. Jones (M.A. 1966) Colorado  
Matthias Kawski (Ph.D. 1986) Arizona  
Vivian J. Kennedy (M.A. 1994) Colorado  
Kim R. Kokkonen (B.A. 1973) Colorado  
William J. LeVeque (B.A. 1944) Washington  
Mary L. Marger (B.A. 1977) Pennsylvania  
John M. Mc Arthur (M.A. 1993, Ph.D. 1994)  
Michael Meyer (B.A. 1986) Colorado  
Karla J. Oty (Ph.D. 1993) Oklahoma  
Stephen N. Patzman (B.A. 1964) Texas  
Dan E. Phillip (M.A. 1971) Maryland

Anthony O. Putman (B.A. 1967, M.A. 1970, M.S. 1973) Michigan  
Sarah J. Simonic (B.A. 1969) California  
Jennifer L. Wesson (B. A. 1990) Massachusetts  
Ronald O. Williams (B. S. Applied Math 1964) Colorado

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John H. Hodges (Professor Emer.)  
William B. Jones (Professor Emer.)  
Burnett Meyer (Professor Emer.)  
Wolfgang Schmidt (Distinguished Professor)  
W. J. Thron (Professor Emer.)

### FRIENDS OF MATH DEPARTMENT

Lee C. Burling, New York  
Melville Coolbaugh, Colorado  
Barbara B. Ellingwood, Colorado  
Dieter Gaier (Professor, Doctor), Germany  
Jean W. Hodges, Colorado  
Martha H. Jones, Colorado  
Richard J. Lundgren, Colorado

### OTHER

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## STAYING IN TOUCH

Please let us know what you have been doing since graduating from the University of Colorado and what you remember best from your campus experience as a student at CU Boulder by completing this questionnaire and mailing it to: PRIME BITS EDITOR (Wm. B. Jones)  
MATHEMATICS DEPARTMENT  
UNIVERSITY OF COLORADO  
BOULDER, CO 80309-0395 USA

NAME \_\_\_\_\_

Mailing address: \_\_\_\_\_

E-mail: \_\_\_\_\_

CU Boulder degree(s) and dates: \_\_\_\_\_

CU thesis advisor or faculty mentor: \_\_\_\_\_

Degrees from other institutions: \_\_\_\_\_

Current employer, position, location: \_\_\_\_\_

Awards, honors, fellowships: \_\_\_\_\_

Family news: \_\_\_\_\_

Other news of interest: \_\_\_\_\_

Reminiscences of CU Boulder: \_\_\_\_\_

Please write on the back if more space is needed.

**MATHEMATICS DEPARTMENT 2002 ANNUAL FUND  
(B1032)**

We invite you to designate your 2002 CU Annual Fund gift to the Mathematics Department, University of Colorado, Boulder. To ensure accurate processing of your gift, please complete this form and mail it along with your TAX DEDUCTIBLE contribution to the

University of Colorado Foundation  
Arts and Sciences Development  
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Boulder, CO 80306-1140. (Attn: Diedre Paterno).

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I work for a matching gift corporation and am enclosing the corporate matching gift form. \_\_\_ Yes \_\_\_ No.

I wish to designate that my contribution be used for:

Amount

\_\_\_\_\_ \$10 for Prime Bits Printing & Distribution\*

\_\_\_\_\_ Math Department General Fund

\_\_\_\_\_ Other \_\_\_\_\_

**ENDOWMENT FUNDS:**

\_\_\_\_\_ Aubrey J. Kempner Colloquium (0150380)

\_\_\_\_\_ Burton W. Jones Teaching Excellence Award(0150087)

\_\_\_\_\_ Ira M. DeLong Lectures (0158013)

\_\_\_\_\_ Adele V. Leonhardy Scholarship (0150212)

\_\_\_\_\_ William N. Reinhardt Lectures (0150622)

\_\_\_\_\_ Frances C. Stribic Scholarship (0150181)

\_\_\_\_\_ W. J. Thron Fellowship (0150575)

\*EDITOR'S NOTE: The Mathematics Department has no other source of funds to pay for printing and distribution of PRIME BITS.