

PRIME BITS

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

Fall 2004

Volume 7, Number 1

Departmental Highlights

New Department Chair: Lynne Walling

Professor Lynne Walling began a three-year term as Department Chair on July 1, 2004. She received her Ph. D. degree in mathematics from Dartmouth College in 1987, working with thesis advisor, Professor Thomas Shemanske. She taught at St. Olaf College in Northfield, MN from 1987 to 1989 and at Bates College in Lewiston, ME from 1989 to 1990. Since 1990 she has been a member of the CU-Boulder mathematics faculty.

Her greatest mathematical interests lie in number theory, particularly in automorphic forms and quadratic forms. Although she teaches a wide range of mathematical courses, her favorite ones are abstract algebra, modular forms and number theory.



Professor Walling grew up in the Southern California town of Santa Anna (Orange County) where she was exposed to mathematics at age 8 in her father's Junior High School (summer) algebra class. Mathematics came easily and she enjoyed games involving logical thinking. In 1976 she enrolled as a freshman at the University of California, San Diego, studying calculus 1 and 2 from a young faculty member, William L. Briggs (CU-Boulder, B.A. 1971). For Calculus 3, however, she found an instructor who was boring and decided to drop out of college. The next two years she worked as a title insurance secretary in Washington, DC and in San Francisco and

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2005: A Special Year in Art and Mathematics

"The mathematician's patterns like the painters or the poet's must be beautiful; the ideas, like the colors of the words must fit together in a harmonious way. Beauty is the first test: there is no permanent place in this world for ugly mathematics."

G. H. Hardy, A Mathematician's Apology

2005: A Special Year in Art and Mathematics at the University of Colorado, Boulder is the brainchild of Carla Farsi, Associate Professor of Mathematics.

Mathematics is a science of pattern and structure (visual and abstract) and art deals with patterns and structures produced for sight and/or sound (music). Hence these two areas of human endeavor are intimately related. The purposes of the special year are to forge long-term collaborations

between artists and mathematicians throughout the world and to discover new tools and techniques for working artists by bringing together the skills and knowledge found in diverse but related disciplines. The special year will include an international conference and exhibits.

Beautiful connections in artistic and mathematical creations can be found, for example, in fractals, knots, soap bubbles, works of Escher, musical composition of J. S. Bach and the golden mean used in Greek architecture and art. Combining art and mathematics has already proven to be an appealing new way for teaching mathematics (see, e.g., proceedings of the 2003

Continued on p. 3

Conference in Honor of Professor Walter Taylor

An international conference -- Algebras, Lattices Varieties -- was held August 15-18, 2004, at the University of Colorado at Boulder in recognition of the research and teaching contributions of Professor Walter Taylor, a member of the CU Boulder Mathematics Department faculty since 1967. The conference title was taken from one of the books coauthored by Professor Taylor.

The 30 speakers came from Australia, Austria, Canada, Chile, Estonia, France, Georgia, Germany, Hungary, Macedonia, Portugal, the United Kingdom and the United States. Four of Taylor's past Ph. D. students gave talks as well as CU faculty members Professor Emeritus Jan Mycielski and Professor Taylor.



Professor Walter Taylor

All of Professor Taylor's Ph. D. students participated in the conference. They are: Carol Ann Bateson (Ph. D. 1977, now at CIRES), Renato Lewin (Ph. D. 1985, now at Catholic University of Chile), Jennifer Hyndman (Ph. D. 1991, now at University of Northern British Columbia), John Coleman (Ph. D. 1992, now at Franciscan University of Steubenville), and Luis Sequeira (Ph. D. 2001, now at University of Lisbon).

Support for the conference came from the University of Colorado Council on Research and Creative Work. Conference organizers were Professors J. Hyndman (University of Northern British Columbia), K. Kearnes (University of Colorado), R. McKenzie (Vanderbilt University), G. McNulty (University of South Carolina), A. Szendrei (University of Colorado), and R. Willard (University of Waterloo). The able assistance of Ms. Marysia Mycielski was essential to the success of the conference.

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PRIME BITS

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New career track programs

As part of an ongoing effort to provide opportunities for students, the Department of Mathematics (led by Professors Kent Goodrich and David Grant) founded an Actuarial Studies Program in 1999 in concert with the Department of Applied Mathematics, the Department of Economics and the Leeds College of Business. Housed in the Mathematics Department, the program provides certification for students in the College of Arts and Sciences. Many students find internships in the insurance industry and by graduation are well on their way to actuarial careers.

During the past year a Quantitative Finance track was added to the certification program, preparing students for careers as mathematical financial analysts. If current financial constraints can be overcome, it is planned to offer more career oriented courses.

Art and Mathematics

(continued from p. 1)



MAA Math. Awareness Month focusing on Art and Mathematics.)

One of the principal events of the special year is an international conference to be held at the University of Colorado, Boulder called "Art + Math = X" which will provide a forum for artists and researchers to present their latest results and work. Themes of the conference will include: a. visualization; b. computer and mathematically generated art; c. pattern and symmetries; d. geometry in quilting; e. artistic artifacts; f. mathematical knots and other 3-D objects; g. design and creation in architecture and engineering; h. artistic aspects of consciousness; i. Spiritual aspects of mathematics such as "sacred geometry;" j. historic and anthropologic aspects of arts and sciences; k. teaching and outreach in mathematics and science through art. The conference will celebrate the 60th birthday of Michele Emmer, Professor of Mathematics at the University of Rome and internationally known scholar and film-maker.

The Special Year in Art and Mathematics 2005 is organized at CU Boulder by the Departments of Art and Art History (James Johnson), Mathematics (Carla Farsi), College of Music (Andrew May) and the University Memorial Center Gallery (Kristi Graham). International cooperation comes from Brown University (Tom Banchoff), SUNY Stony Brook (Anthony Phillips) and the University of Rome, Italy (Michele Emmer).

Department Chair (continued from p. 1)

discovered that she preferred rural areas to large cities.

In summer 1979 she took an accounting course at Santa Rosa Junior College and the following fall enrolled as an accounting major at Sonoma State College in northern California. Going against the advice of her advisors at Sonoma she enrolled in mathematics courses such as abstract algebra and topology and came to realize this was where her greatest interests and abilities lay. By 1982 Lynne had completed a bachelor's degree with a double major in accounting and mathematics and was accepted in the graduate program at Dartmouth. Here she expanded her horizons both in mathematics and in activities such as woodworking and blacksmithing at the Dartmouth campus shops. She learned the art of roofing by working side-by-side with her thesis advisor on his house, at the same time explaining to him the ideas of her thesis. Having produced numerous tables and other pieces

of hard-wood furniture, Professor Walling currently makes decorated birdhouses and squirrel houses in her spare time.

At St. Olaf College Dr. Walling lived in an old house with no indoor plumbing, 15 miles from Northfield, and learned the rigors of pioneer life in Minnesota winters. During the summers at St. Olaf and at Bates she returned to Dartmouth to continue mathematical research collaborating with Tom Shemanske. In 1995-96 Professor Walling spent a sabbatical year at Mills College in Oakland, CA and in 1987-98 she was an NSF Visiting Professor at the University of California, Berkeley. For two years, 2000-2002, she served as an NSF Program Officer in algebra, geometry, number theory and combinatorics at Arlington, VA.

Prior to becoming the Department Chair, Professor Walling was Chair of the Mathematics Graduate Program for two years.

Faculty Retirements:



Distinguished Professor Wolfgang M. Schmidt began retirement in 2003, having been a member of the faculty from 1960 to 1962 and from 1964 to 2003. He served as department chair during AY 1978-79 and was given the rank of Distinguished Professor by the regents of the university in 1988.

Pictured at left: Patricia & Wolfgang Schmidt with daughter, Elisabeth.



Professor Arlan B. Ramsay retired in 2003, having been a member of the faculty since 1968. He served as the department chair from 1990 to 1993.

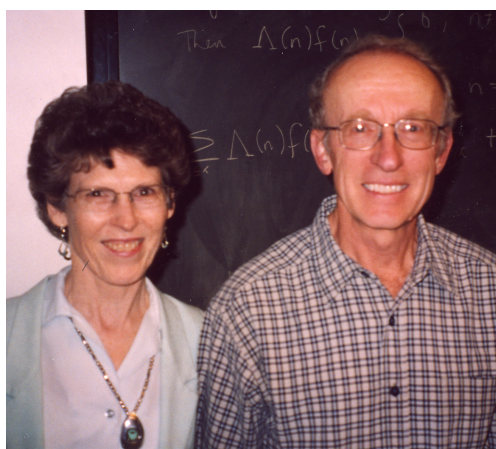
Pictured at left: Judith and Arlan Ramsay



Mathematics Department faculty, staff, students and families at retirement party honoring retiring Professors Arlan Ramsay and Wolfgang Schmidt.



Retirement party skit
2003 for Ramsay and
Schmidt



Professor Richard A. Holley retired in 2004 after serving on the faculty since 1974. Professor Holley was chair of the Graduate Program for a number of years and when retiring he asked that gifts from the faculty be used to establish a Mathematics Graduate Student Fund. Please see article by that title in the present issue of Prime Bits, p. 23.

Pictured at left: Richard & Frieda Holley

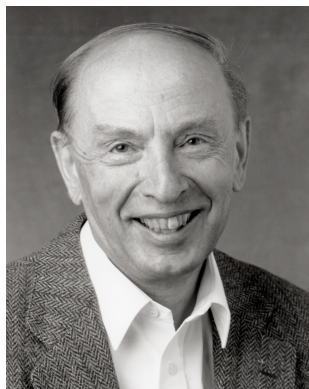


Mathematics Department at Holley's retirement party.

Wolfgang Schmidt Lecture in Number Theory Endowment

The Department of Mathematics has established an endowment fund at the University of Colorado Foundation for the Wolfgang Schmidt Lecture in Number Theory, an annual series of lectures that will bring some of the great number theorists of our time to the University of Colorado at Boulder.

The lectureship is being formed to honor Professor Schmidt for forty years of distinguished service to the University. Professor Schmidt has been the recipient of many honors and awards: the Sierpinski Medal, the Cole Prize in Number Theory, the Austrian Medal of Honor for Science and Art, honorary degrees from the Universities of Ulm, Marburg and Paris and membership in the Austrian Academy of Science and the Polish Academy of Science. He is also a fellow



of the United States National Academy of Arts and Sciences.

The Mathematics Department has been fortunate to claim Wolfgang Schmidt as one of its own. Upon his retirement in 2003, his colleagues at the University of Colorado want to honor him appropriately for his service to the University of Colorado and for his important and fundamental contributions to number theory. In order to build an endowment to fund the lecture series, we are asking all of our faculty, alumnae and alumni to make tax deductible

contributions to the Wolfgang Schmidt Lecture in Number Theory Endowment at the University of Colorado Foundation, Arts and Sciences Development, P.O. Box 1140, Boulder, CO 80306-1140.

DeLong Lectures

(For more information please see Mathematics Department Endowments on Page 21)



Richard Taylor

Richard Taylor from Harvard University gave the 39th Annual DeLong Lectures in the week April 29 to May 1, 2003 on "L-functions and Galois Representations."

Phillip A. Griffiths from the Institute for Advanced Study at Princeton delivered the 40th Annual DeLong Lectures between March 29 and



Phillip Griffiths

April 1, 2004 on the subject: "Geometry and Arithmetic Cycles."

Paul Baum from Penn. State University will be the 41st DeLong Lecturer, March 28 to April 1, 2005.

I. M. Singer from the Massachusetts Institute of Technology will be the 42nd DeLong Lecturer, August 29 to September 2, 2005.

Reinhardt Lectures

The Reinhardt Lectures are sponsored jointly by the Departments of Mathematics and Philosophy at the University of Colorado. (For more information, please see Reinhardt Lectures under Endowments, page 23.)

William Tate from the University of Chicago gave the 2nd Annual Reinhardt Lecture, March 17, 2003, on the subject: "Frege's Three Methodological Principles."

Donald A. Martin from the University of California at Los Angeles gave the 3rd Annual Reinhardt Lecture, March 12, 2004, on "Is Set Theory About Sets?"

A mathematician, like a painter or poet, is a maker of patterns. If his patterns are more permanent than theirs, it is because they are made with ideas.

G.H. Hardy, A Mathematician's Apology(London 1941)

Student Highlights

Awards and Scholarships

Achievement Reward for College Scientists Scholarship

2004: Mike Schefferstein

Burton W. Jones Teaching Excellence Award

2003: Christine Jerritts

2004: Sheila Miller; honorable mentions: Will Kirwin and Chris Seaton.

Adele Leonhardy Scholarship

2004: Sharon Lutz

William Lowell Putnam Mathematical Competition

2003: Brett Beckman, Hoyt Koepke and Ryan Gardner.

2003-04: Adam Henderson, Nicholas Hall and Nick Pratarelli

Residence Life Academic Teaching Award

2004: Dana Earnst, Hiba Fayouni and Lynne Walling.

Frances C. Stribic Scholarship

2004: Jennifer Horne

W. J. Thron Fellowship

2003: Chris Seaton

2004: Veronika Furst

University Fellowship (for summer research)

2003: Chris Catone, Will Kirwin, John Massman and Erich McAlister.

2004: Chris Brown, Bob Cohen, Abdul Deajim and Jennifer Horne.



Jennifer Horne



Chris Seaton



Veronika Furst

GRADUATE DEGREES

The following students received graduate degrees in mathematics between December 2002 and August 2004. They are listed by NAME, degree and (faculty advisor).

December 2002

Douglas NORRIS, Ph.D. (R. K. Goodrich)

May 2003

James GATTIS, M.S. (Richard Holley)

Beverly HEIGRE, M.A. (Richard Holley)

Christine JERRITTS, Ph.D. (Richard Holley)

Young Jo KWAK, M.A. (Keith A. Kearnes)

Chris ROWE, Ph.D. (David Grant)

Tim SCHUMACHER, M.A. (Sergei Kuznetsov)

Bret SIMON, Ph.D. (David Grant)

Emily SILVERMAN, Ph.D. (Richard Holley)

August 2003

Adriana GOMEZ, Ph.D. (James D. Meiss)

Troy WIECK, M.A. (R. K. Goodrich)

December 2003

Mark BECKER, Ph.D. (Robert Tubbs)

May 2004

Jonas D'ANDREA, M.A. (Judith Packer)

William KIRWIN, Ph.D. (Siye Wu)

Yumiko MITCHINER, M.A. (Richard Holley)

Catherine Pfeiffer MOODY, M.A. (Eric Stade)

Christopher SEATON, Ph.D. (Carla Farsi)

Preston SLAUGHTER, M.A. (Richard Laver)

August 2004

Hiba FAYOUMI, M.A. (John Black from CS)

Adil KAYMAZ, M.A. (Marty Walter)

Nathaniel REID, M.A. (Judith Packer)

Spring Graduates

The following students received bachelor's degrees with honors or graduate degrees in mathematics during the spring graduation exercises. Photos were made at the Mathematics Department reception.

Spring 2003 Graduates

Thomas Cooper, B.A., Phi Beta Kappa, Golden Key
and Distinction

Chip Davenport, B.A., Phi Beta Kappa

Jessica Hughes, B.A., Distinction

Megan McConnell, B.A., Phi Beta Kappa and
Distinction

Clair Merchant, B.A., Distinction

Sarah Rousmaniere, B.A., Distinction

Luke Gattis, B.A. and M.S.

Allan Mann, M.A.

Emily Silverman, Ph.D.

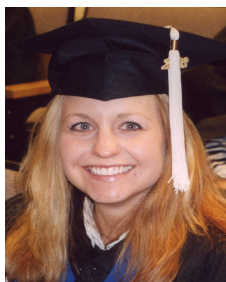
Brett Simon, Ph.D.



**Thomas
Cooper**



**Chip
Davenport**



**Jessica
Hughes**



**Megan
McConnell**



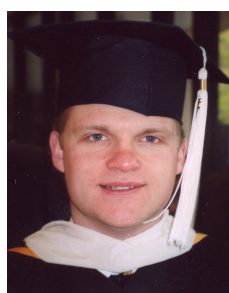
**Claire
Merchant**



**Sarah
Rousmaniere**



**Luke
Gattis**



**Allan
Mann**



**Emily
Silverman**



**Brett
Simon**

Spring 2004 Graduates

Darcy Fugate, B.A., Collegiate Scholar and National Honor Society

Mark Nelson, B.A., Pre-Health Honor Society with Amber Hoffman

Drew Soderborg, B.A., Summa Cum Laude and Distinction with Professor P. Elliott

Melissa Spannuth, B.A., Summa Cum Laude and Distinction

Jonas D'Andrea, M.A., with wife, Yvonne

Yumiko MitchIner, M.A., with Professor R. K. Goodrich

Will Kirwin, Ph.D.

Chris Seaton, Ph. D.



**Darcy
Fugate**



**Mark
Nelson**



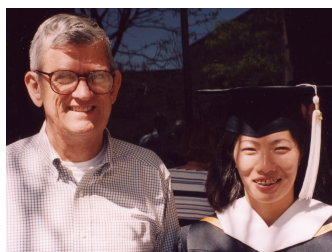
**Drew
Soderborg**



**Melissa
Spannuth**



**Jonas
D'Andrea**



**Yumiko
MitchIner**



**Will
Kirwin**



**Chris
Seaton**

I do not know what I may appear to the world; but to myself I seem to have been only like a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me.

Sir Isaac Newton

Faculty Highlights

Meet Our New Faculty Members



Richard Green, Assistant Professor, Ph.D. University of Warwick, 1995.

Research: Combinatorial problems involving Coxeter groups and their Hecke Algebras; quantum groups.

Favorite course: Modern Algebra.

Professor Green joined the Mathematics Department faculty in the fall of 2003. He recently completed a stint as editor of the Bulletin of the London Mathematical Society (the British equivalent of the Proceedings of the American Mathematical Society). Currently he has the very important job of organizing the department's weekly Kempner Colloquium series and the annual DeLong Lecture series. On May 16, 2004 Richard Green and his wife, Tara, had twin daughters, Annabel and Emma.



Brian Rider, Assistant Professor, Ph.D. Courant (NYU), 2000;

Research: Probability and Mathematical Physics.

Favorite courses: Probability, Stochastic Processes, Real and Complex Variables.

Professor Rider joined the Mathematics Department in the fall of 2004 after a three-year post-doctoral appointment at Duke University and one additional year at the Technion in Israel. His undergraduate work was at MIT. Brian Rider and Jennifer Lee were married on Saturday September 18, 2004. Jennifer is an attorney with the farm worker project at Legal Aid of North Carolina.



Agnes Szendrei, Associate Professor, Ph.D. Budapest (Hungary) 1982.

Research: Algebra, with an interest in combinatorics and logic.

Favorite graduate course: Modern Algebra.

Favorite undergraduate courses: Algebra, Combinatorics, Set Theory, Logic.

Professor Szendrei grew up in Szeged, Hungary, obtained her degrees at the University of Szeged and the Hungarian Academy of Sciences, and taught for several years in the Department of Algebra and Number Theory at the University of Szeged. She is the author of three textbooks (Discrete Mathematics, Geometric Constructibility, Problems and Solutions in Abstract Algebra) and one research monograph (Clones in Universal Algebra). She married CU faculty member Keith Kearnes in 2001 and joined the CU faculty in 2003. Professor Szendrei enjoys reading, listening to classical music and baking bread. She has an identical twin sister who is also a mathematician.

Faculty Spotlights

Meet the interesting and diverse faculty of the University of Colorado-Boulder Department of Mathematics.



Larry Baggett, Professor, Ph.D. Washington (Seattle), 1966.
Research: Wavelets, multi-resolution analyses, and representation theory.
Favorite courses: Fourier Analysis, Functional Analysis,

Real Analysis and an undergraduate course in Analysis.

Professor Baggett is currently teaching this last course with notes that are planned for a text book. He was an invited speaker at the Institute for Mathematical Sciences in Singapore in August 2004 and for the past three years has been collaborating with a Focused Research Group on Wavelets, Frames and Operator Theory with NSF support.



Gordon Brown, Associate Professor, Ph.D. Cornell, 1963.
Research: Nonassociative algebras, especially Lie algebras of small characteristic.
Favorite courses: Introduction to Complex Variables, graduate and undergraduate Linear

Algebra and Modern Algebra.



Jeanne N. Clelland, Assistant professor, Ph.D. Duke, 1996.
Research: Geometry of differential equations; in particular, (1) sub-Finsler geometry and applications to control theory, and

(2) Backlund transformations of hyperbolic Monge-Ampere PDE.

Favorite courses: Geometry of Curves and Surfaces; Differential Geometry.



Richard Clelland, Assistant Professor, Ph.D. Duke, 1996.
Research: Numerical partial differential equations, particularly hyperbolic models for solid material and the Navier-Stokes equations.
Favorite course: Fluid Flow.

Professor Clelland is the faculty sponsor of the CU Boulder Math Club.



Peter D. T. A. Elliott, Professor, Ph.D. Cambridge, 1969.
Research: Number theory.



Homer G. Ellis, Associate Professor, Ph.D. Texas, 1961.
Research: Relativity theory, differential geometry, mathematical physics.
Favorite courses: Introduction to Abstract Mathematics, Introduction to Differential Geometry, Mathematical

Theory of Relativity.



Carla Farsi, Associate Professor, Ph.D. Maryland, 1989.
Research: Functional Analysis, Non-commutative geometry, Art and Mathematics.
Favorite course: Mathematics

from the Visual Arts, which was created by Professor Farsi. Please see the article on the Special Year in Art and Math 2005 in this issue of Prime Bits.



Jeffrey S. Fox, Professor,
Ph.D. Berkeley, 1983.
Research: Representation
theory of Lie groups, non-
commutative geometry,
operator K-theory and
mathematical neuroscience.
Favorite courses: most
Analysis courses, Geometry,

Algebraic Topology and Numerical Analysis.
Since 2002, Professor Fox has been working jointly
with Robert Eaton of EPO Biology on an NSF
supported project (\$250,000) to construct a new
computational model of the Mauthner neuron. Funds
from this grant have been used to build a 30 node, 60
CPU Beowulf Linux cluster dedicated to high
performance computing applied to biological models.
Professor Fox is currently developing courses for a
Ph.D. tract in mathematical neuroscience that would
offer a joint degree in mathematics and neuroscience.



Robert Kent Goodrich,
Professor, Ph.D. Utah, 1966.
Research: Functional Analysis,
Theory of Optimization,
and since 1985 weather hazard
algorithms with the National
Center for Atmospheric
Research (NCAR).
Favorite Courses:

Undergraduate and graduate Analysis, Functional
Analysis, Operations Research and Introduction to
Abstract Mathematics.



Alexander Gorokhovskiy,
Assistant Professor, Ph.D. Ohio
State, 1999.
Research: Noncommutative
geometry and geometric
analysis.
Favorite courses: Analysis,
Geometry and Topology.



David R. Grant, Professor,
Ph.D. MIT, 1985.
Research: Number theory,
especially in its interactions
with algebraic geometry.
Favorite courses: Number
Theory, Algebraic Geometry,
Mathematical Probability, The
Mathematics of Coding and

Cryptography. The last course, initiated four years
ago by Professor Grant and others, involves rapidly
changing fields which are of interest to students of
mathematics, computer science and electrical
engineering.

One year ago Professor Grant began collaborative
research with Mahesh Varanasi, Department of
Electrical and Computer Engineering, on Space-Time
Codes used to transmit information over systems with
multiple transmitting antennas, such as cell phone
networks. This joint research, which involves a
surprising amount of number theory and algebra, is
currently being supported by a three-year grant from
NSF.

Richard Green. Please see New Faculty on Page 10.



Karl Gustafson, Professor,
Ph.D. Maryland, 1965.
Research: Mathematical
physics and applied
mathematics.
Favorite courses: Partial
Differential Equations, Linear
Algebra.
Since the 2000 Prime Bits

Professor Gustafson has published 25 papers and
given five invited addresses during a
Switzerland/Germany lecture tour. Topics included
Geometry of Relaxation (numerical analysis), Old
and New Results in Zeno and Bell Problems
(quantum mechanics), Local Chaos and Machine and
Human Cognition (psychology). He wrote a
memorial article, Professor Ilya Prigogine: a Personal
and Scientific Remembrance published in Mind and
Matter. The 1977 Nobel laureate, Ilya Prigogine, was
twice a visiting lecturer for the CU Boulder
Mathematics Department. Professors Gustafson and
Rick Clelland received an NSF grant for a new
computer to replace the department's Euclid file-
server and to use for their fluid dynamics research.

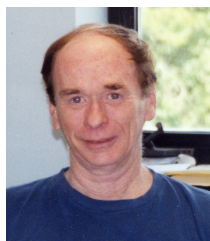


Keith A. Kearnes, Associate
Professor, Ph.D. U. C.
Berkeley, 1988.
Research: Algebra and logic.
Favorite graduate courses:
Algebra and logic.
Favorite undergraduate courses:
Topology and complex

analysis.



Sergei Kuznetsov, Associate Professor, Ph.D. Kiev (USSR), 1976.
Research: Probability, statistics, partial differential equations.



Richard J. Laver, Professor, Ph.D. Berkeley, 1969.
Research: Set theory, especially large cardinals and their consequences for low level mathematics.
Favorite courses: Foundations of mathematics; set theory.



J. Donald Monk, Professor, Ph.D. Berkeley, 1961.
Research: Infinite Boolean algebras, set theory, logic.
Favorite courses: Set theory, logic, algebra, combinatorics.



Carrie Muir, Instructor and Undergraduate Advisor; M.A. University of Colorado, 1998;
Research: Logic, set theory, undergraduate mathematics education.
Favorite Courses: QRMS, Linear Algebra.



Judith A. Packer, Professor, Ph.D., Harvard University, 1982;
Research: Operator algebras and analysis; the connection between operator algebras, abstract harmonic analysis, and wavelets; K-theory and cohomology and their relation to discrete groups and C^* -dynamical systems.
Favorite courses: Undergraduate and graduate courses in Analysis and Topology.

Brian Rider. Please see New Faculty on Page 10.



Delphy Shaulis, Instructor, Ph.D. University of Colorado, 1998.
Research: Number theory.
Dr. Shaulis' primary responsibility is with the Mathematics Module Program and QRMS (Quantitative Reasoning and Mathematical Skills) for which she is the director. She recently initiated a change to Business Calculus (Math 1081), taking the course out of the module format and replacing it with large lecture and recitation. Most of the lectures are now given by Dr. Shaulis. With regard to QRMS courses, the newest addition was Professor Carla Farsi's course on Art and Mathematics.



Eric Stade, Professor, Ph.D. Columbia, 1988.
Research: Number Theory; automorphic forms; Fourier analysis.
Favorite course: Fourier analysis (created by Professor Stade)
Professor Stade organized an Integrated Math/Math for Elementary Education (MELEE) at CU Boulder, July 14-16, 2003, to establish a community of Colorado higher education teachers and to provide participants with information, ideas and resources to design courses and train teachers to teach these courses. The workshop was supported by the No Child Left Behind Act of 2001 (through the CCHE) and the Mathematics Department. A second son, Nicholas, was born to Eric and Beth on April 2, 2004. All, including older brother, Jack, were reported well.

Agnes Szendrei. Please see New Faculty, p. 10.



Walter E. Taylor, Professor, Ph.D. Harvard, 1968.
Research: general algebra; topological algebra.
Favorite courses: Non-euclidean geometry, triple integration, basic algebra. Graduate: topology, analysis, linear algebra.
Please see the article on Page 2 of this issue on the International Conference in honor of Professor Walter Taylor.



Robert Tubbs, Associate Professor, Ph.D. Penn State, 1981.

Research: Number theory. Professor Tubbs is currently serving as Chair of the Rocky Mountain Section of the Mathematical Association of America. His book, Making

Transcendence Transparent: An intuitive approach to classical transcendental number theory, written jointly with Ed Burger of Williams College, was published in 2004 by Springer. He gave the invited address at the Pike's Peak Regional Undergraduate Research Conference in Pueblo, Colorado in spring 2004. Robert Tubbs was married in July 2004 to Vesa, formerly of Moscow, Russia. We welcome Vesa and her daughter, Natasha, to the mathematics family.



Lynne Walling, Professor, Ph.D. Dartmouth, 1987. Research: Number theory, in particular automorphic forms (including holomorphic, nonholomorphic, Jacobi, Hilbert, Siegel, and Hilbert-Siegel modular forms) and quadratic

forms.

Favorite courses: Abstract Algebra, Modular Forms, Topics in Number Theory.

(Please see the article on Page 1 of this issue on the New Department Chair.)

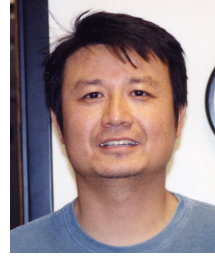


Martin E. Walter, Professor, Ph.D. California Irvine, 1971. Research: Noncommutative harmonic analysis, groups, groupoids, C^* -algebras, environmental modeling.

Favorite undergraduate course: Mathematics for the Environment (course and text

created by Professor Walter).

Professor Walter was the "Local Arrangements Committee" for the 2003 MAA summer Mathfest held in Boulder, attended by more than 1000 participants. He also organized sessions on the environment and led nature walks for attendees.



Bin Wang, Assistant Professor, Ph.D. Brown, 1994.

Research: Algebraic geometry. Favorite courses: Calculus 3 for undergraduates and Algebraic Geometry for graduate students.

Professor Wang writes: My wife and I have a son who is

almost two years old now and he brings us a lot of joy and sense of responsibility.



Siye Wu, Associate Professor, Ph.D. MIT, 1990.

Research: Differential geometry, topology, mathematical physics.

Favorite courses: Differential Geometry and Topology (graduate level).

Professor Wu has recently revised the second semester Differential Geometry course and has proposed the following additional courses: Geometry of Quantum Fields and Strings and Advanced Algebraic Topology, each of which can be regarded as a third semester of a trilogy of courses.

The photo of Professor Wu was taken in villa Adriana near Rome, when he gave a short course at the University of Rome during the summer of 2003.

Retired Faculty

William B. Jones

William B. Jones continues to be active in mathematics with three research papers to be published in 2004 (two with Catherine Bonan-Hamada and one with Walter M. Reid) and invited hour-talks given at an international conference in Roros, Norway in August 2003 and at the January 2004 meeting of the American Mathematical Society in Phoenix, AZ. He is the editor of the Mathematics Department newsletter, Prime Bits, sings in two adult choruses and a barbershop quartet and rings bass bells in the Congregational Church bell choir. Bill and his wife, Martha enjoy camping, hiking, bicycling and reading. Once each month they collect donated food at Boulder County Community Food Share to provide a Sunday dinner for homeless people at the Congregational Church in Boulder.

Albert Lundell

Albert Lundell can be found almost every day at his office in the Mathematics Building on the Boulder campus and running at the Fieldhouse around noon.

Jerry Malitz

Jerry Malitz participated in an art show with several pieces on display at the Arapahoe Community College in Littleton, CO through October 2004. A new edition of his book, Rocky Mountain National Park-A Dayhiker's Guide, will be available by winter 2004. Jerry and his wife, Susan, are co-authoring two books to be published by Johnson Books of Boulder. They are: A Dayhiker's Guide to Arches National Park (spring '05) and A Dayhiker's Guide to Acadia National Park (winter '06).

Jan Mycielski

Jan Mycielski was recently in Moscow giving lectures on the foundations of mathematics, concerning a hierarchy of functions, and concerning the axiomization of set theory. In Wroclaw, Poland, he gave a lecture on the topology of 3-manifolds.

Arlan Ramsay

Arlan Ramsay has a student, Chris Brown, who is nearing completion of his Ph.D. work. He and Karla Oty have recently submitted a mathematics research paper for publication. Professor Ramsay is also participating in the analysis seminars in the Mathematics Department during fall 2004. The ninth annual workshop on Groupoids and their Applications was held October 2-5, 2003 at CU Boulder in honor of Professor Ramsay on the occasion of his retirement. Professor Ramsay organized the first Groupoidfest in 1995.

Richard Roth

Richard Roth, who has been retired for 3.5 years, is still on campus a great deal. He attends seminars from time to time and has been re-elected Secretary for the Retired Faculty Association. Professor Roth is tutoring a Mexican immigrant couple in English through the Intercombo de Comunidades program and he is a volunteer at the Community Food Share food bank in Niwot. In September 2004 he left all of this behind to attend an Elderhostel tour of China.

Wolfgang Schmidt

Wolfgang Schmidt has spent the fall 2004 semester as a visiting research professor at the University of Hamburg, Germany.

Irving Weiss

Irving Weiss, at 84, continues to be a long-distance runner and bicyclist. He recently finished the 10 kilometer Boulder Boulder running race in 1 hour, 20 minutes and 7 seconds. The previous year he completed the Olympic-distance Boulder Peak Triathlon in less than five hours. He participated in the 2003 Courage Classic to benefit the Children's Hospital. In a 2003-2004 Boulder Magazine feature article about Irv, he is quoted as follows: "My primary-care physician runs with us (the Boulder Road Runners) on Sundays, and one time I passed him. He yelled to me 'You are my hero.'"

Meet our staff



Donna Maes

Donna Maes became the Executive Assistant (for the Executive Committee of the Mathematics Department) in October 2004. As the first staff member to hold this newly created position, she attends meetings of the Executive

Committee, records its actions and distributes them to the faculty. She is also responsible for administrative work associated with new appointments, promotions, tenure, search committees and official visitors to the department. Born in Jersey City, NJ, Donna Maes moved to Boulder with her family in 1977, attended Baseline Junior High and Graduated from Boulder High School in 1983. After two years in the College of Arts and Sciences at CU Boulder, she graduated in Business Administration from a business school in Las Vegas, NV in 1985. Before joining the staff at CU she held positions as office manager and other business related activities. She also worked as a full-time mom for four years. She is married to Reuben Maes, a middle school mathematics teacher, and they have three sons: Ryan (10), Evan (8) and Austin (6). We welcome Donna Maes to the Mathematics Department.



Carol Decker

Carol Decker began working as the Graduate Program Assistant on February 6, 1995. She is still enjoying working with the graduate students, helping them sign up for the courses and exams they need to fulfill the requirements

for their degrees. She and her husband own a 29-foot boat with sleeping quarters that they enjoy taking to Glendo Lake in Wyoming, where they plan to eventually build a log cabin for a retirement home.



Erika Herreria & Jane Wang

Erika Herreria and Jane Wang are currently sharing the position of Mathematics Department Accountant with responsibility for budgeting, purchasing, employee payrolls, etc.. Erika has been with the department since July 2002, but is currently planning to begin a new career, at which time Jane Wang will assume this job full-time.



Marysia Mycielski

Marysia Mycielski, the Undergraduate Program Assistant, works with the chairs of both the Graduate and Undergraduate Programs on course assignments for faculty, rooms and times for courses and on special events, including Putnam

exams, DeLong lectures, career night and the Math Club. She also serves in the very important job of being the first person students, faculty and visitors meet when they come to the department office. She says "I now have been here for four years and am really loving it. I would like to take a moment to thank everyone who is a part of our department for making me smile and for keeping me in good spirits on a daily basis." Marysia Mycielski has been struggling with rheumatoid arthritis for more than a year and is grateful for support received from everyone in the department. She is currently looking forward to a trip to Africa in the near future.

Alumnae/Alumni News

Mick Amundson-Geisel (B.A. 1995) received an M.A. degree in Psychology from the University of Minnesota and currently is a Guidance Counselor at Hopkins High School in Hopkins, MN. He taught mathematics in the Peace Corps from 1995 to 1999 and married Patty Geisel whom he met in the Peace Corps in September 1999. About CU he remembers a mathematics professor wearing Michael Jordan high tops and another who loved the Brooklyn Dodgers and baseball in general. Mick and Patty live in Bloomington, MN.

George E. Bardwell (Ph.D. 1962) is a retired Professor of Mathematics and Statistics at the University of Denver. He was the recipient of an Alfred Sloan Fellowship (1968), a Distinguished Teaching Award in 1972, was elected to the National Academy of Arbitrators in 1975 and is the author of 3 books and more than 20 articles on mathematics and statistics. Professor Bardwell is married and has 5 children, 3 of whom have Ph.D.'s (Brown, Harvard and Yale). He writes about CU: "Had Chowla, Jones, Kempner and Ulam as instructors. Commuted from Denver in those days. First time I received Prime Bits. Keep it coming."

Janet Barnett (M.A. 1988, Ph.D. 1990) & **Karla Oty** (Ph.D. 1993) organized a CU Mathematics Alumnae/Alumni Reunion on July 31, 2004 at the MAA Mathfest in Boulder. It was an informal time to get together with other CU alums and faculty.

William L. Briggs (B.A. 1971) became the SIAM vice-president for education on January 1, 2003. Bill Briggs brings extensive experience to this position, including eight years on the education committee and membership on the editorial board of the SIAM Review's education section. A professor of mathematics at the University of Colorado, Denver, Briggs is a co-author of two highly respected books: *A Multigrid Tutorial* (now in its second edition) and *The DFT: An Owner's Manual for the Discrete Fourier Transform*. Bill lives in Boulder, CO.

Catherine Bonan-Hamada (Ph.D. 1994) and **Edward Bonan-Hamada** (Ph.D. 1996) are the happy parents of a son, Connor Kapono, born September 2, 2004 in Grand Junction, CO. Cathy and Ed have been teaching mathematics at Mesa State College in Grand Junction since 1996.

Robert A. Burkhardt (B.A. 1987) is a self-employed computer consultant. He lives in Ellicott, Maryland.

Lea Carty (M.A., 1992) received M.A. and Ph.D. degrees from Columbia University and is now employed at Moody's Investors Service. She writes: "I'm using a great deal of stochastic calculus in my work--a rare and enjoyable thing." About CU Boulder: "Wonderful period during which I had time to concentrate deeply on some important concepts that have since served me very well." Lea's home is in Brooklyn, NY.

Carolyn H. Coolbaugh (B.A., 1951) graduated cum laude from CU with honors in Phi Beta Kappa, Mortarboard and Pi Mu Epsilon. She received a B.S. in Psychology from the University of Utah in 1975. She has been married for 51 years, has 3 children, 6 grandchildren and one great grandchild. Her daughter Elizabeth Coolbaugh was also a mathematics major at CU. Coolbaugh retired in 1997 after working 15 years as Director of MIS (computer information mgmt.) for the Jefferson Center for Mental Health at Arvada, CO. About CU she writes: "Burton Jones was an excellent teacher, but I never mastered some aspects of Diff. Eq. Frances Stribic taught me 1 year of Mathematical Statistics. I did a term paper on using graphs to estimate correlation coefficients--before computers and before calculators. Frances Stribic always said the best undergraduate degree for any field was mathematics. When I graduated in 1951 I went to work for the University of California at Los Alamos, NM, helping to design and build the MANIAC, one of the first electronic computers. The first thing they did was to teach me binary, octal and hexadecimal arithmetic--although I majored in math I had never heard of numbers to any base but 10! I worked on translating a German book on continued fractions--to be used to generate a series of random numbers." Carolyn Coolbaugh now lives in Golden, CO."

Walter R. Dodge (B.A. 1965, M.A. 1967) retired in 2000 after teaching 33 years at New Trier High School, Winnetka, IL. He was a recipient of the 1988 Presidential Award for Excellence in Mathematics Teaching in IL, the 1990 Woodrow Wilson Master Teacher Award, the 1995 Tandy Award for Excellence in Mathematics Teaching and the 1998 Sieman's Award for Advanced Placement Teaching in Mathematics. He has co-authored three

textbooks published by Houghton Mifflin and a recent article on "Thinking Out of the Box...Problem." He and wife, Sally have two adult daughters. Walter writes: "In retirement I am still volunteering help in calculus at Lakeland High School, Minocqua, WI. I am a math contest question writer for the North Suburban Math League of Chicago. I am also a volunteer fireman for the local town Fire Department. (About CU) A wonderful time learning mathematics from a talented, dedicated faculty." He lives in Park Falls, WI.

George F. Estabrook (M.A. 1968) has been on the Biology Department faculty of the University of Michigan, Ann Arbor, for 34 years and has more than 100 publications mostly on mathematics and computation in natural and social sciences. Interests include being a Nationally Ranked Age Group Triathlete and for the past few years a serious vocalist in sacred polyphonic music, especially less well known works.

Brian Hagler (B.S. 1992, Ph.D. 1997) has been an Assistant Professor of Mathematics at the University of Texas at Odessa since January 2000. In April 2004 Brian was admitted to St. Luke's Hospital in Houston with congestive heart failure. After receiving a heart transplant and a great deal of physical and occupational therapy, Brian returned to Odessa in July to prepare to resume teaching in January 2005. Although he reports that the transplant is working well with no rejection and strong function, he has had to return to the Houston hospital due to a low white cell count. He writes that he has received much caring support from brothers, sisters, friends, colleagues, students and many others, including perfect strangers. "I had such little recognition of the lives I've touched and have been touched by." Brian's e-mail address is: haggler_b@utpb.edu.

Matthias Kawski (Ph.D. 1986) is on the mathematics faculty at Arizona State University in Tempe, AZ. He writes: "After one year in industry on an NSF grant optimizing supply chains, I am back at ASU. Continue both my work in differential geometric control, and in interactive visualization in virtually all classes across the undergraduate curriculum, the latter being received even better with several overseas plenaries in last 3 years. Anna (11) and Monika (9) are doing fine, world travelers, just back from climbing active volcanoes in Guatemala.

William J. LeVeque (B.A. 1944) has recently moved to Bainbridge Island, WA. He writes: "Many thanks for Prime Bits, the very enlightening and

interesting obit of Thron. I really enjoy hearing about you-all there. We've recently moved to a condo overlooking a harbor on Bainbridge Island in Puget Sound about 8 miles west of Seattle (i.e., across the sound). All very beautiful except for the cloudy weather; not Boulder. Best wishes to you and other friends there."

Michael Levil (M.A. 1968) is currently employed as a Senior Principal Systems Engineer for Raytheon in Aurora, CO. He married Claudia DePrenger in 1975 and they have one adult daughter. About CU he recalls: "I was in the Engineering Building when the wind broke the west-facing revolving door."

Tina (Duckworth) Lindley (B.A. 1993) was one of the first two recipients of the Martin-Stribic Scholarships and was a member of the Golden Key National Honorary Society. She is currently an 8th grade mathematics teacher at Chaparral Middle School in the Alamogordo, NM Public Schools. She has taught mathematics in grades 7 to Community College and has successfully coached her math club for three years to 2 regional championships in Math Counts and first in state of NM in Math League. About CU she writes: "I was a TA for QRMS from 9/91 to 5/93 and that encouraged my teaching career. That was a wonderful experience. Favorite professors included Dr. Monk and Prof. Walter."

James T. (Jim) Loats (Ph.D. 1977) has been a Professor of Mathematics at Metropolitan State College in Denver since 1983. He received the 2001-2002 Burton W. Jones Award for Excellence in College or University Teaching given by the Rocky Mountain Section of the Mathematical Association of America. He was on leave during AY2002-2003 while working as the Mathematics Curriculum Coordinator for the Denver Public Schools. Jim's son Jeff is a physics graduate student at Oregon State University.

William Myers (M.A., 1974) received a B.S. degree from Purdue University in 1971 and an M.S. in CS Ed. in 1984 from the University of Evansville. He is currently an Associate Professor of Computer Information Systems at Belmont Abbey College in Belmont, NY. Myers serves as Treasurer for the Consortium for Computer Sciences in College.

Scott Ready (M.S. 1978) is the owner of Mountain Lake Properties and several other Colorado corporations. Scott and his wife came to CU as newlyweds in 1976. They work together in their

businesses and have two children who are "ready to be teenagers." Scott writes: "After graduation I slipped over The Divide to the little village of Grand Lake and its alpine environment. I'm still here doing heady sums in Real Estate and enjoying the incalculable value of the wilderness. For virtual tours of THE FAR SIDE of Rocky Mountain National Park and the Indian Peaks Wilderness Area (and for Weather Graphs) go to www.MountainLake.com. Send math questions to the wizard@MountainLake.com. I've gotten rusty, so maybe some of you can help me. I'm still trying to derive Quantum Mechanics and the Big Bang. What is Dark Energy? Stephen Hawking wrote a foreword to an article of mine in the mid 80's. John Wheeler took me to a Philosophical Society dinner in Philadelphia. I spoke at Harvard's Divinity School in '98. I made a pilgrimage to the Niels Bohr Institute in Copenhagen in 2001. Life is good. The aftermath is unbounded."

Estevan Salazar (B.A. 1980) is a Senior Computer Systems Engineer for Hewlett Packard in Colorado Springs and is the father of a 14 year old son. About CU he writes: "Professor Monk was most considerate and gentle and fair."

Dianne M. Waterman (B.A. 1993) plus all but thesis for a degree in Biometrics from CU Health Sciences. She is currently employed as a statistician in the Failure Analysis Department at Seagate Technology in Longmont, CO. Dianne is married to Chuck Wyman and has two children (ages 14 & 15) and two step children (ages 12 & 16). Her interests include Green Belt and completing courses in Design for Six Sigma. On CU memories she writes: "The annual engineering egg drop from the highest window of the Engineering Building. My children were 3 & 4 years. Therefore my life at CU was not that of the 'normal' student. I was 32 years old. It took a long time but was well worth it. I have a great job where my work is widely recognized."

Nancy J. Wyshinski (M.S. 1988, Ph.D. 1991) organized a special session on Continued Fractions (Number theory and Analytic Theory) at the winter 2004 meeting of the American Mathematical Society at Phoenix, AZ (with James McLaughlin). Nancy has been on the Mathematics Department faculty of Trinity College in Hartford, CT since 1991. She recently completed a three-year term as department chair.

Our Appreciation to These Generous Donors

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Michel Waldschmidt
Jesse Taylor Walker
Beth Ann Chorbajian and R. Andrew Weekley
Leonard Weiser
Sue Wilkinson
Stephen Mark Woodruff

IN MEMORIAM

Jack R. Britton

Jack R. Britton, a member of the Applied Mathematics faculty at CU Boulder from 1929 to 1966, died on January 23, 2004 in Tampa, Florida at the age of 95.

He was born on January 27, 1908 in St. Petersburg, Russia. He earned a B.A. degree in mathematics from Clarke University in Worcester, MA and a Ph.D. in mathematics from the University of Colorado working with Professor Aubrey Kempner.

In the early 1940's he worked for U.S. Rubber in Detroit and then as an instructor for the Army Air Force and the University of Michigan. He was Acting Head from 1960 to 1962 and Chair of the CU Boulder Applied Mathematics Department from 1962 to 1965. He taught at the University of West Florida in Pensacola in 1966-67 and at the University of South Florida at Tampa from 1967 until retirement.

Professor Britton was the author of many textbooks and mathematical papers and he was a gifted teacher.

Robert Davis Richtmyer

Robert Davis Richtmyer, a longtime member of the Mathematics Department faculty, died on September 24, 2003 in Gardner, Colorado at the age of 92. He was born in Ithaca, NY on October 10, 1910 (10-10-10).

Professor Richtmyer studied physics at the University of Goettingen in Germany and at Cornell University and the Massachusetts Institute of Technology.

He taught physics at Stanford University before working with the Department of the Navy in Washington, D.C. during World War II and then as a researcher at the Los Alamos Laboratories on the Manhattan Project. He resumed teaching in 1953 in the Courant Institute at New York University.

In 1964 he came to CU Boulder where he taught in both the Physics and Mathematics Departments, eventually moving fulltime to mathematics.

For six years after retiring, he mentored gifted and exceptional students through the Talented and Gifted program for which he created several curricula. In 1987 he received the Governor's School Award for that work.



Professor Richtmyer was the author of textbooks including "Principles of Advanced Mathematical Physics." He was instrumental in creating the Mathematical Physics Ph.D. Program. One of his best known books was on numerical methods for solving partial differential equations, written at the Los Alamos Labs. A lesser known publication is a group of essays (spring 1997) including: 1. The Present and Future of Mankind; 2. The

Brain and Thinking; 3. Mathematics; 4. Man and Woman; 5. Music; and 6. Things Out There. Professor Richtmyer played the violin with the Boulder Philharmonic Orchestra.

G.H. Hardy, remembering Ramanujan:

I remember once going to see him when he was lying ill at Putney. I had ridden in taxi cab number 1729 and remarked that the number seemed to me rather a dull one, and that I hoped it was not an unfavorable omen. "No," he replied, "it is a very interesting number; it is the smallest number expressible as the sum of two cubes in two different ways."

A Mathematician's Apology (London 1940)

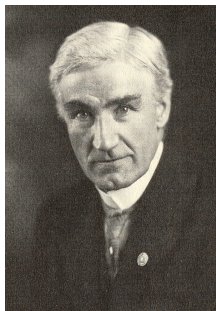
Mathematics Department Endowments

Ira M. DeLong lectures and undergraduate prizes

The DeLong Lecture Series and undergraduate prizes are funded by an endowment given to the 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. By the time he retired in 1925 there were four members of the mathematics faculty.

DeLong also became a prominent citizen of the Boulder community: president of the Mercantile



Bank and Trust Company, organizer of the Colorado Education Association and president of the commission that gave Boulder the city management form of government.

After his death in 1942, it was decided that the \$25,000 bequest he made for the Mathematics Department accumulate interest until income became available to fund the DeLong Lectures and prizes for undergraduates competing in the annual Putnam exam.

The DeLong Lecture Series, started in 1963, has brought 40 outstanding mathematicians to the Boulder Campus.

Kempner Mathematics Colloquium

The Kempner Colloquium was initiated in 1963 in honor of Professor Aubrey J. Kempner who served as head of the Mathematics Department from 1925 until his retirement in 1949.

Professor Kempner gave the inaugural lecture for the series speaking on "Reminiscences of the University of Goettingen" where he received a Ph.D. degree under Edmund Landau in 1911. Kempner continued to take an active interest in the department until his death in 1973.

The Kempner Colloquium Endowment Fund was established in 1995 to provide an independent source of income to pay travel expenses and a small



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

honorarium for colloquium speakers. Initially \$10,000 was raised by gifts from the faculty and \$5000 from alums. This was followed by a generous gift of \$25,000 from CU alumnus, Dr. William J. LeVeque (B.A. 1944), who wanted to perpetuate the memory of Aubrey Kempner because of the great influence he had on LeVeque's life and career. A matching gift of \$10,000 from the College of Arts and Sciences brought the

endowment to the initial goal of \$50,000.

The weekly Kempner Colloquium series on topics of broad mathematical interest help maintain a vibrant learning environment for faculty, students and visitors from the community.

Mathematics Department Endowments

Contributions can be made to any of the department's endowment funds described on these pages by sending your TAX DEDUCTIBLE GIFT to the University of Colorado Foundation, Arts and Sciences Development, 1305 University Ave. Boulder, CO 80302. Please see the enclosed form for the MATHEMATICS DEPARTMENT 2004 ANNUAL FUND.

Burton W. Jones Teaching Excellence Award

Burton W. Jones was on the faculty of the Mathematics Department from 1948 until his retirement in 1971. Under his leadership as chairman from 1949 to 1963, the department grew to a position of national leadership.

In 1984, to preserve the memory of our distinguished colleague, the Mathematics

Department faculty contributed money to establish an endowment with the CU Foundation of the Burton W. Jones Teaching Excellence Award. Each year income from the endowment is awarded to a Mathematics Department graduate student chosen by the faculty as the outstanding teaching assistant.

Frances C. Stribic Scholarships

Frances Stribic was a member of the Mathematics faculty from 1926 until she retired in 1965. 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 jointly with Professor Dorothy (Happy) Martin in the Psychology Department.

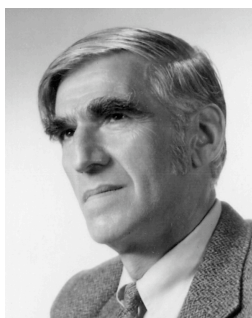
Professor Stribic was an outstanding teacher, well respected by her students and colleagues. The Stribic Scholarship Endowment was established in 1990 by her long-time friend and colleague, Dorothy Martin. Scholarships are awarded each semester from endowment income to female graduate students chosen by the faculty for excellence in mathematical scholarship.



Frances Stribic and Dorothy Martin

Wolfgang J. Thron Mathematics Fellowship

In 1999 Professor Emeritus Wolfgang Joseph Thron made a gift to the University of Colorado Foundation to establish the W. J. Thron Mathematics Fellowship Endowment. The income from the endowment is used to award a fellowship 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. Professor Thron was a member of the Mathematics Department faculty from 1954 until he retired in 1985. He served as the department chair from 1972 to 1974 and was the thesis advisor for 21 Ph.D. students.

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.

Archimedes will be remembered when Aeschylus is forgotten, because languages die and mathematical ideas do not. "Immortality" may be a silly word, but probably a mathematician has the best chance of whatever it may mean.

G.H. Hardy, A Mathematician's Apology(London 1941)

William N. Reinhardt Memorial Lectures

An endowment to fund the annual William N. Reinhardt Memorial Lectures was established at the University of Colorado Foundation in 2001 by family, colleagues and friends.

Professor Reinhardt was a member of the Mathematics Department from 1967 until his untimely death on June 22, 1998 at the age of 59.

Bill Reinhardt, as he was known to family and friends, was interested in the foundations and philosophy of mathematics and he sometimes taught courses in the Philosophy Department.

The lecture series was inaugurated on September 10, 2001.

Adele Leonhardy Memorial Scholarship

An endowment fund for the Adele V. Leonhardy Memorial Scholarship was established in the University of Colorado Foundation by a gift from the estate of Adele Leonhardy (B.A. 1924). Income from the endowment will provide annual scholarships to be awarded to outstanding graduate students or upper-division A&S undergraduate students majoring in mathematics. Recipients must have demonstrated excellence in their studies and must be preparing to teach mathematics.

Adele Leonhardy was born in Carbondale, Colorado in 1900 and grew up at Fruita near Grand Junction. She was a student at the University of

Colorado from 1917 until 1924. She taught elementary school in Boulder during her seven years as a CU student in order to pay for her college education. After graduate work at the Universities of Chicago and Missouri, she taught mathematics at Stephens College until she retired in 1967.

Professor Leonhardy knew the difficulty of working one's way through college. She dedicated her life to the teaching profession. Her gift to the University of Colorado will enable students from all future generations to prepare themselves to teach mathematics.

Mathematics Graduate Student Fund

Upon retirement after thirty years on the CU Boulder Mathematics Department faculty, Professor Richard Holley requested that a Mathematics Graduate Student Fund be established in the University of Colorado Foundation in lieu of an appreciation gift to him from our faculty.

The purpose of this fund, which has now been established with the money that was donated at his retirement, is to promote the graduate students in the Mathematics Department at the University of Colorado at Boulder. Professor Holley wrote: "Your contributions to the fund acknowledge the importance of the graduate students to our department."

