THIS PLOT STRIKES ME AS SO SURREAL...

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The cover design is from this year's Geology t-shirt. It was designed and drawn by Frankie Iaquinta-Ridolfi and Michael Ramage, both '95.

The Carleton Geology Newsletter is edited by Timothy Vick. The alumni list computer programs are by Susan Campbell LaCroix '78.

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June 22, 1994  

Dear Geology Alumni,

When I took over as Chair of the Geology Department from Ed Buchwald in 1991, he said "Mary, we don't have normal years in this department. You won't have much peace of mind unless you anticipate and accept that each year is going to be different and unusual."

It should be no surprise to any of you that Ed was absolutely right. The 1993-94 academic year has been filled with surprises. You'll read about some of the major ones in the next few pages - Shelby Boardman's move to college administration ("the other side" as our students put it), Cathy Manduca's successful application to be the new Keck Geology Consortium coordinator (if the grant is renewed, Carleton will administer it), and the arrival of Julie Maxson and Bereket Haileab, who will teach in the department for the next few years.

We are continuing to thrive, though our view west across the Bald Spot has now been blocked by the new Biology building. We have plenty of enthusiastic, inquisitive students at all stages of their geologic education. Some of the really neat things that happened this year included our first-ever extra-terrestrial comps, a complete refurbishing of a large display case undertaken by five students to showcase some of our mammoth and mastodon fossils and to show dinosaurs in an anastomosing stream habitat, and a student project for an education class about why our geology program is so successful.

We were delighted to have Cindy Shroba with us for a year. She started her Sedimentary Geology class in the fall by reading a warm and fuzzy picture book about rocks and went on to delight Seds and Paleobiology students all year. She'll be moving on to Mt. Holyoke College next fall. Bereket Haileab, our other newcomer this year will be staying on as Shelby's leave replacement. We thank both Cindy and Bereket very much for their efforts this year.

Tim Vick and Betty Bray continue to keep our operation running, a major task given the numbers of majors, complex projects, and variety of activities we engage in. One visitor described the department as "a well-oiled machine". I think the "oiled" part of the analogy is particularly apt. I think of Betty and Tim as the ones who spend time talking with everyone, both students and faculty, to make sure that everything works as well as it can. Thanks to both Tim and Betty!

The loss of two of my mentors this spring, Clyde Wahrahaftig and Marie Morisawa, has made me realize just how important role models and mentors are. One person who has served that role for many of us is Ed Buchwald. Most of you graduated since Ed arrived at Carleton in 1967 and have been influenced by his integrity, his commitment to the natural environment, and his educational values. In a few years, in the autumn of 1997, we'll have an opportunity to honor Ed as alumni of Carleton. We haven't settled on the exact format yet, but we may organize a symposium around the twin themes of why citizens of the world should be educated in environmental geology and how environmental management has developed the past thirty years. I'll be writing to many of you asking for your help, but please feel free to contact me if you know you'd like to be involved.

Thanks to all of you who helped this year with campus visits, talking with students, leading field trips, providing posters, and all the other things that you do for us.

Best wishes to all of you,

Mary Savina  
Chair and Professor
Although the off-campus seminar in Italy suffered more than its share of rainy days, there were some nice ones and spirits were high. Clockwise from upper left: Ian Wallace '95 and Kate Jesdale '95 take a breather during a hike in the Dolomite Mts.; Bryn Perkins '95 examines a limestone outcrop on Monte San Vicino near Coldigioco; and Jessamyn Tuttle '94 shows the scale of a primary fold in a limestone at San Vittore, Italy. Photos by Kate Jesdale and Julie Williams '94.
DEPARTMENTAL NEWS

Dave Bice Leads 24 Students To Italy Fall Term

Twenty four enthusiastic geology students invaded the Italian village of Coldigioco under the leadership of Dave Bice last fall, during the first off-campus geology program in Italy. The program was a great success, and we plan to run it again in fall 1995.

The best way to characterize the experience is to reprint a couple of paragraphs of a letter Dave faxed home to the Geology Department after the first third of the program was over:

"Most of the students arrived tired and a bit disoriented, but they're all doing well now and have injected a new life into this town. The original inhabitants of the town are delighted by the change and they have been very nice to the students. The town matriarch, Italia, even made a special dinner that was waiting for us when we returned from a week in the Dolomite Mts. (which was a great disappointment because of wet, cloudy, cold weather that made it nearly impossible to see anything). The students expressed their gratitude in the form of a poem, composed by Myongsun Kong.

"The students have seen and done a lot so far. They have learned a lot about limestones, planktonic foraminifera, mapping, structures of all kinds, ophiolites, melanges, turbidites, and much more. They are also picking up some good cooking skills and they've been especially good about pitching in cleaning and other maintenance chores. We are especially glad to have Michael Ramage and Ian Wallace along to keep our fleet of cars running (they are both very impressive and inventive mechanics)."

While on a three day field trip to the town of Piobbico, the international headquarters of the Club dei Brutti (Club of the Ugly People), all of the students were inducted as members of the club and the club president gave everyone an official rating on the ugliness scale. He noted that although this was a remarkably good looking crowd, some members of the group showed potential for more respectable ratings as they matured. All this over dinner at one of the best restaurants in the region, and most likely some wine, too.

The program was housed in the Geological Observatory of Coldigioco, a group of 200-300 year-old stone houses with a somewhat newer school building, and includes living spaces and geological research labs. One note of interest that Dave found was that earlier in this century, Coldigioco was a center for experimental education, where two teachers were trying out some new approaches to educating children, emphasizing cooperative learning through group projects. "It seems," he said, "a little ironic that the Carleton Geology Department takes the same approach."

Shelby Boardman Named Associate Dean

[Adapted from the Northfield News]

Charles L. Denison Professor of Geology Shelby J. Boardman was selected to serve a three-year term as associate dean of the college beginning this September, succeeding Prof. Steve Galovich who has become dean and provost at Lake Forest College in Illinois.

When Dean Beth McKinsey made the appointment, she said "Shelby brings lots of relevant experience to the position- grant writing and administration, building planning, a college-wide perspective from extensive committee service, as well as strong administrative skills, good judgment and high credibility and respect among the faculty."

Shelby has been a member of the Carleton faculty since 1971. His areas of teaching interest include mineralogy, petrology, x-ray analysis and Precambrian geology.

In addition to leading numerous field study programs and summer research programs for students, Shelby has been active in the Council of Undergraduate Research. He has won several research grants, and has edited a book and authored or co-authored more than 25 articles and abstracts. He is a member of the American Association for the Advancement of Science, the National Association of Geology Teachers, the American Mineralogical Society, the Society of Sigma Xi, and is a Fellow of the Geological Society of America.

Shelby has served on numerous Carleton committees including Faculty Personnel, Administrative Policy, Social Policy, Educational Policy and Admissions and Financial Aid. He served as Geology Department chair from 1979 to 1983 and this past year chaired the Off-Campus Studies Committee.
As assistant dean, Shelby will be responsible for grant administration, oversight of the Modern Language Center, academic budgets, teaching support programs and special projects. He also will assist in faculty hiring and faculty development and represent the Dean’s office on campus committees.

**Visiting And New Faculty Bring Diverse Interests**

This year we were fortunate to be able to invite two excellent scholars and teachers to teach in our department. One of these will continue on for the next two years as a leave replacement for Shelby Boardman, and another person will arrive in September to teach structure and sedimentary geology for two years, replacing Mary Savina, Dave Bice and Ed Buchwald while they take short sabbatical leaves.

Cynthia Shroba was here this year as a Pew Teacher-Scholar in Geology. She taught Paleobiology and Sedimentary Geology, and she hosted Brett Kessler (now Dooley) ’94 at the Friday Harbor Marine Lab while Brett did field work for her comps project. In addition, Kate Ferguson ’95 has joined Cindy at Friday Harbor for a project this summer, and Cindy is teaching an Elderhostel course in geology this July here on campus. Cindy previously taught at the University of Illinois-Urbana and the University of Oregon, where she earned her PhD in geology in 1992. Cindy was a popular and exciting teacher, and we enjoyed working with her tremendously. She has taken a position at Mount Holyoke College for next year.

One of the best story tellers we have seen in many moons is Bereket Haileab, an native of Eritrea (which for a time was part of Ethiopia). Bereket this year taught Mineralogy and Petrology as a Hewlett Fellow in Geology, but the students and department thought highly enough of him to invite him back for another two years to replace Shelby while he is Associate Dean of the College.

Bereket earned his BS. in geology at Addis Ababa University in Ethiopia, his master’s at the University of Utah, and expects to finish his PhD at Utah this summer. His research for his graduate degrees centered on identification, field mapping, and chemically analyzing tephra units in Ethiopia, which are used to correlate and date deposits containing hominid fossils in East Africa.

Bereket is one of the more colorful personalities we have enjoyed, and he loves to tell stories of his many adventures. Field work in Africa is an enterprise that involves a geologist-to-soldier ratio of about 1 to 6, and a field day to dig-your-jeep-out-of-the-mud pit day ratio of about 1 to 1 (at least the way Bereket tells it).

Next year, Bereket is scheduled to teach Mineralogy, Petrology and Introductory Geology.

The other new person for the next two years is Julie Maxson, who will teach Sedimentary Geology, Structural Geology, and Sedimentary Basins. Julie earned her BA at Oberlin and is completing her PhD at the University of Minnesota. Her doctoral thesis is entitled “Sedimentary Record of mid-Cretaceous Tectonic and Volcanic Evolution of the Northern Tyaughton Basin, British Columbia.” Julie's experience includes teaching at the University of Minnesota and Oberlin College as well as research with the USGS.

Welcome, Julie!
Mary Savina Presents
Geomorphology Workshop

Mary Savina organized and presented a Keck Geology Consortium workshop on teaching geomorphology in late September, 1993. The eighteen participants represented ten Keck consortium schools and four Minnesota schools. Marie Morisawa (SUNY-Binghamton) and Bob Anderson (UC-Santa Cruz) were special guests. Before the workshop began, David Harbor (Washington and Lee) compiled a 230 page booklet of "Great Ideas in Geomorphology", a collection of syllabi, labs and exercises used by many participants. Eric Leonard (Colorado College) also compiled the results of a questionnaire about the place of geomorphology in the curricula of the schools represented at the workshop.

The workshop sessions included two field trips (to the Arb and the Cannon River Wilderness Park). These field trips generated a lot of questions and discussion about field work in geomorphology, including issues of faculty guidance of student work, instrumentation, and others. Indoor sessions included compiling a list of goals, questions and topics for geomorphology classes; a demonstration of the role of classroom demonstrations; a discussion of quantitative problems in geomorphology; and a demonstration of computer programs and equipment. After dinner on Saturday night, Mark Johnson, of Gustavus Adolphus College, gave an excellent talk on the Quaternary geology of Minnesota, with commentary from the other Minnesota attendees.

One of the best aspects of the weekend was the chance to talk informally with other geomorphologists (and those contemplating beginning to teach geomorphology). Informal conversations went on during the breaks, at meals, after dinner, on the way to the airport, and in a variety of other settings. Everyone came away from the weekend with long "to-do" lists and a lot of enthusiasm for tackling their courses. We all hope to continue these conversations.

Marie Morisawa, Peter Birkeland Visit As Bernstein Geologists-In-Residence

We were very pleased to be able to invite Drs. Marie Morisawa and Peter Birkeland to be our twelfth and thirteenth geologists-in-residence on the Bernstein Development Foundation Geology Endowment this year.

Dr. Morisawa, who died tragically in an automobile accident in June [see separate story], visited for three days in September. Her two talks were entitled "Geomorphological hazards: floods, landslides, and other natural disasters," and "Women in geology."

Bereket Haileab explains deep metamorphism on the rocks of Lighthouse Point, Marquette, Michigan, during our fall field trip. The student next to him is Kim Knight '97.

After receiving her BA from Hunter College and MA from the University of Wyoming, she earned her PhD from Columbia University. She held teaching and research positions at Bryn Mawr College, the University of Montana, Antioch College, and the U.S. Geological Survey, but since 1970 she was in the Department of Geological Sciences and Environmental Studies at the State University of New York at Binghamton, recently as a Professor Emeritus.

Her research and teaching focused on geomorphology and environmental science, especially the study of rivers, natural hazards, morphotectonics and human effects on landscape. She published more than 30 papers and eight books,
and was a Fellow and a Councilor of the Geological Society of America, as well as serving on a wealth of other boards and scientific organizations.

Dr. Peter Birkeland visited in October and gave talks entitled "Geological applications of soils" and "Exotic soils on exotic islands: geology and soils by mountain bike in the Western Pacific."

Dr. Birkeland earned his BS from the University of Washington in 1958 and his PhD at Stanford in 1962. He has held research and teaching positions at the University of California, Berkeley, the USGS, and has taught at the University of Colorado, Boulder since 1967. He is also a Research Associate for the Institute of Arctic and Alpine Research.

His publications include more than 50 papers and two books. He received the Kirk Bryan Award in 1988 from the Quaternary Geology and Geomorphology Division of GSA for his book Soils and Geomorphology. His research interests are global, including areas in the U.S., New Zealand, Israel, and Peru, among others.

Cathy Manduca Coordinating Keck Consortium Projects

Cathy Manduca was elected this spring to be the coordinator of the Keck Geology Consortium. She is currently writing proposals which, if funded, will support the consortium's activities during the academic years in 1997 through 1997.

The main activities of the consortium comprise roughly half a dozen projects each summer. During the following school year, participating students do lab analyses and write up their results, then present their findings in a meeting in April. The program has an overall budget of around a half million dollars per year, and is funded by grants from the National Science Foundation and the colleges themselves in addition to the major funding of the Keck Foundation. The colleges in the consortium are Carleton, Amherst, Beloit, Colorado College, Franklin and Marshall, Pomona, Smith, Trinity University, Washington and Lee University, Whitman, Williams and the College of Wooster.

Many will know Cathy from the years she taught Mineralogy, Petrology, Advanced Petrology and Introductory Geology here, 1989 through 1992. She and Armando now live with their children in

Police Exhume Shallow Hasty Grave Dug By Soils Class

A "possible hastily dug shallow grave of an animal or human" was investigated in the Carleton Arboretum by the Dakota County Sheriff's office on Saturday, October 30, 1993 with assistance from Carleton College Security officer Klay Christianson and a Northfield Police officer. Despite the date, this was not a Halloween gag.

The grave was reported to the Dakota County Sheriff's office by a Boy Scout leader (not Ed) who was walking in the Arb with some of his scouts and looking for deer tracks and other wildlife. The Sheriff's deputies who investigated requested an officer from Northfield to be in attendance, and they called College Security to borrow a shovel so they could exhume the grave.

While the excavation, which produced nothing of forensic value, was taking place, Carleton Security man Klay Christianson did a little investigating independent of the municipal constabulary. He found that not only did Mary Savina have a suspiciously accurate knowledge of the location of the grave, but she was able to describe its dimensions with uncanny precision even though she had not seen it. The pieces of the mystery fell into place when he realized that the grave was dug in partial fulfillment of a lab assignment by students in Mary's Soils class.

The remains buried in the grave were those of ignorance and underappreciation of the local soil profile. The police failed to notice them and reported the grave was empty. At left, some of the culprits in action: Geoff Redmond '95, Vanessa Bodrie and Andrea Stein, both '96.
Rochester, MN, where Robert will enter first grade this year and Katie (2 1/2) is growing up quickly. Cathy's office is on the second floor of Goodsell Observatory.

In addition to her work with the Keck consortium, Cathy has received a grant of $6500 from the National Science Foundation to support her study of the stability of the mineral epidote at high temperature and pressures using experimental techniques and will be teaching at St. Olaf in the fall.

**Marie Morisawa And Clyde Wahrhaftig Pass Away**

It is with tremendous sadness we report that during the spring, both Clyde Wahrhaftig and Marie Morisawa died. Clyde Wahrhaftig, whom recent Carleton graduates remember for his visit a year ago as Chesley Lecturer, died unexpectedly after a brief illness in April. Besides being one of the preeminent geomorphologists and field geologists of our time, he was active in bringing the science of geology to ordinary citizens, and in awakening the world of geologists to the presence of gay, lesbian and bisexual people among them. He also worked hard to enable members of sexual and other minorities to be full participants in our science without repression or stunted opportunities.

Marie Morisawa died June 10 in a single car accident as she drove to work. She had visited Carleton three times, once during our symposium in 1983 commemorating the first half century of the Geology Department, in the fall of 1990, and again this year as a speaker in the workshop on teaching geomorphology, organized and presented by Mary Savina. Marie was one of the most prominent geomorphologists of our generation and served as a role model for women aspiring to careers in the science. She was also a particularly warm person whom we remember fondly. Both of these wonderful people will be sorely missed.

**Don Davidson '61 Named GSA Executive Director**

How do you find a person who has the breadth of intellect and experience to manage a huge budget, understands geological research programs, and has a good working knowledge of the publications business? Look for a Carleton grad, of course, such as Don Davidson, who recently was named Executive Director of the Geological Society of America. The qualities above were the ones listed by GSA as the requirements they needed for their new director to replace F. Michael Wahl, who retires this spring after 12 years in the post.

Don has been Assistant Provost for Resource Planning at Northern Illinois University in De Kalb for the past four years, where he has been responsible for an $84 million per year program. He assumes his new post as of July 1.

After earning his bachelor's in geology at Carleton, Don earned his PhD at Columbia University. Don's younger son, Mark, who is studying for a master's in geophysics at Purdue, is a third generation geologist in the family.

In a note to the Newsletter, Don said, "Many challenges lie ahead for me in [my new] role, however I believe my experience fits well with the society's needs. Although I leave higher education reluctantly, I look forward to future interaction with Carl alums at various GSA functions. Additionally, I look forward to discussing issues of import to the geosciences with many of you."

**Gary Ernst Elected To American Philosophical Society**

W. Gary Ernst '53 recently was elected to membership in the American Philosophical Society, the oldest and perhaps most prestigious learned society in the United States. Gary is the Dean of the School of Earth Sciences at Stanford University. The society, founded 251 years ago by Benjamin Franklin, promotes excellence and useful knowledge in the sciences and humanities through scholarly research, professional meetings, publications, library resources and community service. Other members elected this year include Walter Cronkite, Marian Wright Edelman and Nobel Laureates Toni Morrison, Nelson Mandela and F.W. de Klerk.

**Thanks To Alums For Your Help!**

There are a number of you whom we want to thank for particular favors which you have done for the Geology Department:

We'd like to express thanks to Pete Rowley '64 for a number of favors he did for us this year. He helped several students become familiar with the regional geography of the Marysville, Utah, area. Karen Swanberg and Ruth Trzynka (both '94) did their comps based on field work in the Cedar City area nearby. Also, Pete hired students Liz Butler and Kevin Theissen '96 as lab and field assistants.

During our spring departmental field trip to Missouri, Robb Jacobson '79 led us on an excellent tour of his field area on the Jacks Fork River where he is studying the movement and impact of gravel bars on
the wildlife habitat. We had a wonderful day-long canoe trip which we all appreciated tremendously. Also, Robb advised Rob Wertheimer '94 on his comps project, which was related to Robb's long term project on the Jacks Fork.

We'd like to thank Meg Hayes '72 for some extremely interesting discussions on environmental issues following the accident in Prince William Sound with the tanker Exxon Valdez as well as the difficulties in reconstituting a major land trust in Alaska. Meg visited as a guest of the Environmental Studies program.

Heyo Van Iten led Cindy Shroba's spring term Paleo class on an excellent field trip in his native state of Iowa, for which we thank him warmly. Heyo knows every cranberry and cafe owner in Iowa.

Evan Dresel '79 visited in May and presented a talk on the groundwater problems associated with the Hanford, Washington, nuclear facility.

John Sharry '73 visited last fall and had a discussion with interested students, and we thank him for sharing his knowledge with them.

And we thank those people who loaned us posters to display in the Mudd hallway. The posters have markedly positive effects for us. They help people who cannot get to GSA or other meetings stay current with the science, and they provide important examples of high quality work for our students. This year, poster sessions included: Lee Ricupiti '85, "Ion microprobe studies of diagenesis: Sulfur isotope variations in the Western Canada Sedimentary Basin," Diane Smith '77, "The Enchanted Rock Batholith, TX: Geochemical constraints of the origin of Llano granites;" and Cindy Shroba (faculty), "Paleoecology, taphonomy and depositional environment of fossiliferous sedimentary units within the Eocene Yachts Basalt at Heceta Head, Oregon."

Thank you all very much!!

**Stewart Fellows For '93-'94**

Three juniors, David Boardman, Kate Jesdale and Ofori Pearson, have been named Duncan Stewart Fellows for the next school year by the Geology Department.

The fellowship was established in 1976 by Daniel Gainey ('49) in honor of Duncan Stewart, professor of geology at Carleton for nearly 25 years. It carries of stipend of $2700 per student, plus a fund which may be drawn on to cover research expenses. The principal criteria for selection are excellence in scholarship, a high level of intellectual curiosity, potential for scientific growth, a demonstrated ability to work independently, and involvement in departmental activities.

These students will extend the number of Stewart Fellows to 52.

**Keck Consortium, REU Project Participants**

Three Carleton students will be participating in projects sponsored by the Keck Geology Consortium this summer. Karen Bobbitt '96 will work with the remote sensing project being led by Glenn Kroeger of Trinity University; Cari Johnson '96 will participate in the Quetico Region project under the direction of Hank Woodard of Beloit; and Matt Reuer '95 will join the Cascades Volcanics project led by Stan Mertzman of Franklin and Marshall.

Two students, Sara Gran and Stephanie Phippen, both '96, will participate in a Research Experience for Undergraduates, sponsored by the National Science Foundation, being conducted at the University of Minnesota, Morris.

**Other Awards**

- **Mortar Board**
  - Chris Poulsen
  - Phi Beta Kappa
  - Beth Pratt
  - Jean Schmidt Prize
  - Myong Sun Kong
  - Richter Fellowships
  - David Boardman
  - Ofori Pearson
  - Michael Ramage
  - Mineralogical Society of America Award
  - David Boardman
  - Sigma Xi Grant In Aid of Research
  - David Boardman

- **Distinction in Comps**
  - Aron Clymer
  - Geoffrey Collins
  - Starr Johnson
  - Richard Kay
  - Reed Krider
  - Miranda Lescaze
  - Beth Pratt
  - Karen Swanberg
  - Liz Symchych
  - Rob Wertheimer
  - Julianne Williams
  - Sigma Xi, Associate Membership
  - Aron Clymer
  - Geoffrey Collins
  - Starr Johnson
  - Richard Kay
  - Reed Krider
  - Miranda Lescaze
National Coming Out Day
Celebrated On Fall Field Trip

National coming out day, Oct. 11, fell during the fall field trip to Northern Michigan last fall and it was observed by wearing appropriate apparel. The shirt at left says "Closets are for clothes, not for people, silly."

There is a network of lesbian, gay and bisexual alumni and students in the fields of geology and natural history to help with career information and other items of interest. The network is in its fifth year and has 18 members around the country.

The network consists of a confidential list of names and addresses kept by Dan Spencer '79 and Marilyn Yohe '88, and is circulated only to members of the network. The network has the twin objectives of helping reduce isolation among alums and helping to provide a more open, accepting and informative environment for geology and natural history students on campus. To join the network or for further information contact Dan, Marilyn or Tim Vick.

Chris Poulsen
Karen Swanberg
Liz Symchych
Julianne Williams
Full membership in Sigma Xi nomination
Cynthia Shroba

This Year's Senior Geology Majors

This year's seniors, their hometowns and titles of integrative comprehensive exercise projects:

Aron Clymer, El Paso, TX "Shocked quartz near the Eocene/Oligocene boundary at Massignano (central Italy): Evidence for a late Eocene terrestrial bolide impact and implications for the late Eocene extinctions"

Geoffrey Collins, Hudson, WI "Global-scale stresses on Triton"

Julia Daly, Wellesley, MA "A phosphate analysis of soils from four different archaeological sites in the Nomos of Grevena, Greece"

Emily Darby, Golden, CO "Mineralization characteristics of the Sage Pipe, a solution-collapsed breccia pipe located on the Coconino Plateau, Arizona"

Starr Johnson, Alpharetta, GA "The disappearing glaciers of Glacier National Park, Montana: A study of their movements since the Little Ice Age"


Brett Kessler, Port Washington, NY "Changes in distribution and infilling of Benthic Foraminifera from Puget Sound, Washington"


Reed Krider, Tucson, AZ "Bar complex evolution and Colorado Squawfish Nursery Habitat availability on the Green River, UT"

Miranda Lescaze, Washington, D.C. "Mechanical state of inverted fold limb in northern Apennines, Italy: Thin section analysis"

Naomi Lubick, Ventura, CA "The Silurian Cranberry Island volcanic series of Mt. Desert Island, Maine"

Chris Poulsen, Helena, MT "Origin, metamorphic history, and tectonic setting of Archean rocks from the Spuhler Peak assemblage, Tobacco Root Mountains, MT"

Beth Pratt, East Lansing, MI "Geologic history of the mountains in the Parco Naturale dell'Orecchiglia and surrounding region, Tuscany, Italy"

Karen Swanberg, Great Falls, MT "A stress field analysis of barren fractures in the southern high plateaus of Utah"

Elizabeth Symchych, Andover, MA "Evidence of periodic basaltic injections into the crystalline mush of the Cadillac Mountain Granite Magma Chamber, Mount Desert Island, Maine"
Ruth Trzynka, Dickinson, ND  "Pressure solution lineations in strata along Highway 14 as indicators of stress regime in south-central Utah"

Jessamyn Tuttle, Peshastin, WA  "Petrogenetic and tectonic history of Andesite Bodies, Chelan County, Washington"

Robert Wertheimer, Upper Arlington, OH  "Vegetation and flood interactions on a point bar of the Jack's Fork of the Current River, Missouri"

Julianne Williams, St. Cloud, MN  "Fluvial terrace evolution; Potamia, Grevena Province, northern Greece"

CLASS OF '95
Cynthia Alm
Emmett Bishop
David Boardman
Daniel Fehler
Michael Caud
Trish Gillespie
Chris Gutmann
Kate Jesdale
Rowan Littell
Roy Luck
Tony Moore
Derek Murrow
Ofori Pearson
Bryn Perkins
Michael Ramage
Matt Reuer
Frankie Ridolfi
Jay Stetzel
Houston, TX
Savannah, GA
Northfield, MN
Jordan, MN
Flagstaff, AZ
Walla Walla, WA
Middletown, CT
Grotton, MA
Albuquerque, NM
Oberlin, OH
Faribault, MN
Marlboro, VT
Montezuma, NM
Los Angeles, CA
Ithaca, NY
Rochester, MN
West Bend, WI
Indianapolis, IN

Stephen Surbaugh
Daniel Turner
Michael Unger
Ian Wallace

CLASS OF '96
Karissa Baker
Karen Bobbitt
Vanessa Bodrie
Philip Bowen
Justin Clarke
Joshua Galster
Shannon Ginn
Sara Gran
Rebecca Hrobak
Cari Johnson
Allon Katz
Georgina Michl
David Mitchell
Nina Molumby
Carrie Morrill
Anders Noren
Stephanie Phippen
Scott Propson
Geoffrey Redmond
Alex Steele
Andrea Stein
Evan Stoner
Kristofer Votruba
Ian Wallace

Anderson, IN
Portland, OR
Franklin, MI
Unionville, KY

Duluth, MN
Houston, TX
Chicago, IL
Grand Marais, MN
Collinsville, CT
Wooster, OH
Bellevue, WA
Eden Prairie, MN
Sterling, MI
Louisville, KY
West Hempstead, NY
Boulder, CO
Clayton, MO
Evanson, IL
Avon, CT
Taylor Falls, MN
Bloomington, MN
Greenleaf, WI
Doylestown, PA
Williamstown, MA
Cypress, CA
Renton, WA
Santa Rosa, CA
Unionville, CT
Field Trips

Clockwise from this page from midstream on his project on the
field trips: Robi Jacobson '79, lectures from field trip; Kevin Blake '92, and Nina
Jacks Fork River during the Missouri
Field trip; Kevin Blake '92 and Nina
Johnson Shuttle State Park, Missouri;
and Hedo Van Ilen '81 is all over the
hacky sack during the Paleo trip to
Iowa this spring (photo by Alex Steele
95). On the opposite page, Shelby
Ann Zawinski '97, Brett Kessler '94
and Rowan Littel '95 during the fall
Michigan trip.
The Carleton College Geology Department: A Successful Builder of Women Scientists?
By Julianne M. Williams '94

The Carleton Geology department has a reputation as being one of the best geology programs in the country. The department prides itself on the high number of women geologists it produces. Is this perceived success real, and if so, what are the reasons for this success?

This paper explores some of the reasons why the Carleton geology department continues to graduate a high percentage of female majors. I interviewed ten women geology majors in their junior and senior years with a list of questions about the factors that influenced their decisions in becoming geology majors. The women were selected unscientifically from those whom I found frequently in the geology labs in Mudd Hall. The information presented here is a combination of my own personal observations, the results of research into existing literature, and the interviews.

Measurements of Success

Statistically, the Carleton Geology Department has been highly productive in graduating women scientists. This is particularly true when compared with national figures on women geology students. According to American Geological Institute information, the national average percentage of women receiving bachelor’s degrees in geology between the years 1973 and 1982 was 20%. Carleton averaged 46% for that time period. It is not unusual for Carleton to have twice the female to male ratio of other schools.

Within Carleton itself, geology consistently produces more female majors than the other physical laboratory sciences (physics and chemistry). From 1987-1994, the average percentage of female graduates in chemistry was 43%, and physics was 26% women. By comparison, geology averaged 54% women graduates for those same years.

Enrollment statistics alone do not provide a complete picture of whether a program is successful. For this reason, student opinion was also sought in an informal poll of ten female geology majors. Women were asked to rate their satisfaction with the geology department on a scale from one to ten (ten being the highest). Overall, women were very positive about their experiences in the geology department, and gave the department an average satisfaction rating of eight.

Another measure of departmental success in creating women scientists is the number of women who continue their studies in earth sciences. If the numbers of women who pursue graduate degrees in earth sciences is a measurement of success, Carleton women are doing very well compared to women from other schools, and just as well as Carleton men. Information on graduate degrees was obtained from a study by the Office of Planning and Institutional Research at Franklin and Marshall College.

Carleton ranks high in female earth science doctorates compared to other four-year liberal arts colleges. Between the years 1979-1988, Carleton alumnae received fifteen degrees, making Carleton the highest producer of female earth science Ph.D. recipients ahead of Wellesley (10), and Smith (9) (both all female colleges). Combining the top ten coeducational undergraduate schools, 20% of Ph.D.’s were earned by women. For Carleton graduates receiving Ph.D.’s, 37.5% were women.

Additionally, Carleton earth science ranked higher in the number of doctorate recipients than the other sciences at Carleton. Although they ranked first in earth science, Carleton women ranked fifth in physics, sixth in chemistry, eighth in engineering, ninth in all the sciences, fourteenth in the life sciences, and fifteenth in mathematics. Also interesting is the fact that when compared to other colleges, Carleton men rank fifth for doctorates in earth science, compared to the females’ ranking of first. This once again points to the fact that Carleton has been more successful than other schools in nurturing women geologists.

Carleton geology women are holding their ground when it comes to comparison with their male peers. Assuming that most of the doctorate recipients from 1979-1988 graduated from Carleton between 1973 and 1985, it appears as though the same percentage of women and men who graduated from Carleton went on to receive doctorates (12% each, 15/123 women and 20/164 men). This contradicts national trends showing the percentage of women geologists decreasing as the level of degree increases. One study found that the proportion of women in the geosciences decreases by ten percentage points (approximately fifty percent of the total women) from bachelor’s to doctorate recipients. In this light, Carleton women are extremely successful when it comes to pursuing advanced degrees in earth science.

Obstacles for Female Scientists

As the status of women in geoscience is changing, stereotyped images are fading, not only in the minds of men, but in those of the women themselves. Geology, like other so-called hard sciences, historically has been a male domain and has been considered an unfeminine discipline. The geosciences have indeed had a long-standing image of
rugged masculinity: the field geologist living and working under primitive, physically demanding conditions. In such a “physical” world, women, if not discouraged from pursuing the profession, were largely seen as teachers, librarians, map makers. The misconceptions regarding women’s ability or willingness to participate fully in all aspects of geoscience explains why, until very recently, women entered the profession in small numbers and tended to advance relatively slowly when they did pursue a geoscience career.

Additional obstacles that have historically excluded females from science include:
- comprising a minority in their classes and departments.
- little contact with other women and perceived isolation, often due to the vertical progression of required courses.
- few female teachers as role models.
- having to deal with male professors who are not accustomed to having females in class (male discomfort).
- pressure to conform to traditional sex-role expectations.
- lower expectations for females.
- unwelcoming, overly competitive or hostile atmosphere.
- lack of support for females.
- less experience with scientific observation and instruments.
- lack of personal connection with scientific tasks and questions.
- unawareness of career opportunities and future applicability.
- ineffective teaching methods and class structure.
- sexual harassment.
- lack of inclusion in male networks.
- condescension, invisibility, devaluation.

Cumulatively, these gender biases have served to exclude women from pursuing scientific degrees and careers.

Factors in Success

One would expect that a successful science program for women would be one that counterbalances these obstacles. The success of the Carleton Geology Department for women can be attributed to a unique combination of the character of the women themselves, a strong tradition of women in the department, and departmental atmosphere, curriculum, and teaching philosophies. Each of these aspects of the geology department addresses some of the obstacles cited as deterring women from entering scientific fields.

The Character of Carleton Women Geology Majors

The one factor that significantly predisposes certain women to a geology major is a love of the outdoors. A large majority of the women surveyed indicated hiking, camping, or other outdoor sports and recreational activities as significant interests and pastimes. Furthermore, they cited outdoor labs and field trips as one of the reasons for becoming interested in geology. Therefore, it seems if a disproportionately large number of women who come to Carleton are interested in outdoor activities, that might be factor in the large number of women geology majors.

The second common theme in women who choose a Carleton geology major is that they stated having already overcome gender stereotyping to various degrees in their own lives. Gender role stereotyping is a large reason cited for women not entering scientific fields. Therefore, it seems that the women who are successful in science are those who are able to bypass or overcome those stereotypes. For many women in the geology department, the acting-out of behaviors not traditionally ascribed to females, or a refusal to accept gender roles that their peers seemed reader to accept, exhibited itself at an early age. For example, one woman stated that, “I went through a phase in seventh grade when I wore lipstick and wanted to look pretty, but (I) soon reverted back to my tomboy stage.” Another woman’s comment when questioned about her childhood stated, “I beat up on boys- but I think most girls did.” She also noted that she was one of the few women in her high school who considered herself a feminist. This is not to say that all women in the geology department are radical feminists who once considered themselves tomboys. It simply serves to illustrate that gender-role stereotypes do exist in our society (otherwise these girls would not have considered themselves tomboys, but children, doing childish things), and that the women in the geology department seem to show a trend of non-conformity to gender stereotypes in some areas of their lives. I don’t know to what extent these attitudes are present in women of other majors on campus.

Tradition of Women in Geology

Previous studies have shown that a strong, positive correlation exists between the proportion of women faculty and the proportion of women students. One reason for this may be the attitudes of the faculty toward the students. A 1979 report by the National Research Council explains that “both women and men faculty tend to be supportive of students of the same sex to a greater extent than those of the opposite sex...”. They conclude that the smaller the proportion of female faculty, the smaller the faculty belief in women’s competence and the lower the expectations for their accomplishment. At Carleton, where the geology department has four permanent professors, there has been one female professor since 1978. One female professor is better than none. However, it is unlikely that a composition of 25%
female professors would be a main reason for the large number of women majors.

A larger influence can probably be found in the strong tradition of female geology majors. Although this does not explain why women first started becoming involved in geology at Carleton, it is an important factor in continuing high numbers. There are many reasons why women in the department lead to more women in the department. First of all, older students serve as role models for younger students. Older women geologists are highly visible in the department, both in classes with younger students, and as lab assistants. A lack of vertical progression in the curriculum encourages mixing of students of all levels. The presence of many women students in the department allows younger students to construct an image of themselves as also being successful in the department. Furthermore, female presence assists in overcoming the anticipation of isolation in classes and the department.

Another effect of having a strong history of women geology graduates is that male faculty become more accustomed to working with women, and their discomfort level decreases. Since discomfort of males in positions of authority is cited as a large deterrent to women majors, this would seem to have a positive affect on the number of women who remain in geology.

**Departmental Character and Teaching Methods**

The final factors influencing women's success in Carleton's geology department are classroom atmosphere, philosophies, methods of teaching, and curriculum. In the geology department, all of these facets are interrelated. Departmental philosophies are exhibited in ways of instruction, as well as classroom atmosphere and curriculum.

**Communal Atmosphere**

According to women geology majors, the biggest attraction of the geology department is its communal atmosphere. This atmosphere is created and maintained by the faculty, the physical arrangement, and classroom and laboratory dynamics.

For the most part, Carleton geology professors are perceived as placing a high priority on students. Faculty know everyone in their classes, including the large introductory classes of 40-50 students. Furthermore, faculty try to maintain accessibility to students by keeping their doors open to student questions and input. This individual attention may contribute the feeling of support women feel in their geology classes.

The physical atmosphere of the geology department also contributes to a sense of community. Instead of individual desks, students sit at large work tables with a number of other students. Many of the classrooms are interconnected, or accessible by more than one entrance. Large windows on laboratories facilitate openness and common knowledge of activities pursued by other students.

The department also fosters a sense of community in the classroom by emphasizing group projects and collaboration. As an illustration, departmental chairperson Dr. Mary Savina envisions the ideal laboratory set-up is not as one in which there is a computer for each student, but as two, three or four people working together around one computer. Most labs and lab write-ups are conducted in teams, instead of by individuals. This creates a setting of collaboration rather than competition. Although students do state that there is a significant amount of competition within the department, they perceive it to be primarily a function of personality types, not externally imposed by departmental structures. A collaborative atmosphere may be particularly beneficial to females. Research shows that women function better academically when they do not perceive the situation as one in which they are competing against others. On the contrary, females “prefer and perform better in situations where everyone wins”.

**Joint Student Ownership and High Expectations**

Also contributing to the community atmosphere of the department is joint student ownership. Senior geology majors each have a desk at which to leave their material and to work at any time. Underclass people have access to lockers and drawers in which to leave personal belongings. The labs are always open to geology students. This works because students are entrusted with the responsibility of stopping suspicious activity, and keeping track of departmental equipment. It is not unusual for 10-20 geology students to be working in the labs at night when no faculty are on duty. Responsibility for physical property is one illustration of the accountability and high expectations geology faculty place on students. These high expectations are also evident in student performance in other areas, such as time and thought that goes into assignments. Women students do not note significantly different expectations for male and female students.

This respect by the faculty is also manifested in their solicitation of student input in departmental matters such as teaching philosophies, curriculum, and faculty decisions. Discussions of departmental philosophies take place in informal settings, as well as formal settings such as the weekly geology forum, student surveys, and lab-assistant meetings.

In the classroom also, women perceive professors as respecting their input. Many women noted that the faculty valued and encouraged diverse perspectives and opinionated discourse on subject material. In class, things are not presented as either “right” or “wrong”, but with multiple interpretations or explanations. This encourages students who come
from perspectives other than the white male perspective that has dominated western scientific thought. Furthermore, multiple-answer problems encourage development of hypotheses that are relational, rather than reductionistic. Students interpret these methods as a respect for their ideas, and take pride in the autonomy of their scientific findings.

Departmental Approach to Teaching Science

Equally influential in attracting women majors is the departmental approach to science. This can be summarized as science as process, not memorized facts. In class and in labs, there is an emphasis on analytical procedures. Weekly labs focus on hands-on experience and observation. Indoor labs usually include the use of technical instruments such as computer modeling programs, microscopes, and stereoscopes. However, many of the labs take place outdoors in the field. Additional field work is conducted on week-long departmental field trips in the spring and fall. Peter Frederick of the Carleton Learning and Teaching Center describes what he observed of the department as “human interaction with the earth, geology as human centered, student centered, holistic.”

The benefits to women of this teaching approach are many. It encourages students to see a connection between themselves, their work, and the outside world. Women consistently perform better when they have a connection with their subject matter. Hands-on experience and outdoor field work which plays off of previous student interests encourages personal interest in what is being studied. An emphasis on the connections between people, ideas, and objects boosts performance levels among women.

Also, by emphasizing the importance of methods, more time is spent in the observation mode, collecting data with technical equipment. This provides hands-on experience that allows women to lessen the disparity of experience between males and females with technical equipment, and positively influence female’s perception of their ability to use scientific equipment. One study found that “the programs that have been successful in attracting and retaining women in equipment oriented, non-traditional field...have included as special component for remedial hands on experience”.

Additionally, it has been recognized that females tend to spend more time with details and relationships between details before considering an abstract framework for those details than their male peers. Therefore, an extended period of time in the observation mode may fit well with female learning styles.

Education of Future Possibilities

Outside geologists and geology alums are highly visible in the geology department. Guest speakers and lecturers visit the department several times each term. The department also sponsors career explorations in which geologists from different fields discuss their jobs. Many of the people who visit the department are Carleton geology alums. Alums are also highly visible due to strong networking between graduates, and by faculty and students within the department itself. This increases knowledge of career-track futures and demonstrates the applicability of geologic questions, thus serving as a motivating factor for people who want to see connections between what they are doing and the “real world”.

Additional Questions

The thought has crossed my mind that a predisposition toward a geology major in Carleton women may be a large factor in the high number of women geology majors. For example, this would be the case if many women came to Carleton with the intent of majoring in geology, or if women were attracted to Carleton due to factors such as the campus setting, that predisposed them to geology.

I found no direct evidence for this to be the case. Of the ten women interviewed for this project, only one indicated that she planned on majoring in geology when she arrived at Carleton. In fact, some people did not even know what geology was, let alone envision themselves as geologists. When questioned about intended majors early in their Carleton careers, the most commonly cited were English, Biology, and Physics.

The hypothesis that correlation between the reasons women came to Carleton, and the attractions of the geology major slanted the number of geology majors cannot be refuted, but shows little evidence. For example, if women chose to come to Carleton primarily because of its physiographic setting, in a rural area with proximity to the arboretum, they might be more inclined to choose a field science. However, in my survey, I found that the reasons people gave for attending Carleton did not correlate with Carleton’s physiographic setting. For many, they came to Carleton despite its location, not because of it.

Julianne Williams, who graduated with the 1994 group of geology majors, wrote this term paper for an education course entitled Schooling and Opportunity in American Society. The complete text of her paper with references is available by mail from Tim Vick. She currently is working on an expanded and more rigorous version which she hopes to present at GSA in Seattle this fall. Many thanks to Julie for permitting us to share her work with Newsletter readers!
1938. Mary-Hill Kueffner French said, in a card which just missed last year's Newsletter publication deadline, that she had just returned from a trip to the Delaware Water Gap and Franklin Furnace, NJ area; she commented there was "beautiful scenery, interesting geology and fascinating minerals."

1942. Dode Wonson writes that she's still involved in her customary activities (volunteering, tennis, knitting and reading), but she "really enjoyed the lectures Shelby and Mary gave at the Geological Society of Minnesota meetings." The society is a club for people of all walks of life who are interested in geology. Thanks, Dode!

1943. A phone call from Eiler Henrikson was welcome assurance that he has recovered nicely from the small operation he had last year. When he called, Eiler was planning two research projects for his sabbatical this fall: a trip to Lituya Bay in Alaska to survey the natural recovery of the landscape from the devastating tsunami which almost swept him away many years ago, and a trip to Russia to work on the archaeology of the Bering Land Bridge. Eiler and Kris are also enjoying the mountain home they bought, which has a nice view of Pikes Peak. Lloyd Beauline and his wife, Mary Jane Busch Beauline '45, celebrated their golden anniversary on April 15th. Congratulations to them from Carleton Geology Department! Lloyd writes, "It has been a wonderful 50 years!"

1945. Charles Repenning writes that he is "retired and am getting more work done, now, without filling forms and answering silly questions." Richard McCarthy was awarded the Civitan Club Citizenship Award last year, in addition to receiving the New Mexico State Alcohol and Drug Counselors' annual award for meritorious service, "as an educator with diverse groups." Congratulations from the Geology Department! Frank Sullivan is enjoying the geology and opportunities in the area of Sun City, AZ. His work includes political science at Arizona State in addition to real estate and stained glass. Frank sends a special greeting to Eiler.

1946. A note from Charles Higgins tells him "still promoting the study of groundwater geomorphology (buy our book!) whenever possible." He plans to be at GSA in Seattle and he hopes to see you there.

1947. When she wrote her card Georganna Dean Dickson remembered back to the spring of 1947, when "we only had two short field trips- the war made field trips impossible. It's too bad, it would have made my geology major more interesting. I did spend the summer of '44 with the U. of Michigan's field camp. Where were you the summer of '44?"

1949. Bill Roth is back working the Williston Basin where he began over 40 years ago, now with the main emphasis on fractured Mississippian reservoirs in the Madison and Lodgepole formations. He's also still working some in Pennsylvania, where Petrobank is commencing a multi-well program.

1950. August Schlaffer writes that he's "enjoying semi-retired status. Had a total knee replacement; it went so well I'm having my other knee done in May." August, we hope the operation went well and everything is fixed now! Paul and Moira Fossum are enjoying the Bay Area climate, as well as the water and their boat. Paul writes, "I have finally quit trying to retire. I am hooked on work of some sort. The most active part of Morpall Inc. is Uniglobe Total Travel."

1953. Peggy Bryant Brophy plans to move this summer from Fargo, ND, to Corvallis, OR, "from glacial terrain to the Pacific Rim." Her new address should be correct in the back of the Newsletter.

1954. Pat Bickford reports he's "Enjoying partial retirement by working 8-10 hours a day in the lab. I am working on methods to analyze ever smaller zircon fractions, including single grains, for U-Pb age determinations. I still work on problems in the Early Proterozoic Trans-Hudson Orogen in Canada, but my new project is studying the roughly 1250-1100 million year old deformed rocks of the Texas Grenville' in the Van Horn and El Paso, TX, areas."

1956. Thanks to Richard Buchheit for your address update. Don Kohls writes that he established Kohls Exploration Ltd. in 1992, and it is doing very well in its chosen field of contract exploration.

1958. William Hollweg sends regards, and says he's doing some consulting work plus traveling and golf. Congratulations to David Southwick, who last year was appointed Interim Director of the Minnesota Geological Survey, filling the vacancy created by the departure of Priscilla Grew for the University of Nebraska-Lincoln. Upon his appointment, David commented, "The mission of the MGS is to understand the geology of the state and apply that knowledge to the needs of Minnesotans. My job is to ensure that we continue to do that in the next year and well into the future." A card from Fred Marschner just missed last year's Newsletter, but it told of his two children, Kevin, 18, and daughter Kim, 20, who were in high school and UC-Santa Cruz respectively. Fred is an agent for Northwestern Mutual Life Insurance Co., and
National President of the NWML Assn. of Agents. He said, "This left brained guy has been dragged over into the right brained world by my career choice, and it was the right decision and has brought some needed balance into my life!" Another card we got in September was from Dante Stephensen, who had "traveled in a caboose cross country, 4000 miles, couriering two Navy SEAL Team Attack Boats to the UDT/SEAL Museum in Ft. Pierce, FL, from Sacramento, CA. Being on the rear of a 11/2 mile long, slow freight train for 13+ days was more than an adventure. The trip included the Tehachapi Loop, CA, and the southern route along the Mexican border to New Orleans, the Birmingham, Atlanta and Jacksonville."

1959. Thanks to John Neemes for your address update.

1960. Best wishes and mighty congratulations are due to Don Davidson, who has been named executive director of the Geological Society of America (see also the story in the Departmental News section).

1960. Congratulations to Michael McLanahan, who has been named president of the Pennsylvania Foundrymen's Assn.

1962. Stephen Johnson has moved from Amoco's research department in Tulsa to the exploration unit in Houston. He says, "My work in the tech group is pre-stack seismic data migration, a great opportunity to work with data from around the world." He's presently working on some data from Norway and Romania, and his work this year took him on his first trip to the Middle East for a conference in Bahrain. Walter Alvarez writes that he's enjoying his work with Dave Rice and Sandro Montanari building the Geological Observatory of Coldigioco in Italy, the site of Carleton's off-campus study program for 24 students last fall. This year Walter ascended to the chairmanship of his department, and in February was pleased to encounter a great deal of excitement about the Chicxulub Crater in Mexico when he attended the Impact Extinction Conference in Houston.

1964. Alain Kahlil has been in Santa Cruz, Bolivia, working on a two year contract advising the national oil company, YPFB. He heads a team of ten geologists, geophysicists, and engineers but the job will soon end and he will be back in Canada working on other consulting jobs. Laurel Clarke Babcock moved to Houston in April for a 12 to 18 month assignment in which she will learn operations at Amoco by working on gas field development in the Tuscaloosa Trend.

Don Davidson

Louisiana. Her husband, Jack, moved with her but is still working for the Denver office. She comments, "I'm looking forward to gaining some new perspectives from being in the midst of things." Terry Tullis writes he's "continuing to do research on rock friction and its implications for earthquake mechanics and prediction. My computer models of Parkfield earthquakes look like real ones as far as we know, and when the next one occurs we should be in a position to learn more and perhaps predict it."

1965. Jan Tullis is "continuing to value the inextricable activities of teaching, learning, advising and research. I have organized a theme session for 1994 GSA on Teaching Structural Geology, and have served on the Board for Active Tectonics Science Plan (chaired by George Davis)." Other activities Jan has been active in include Women in Science and Engineering (WISE) and many activities at Brown.

1966. Beth Schwarzman has been named chair of GSA's Education Committee, for which we are duly proud of her! She spent last Christmas in Thailand and visiting her daughter Caitlin '92 in Guam ("on the brink of the Marianas Trench!"). Her plans for this summer included sailing to Newfoundland. She comments, "The rocks should be interesting. Hope we can see them through the fog before we feel them." Amen.

1968. Patricia McWethy is "enjoying working with teachers and giving back to education" in her role as Executive Director of the National Assn. of Biology Teachers. She also says she's "struggling to keep up with the kids. My eldest, Kristin (10) is quite a track star and so many long hours are spent at meets throughout the year. Our youngest, Nicholas (3) has given up naps and this makes it hard for his parents to make it through the weekend."" 1969. Candace Kohl had what sounds like a wonderful year of field work in her capacity as a research chemist at UC-San Diego. She spent a month on the Greenland icecap with the GISP2 coring project; a month in the Simpson Desert in Australia collecting sands; and two months in Antarctica searching for meteorites. She says, "this year looks to be quite tame in comparison." What a year! Thanks to Alan Hartley for your address update. Bill Henry writes, "After directing Phillips Petroleum Company's paleomagnetic research program (to my knowledge the only one of its kind in industry in the world) for 19 years, I was laid off during cut-backs in 1992. I have
since undertaken a new challenge and am currently finishing my first year as a medical student in the MD program at the U. of Oklahoma Health Science Center." Great- we hope it goes well for you, Bill. Bill is also teaching medical college entrance exam courses for Kaplan Educational Center, Ltd.

1970. From Judy Vandenbog Boudreau: "After 5 years in floodplain management I am switching to stream flow monitoring, gaging and data management; hydropower license application review; and instream flow program coordination. I hope to re-awake some brain cell activity! Meanwhile, we're moving two doors from our current home (a duplex) to a single family home, keeping and renting out the duplex. Finally the kids can run like rhinos without (too much) concern."

1971. Roy Kruse writes that he continues to be involved in the international ministries of Billy Graham Evangelistic Assn. "We are working on a world-wide evangelistic mission by satellite March 16-18, 1995, from San Juan, Puerto Rico, to 150 countries in over 50 languages. Personally, I am closing in on one million miles of travel since 1988, to nearly 50 countries." Karen Klusmeyer Lubke, who is now Principal Geologist for Vastar Resources (formerly ARCO, and Karen, I hope I got that spelling correct), looks back on 16 years with ARCO and two and a half years in Lafayette, LA. She writes that she particularly enjoys fishing, boating, ranching and skiing with her boys. Thanks to Jane Willard for your address update...We received a press release last summer announcing Jane had been appointed to the Training Task Force of the ASTM National Committee on Environmental Assessments.

1973. When he wrote, Rich Fiore was getting ready to join a joint venture with Search Consultants International in Houston to provide permanent and contract placement services for industrial companies and environmental consulting firms. His move was to be effective in June. Bruce Nesbitt sends "Greetings from Japan. Barb, the kids and I are spending a 6 month sabbatical in Tsukuba at the Geological Survey of Japan. Managing also to do lots of sightseeing, eating raw fish and meeting Japanese families. It has been quite fun and I don't think we will be ready to go when our time is up in July."

1974. Emily Hoffman Almschneider, esteemed mom to two, has gone back to school to finish up her teaching certification in secondary science. "I'll be certified to teach... guess what?... Geology and biology! Our girls, Kiri and Bryne, are ardent geologists in their own right with a growing rock collection."

1975. Susan DuBois is continuing with her part time massage therapy practice, and she's consulting three days a week in business and management. "Life feels very full with two active sons, Michael, 2, and Jesse, 9" she says. She added that she "appears settled in Tucson for awhile. Love reading news of the rest of you and thought I'd contribute too!" Thanks for joining in, Susan; people do appreciate it. Thanks also to Scott Fischmann for your address update. A computer note from Dave Rogers includes:"I'm now a hydrology postdoc at Los Alamos, in the Environmental Protection Group. My mission is to learn about the groundwater recharge beneath the lab property, to determine the possibility for offsite contaminant movement. It's a pretty neat setting; the water table is 1000 ft deep. Recharge occurs as unsaturated flow through fractured rock, and we hydrologists really don't even understand the physics of this! So I live at 7200 feet, surrounded by ponderosa, juniper, and pinion; it just snowed again (late April). Seems almost like heaven."

1976. Will Maze is back in the US after nearly a year in Malaysia doing thermal modeling. "A great place," he says, "but a long way from home." Barbara Rossing plans to finish up her dissertation on the Book of Revelation and begin a new job at the Lutheran School of Theology in Chicago in September, where she will be living just two blocks from Leah Haworth in Hyde Park. Neat! Good work, Barb. Heather Macdonald is getting together a special theme session for this fall's GSA meeting in Seattle, entitled "Working in Groups: Using Collaborative Activities to Teach Geology." Gee, Heather, that method of teaching sounds familiar somehow! On her postcard, Heather wrote, "Somewhat to my surprise I am enjoying my temporary shift to administration and will be Acting Dean of Undergraduate Studies for another year." Jamie Fosters writes "We officially live in paradise now - moved to the water's edge last June. And there's a separate pool house to accommodate any Carls passing through! Our son's Odyssey of the Mind (OM) team placed first at state finals in April, so it's on to World Finals in Iowa this June. If you have kids and haven't heard about OM, find out through their school (or write me). It's a great program." Ken Collier was working this year on the launch of a new magazine for Family Handyman, this one to be on the "how-to's" of life in general rather than just home improvements as Family Handyman does. Ken described it as a sort of "Cliff Notes on life;" we wish him best wishes in getting it going! Son Cyrus is really blooming as a musician, playing clarinet and cornet in the band and also singing and playing handbells in the church choir."

1977. Thanks to Elizabeth Rorig Marxsen for your address update. I am very sad to report that Dave Machemer died on Jan. 7, 1994. His mother returned
his card with the request, "If anyone has memories of David that they would like to share with his family, we would appreciate hearing from them," signed, Merle and Donald Machemer, 640 Gentry Court, Howell, MI 48843. On his card, Jim Berg wrote, "The flat consulting market of '93 moved me to different pastures at Groundwater Technology, Inc., in Burnsville, MN. Same grass, however." Mark Filipi survived a tumultuous year of lay-offs and reorganizations which resulted in the staff of his work unit being reduced from 16 to 3. He says, "I am still employed and actually got promoted. No news on the home front, all is quiet and well with the family, or at least as quiet as a 5 and 6 year old can be." Philipp Muessig is now a Pollution Prevention Specialist with the Minnesota Office of Waste Management in St. Paul. He says, "I'm happy to report that all that chemistry I took is being revisited in a fascinating way: I assist community groups and cities in promoting toxic use reduction among their local businesses. The community organizing and business experience I picked up in my previous two jobs, but the chemistry... I tip my hat to that broad Carleton education." Thanks, Philipp! Dave Gambill is in the Philippines doing private environmental consulting. On a card we got from him last winter, he wrote he was beginning work on an Asian Development Bank contract to help coordinate a team to write guidelines for the bank. The guidelines would be used to determine the economic value of environmental impacts of bank projects. Dave, keep us posted, will you?

1978. Cliff Wright expected to be awarded his MS in civil and environmental engineering from the U. of Wisconsin at Madison this May. After a short break to visit some friends in California he was to start working as a project engineer for Eder Associates in Madison. Good work, Cliff! Laura Nadelhoffer writes that she's "back to work part time after the birth of our son, Alexander, last September. I'm still tinkering with the job/family equation- extra curricular variables such as social life and cultural enrichment are now gone. However, we love our new home in the "bubs and Claire is especially fond of the big back yard." Alexander was born Sept. 8, and weighed in at almost 8 1/2 lbs. Wes Danksin "had to work nights at the Post Office the past couple of years to make ends meet- never knew how much fun unloading semi's could be at the age of 40. Eventually I got laid off from my second job, a mixed blessing, but I guess it paid off. We have a big four bedroom house now, a new Power Mac, and I'm going to China next month to start a new project: optimal management of water resources in Tian Jin to control subsidence caused by groundwater pumping." When she wrote, Tracy Giefer Fullerton was looking forward to a trip to Minnesota and a visit to Carleton for old time's sake. "Things are going well at Amoco for me," she writes. "I'm never bored. My husband Randy will soon be done getting his CNE certification and be back in the work force." Zach Wilson, ever the deal maker, "took the whole family to see the space shuttle launch as guests of astronaut Pierre Thuet, who went to Navy flight school with [his] brother. It was an awesome experience- a mix of technological wonder and patriotism. As one astronaut said, 'when the solid rocket boosters ignite, you know you're going somewhere.'" Barb Okamoto Bach sends a hello with some field trip stories, which I'm passing on to Mary. Thanks Barb! Barb and Mark adopted a second child last year, Nathaniel, who came to them from Korea. Last summer, they moved the family to the outskirts of New York when Mark accepted a position in the Clinical Research Endocrinology and Metabolism Section of Merck Research Labs. Barb has swapped her briefcase for a double stroller, since Camilla and Nathaniel are just 15 months apart in age. Good luck Barb- that's a lot of changes in one year! Brooks Wallin is living in the Marais district of Paris with his wife, Catherine (an attorney and a native of Brittany), and children Pierre, 4, and Elena, 1. Brooks is now in the Acquisitions and Divestments department of a company called Total. He deals in bids for land which has chemical and mineral potential, a fast-paced business which is conducted almost entirely in French. When he wrote, Steve Ingebritsen and his wife, Barb Gaal '78, were expecting a child, and we hope the birth went smoothly. Steve was working on geysering and flow and transport problems near the critical point of water. Craig Banister was looking forward to some
time in the Colorado Rockies this summer. Craig, next year, tell us more! Alison Krafft Rempel bore her second daughter, Rebecca, last December 12. "She has lots of light brown hair, with a hint of red, and huge cheeks." Alison took a half year off to be at home, but was planning to go back to work, possibly part time, in May. Her recent projects have included a large soil vapor and groundwater extraction and treatment system to treat solvent contaminated water from five sites. Although Sue Campbell LaCroix generated about half of this Newsletter on her computer, this here is for real: Sue is still working in the alumni database section of the Development Office, and Les is busy installing new computer networks on campus and trying to find time to play music with Tim Vick and others. In her 'free' time, Sue enjoys flower gardening and keeping an eye on the state of the Cannon River Watershed. Son William, age 5 1/2, is riding his bike, learning to swim and singing silly songs (Sue said that). Daughter Bonnie, now a high school student, is doing math, soccer and music, and ventured to London with a friend this spring! We are given to believe she returned with everything except a boyfriend. Sue adds, "A middle aged house and several pets round out the household, and we just inherited a 'new' sailboat."

1979. Georgane Callaizakis Higgins writes that she left Automatic Data Processing two years ago to join the largest casino operation in Colorado as the Employee Relations Manager. Just recently, she joined yet another new casino operation as manager of human resources at Harvey's Hotel and Casino. Good luck with the new outfit, Georgane! Marie Del Toro reports "A good year! I was promoted to a senior civil engineer in the newly combined Water/Wastewater Department. In addition, we're expecting our first child the middle of July. I'm sure life will never be the same." Best wishes on both, Marie. Jerry McNeish is still environmental consulting in Dallas, doing environmental liability and risk assessment work. He adds, and I won't question, "Heidi never returned my correspondence. Ah, well." From Dave Tolley: "I proposed to a wonderful lady, Terry Lynn Boudreaux, from Arkansas, last November, we bought a house in December, and have been working on it ever since. We plan to be married by my father in Lynchburg, VA, on May 21, which just happens to be her birthday and my parents' anniversary. Life in Houston is now infinitely more enjoyable!" Best wishes and congratulations, Dave! Great news from Karen Campbell: "Well, guess what? Soon I will be able to visit Carleton whenever I wish! I've accepted a job in the Hamline Library. I'm very excited--it's more than I'd dared to hope for. I will be doing general reference in the undergraduate library, focusing on electronic resources and also doing bibliographic instruction and faculty outreach. My only regret is that Hamline doesn't have a geology department, but I had decided that I would like to try a small liberal arts environment for awhile, so I knew I might have to part ways with geology again for awhile. I think maybe this time I'll keep up my GSA membership, since I seem to have a habit of straying back!" Joy Miller Crisp writes, "I'm working on the chemical analysis instrument that will be on a rover as part of the Mars Pathfinder mission (landing scheduled for 1997). I'm also preparing for observations of volcanic eruption clouds with the EOS satellite instruments (launches start 1998). Visited with Chris Brick at AGU--we hadn't seen each since leaving Carleton. We reminisced about life in the optical mineralogy lab, beaker-sherry, percolator-Folgers, and other assorted good memories." Wired all the way from Texas by special electrons, we got this message from Tillman Farley: "Audrey and I are doing well. We have three children, Becca (10), Ben (5), and Brianna (18 months). We now live in the vast wilds of far west Texas where we have started a rural health clinic. We live in Van Horn, which is a town of 3000 people 120 miles SE of El Paso and not near anywhere else. Medically this is an interesting place, but even more importantly, it's a great geologic place to live. There are mountains all around which consist of the largest fossilized reef in the world. We have taken lots of fossil hunting trips up in the hills behind our house. On one trip we found not only lots of Ordovician (I think) gastropods, but also a Holocene human skeleton, complete with pants. That was pretty exciting. I got to hang out with the Texas Rangers and scout all around the mountain looking for clues. Pretty cool. We have two horses which we keep in the back yard, and also two goats. We never worry about traffic, and if I have to be to be at work at 9:00, I leave the house at 8:59. We're getting fairly fluent in Spanish. All in all we are having a great time, worlds away from the northeast where we spent the past 6 years. I hope all is well with you. If you or anyone else is ever down here geologizing, we love visitors and have plenty of extra space." Tillman, how about a picture sometime that would let us see this wilderness you've shared in words? It sounds interesting! And a different batch of electrons brought a message from the far reaches of Missouri saying Robb Jacobson, is "continuing work on the Ozarks Stream Geomorphology Project, investigating the links among landscape disturbance, stream geomorphology, and aquatic ecosystems. After four years, I think I can finally articulate the hypotheses correctly. In addition, I have been studying aspects of geomorphic changes that resulted from the 1993 floods on the Mississippi and Missouri Rivers. These studies could
have implications for improving floodplain management policies, to minimize catastrophic erosion/deposition on agricultural fields and maximize biodiversity. The work is more than enough to keep me busy. I have had extremely valuable help this past year from Rob Wertheimer (class of 1994), who did his senior comps as part of the Ozarks effort, and Beth Lambert and Maria Panfil (class of 1993). Rob labored under hot, humid conditions, enduring snakes, ticks, chiggers, and an awe-inspiring case of poison ivy. Beth and Maria withstood snow, sleet, ice and bitter cold. All three worked as unpaid volunteers -- the USGS and I are very grateful! At home, Anne and I are edging into the cut/dried flower business while also trying to keep up with Alex (age 2) and Sarah (age 3).” Robb, thousands of thanks for helping us out with the tour of your field area during our spring field trip! It was great. And don’t worry about Rob, Maria and Beth; they’re all the tougher for their experience. (They liked it anyway, they said...) Evan Dresel visited campus this spring and gave a very interesting talk on his work on the groundwater problems associated with the Hanford nuclear site. He says he’s “enjoying living on the dry side of the Pacific Northwest.” The area around Hanford is semi-arid.

1980. Fred Seymour and his three children "continue to grow, and we get to relive our childhood through them." And you get to do all the things with them you didn’t get a chance to do in your own childhood, right Fred? Fred adds, "Newmont has become more active internationally and I’m able to travel to Peru and Indonesia. Life is busy and good." Reid Fisher says they have "the same jobs, the same horse, one dog, one cat." Keep up the good work, Reid. We need some stability in the world. And good luck with the western swing band that you joined! Muffy Barrett has taken charge of restoring remnants of prairie and savanna her and Scott Weber’s property near Baraboo, because Scott was fortunate enough to land a good job just when they ran out of money last year. Muffy writes, "I have no free time during the growing season but I still like visitors. In the winter I clear brush, trees and old fences. Someday it’s going to be beautiful.” The last time your newsletter editor was there, Muffy, it was already beautiful even though you had barely started to work on it! Of course, now... The first child born to Martha Buss Bond, Julia, was one on May 17 this year. "At one year, she weighs 20 lbs., has two teeth and can almost walk. My other work is restoring our 200 year-old limestone French Canadian house in Quebec. My husband, James "007", continues to work as a geologist for a cement company to pay for everything." Ed Secor reports "The last year and a half or so has seen some big changes in my life. Self-employment has brought new freedoms and new responsibilities, not to mention a whole new category of challenges at tax time. The initial renovation of our turn of the century house is about done; now we dream of tearing down the haphazard additions on the back and rebuilding them. But that won't happen too soon, what with the birth of our son Daniel Feb. 12 hot on the tail of an early spring blizzard. We’re having enough trouble finding time to even get the little guy together with his "cousin," Dylan Wells. Bill Hughes has married Eileen Lindsay ‘77, "creating a blended family with four half-time children, and we sealed our commitment with the requisite loan for the requisite minivan.” Bill is still working on environmental remediation at the closed Mather Air Force Base. Max Lyon is “still living in L.A., still can’t admit to calling it home, still running a high school outdoor education program, still finding great joy in sharing wilderness adventures with kids, still not crazy about being an administrator, but it doesn’t seem to be getting under my skin so badly these days.” And we still like hearing from you once in a while, Max! John Goodeg announces the birth of his and Vicki’s second child, “a hefty baby girl! Berit Hansen Goodeg was born Wednesday March 16, 1994 at 12:41 PM. She weighed in at 9 lbs. 8 oz., and is 21.75 in long. Berit has a lot of dark brown hair and blue eyes. Otherwise, she looks pretty much like a newborn baby. Vicki did a great job with a natural child birth [John said], and Berit is in great shape. Mom and Berit are home and doing fine, although Berit eats like a horse. One month old and she’s already up to about 12 lbs. Consequently, Vicki is a little short on sleep. SMU has a newly initiated maternity leave program for faculty, so Vicki has been mostly staying home with Berit over the past few weeks while she continues breast-feeding, but she recently started expressing milk so that I can stay home with her some
days. Casey, who recently turned two, has been wonderful. He was very excited to meet this 'little baby sister' at the hospital, and he loved holding her on his lap, counting all her fingers, toes, ears, and eyes, stroking her soft hair, giving her hugs and kisses, and lying down next to her. Since coming home, he's been equally interested in how Berit is doing, but Berit was very wise to give Casey a brand new Tonka front-loader/back-hoe that he has been spending a lot of time with in his sandbox." John now has a position on the faculty of SMU (good work, John!), and got another stint in Antarctica last winter. Also, Mary Savina visited John and Vicki's house in April, and had a wonderful time and says hi.

1981. Jeff Mow is moving up in the National Park Service, "as far as one can, up in terms of north that is... Anaktuvuk Pass, which is the northern most post in the NPS, 100 miles north of the Arctic Circle. AKP is a Nunamuit Eskimo village in the heart of the Brooks Range. I'm the lone ranger here (along with my fiancee) so there are lots of challenges with the job and culturally." Mary Lucas McDonald is still an independent environmental consultant. She says she's "trying to keep it down to part time so I can enjoy time with my 2-1/2 year old son." We extend a warm welcome to Bonnie Rohl's new daughter Ellen Grace, born on April 6. "This makes three," Bonnie says, "so my husband and I have to go to the zone defense. Fortunately we have found a wonderful woman to help us." "Raising two young children and keeping a business running consumes all of my time," writes Laurel Maze. "Now that Heather (one year old) is toddling, I expect I'll find myself running in two directions most of the time." Becky Craven and Scott Linneman are expecting a child at the end of this summer! Becky wrote that she's hoping for a cold summer, understandably. They have finished their new house, and Becky says she's busy representing the Nez Perce Tribe in a lawsuit to quantify their water rights. A third son has arrived at the Will Mast household, a bruiser named Devin whose weight at four months was a solid 22 lbs! Will says the San Francisco 49'ers have already been scouting him. He and Carolyn and the boys are looking forward to summer, and a break from the CERCLA site (Hunters Point Naval Shipyard) Will works on. Hello, Devin, and good luck to Will and Carolyn! Cathy Villas-Horns writes she's now working on pesticide cleanups at agricultural chemical businesses. "I'll be traveling to southeast Minnesota often, which is wonderful since it is such a beautiful area. Minnesota has the first long term pesticide cleanup program in the nation!" She and her husband vacationed this spring in New Zealand, where they took in some great geology and caught, photographed and released some huge brown trout with fly fishing gear. Dave Rodgers writes, "Our family has grown to four with the addition of two kids, two-year old Emma and newborn Evan. We live close to campus in an old house that we're slowly restoring to its original condition. Shannon continues to work part-time as an environmental geologist, and I live a typical professor's life. This year that includes teaching structure and tectonics courses, supervising several grad students, chairing the department, and directing the summer field camp. Next year all this will change -- we will move to Oman for a year, where I will be a visiting professor courtesy of the Fulbright Scholarship Program." Next, Dave- hope you have a great experience over there!

1982. Lynn Davies bought a house in Denver last August and has been enjoying remodeling, skiing and lots of reading in her spare time. She continues as a geochemist at PRC Environmental in Denver. Ralph Welliver has become an Engineering Technician II for the Loudoun County Sanitation Authority in Virginia. His son, Reid, will celebrate his first birthday in July. Lisa Wehmeyer Ryan reports the birth of her son, Kevin David Ryan, June 2, 1993. She says she "bought a bike car so I can travel with the baby and his 3 year old sister!" She's currently working on ARC/INFO GIS projects, "doing more programming than geology, but enjoying it nevertheless. It's a job that fits well with motherhood." From the Middle East (Israel), Dave Ratner says "We're settling in and adjusting to a new culture. Right now I'm studying Hebrew and teaching chemistry part time. Have taken some trips around this beautiful country. It's the size of Delaware with the geologic diversity of California! Ariel (2 and a half) is already surpassing me in Hebrew. Leslie is doing well. We're hopeful the process of making peace stays on track!" We'll second that hope, Dave. Peter Wiegand is still in Steamboat Springs, and he's now a partner in his engineering firm. Pete says so far business is good and it's been a nice year in the mountains. Dan Sontag writes from Brattleboro, VT, "My fourth child, Kayla Jane, was born in November and we are pretty crazy about her. That's it. No more. Work is great, but a little too much of it. I've had to take on per diem work to pay the bills. I carry a beeper and get called in to talk to suicidal youths, psychotic adults and disturbed drunks. Never a dull moment!" Pete Whiting is managing to "keep busy but we have added another time sink to our schedule- a puppy, Capri." When he wrote, Cathy O'Dell was expecting the birth of her baby (known to be a girl) in May, we hope it came off without a hitch! She said she's hoping to get out and go camping with the new daughter and three year old son, Freddy, this summer. The Newsletter editorial board bids welcome to another new member of our
community, Dylan Meyer (Suck-Suck) Wells, son of Heidi Bredenbeck Wells. She says he's "breaking records for growth and keeping his parents in a perpetual state of exhaustion." He was born March 8 at 8 lb 9 oz, and gained roughly 25% in his first month. 1983. Keith Knudsen reports a new daughter, Sydney Claire, whom we welcome warmly, and a new job with a Quaternary geology firm specializing in seismotectonics, fault investigations and surficial geology and geomorphology in Oakland, CA. His company, William Lettis and Associates, "is a small company with a good group of people that does interesting work" in a very complex and geologically active area. Kathleen Duffy Carmona writes "Now that [her son] Kris is one, and big enough to go with me, I can cycle again. That's exciting! Being a mom is lots of fun. Being a junior high teacher is never boring." Tom Baring is studying the Antarctic stratosphere with NOAA, using a hangar in Christchurch, New Zealand, as headquarters. "It took no time at all for me to fall in love with New Zealand- it has hot springs, beaches, glaciers, rain forests, whales... you name it. Wonderful; an old geologist's heaven!" Sharon Anderson says she'll "either be tenured or out job hunting in Jan '93. We had a baby boy named Tizoc, after an Aztec ruler, in March, so tenure doesn't even seem important." Sharon, if they know what's good for them they'll offer you double tenure. Welcome, Tizoc! Bruce Pfaff has gotten a new job as an Associate at Booz-Allen and Hamilton in San Francisco, and he plans to do management consulting in their energy and chemicals practice. Also, he has become the master of two doberman puppies. Amy Sager Patton has taken a two year leave from her job at the Oregon Dept. of Environmental Quality to enjoy her five year old son and two year old daughter. She's also been active on a citizen committee for natural resources; writing policies for the city; working to get citizens involved in groundwater protection in Oregon; and doing activities with other moms. Dan Packer and Ruth McDonald are living in Albuquerque, where Dan teaches history and Ruth is doing computer science at Los Alamos. Dan wrote that they are living on and caretaking some land owned by the school Dan teaches in." After a peaceful year in Iowa, Laura Ferguson Jacobson and her family are moving back to the big city, Cleveland Heights, OH, as her husband starts on his residency. She says, "My children are three and one year old and the best things in my life. The dog is dumb (ran through the screen door twice in one day) and the cat is FAT." Scott Linneman is bracing himself for the expected child to be born this summer/fall, and developing courses with names such as "Integrated Science for Elementary Education Majors" and "Integrated Seminar in Technology and Risk Assessment." He says, "Like most places, N. Idaho is Carleton Geo-friendly. I see Larry Meinert '75 at Washington State U. and Dave Rodgers '81 at Idaho State." Rob Alexander's family "grew by one in July '93 with the home birth of Petra Tempeste, and thus ends our family growing phase. Bayou country has been wonderful for us but the ice skating and cross country skiing season is a bit short. Year round gardening is a plus!" Cecilia Warner's family increased this year with the birth of their second child, Heather Marie Campbell, on March 20. Best wishes and hello to Heather! Cecilia took some time off this year to be home with the children, but hopes to find a teaching position for this fall. Congratulations and best wishes to Marcia Bjornrud, who was recently tenured and promoted to Associate Professor at Miami of Ohio. She expects her second child in August; good luck, Marcia! From Mark Gonzalez "The frantic pace of the first few years of teaching has subsided. I've begun to venture out of the office and have two new research projects. One is with a USGS team in Lakewood, studying Climate Change and Paleohydrology in the Great Plains. The other is an office project: The Stratigraphy of Diamicts. Several large, unsorted deposits cover my desk, floor and countertops. Dated memoranda provide constraints on the time and rate of deposition. A fascinating application of Chaos theory with deposits that rival anything created in Mary Savina's office. Frequently see Prof. Blondie (Chris Smith) and the Bruhls (Dr. Elliot, Sara and Gus) for diversions and good cooking. Also celebrated Chama's second birthday with some of the young neighbors. A good kid, though it would be nice to find her a permanent mother-figure. All those traveling through Denver are invited over. If you can hammer, paint or saw, you've got room and board." Sorry, Gonz, the Newsletter editorial board is prohibited from commenting on any of the above material. We send best wishes, though. Jeff Pipes and Florence wish everyone "Kung hey fat choy!" (Chinese for wishing you a prosperous new year). This is 4631, the year of the dog. Jeff is working in Honeywell's Office of General Counsel, Environmental Health and Safety Group; he planned to finish his law degree and bar exam this spring. Florence, meanwhile, has created her own clothing designing and importing business, selling to rather large department stores such as Nordstrom's. Good luck to both of you on your new enterprises!

1984. Elliot Bruhl writes that he's "still slugging it out in my last year of medical school. We moved into a new house here in Indian Hills; Gustav is now one year old and extremely mobile, aside from being a
great kid." From Alberta, Canada, comes a message from Jack Dunn: "We have spent 2 great years living in Bolivia and are moving with Chevron to Calgary, Canada on June 1. Our second daughter, Rebecca, was born Feb. 22 in Bolivia without complication. We have had some eye-opening experiences in South America in the last two years including Peru and Ecuador; we'll miss the excitement of life down here." Mary McMillan says she "learned that cats cannot metabolize chocolate, but they will eat it. My dear cat, Tim, went after brownies and wound up in the pet clinic at midnight. But he's fine now, thank goodness." We will not go out on a limb and inquire whether Tim is named after anyone we know, but we wish both cat and mistress well. Hats off to Linda Schalch Eickhoff! She writes, "My biggest news is 13 months old. In March '93, Steve and I became the parents of twin girls, Leah and Emily. After a somewhat rocky start (Emily was born with a heart defect that required open heart surgery on day 2), we're all doing well-the girls are delightful. I'm back to work (outside the house!) part time at ENSR. Finding a good balance between work and home is a challenge- and I used to think I was busy!" Good luck with everything, Linda. We won't even ask if you're still playing your cello! Carolyn White has joined a small consulting firm in Santa Monica, CA. "Much to my dismay," she says, "I won't be able to make it to the north woods this summer. Guess I'll have to battle traffic instead of mosquitoes." It's probably old news now to many, but Carolyn and Kent Snow, a structural geologist, married last summer. Kent is on a post-doc at Caltech. Kendra Beard Gassel delivered Daniel Vance Gassel on April 15 (but that's when you're supposed to be doing your income tax!!) and she reports, "He's beautiful if I do say so myself!" She's still in business for herself and enjoying it, working on the Great Lakes Recycle Project for the Council of Great Lakes Governors. Julie Chen, Lazhar and their daughter Sana were, when they wrote, battling malaria, along with millions of other Africans. Sana was born Nov. 21 of last year." Life is rough here, but I'm thankful that I can escape occasionally to the luxuries of the First World. The work is very rewarding, even more so this second year. Lazhar is teaching up a storm during the evenings, and taking care of the baby during the day. Now we hardly ever see each other! The baby makes it all worth it- she's absolutely fantastic." Good luck Julie, and I hope the malaria is gone by the time you get this! Rudi deZoeten reports a challenging last year for him and Mary. "Our second son was born in December and two months later we moved the family to Bangkok, Thailand. We are slowly adjusting our lifestyle and sweat glands to cope in our new environment. I'm working on offshore gas development in the Gulf of Thailand, quite a change from the exploration I was involved in in China." Last summer Mark Gordon visited Russia to visit friends he met in France in 1991. "I went to Moscow, St. Petersburg and Yaroslavl', a provincial city of great historical importance. This winter, I returned to Honduras to continue fieldwork for my NSF grant. I am starting to look for a job because the grant is about to run out." Thanks to Andrew Smith for your address update. Got an update from Summer Crosby last winter after a long hiatus, and Sumner sends greetings to everyone from his post at the Ground Water Protection Section of the EPA in Philadelphia. Since he graduated, Summer's wanderings took him through Colorado, Connecticut and Delaware before he finally settled in Pennsylvania, started on his master's in regional planning at the U. of Penn. (which he planned to finish this spring) and secured his job at the EPA. For the past few years, most of Sumner's efforts have centered on implementing GIS systems. He and his wife, Bonnie, are kept busy raising their two children, Anna, now 3, and Sumner IV, who will be one this July. Good to hear from you, Sumner!

1985. In a letter sent this June, Barb Waugh and Jay Jackson told about their eventful, and somewhat scary in some ways, first year of marriage. "Barb was diagnosed with Hodgkin's disease in December after doctors found a tumor in her chest. She has completed 6 months of chemotherapy and all traces of the disease are gone. She will undergo several weeks of radiation treatment in July to conclude her therapy.
Her prognosis for a full recovery is excellent; Hodgkin's disease is one of the most curable cancers. Barb looks and feels great and continued teaching throughout most of her treatment. She's looking forward to her hair growing back, though! Just to add to the excitement, they decided to buy a house, and they plan to spend the summer moving in, decorating, etc. All the geoids here at Carleton wish you well, Barb, and hope the prognosis is totally correct.

Russell Urban-Mead has just switched from teaching to being a consulting hydrogeologist. He says, "I hate the 8 to 5 discipline but enjoy not preparing class until 1 a.m. My first task is to prepare a remediation plan for a contaminated industrial site—Yikes. Family and home are great; thank goodness for music!" News from the Trina Blake/Brad Miller household is that their daughter Dylan Reid Miller just turned one and is walking, and the three of them have settled in Seattle for a while. They saw lots of other Carls when they attended Diane Cassidy's and Lisa Shepherd's weddings last year. Tom Hoak finished his PhD at UT-Austin last year, and then after a 6-month search landed a position as a structural geologist with Advanced Resources International, a consulting firm. He says most of his work centers on gas reserves in fractured rocks. Liz Reading and Keith welcomed a new daughter, Sarah Ann Schnebly, into the world on Sept. 8, 1993. Congratulations from the Geo Dept! Bill Dewey has bought a home "beautiful Marin County..." He added that he wants to try to participate in the Carleton Grand Canyon trip next year. Kris Grady Mitchell has moved with her husband, Dale, out to Oregon. She writes, "We had a great trip west, stopping by Carleton to visit on the way. It's interesting to be living in a desert (Richland, WA), with artificial life in town of course. So far we're enjoying it. Recently Kris had a paper published on the structural geology of part of the Josephine Ophiolite as part of a GSA Special Paper.

Emily Adams and I have plans to get together sometime over the summer." Kris, glad you stopped by— it was neat to see you. I hope you and Emily can get together! A note from Brad Werrell says he's cranking up a startup tire recycling firm, using scrap tires as building materials. He also is instructing Hsing-I Kung Fu, stick fighting, and horseback riding, "starting to feel like I am about to come into my own!" Med school may be out there in the future someplace... Peter Cole is looking forward to the birth of their baby, which is expected in August. "Until then we'll be busy doing what expectant parents have been doing for years, whatever that is." Good luck and best wishes for a successful delivery, Peter. Some good news from Maria Peterson: "I'm somewhere in the middle of my PhD research at Stanford and things are going well. I'm studying the environmental geochemistry of chromium and magnetite, and am working on the surface chemistry involved in chromium reduction and sorption at the magnetite/solution interface. An NSF proposal I helped write was funded, so that will carry me through the remainder of my dissertation. For the next year, though, I will be funded through a Corning Fellowship which is awarded each year to a geochemistry student in my department, and is sponsored by the Corning Glass Company in New York." Good work on winning the Corning Fellowship, Maria! Mike O'Connell, when he wrote, was planning a trip to Ecuador and the Galapagos Islands for some hiking and geologizing. He said, "We are living back in Florida, in Winter Park/Orlando where I am Director of Habitat Conservation Planning for The Nature Conservancy. My job involves facilitating a
consensus habitat conservation and development plan under the Endangered Species Act for 8 units of local government, the state, the feds, 15,000 landowners, environmentalists, developers, and scientists. Makes hurricane Andrew seem minor. The focus of the conservation plan is the Florida scrub jay, a threatened species, and its scrub habitat, a natural community with one of the highest rates of endemism in the U.S. Also, I'm working on another book on the Endangered Species Act with colleagues at Stanford and Oregon State. Outside of work, we couldn't be happier back in FL. My daughter, Melanie, is now 2 1/2 and loves the outdoors. We hike every weekend and she is already swimming like a fish. Wife Mary Anne is devouring all the fun family things to do in Central Florida and also finishing her nursing degree.

1986. Being the unbiased, objective writer that she is, Mary-Russell Roberson says "Mark Johnson '85 and I have a beautiful, sweet, smart and charming daughter named Susannah, born Nov. 21, 1993!" M-R planned to return to work half time in May, and next fall work on writing manuals on the earth sciences for teachers in North Carolina. Congratulations M-R, and good luck on the new writing! Emily

Adams Pugh sent me massive amounts of information which was neat to read, but the big picture is that she, Graham and Alan have moved to Portland where Graham is working for Intel and Emily is doing the more than full time job of managing the household and raising Alan and trying to sell their old house in New York. Alan is quite the center of her life as she works to make this new house a home and evaluates how she can best utilize her talents. In a year or two, Em, can we check back to find out how a pro conquers mildew in a damp climate? Good luck on your new adventure! Erick Neher has "finally gotten back to school, the University of Idaho, for an MS in hydrology, and am really loving it. I recently was awarded a Dept. of Energy fellowship to do research for my thesis at the Idaho National Engineering Lab in Idaho Falls,

where he plans to complete his thesis. He also likes the location, within a day's drive of Jackson Hole, Yellowstone and the Henry's Fork. When she wrote, Lisa Morrison was in the final stages of her 6-month maternity leave to enjoy her son, Reed Morrison Tierney. She writes, 'I'm amazed at how my schedule and priorities have really changed since Nov. 28, 1993. My husband and I are also taking a trip to Las Vegas and Death Valley to check out some of the old stomping grounds...' John Sorlie writes he finished with law school last spring, and now is working for a firm in Chicago on environmental insurance coverage. Craig McCaa responds to the question, 'What's new with you?' with "Not enough." Best wishes anyway, Craig- hope things liven up soon! Susan Baxter Grubb writes that she and Stu had a great vacation in Mexico last winter, which helped them make it through the long Minnesota winter. They also had a visit from Glen Carleton, who combined his "Uncle Glen's Pancake Mix" with some of their log cabin syrup. This summer, they're looking forward to doing some paint and oiling work on their log cabin, and planting a HUGE garden. Susan added, "Our daughter, Muriel, is a bright, bubbly precocious two year old. She seems to have a natural affinity for rocks (We're so proud!)."

Woodwell has been in his PhD program in marine estuarine environmental science at the U. of Maryland Chesapeake Biological Laboratory for a year now. He reports it is "pretty quiet here in Solomons, but the other folks in the program are great, so I'm glad to be here." The fact that John hasn't visited Northfield in quite a while now is probably excusable on the grounds that it is a little off the track between Maryland and Woods Hole. Kate Heimes Carlson had a third son, Anders Christian, whom we welcome warmly and send best wishes to his parents. Sean McKenna and Karen flew to Nepal last June to pick up the baby they were to adopt. "We spent July and some of August surviving earthquakes, monsoon flooding, communist riots and the US government's bureaucracy. It was certainly worth the effort. Libby is now 19 months old, a great
kid and we feel lucky to have her in our family. We all arrived back in Golden in time for me to teach the introductory groundwater course here at CSM last fall. I defended my dissertation last week and am all done except for a few revisions and one last piece of software to clean up. Between parenthood and the dissertation, I feel like a subject in some sort of long-term sleep deprivation experiment." Sean and Karen are moving to Albuquerque where he will work in the Geohydrology group at Sandia National Laboratories. One of my soon-to-be coworkers is also a Carleton Geology alum, Chris Rautman (72, I think). Good luck on your new job, Sean! And hello to Libby!!

1987. Last September Lisa Shepherd married a graduate student in sedimentology at Madison, Peter Drewiecki. Lisa is still a hydrogeologist for RMT in Madison, and she’s looking forward very much to their planned vacation this summer in Spain and Portugal. Neat! Kristin Hazard says "Two years of law school down and one to go— I’m actually enjoying it. Quit my clerk job with the Dept. of Justice to clerk for a federal judge in the US District Court in Portland this summer. Worked on a lot of environmental cases with DOJ, mostly under the Endangered Species Act. Next fall I’ll be spending a lot of time working on the Editorial Board of Law Review. Not much time for fun, but visitors would be a welcome change." Chris Carlson sends word from Indiana that he has passed his qualifying exam and is now ABD; his dissertation research is on "Reaction and transport of septic effluent in the Indiana Dunes area." This summer he planned to work at Indiana’s field camp, with hopes of developing an environmental component for the course.

1988. Gordon Keating is "still gainfully employed, but the field work is usually in industrial armpits rather than the high country. Lisa Shepherd Drewiecki keeps up the levity in our office." Gordo writes of plans to start a PhD at New Mexico next January in Hydro/volcanology and hopefully Elizabeth will be able to finish her dissertation by then. "Zoe is now one and a half and will probably be the next Larry Gould!" From Sean Weekes: "Getting married to a miss Diana Elizabeth Churchill in April, 1994 (not April Fools Day, unfortunately). Moving to England in late fall, perhaps returning to Japan in ’95. Best wishes and good luck, Sean! We hear through the e-mail grapevine that Melissa Johnson is engaged, but the planned date didn’t get into the message. Carolyn Carr is looking forward to finishing up her master’s in conservation biology at the U., and in the meantime is staying sane by building a cedar strip canoe in Holly Ewing’s basement and playing frisbee on a Twin Cities women’s team with the wonderful (?) name of Jane Air. Carolyn also wrote of an impending scheme to get together with Marilyn Yohe and Michelle Stolow over the 4th of July at an undisclosed location in the Atlantic Northeast.

1989. Carol Ormand says she’s "busily pursuing a PhD in structural Geology at the University of Minnesota, and hope to catch it within the next three years or so. I’m happy living in St. Paul and calling square and contra dances when the opportunity arises." Mary Pyott is "still working as a naturalist with the Los Angeles County School District in the San Gabriel Mountains, enjoying the beautiful yellow pine forest ecosystem and working with diverse and challenging students." Mary was planning to work another summer with Dr. Alison Rautman ‘80, and grad school in the near future is also a possibility. Rowland Cromwell was married last Sept. 5 to Krista Bourquein, whom he met at the University of Wisconsin where she was studying acting. Rowland said he recently got together with Kari Paulson and Morgan, and he had a career exploration visit from Sarah Laxson ‘93 who helped him collect GPR data. Middlebury College recognized a good thing when they found it and offered Kim Hannula a tenure-track slot in the Geology Department. Kim says her dream is "to get the Middlebury department to go on extended departmental field trips over fall mid-term break, Hillary Liller married James Ward last October in Boston and they moved to a small (8 acres) farm in Idaho. We’re not sure if this is a picture of them moving; Hillary now has a seasonal job with Hagerman Fossil Beds doing paleo-technical work.

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and to finally figure out what went on in New England metamorphic rocks." Kim reminds you that her e-mail address is hannula@middlebury.edu. When she wrote, Holly Ewing had just "finished a term from hell, 10 to 14 hours a day, seven days a week, studying for my written prelims. I like the ecology program and the other students are good, but you geo folks considering changing fields be warned remedial work is necessary. My life might have been easier if I had not listened to those people who told me I did not need the pre-reqs." Hope things ease up a little for you, Holly! Ben Edwards was back on campus for his fifth reunion recently, and Ben, it was nice to see you! Ben is planning to go back for another field season on Hoodoo Mt. after a very successful season there before. Ben comments, "Hoodoo consists of peralkaline lavas partially erupted under a glacier and has a healthy grizzly bear population as well!" Sounds like some interesting challenges. Kim is managing the microscopy lab for a company which processes field samples for kimberlite indicator minerals, looking for diamond deposits in the Northwest Territories.

1990. Mark Scott, laid off a year ago, has been touring with Barb Billington '89, a Bio major, hitting all the major parks west of the Mississippi. He says, "Love those deserts!" After house-sitting for the Wagenbach family for a while in the country outside Northfield, they have moved to Minneapolis where Mark is looking for work and planning to start in a water-related field at the U of M next year. Sean McCauley passed his orals last spring, then spent 9 months at the Scripps Institution in San Diego. He writes he is now working on an isotopic method for measuring past ocean pH and hopes to finish his PhD in the next couple of years. Drew Cromwell is engaged to Kate Moodie '89! On the side, he's attending Naval Flight Training in Pensacola, FL, in the Coast Guard Reserve. He planned to solo in May and start helicopter training in October, so he can fly search and rescue missions in the Pacific Northwest. Andy Garrett was waiting to hear from a couple of grad schools when he wrote, having been accepted at Vermont law school and not knowing about his application for an medicine/geology program at Dartmouth. He's keeping his hand in with doing volunteer fire fighting and EMT work on the side. Good luck, Andy, with whichever program you end up in! Rebecca Arenson is having a busy summer leading a two-week field studies course for high school students and helping coach a 6-week high school geology research team; she's teaching geology and natural history at the Hancock Field Station in Fossils, OR. Last fall her classes included an Elderhostel group as well as many school groups. She enjoyed an epic trip from Oregon to Alaska to Virginia to Florida and back to Oregon last winter to see friends and family, and enjoyed another trip to San Francisco to see Dan Bon '90 be married. (Hi, 'Becca- Tim) Mark Newcomb writes that he's "spending a sedate spring bending nails as a carpenter after a year that took me climbing at Smith Rocks, OR, Yosemite and Denali, a 20,320 ft peak I climbed by two separate routes (West Buttress and Cassin Ridge) after being waylaid in Talkeetna for five days with chicken pox. Last fall I was back in China leading another group of old folks on a cultural tour of the Silk Road." Andy Moore sends e-mail: "I might have some stuff going on Molokai—but it may well be in September. There's also paleoseismic stuff to do in Puget Sound, but I don't think there's any money for it around." Andy, it was great to see you and Cynthia for Butch's and Brett's wedding! Andy didn't mention, but the editor will insert, that he and Cynthia were themselves married a year ago on Sept. 4 in what, by all accounts, was a very good party. They honeymooned, we believe, on one of the most remote northern islands of Scotland. Also here for B & B's wedding this June, and also visiting our field trip in Missouri (and she survived both experiences...), Sharon Stern is in her second year of her PhD program.
at Kansas. She has become the virtual parent of a 1 1/2 year old Weimaraner puppy (with lots of energy) named Misty. On the Missouri field trip, Misty covered more rocks than anyone else! Audrey Massa sent a nice picture from Andy & Cynthia's wedding last summer and wrote, "I've been working finding a suitable ocean disposal site for sediments dredged from New York Harbor to keep the harbor open for navigation by container and other ships with drafts of up to 45 feet. One of the critical factors is the resuspension potential by storm waves of material already disposed of. Another project is the development of a Region 2 (NY, NJ) database and GIS system for contaminated bottom sediments in the lakes, rivers, estuaries and coasts of the region." Andrea Earley has been working on a teaching degree at UM-Duluth and doing some fiddling at local festivals and cafes on the side. This summer she was planning to lead wilderness trips in the North Country, and she has been very tolerant of your slack news editor not returning her notes. [I apologize, Andrea... please don't give up on me.- Tim]

1991. From the steep Himalayan foothills came an exhausted pack animal who dropped a packet out of his mouth in the moment before he collapsed on our doorstep. Inside the packet was a message from Catherine Inman: "Since last September, I've been working with the Nepali Soil Conservation Office. I live in a village in Himalayan foothills, and am having a blast hiking around and encouraging farmers in conservation projects. I've certainly learned far more than I've taught, and am indebted to Nepali friends for their kindness, language lessons, endless helpings of rice, entertaining livestock, and offers to send the latter to my father to arrange my marriage to their cousins... The geology is amazing here!" Catherine, keep us posted in case of any surprise announcements. Catherine's mother called one day, and among other things she said she'd received a picture of Catherine's kitchen in Nepal with a rooster(!) in it. Our spy in the sky sez: Derek Books, Christina Vosen, Peter Sauer, Nick Dewey and Clifford Blizzard all got together in January for a reunion featuring Clifford's culinary specialty: breakfast crepes. Clifford was winding up his masters program at Colorado State this spring, and was looking forward to a week in the Boundary Waters with his father and other great adventures in Minneapolis this summer. Hopefully, at least one of the adventures would pay a salary! Jenn Macalady has spent the past school year in Northfield with Dave Bice, but is now looking forward to starting an MS in soil science at UC-Davis in the fall. Good luck with the new program, Jenn. Pete Reiners is plugging on toward his PhD at Washington, working with Bruce K. Nelson '77 and Robin Holcomb on Hawaiian volcanism and still working on Alaska Range magma genesis problems. He says, "Hope to see everyone out here in October for GSA. I'll be leading field trips to the grunge bars of Seattle." As I write this, Andy Moore and Cynthia Graff are sitting in my office and they won't tell anything about Pete and Juliet, but they did reveal that Pete won the Plaid Award for his "grunge oriented style!" Erich Cowgill plans to finish his master's this fall and then think about a PhD program. "Rock climbing, mountaineering and Kari Cooper (not in that order) play an ever increasingly significant role in my life," he says. Becky Lang writes, in the Minnesota style so true to her roots, "The biggest news, I guess, is the marriage planned for Sept. 10 on Whidbey Island (way out here on the west coast)- marrying Alistair MacDonald, of course." Becky plans to defend her master's thesis in the fall, and for fun she's been playing ultimate frisbee with the Seattle women's club. Good luck on everything, Becky! When she wrote, Kea Umstett said she was hoping to finish her MA in May, then head off to the Southeast somewhere to support Paul while he goes to grad school ("Better him than me!"). Jenny Nigrini is planning to start a graduate program in Movement Science (such as athletics and soccer) at the University of Oregon this fall, so all her good training in stress, strain, pressure physics etc. she got here will be very useful after all! She writes, "I figure life can't be too bad if I can get someone to pay me to play the rest of my life." Eric Baer sent a postcard from Japan last September; he said it was rainy. "I should have known the weather was going to be lousy when the very day I arrived here a HUGE hurricane hit. They said it was the strongest one to hit Japan in 30 years. It was truly amazing to see..." Eric is probably back in California by now, where maybe the weather is better! Butch Dooley and Brett Kessler '94 were married by Naomi Kritzer on the Hill of Three Oaks on June 12, with something like 37 other geoids plus many relatives in attendance (see picture). Attendants were Jessamyn Tuttle, Penny Valentine, David Dettweiler, and Andy Moore; musicians included Patty Weston, Mark Heiman, and the Bretchet (Tim, Andy and Laura Vick, Beth Ashman). Going through South Dakota on their honeymoon, B&B sent postcards from The Corn Palace, Ellsworth Air Force Base, the Black Hills Central Railroad, The Badlands (twice), and the International Balloon and Airship Museum in Mitchell. (Or did they just stop at Wall Drug and load up with all those postcards?)

1992. Christina Vosen is engaged to a rancher, Mark Ostendorf, and they look forward to being married next summer. In the meantime, she's trying to finish her master's in geo at Colorado State U. She
has "a neat project studying the meandering rates of the Yampa River for the Nature Conservancy." Good luck with it all, Christina— we’re all anxious to meet your rancher this June at graduation! Sean Kempke has been teaching outdoor and environmental education in Ohio, and preparing for a Portland, OR to Portland, ME, bicycle trip this summer. He says, and we hope it works out, "With any luck, we’ll be eating fresh lobster by the end of August, with a lot of black and white film in hand!" Andy Brydges writes that he’s working with Beth Hayes Martin ’86 at Rizzo Associates, an environmental consulting firm near Boston. He planned to return to his camps field area in Idaho for some camping and hiking this summer. Nick Dewey was looking forward to student teaching in Denver this fall, when he wrote his postcard. Jon Nauert has switched into a master’s program at UCSB and is working on dating basalts using the 40Ar/39Ar method; he presented some preliminary results at the GSA Cordilleran Section meeting this year and hopes to give another at the International Congress on Geochronology meeting in Berkeley. Most important in his plans, though, is his and Jessamyn’s wedding in July; we wish both of you the best, and long happy lives together! Also, thanks to Jessamyn’s parents for the great pictures they got at Brett’s and Butch’s wedding, one of which I will put in this Newsletter. Erik Stokstad has finished his first year of his master’s in stratigraphy at UC Riverside, and this summer he planned to do field work in the Inyo Mts. He’s working on a formation in an Ordovician carbonate platform that’s roughly age equivalent to the Decorah Shale; “Oh,” he says, “life can be so ironic!” Patty Weston was here and played flute and harp duets with a local harpist at B&B’s wedding in June; the harpist’s children are, as the Newsletter is being typed, sitting on the porch of Farmhouse listening to stories read by Prairie and Wood teachers Sarah Rezny, Julie Williams and Rachel Bynum. Oh, life is not only ironic, it’s intertwined! Oakley Cochran was back on campus this June for the festivities; last summer she sent a postcard after she had spent two months alone in the field in Alaska. "Really enjoyed it," she wrote, "saw lots of bear tracks, but luckily no bears."

1993. Todd Osmundson visited for Brett’s and Butch’s wedding. Todd was planning to help run some canoes trips in the vicinity of Newberry, Michigan, in the U.P. this summer. Beth Lambert took this past year off from school and volunteered for a social service agency and for Robb Jacobson ’79, a geomorphologist for the USGS in Missouri, during the winter. After doing an Outward Bound course including mountaineering, desert hiking and white water rafting this summer, she plans to start grad school at Oregon State with an interdisciplinary research team studying the effects of human land use on forest environments. Anita Ho visited the department one day in June. She has finished a year studying volcanology at Oregon but hasn’t yet formalized her program. She also enjoyed being the university orchestra out there, which she found to be surprisingly good, as well as playing frisbee for the Oregon Ducks (!). Joyce Wilson was on campus in June for Brett’s and Butch’s wedding- she came all the way from Nashville just for it! She is still enjoying folk dancing and playing soprano and alto recorders with a local church consort, and she was planning to move to St. Louis with her parents in August. “Still no great school plans, but I did get wait-listed by the vocational college at Red Wing! I may turn up in Minnesota yet...”

Size does count... So opposite is the biggest picture in this Newsletter of probably the biggest collection of us ever for any wedding. About half the people at Brett and Butch’s wedding are in the picture, the other half were taking pictures of this half. This picture was taken by Jessamyn’s parents, but we can’t say which one of them because they shared the camera and both were snapping rapid-fire. From left, standing: Butch, Andy Moore, Cynthia Graff, Clifford Blizzard, Shelby Boardman, Beth Pratt, Myungson Kong, Tim Vick, Joyce Wilson, Jon Nauert, Jessamyn Tuttle, David Boardman, Jenn Wenner, Ofori Pearson, Todd Osmundson, Patty Weston, Eric Baer, Ed Buchwald, Nina Molumby, Matt Stone, Sharon Stern, Mary Savina, Heyo Van Iten, Pameila Stone, Julia Daly, Oakley Cochran, Nick Babicky, Julie Williams, Starr Johnson and Liz Synchych; sitting: Brett, Anu Gupta, Cathy Manuda, Naomi Lubick, Christina Vosen, Fer Horn, Rowan Littell, Karen Swanberg and Geoff Collins.
Some cards came in just as the Newsletter was going to press. One from "Doc" Constans '40 said, "I am slowly recovering from a knee operation, heart attack, and a small stroke. I am walking well with a walker; I have a therapist five days a week. Otherwise I am very healthy." He also noted that he has 10 grandchildren and 3 great grandchildren, and we wish him well and a good recovery. Mark McBride '67 is still at Dames and Moore working on groundwater modeling for two Superfund sites. He says he's feeling "burned out on the Washington area—does anyone need a hydrologist?" Eric Simonson '77 has just opened a restaurant and motel near Mt. Rainier National Park. He recently returned from leading a successful climb on Mt. Everest and is climbing and guiding full time. Good luck with the new business, Eric! John Hankins '81 wrote that he and Beth and their two daughters traveled to Colorado last summer. "Along the way we stayed with Fred and Marggi Seymour '80 and Ed Secor '80 and impending family. I ran the Pikes Peak Marathon in 5 hours and change and left a little of my skin on the rocky trails." That sounds like good time, John, over what is probably pretty hilly terrain. Jan Pohl '81 and Bill bought a house last summer and moved off the boat they'd been living on. "We miss the otters racing around on the decks at night, but we don't miss smelling like diesel. This week I'm teaching Sex Ed to my 8th graders. They have lots of questions which they're only half mortified to ask, so my days are filled with laughing, blushing young people; it somehow seems fitting for springtime!" Lisanne Pearcy-Scott '82 has been enjoying her work with the Forest Service and learning a lot about air and water quality issues and ecosystem management, but the year was difficult because her marriage is ending. She wrote, "Central Oregon is beautiful. I hope to stay here for a while." Best wishes from the Geo Dept., Lisanne.

GSA Dinner

This year's GSA dinner in Seattle will be at 7:00 p.m. Monday, Oct. 24, at a place to be announced. Bonnie Wong '88 is working with Betty Bray to set it up.

Last year's very successful GSA dinner was at the Casa Romera in Boston, and Laura Day Moore '86 helped with the arrangements. Thanks, Laura— it was great!
My very first field trip with the Carleton Geology Department was the departmental fall trip to the Black Hills, South Dakota, in what felt like winter, 1975.

I had been working here for a month or so. My memory is vague as to who did what either in preparation for or during the trip, because at that point I didn’t know many of the people very well. That was about to change with a jolt.

We set off on the trip in the afternoon. My recollection is that while both Ed Buchwald and Shelby Boardman were along on the trip, departmental Chairman Eiler Henrickson ’43 was in command and had everything under control. We would find a camping place when it started to get dark, have dinner, and be on our way the next morning.

Evening came; no camping places around here! Eiler was far from defeated, though. He’d been through this many times before. It wasn’t long before he’d found us a nice spot next to a commercial fishing operation on some lake or reservoir somewhere in western Minnesota or eastern South Dakota. I never saw the body of water nor heard the name of the place, but we were there, anyway.

As we made camp, things darkened. The sun went down and the camp site went pitch dark. Somehow we managed to erect the tents as freezing rain mixed with increasing amounts of snow fell on us with increasing intensity. Chef Ken Collier ’76, a masterful cook as well as an accomplished woodworker and writer, fired up the Coleman stoves and got somebody to put up an awning over the cooking area. It was cold. Cold. And windy. COLD! Everyone crowded under the awning trying to get in on the few stray calories of heat that escaped from the fire under the spaghetti pot.

People were famished and clamoring, or at least pressing, for something to eat. It was probably mostly in exasperation that Ken finally decided to dispense some French bread to mollify the throng elbowing their way around the kitchen.

Phwomp. The bread topped with shrapnel of cold butter was consumed with a voracious sucking sound. The crowd of roughly 40 campers remained, unsatiated and cold, huddling under the awning next to the stoves.

Next came the salad. Rustle rustle. We ate it by the fistful with bare hands. There was salad dressing around somewhere but I never made contact with it. Still hungry. Still cold. The snow increased, both in an absolute sense and relative to the rain. So did the wind.

Wait around. Shiver. Huddle. The wind was blowing so hard that the spaghetti water, try as it might, just wouldn’t boil. Ken finally gave up and cooked the noodles in semi-hot water.

Yea! Here comes the spaghetti sauce!! Take it- drink it and get warm! Well, what else could we do? The spaghetti wasn’t ready yet and we were all hungry and cold, even desperate by this time for something that would fill our complaining stomachs.

Finally... The main dish was ready. Spaghetti. Ken had to kind of estimate on the cooking time because he had a hard time getting close enough to the pot to see anything, what with the steam billowing out and all those people crushed around the stove trying to keep warm, so the spaghetti was compacted into something looking midway between golf balls and Oscar the Grouch’s furry fist, but what the hey, we were ready for it.

But wait a minute, we already ate all the sauce, the bread and the salad. Darn. Well, just stuff it down as best you can. And climb into your sleeping bag and try to keep warm. Fat chance.

Bright and early the next morning we enjoyed a nice breakfast of cold economy grade food service Danish rolls and cold milk and cold orange juice in the comfort of the cold tin shed that belonged to the commercial fisher people and I got my introduction to rolling up tents encrusted with ice.

And, nineteen years later, I’m still here?