The cover design is from this year's Geology t-shirt.

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

If you have a change of address or other correction to our address list please notify:
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Dear Alums,

We've had another busy and exciting year in the geology department. Nearly every week, I listen to Garrison Keillor say "It's been a quiet week in Lake Wobegon" and I realize that I can only rarely say the same of the geology department. (It is, however, true that our students and alums are all strong, good-looking and above average). You will read about the highlights of the year in the Department News section that Tim has put together. We’ve had a successful off-campus program to Australia, department trips to the Black Hills and Missouri, two Bernstein lecturers (Herb Wright and Lawford Anderson), and a wonderful contribution from Lisanne Pearcy-Scott ('82) who taught Mineralogy winter term.

We continue to have strong student interest in our program. We graduated sixteen seniors last week and there are twenty majors in each of the next two classes. Our introductory courses are consistently over-subscribed with waiting lists; we cannot accommodate all the students who would like to take introductory geology, even though we have places for around 150 students each year. We believe that we are filling an important campus role by teaching about global change, resource use, and environmental geology and we wish we could reach all the students who have interests in these areas.

I would especially like to thank Tim Vick, Betty Bray and Ed Buchwald for their continued outstanding work for the department. This year was my first as department chair and I soon realized that Tim and Betty do much of the work that would otherwise have to be done by me. Both made my job much easier. In addition, both Tim and Betty have the wonderful ability to communicate well with students. They help us greatly to maintain the close-knit atmosphere that students appreciate so much. This year marks Ed's 25th on the Carleton staff. Most of you are aware of Ed's many contributions to the college and the department, because it was after he arrived at Carleton that the numbers of geology majors began to increase. Ed helped open the department up to a much wider group of students through his teaching of environmental geology.

This academic year was Cathy Manduca's third and final year as part of our faculty. She has contributed greatly to the department: in teaching, directing student research, advising students and in lots of other ways. Her list of accomplishments for the year includes at least one published paper, several papers and maps either accepted or submitted, a poster presentation at GSA, and one baby, Katie, who arrived just in time for Christmas. Katie has already been on her first two overnight field trips. We are pleased that Cathy will continue to be in residence in Northfield, doing research, writing papers and caring for Katie and Robert for at least one more year and that we have been allowed to appoint her as a Research Associate in the department. Thank you, Cathy for all your contributions!

My best wishes to each of you for the upcoming year. Thank you for your continuing contributions to this newsletter. Please continue to let us know how you are doing!

Best Wishes,

Mary Savina

Mary Savina
The spring field trip in Missouri was highlighted by an all-day canoe tour of gravel bar movement in the bed of the Jacks Fork River. Our guide was Rose McKenny, a doctoral student under the direction of Robb Jacobson '79, who is studying the impact of human-induced changes in the riverbed on wildlife.

On the fall field trip in the Black Hills, S.D., we got a tour of the Homestake Mine from a company geologist.
[Dave Bice and three colleagues published an article in the Journal Science in January which generated international interest and Dave was interviewed by media including the BBC and the New York Times. This is the most interesting of the print articles we saw:]

**Meteor May Have Aided Dinosaur’s Dominance**

by David L. Chandler

(Reprinted courtesy of The Boston Globe)

Jan. 24, 1992

The meteorite impact that many scientists believe killed off the dinosaurs may have been matched by a similar collision 140 million years earlier that made their rise to world domination possible, a new study says.

In a report being published today in the journal Science, scientists say they have found evidence of a cataclysmic impact just before the dawn of the dinosaur age, about 204 million years ago. The impact may have made the dinosaurs’ initial evolution possible by wiping out earlier dominant species and providing an ecological opening for them to fill.

The new evidence concerns a time called the Triassic-Jurassic boundary, when life on Earth underwent what paleontologists call one of the big five mass extinctions that wiped out many of the species alive at the time. For some kinds of shellfish, for example, 92 percent of all species were wiped out in this mass extinction.

David Bice, a geologist at Carleton College in Minnesota, along with four colleagues [including Sean McCauley '90 and Pete Reiners '91], found the evidence for a meteorite impact at that area while digging in deposits in the Apennine mountains in northern Italy. They found grains of quartz that showed evidence of having suffered an impact.

Such “shocked quartz” grains are one of the signs of a meteorite strike, Bice said.

Cathryn Newton, a paleobiologist at Syracuse University in New York who collaborated on the excavation, said the connection between the shocked quartz grains and the extinction appeared to be very strong.

On the very top of the last layer of sediment below the layer of shocked quartz grains, she said, was a fossil of a tiny marine animal that went extinct immediately afterward. “It was the most amazing coincidence I’ve ever seen,” she said, to find this fossil creature literally in the last layer it could possibly be in before the impact. The layers below are filled with such creatures, she said, while in higher layers they are completely absent.

That shows that the quartz coincided exactly with the time of the extinction, she said.

While evidence has been steadily building over the last decade that one or more major meteorite impacts occurred at the time of the mass extinction that killed off all the dinosaurs 65 million years ago, “this is the first indication” of such an impact at the Triassic-Jurassic boundary, Bice said in an interview yesterday.

In fact, the sediments show three separate layers of shocked quartz, indicating there may have been a series of impacts within a few hundred thousand years.

Bice and Newton stressed that because the data comes from only a single site, it will need to be confirmed by similar findings elsewhere in the world to be truly convincing.

Paleontologist David Raup of the University of Chicago, who has done research and written extensively on the mass extinctions, said yesterday that he hoped the research would encourage a further search for evidence of impacts associated with mass extinctions.

Unlike the extinction at the end of the dinosaur age, where finding a crater associated with the impact was difficult because no obvious candidates were known, there is a large crater in Canada that formed at about the right time to account for the Triassic-Jurassic extinction.

The Manicouagan crater in Quebec is 40 to 50 miles across, and has been dated to about 214 years ago, give or take 5 million. That’s a bit too old to have been the cause of the extinction, but Bice said that more recent data indicates that the crater may in fact be a bit more recent and may in fact coincide with the time of the shocked quartz he found.

**Lawford Anderson, Herb Wright Visit As Bernstein Fellows**

The "grand old man" of Minnesota Quaternary geology, Dr. Herbert E. Wright, visited this winter as the tenth geologist-in-residence on the
Bernstein Development Foundation Geology Endowment.

Dr. Wright, emeritus professor at the University of Minnesota, spoke on "The History of Climate Change," and "Studies on Peatlands in Sweden and Minnesota." He also joined the Advanced Geomorphology class for two of its meetings, advised students interested in Quaternary geology and lectured in the Archaeological Methods course.

Dr. Wright received his undergraduate and graduate degrees at Harvard University. He has been on the faculty of the University of Minnesota since 1947, most recently as Regents Professor of Geology, Ecology, and Botany and Director of the Limnological Research Center. He is an internationally known scholar and has published hundreds of articles and edited 14 books. His research field areas have included a diverse list of localities in Alaska, the Yukon, Labrador, Mexico, Lebanon, Iran, Iraq, Turkey, Greece, Norway, Sweden, Great Britain, Ireland, Peru, Bolivia and Antarctica. He has received two honorary degrees and numerous scientific awards including membership in the National Academy of Science.

Dr. Wright's research has focused on environmental changes in the last two million years. His interdisciplinary studies have involved biology and archaeology in addition to geology.

The eleventh geologist-in-residence on the Bernstein Endowment was Dr. J. Lawford Anderson, a professor of geology at the University of Southern California.

Dr. Anderson earned his bachelor's degree at Trinity University in San Antonio and his master's and PhD at the University of Wisconsin-Madison. His research and teaching have focussed on the evolution and construction of the Earth's granitic crust. As an igneous petrologist concerned with granitic magma petrochemistry and mineral equilibria, much of his and his students' work has been to map the petrology of batholiths of various ages and tectonic settings.

Among his many honors and awards are the 1989 USC Associates Award for Excellence in teaching, which reflected his interest in students, his amiable teaching style and his wonderful sense of humor.

Dr. Anderson presented formal talks entitled "Middle Crust of the Cordilleran Orogen-Core Complexes and Suspect Terranes" and "Anorogenic Plutonic Perforation of Proterozoic Planet Earth," in addition to participating in discussions in Petrology and Advanced Petrology classes.

During their visits both speakers visited several geology classes and labs in addition having lunches and many spontaneous discussions with students.

We want to express deeply felt thanks to the Bernstein family for making Dr. Wright's and Dr. Anderson's very interesting visits possible!

AAGP Lecturer

Susan Landon, a consulting petroleum geologist, visited in April as part of the AAPG Visiting Petroleum Geologist series.

Ms. Landon spoke on "A comparison of the Midcontinent Rift and the East African Rift" and held several informal discussions with students on careers in the petroleum industry.

Keck Faculty Development Program Draws To A Close

A significant chapter in the history of the Geology Department is drawing to a close as we exhaust the major grant awarded to us for faculty development in 1988 by the W.M. Keck Foundation.

This $250,000 grant enabled us to make strides in several ways. First, it provided funding for a postdoctoral position which has supported Cathy Manduca; our program certainly benefitted from her presence, and we hope she has gained an equal amount.

Additionally, the grant helped us purchase important equipment including an atomic absorption spectrophotometer, canoes, computers and software, plus tuition for short courses, service contracts for equipment (a major item!), and supplemental funding for a large number of joint student/faculty research projects.

Research results have been presented at professional meetings or published in journals. Our enrollments have climbed from their lows of the late 1980's to quite healthy levels today, stimulated by the vitality of our faculty and the quality of our facilities.

If there ever was an example of adequate funding at a crucial time making a positive difference, this surely must be one!

GSA Dinner

The San Diego dinner, attended by about 35 alums, was extremely successful. A special thanks goes out to Wes Danskin '78 for lining up the Cabo Cabo Grill and helping us organize it. This fall in Cincinnati we will be having a breakfast on Wednesday, Oct. 28. If you're at GSA, we will look forward to seeing you there!
Scuttlebutt from the students, however, was uniformly positive about their experience. Many returned with stories of wondrous sights and interesting research projects they had done. One person, reflecting on the hat and camera outfit, also commented, “Shelby makes a great tourist!”

Lisianne Pearcy-Scott
Teaches Mineralogy

We’d like to thank Lisianne Pearcy-Scott ’82 for detouring to Northfield to teach mineralogy this spring. The course was originally scheduled to be taught by Cathy Manduca, but then the birth of Katie in December changed things. Shelby is on sabbatical this year, but will be back next year.

Last year Lisianne was a Pew Foundation Postdoctoral Teaching Fellow at Whitman College in Walla Walla, Washington. She completed her PhD in 1991 at Stanford with a thesis on “Island-arc petrogenesis and crustal growth: examples from Oregon and Alaska” under the supervision of Dr. R.G. Coleman. At the conclusion of her time at Carleton this year Lisianne was nominated to full membership by the Carleton College Chapter of Sigma Xi, The Scientific Research Society.

The stint at Carleton meant Lisianne had to spend the term separated from her husband, Toby, a consulting environmental geologist in Corvallis, OR. Lisianne, we really appreciate your help!

Alums Discuss Environmental Careers With Students

A very interesting and rewarding panel discussion was held in Great Hall in January under the leadership of Cathy Manduca and Ed Buchwald to help current students get in touch with the world of environmental geology as it is practiced in Minnesota.

Members of the panel were Kelton Barr ’72, hydrogeologist with Geraghty and Miller, Inc., Ed Swain ’74, senior biologist with the Minnesota Pollution Control Agency, Cathleen Villas-Horn ’81, a hydrogeologist with the Minnesota Pollution Control Agency, and Jane Willard ’71, the president of EnPro Assessment Corporation. All of the panelists live and work in the Twin Cities area.

The discussion was lively and elicited a good deal of interest from the students. Many thanks to the alums who participated!
Thanks To Alumni For Posters, Field Trip Help And More

We'd like to extend a special thanks again this year to people who loaned us poster displays for the Mudd Hallway display cases. Posters displayed in the past year have included work by Wendell Duffield '63 and many current students whose projects for classes including geomorphology, mineralogy, introductory and environmental geology were displayed.

We also thank Robb Jacobson '79 for tremendous help in setting up one of the best field trip days we can remember. Rob arranged for us to float a section of the Jack's Fork River in southern Missouri, guided by his doctoral student Rose McKenny. Rob and Rose are studying the movement of sediment in the riverbed and its impact on wildlife in the river.

Thanks are also due to Libby Youngblood Anthony '75, who gave a talk in April in our department on "Recent thoughts on the chronology and magma evolution in the Potrillo Volcanic Field, Rio Grande Rift."

Thanks to you all; the active participation of alums adds wonderful diversity and stimulation to our life among the corn fields in Northfield!

While she is not an alum, we need to thank Cathy Manduca as well for allowing us to display her posters which she used at GSA. Williams graduates do good work too!

We need to thank the people who called in job openings throughout the year, too. Several students found excellent career opportunities as a result of a job lead provided by alums, and the students and staff of the Geology Department are extremely grateful for the help.

Research Project In Boundary Waters Canoe Area

S.S. Goldich (1938) wrote one of the important pioneering papers discussing the effects of weathering on the stability of minerals. That paper serves as the inspiration for a series of researches that I have undertaken with students during the past four summers in the Boundary Waters Canoe Area Wilderness. In essence we have been trying to determine the sequence of chemical events that take place as major ions move from bedrock to lake water.

It seems to make sense to concentrate our study on small, headwater lakes situated within a single rock type, and so we selected as our first study area Little Kek Lake near Kekekabic Lake about 15 miles west of the end of the Gunflint Trail. So far students have mapped the bedrock and vegetation, completed mineral and chemical analyses of the bedrock, mineral and chemical analyses of soil profiles, mineral and chemical analyses of bottom sediments, and some analysis of water chemistry.

We are, in part, showing that Goldich's stability series makes sense at Kek Lake, but we remain confused about the mobility of phosphorus in the system. We may have to shanghai biologist Gary Wagenbach and chemist Will Hollingsworth. Sooner or later we are going to have to look at the biogeochemistry of the system, too.

In the summer of 1992 we will move to another lake to do similar studies where the rock type is different. This will give us a chance to test our ideas about the movement of major ions from bedrock to lake water and to make certain that Kek Lake is not a special case.

Some day, before I retire, we hope to make a flow chart which will show the pathways and reservoirs of major cations as they are weathered, incorporated in soils and vegetation, and move into the water column of lakes. In the meantime we are learning a lot about doing field limnology in remote areas. Each summer about six students learn to canoe and camp together, make measurements and sample, and ask good questions of nature.

-Ed Buchwald
Shelby Boardman's
Petrology Research

These past two terms I have been on sabbatical leave, though I have been working here on campus.

One of my goals is to complete the research Cathy Manduca and I have been doing in the northern Sierras with Becky Lang and Kari Cooper (both '91). The article, on the aluminum in hornblende igneous barometer, is now nearly complete and we plan to submit it for publication this summer.

My other goal is to wrap up one major phase of my long-term Colorado research. For the past several years several students, Brian Beard '86, Peter Sauer '88, Rolf Miller and Betsy Hunt (both '90) and I have been trying to understand an unusual suite of high-Mg volcanic rocks, called komatiites, that are part of the early Proterozoic terrane of central Colorado.

I am working on an article, with Bob Cullers of Kansas State who provided rare earth element analyses, and hope to have it completed before summer rolls around.

-Shelby Boardman

Keck Consortium
Research Projects

Five of the six juniors who were accepted will be participating in research projects this summer under the sponsorship of the Keck Foundation grant to 12 top quality undergraduate geology departments.

Maria Panfil and Eric Jensen were accepted into a project studying Quaternary geology in the Upper Rio Grande Drainage in the San Juan Mts. of Colorado. The project is directed by Eric Leonard of the Colorado College faculty.

Beth Lambert will be studying structural and sedimentological evidence for the Paleocene uplift in eastern Montana in a project directed by Ed Belt of Amherst College.

Ben Surpless will look at Miocene to Holocene volcanism by helping with an east-to-west geologic and geochemical transect of the Cascade Volcanic Arc through southern Oregon.

Britta Gustafson will study alkaline intrusive centers in the Pikes Peak Batholith in Colorado under the direction of Jeff Niblett of Colorado College. Among the faculty for this project is Diane Smith '77, a member of the faculty of Trinity College in San Antonio, TX.

Network For Gay, Lesbian And Bisexual Geology And Natural History Alums

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 third year and has eleven members around the country. The importance of the network may be even greater now than when it was formed: while significant gains in the rights and freedom of lesbian, gay and bisexual people have been made in many localities, reports of hate crimes against them also have increased hundreds of percent in recent years.

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.
John Hillyer, Donor Of Mineral Collections, Dies

We are sad to report that John C. Hillyer, the donor of a large number of mineral specimens which significantly increased the size and breadth of the Carleton mineral collections, died May 23, 1991.

Mr. Hillyer's donations included roughly a thousand mineral samples. Over 400 specimens of museum quality were added to the Dana Reference Set including many excellent samples of fluorite, calcite, rhodochrosite and azurite. Hundreds of other samples are actively used in classroom teaching sets.

Paul Tychsen Dies

Paul Tychsen '41, who for many years was a well known and loved professor of geology at the University of Wisconsin at Superior, died last Oct. 1.

Paul was well known as a superb teacher, and on many occasions helped lead Carleton field trips in the northern Wisconsin and North Shore, Minnesota, areas.

After graduating from Carleton, Paul earned his MS and PhD at the University of Nebraska in 1947 and 1949. During his career he won awards for excellence in teaching including the Johnson Wax Foundation Award for Distinguished Teaching, and he sat on committees of or was an officer of the Geological Society of America, the National Association of Geology Teachers, and the Regents Fellowship of the University of Nebraska.

Students Choosing Less Alcohol And Meat

The Departmental field trips this year to the Black Hills and St. Francois Mts. have been memorable for a number of differences between them and trips which many alums may remember.

For one thing, in the Black Hills the weather was nice until the last night of the trip. That last evening, while we were camped in the Badlands (all clay, remember?), we got about two inches of rain in three hours. Needless to say we were glad we had our field work done, although we rejoiced for the excellent opportunity the geomorphology students had to observe runoff and erosion in action. The buffalo burgers at the restaurant up the road from the campground were an interesting experience, too (we scratched dinner by the campfire). In Missouri, we rented a church camp lodge so we wouldn't be incurably soaked if it rained, and... you guessed it: it didn't rain.

Another difference between these trips and trips of yore is that now the trips are nearly alcohol free. A few years ago the idea of an alcohol free geology field trip would have seemed outlandish, but the reality now is that most of the students are under the 21 year old drinking age, and the staff members' enthusiasm for drinking on field trips has dimmed. The lack of alcohol has in no way reduced the enjoyment of people on the trip, in fact we felt the atmosphere was better than on many trips in the past. We had interesting discussions, plenty of good humor and lots of fellowship from everyone.

We also find that about a third of the students are opting for vegetarian meals when offered the choice. In the past the percentage choosing veggie options was more like 10-15%. Our menus have been drifting toward the vegetarian side in the past few years since many dishes like Timslop, spaghetti, soups and lasagne can easily be made meatless with no loss in flavor.

Geo T-Shirts For Sale

Some geology t-shirts from recent years are available for sale from Tim Vick. The cost is $9 (which includes mailing). Most of the shirts are XL size, although I have a few size L in some of the patterns. The available patterns are:

'89- "Ramblin' Ed & the continental drifters"
'90- "Cold, wet and hungry"
'90- Paleo shirt, quote about reproduction
'92- "Caution- the Cenozoic is near"
'92- Geo Wanna Be's
'92- "Geo Rocks"

To order a shirt send a check made out to the Carleton Geology Dept. to Tim Vick at the Geology Dept., and include mailing instructions.

Two Seniors Awarded NAGT/USGS Internships

Two Carleton senior geology majors, Jill Baum and Jim Rowe, were nominated by their field camp directors last fall for internships with the US Geological Survey. We are particularly proud of Jill's and Jim's achievements, since only about three dozen such internships are awarded to students nationwide each year.

Jim has been assigned to work on geohydrology projects at the Little Rock, Ark., office of the USGS. He attended the Bowling Green State University field camp directed by Charles Onasch and Joe Mancuso '53.
Jill has been assigned to the USGS office in Providence, Rhode Island, where she may be working on environmental projects. She was nominated by Dave Rodgers '81, director of the Idaho State University field camp.

**Several Geology Majors Awarded Fellowships**

Several geology majors won fellowships to conduct summer research this year. Congratulations to each of them!

Joan Ramage '93 was awarded the Class Of 1963 Fellowship, which she will use to visit Turkey. She will experience both modern and ancient Turkish culture while she assists with the excavation of a ninth century B.C. archaeological site.

Kevin Blake '93 has been awarded a Richter Fellowship. Kevin is interested in geomorphology and he will spend the summer in Norway helping to map glacial deposits.

Another Richter Fellowship was offered to Anu Gupta for her proposal to study the position of women in India, but after serious soul-searching Anu concluded there were too many cultural and logistical obstacles to the project for it to have a realistic chance of success.

Two juniors were awarded summer fellowships by the Pew Midstates Science and Mathematics Consortium. This program pairs promising science students with faculty sponsors who have active research programs. Anita Ho will be working with Alfred Anderson at the University of Chicago on textural and microanalytical studies of olivines, and Joyce Wilson will be with Michael Wysession of Washington University, St. Louis, studying earthquakes in the intraplate Atlantic Ocean basin.

**Stewart Fellows For '92-'93**

Two juniors, Eric Jensen and Maria Panfil, have been named Duncan Stewart Fellows for 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. 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 people will extend to 47 the number who have been Stewart Fellows.

**Other Awards To Seniors**

**Distinction in Comps**
- Clifford Blizard
- Andy Brydges
- Sean Kempke
- Erik Stokstad
- Patty Weston

**Laurence M. Gould Prize for achievement in science and humanities:**
- Patty Weston

**Sigma Xi, Associate Membership**
- Clifford Blizard
- Andy Brydges
- Oakley Cochran
- Jim Rowe
- Erik Stokstad
- Dave Tinker
- Christina Vosen
- Jenn Wenner
- Patty Weston

**American Mineralogist Award**
- Jim Rowe
This Year's Senior Geology Majors

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

**Jill Baum**, Milwaukee, WI "Miocene to Holocene volcanism of Robinson Butte and vicinity, southern Oregon High Cascades"

**Clifford Blizard**, Ambler, PA "Soft-sediment deformation structures in volcanic sediments, Te Ruatakuahi Point, Taupo, North Island, New Zealand"

**Andrew Brydges**, Acton, MA "Evidence for magma mingling: Enclave genesis at the boundary of an accreted oceanic-arc terrane in west-central Idaho"

**Oakley Cochran**, Far Hills, NJ "A geologist's excursion in the Dolomite Mountains, southern Alps"

**Nicholas Dewey**, Boulder, CO "Triassic/Jurassic boundary stratigraphy of Nevada and the presence of potentially dateable layers"

**Jennifer Horn**, Princeton, NJ "Sunday afternoon in the park: A brief guide to New Jersey geology as seen in the parks of Mercer County, New Jersey"

**Sean Kempke**, Northfield, MN "High-level radioactive waste disposal: The subsedimentary concept"

**Jonathan Nauert**, Columbia, MO "Volcanic extrusives of the Fish Lake area, Cascade Range, Oregon"

**Brent Nystrom**, Danville, KY "Sediments from Kek Lake in the Northern Minnesota Boundary Canoe Area Wilderness"

**James Rowe**, Washington, D.C. "The petrology and geochemistry of Quaternary and Tertiary volcanics in the Mount McLoughlin area of the southern Cascades, Oregon"

**Erik Stokstad**, Berkeley, CA "Environmental stratigraphy across a marine Triassic-Jurassic boundary section in Portovenere, Italy"

**David Tinker**, Fresno, CA "A discussion of viscosity: Theory and applications to the diopside-anortosite join"

**Christina Vosen**, Miles City, MT "An investigation of an empirical sediment delivery model for the lower Yellow River, People's Republic of China"

**Jennifer Wenner**, Grand Rapids, MI "The Vourinos Complex as an island arc accretion: Questioning the long-held belief that ophiolite sequences were all formed at mid ocean ridges"

**Patricia Weston**, Bellevue, WA "A metamorphic history of metasedimentary rocks within the Payette River Tonalite, East of the Arc-Continent Boundary near McCall, Idaho"

**CLASS OF '93**

Kevin Blake
Annel Delaney
Lance Dockter
Anupma Gupta
Britta Gustavson
Christopher Hagerman
Anita Ho
Eric Jensen
Beth Lambert
Michelle Lang
Sarah Laxson
David Lund
Christopher Orth
Todd Osmundson
Maria Panfil
Joan Ramage
Benjamin Surpless
Joyce Wilson

Northeast Atlanta, GA
Rochester, MN
Blaine, MN
New Hope, MN
Stillwater, MN
Littleton, CO
Northwest Minot, ND
Green Bay, WI
Bethesda, MD
Grand Marais, MN
Honolulu, HI
White Bear Lake, MN
Billings, MT
Rochester, MN
Arlington, VA
Ithaca, NY
Eagle River, WI
Nashville, TN

**CLASS OF '94**

Elizabeth Butler
Aron Clymer
Geoffrey Collins
Julia Daly
Emily Darby
Starr Johnson
Richard Kay
Brett Kessler
Myong Sun Kong
Reed Krider
Miranda Lescaze
Naomi Lubick
Christopher Poulsen
Beth Pratt
Karen Swanberg
Elizabeth Symchych
Ruth Trzynka
Jessamyn Tuttle
Michael Unger
Robert Wertheimer

Washington, D.C.
El Paso, TX
Hudson, WI
Wellesley, MA
Golden, CO
Lawrenceville, GA
New Orleans, LA
Port Washington, NY
Westwood, NJ
Tucson, AZ
Washington, D.C.
Carmichael, CA
Helena, MT
East Lansing, MI
Great Falls, MT
Andover, MA
Dickinson, ND
Peshastin, WA
Franklin, MI
Upper Arlington, OH
Report From The Field

Field work can be hazardous; things don't always go as planned. This letter, from Brett Kessler '94, arrived last summer after she and three other students (Butch Dooley '91, Starr Johnson '93 and Emily Darby '94) began a field project in Virginia in which parts of a fossil whale were excavated for reconstruction in the Virginia Museum of Natural History, Martinsville. We thank Brett and Butch for allowing us to share this letter, and wish them better luck in future travels! (The project was successfully completed despite 130° temperatures and other logistical woes. Emily travelled separately.)

July 1, 1991

Dear Tim:

Howdy. I wanted to drop you a line to let you know how, once again, you saved the evening while we were camping. First, however, I'll give you background so you can appreciate fully how chaotic our past few days have been.

Starr, Butch and I left Carlton Saturday a few hours after graduation. Things ran smoothly until about 10:00 p.m. when, in I believe it was Davenport, Hwy. 52 was blocked off and we were going to be held up for five or six hours. Butch wasn't too keen on sticking around and so, after some heavy-duty cursing, we back-tracked, went through Prairie du Chien, Wisconsin, and back to Dubuque, Iowa. This was two hours later and we expected to be further south by 60 miles or so. It was around midnight and we began looking for hotels, since all state parks had closed two hours earlier. We looked at about six places but they were all full, due to the riverboat gamblers. We finally, after an hour or so and much cursing from Butch, found a place and got two of the last three rooms in all of Dubuque! The reason we could get those was because they didn't have bathrooms in the rooms.

We started out early the next morning and the whole day was rather uneventful. We made good mileage and Sunday evening we stopped at a Red Roof Inn in Lexington, Kentucky.

When we were getting ready to leave Monday morning at 7:00 A.M., Butch noticed that the cooler wasn't there. He soon realized that half the stuff from the car and most of the stuff from the trailer had been stolen. There was much cursing. We reported the robbery to the front desk and they told us the guys had been caught and all our stuff was retrieved. They hadn't contacted us because only stuff with my name and Butch's name was found and Starr had registered us. Anyway, we got everything back. Starr and Butch went to the police station while I stayed in the hotel to guard the rest of the stuff. By 10:00 A.M. we were ready and rolling. At around 1:00 p.m. Butch's car quit after stopping at a gas station. After a lot of swearing and Starr jump-starting it we were going again. Not well, but going. Then about 6:00 p.m. his car quit again on the West Virginia Turnpike and wouldn't start again. He tried all that he could and he and Starr took three trips to Princeton getting parts. I stayed in the car the whole time. After replacing the fuel pump and fuel line at 10:00 p.m. the car was able to move. We were all cranky. I was mad at being alone for four hours or so; Starr was mad at Butch's yelling and orders; Butch was mad at the world. He, in trying not to hit the car, threw his hat and broke the rear view mirror with the head from his hat. Well, the car ran long enough to exit the turnpike so Butch could call his father. On the entrance ramp however, it quit again and wouldn't start. Butch pushed the 7,000 lb. car and trailer about 100 yards off the road. There was a hotel 1/7 mile away. We pushed the car into a ditch off the road, wary of being burglarized again. We tried to move the trailer so it would be near the hotel, but that was a dismal failure. Starr and I were holding the tongue and Butch was in back to push it, but it was too heavy and it dropped on two of my fingers. They were swollen but all right. I wasn't able to help anymore and soon Starr and Butch gave up, too. In the morning Butch fixed it by turning the gas filter the right way and we made it to Roanoke.

Since then his spark plugs and spark plug wires have been replaced and he needs to replace part of his exhaust system and muffler.

We made it to the quarry on Friday. It was about 110° where we were supposed to work. Then it rained that night. It rained Saturday. And it was cold and drizzly Sunday. (Butch's magic still works!) Well, Sunday night we had Tim'slop. It was the saving grace of the weekend. Thank you.

I hope your summer has been better than ours so far. See you in the fall.

Sincerely,

Brett
Four intrepid paleontologists research paleowildlife somewhere in central Iowa, (clockwise from upper left) Butch Dooley ’91, Heyo Van Iten ’81, Brett Kessler ’94 and Starr Johnson ’93, in this picture by Heyo’s father, Richard Van Iten. Butch, intent on getting the inevitable “big one” that’s always just outside the frame of the picture, couldn’t turn around to be photographed. For a discussion of another paleontology expedition see page 11.
1935. We have 2 cards from Charles Golder, one from this year and the other which came last August after the Newsletter had been "put to bed." Last summer he and his wife, Eleanor Suttle '36, enjoyed a combination geology/bridge/family trip to New Mexico. This year, he writes he's "enjoying life in Kansas City, MO, with continued interests in theater, travel, pistoleering and farming, all of which keeps us from any frivolous mischief." Thanks for both cards!

1938. When she wrote, Mary-Hill Kueffner French was looking forward to attending a meeting in July of the Meteoritical Society in Denmark which was to include a field trip to the Cretaceous-Tertiary boundary. Also in her plans was a conference on large meteorite impacts and planetary evolution in Sudbury, Ontario. "On a smaller scale," she says, "I've agreed to serve on the finance committee of the Geological Society of Washington." Sounds like a wonderful summer—your newsletter editor wishes he could tag along!

1939. Sheldon Vance and Jean Chambers '38 enjoyed a cruise in the western Caribbean and some golfing in Florida this winter, and they report seeing Mary Hill Kueffner French from time to time. Sheldon retired from law practice in Washington, DC, after 10 years, following 35 years in the Foreign Service where he held positions of ambassador twice and assistant secretary of state once. They have two sons, Robert and Stephen '69, and two grandchildren.

1940. David Schacht writes that he's "not actively involved in geology, but continues to assist foreign and Native American students at Oregon State University in Corvallis."

1941. Ed Buffington is now a great grandfather! His son, Steve '66, has a grandchild, plus Ed is attending another granddaughter's college graduation this spring. He comments, "I'm in good shape considering the shape I'm in... My, how time flies when you're having fun." Lloyd Pray said he had a fine year, highlighted by being awarded the Distinguished Achievement Award in Geology at his 50th reunion last June, and travels to Maine, New Zealand, and his favorite mountains, the Guadalupe Mts. of Texas and New Mexico. Bob Chapman is working on several geologic reports on areas in central Alaska. He also writes that he "enjoyed a great visit at Carleton last June for the class of '41 50th reunion. Three of us geologists were there." He also had a very interesting trip through Germany and some adjacent countries which included the World Curling Championship playoffs at Garmisch-Partenkirchen. He saw "just enough to want to see much more."

1942. Congratulations to the members of the class of '42 on your fiftieth graduation anniversary! Dode Wenson wrote in that she's looking forward to the reunion in June (which, regrettably, will be old news by the time this is printed). She also took note of her continuing enjoyment of the Monday lectures of the Geological Society of Minnesota. Robert Ruhe sends a hello from his seventh year of retirement...

1943. Jane Dymond sends word she is spending her winters in Arizona and summers at her cottage in Michigan. Her summer address is 7038 Platte Rd., Beulah, MI 49617. Greetings from Frank Sullivan, who has moved permanently to Peoria, Arizona. His activities include being an associate at All Saints of the Desert in Sun City, pastoral work with the American Legion and arranging a reunion of his Marine squadron.

1945. Richard McCarthy is chairing the City of Albuquerque Religious Initiative Committee on Alcohol/Drug Treatment Improvement, as well as various other church committees and projects. He is also interested in pottery and crystalline glazes, and if I interpret the card correctly, has visited Compadre of Ghost Ranch, the site of many fossil digs for coelophys. If that's not right, please set us straight for next year's Newsletter!

1946. Charles Higgins has retired from the faculty at the U of California at Davis to the Carmel Valley. He is "still active geologically and fielding inquiries about our book (Higgins & Coates, Groundwater Geomorphology, GSA Special Paper #252)."

1947. Georganna Dean Dickson took a fascinating sounding trip this year, and was in South Africa during the referendum; "Interesting things happening in a very beautiful country," she writes. John Kirwan is "just hoping for oil prices to stabilize so we can get domestic oil production and not rely on Arab countries to run the oil business." A lot of people would agree!

1949. Bill Roth is working the Williston and DJ basins as a consultant with Kenisa Oil Co., and the shallow upper Devonian tight-gas sands of western Pennsylvania for Petrobank Operating Co. Both companies are in Denver. He comments, "Things continue to get grimmer in the oil patch, but there is still some money around, especially for tight gas and the tax credits."

1951. Dean Millman was planning to retire on June 1, 1992, when he wrote, from his post as
exploration geologist with Marathon Oil Co. He said, "Betty and I are considering a move back to the Rocky Mt. region where I spent most of my career; it would put us in a central location with respect to children (5) and grandchildren (5). We had such a good time at the class reunion last year that we are planning to return this summer for an extended stay on one of Minnesota's vaunted lakes. The 'roots syndrome' is a compelling force!"

Phyllis Rudstrom Brenner '51 (right) and her college room mate, Tricia Lowden Ceaderleaf '51, sorting through Cucullaea igigantias they picked in a small stream near Alexandria, VA. Phyllis' "Grand Canyon" t-shirt is a souvenir of her 1988 Carleton trip there.

1954. Pat Bickford is making progress building his new geology department at Syracuse University. He says, "I have active research projects in the Trans-Hudson Orogen, Saskatchewan and in the Northern Sierra Nevada with Hooard Day of UC-Davis. Betsy '54 and I enjoy being near our son Mark and daughter-in-law Rhonda (Ithica) and daughter Martha, son-in-law Mitch, and grandsons Keenan and Ellis (Rocky Point, NY)."

1956. Richard Buchheit writes that he had "anticipated an early retirement" to our lake home at Grand Marais in 1991, with consulting work on the side. The grand plan was changed at mid-year, when I accepted the position with the Eveleth Fee Office. The Eveleth Fee Office, Inc. was subsequently incorporated on 12/2/91 with me as president, owner, manager, and janitor! The Fee Office has represented mineral and fee owner interests in Minnesota for over 90 years, and intends to expand its services to resource businesses of the region." Good luck in the new enterprise! Don Kohls retired last summer after 5 years as vice president at Goldfield Mining to form Kohls Exploration, Ltd. Best wishes for the new business, Don!

1959. Thanks to John Neemes for your address update.

1960. Neal Bullington, the chief of interpretation at Sleeping Bear Dunes National Lakeshore in Michigan, recently attended the National Symposium at Vail, CO, celebrating the 75th anniversary of the National Park Service. Thanks to Michael McLanahan for your address update. Rene Fournier continues in environmental work with Condor Geotechnical Services. He writes that OSHA safety classes are a new area of work for his firm.

1961. John Lufkin has started a new consulting business, Precept Environmental, Inc., specializing in environmental consulting and remediation services; major clients have included Mobil Oil and Amtrak. Chris is also involved in the business part time. Best wishes for the new enterprise, John! John says his sons, Nat and John, 9 and 10, are active in baseball, basketball and soccer, and he is planning trips to Hawaii and Alaska.

1963. Wendell Duffield is "scrambling to find funding to study the Hopi Buttes field of maar volcanoes. Success is not assured. The USGS is scrambling for survival." Also, "Anne '64 and I are moving across town. We're selling our house of nine years and will replace it with a much smaller house... plus barn, arena and work shop. This is called the house effect!"

1964. Terry Tullis continues to work on research on rock friction, fault mechanics and earthquakes, and he recently visited the Galapagos Islands and Antarctica ("Both fantastic places!") as a faculty lecturer on Brown University alumni trips. Last September Terry married Connie Worthington, whose works for nonprofit organizations in fields such as abortion rights and programs for handicapped people.

1965. Jan Tullis is on sabbatical: "Time at last to concentrate on research (experimental rock deformation)." Relief is spelled sabh...

1966. Beth Schwarzman's daughter Caitlin graduated from Carleton this year; best wishes and good luck in Real Life to her! It was good to see Beth and Gary when they were in Northfield in May. Beth is spending a great deal of time on the Woods Hole Science and Technology Education Partnership, an effort to bring the scientific
resources in Woods Hole to support science education. "It's interesting, sometimes exciting and hope-inspiring, and sometimes very depressing," she says. Plans for the summer included another Carleton alum trip down the Grand Canyon, but no sailing since the family is between sailboats at this point.

1968. Ron Nordquist and Nancy write they are enjoying Texas living with their eight-year old daughter Alice; he's exploring for oil and gas in the Rocky Mountain region. Susan Hartley is teaching at the U of Minnesota at Duluth for both the Astronomy and Geography departments. She reports that her and Alan's son Andrew, now 6, was a state finalist in the National Geographic Geography bee this spring in St. Paul. Good work, Andrew!!

1969. Meanwhile, Alan Hartley is writing a compilation of nautical terminology from several Mediterranean languages. He's still working at Empire Stevedoring. Connie Sansome, proprietor of Trailblazer Books, is marketing her board game Boundary Waters Canoe Trip: A Travel Adventure Game which she introduced last December. Her family, Ken, Nick and Dain, continue to be a great source of joy and commitment for her. Also, Connie writes, "Hello from Ken and myself to Dave Tiffany. Where are you? How are you? Stop by sometime!" Dave, are you out there? Candace Kohl is new to the mailing list, and we welcome her! Candace was a chemistry major but she now works in cosmochemistry at UC San Diego. She writes "It was fun to see some old friends at the GSA meeting in San Diego this fall and I would like to stay in touch. I may be going to Greenland this summer for some ice core studies, depending on funding."

1970. Steven Hulke is still exploring for oil in the California subthrust plays.

1971. Royston Kruse continues to travel the world as a ministry representative of the Billy Graham Evangelistic Association. He writes that he's currently assisting with a project to extend Dr. Graham's mission in Germany across Europe by Satellite in March, 1993. Karen Klusmeyer Lubke writes that "Royce and I transferred to Lafayette, LA, in November during yet another restructuring in the oil patch. With the move, we have experienced a pleasant change in lifestyle—more time for fishing with the boys (4 and 5), great Cajun food and incredibly friendly neighbors."

1972. Mark Taylor started a new job in December, managing new technology developments for a partnership between Corning and Asahi Glass to produce TV glass called Corning Asahi Video. "This brings me back to the R&D lab and back to applied igneous petrology."

1973. Bruce Nesbitt, Professor and Associate Chair of the geology department at the University of Alberta, became the father of a second son a year ago December. "We are now parents of two boys, age four and one, which is clearly enough." He also reported a warm winter but still enough snow for some great skiing... Steve Haase joined the New Mexico Bureau of Mines and Mineral Resources last December "after 12 years of interaction with BIG government. Am enjoying the change of pace and the Southwest," he says. Thanks to George-Ann Maxson for her address update.

Dick Pautsch was in some high places this year: "Made a pilgrimage to the land of my Viking ancestors in September, travelling above the Arctic Circle to visit Abisko National Park in Sweden and the Lofoten Islands in Norway. Ascended Half Dome in Yosemite and Guadalupe Peak (the highest point in Texas) in August as a consolation for turning 40."

1974. George Bentley has a son who is almost one year old now, Matthew Gregory, born last August 22. He's a "great kid, happy, beautiful, sleeps well when healthy, and we both feel blessed by his coming." George also reports his father had to finally move out of his apartment into a retirement home. Phil Brown had a six-month sabbatical in Western Australia last year. "I spent my geologic time working on fluids in Archean lode gold deposits. Relaxation time was spent on the white sand beaches. Since returning in July, ongoing and new research projects have continued apace with an emphasis on understanding the origins of mineral deposits. The family continues to do well and grow (in height) like weeds." Ellen Smith has been serving as a member and vice-chair of the City of Oak Ridge, TN, Environmental Quality Advisory Board. Board activities range from reviewing impacts of radioactive waste incinerators to acting as the city's tree board. Marjorie Diamond and Charles Dennis Simpson were married on a sunny day in their back yard on April 12. In attendance were Joan Gaspereow Harn, matron of honor, her husband Jeff who gave Marjorie away, and Joan and Jeff's children Alex and Lisa, who were attendants; Marjorie's steppson, Chuck, 17, best man; and Kathy Rosskopf and M. JoEllen Parent Johnson (both '71). Marjorie writes, "We returned home from our sailing honeymoon in Grenada just in time for the three 6+ earthquakes within 18 hours. Several things fell over, but nothing broke. Pictures hanging on the wall were swinging at least 30 degrees off.
horizontal." What a homecoming. Best wishes for the new household from the Geology Department!

1975. Scott Fischmann writes: "I'm still married to Nancy Borgwardt (St. Olaf '78) and we are raising Jacob, 8, and Leah, 5. Occasionally hear from (or about) Toots Herbsheimer and Tim Williams. Life is good!" Ginny Gillerman was in the process of buying a house when she wrote. "It's made for geologists—built on an (inactive) landslide. It's a standard house, needs a new roof. Guess I'll learn all the joys and pitfalls of home ownership." Yup. Ginny also said she's enjoying teaching part of a class on ore deposits. Teon Grauch was awarded a travel grant last fall with the Citizens Ambassador Program of People-to-People. She visited the Soviet Union after the coup but before the ultimate demise. She writes, "I was with a group interested in geophysics and mining. We visited Noril'sk and Magadan, spanning the (extremely large) continent." She's now back home building a new house further back in the hills.

Welcome to the world to Jim Pizzuto's new daughter Ellen, born in March! Ellen joins David, 3, in helping direct household affairs. Jim wrote that he's busy studying rivers, tidal wetlands and some groundwater and is still teaching geomorphology, hydrogeology, modeling and sedimentology." Emily Wrubel, usually a teacher, "took a leave this year to get kids and husband under control. Actually it's been nice to play with my kids and get back into our bike shop again. Next year I'll be back 'rastling with 7th graders' and our oldest, Wiley, starts kindergarten." Emily is trying to get ahold of Barb Rossing, so Barb, if you haven't heard from her yet, could you give her a call? Thanks.

1976. Will Maze is "still modeling thermal history in basins around the world, and still waiting to see if a 15 month assignment to Malaysia comes through. The oil patch is shrinking, so it might be nice to be overseas for a while!" Good luck, Will, if you get to go over there! From Jamie Foster: "Our gem and mineral store (Carats and Crystals) continues to grow. I recently became a titleholder with the American Gem Society and with the National Association of Jewelry Appraisers. If anyone would like a free subscription to our informative and fun newsletter, just send your request with a note that you're a Carleton geo grad." Jamie's address is listed in the Mailing List section of this Newsletter. Heather Macdonald writes that she still is liking her teaching job at the College of William and Mary. She's now a councilor-at-large for the National Association of Geology Teachers and she's gotten more involved with K-12 education. "If you have a favorite activity or demonstration for K-12 or intro geology on a topic related to sedimentary geology (including hydro), I'd love to hear about it. SEPM's K-12 committee may do another activity book." So, send Heather an idea and maybe get it published! From Craig Knutson we hear "After some initial culture shock, we've survived and even enjoyed our first year in Dallas (it was a cool summer)!. I've been fortunate to travel often to Argentina where the field geology is exceptional. Hopefully I will not be a victim of the current purging of employees, now an annual event in the petroleum industry, and can travel again to the distant south." Barbara Wonson-Liukkonen is back in Duluth as program leader for the Sea Grant Extension program. She says, "I miss real work. This administrative stuff is a drag." Rick Zimmerman sent a card last winter announcing a change of address and a son, Joseph Campbell Zimmerman, born last August 4. He needed a new house because he now has 5 kids.

1977. Phil Muessig is still working on getting a skiff made for rowing the Mississippi.

He's working with the "Minneapolis Ambassadors" program to sell the benefits of city living. Congratulations *big time* to Bruce K. Nelson for earning tenure at the University of Washington! Bruce says, "It certainly changes one's perspective of the future, but unfortunately the schedule just becomes more hectic." Bruce's current research is focussed on southern France, Hawaii and Mexico; Pete Reiners '91 has begun his M.S. with Bruce and the USGS in southern Alaska. Lynn Gandi didn't say this on her card, but it looks to your humble editor like she's changed companies and is now working as a "senior hydrologist" (great title!) for Geo West Golden, Inc. up in Conifer, CO. Is that right, Lynn? Anyway, she writes that her "Big news is my 'first born'; a litter of five Belgian Sheepdog puppies born on Christmas eve!" She's only keeping one, Glory, who brings her family of dogs to four. Lynn is also doing some free lance writing of articles on dogs. "Life in the mountains is grand, but it's been snowing since October" (postmarked Apr 1). Eric Simonson had "Another busy year of mountain guiding with trips to Russia, Africa, Alaska and South America. During the winter I've been busy with avalanche courses and ski mountaineering. Also, I recently married my wife Kathy and have a new fourth grade daughter and fifth grade son. WOW!!" From Bruce Yeomans: "Still active keeping the 'greenies' mobile, warm, dressed in oil products and bedecked in jewelry so they can be comfortable while they
drive us out of business.” Give them a break, Bruce. It can’t be that bad.

1978. By the time this is out Lisa Doull Wright may have already delivered her new baby; when she wrote she was about a month away from it and being bothered by the April heat in Tennessee. “It’s getting hot, and our Christopher (3 in July) is asserting himself more and more... I’m trying to finish up our storm water permit application at work before May 20. Here at home we’ve built a new room for baby, dug a basement for Daddy, and bought a car for all.” Good luck Lisa, hope the delivery is smooth! Steve Ingebritsen’s busy schedule includes an expected baby in June, convening a Penrose Conference entitled “Fluid-Volcano Interactions”, and studying volcanic systems in Hawaii and Alaska. Whew—good luck with it all, Steve! Barb Okamoto Bach writes of and then returned to work half-time in October. Congratulations, Alison, and hello Sarah! Hello also from the Vicks and Dacie’s. Zach Wilson reports the following: “Having had no information about my checkered past, the Colorado Bar Association named me Outstanding Young Lawyer’ of the year. Fortunately, the award has had no impact on my usual deviant behavior.” Well, congratulations anyway, Zach. Whatever it was you did, they must have liked. Cliff Wright is at the U of Colorado at Denver getting ready to start a program in Civil and Environmental Engineering at UW-Madison this fall. He says, “After living in Denver for 14 years it will be tough to leave Colorado, but I'm looking forward to being back in the Midwest.” And we’ll look forward to seeing you, too, Cliff. Good luck with the new program. A card from Janet Thigpen arrived a little late for last year’s newsletter, but is worthwhile anyway: “There's never a dull moment with two small children. Edward, 4, is a 'dinosaurologist.' His latest theory on their extinction is that mosquitoes came at night and ate all the dinosaurs. Erica, 2, seems more inclined to hydrology—spashing, pouring, falling in, etc.”

1979. Dan Muturen is “entering my 3rd year of restructuring at Folwell Middle School in Minneapolis. It has made me wonder if we are taking a discipline based, multidisciplinary, interdisciplinary, integrated day or complete program approach to education. However, the rest of my family is not as confused and has put their efforts into bluegrass music. If you’re in the neighborhood and need a jam session, drop us a line.” Chris Brick has switched from studying watershed management in the Forestry School at Missoula to working on aqueous geochemistry in the Geology Department. But in real life it’s “the usual stuff—skiing, mountaineering and just generally having fun.” Hi Chris—hope the new program goes well! Jo Ann Murashige Gronberg is working on the National Water Quality Assessment Program for the San Joaquin-Tulare Basin as the geographic information specialist and database manager at the USGS in Menlo Park, CA. "I've been traveling more for this project; when I get to Denver I usually see Marie Del Toro. I just saw her in January, she's doing great." Jo Ann's son Richard is now two and he's also doing well. From Lucy Chronic Hinze: “New log house, new little girl named Betsy Lynn. Betsy arrived Dec. 22... We moved into our new Lucy-and-Christ-built log home on New Years Eve. Made for a busy Christmas vacation. Now we are building kitchen cabinets and Betsy is playing with a mobile.” Welcome to Betsy from all of us out here
in Carleton land!! At the Jet Propulsion Lab, Joy Miller Crisp is still doing volcanology and remote sensing studies. In addition she's "working on a project to build and demonstrate a visible spectrometer on a Mars-prototype microrover." Is that like a remotely-guided vehicle, Joy? Thanks to Steve Nagel for your address update. From Chris Neumann: "I am now working with the Natural Areas program of the Wisconsin Department of Natural Resources and doing volunteer land management with The Nature Conservancy. Our son, Tristan, 10, has started cello; our most successful collaboration (cello and banjo) has been 'Bile Them Cabbage Down.'" We saw Robb Jacobson in a gas station in Rolla, MO (by design) while we were driving back from the Missouri spring field trip. He was accompanied by his wife, Anne, daughter Sarah, 1, and the unborn Alex Reed. Later Robb wrote, "Our second child, Alex Reed, was born 3 days after visiting (in utero) with the spring geo field trip at a gas station in Rolla. He joins his sister Sarah in providing plenty of distraction from my my research and our gardening. I am enjoying the challenge of being part of a large, interdisciplinary research effort to understand fluvial geomorphology and aquatic ecology of Ozark streams. Whenever I get anxious about the complexities of the physical system, I only need to consider the biological aspects to feel much better." Robb helped us arrange a tour of his field area on the Jacks Fork River in southern Missouri, for which we owe him many many thanks. Robb's doctoral student, Rose McKenny, was our tour guide, and she made the tour interesting enough that one of our Stewart Fellows for next year, Maria Panfil, decided on the spot to spend a month assisting with the project during August! When he wrote, Will McDowell was finishing up a 3-year consultancy in Cochabamba, Bolivia. "To celebrate," he said, "my wife Kimberly and I will pack son Riley (1 and a half years) on a high country llama trek, then a jeep safari through the lowland savannas of Bolivia in June." After that, it's job hunting. Good luck, Will; hope a good job turns up quickly for you. Dan Spencer has been awarded the Master's of Philosophy degree at Union Theological Seminary, which, he says, "recognizes me as ABD." Dan's doctoral dissertation proposal, recently approved, is entitled "Gay and Gaia: A Liberationist Contribution to a Christian Ecological Ethic." I hope Dan will forgive my attempt at a hopeless oversimplification, but as I understand it the paper will examine four Christian or ecological ethics systems based on biblical theology, liberal Christian realism, process theology, and feminist theology, and reflect on the disparities between, and need for examination of, the relationship between our views on people who differ from the majority and our ecological and environmental ethics. The proposal makes fascinating reading, Dan. The paper should be really interesting! Thanks for sending it, and thanks also for the article on suicide among gay and lesbian teenagers, which is 6 times the average for all teenagers and attributable at least in part to society's refusal to wrestle with homophobia. Mary Horak Binger stopped by the department during a visit to campus in April... Mary, it was great to see you again—thanks for stopping in! Dave Tolly is still at Phillips Petroleum, "scrabbling to keep on top of the ever-changing technology in the computer business. This spring in Houston taught me how to survive omnipresent flood waters!" Dave says he's travelling a lot, too, to places like Boston, Belize, and the World Series...Karen Campbell has started a master's in library science program at Simmons College, and on the side is assistant manager of a knitting, spinning and weaving shop in Harvard Square. Karen's full time job, if I understand things right, is being a librarian for the Earth Atmospheric and Planetary Sciences Dept. of MIT.

1980. Mindy Bell and Darrell announce the birth of a girl, Lindsey Bell Kaufman, on March 14th. "We're taking her to Norway for six months while Darrell completes an NSF-NATO fellowship, and then in December moving to Utah State University in Logan where Darrell starts his faculty position in the Geology Department." Congratulations and good luck on your new endeavors from all us geoids! Bill Hughes is in his third year of technical oversight of the CERCLA program at Mather Air Force Base in Sacramento, but he says he'll probably stay in Sacramento even after the base closes. He writes he's "Enjoying spring; lots in bloom and about time to put in the vegetable garden again. Saw Ed Seeco on Boxing Day in Victoria, BC. Katherine, 8, and Will, 6, are growing up fast but keeping me young (so far)."

From Max Lyon: "I've made the realization that I'm the wrong level of administrator: too high to have a manageable range of responsibilities and too low to have enough people to delegate administrative hassles to. Despite or perhaps because of this I'm learning more and more to find joy in embracing each moment, learning to say thank you to the world. I'm especially loving working with the kids and my friends, growing into mentorship." Thanks, Max. That's neat to hear! Reid Fisher is a project geologist with Harlan
Tait Associates in San Francisco; his wife Vicki is working at the USGS. Reid says he sometimes sees Steve Ingebritsen and Barb Dahl. "I finally defended the PhD in December, so can get back to the serious business of fiddling!!!" A good fiddler is forever. Fred Seymour is "coaching soccer, skiing, and raising a family of three children with Marggi 80 in the 1990's." And that's all on top of the computer modeling of the Carlin, Nevada gold mines he does for Newmont Gold Co. in Denver! Vicki Hansen and John Goodge announce the birth of the first non-canine addition to their family, Casey Hansen Goodge, born Feb. 17 just in time for lunch ("Proof positive that he's our son!"). After 2 weeks, Casey was in the 95th percentile for height of kids his age; Vick says "probably the only time I will ever have anything to do with something that can be called tall!" Nonsense, Vicki; our regard for you is as tall as the IDS tower! Glenn Lee has moved to the Ann Arbor area and signed on as geologist for a new office of Coastal Remediation, a division of American Natural Resources Co., under the supervision of Chuck Kureth '70. The job has a lot to do with compliance with federal and state environmental regulations, and involves some field work and lots of office work. "The most important piece of hardware we use is the telephone," Glenn says. Good luck to both Glenn and Chuck- hope the venture is a wonderful success! Mark Timmerman's kids Kate, 7, and Grace, 3, are providing; many hours of entertainment: reading, biking, gymnastics, piano, hiking, picnics, gardening, horse-back riding etc. Ah, yes, we know the feeling...

1981. Congratulations and best wishes also to Bonnie Rohr on the birth of her daughter, Mary Claire Dybrig, born March 2. Bonnie writes that she's now very busy with the baby and her brother; "Luckily, I am able to work part time as a family physician here in Cambridge, MN, to have more time as a Mom." Beth Dyer Clary, who lists her profession as "handmaid to Madeline," sez: "Madeline's arrival last summer (7/1991) has made my life busier, happier and more challenging than any job I've had. She's got Bill's ('81) strawberry blonde hair and the combined energy of everyone I know. I've read for years the geo grads who stopped jobs for parenthood and expressed happiness in the Newsletter and wondered what it would be like. I'm with them!" And Beth, it goes without saying that we're with you, too!! John Hankins writes somewhat enigmatically that he "spent last summer drilling production wells at Connecticut's maximum security prison and making new friends. My political career got its start last fall when I was elected chairman of the the board of my daughter's day care center." John, it sounds like you got your master's and PhD in being a politician all in one year! Dave Rice probably wouldn't fill out one of those little postcards if it were the last thing he could do, but here's the scoop anyway. Dave took a leave last fall to do some research and gather himself back together after a hellish summer of getting the shocked-quartz article ready for Science (see the item in the general news section). Carolee, meanwhile, finished up a months-long course in French cooking at a chef school in New York City, and now the two of them produce some of the most amazing cuisine the Geo. Dept. has ever seen; we doubt our palates detect even half of the subtleties that are present in their food, but we're appreciative anyway.

Carolee has been cooking at the newly reopened Grand Restaurant, the latest incarnation of the old Grand Theater which went out of business several years ago. The restaurant is elegant, especially on the nights Carolee is working... And from the desk of the chairman, the note from Jeff Mow that he's still at Klondike Gold Rush National Historical Park supervising operations on the Chilkoot Trail. "I'm responsible for law enforcement, search and rescue, EMS and commercial operations. When I get a chance I teach environmental education programs at the school and glacial geology to flightseeing pilots." Jeff also said he visited Dave Rodgers and Gary Walvatne this past winter. Will Mast is "Surviving the tremors from the north coast and the fallout from the frustration over the Rodney King trial. We feel fortunate to have a healthy and hopeful life here in the north bay. Lucas, 4, and Cory, 2, are growing like weeds and enjoy joining Carolyn at Will's HLA (Harding Lawson Assoc.) coed softball games. Not as good as Rothblatt!" Will is a project engineer at HLA. Melissa Willette writes that she's "Finishing my master's degree in Economic Geography focusing on comparative agricultural systems. Gave a paper in April on the politics of Japanese agriculture in San Diego at the Association of American Geographers annual meeting. This summer, I go to Russia to study the breakup of collective farms." Sounds really interesting, Melissa! I got a nice letter from Jan Pohl last August telling some amazing things, like the fact that she was married to Bill Glude two years ago and has a step daughter, Heather, who is now 12! Jan has been teaching on a contract basis for several institutions and running classes on her own in fields as varied as environmental education and conquering homophobia. She wrote, "I'm happy to say that I consider my most important work to be
encouraging and assisting the people around me to be the best that they can be, changing the world in small but satisfying ways, and hanging out with the porcupines." (Great work, Jan. I'd love to see what you're doing at closer hand. Maybe some day I'll get up to Alaska. Tim) **Rebecca Craven** and **Scott Linneman '83** were joined in wedlock last August but we need hardly mention the fact because a good fraction of this magazine's readers were present at the wedding. Something like four generations of Geo 10 lab assistants were represented (I will try to get all their names in the picture caption). Becky and Scott bought 10 acres of land to settle on a couple of miles from Winchester, Idaho; Becky is still counsel for the Nez Perce Tribe. **Gary Walvatne** and Cindy Hoppel were married last Sept. 21 in the Wasatch Mts. near Salt Lake City, UT. They've been fixing up their house and are both engaged in two other businesses. In addition to Gary's work as a hazardous waste consultant with A.T. Kearney Inc., and Cindy's as a clinical dietitian at the Primary Children's Medical Center, they are developing a business manufacturing Beardog Petwear™, which includes brightly colored and patterned leashes and collars for dogs. Gary says, "It continues to amaze us that it takes so much time, energy and money to get such uncomplicated products to market. We're glad we didn't try to manufacture computers as our first product line." They plan to add more products when the existing ones can stand on their own. Good luck, Gary—hope the new business flourishes!

1982. Well, now it's official... **Cathy O'Dell**'s son Frederick (whose birth was announced last year here without our hearing from Cathy herself) is now about a year old "and getting into EVERYTHING—I can now say I'm an initiate into parenthood!" Cathy says she's still enjoying her work in environmental consulting with several Carleton grads at Geraghty & Miller, most recently **Susan Nourse Mullin**. **Heidi Bredenbeck Wells** is still in the computer book business which continues to boom: "We are thinking about actually adding a little human being to our family of dogs, and a cat, but not concrete announcements yet." Heidi also said she sees **Elliot Bruhl '84** and **Tim Cruise** and **Mark Gonzalez '83** from time to time... Congratulations and best wishes to **Toni von dem Hagen**, who writes, "After finishing law school and passing the bar, I practiced corporate and securities law for Wilson, Sonsini, Goodrich and Rosati in Palo Alto. I left when my husband of 9 years, Dick Paterson, and I discovered we had a baby on the way. Kathlyn is now 9 weeks old (in April) and showing signs of a demanding personality—wonder where she gets it?—and I love being a mom!" **Lisa Wehmeyer Ryan** has been doing consulting and training courses in Geographic Information Systems for Conoco and other companies. She says her daughter Kimberly "is doing well, except she's cutting teeth right now!" It's tough right now, Lisa, but you get paid back when you get to be the Tooth Fairy a few years from now—it's a real kick! **Gustave Tolson** started a doctorate in geophysics a year ago May at the UNAM. He says "We will spend two years in Germany using lab facilities then return to write up. David will be two and is enjoying himself."

Prof. **Pete Whiting**, a member of the faculty at Case Western Reserve University, writes, "Cindy's internship year is nearly done, and my lectures are nearly done. Life is going well, we're happy, and that's great. I'll see some of you in Cincinnati."

**Dan Sontag**, an outpatient therapist at the Beacon Clinic in Athol, MA, says "What's new? Certified in Vermont. Licensed in Massachusetts. Wanted in New Hampshire. (Actually, it's true. Gotta pay a parking ticket.) Also, new car. New couch. Family life and work continue to be good and busy." (Dan, been playing any banjo lately? Tim.) **Geoff Seltzer** is the Byrd Polar Fellow at the Byrd Polar Research Center, Ohio State University, this year. Geoff finished his PhD and did some travelling last year before settling in Ohio; he hopes to do more field work in Bolivia and Spain with support from NSF. Hope it works and the funding comes through, Geoff; keep your fingers crossed. **Lisanne Peary Scott** visited the Geo Department this year to teach mineralogy in place of Cathy Manduca (on maternity leave) who was replacing Shelby (on sabbatical)—thanks for your help, Lisanne! When she last wrote in May, Lisanne was planning to work for the US Forest Service this summer in the High Cascades of Oregon as an interpreter and geologist.

1983. **Scott Linneman** and **Rebecca Craven '81** were married last August with many fellow Carls in attendance (see Becky's entry in 1981). This spring Scott was planning to put together a garage on their new 10 acre lot, then head up to Alaska for an NSF project. **Laura Ferguson**'s son, Alan Gordon, turns one with the publication of this Newsletter. "He has definitely changed out lives for the better!" she says. **Dave Purkey** writes that since returning from Chad he has been a consulting irrigation specialist for Winrock International Institute for Agricultural Development. "My family and I currently reside at Winrock headquarters in the Ozark Mts. of Arkansas where I am preparing the Small-Scale
The party attending the marriage of Becky Craven and Scott Linneman included four generations of Geo 10 lab assistants: (sitting, from left) Lucy Chronic Hinze '79, Emily Pugh '86, Sue LaCroix '78 with children Will and Bonnie; (standing, from left) April Elsasser '81, Terry Sauer '83, Sarah Benn '83, Gail Peretsman Clement '81, Graham Pugh, Chris Hinze '83, Becky Craven '81, Scott Linneman '83, Bruce Pfaff '83, Sarah Pfaff, Dave Purkey '82 with Hannah, Dawn Purkey.

Irrigation in the Sahel Initiative. We will probably move to Mioneya, Niger, this summer for a 3-year contract on the initiative." Thanks to Tim Cowdery for becoming a contact person for current students looking for summer jobs with the St. Paul office of the USGS- we appreciate it! Tim writes, "After stagnating and grinding to a halt on my MS thesis, I have put it on the back burner and have taken a job as project geologist with the USGS in St. Paul. I'm doing a regional groundwater study of the Lake Mille Lacs basin and a water quality assessment of the Red River Of The North basin. It's nice to have a job..." Christina (Seeburger) Sigeti writes she's finishing up her second year of training ("will I ever finish?") as a resident physician in anesthesiology in San Antonio. "I'm making my goal for this year to get back in shape and do some races this summer; medicine is not conducive to a healthy lifestyle." Also: "Barb Waugh, give me a call, please!" Mark Gonzalez sez "The graduate school party is over. Got a job; getting lower back pain, eye strain and hemorrhoids (well, 2 out of the 3), and paying taxes too. Also became a proud papa on March 23. Haven't Yet named my little brown-eyed girl (postmarked March 31)- thought I'd wait until I know her better. Wish me luck as I embark into single parenthood. P.S. to my old chums: I'm busy now, but will write with details when the school year ends in June." Mark, sorry the Newsletter comes at an awkward time of year for you, but I hope you'll fill us all in more next year on how things are going! Kathleen Duffy is scoping out the market for jobs in Colorado, but at the moment is still teaching in Texas. Good luck, Kathy, hope something turns up for you. Congratulations and best wishes to Marcia Bjornerud on the birth of her son, Olav Andrew Bjornerud, on Dec. 12. Marcia reports that "He regularly attends intro structural labs, and he participated in his first field trip, to the Appalachian foreland, in April." Marcia is teaching at Miami University of Ohio. Sharon Anderson sent a comment: "Working at a state university makes me yearn for the intellectual curiosity of Carleton students... and makes me appreciate my Carleton education all the more. Knowing how to think is infinitely more important than memorizing facts. The students here complain bitterly if required to think, not just regurgitate information." Thanks, Sharon, I'm sure everyone here would second your thoughts. In case you haven't heard, your excellent paint job has been repainted at the Dacie Moses House. The college decorator insisted it be done exactly the same as it was, and when they did the scraping it was obvious which parts you had done- they didn't get any paint off! It came out looking very nice. Amy Sager Patton finds "work in a new state program is as exciting as when I started two and a half years ago, but I'll be taking time off to have our second child in July." Amy joins your newsletter editor in "looking forward to seeing photos of Jane Woodwell's baby, due in April." And finally, Amy writes that she enjoyed a trip to
Mt. St. Helens recently with other Portland area Carleton alumni. Amy Zachais is "taking a holiday after 5 years of teaching high school in the Alaskan bush; I'm going to Siberia and England to go to school for a year. But I'll be back somewhere in Alaska after that, and I'd love to have visitors from Carleton." Have a good trip, Amy- it'll be quite a change! Things have been changing for Matt Zuzkowski, who is engaged to "a wonderful woman named Ann Harris (no date yet)." Matt adds that he is enjoying his job as a hydrogeologist, and he recently started his own business writing and publishing hydrogeologic software. His first product, called WellCalc, will be out soon.

Congratulations to Rob Alexander on the successful completion of his PhD. Rob said the lack of any post-docs or teaching positions induced him to join a Texaco research lab in New Orleans. "I'll have to trade my cross country skis for roller skis, I guess." He added that his wife, Becky, and daughter, Desiree, are doing well. Bruce Pfaff and Sarah have moved from L.A. to the Bay Area; "The big news is that we're buying a house in Moraga and are entering the 'suburban' mode. Visitors are always welcome." A letter from Matt Masotti this winter told how he has been engaged in consulting environmental geology for the past few years. He currently works for a firm called International Exploration, Inc., in eastern Pennsylvania, which was founded years ago as an exploration company but which now works more in environmental quality. Matt said "Geophysics, hazardous waste management, hydrogeology, and even a little archaeology on the side, have kept my hands busy for a good stretch of time now and I'm looking forward to continuing on in the field." Good luck Matt- it's good to hear from you again!

Brian Leonard quit his job a couple of years ago and set up his own law practice in Topeka, KS. Last summer he spent a week with Tom Ferris in Estes Park, CO, last summer in company with non-geo Carls Jerome Comeau, Sean Soltysik and Jeff Blodgett. Keith Knudsen and Annie moved back to California last summer; Keith is a hydrologist and geomorphologist for Balance Hydrologics in Berkeley. Keith writes, "Our son Casey, who will be 2 in July, enjoys all the California activities like cycling, hiking, beaching. Like many of us budding geologists he likes nothing more than to pick up a good hunk of Franciscan greywacke- and throw it, as far as possible. Visitors are always welcome in our newly purchased old house, especially those with a hammer or shovel."

John Smoot, a research hydrogeologist with Battelle in Richland, WA, announces the birth of a daughter, Katherine, on May 20, John's second child. John has been studying uranium ore migration in Australia as an analogue for high-level radioactive waste migration at Yucca Mtn. He's also looking at migration of lead and nickel from decommissioned submarine reactors that the Navy has disposed of at the Hanford military reservation. Congratulations, John, and welcome Katherine!

1984. Jeff Pipes has been studying hard at Hamline University Law School this year. Jeff writes that he and Florence climbed Paricutin Volcano in Mexico in January, "Otherwise I've just been studying!" From Rudi deZoeten, an exploration geologist with Unocal International, "The year has been filled with news, both good and bad. The great news is that we have a son who was born on Jan 24, named Erich. The bad news is that oil and gas prices are low and the International Division is moving to Houston from Los Angeles." Congratulations on the good, and good luck on the bad, Rudi. Elliot Bruhl has "enjoyed/survived the first year at Colorado School of Medicine. Medicine is certainly different to study than geology, but there are some similarities. We recently had a lecture on kidney stones which, it turns out, are usually well rounded and poorly graded, and can range from medium sand to coarse gravel!" Was the next lecture on sieve analysis? Anyway, Elliot also said he and Sara were planning a trip to India this summer. Mark Gordon has moved to Houston to do another post-doc at Rice University, after spending most of 1991 on a post-doc at the University of Paris in France. He says, "I, too, can confirm that Barb Waugh and Jay Jackson have moved to Houston, and I see them from time to time along with Mark Hempton and Lorie Dunne and other Carleton geology types. Future? Uncertain." Dr. Chris Foley is teaching pediatrics at the U of No. Carolina Hospitals in Chapel Hill. "Sharon and I are happily living in the realm of parenthood with our beautiful daughter Caitlin, now about a year old (when this is published). Pebbles and Bam-Bam, our golden retrievers, are a little jealous but otherwise great around her. I continue to work in the Peds Dept while Susan is Chief Resident in Family Medicine. George Hudak is doing well and continues to crack me up!!" Carolyn White is finishing up her master's degree in landscape architecture; when she wrote she was an intern at the California State Coastal Conservancy. She writes, "I have no idea what my future holds, but I'm looking forward to spending a summer in Marquette, Michigan, building a cabin in the woods. My job at the Coastal..."
Conservancy is fascinating but not permanent." Good luck in the life after school, Carolyn! Stephen Childress is working on finishing a masters in geophysics at the U of Illinois at Chicago by the end of this year. He says, "No plans after that. Is anyone out there hiring geophysicists?" Maybe this inquiry will produce a response if anyone knows of anything. Kendra Beard Gassell ran into Summer Crosby at a workshop in Annapolis on groundwater toxic loading to the Chesapeake Bay; Kendra is a senior associate at ICF Inc. in Chicago. Julie Chen has finished her master's (in urban planning, right Julie?) at MIT and was planning to do an internship with USAID this summer in Washington DC. She spent last summer working for them in Tunisia while she gathered material for her thesis. (Julie thanks very much for your final e-mail message which I appreciated. Write when you get your new address; I'll try to answer. Tim) Norm Brown is the proud owner of a newly-minted PhD from UC-Santa Barbara... Congrats, Norm! Christine Smith is headed back to "the Ice," this time with the German National Expedition GANOIX, so she's been studying German. She'll get there in the time-honored way, by ship from New Zealand, and while there will be working in Marie Byrd Land. "I hope to make a pilgrimage to Larry Gould's Fokker" [airplane which was ruined in a windstorm, see Cold, p. 17] If you make it Christine, how about a picture for next year's Newsletter of you standing with the wreck? Hope things work out and you can get to it! This summer Christine is teaching field camp, and she happily announces that she has finished the first chapter of her PhD thesis.

1985. Barb Waugh writes that she and Jay Jackson have settled into Houston. "We see lots of Mark Hempton, Lorie Dunne and Mark Gordon. I had four months of paradise teaching in Zurnatt. Now I'm spending four months as an intern at Shell Oil." Barb was unsure whether she'd be teaching or doing geology next fall, so hopefully she'll fill us in on what happens in next year's Newsletter. (Barb, you've got a message waiting for you in Christina Seeburger's entry back in the class of 1983 news. Tim) We send best wishes to Peter Cole upon his marriage on March 21 to Jennifer McIntyre. As Mary Savina heard it from Alumni Board member Bill Dewey and Pete's card confirms, the ceremony was on a ferry boat as it crossed Puget Sound, hopefully on reasonably calm seas. Other witnesses to the wedding were Meg David, Liz Reading and Sarah Benn. Jean Miller Lee writes that she's about done with vet school and will begin practice this summer. "I'll be working with small and large animals and I'm really excited about it! Jim is still in school." Good luck, Jean! Russell Urban-Mead, who in December finished his MS in hydrology at Rensselaer Polytechnic Institute, is now "fully employed (by choice) as a stay-at-home dad with our infant daughter Kassie." He's also teaching a night class at the community college. Alumni Board member Bill Dewey has gotten back into small business again, but somewhat removed from the old High End Audio: He's now consulting on employee benefits programs for Craford and Craford, a firm specializing in employee benefit planning. He says, "I am enjoying my Alumni Board stint; it's great to return to campus and see old friends- Mary, Shelby et al. I will run the San Francisco marathon in August. Had a blast at Pete Cole's wedding in Seattle. Although I do not use my geology major in my vocation, it has allowed me to better appreciate California's geology and have fun!" Bill, it's good to see you, too! Congratulations and best wishes to Maria Peterson and Ken Boyer who were married last August 23, then spent a month hiking and touring in Japan. They had a nice reception for their Northfield friends at Maria's parents' house in March. Maria is in a PhD program in geochemistry at Stanford. Kristin Grady Mitchell is still working for Law Environmental in Albany, though she's beginning to think about alternatives. She writes that her husband has at least a year to go on his PhD. Good luck Kris, and hi from Tim. Glen Carleton, besides helping current geo majors and recent alums find jobs with the USGS (for which we thank him profusely), "just bought out the other owner of my house, so now I'm the sole one indebted for life." Glen is close to finishing his master's, and debating the rewards and miseries of further indenture as a student. Good luck, Glen! Good luck also to Stu Grubb who this year launched a new business, Grubb Environmental Consultants! Stu is the father of a new daughter, who was introduced to your editor by her mother so who will be further described under Susan's entry in the next paragraph. Mike O'Connell, wife Mary Anne and new baby Melanie are enjoying the suburban life in Maryland while fiercely denying that they might be yuppies. Mike co-authored a book last year on habitat planning under the Endangered Species Act for WWF. Thanks to Liz Reading for her card; Liz is teaching fifth grade in Cambridge, MA. The word from Bret Berglund is that he "recently got married to a great person named Caryn Smith. It was a very Alaskan style affair with the whole wedding party wearing skis!" Bret is an environmental
scientist at American North/Emcon in Anchorage; his work recently has included environmental assessments at an old Kemnicot Mine.

1986. A daughter, Muriel Clair Perrin Grubb, came due and was born to Susan Baxter Grubb and Stu Grubb ’85 on the same day income taxes fell due, April 15. Susan brought Muriel down to introduce her to the Geo labs in May; Muriel was very cute but will have to wait awhile before signing up for any of our courses. Susan is still working for Delta Environmental Consulting and helping renovate their cabin in North St. Paul, so she's one busy lady. Thanks for stopping in, Susan, and hello again to Muriel! Roger Huddleston was busy last year: "I got married, bought a house, and took a 16-day vacation to Belize (tropical paradise—I highly recommend it)." Roger is working as a hydrogeologist for CH2M Hill in Evanston, IL. Congratulations and best wishes for many years of fulfillment to Gregory Foley and his partner, David Steinberg, who celebrated their commitment in a ceremony on their fifth anniversary of being together, January 26th. Greg writes, "Fellow geotype Carl, Marilyn Yohé, was there along with many friends and family. It was something both and I had looked forward to for a long time." Gregory is continuing his studies in medicine and taking some courses at Harvard ("It's definitely easier than Carleton!") and says he sometimes runs into Gary Ruskin ’86 in his travels. John Woodwell is finishing up his master's at the Duke School of Forestry and Environmental Studies, and this summer plans to be at the Duke Marine Lab in Beaufort, NC. He says he "runs into Mark Johnson ’85 and Mary-Russell Roberson ’86 now and then. They drive around in a green 1980 Honda Civic wagon just like mine. I've been waiting for an extra dark night to pick up some spare parts." Congratulations and belated best wishes to John Sortie and Nancy Walker, who married last summer. Nancy, a native Oregonian, is planning to attend the physical therapy program in Chicago next year. John, who has completed two years of law school, plans to transfer to Chicago for the final year. Craig McCua visited Northfield last summer, and it was great to see him! He also took "a wonderful trip to Scotland last winter. Much to my surprise, I thought the more barren parts of the Highlands bore an uncanny resemblance to the Nevada Desert. I also learned that even in the country of my ancestors, people think I spell my last name funny!" Craig's travelling plans for this spring included a visit with Mike Macicak.

Christine Massey sends a hello from Seattle, where she's working on a master's at the U of Washington and hopes to finish by the end of the year. When she wrote she was also hoping to join Bruce K. Nelson '77 and some others on a trip to Hawaii next winter. Good luck, Christine- Hawaii is excellent. Sean McKenna says he's still in grad school at the School of Mines in Colorado, and sends a hello to everyone. Congratulations and many best wishes to Kate Heimes Carlson who delivered a baby boy, Spencer Vincent Carlson, on April 14! She says, "He's a big healthy baby and we're both doing great. It's fun to finally have a boy in the family since I was one of 4 girls." She added she's looking forward to her first garden in a decade this year. Emily Adams Pugh is balancing mothering her son Alan with trying to start a free-lance drafting, writing and consulting business. Alan was born at 3:33 a.m. last Dec. 3 by candlelight during an ice storm and power outage with friends and family present. It was, shall we say, not exactly a smooth birth, but in the end...
Forrest Wichman was born June 2 at 11:14 pm weighing 8 lbs 12 oz. Welcome Nathaniel!}. Among the things Sharon's been doing in the past year is teaching at an environmental center, but at this point the whole job scene is in flux. Good luck, Sharon. Laura Day Moore, who lives right up the street from Beth Hayes Martin, recently finished her masters at Boston University Geology Department; her thesis was on a groundwater isotope tracer study using natural tritium. She writes, "I'm still working at ENSR and generally enjoying life." Got a note a while back from Sean McKenna at Colorado School of Mines saying that Tom McCabe and Bonnie Wong '88 had moved to near Smoky Mountain National Park where Bonnie was teaching at an outdoor education center; Tom was commuting to Oak Ridge to work for a software firm. Bonnie, thanks for stopping in a few months ago - it was good to say hello again.

1987. Chris Carlson was laying plans to finish his PhD at Indiana University; "It will be quite the shock to go back to student life in Indiana from professional life in Madison." Chris added that he hopes to take a leave of absence from the Wisconsin Department of Natural Resources rather than resigning to finish the degree. He also reported seeing Lisa Shepherd '87 and Gordon Keating '88 around Madison once in a while.

Kim Sollenberger Allen is back in Florida after a year in San Diego. "I'm working at Mote Marine Lab, a private research foundation focussing on shark, marine mammal, and environmental issues as an analytical chemist- looking for metals in all the right places including sharks, clams, oysters, and waters and sediments. Todd is triple majoring at USF's honors campus, New College, in Econ, poli-sci and Russian." Kim, have you tried using resistivity on the critters? That might give shocking results. Congratulations and good luck to Mike Macicak and Carmen Retzlaff '88 who were married last summer! After the wedding they travelled for a while through exotic places including North Dakota and Mexico before settling down and finding jobs in Austin, TX. Mike is working for Radian Corp., a groundwater cleanup consulting firm, and Carmen develops public education programs to prevent violent and abusive behavior for the city health department. Kristin Hazard writes that "After 5 years at ERM-West, I will be leaving at the end of July to attend Lewis & Clark in Portland, where I have won a scholarship to study natural resources law." Good luck in the new career, Kris! You'll be interested to hear that your old friends at Holden Farms are still trying to get their turkey manure composting permit - they've started the operation down near Kenyon but continue to get flack from the neighbors; Ed testified on their behalf at a recent hearing. Lisa Shepherd has finished her MS in geology at UW-Madison, and was planning to go to work for RMT as a hydrologist in the same office as Gordon Keating in July. Good luck in the new jobs to both of you! Diane Cassidy is slogging through her master's at RPI, studying white-blowing cases related to weapons complex sites and the proposed high-level radioactive waste repository at Yucca Mt., NV. She hopes to finish this fall and then move to Seattle.

1988. Carolyn Carr is in the graduate program in Conservation Biology at the U of Minnesota; she "went skiing in Yellowstone over spring break and continue to ask myself why I live in a mostly flat state." Now Carolyn... Anyway, Carolyn writes that in one way she has enjoyed being in the crossroads of mid-America: Michelle Stolow, Bonnie Wong and Holly Ewing have all visited in the past year. Many of the people in Carolyn's friendship circle enjoyed a great party at Michelle's wedding last August in Boston. (Carolyn, Tim claims editor's prerogative and sends best wishes!) Seaperson Karen Merritt still rides the waves, last year sailing from Auckland, New Zealand, to the Canary Islands on the Anna Kristina. This spring the ship leaves Lisbon in late April as part of the tall ships race to Puerto Rico, then heads up the East Coast and back from Boston to Liverpool. Karen's mother writes, "Look for Karen and her beautiful ship at the grand parade of ships in New York Harbor on July 4th." By the time this is out the parade will be history, but maybe someone will have it on videotape? Katrina Allen has been busy: she was Shelby's assistant during the Australia Program fall term, she finished her MS in geology at the U of Minn. in February, and she was married to Dan Kennedy in May. In September she and Dan plan to move to Prague, Czechoslovakia, where Dan has a teaching job for a year or two. That sounds like a real adventure - good luck! Binks Colby-George writes: "Since August '91 I have completed my MS in Environmental Studies, moved to Maine, gotten married in a beautiful outdoor ceremony and started work at a large environmental consulting firm. My wife, Judy, is completing her master's thesis on Maine's Coastal Geographic Information System. Wow - congratulations on all your new beginnings, Binks. We wish you and Judy the best in all the endeavors! Peter Sauer is still studying paleoeclimatology at the U of Colorado at Boulder. "This summer I'm heading up to
Greenland and to Baffin Island for mud collecting. I see John Ostergren '90 and Jenn Macalady '91 for brunch and beers (not at the same time!).

Carmen Curtis is teaching science in the Rochester, NY, public schools and math during the summer in Boston at Balfour Academy. She also writes that she's started a ceramics program at the Boys & Girls Club of Rochester and has continued her own ceramics work with studio space at a local cooperative.

1989. Rowland Cromwell planned to finish his master's degree at UW-Madison by the end of this summer. He's accepted a position starting in September with Golder Associates, an environmental consulting firm near Seattle, WA. The job will involve doing seismic refraction, ground penetrating radar and possibly even some marine seismic work. Best of luck out in the Real World, Rowland! Ben Edwards plans to finish his MS on the Sherman Batholith this July, and then will move on to work with Dr. Kelly Russell on a PhD at the U of British Columbia. Good luck, Ben! Sarah Gramlich is "busy but having a good time" in the Environmental Ed master's degree program at the U of Michigan in Ann Arbor. She wrote that she's going on a "quick trip to Asia this summer to help out some student environmental activists."

Sounds neat, Sarah; can we get a report for next year's newsletter? We will be happy to see Holly Ewing back in Minnesota next fall. As she writes, "I am still working in a greenhouse, but I will be leaving at the end of May to do something other than clean dead flowers off geraniums and marigolds for the summer. I have finally decided to try grad school: ecology at the University of Minnesota. I think I want to do plant ecology/community ecology in relation to soils, geomorphology and climate, maybe with a paleo bent (Quaternary- no more Ordovician stuff)."

C'mon down to Northfield when you get here, Holly. Bill Dinklage is in his third year of structural geology and metamorphic petrology at Santa Barbara. When he wrote he was getting ready to spend his third field season in the Brooks Range and T'A'ing metamorphic petrology ("There's no better way to become a petrologist!").

Bill's sister, Anne '93, is working at Dacie Moses House this year. Thanks to Kari Paulson for your note from Senegal! It will be neat to see you again when you are back in the states. Kari is still in the Peace Corps and may stay for a third year.

1990. Andy Garrett spent his fifth summer as a ranger in Yellowstone last summer, but now is a research technician at Children's Medical Center in Seattle, WA. Andy's living in a "Carleton house" with Amy Snover, Evan Shopper and Dan Truman (all '90). He's working on a nationwide cystic fibrosis study and testing the efficacy of a drug, hoping to move on to grad school next year. Andy reminds everyone he still actively uses his Carleton VAX account AGARRETT, and will gladly receive mail. Good luck on the grad school applications, Andy. Sharon Stern writes happily that she's done with her MS at Chapel Hill and looking forward to starting the PhD program at the University of Kansas this fall. She says, "I hope to do field work for my PhD in the western Mojave Desert or in the fold and thrust belt of Utah. Little by little, I'll work my way west... But no, I'm not changing my name to Dorothy and no, the dog I intend to get will NOT be named Toto!"

Also finished with her MS (at Colorado School of Mines) is Susan Ford. Susan plans to continue as an environmental scientist with EG&G at Rocky Flats, with the eventual goal of going back for a PhD.

Betsy Hunt is working on an MS in Environmental Pollution Control at Penn State, and also working for the state Department of Environmental Resources on acid mine drainage remediation. She says, and we quote, "I'm also engaged to an awesome guy I met while living in Vermont." Great Betsy-congratulations from us here in the Mudd hole!

Keep us posted on future events. Mark Newcomb writes that he's "making money instructing people in mountaineering and guiding them up mountains. Hoping to earn enough money for a return trip to China to further explore nooks and crannies I discovered during my Watson sponsored travels there in '90-'91." Rebecca Arenson has moved back to the seacoast. She's now teaching at the Marine Science Consortium and living in Wappans Island, VA. "Becca says she's busy but enjoying herself, and may consider a trip to grad school in another year. Andrea Earley spent this year teaching at the Keystone Center Science School in Colorado, having a good year and even playing a few tunes on the side. As of May she was planning a road trip to Alaska with her sister Meredith during the summer to see Chris, who will be a wilderness ranger in the Chugach National Forest. Highlights of the past year included a snorkeling trip to Mexico in which she met, underwater and head on, a 300 lb. loggerhead turtle. Luckily, the turtle was only curious, not angry. Mark Scott has left the art gallery security business to become a geologist for MAECORP, Inc. in Chicago. Most of their work involves identification and remediation of groundwater and soil contamination at industrial sites in the upper Midwest. His wife, Barb Billington '89, is working as a lab technician in molecular biology at the U of Chicago. Mark- it was
good to see you when you visited a couple months ago; good luck!

1991. **Pete Reiners** has begun a graduate program under the direction of **Bruce K. Nelson '77** at the U of Washington in Seattle. Pete, you may not be aware that in the newsletter I have to include Bruce’s middle initial; he can explain why. Pete reports he is studying rocks and isotopes and enjoying the Northwest. **Catherine Inman** is “thoroughly enjoying her self in the Sierra foothills at Challenge, CA, teaching science to hilarious 6th graders outdoors. I travelled this winter in Central America, marvelling at natural beauty and riding buses with friendly people and their livestock. My door is open to anyone passing by California!” A note from **Jenny Nigrini**’s mother said that Jenny is teaching English at a college in Tianjin, China, for six months. Jenny, send us a full report for next year’s Newsletter, would you? **Jenn Macalady** was in Senegal this spring with **Kari Paulson**, where they had “motorcycle adventures and amoebas and green mangoes for dinner.” We hope the amoebas weren’t part of the dinner, though, realistically, maybe they were (sigh). “Kari is perennially amused by the tenacious aspect of Carleton geology propaganda which keeps reaching her in nowhereville, West Africa.” What a lot of folks don’t realize until too late is that graduation is not the end of your Carleton association, it is just a turning point in it! Jenn writes, “Me, I am (besides taking 6-week trips to Africa) paying my debts. I work for an engineering turned ‘environmental’ consulting firm whose motives do not comfort me. Nothing like corporate America for a steady paycheck, though.” Yea, Jenn- we love you! Jenn also added that she narrowly missed seeing **Karen Merritt** in Lisbon, but the ship was a little behind schedule (see Karen’s entry in the 1988 news). When she wrote, **Becky Lang** was happy because she’d just heard she was accepted for the master’s program at the University of Washington, so she’ll be joining several other Carls out there. “I’ve been working for the Idaho Geological Survey since last summer and will hike around the mountains with them again this summer.” She didn’t mention it, but someone else will be going to medical school in Seattle too. A bottle containing a note from **Jean Morrill** (who is far to the south) washed up on the shore of the Cannon River reading: "I have learned the common names of over 30 species of cactus and had painful encounters with several of them. I haven’t seen snow in five months. I consider ‘cold’ anything below about 60°F (not living through a Minnesota winter has weakened my blood). However, I do still miss Carleton.” Jean is a research assistant in the Dept. of Hydrology and Water Resources at the University of Arizona. **Geoff Puckett** spent last summer digging vertebrate fossils at Ash Fall State Park in Nebraska and had a very good experience. The park is highly recommended by both Geoff and your Newsletter editor as one of the best displays of in situ mammal fossils around, especially in the Midwest. This spring Geoff was working in a bank as a loan processor. **Butch Dooley** will be back at the quarry in Virginia this summer, and hopefully things will go smoother than the letter in the news section describes from last year; Butch plans to remove the rest of the whale that they were working on last summer so it can be placed in the Virginia Museum of Natural History in Martinsville. Also, he’s planning to spend some time at the Smithsonian this summer; he’s thinking about continuing the work he began for his comps and expanding it into a PhD thesis.
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Mary Savina '72, outstanding in the field.
Photo by Christina Vosen '92
Australia Program

Clockwise from upper left, Katrina Allen '88, Joyce Wilson '93, Dave Lund '93 and Josh O'Brien '94 at Cape Liptrap, Victoria.

Erik Stokstad '92 diving on the Great Barrier Reef, Heron Island, Queensland.
On a rocky shore, @ low tide, @ night

Dark sand, darker rocks, darker sky
All stretch together as if they were one.
I'm told to look at the sand and the rocks
And the life among and between,
But my eyes are drawn to the sky
And the lights above and beyond.
They are not familiar.

The strange patterns reach and twist in my mind
And suddenly I stand, not on the shores
Of another land, but on another planet.
For really, what is the difference?
Even the roll of the waves is strange,
Crashing on rock and not sand.

For a moment I pretend it is true.
And I search the sky for a star to call home.
But then a friend calls of a thing he's found,
And the torches below call more than the stars
And I know that home is not in that sky.

For
Participants in the Barrington Program, summer, 1976.