

ALUMNI NEWSLETTER

1993

Department of Geology and Planetary Science

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Thanks to Rochelle, Candy, Kathleen and Jodi
for putting this newsletter together.

On the cover:

Pahoehoe lava cascades over a scarp near the coast in Hawaii Volcanoes National Park. Deformation of a thin chilled crust gives the lava its ropy appearance. This lava was erupted at the Kupaianaha vent and traversed 11 km to the Pacific Ocean in a lava tube system from the east rift zone of Kilauea Volcano. The recent activity at Kilauea Volcano, which began in 1983, is one of the longest lasting observed eruptions in Hawaii and has destroyed over 150 homes.

Chairman's Letter

T.A.'s Tale - Year Six

Dear Alumni and Friends:

VIC SCHMIDT

This is a tough time to write a letter. We have a lingering burden of sadness from the sudden death of faculty colleague Vic Schmidt. Vic was a pillar of the G&PS faculty. His passing leaves a gaping void in the infrastructure of our department and we miss him very much. An obituary, eulogy and letter of appreciation from the National Park Service are included, starting with page 41. In memory of Vic and in commemoration of his love of teaching family, friends and colleagues have begun a memorial classroom fund.

ENVIRONMENTAL GEOLOGY

As I noted last year, we were striving to alter the undergraduate curriculum so that it better accommodates the needs of our students with respect to increased focus upon the environment. After much deliberation we decided to offer a major in environmental geology. This required a modest revision of the existing curriculum that entails adding courses such as organic chemistry and stream water chemistry and requiring groundwater geology. We strove not to weaken the existing curriculum but in spite of our best efforts we have been forced to delete paleontology from the environmental curriculum. Jack Donahue was instrumental in shepherding the environmental geology major through administrative channels for approval. Students now may choose between majors in geology and environmental geology.

NEW FACULTY

We are excited about the arrival of Dr. David Crown, formerly of NASA and the Jet Propulsion Laboratory, who will contribute to our existing strengths in planetary science and remote sensing. David has worked primarily on remote sensing and physical volcanology with specific applications to the Earth and Mars. As a National Research Council Research Associate at the Jet Propulsion Laboratory, he examined the spatial and temporal variations of volcanism on Mars as indicated by the morphologic and physical properties of lava flows. David intends to continue his study of volcanic deposits and interpretations of eruption and flow emplacement processes on Earth and other planets, primarily through analyses of remotely acquired data. As 1994 begins we anticipate recruitment of a new faculty person to augment the work in laboratory geochemistry.

THE RECORD

For the academic year 1993-94 thirty six courses were conducted by nine tenure/tenure-stream (T/TS) faculty of which the average faculty load was four courses. A total of 2508 students were enrolled in these courses for 7713 credit hours. A breakdown per term for courses is: **fall term (94-1)** - nine T/TS faculty taught 17 courses for an enrollment of 1005 students for 3418 credit hours; **spring term (94-2)** - ten T/TS faculty taught 16 courses for an enrollment of 1203 students for 3695 credit hours; and, **summer term (94-3)** - three T/TS faculty will teach 3 courses for an projected enrollment of 200 students for 600 credit hours. Two non T/TS faculty taught four courses for the academic year which resulted in an enrollment of 62 students for 127 credit hours.

Twenty six research proposals with requests for \$2,497,681 were submitted between May 1992 to present. Of those submitted, six were awarded for \$397,954.

Chairman's Letter

Undergraduate enrollment currently is 36 students (Juniors and Seniors), 25 graduate students, of which 22 are full-time and 3 are part-time.

NEW AWARDS

It is a pleasure to announce that we have made awards from The Flint and Leighton funds in support of students. The Norman K. Flint Memorial Field Geology Fund was established by his wife Margaret to support undergraduate field activities. The Henry Leighton Memorial Scholarship Fund was established by his daughter Helen for support of graduate students. Helen Leighton Cannon graduated from our department and had a distinguished career as a paleontologist at the U.S.G.S. Awards are based upon merit and need.

ALUMNI CONTACTS

Thanks to Becky Michaels of the Arts and Sciences Development Office who visited some friends and alumni this fall. She reports that she thoroughly enjoyed her visits with our graduates and colleagues who treated her with warmth and hospitality. Thanks again to both Becky and alumni!

STAFF CHANGES

Becky Eritano, who served as a highly capable staff person, has moved to Morgantown, West Virginia. Thanks and best wishes to Becky. We would also like to welcome a new staff person to the main office - Jodi Teslevich. Candy, Kathleen and Rochelle continue to make up the rest of the main office staff.

THE FUTURE

Every advance in geological knowledge and every confirmation of an existing theory depends upon our ability to see things with higher resolution, measure things with precise instruments, or present our results in ways that are easily understood. As geologists, we face a future in which we will need to look at things with higher resolution than we can attain with the polarizing microscope. We will also use new mapping techniques involving the Global Positioning System (GPS), in which hand-held devices may be used to determine geographic coordinates on the earth's surface rapidly, with a precision of one meter. We must be able to utilize the ARC/INFO program for plotting data in the framework of preexisting geographic information systems (GIS). Commonly, equipment necessary for these activities is expensive. Our department has an opportunity to address some of these equipment needs through the generosity of Bill and Bev Cassidy, who have made a challenge gift to the department. Their gift, supplemented by matching funds from the Westinghouse Foundation and Arts and Sciences Dean Peter Koehler, has provided a base of \$40,000 toward the purchase of major equipment. Sigma Gamma Epsilon (SGE) has also contributed through the sale of paper weights made from serpentine and limestone slabs from the former Syria Mosque building. Will you help us reach \$50,000 or more? We plan to use this fund in combination with matching funds from other sources in proposals to enhance our major equipment base. We need a scanning electron microscope (SEM) and a complete GPS/GIS system. These items will be widely used within the department and our students will emerge with even better backgrounds than they now receive.

Good luck to you all.

Cordially,

Tom Anderson

Faculty News

THOMAS H. ANDERSON

It is Tuesday, January 4, 1994 and I am snowbound at the kitchen table in Washington, Pennsylvania as a result of a storm which has dropped about 2 feet of snow. It sure is pretty; the driveway is cleared; it could be a lot worse.

Last winter I worked with Jim and Mary Beth McKee in northeastern Sonora where mountain-sized slabs of reefy limestone have slid off the flanks of uplifted fault blocks. Fun stuff! We found a slide surface complete with grooves and scratches! We return this winter to study more (I would say finish except that is a boast which I can't back up in light of the size and geographic extent of the mountain ranges). In late winter I spent time again in Mexico across the border from Organ Pipe National Monument on the trail of the trace of the Mojave-Sonora megashear. Much solitary desert walking but loads of fun if you like rocks and are good at dodging cactus and rattlesnakes. I took time from field work to participate in the third symposium of the Geology and Mineral Resources of Sonora at which I presented results (with Jon Nourse and Lee Silver) from years of studies on Tertiary metamorphic core complexes. In April the focus was upon Jurassic continental tectonics and magmatism of the North American Cordillera during a Penrose Conference held at Havasu on the Colorado River. Some of that region makes Sonora look like a garden!

Back in the Appalachians work continued on various and sundry problems such as how did the Blue Ridge get to where it is today and now does the North Mountain fault end? Bill Elinski finished his MS with an insightful analysis of the latter and has matriculated to University of Illinois where he is pursuing a PhD. Patti Campbell, a newly-hatched computer maven, struggles against a two-headed mylonite monster that spews fire and smoke from Maryland to Mexico (no doubt from rapidly deforming ductile rocks!!).

In May I visited a Seismological Institute at Wuhan, China. Professor Hsieh, whose knowledge and experience were of inestimable value, guided me on this journey. It turns out that this Institute is also the center of remote sensing along earthquake prone faults. In this arena our interests mesh closely and we hope to identify mutually beneficial research and technical activities.

Concurrent with these research and student activities were loads of committee meetings of which the University Planning and Budgeting Committee and associated subcommittees has emerged as the chief time and energy consumer. Recruitment also lay claim to considerable time.

As Fall began, so did the course in structure. This year's group was friendly and interested and benefitted from the hard-work of Tom McCaffrey who conducted the laboratory.

At the annual meeting of the Geological Society of America I participated in a paper with Bill Elinski (North Mountain Fault mysteries) and two papers with University of Wisconsin, Oshkosh colleagues (northeastern Sonora mysteries).

Sara Lee has graduated from Boston University with a Master's Degree in international relations. She has interned at the Boston Gardens as a public relations person and is adding to her resume as best she can while job-hunting. Garrett spent the summer in Beijing, China learning more Chinese. However, he has switched from East Asian studies to ecology in which discipline he plans to complete his major. Tanna says Hi while she considers her options.

Regards to all.

Faculty News

KATHI K. BERATAN

My primary research focus is "tectono-stratigraphy", the study of structural events by examination of the resulting sedimentary strata. Syn-tectonic sedimentary and volcanic deposits provide information about the timing and nature of surface events, and can be used to test structural models. Techniques used in my field-based research include sedimentary facies analysis, paleocurrent analysis, and detailed stratigraphic correlation. I have worked extensively in the Whipple detachment terrain of southeastern California, an area which experienced extreme crustal extension in the Miocene, and I am currently working in the southern Death Valley area of southern California, studying the interaction between the strike-slip Garlock and Southern Death Valley fault zones. I plan to begin work this summer in the Gettysburg basin of south-central Pennsylvania; my goal is to compare the sedimentation patterns and structural histories of extensional basins in detachment terranes and rifted continental margins.

My secondary research focus is on the application of remote sensing techniques to the resolution of geologic questions. To date, I have concentrated on analysis of data from the visible and near-infrared portions of the spectrum (e.g., Landsat Thematic Mapper, SPOT, and AVIRIS datasets). Working closely with collaborators at the Jet Propulsion Laboratory in Pasadena, California, I use specially processed imagery to guide field work; the images provide a large-scale view of the distribution of rock types and structures that is very difficult to get from ground-level. Projects include mapping extension-related potassium metasomatism in the Whipple Mountains and in the Rio Grande Rift, and, in collaboration with Bill Cassidy, looking for a "lost" meteorite in the northeastern Argentina.

I currently have three students. Bob Anderson is doing a remote sensing/geomorphology study of alluvial fan surfaces flanking the Whipple Mountains. These surfaces, some of which may be as old as 8 m.y., display systematic changes in spectral signature with increasing age; these changes apparently reflect the development of desert varnish and desert pavement. Kevin Riley is attempting to identify terrestrial analogues for individual, small-scale (near the limit of resolution) features observed in the Magellan radar data from Venus. Svetlana Liberman is a new student; she will be working on the structural implications of sedimentation patterns in the Avawatz Mountains, south of Death Valley, California.

I have become fully acclimated to Pittsburgh at last. This is a wonderful place in which to live and work. It's too far from the desert for convenience, but I can live with that. And I like snow and cold weather (maybe I'll believe it if I say it enough)!

Faculty News

MICHAEL BIKERMAN

This past year has been busy and interesting. In the past Fall term I taught Physical Geology, Geochemistry and World Physical geography, and in the Spring I returned to geology 0800 for the first time since Semester @ Sea in 1991. Ore Deposits failed to fill again - I wonder what the future sources of raw materials will be! This Fall semester (94-1) I was to teach the same classes as last, with the exception of substituting a freshmen studies class for geography. This changed after the sudden and unexpected death of Vic Schmidt just before the semester started, when I picked up one of the sections of the Geology of the National Parks. This class has 170 students, and is most interesting to teach. Vic's excellent slides, supplemented by mine, make for a colorful display.

Research continues slowly. Henry Prellwitz is making progress on his MS study of the Masontown dike, and we are hoping for a defense this year. We went to the NE GSA meeting in Burlington, Vt. where I went on a field trip on the frozen lake to look at a thrust fault (cold but interesting). Other field trips included the PA conference to Warren last Fall, to Somerset this Fall, and the PGS trip to Lake Erie last May. I served on the PhD committees of Suzanne Traub-Metlay and Darius Greenidge. New graduate student Dom DiMucci is getting his program started.

My long membership in the Community Relations Committee of the University Senate, has resulted in being elected chair for this year. As part of last years service on this committee, I was liaison to the PUP committee which has been ably chaired by Tom Anderson for a couple of years. Our joint committees, along with neighborhood representatives, established a new group which is actively working to improve the university community interface.

On a personal note, after 25 happy years we moved from our house on Woodhaven Drive about a mile to Lindendale Drive. The new house has all the most important rooms on one level, which is easier on creaky knees! Our first house guests were colleagues from the voyage with whom we did a 10 day vacation trip through the NE in a rented van - more good geology only briefly seen.

If any of you watched the Pitt football team get wiped out by Ohio State, you might have noticed a "coach" in a yellow shirt on the sidelines. I was a guest coach for that game, and came away with a keen appreciation for the complexities of football. If a student can learn those complexities, he ought to be able to handle "rocks for jocks" with little trouble!

Best wishes - and stop by and say "Hello".

DAVID K. BREZINSKI

I have spent most of the last year putting the final touches in my report of the lithostratigraphy of the Blue Ridge cover rocks for the Maryland Survey. This report is now finished and published as a report of investigations.

In January I began a similar study of the Lower Cambrian through Ordovician rocks of Maryland's Frederick Valley and eastern Blue ridge. Initial field studies suggest that much of the stratigraphy and structure of this area, as it is now perceived, is incorrect. I'll definitely need the help of a structural geologist if I can find one.

In July I spent nearly three weeks collecting Mississippian fossils from the Madison Limestone of Montana with Albert Kollar and John Carter of Carnegie Museum. Trilobite remains were rare, but worth the effort.

Faculty News

JOHN L. CARTER

I have just about finished my contribution to the TREATISE ON INVERTEBRATE PALEONTOLOGY and expect to submit it to the editor shortly. In June I attended the Subcommittee on Carboniferous Stratigraphy meetings in Liege and then participated in field trips in southeastern Belgium and in the High Pyrenees of southern France. The Carboniferous rocks in the Pyrenees occur mostly in nappes or thrust folds and cannot be readily associated with a sedimentary basin, so the Subcommittee decided to look elsewhere for a mid-Carboniferous boundary stratotype. I also visited the newly ordained Devonian-Carboniferous boundary stratotype in the Montagne Noir and found it to be very disappointing in every respect. In July I spent a few days in the Little Belt Mountains of Montana collecting brachiopods. Right now I have right leg in a cast waiting for my achilles tendon to heal, which is what I get for playing squash at my age.

WILLIAM A. CASSIDY

Two of my graduate students completed their research last year. Suzanne Traub-Metlay spent many intense hours measuring natural thermoluminescence (NTL) and induced thermoluminescence of a suite of Antarctic meteorites. Most of the measurements were utilized in interlaboratory comparison between our lab and the only other U.S. laboratory doing these measurements. After measuring the same sets of specimens, we found excellent agreement between our results and theirs for NTL. Suzanne is still calculating the induced TL numbers and we are hopeful of excellent agreement with them, too. This will serve to increase the credibility of results from both labs. Based on her NTL numbers, Suzanne was able to increase our understanding of the Allan Hills Main Icefield and postulate some interesting models of ice flow in the past, when ice thicknesses may have been greater, or the Transantarctic Mountains lower.

Chris Kern worked on a problem involving plasma growth of minerals. As you may know, diamonds may form metastably in a plasma at relatively low temperatures and pressures, under conditions similar to those in the atmospheres of stars. "Interstellar" (i.e., not from our solar system) diamonds occur in some meteorites. Presumably they have grown in the atmospheres of other stars! In trying to duplicate these conditions, Chris worked in collaboration with Bob Witkowski, at the Westinghouse Science and Technology Center. They produced lots of diamonds, but also some very interesting fluffy, iron-rich condensates studded with diamonds, fibers of unknown composition, and what can only be described as fuzballs, also of unknown compositions. We now have a model for the atmospheres of carbon-rich stars that contains diamonds, as earlier thought, but also fluffy masses, fibers and fuzballs.

Suzanne is now with husband Mike at Florida State, where he has a postdoctoral position and Chris is working with an environmental company in eastern Pennsylvania.

I send my very best wishes to all.

Faculty News

DAVID A. CROWN

As the newest arrival in the department, my eight weeks in Pittsburgh have been a blur of unpacking boxes, meeting new people, shoveling snow, and slowly getting settled in my new surroundings. While I am here to complement the research and teaching interests of Bill Cassidy and Bruce Hapke in the planetary science program, after spending two geologically exciting years in Los Angeles as a post-doc at the Jet Propulsion Laboratory, I feel more qualified in the area of natural disasters (*i.e.*, drought, mudslides, forest fires, floods, and earthquakes). Prior to that I was an undergraduate in geophysics at Brown University and received my PhD in geology at Arizona State University in 1991.

My scientific interests are in planetary geology and physical volcanology, and I utilize a combination of geomorphic analyses of spacecraft images and aerial photographs, spectral studies of remotely acquired data, field investigations, and computer simulations in my research. I have been involved in NASA-sponsored geologic studies of Venus, the Earth, Mars, and Io. Currently, my efforts are concentrated on analyses of volcanic deposits, eruption dynamics, and flow emplacement processes on Venus and Mars, with corresponding studies of terrestrial analogues in the western U.S. and Hawaii.

As part of a project to determine the origin and evolution of steep-sided domes on Venus, I will spend part of this summer continuing to investigate the Inyo and Mono domes in eastern California with Steve Anderson of Black Hills State University and Jeff Plaut and Ellen Stofan of JPL. We are measuring topographic profiles and boulder size distributions on the various surface units found on these silicic domes in order to interpret AIRSAR (airborne radar) images so that terrestrial volcanic domes can be compared to Venusian domes in a rigorous manner and the possibility of silicic volcanism on Venus critically assessed. Related work includes my participation in the Venus Geologic Mapping Program and the production of U.S.G.S. geological maps of volcanic regions on Venus.

This summer I will also initiate a new field project concerning the formation of pahoehoe flows on Kilauea volcano in Hawaii. This is part of a NASA funded project that continues my dissertation studies and includes the development of new theoretical models for the emplacement of lava flows in order to constrain effusive volcanic processes on Mars and the evolution of Martian volcanic centers. I am very much looking forward to my time at the University of Pittsburgh; I am sure this will be a busy, challenging, and rewarding year.

MARY DAWSON

Several new projects receiving attention include studies of middle Eocene mammals from fissure-filling deposits in Jiangsu Province, southeastern China, supported by a three year NSF grant with Chris Beard. Field work in China, performed cooperatively with colleagues from the Institute of Vertebrate Paleontology and Paleoanthropology of Beijing, in May and June resulted in large collections of fossils now under investigation. Another project involves Paleogene rodents from Mongolia, China, and Wyoming, which are providing new evidence on rodent origins and biogeography. Continuing projects include investigations of Paleogene and early Neogene faunas of the High Arctic, Eocene and Oligocene mammals and environments of the Kishenehn Formation of northern Montana, and phylogenetic relationships of early Eocene rodents from the Gulf Coast.

Faculty News

JACK DONAHUE

This academic year began with summer field work in Mexico, just south of Mexico City. I was invited to look at an area of Aztec sites by Mike Smith, an archaeologist at SUNY, Albany. He wanted my evaluation of how much erosion and/or deposition had affected the Aztec sites since they were occupied. The answer - almost none. After much thought on the matter, I have decided to pass the editorship of Geoarchaeology on to Paul Goldberg at the University of Texas, Austin and Ofir Bar-Yosef at Harvard. I had the satisfaction of creating the journal and bringing it into a profit-making position. It is time for new things, especially since I have three new and excellent grad-students, Ann Fleming, Jim Kradyana and Brian Peer beginning in geoarchaeology this year.

I hope everything is going well for all of you.

BRUCE W. HAPKE

This year saw the publication of my scientific reference book "Theory of Reflectance and Emittance Spectroscopy". It was published by Cambridge University Press and appeared in August, 1993.

Starting about 8 hours before full moon (corresponding to a phase angle of about 5 degrees) the brightness of the moon suddenly shoots up dramatically. This is called the opposition effect, and traditionally has been explained by shadow-hiding, in which grains of soil hide their own shadows exactly at full moon, but at other times the shadows are visible. However, measurements on lunar soil samples by former Pitt grad student Bob Nelson and Bill Smythe at the Jet Propulsion Lab and myself showed that the opposition effect is caused by a positive interference phenomenon called coherent backscatter. We published this explanation in the journal Science last April. The paper generated a lot of interest and resulted in stories in the NY Times, Pittsburgh Post-Gazette, London Times, Sky and Telescope magazine and Discover magazine, as well as on Canadian Network and British Broadcasting radio broadcasts.

After the Apollo missions, analyses of lunar samples by Bill Cassidy, former Pitt grad student Ed Wells (now at Space Telescope Science Institute) and myself had indicated that deposits formed from impact vaporized materials were an important component of the lunar regolith. At the time our work was strongly criticized by geochemists studying lunar samples because they were unable to find such material. However, recently two scientists at the Johnson Space Center used a newly developed transmission electron microscope to study grains of lunar soil and discovered that most grains are coated with vapor-deposited material, exactly as we had predicted. These coatings explain a number of puzzling chemical, magnetic and optical properties of the lunar soil.

Faculty News

WILLIAM HARBERT

I was deeply saddened by the death of my friend and colleague Vic Schmidt at the end of this August. Vic seemed in perfect health and was working on many projects up until the time he passed away. During September, October and December I organized material that Vic left and finished his revision of the "Planet Earth" text book. Vic had a contract to supply updated, camera-ready copy for the complete book and I completed this task in time for publication in December. Gary Storrick has taken on the task of organizing Vic's cave related scientific work. If you have any thoughts or memories about these activities of Vic please contact Gary. The paleomagnetic lab is working as well as ever. We are preparing for our first Helium fill in over 400 days! Projects being completed in the lab include those of Bob Graham, paleomagnetism of the Dunkard formation, Jiang-yun Zheng, paleomagnetism of a Miocene reference section in Idaho, Xi Xu, paleomagnetism of some rocks collected slightly north of Mongolia in the former Soviet Union, myself and Alexander Heiphetz both working on paleomagnetic samples from northwestern Russia. Reports from my colleagues in Russia confirm what we have all been seeing in the news. My 1989 monthly salary, paid by the Soviet Academy of Sciences, would now buy 2/3 of one postage stamp!

On the computer front our graduate/advanced undergraduate computer lab has been upgraded with an additional color Mac, 486DX2/CDROM PC, Tektronix X-terminal and additional software to do optical character recognition. In addition I have installed ARC/INFO and ArcView on a department workstation and we have the CDROM datasets ARC/USA, ARC/WORLD, and the digital map of the world. These programs and data all seem to work together and we are making beautiful color maps. In addition we have imported large chunks of Arc-macro code written especially for making geological and geophysical maps, from the USGS in Menlo Park. I hope that you have a great year.

EDWARD G. LIDIAK

The past year has been spent essentially in the same mode as in previous years, keeping busy in teaching and research. I taught three courses in the Fall Term (igneous and metamorphic petrology, advanced igneous petrology, and introduction to geology) and one course in the Winter Term (optical and x-ray mineralogy).

Last Fall I attended the annual Geological Society of America (GSA) Meeting in Cincinnati and presented a paper on the geology and geophysics of the Proterozoic in the eastern midcontinent of the U.S. and was a co-author of a paper on the geochemistry of Puerto Rican volcanic rocks. In the Spring, I presented three papers at the south-central GSA in Ft. Worth, Texas, one on the geochemistry of Arbuckle granitoids and two on proposed deep drilling sites in the southern midcontinent.

This past summer was spent working mainly on getting several manuscripts ready for publication. My co-authors and I finished revisions on a manuscript that has been accepted for publication in the international journal Contributions to Mineralogy and Petrology. We also have completed draft versions of two other manuscripts that should be ready for submission to journals in the very near future.

Best wishes to all.

Faculty News

WALTER PILANT

Continued to plug away at my Maryland maps, filling in the chinks where I could get either new data or new inspiration. However, in the "Big Snow of '93" I managed to break my ankle -- it is now held together by a steel plate and six screws. My situation limited field work considerably.

This past year I have been on the Computer Labs Committee and we have been working to see how fast we could get new PC's available to the students. The best machines available to the students are better than mine, which is pretty good. However, I get to look at all the new and wonderful things out there.

HAROLD B. ROLLINS

The last year has involved a "stepped-up" program of research on St. Catherines Island, Georgia. We have continued with a biodiversity survey of barrier island biota but also became involved in a study of hard clam recruitment in point bar and other tidal creek habitats. My co-workers in this endeavor have been, as before, my wife, Judy, Bob Prezant (IUP), Ron Toll (Wesleyan), Carol Cleveland (SUNY/Stony Brook), and Sonya Skoog (IUP). In addition, Dave Linsley successfully defended his PhD dissertation dealing with the origin and geological evolution of St. Catherines Island. Dave, since last fall, has been working part-time at the Paleontological Research Institute in Ithaca, New York. By the way, Dave informs me that his PRI stint terminates in January and he is looking for future employment. My other island activities include work on a book (for popular consumption) dealing with barrier islands with a primary focus upon St. Catherines. Also, I am delighted to report that the two-year search for the wily clam, *Barnea truncata*, has ended with recovery of a dozen much-needed living specimens from the island's South Beach. Glenn Goodfriend of the Carnegie Institute in Washington, D.C. has been "bugging" me for an adequate sample to calibrate amino acid racemization of this critter's shell. Now, maybe we can finish that paper (dealing with high temporal resolution of palimpsested events in relict marsh mud)!

Additional research activities include cooperation with Bill Harbert and Roman Kyshakevych (a Masters candidate in our Department) on an exciting application of remote sensing technology to microgrowth increment analysis of fresh water mussel shells. This work has resulted in the unexpected discovery of daily growth increments in one species of fresh water mussel from French Creek, Pennsylvania and the intriguing possibility that these daily increments are bundled into lunar rhythms of twelve to fourteen days.

Encouraged by increased interest in our earlier climate change research along coastal South America, Dan Sandweiss and I are again pursuing funding for research in that area. This renewed interest was catalyzed, in part, by Dan's recent employment at the University of Maine's Quaternary Research Center.

In June, Judy and I attended the annual American Malacological Union Meeting aboard the Nordic Empress in the Bahamas. I suppose it is unnecessary to say that we did not hear too many talks, but had a great time and great collecting!

Faculty News

VINCENT L. SANTUCCI

The year began in Triassic badlands of northeastern Arizona. I arrived in this part of Pangea soon after graduating from Pitt in 1991. My role was to serve as one of 4 National Park Service Paleontologists and my duty station was at Petrified Forest National Park. The position provided me with more challenges, rewards, and opportunities than I could have dreamed of while struggling through graduate school.

I served as Chief of Natural/Cultural Resource Management and Research. Although paleontological and geological resources are the dominant resources, the park also managed a wide variety of other natural and cultural features. These ranged from Pronghorn antelope herds, endangered species of plants, recovering desert prairie ecosystem, over 500 archeological sites, etc. Each day presented new learning opportunities. The park cooperated with 35 different researchers. Their research increased the overall understanding of the park's resources and in turn assist park staff in making better management decisions.

One of the highlights of the 1993 research season was the discovery of new Triassic vertebrate tracks both from within and outside of Petrified Forest National Park. Most notable is a trackway from the Holbrook Member of the Moenkopi Formation near Holbrook, Arizona. The trackway provides the first described evidence of dicynodont (mammal-like reptile) from North America. The various new Triassic vertebrate tracks discovered served as the basis for a number of publications in 1993.

I continued my participation, as a special investigator, in the FBI investigations into Paleontological Resource theft by commercial fossil collectors in South Dakota. The investigation began with the seizure of the well-noted Tyrannosaurus rex specimen nicknamed "Sue". The information gained through the investigation indicated that the theft of fossils on federal land was a far more serious problem than had been previously realized. The economic incentives through the sale of fossils far exceeded any fears of criminal prosecution. The investigation provided the U S Attorney in South Dakota with enough evidence to convince a Grand Jury to put forth a 29 count indictment.

I served a second year on the Government Liaison Committee of the Society of Vertebrate Paleontology. This groups efforts were largely directed towards assisting Senator Max Baucus (D - Montana) with the drafting of a bill entitled "The Vertebrate Paleontological Resources Protection Act". I attended a series of meetings in Albuquerque, Denver and Washington D.C. I was also assigned to a special detail in Washington to review cases of Paleontological Theft throughout the National Park Service and compile a report for Congress. Additionally, I was assigned to brief top Interior Department Law Enforcement Staff on the issue of Fossil Theft on Federal Lands.

In order to return to Pittsburgh, to assist a terminally ill relative, I secured a faculty position at Slippery Rock University for the Fall Term. When I arrived in Pittsburgh in August, I was deeply saddened to learn of the sudden passing of Vic Schmidt. I feel very lucky to have known and worked with him. He visited me when I was working in Badlands National Park in 1986 and helped to develop a research design that lead to my thesis. He had a great passion for

Faculty News

SANTUCCI continued

many things, including the National Parks. This was reflected in his highly praised course "Geology of the National Parks". I was honored to be able to teach his course at Pitt during the Fall of 1993.

After the Fall term I will be working on the drafting of a Resource Management Plan for Grand Canyon that will take many months. I am also organizing a symposium session at the Rocky Mountain Section GSA Meeting in Durango, Colorado, May 1994. The symposium is entitled, "National Park Service Paleontological Research". I am also editing a research volume that will be a companion volume to the symposium.

Thanks to the staff and students of the Geology Department at Pitt both during my days as a student and while teaching during the Fall term.

JACK SHARKEY

My primary research effort continues to be studies of the surface properties of coal. Removal of sulfur from coal plays a key role in reducing emissions that pollute the environment. Sulfur forms in coal are classified into three groups: pyritic; organic and sulfate. Knowing the concentrations of these three forms assists in the design of more efficient coal cleaning processes. Our research has resulted in a method (published recently) to determine sulfur forms on coal surfaces.

I am continuing to teach the two term Introductory Mass Spectrometry course. This term students from five industrial labs are taking the course. Since combined gas chromatography-mass spectrometry was designated by EPA as the official analytical technique for water quality studies; interest in the course has increased. I am also teaching a one credit course on analytical instrumentation for G&PS majors that includes lectures and demonstrations by faculty from other departments.

I am active in the American Society for Mass Spectrometry and the Pittsburgh Analytical Conference, primarily on program committees.

CATHY WHITLOCK

Oregon is green, wet, and beautiful, and I am developing the requisite webbed feet to survive. The Quaternary paleoecology group has been busy examining the vegetation and climate history from a number of new pollen sites. Katherine Hakala (at Pitt) is studying a long pollen record from Grass Lake, California for her dissertation. This research is partially funded by the U.S. Geological Survey as part of their investigation of the climate history of northern California. Sarah Millspaugh, who received her M.S. degree in the department, is currently working on her dissertation at the University of Oregon. She and I are looking at patterns of Holocene vegetation and fire history in the Yellowstone region. This project continues to challenge us as we extend the fire chronology back in time and to new areas and as we attempt to model future climate-fire regimes. I have also started a 3-year project funded by the National Science Foundation to look at paleoclimate records in the Pacific Northwest through the last interglacial. These activities, plus a heavy teaching load in the UO Geography Department, keep me tied to my computer and microscope most of the time. What else is new? Bob and I now live on a small farm in the foothills of the Coast Range. Look us up if you are out this way.

Publications

THOMAS H. ANDERSON

Abstracts:

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KATHI BERATAN

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MICHAEL BIKERMAN

Abstracts:

Prellwitz, H.S., and Bikerman, M., 1993, Petrological characteristics of the Masontown, Pennsylvania kimberlite dike: Geological Society of America Abstracts with Programs, v. 25, p. 71.

DAVID K. BREZINSKI

Articles:

Brezinski, D.K., 1992, Lithostratigraphy of the western Blue Ridge cover rocks in Maryland, Maryland Geological Survey Report of Investigations 55, 69p.

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JOHN L. CARTER

Articles:

Carter, J.L., 1992, New genera of Lower Carboniferous spiriferid brachiopods (Brachiopoda: Spiriferida): Annals of Carnegie Museum, v. 61, no. 4, p. 327-338.

DAVID A. CROWN

Papers:

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Abstracts:

Anderson, S.W., Crown, D.A., Plaut, J.J., and Stofan, E.R., 1994, Surface characteristics of steep-sided domes on Venus and terrestrial silicic domes: A comparison: Lunar Planetary Science Conference, XXV, p. 33-34.

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JACK DONAHUE

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BRUCE W. HAPKE

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WILLIAM HARBERT

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PETER J. HUTCHINSON

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EDWARD G. LIDIAK

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HAROLD B. ROLLINS

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VINCENT L. SANTUCCI

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- Santucci, V.L., editor, 1992, Petrified Forest National Park: Research Abstract Volume, vol. 1, 32 pages.
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ANDREW G. SHARKEY, JR.

Articles:

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CATHY WHITLOCK

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Elinski, William, W., and Anderson, Thomas H., 1993, A Structural Geometry at the Northern Terminus of the North Mountain Thrust Sheet, Pennsylvania [abs.]: Geological Society of America Abstracts with Programs, v. 25, no. 6, p. A-165.

Bachelor of Science in Environmental Geology

In response to increased undergraduate enrollment and requests for an environmental geology option at the Bachelor's degree level, the geology department has initiated and had approved by the University, a new Bachelor of Science degree in environmental geology. The new degree, with a different list of requirements, is somewhat more rigorous than the standard geology major. Among significant differences are that environmental geology majors:

1. Complete groundwater geology in place of invertebrate paleontology.
2. Complete one of two biology courses (Global Ecology or Stream Ecology).
3. Complete a third course in chemistry (Organic Chemistry).
4. Complete two rather than three courses in Physics.
5. Complete three elective courses chosen from a list of approved courses in geology, biological sciences, chemistry and environmental engineering.

To give you a better idea of the courses included, the table lists requirements and a typical four year program for students in the two different Bachelor's degrees. We intend that the G&PS environmental geology degree be quite rigorous and give our students a firm grounding in the field. In the first year after University approval of the degree, approximately half of the new geology majors have chosen the environmental geology degree.

Bachelor of Science in Environmental Geology

Differences between the Geology Major and the Environmental Geology Major

Courses

- A. GEOL 1051 (Groundwater Geology) is taken in place of GEOL 1200 (Invertebrate Paleontology)
- B. Either GEOL 1410 (Geophysical Field Methods)
GEOL 1500 (Geochemistry) or
GEOL 2540 (Intro to Mass Spectrometry)
- C. Either BIOSC 1380 (Global Ecology) or
BIOSC 1600 (Stream Ecology)
- D. CHEM 0310 (Organic Chemistry 1) in addition to CHEM 0110 and 0120
- E. PHYS 0104 and 0105. PHYS 0106 is not required for the environmental geology degree.
- F. Three courses chosen from:

Geology (GEOL)

- GEOL 1079 - Field Methods
- GEOL 1410 - Geophysical Field Methods
- GEOL 1413 - Well Logging
- GEOL 1460 - Remote Sensing
- GEOL 1500 - Introduction to Geochemistry
- GEOL 1640 - Environmental Hazards
- GEOL 2540 - Introduction to Mass Spectrometry

Biological Sciences (BIOSC)

- BIOSC 1380 - Global Ecology
- BIOSC 1600 - Stream Ecology

Chemistry (CHEM)

- CHEM 0320 - Organic Chemistry II

Environmental Engineering:

Civil Engineering (CE)

- CE 1503 - Introduction to Environmental Engineering
- CE 1513 - Environmental Engineering Processes

Chemical Engineering (CHE)

- CHE 1620 - Industrial Waste Treatment

Bachelor of Science in Environmental Geology

TYPICAL PROGRAM FOR GEOLOGY MAJORS

<u>Freshman</u>			
<u>FALL</u>	<u>credits</u>	<u>SPRING</u>	<u>credits</u>
GEOL 0050	4	GEOL 0060	4
MATH 0220	4	MATH 0230	4
CHEM 0110	4	CHEM 0120	4
English Comp.	3	Gen Ed 1	3
15		15	

<u>Sophomore</u>			
<u>FALL</u>	<u>credits</u>	<u>SPRING</u>	<u>credits</u>
GEOL 1001	4	GEOL 1002	4
MATH 0240	4	PHYS 0104	3
(language ^a 4-5)		(language ^a 4-5)	
Gen Ed 2	3	Gen Ed 3	3
15-16		14-15	

<u>Junior</u>			
<u>FALL</u>	<u>credits</u>	<u>SPRING</u>	<u>credits</u>
GEOL 1003	4	GEOL 1020	4
GEOL 1100	4	GEOL 1200	4
PHYS 0105	3	PHYS 0106	3
Gen Ed 4	3	Gen Ed 5	3
14		14	

<u>SUMMER</u>	<u>credits</u>
GEOL 1960	4-6

<u>Senior</u>			
<u>FALL</u>	<u>credits</u>	<u>SPRING</u>	<u>credits</u>
GEOL 1400 ^b	3	GEOL elective	4
Gen Ed 6	3	Gen Ed 8	3
Gen Ed 7	3	Gen Ed 9	3
Elective	3	Elective	3
12		13	
		116-120 credits	

^a If CAS requirements are not satisfied by advanced standing

^b Choose one of: GEOL 1400, 1410, 1500 or 1501

TYPICAL PROGRAM FOR ENVIRONMENTAL GEOLOGY MAJORS

<u>Freshman</u>			
<u>FALL</u>	<u>credits</u>	<u>SPRING</u>	<u>credits</u>
GEOL 0050	4	GEOL 0060	4
MATH 0220	4	MATH 0230	4
CHEM 0110	4	CHEM 0120	4
English Comp.	3	Gen Ed 1	3
15		15	

<u>Sophomore</u>			
<u>FALL</u>	<u>credits</u>	<u>SPRING</u>	<u>credits</u>
GEOL 1001	4	GEOL 1002	4
MATH 0240	4	CHEM 0310	3
(language ^a 4-5)		(language ^a 4-5)	
Gen Ed 2	3	Gen Ed 3	3
15-16		14-15	

<u>Junior</u>			
<u>FALL</u>	<u>credits</u>	<u>SPRING</u>	<u>credits</u>
GEOL 1003	4	GEOL 1020	4
GEOL 1100	4	GEOL 1051	3
PHYS 0104	3	PHYS 0105	3
Gen Ed 4	3	Gen Ed 5	3
14		13	

<u>SUMMER</u>	<u>credits</u>
GEOL 1960	4-6

<u>Senior</u>			
<u>FALL</u>	<u>credits</u>	<u>SPRING</u>	<u>credits</u>
GEOL 1410 ^b	3	ENV elective ^c	3
ENV Elective ^c	3	ENV elective ^c	3
Elective	3	Gen Ed 8	3
Gen Ed 6	3	Gen Ed 9	3
Gen Ed 7	3	BIOSC 1380	3
15		15	
		or BIOSC 1600	
		120-124 credits	

^a If CAS requirements are not satisfied by advanced standing

^b Choose one of: GEOL 1400, 1500 or 2540

^c Choose from the list of environmental geology option electives

Students

FULL-TIME UNDERGRADUATE STUDENTS

- | | |
|-----------------------------|------------------------------|
| 1. Arnel, Aimee S. | 19. Mastandrea, Joanna L. |
| 2. Coffman, James D. | 20. McConnell, Amy S. |
| 3. Cole, George G. | 21. Myers, Todd C. |
| 4. Cusick, Daniel P. | 22. Niebrzydowski, Thomas J. |
| 5. Dietz, David M. | 23. Prosser, Edwin J. |
| 6. Doerr, April E. | 24. Quinn, Heather L. |
| 7. Eboli, Richard | 25. Ryan, Andrea M. |
| 8. Elmes, William R. | 26. Salizzoni, Kara |
| 9. Everitt, Wayne D. | 27. Schultz, Aimee M. |
| 10. Fernstrom, Tina L. | 28. Steinhart, William E. |
| 11. Geho, Erik S. | 29. Vinson, Cassandra N. |
| 12. Gwillim, Keith Thomas | 30. Werner, Christopher L. |
| 13. Holland, Christopher J. | 31. Westrick, Thomas J. |
| 14. Jankovic, Erik M. | 32. Wetzell, Lawrence M. |
| 15. Kearney, Rene A. | 33. Wilson, Christopher J. |
| 16. Kilbert, Rebecca A. | 34. Wilson, Yvonne M. |
| 17. Little, David C. | 35. Wrana, Charles V. |
| 18. Mack, Peter W. | 36. Zampogna, Damian M. |

FULL-TIME GRADUATE STUDENTS

- | | |
|---------------------------|--------------------------|
| 1. Anderson, Robert | 12. Liberman, Svetlana |
| 2. Campbell, Patricia | 13. Marshall, Leland |
| 3. Dembosky, John Jr. | 14. McCaffrey, Thomas V. |
| 4. DeLillo, Nick | 15. Peer, Brian |
| 5. DiMucci, Domenic | 16. Prellwitz, Henry |
| 6. Fleming, Ann M. | 17. Riley, Kevin |
| 7. Hakala, Katherine | 18. Risek, Richard |
| 8. Heiphetz, Alexander | 19. Venn, Cynthia |
| 9. Hoadley, Mark | 20. Waller, Harry Earl |
| 10. Kradya, James | 21. Xu, Xi |
| 11. Kyshakevych, Roman G. | 22. Zheng, Jiang-yun |

PART-TIME GRADUATE STUDENTS

Flaherty III, Thomas
Kendrick, Andrew W.
Schatzel, Steven J.

Degrees

BACHELOR OF SCIENCE

Ayres, Gregory A.
DeFlitch, Douglas A.
Dietz, David M.
Mack, Peter William
McCaffrey, Thomas V.
Ryan, Andrea Merk
Sgourakis, Michael S

MASTER OF SCIENCE

- Elinski, William *A Structural Geometry of the Northern Terminus of the North Mountain Thrust Sheet, Pennsylvania*
Thesis Advisor: T.H. Anderson
Graduated: December, 1993
- Kern, Chris *Stability of Minerals in a Plasma*
Thesis advisor: W.A. Cassidy
Graduated: December, 1993
- Gerber, Dean *The Use of Spectrographic Cathodoluminescence and the Laser Mass Analyzer (LAMMA) in the Characterization of Coarse Quartz Silt for Source Rock Determination*
Thesis advisor: S.K. Kennedy
Graduated: December, 1993

Degrees

DOCTOR OF PHILOSOPHY OF SCIENCE

- Hutchinson, Peter J. *Detection and Remediation of Aqueous Phase Xenobiotic Contaminants*
Dissertation Advisor: H.B. Rollins
Graduated: December, 1992
- Linsley, David M. *Depositional Environments of St. Catherines Island and Their Relationship to Late Quaternary Sea Level Change*
Dissertation Advisor: H.B. Rollins
Graduated: April, 1993
- McGuire, Audrey F. *Experimental Investigation of Light Scattering by Large Irregular Particles*
Dissertation Advisor: B.W. Hapke
Graduated: March, 1993
- Storrick, Gary *Synthesis of Magnetite Using the Glass Ceramic Method*
Dissertation Advisor: V.A. Schmidt
Graduated: August, 1993
- Greenidge, Darius *Comparison of Trapped Hole Centers in Imperial Topaz and Quartz*
Dissertation Advisor: E.G. Lidiak
Graduated: December, 1993
- Traub-Metlay, Suzanne *Natural Thermoluminescence in Meteorites and Their Relation to Meteorite Concentration Mechanisms in the Allan Hills Region Icefields, Antarctica*
Dissertation Advisor: W.A. Cassidy
Graduated: December, 1993

Awards and Honors

FRANCO CORONA HAS A GOOD YEAR

Franco, a Senior Applied Geologist with Unocal Energy resources Division in their Exploration and Seismic Technology Group at Brea, California, is a member of the Structural Geology Team specializing in structural-styles analysis and fault-seal prediction.

As reviewed in "Geological Remote Sensing Group Newsletter", 1991, No.3, the runner-up article, "Delineation of Structural Styles along the Sub-Andean Zone of Ecuador using Remote Sensing Data", by F.V. Corona of Unocal, and J.R. Huacho-R. and S.N. Delgado-L. of Petro, Ecuador, was a seminal presentation. It set out a straightforward application of remote sensing to oil exploration. It showed how it should be done by inspired interpretation of structural geological features systematically applied; and not with fancy lineaments or unnecessary image enhancements and classifications. It was clearly presented. The work had clear purpose -- remote sensing was essential in the difficult terrain of complex geology. It called upon all available data and ground validation and did not rely unnecessarily on satellite data alone to identify targets. Furthermore it represented a co-operation of oil company and Government that is typical of the industry. It was a model to follow for the successful application of remote sensing in oil exploration.

Franco also was the 1992 award winner in the Creativity/Achievement Award Program. His significant achievement, above and beyond what was originally anticipated, was: The development of a fault-seal analysis for determining if geological faults are sealing or leaking to hydrocarbons. He was nominated by his department manager and among the 60 other applications, his was rated by the management staff at the Fred L. Hartley Research Center as an outstanding contribution.

At the Ninth Thematic Conference on Geologic Remote Sensing: Exploration, Environment, and Engineering in Pasadena, California, February 8-11, February, 1993, Franco was awarded Plenary Session Honorable Mention for Structural Framework of the Imperial Valley Area, Southeastern California, Derived from Landsat and Image-Enhanced Potential Field Data by F.V. Corona and S.F. Krupicka, Unocal Science and Technology Division, Brea, California.

BRUCE HAPKE AND AGU

Dr. Bruce Hapke has been elected to Fellowship in the American Geophysical Union. Fellowship is awarded to scientists who have attained acknowledged eminence in a branch of geophysics. It is one of the few honors that AGU confers, and the number of Fellows elected each year is limited to 0.1% of the total membership of AGU.

It will be AGU's honor to present this Fellow's certificate at the Honors Ceremony at either the Spring or Fall Meeting.

VINCENT SANTUCCI GUARDING FOSSILS

SCIENTIST SAYS PROFITEERS, TOURISTS STEAL BITS OF HISTORY¹

Some people refer to them as "thieves of time."

But paleontologist Vince Santucci prefers to call them looters or rapists or names that aren't as nice.

For years, the Avalon native has been fighting for stricter federal guidelines to punish people who illegally take fossils and ancient bones from federal lands to sell for profit.

As a paleontologist with the National Park Service, he's watched fossils disappear from national parks and paleontological digs in growing numbers. And his frustration has swelled as he grapples with a government with no clear guidelines on catching the bad guys of fossil-finding.

"Commercial collectors go out and rape federal lands daily," Santucci said. "When these fossils are being removed from the hands of scientists, we have a problem. And if we can't prosecute the cases where there's clear-cut theft, then we need to change the law."

Federal law generally prohibits the taking of fossils from federal lands without a permit. But Santucci said that because of lax enforcement and low fines, many fossils and bones end up in private collections or overseas - useless to American scientists.

"There's a wealth to be made in commercial dealing and that's why so many people are getting into it," Santucci said.

As more people become educated, fossils and bones are becoming curios, Santucci said. Commercial dealers also report brisk sales overseas because fossils - and especially dinosaur bones - represent American culture. Some fossils and bones boast price tags of hundreds of thousands of dollars.

Opponents of fossil-protection legislation say many significant discoveries were made by amateurs eager to share their finds with scientists.

The U.S. National Academy of Sciences recommended in 1987 that "the science of paleontology is best served by unimpeded access to fossils and fossil-bearing rocks in the field."

But Santucci contended that scientists and museums often can't afford commercial dealers' prices, so many rare specimens end up out of paleontologists' reach.

In addition, visitors to federal lands also take fossils despite regulations against it, he said.

In one instance, the Fossil Cycad National Monument in the Black Hills of South Dakota lost its status as federally protected land in 1959 because visitors and commercial dealers had taken virtually all of the site's protected resources.

At the Petrified Forest National Park in Arizona, where Santucci works as curator and paleontologist, workers conducted a six-week study in 1990 to see how much petrified wood was stolen daily. The finding: an average of 3 1/2 pounds of wood was stolen for each car that entered the park, averaging about 36,530 pounds a week total.

"These are staggering levels," Santucci said. "If everybody that visits the park takes a piece of wood, this park would disappear."

¹The following article dated February 8, 1993, was reprinted with the permission of Staff Writer Dana DiFlippo of the North Hills News Record.

Awards and Honors

WILLIAM E. STEINHART IS NAMED AN OUTSTANDING STUDENT BY AMERICAN MINERALOGICAL SOCIETY

Ten MSA members have taken advantage of the Society's American Mineralogist Undergraduate (AMU) Award program to recognize outstanding students who have shown an interest and ability in the discipline of mineralogy. Each student was cited by his or her department for outstanding achievement in mineralogy-related courses.

The AMU Awards allow MSA to join with individual professors to formally recognize outstanding students. Each student is presented a certificate at an awards ceremony at his or her university or college. In addition, each recipient receives a complimentary student membership, including American Mineralogist for 1993. This year the Award has gone to William E. Steinhart who was sponsored by Professor Edward G. Lidiak.

W.A. TARR AWARD

Andrea Merk Ryan wins the W.A. Tarr Award which was presented by the Beta Chapter of the Sigma Gamma Epsilon for the academic year of 1992-1993.

THE GEOLOGICAL SOCIETY OF AMERICA UNDERGRADUATE AWARD GOES TO TOM MCCAFFREY

The Geological Society of America National Meeting - Undergraduate Program was pleased to announce that Tom McCaffrey participated in the top Seniors Program.

Each year GSA selects a limited number of universities within the region of the convention site to send top undergrad students to the National meeting. Last October, undergraduate geology Top Seniors spent five days in Cincinnati attending the Geological Society of America's Annual Meeting. These students exchanged views with earth science professionals and graduate students who provided the latest in research and expertise in their fields. This program was a great success for both the students and their sponsors.

The Annual Meeting proved to be a powerful tool in preserving further education in the earth sciences, both for the student and the sponsoring university.

PETER J. HUTCHINSON - AAPG VISITING GEOLOGIST PROGRAM

Pete was selected for the AAPG Visiting Professional Geologist program and will be lecturing at the following universities/colleges:

Bucknell University, PA; Brooklyn College, NY; Bates College, Maine; and SUNY Oswego, NY.

Awards and Honors

TIMOTHY M. MURIN PROMOTED

Timothy M. Murin (MS, 1988) - has been promoted to President of Castle Exploration Company, Inc., Castle Texas Production Limited Partnership and Petroleum Reserve Corporation, Pittsburgh. He is responsible for managing over 400 gas and oil wells and developing future reserves in Pennsylvania, Texas, Oklahoma and Alabama.

W. N. "BILL" TINDELL HONORED

W.N. "Bill" Tindell, CPG-0562, longtime Abilene oil man, was honored by the southwest Section of the American Association of Petroleum Geologists at its annual convention February 20-23 in Fort Worth, Texas.

On February 23, Bill received the John Henry Adams Distinguished Service Award in ceremonies at the Radisson Hotel.

Jerry Namy of Forth Worth, President of the Southwest Section, said Tindell was recognized for Distinguished service to the AAPG section and the geology profession. Bill Tindell served as president of the Southwest Section of AAPG in 1959-1960. He has also been president of both the Abilene Geological Society and West Central Texas Oil and Gas Association (WeCTOGA) and has served numerous roles within AAPG, Texas Independent Producers & Royalty Owners Association, Independent Petroleum Association of America and the Mid-Continent Oil and Gas Association.

He also was named Oilman of the Year by WeCTOGA and is an Honorary Life Member of the Abilene Geological Society.

The Southwest Section has 3,825 members with societies in Abilene, Dallas, El Paso, Fort Worth, Graham, Wichita Falls, Roswell, N.M., Sangelo and Midland.

JACK SHARKEY WINS THE FIFTH JAMES L. WATERS ANNUAL SYMPOSIUM AWARD

Jack Sharkey has won the Fifth James L. Waters Annual Symposium award for the Development and Early Applications of Commercial Mass Spectrometers.

The purpose of the Waters Symposium is to explore the origin, development and implementation of analytical instrumentation and methodology. Four or five distinguished speakers are invited to provide a comprehensive overview of the subject recognizing the collaborative work of all those involved in its commercial success. Speakers typically include inventors, entrepreneurs, or other individuals producing and selling commercial instruments, and/or people at the forefront of the technology. Gas chromatography, atomic absorption spectroscopy, infrared spectroscopy and nuclear magnetic resonance were the subjects of the first four Waters Symposia.

Alumni News

CHERYL BIRCIW

BS, 1979

Cheryl lives in Tampa, Florida with her husband Charles Pumroy. She is affiliated with Delta Environmental Consultants, Inc. as an Industrial Hygienist/District Health and Safety Officer who is responsible for health and safety of employees in the Tampa office of Delta; industrial hygiene consulting. OSHA compliance, project manager for soil and groundwater contamination and remediation activities.

MARSHALL C. CAROTHERS

PhD, 1976

Marshall and his wife Clare have five children whose ages range from 21 to 12 and they live in The Woodlands, Texas. Marshall is a Geologist/Vice President/Treasurer for El-Can Exploration, Inc. His duties involve oil and gas prospect generation and paying the bills!

Marshall has kept track of several alums nearby in oil patch. They are Rick Sarg with Mobil in Dallas; Bruce Cain with Shell in Houston; Bob Lieber with Simon Geophys also in Houston and Gordon Van Swearingen is a consultant in Houston.

DAVE CEFOLA

BS, 1979

Dave and his wife Luann live in Richardson, Texas where Dave is affiliated with Oryx Energy Company and a Manager, HIC Services Group. As a manager of Oryx Energy's Exploration Group he deals with the exploitation of AVO technology for lithology prediction and hydrocarbon detection. In 1982 he received his MS degree in Geophysics at Texas A & M University.

FRANCESCO V. CORONA

BS, 1977 MS, 1980

Franco is a Senior Applied Geologist with Unocal Energy resources Division in their Exploration and Seismic Technology Group at Brea, California. Franco is a member of the Structural Geology Team specializing in structural-styles analysis and fault-seal prediction. Since joining Unocal in 1989, Franco has been involved in numerous regional studies interpreting structural features and structural styles from satellite, potential field, and ground data, and evaluating fault-seal potential of fault-bounded and fault-segmented hydrocarbon traps from well and seismic data. Franco is also an instructor in Unocal's tectonic field seminars, and recently led a field trip into the Salton trough examining wrench-fault tectonics associated with the San Andreas fault system.

Prior to joining Unocal, Franco was a Senior Research Geologist at Exxon Production Research in their Basin Analysis Group (1980-1988), and later a Senior Production Geologist with Exxon Company USA drilling development wells along the Texas Gulf Coast (1988-1989). Franco has also spent some of his free time showing students, young and old, the fascinating realm of physical geology.

PETER HUTCHINSON

PhD, 1992

Peter, who is now serving as an Adjunct Professor in G&PS, has been selected as a lecturer in the AAPG Visiting Professor Geologist Program. He is also an Adjunct Professor at Chatham College and is teaching Environmental Geology on Friday after teaching Environmental classes for Pitt.

Alumni News

WILLIAM ELINSKI

M.S., 1993

SANDRINE SCHULTZ

B.S., 1992

Hello to everyone at the Geology and Planetary Science Department from Urbana-Champaign, Illinois!!! We moved to this rural area in August 1993 for Bill to pursue a Ph.D. in Structural Geology with Professor Marshak. I am working on a M.S. and have a position as a Geologist with the Illinois State Geological Survey. Bill's research is located in Marquette, Michigan and he will be focusing on the origin of a granite-greenstone terrain in northern Michigan. I am finishing a research project with Professor Bass which determines the elastic parameters of epidote using a Fabry-Perot spectrometer and obtains Brillouin peaks.

Life here is very different, no more hills, no traffic jams in the morning, and every day we get fresh air from the surrounding farms located around our house. Maybe the topography is not exciting, the sunsets, however, are breathtaking. But we do miss the mountain!!!! So that is where we are, studying Geology in the middle of farmlands.....However, Bill and I will be coming back to Pittsburgh in June since we are getting married at the Heinz Memorial Chapel on campus. So we will come and visit everyone in the department and until then, hope everyone is alright and see you soon.

KIEHWA LEE

PhD, 1975

Kiehwa and his wife Myoung Ja and daughter Jennifer are all doing well. Kiehwa was promoted to Professor of Geophysics in 1989. He served as associate dean for College of Natural Sciences of Our University from 1989 to 1991. He has produced 5 PhD's and a dozen MS's since joining the faculty of this department. Now he is building a big seismological observatory in the Campus.

ROBERT K. LEE

MS, 1979

Robert, President and Principal Geophysicist of Quantum Geophysics, Inc., is presenting his paper Locating and Mapping Near-Vertical, Water-Bearing Fracture Zones Using Surface Geophysical Methods: A Case History at the National Ground Water Association (NGWA) 8th Annual Outdoor Action Conference in Minneapolis, MN late May, 1994. The methods described in the paper have also been used to locate and map other thin "conductive" structures such as slurry walls (engineering application) and clay-enriched fault zones (geologic/geotechnical application).

Alumni News

ROBERT M. NELSON

PhD, 1978

Bob Nelson and his wife Marguerite and their sons Tom and Chet live in California where Bob is affiliated with Jet Propulsion Lab as an Astronomer.

PAT PONTORIERO

MS, 1981

Pat and his wife Diane and their children Daniel, Matthew and Eva live in Gibsonia, Pa. where he is affiliated with BCM Engineers, Inc. His position is a Senior Project Manager dealing with BCM's hazardous waste services in the Pittsburgh region. Projects include site investigation and remediation of manufacturing facilities and federal installations.

MICHELLE ROGAN

BS, 1985

Michelle and her "other half" have moved to New Zealand and they just love it and say that the people are so very friendly. She has started her own digital cartography business which is doing well. Her husband, Mike, works at the University of Canterbury - in the Geology Department! He is their computer specialist. They just bought a 1901 Villa that needed total renovation and it is coming along wonderfully. She said she is keeping busy.

ROBERT "MAE" WEST

Adjunct Faculty

1983-1987

Bob and Jean and Christopher live in Washington, D.C. where Bob is affiliated with RMW Science Action, Informal Science Inc. as an owner and partner. He is a consultant to museums and other science education institutions.

Seminars

1993 January

- 07 Jack Donahue, University of Pittsburgh, Department of Geology and Planetary Science, *Neotectonic Movement in the Southern Dead Sea Valley: Data From Four Early Bronze Archaeological Sites in Jordan*
- 14 Robert D. Regan, Consultant, *GEIS: An Information System for Geoenvironmental and Geotechnical Studies*
- 15 Steven E. Boyer, 1992-1993 AAPG Distinguished Lecturer, University of Washington, Department of Geological Sciences, *Sequence of Deformation and Structural Variation Within Thrust Belts: Implications for Mechanical Model and Hydrocarbon Exploration*
- 21 Suzanne Traub-Metlay, University of Pittsburgh, Department of Geology and Planetary Sciences, *Studies in Natural Thermoluminescence of Antarctic Meteorites*
- 28 Richard K. Lee, Quantum Geophysics, Inc., *Geophysics - Truth, Lies, and Video Tapes*

1993 February

- 04 Samuel T. Pees, Exploration Geologist, *The Early Days, Oil Creek Valley, PA*
- 16 Keith Bell, Carleton University, Ottawa, Canada, *Carbonatites and the Evolution of the Subcontinental Upper Mantel*
- 18 Roy K. Dokka, National Science Foundation and Louisiana State University, Department of Geology and Geophysics, *Role of the Eastern California Shear Zone in Accommodating Pacific-North American Plate Motion*
- 25 David W. Oldham, West Virgin University and Wyatt Petroleum, *Shallow Gas Production From Sandstone Reservoirs of the Fort Union Formation, Powder River Basin, Wyoming*

1993 March

- 04 John F. Stolz, Duquesne University, Department of Biological Sciences, *Biogenic Magnetization of Sediments - A Sulfur Connection?*
- 11 Spring Break - no seminar
- 18 James V. Hamel, Hamel Geotechnical Consultants, *Environmental Geotechnology in the United States: A Consultant's Perspective*
- 23 Henry W. Posamentier, 1992-1993 AAPG Distinguished Lecturer, ARCO Exploration and Production, *Making Mountains Out of Molehills: A Scale-Independent Approach to Sequence Stratigraphy*

Seminars

1993 April

- 01 Audrey Frances McGuire, University of Pittsburgh, Department of Geology and Planetary Science, *An Experimental Investigation of Light Scattering by Large Irregular Particles*
- 08 Gary D. Storrick, University of Pittsburgh, Department of Geology and Planetary Science, *Field Dependence of Thermoremanent Magnetization (TRM) in Magnetite*
- 13 Donald Siegel, 1992-1993 Birdsall Lecturer, Syracuse University, Department of Geology, *The Hydrogeology of Wetlands: Paradigm Lost*
- 15 Ronald G. Blom, Jet Propulsion Laboratory, California Institute of Technology, *Space Technology and the Discovery of the Lost City of UBAR*
- 16 David Linsley, University of Pittsburgh, Department of Geology and Planetary Science, *Late Quaternary Sea-Level High Stands on the Georgia Coast: Glacio-Eustatic Stratigraphy and Its Relationship to Cyclic Stratigraphy of the Paleozoic*
- 20 Duane Bindschadler, UCLA, Department of Earth and Space Sciences, *Origins of Venusian Highlands: Hotspots and Coldspots*
- 22 William W. Elinski, University of Pittsburgh, Department of Geology and Planetary Science, *A Structural Geometry of the Northern Terminus of the North Mountain Thrust Sheet, Pennsylvania*

1993 May

- 03 Richard Binzel, MIT, Department of Earth, Atmosphere, and Planetary Science, *The Asteroid-Meteorite Connection*
- 20 David A. Crown, Jet Propulsion Laboratory, *Volcanic Geology of Hadriaca and Tyrrhena Paterae, Mars and The Frailes Formation, Bolivia*

1993 June

- 09 James B. Garvin, NASA/Goddard Space Flight Center, *Significance of Length Scales in Planetary Surface Processes*

1993 August

- 06 Kern, Christopher M., University of Pittsburgh, *Stability of Minerals in a Plasma.*
- 24 John Grant, Brown University, *Craters, Degradation and Climate on Mars and Earth.*

Seminars

1993 September

- 09 Thomas H. Anderson, Introduction of Faculty and Students
- 16 Dean Gerber, University of Pittsburgh, The Use of Spectrographic Cathodoluminescence and the Laser Mass Analyzer (LAMMA) in the Characterization of Coarse Quartz Silt of Source Rock Determination
- 23 William Harbert, University of Pittsburgh, Geological Interpretation of Kamchatka, Russia: Constraints from Digital Residual Magnetism, Synthetic Aperture Radar, Landsat MSS, Digital Elevation Models, Paleomagnetism and Previous Geological Studies
- 30 Franco V. Corona, Unocal Resources Division, Brea, CA, An integrated structural interpretation of geologic, Landsat Thematic Mapper (TM), for the Imperial Valley area of the Salton Trough, SE CA

1993 October

- 07 Karen Rose Cercone, Geoscience Department, Indiana University of Pennsylvania, Female Friendly Geoscience: Eight Techniques to Engage and Encourage Female Students in the Geological Sciences
- 14 Professor William A. Soffa, Department of Materials Science and Engineering, University of Pittsburgh, The Relationship between Structure and Properties in Polytwinned Ferromagnets

1993 November

- 04 Raoul Miller
- 10 R. Douglas Elmore, 1993-94 AAPG Distinguished Lecturer, Chemical Remagnetization and Paleomagnetic Dating of Fluid Migration Events: Testing the Organic Fluid Hypothesis.
- 11 Dr. John Brady, Smith College, Why Walden Pond is an Imperfect Model for a Lava Lake and Marble-Hosted Talc Deposits in SW Montana: Evidence for Deep Circulation of Proterozoic Sea Water.
- 18 Robert Anderson, University of Pittsburgh, Identification of Geomorphic Surfaces from LANDSAT data, Whipple Mountains, Southeastern CA., and Dr. Kathi K. Beratan, University of Pittsburgh, Lithologic Discrimination and Alteration Mapping from Aviris Data, Datil-Mogollon Volcanic Field, New Mexico. Presentation of Posters from the Boston GSA Meeting.

1993 December

- 02 Thomas Flaherty, Department of Environmental Resources, Bureau of Oils and Gas Management, Stratigraphy of the Upper Devonian Bradford Group in SW Pennsylvania: A Hierarchical Classification of Genetic Transgressive-Regressive Units.

Sigma Gamma Epsilon

SIGMA GAMMA EPSILON

Sigma Gamma Epsilon membership has almost doubled during the new academic year. The influx of new members has brought an increased interest in both long and short field trips.

Because of successful fund raising last year, and the return of the rock kits to the department, SGE is finally in the black. Fund raising this year will consist of continued selling of T-shirts and Syria Mosque plaques as well as tickets for the annual SGE Spring Banquet.

Trips this year are: a co-sponsored trip with the Geology Club to Sudbury, Ontario at the end of the Spring Term and a spelunking trip to West Virginia during the spring break. The spring break trip will be a minimal cost trip to all who are welcome. The purpose of this trip is to recruit new majors by showing the more adventurous side of geology. Other short trips have been tentatively discussed but as always the busy lives of our members makes scheduling difficult. It is hoped that this year ASG activities will continue into the summer instead of ending in April.

BETA CHAPTER

The Beta Chapter of SGE is delighted to salute Sigma Gamma Epsilon on the occasion of its (and our own) seventy-fifth anniversary. We are pleased to have assembled this special issue of The Compass and look forward to another successful and progressive years with SGE.

The 1990-91 academic year began with a flurry of SGE activity at the University of Pittsburgh. As usual, we participated in the annual Freshman Activities Fair and sold rock and mineral kits to students in introductory geology classes.

At our first meeting of the year, however we held an election for new officers, a task usually done during our last meeting in the spring. This year's officers are: Suzanne Traub-Metlay, President; Henry Prellwitz, Vice-President; and Bob Anderson, Secretary Treasurer.

Among the activities planned for this year, the first to be completed will be among the longest lasting. Decrying the unsightly bareness of the corridor linking the department office to the majority of the graduate student and faculty offices, members of Beta chapter mounted several geologic maps as wall displays. Lastly, a series of posters describing current research in the department was also updated.

Beta Chapter consists of Suzanne Traub-Metlay, Bob Anderson, Cindy Venn, Andy Redline, Dean Gerber, Henry Prellwitz, Sami Abdel-Bagi, Mark Hoadley, Dave Anderson, Chris Connors, Darius Greenidge, Leland Marshall, Pat Mannion Rowe, and Kevin Riley.

Sigma Gamma Epsilon

The following article appeared in *THE COMPASS*, the earth-science journal of Sigma Gamma Epsilon, Vol. 69, No. 3, Spring, 1992. It was written by Kenneth A. LaSota of the Department of Quantitative and Natural Sciences at Robert Morris College, Coraopolis, Pennsylvania and J. Richard Jones, Department of Geology, Acadia University, Wolfville, Nova Scotia, Canada. Our thanks to them for allowing us to reprint this article.

SEVENTY-FIVE YEARS OF EARTH-SCIENCE EDUCATORS AT THE UNIVERSITY OF PITTSBURGH²

For 75 years, members of the Beta Chapter of Sigma Gamma Epsilon at the University of Pittsburgh have had the pleasure of being introduced to the earth sciences by a distinguished faculty. As alumni of the University of Pittsburgh's Department of Geology and Planetary Sciences, and as former members and ardent supporters of the Beta Chapter. In reviewing this faculty who served the Beta Chapter for the past 75 years, it became apparent that academic diversity was one of its dominant characteristics. The paper here focuses on this outstanding faculty's diverse and extensive educational background.

Background data on the faculty were obtained from the University of Pittsburgh's university catalogs, spanning the years 1914 to 1989. Information noted were years of service to the Department of Geology and Planetary Sciences, highest degree earned by each faculty member, and the institution which awarded the degree (Table 1). The faculty members reviewed here served in roles including professor, instructor, lecturer, visiting research professor, and adjunct professor. Because the collection of university catalogs reviewed was only about 90% complete, some faculty members may have been overlooked. To correct some omissions, present faculty were contacted for additional information. Furthermore, the years of service indicated in Table 1

may not exactly correspond to actual years of service because of the time lag involved in the university updating and printing the various catalogs. However, Table 1 shows a faculty with considerable depth of service and academic training.

For past and present members of the Beta Chapter of Sigma Gamma Epsilon, the faculty listed will certainly contain a name or two that will rekindle a memory from your studies at the University of Pittsburgh. For some earth scientists not part of the University of Pittsburgh community, the list will no doubt contain the name of a colleague or two with whom you have collaborated.

Table 1 shows that the faculty that served the Beta Chapter for these 75 years were well trained. Of the 65 members included 82% (53/65) earned doctorates. Moreover, Table 1 shows this faculty received its academic training from eminent institutions of higher learning located around the world: from universities located on three continents, in sever foreign countries, and in 20 of the 50 states.

In summary, of the faculty that gave the Beta Chapter 75 years of fine education much could be written. The brief review here of the faculty's educational background is but one. We feel that if *The Compass* is to reflect on the 75 year history of the Beta Chapter, the faculty who made these 75 years possible must be remembered.

²(The following article has been reproduced from *The Compass*, Vol. 69, No. 3, Spring, 1992)

Sigma Gamma Epsilon

TABLE 1

Full-time faculty that served Beta Chapter of Sigma Gamma Epsilon since 1914, their years of service and institution from which their highest degree was earned.

Anderson, Thomas H.	1975-present	PhD	Texas, Austin
Baur, Werner	1964-66	Dr. Nat.	Gottingen University
Beratan, Kathi K.	1992-present	PhD	Univ.Southern California
Bikerman, Michael	1968-present	PhD	Arizona
Bowen, Robert	1965-66	PhD	Univ. London (England)
Brewer, Charles F.	1925-27	AB	Harvard
Buckwalter, Tracy V.	1950-66	PhD	Michigan
Busch, Daniel A.	1939-42	PhD	Ohio State
Cassidy, William A.	1968-present	PhD	Penn. State
Cate, Addison	1965-67	AB	Harvard
Cohen, Alvin J.	1964-87	PhD	Illinois
Crown, David A.	1994-present	PhD	Arizona
Dehn, Heinz	1965-79	PhD	Technische Hochschule
Deju, Raul	1971-75	PhD	New Mexico Inst. Mining
Deul, Maurice	1982-present	MS	Colorado School Mines
Donahue, Jack	1970-present	PhD	Columbia
Eckhardt, E.A.	1929-38	PhD	Pennsylvania
Erdman, J.G.	1965-66	PhD	Johns Hopkins
Evans, George C.	1971-75	MS	New Mexico Inst. Mining
Flint, Norman K.	1950-84	PhD	Ohio State
Frederickson, Armand F.	1962-67	ScD	Mass, Inst. Tech.
Fuller, Michael D.	1965-75	PhD	Cambridge
Hammer, Sigmund I.	1966-67	PhD	University Minnesota
Hapke, Bruce	1968-present	PhD	Cornell
Heald, Kenneth C.	1929-39	ScD	Pittsburgh
Hsieh, Chiao-Min	1983-present	PhD	Syracuse
Inous, Yuji	1966-74	DSc	Univ. Kyoto
Jeffery, George A.	1962-67	PhD	Univ. Birmingham
Jennings, Otto E.	1914-42	PhD	Pittsburgh
Kennedy, Stephen	1984-present	PhD	South Carolina
Khoury, Samir G.	1967-75	PhD	University Glasgow
Kobayashi, Kayuo	1962-66	PhD	Univ. Tokyo
Leighton, Henry	1914-42	AB	Cornell
Lidiak, Edward G.	1965-present	PhD	Rice
Lipson, Joseph	1962-65	PhD	Univ. Calif. Los Angeles
Lowrie, William	1968-71	PhD	Pittsburgh
Lund, Richard	1969-75	PhD	Columbia
McCammon, Helen M.	1965-69	PhD	Indiana
Nugent, Lawrence E. Jr.	1937-38	MS	West Virginia
Onuma, Kosuke	1966-67	DSc	Hokkaido Univ.
Ortmann, Arnold E.	1914-27	ScD	Pittsburgh
Pelto, Chester R.	1962-75	MS	Penn. State
Pilant, Walter	1964-present	PhD	Univ. Calif. Los Angeles
Pollack, Sidney S.	1968-79	PhD	Univ. Wisconsin
Rollins, Harold B.	1969-present	PhD	Columbia
Rutherford, Homer M.	1934-37	MS	Pittsburgh
Schmidt, Victor A.	1969-1993	PhD	Carnegie Int. Tech.
Sharkey, A.G.	1965-present	MS	Case Inst. Tech.
Sherril, Richard E.	1929-52	MS	Cornell
Somers, Ranson E.	1918-40	PhD	Cornell
Strick, Ellis	1968-present	PhD	Purdue
Stacey, Frank D.	1964-65	DSc	Cambridge
Tolmachoff, Innokenty P.	1925-35	PhD	Univ. St. Petersburg
Werner, Harry J.	1964-77	PhD	Syracuse
Wyckoff, Ralf D.	1930-37	BSEE	Michigan St.
Yagi, Kenzo	1965-66	DSC	Tohoku University

Sigma Gamma Epsilon - Fund Raiser

Syria Mosque Paperweights

This is your chance to obtain a unique souvenir of the recently demolished Syria Mosque. Complimentary paperweights prepared from interior stonework are available with a donation* to our newly established Department of Geology and Planetary Science Major Equipment Fund at the University of Pittsburgh. Each piece is cut and polished, and a metal plaque engraved with "Syria Mosque, 1916-1991" is centered on the top of the paperweight. The bottom of each paperweight has felt pads to prevent damage to desk tops.

<u>Rock Type & Appropriate Size</u>	<u>Available for a donation of:</u>	<u>Choice</u>
Limestone (contains fossils)		
2"x4"x1	\$ 15.00	_____
3"x5"x2"	20.00	_____
Serpentine (green with white veins)		
1.5"x3"x0.75"	15.00	_____
3"x3"x0.75"	20.00	_____
Pink Granite Slabs (polished top, rough edges)		
sizes vary, max. size 5"x7"	2.00/sq.in.	
Size desired _____		_____

LIMITED QUANTITIES AVAILABLE (ESPECIALLY OF SERPENTINE).

ORDER EARLY TO ASSURE SATISFACTION. Indicate a second & third choice in case the supply of your first choice has been depleted.

Checks for donations* (tax deductible) should be made out to the **University of Pittsburgh**, with the Department of Geology & Planetary Science Major Equipment Fund noted in the memo blank of the check. Remember that your company may also have matching funds available.

NOTE: Custom orders (bookends, larger blocks, etc.) may be ordered at a negotiated price. Contact Henry Prellwitz at (412) 624-9320 or Cindy Venn at (412) 624-0490.

To place your order, indicate your choice by number in the blanks above and fill out your name, address & phone on the opposite side of this form. If you order a granite slab, be sure to indicate the approximate size desired in the blank above. Enclose this form with your check.

Department News

Banquet News

The banquet was held on April 8, 1994 at Duranti's Restaurant in Oakland. Sigma Gamma Epsilon sponsored the event and the wonderful evening was arranged by Ann Fleming. Forty people attended and the number included alumni and friends of G&PS. A slide show presentation with Henry Prellwitz as Master of Ceremonies was fun. Two awards were given out - the Henry Leighton Memorial Scholarship Award (*see Awards and Honors*) and the Norman K. Flint Field Geology Fund (*see Awards and Honors*).

Christmas Party

Amid a challenging winter for Pittsburghers, a Christmas party for the brave was hosted by Kathi Beratan and her husband Dave at their home in Squirrel Hill. Those who attended brought wonderful food and desserts leaving the Beratans with quite a stockpile of leftovers to carry them through the soon-to-come winter storms.

Geology Picnic

The picnic was held on September 1993 on a cool, but sunny day. Those who bet on a rainy day lost money and their chance to play mud volleyball.

Geology Club 1993

PRESIDENT - Eric Jankovitch

VICE PRESIDENT/TREASURER - E.J. Prosser

BUSINESS MANAGER - Aimee Schultz

SECRETARY - Richard Eboli

Memorials to Victor A. Schmidt

EULOGY

by
Thomas Anderson

Vic had extraordinary qualities which combined to make him an outstanding academician and special colleague. Bill Harbert remembers Vic as an enthusiastic, youthful, fun colleague and friend. When I arrived at Pitt nineteen years ago as an inexperienced assistant professor with an idea nobody believed, Vic approached me. "I think that I may be able to help you test your ideas, why don't we get together on this". Subsequently during the next few years Vic proceeded to test the new ideas by utilizing the most modern theories in geology. In order to do this he broke new ground that required writing computer programs and generating special plots that were unusual then and still not commonly employed although they are extremely useful. All this for some rookie that he hardly knew.

Other new faculty in the department have received similar generous mentoring from Vic --- Kathi Beratan writes ---- "I considered Vic both a mentor and a friend. He made me feel welcome when I was a stranger here, and helped introduce me to the area. He truly cared about the department; he viewed young faculty as the department's future, and thus did everything he could to make me feel welcome and to help me succeed. Vic's door was always open to me. He patiently answered questions and gave good advice when asked. He recognized the value of good teaching, and had volunteered his already over-committed time to sit in on one of my classes and help me improve my teaching skills".

That was Vic. Extremely caring, but not in an ostentatious manner, and incredibly bright with unusual creativity. Vic was so bright that when he was training as a physicist at Carnegie Mellon he didn't take nearly the full complement of math and science courses because he already had mastered much of the material and tested out of the courses. He took some music, a little theater and did some acting. I gather that while engaged in these activities he mastered electronics and began to indulge in his passion for caving which he continued off and on throughout his career. Vic's interest in caving no doubt contributed to his geological education. In fact, to my knowledge, Vic never had a formal course in geology. No doubt he acquired his knowledge by sitting in on courses and by osmosis, which I have no doubt, would be no big trick for him. In any case, he knew enough to write an innovative, creative text, called Planet Earth of which he was justifiably proud. His book provided the basis of an Honors course which he conducted for several years. The course bore a typical Schmidt characteristic in that new teaching methods were tried such as setting up computers in a departmental study area so that students could do special projects, which Vic devised, at their convenience. Another new idea was to use computer E-mail to communicate with students. Vic felt this was an important experiment because he believed that the way we teach and perhaps who we teach are going to change.

Vic's deep concern for the welfare of students served as a model for all of the faculty. His lectures, as well as thoughts expressed in informal discussions, were always well organized. He was constantly trying to improve facilities to communicate with students and faculty to exchange information and enrich the learning experience. The brown bag, lunch time, seminar program that he initiated is just one example. Vic will be remembered not only for his great academic skills and knowledge but also for his caring interaction with individuals.

Memorials to Victor A. Schmidt

Vic thought a lot about education and that was good. He fretted about education in public schools - he was an activist and participated in outreach programs; he argued for technologically sound classrooms - places where students could hear and see well, classrooms, where they would be exposed to what was going on at the forefront of science via the magic of computers; he was concerned about the quality of teaching - his was consistently highly rated by students. His lectures were always interesting - he managed to involve his class with science via a straight-forward friendly approach. I thoroughly enjoyed listening to Vic lecture.

Lastly Vic thought about the economics of education - he clearly recognized the inefficiencies of classical teaching and struggled to create new means to educate and communicate with students by methods which would lessen the cost associated with classical small lecture classes.

One other teaching note - as environmental concerns became more and more important to society and our students, we realized the need to add new courses that would accommodate these changes - who picks up the challenge - Vic. His course on groundwater became a departmental mainstay although he never had training in this area.

Vic combined teaching with his love of outdoors through his class on the geology of national parks. The course was beautifully illustrated because Vic was also a very good photographer --- the class was constantly in demand.

Although Vic's research encompassed several topics, two lines of investigation stand out. From his beginnings at Pitt under the tutelage of Mike Fuller until late this summer when his most recent graduate student Gary Storrick completed his dissertation, Vic worked to understand the physics and chemistry of magnetism in the rocks.

Concurrently he maintained a passion for caves. He crawled in them, explored them, made maps of them and studied the paleomagnetic properties of cave deposits throughout his career. Perhaps an odd passion for a large, tall person but not for Vic.

Vic also collected and analyzed rocks for traditional paleomagnetic research. Among these are sandstone from the continental divide in Montana, cave sediments from Africa, and coal-bearing layers from Pennsylvania. Furthermore, Vic understood plate tectonics and employed that understanding in his work and to help others in the department.

Vic will be remembered not only for his great academic skills and knowledge but also for his caring interaction with individuals. Mike Bikerman, with whom Vic shared a lab, remembers that in spite of opportunities for conflict, none ever developed - no pettiness, no jealousy, just a first-rate working relationship. Walt Pilant remembers the drives to scientific meetings in Baltimore where Vic knew the best restaurants and showed them to Walt. I was surprised during a recent conversation with Vic about intellectual snobbery that he admitted to a semi-severe case of it himself at a younger age. There wasn't a trace of it left when I spoke with him. Vic also said that he loved the atmosphere in G&PS especially after visits to some pretty highly charged places. But Vic didn't appreciate just how much he contributed to that atmosphere. Vic was a big man with arms long enough to embrace family, friends, teaching, research, nature, music - the list goes on and on. What an exceptional person. Our department and our university will struggle to fill his shoes. It was a privilege to know him.

We all miss him.

Memorials to Victor A. Schmidt

OBITUARY (from the Pittsburgh Press)

Victor A. Schmidt, an expert on rock magnetism at Pitt, died of a heart attack on September 26, in his Squirrel Hill home. He was 56.

Schmidt was a professor of geology at Pitt, where he served on the faculty for 27 years. He was an internationally known authority on rock magnetism, particularly for his work on magnetic techniques for determining the age of cave sediment.

He authored instructional materials for the "Planet Earth" series that aired recently on WQED-TV, and he published more than 60 papers in technical journals. He earned a doctoral degree in physics from Carnegie Mellon University in 1966. Schmidt joined the rock magnetism group in the Department of Earth and Planetary Sciences (now the Department of Geology and Planetary Science) in 1966 as a NASA postdoctoral fellow.

In 1968, Schmidt was appointed an assistant professor of geophysics; in 1975, he was promoted to associate professor with tenure; and in 1986, he was promoted to full professor.

Schmidt enjoyed outdoor activities and actively supported conservation efforts.

A memorial service was held in the East Liberty Presbyterian Church on September 11 at 11 a.m.

LETTER OF APPRECIATION FROM THE UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE

On behalf of the National Park Service, I would like to express our appreciation for Dr. Victor Schmidt's valuable work in national parks throughout the United States. His research has made important contributions to our understanding of the geology and geophysics of Badlands, Carlsbad Caverns, Mammoth Cave, and Yellowstone National Parks. In addition, he directed or encouraged graduate student research projects in a number of parks. I understand that a generation of University of Pittsburgh students has been introduced to the geologic wonders of the parks by Dr. Schmidt's popular "Geology in the National Parks" course, and he also helped faculty from other universities to establish similar courses. As the University remembers Dr. Schmidt's accomplishments, in the wake of his untimely death, I hope that his contributions to the understanding and preservation of the national parks will be acknowledged.

*This letter is signed by Dennis B. Fenn, Acting Associate Director, Natural Resources,
Department of the Interior*

Special Department Funds

The Geology and Planetary Science department is continuing to strive to improve performance in teaching, research and public service. We believe that continued improvements in all areas are in the best interests of our alumni, students and friends, and to that end we invite your support. Some contributions have already been received for either specific departmental funds (see list below) or for unrestricted departmental use, and the needs are still large. We appreciate the continuing support of the alumni. Incidentally as you may know, many companies match employee gifts - some double or even triple them, so if in doubt check with your personnel office. Contributions may be sent directly to the Department, or, if you prefer, they may be sent to the University of Pittsburgh as part of the University's annual fund campaign. If you choose the latter method and want the contribution ear-marked for the Department, then you must specify that the funds are for the Department of Geology and Planetary Science. All contributions are tax-exempt and will be acknowledged.

If you wish to contribute, (1) please indicate on the form below to which fund you wish to contribute, (2) fill in name and address, (3) cut form along dashed line, and (4) return form and contribution to Mrs. Rochelle Chesterpal, Department of Geology and Planetary Science, 321 Engineering Hall, University of Pittsburgh, Pittsburgh, PA 15260-3332.

Norman K. Flint Memorial Field Geology Fund

In Appreciation and Recognition of devoted and inspiring teaching in the field and in the classroom, his students, friends, and Colleagues Have Established in His Honor the Norman K. Flint Memorial Field Geology Fund.

Frances Dilworth Lidiak Memorial Fund

Money generated from this account is used for departmental seminars to which outstanding scientists will be invited to present public lectures on topics in the geological and planetary sciences.

Alvin J. Cohen Memorial Fund

The family of Dr. Cohen has suggested that donations in memory of Dr. Cohen be made to the Department of Geology and Planetary Science for support of students conducting basic research in fields close to Alvin's interests.

Henry Leighton Memorial Fund

The scholarship is established in response to a contribution from Professor Leighton's daughter, Helen Leighton Cannon. Mrs. Cannon requests that a permanent graduate scholarship fund be established and that the scholarship be awarded on the basis of merit and need.

Cassidy - Major Equipment Fund

Bill and Bev Cassidy have provided the initial monies in an effort to augment and enhance departmental instrumentation.

Departmental Field Vehicle Fund

Victor A. Schmidt Memorial Classroom Fund

In memory of Vic Schmidt and in commemoration of his love of teaching, family, friends and colleagues have begun the memorial classroom fund.

Unrestricted Departmental Gifts Fund

Other (please specify) _____

NAME _____

ADDRESS _____

AMOUNT OF DONATION _____

List of Contributors

We are very grateful to the below mentioned contributors to these funds. Your generosity is greatly appreciated.

If there are any questions, or concerns, please contact either Candy Weller at (412) 624-8784 or Thomas Anderson at (412) 624-8783. We try very hard not to miss a single donor, but we aren't perfect. If we goof, please let us know. Thanks.

Norman K. Flint Memorial Field Geology Fund

Carothers, M.C.
Cooley, William W.
Duerring, Nancy T.
Flint, Margaret
Flint, Mary H.
Flint, Susan M.
Gebhardt, Gertrude
Gray, Richard E.
King, Sally Flint

Unrestricted Gifts

Becker, David Francis
Kilburg, James

Major Equipment Fund

Cassidy, Beverly
Sigma Gamma Epsilon

Frances D. Lidiak Memorial Fund

Lidiak, Edward G.
Kaktins, T.
Cain, Bruce

Alvin J. Cohen Memorial Research Fund

Martin, Carol H.
Nelson, Robert M.
Wagner, Jeffrey K.

Henry Leighton Memorial Scholarship Fund

Cannon, Helen L.

Vehicle Fund

Groff, Donald
Neupert, Robert C.

Alumni Response Form

Please complete this form so that in the next Newsletter we can include your news in the "Alumni News" section. Thanks.

NAME _____ DEGREE _____ YEAR _____

ADDRESS _____

SPOUSE'S NAME _____

NAMES AND AGES OF CHILDREN _____

COMPANY WITH WHICH YOU ARE AFFILIATED: _____

YOUR POSITION, TITLE, ETC. _____

YOUR DUTIES _____

OTHER ITEMS OF POTENTIAL INTEREST TO CLASSMATES: _____

INFORMATION ON OTHER DEPARTMENTAL GRADS? _____

Please return to:
Mrs. Rochelle Chesterpal
321 Engineering Hall
University of Pittsburgh
Pittsburgh, Pennsylvania 15260-3332