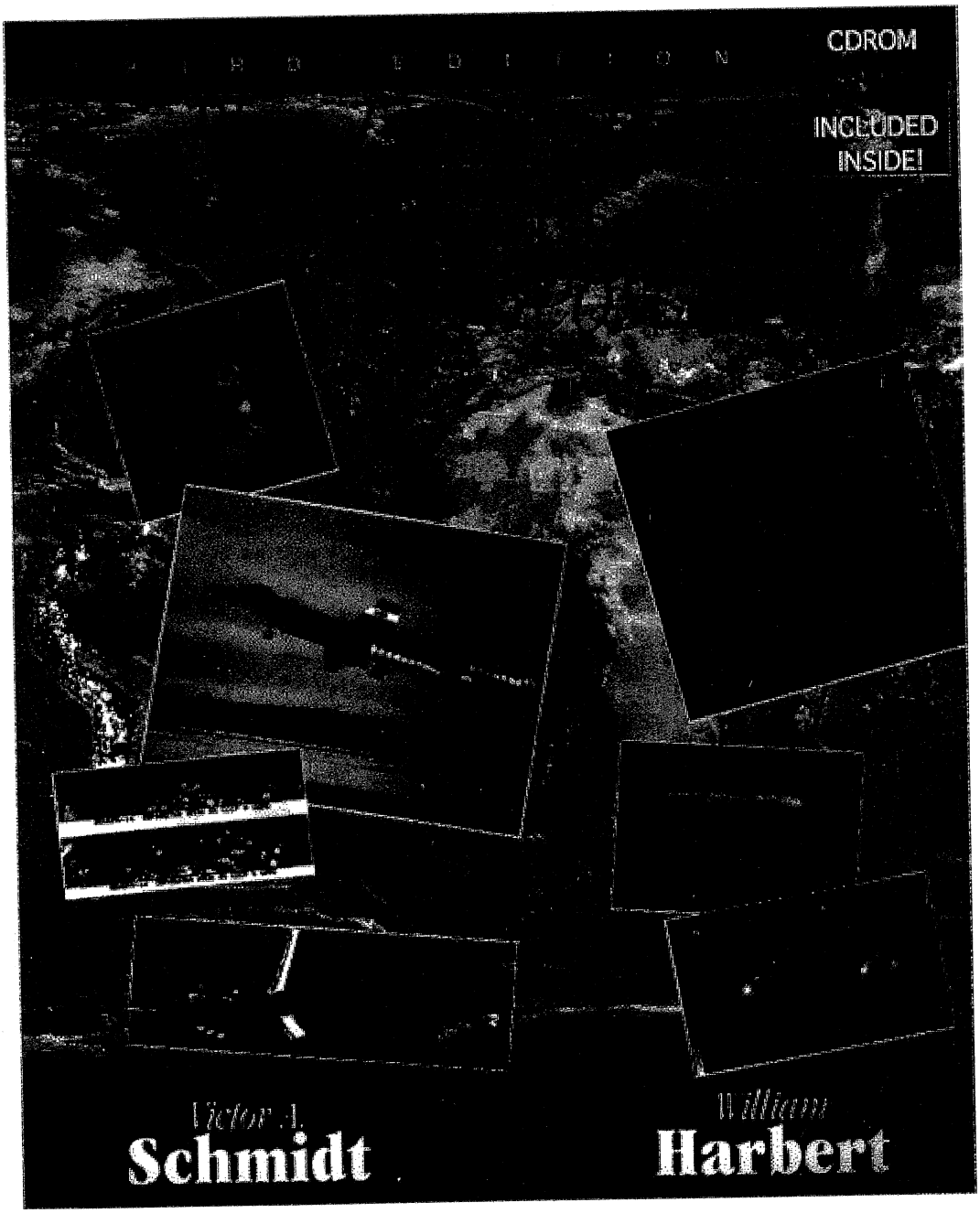
Alumni Newsletter
1997-1998 & 1998-1999

Department of Geology and Planetary Science



Alumni Newsletter

1997-1998 & 1998-1999

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Thanks to Todd, Dolly, Candy and Sarah (Super Workstudy)
for putting this newsletter together

On the cover: The 3rd edition of *Planet Earth and the New Geosciences* (with interactive CD-ROM), Kendall-Hunt Publishers, 1999, Victor A. Schmidt and William Harbert

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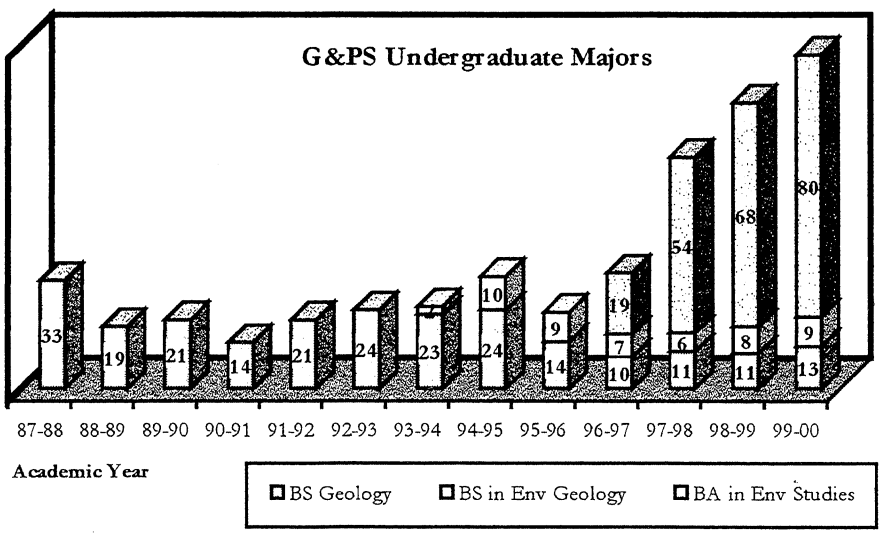
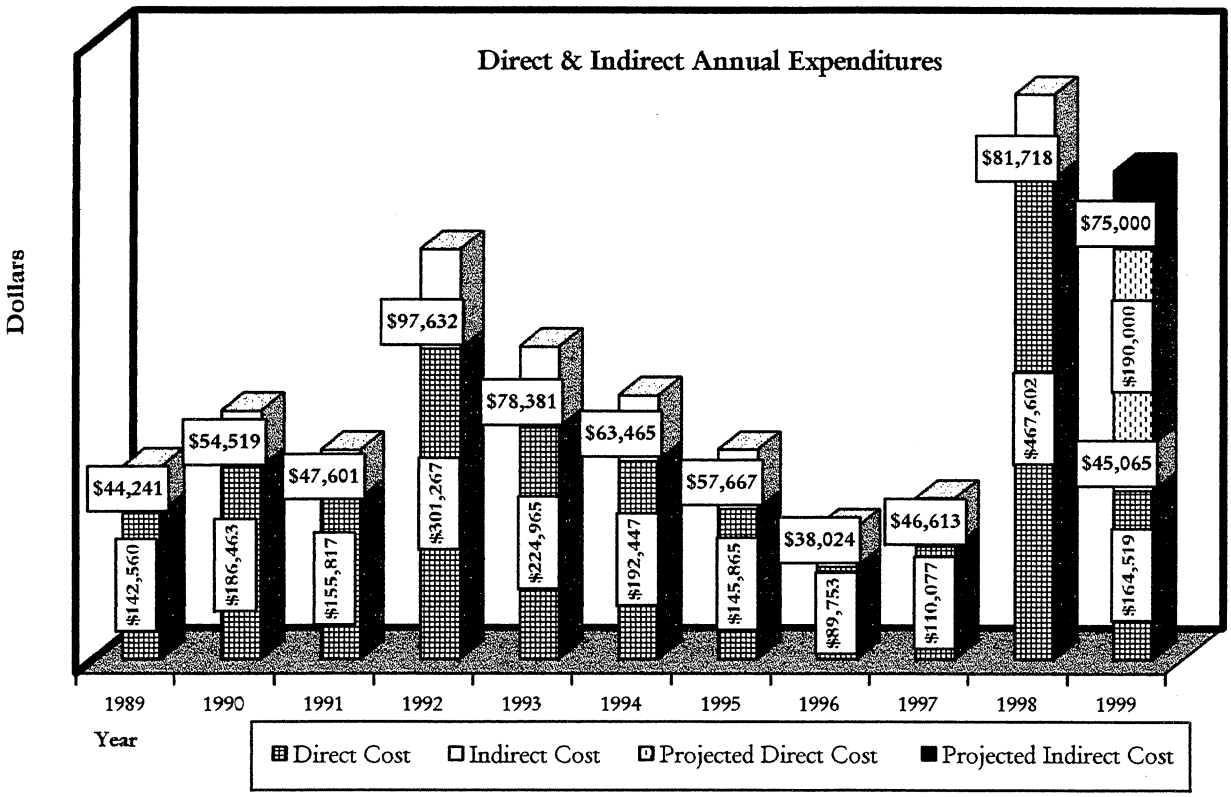
CHAIR'S LETTER

ELEVENTH AND TWELFTH YEARS

Two more years have passed! The last time that the Newsletter was late I claimed to have been soooo busy. This time, although we have been very busy, there is no good excuse. Maybe it is time to get some fresh blood in the job. Speaking of which, next year, my thirteenth as chair, will be my last. I hope the change is beneficial, *e.g.* at least the Newsletter is generated on a regular basis. The last two years have been very good years for the Department. Programs in isotopic geochemistry and environmental studies, newly formed in '96-97, have been very successful as they evolve into fundamental components of the department. Drs. Capo and Stewart have garnered impressive support for diverse research activities in which both graduate and undergraduate students are extensively involved. The new major in Environmental Studies continues to attract highly qualified students with broad interests. More than 80 students are currently enrolled and more and more of these students are participating in expanding internship and undergraduate research programs. With the development of a modified field course under the guidance of Dr. Steve Tonsor of the Department of Biological Sciences, students in Environmental Studies have the opportunity to participate in the full range of activities envisioned for this program. Drs. Donahue and Rollins have done an exceptional job of advising for departmental majors, the number of whom is commonly 110 or so students. We have recognized the need to lift the load from their shoulders. For this reason have proposed that a program coordinator undertake many of the tasks such as advising, development of new interdisciplinary courses, management of the internship and undergraduate research programs, program assessment and some teaching (*e.g.* professional communications) that are an integral part of this ambitious new major. We were delighted to learn that the co-ordinator had been approved by the Dean and doubly delighted that the Heinz Foundation has provided an endowment of two million dollars for the Environmental Studies program! With the strong underpinnings provided by this generous grant and the continuing advice and support of the ES Advisory Board we are optimistic about the future of this innovative major.

The positive effects of the new educational and research programs are revealed by increases in number of departmental majors, credit hours taught, active research awards, and the total amount of expenditures of research dollars. These data are provided in the illustrations below.





Another significant change since the last Newsletter is the retirement of Professor Bill Cassidy. Bill, who is known as the father of the U. S. Antarctic Meteorite Program, was feted at a symposium in his honor on April 30 and May 1, 1999. The title of the meeting was "The Impact of Antarctic Meteorites on Planetary Science." Participants who had accompanied Bill on Antarctic expeditions presented eleven papers which provided an overview of the program activities. It was a well-deserved tribute that was enjoyed by all of us who had the opportunity to attend.

The quality of teaching by G&PS faculty was acknowledged when Professor Harold Rollins (Bud to everyone who knows him) won the inaugural Tina and David Bellet College of Arts and Science Teaching Excellence Award. Bud, who has done an exceptional job of teaching, mentoring and advising students for decades, is unquestionably deserving of this award and we are delighted by his success.

Among the nascent initiatives reported in the last Newsletter, perhaps the least developed at that time was the lab and educational program for geographic information systems. Under the direction of Drs. Beratan and Harbert the lab has been completed and the Undergraduate Certificate Program in Geographic Information Systems has been designed, submitted and approved. Students learn GIS fundamentals and gain in-depth technical skills from basic (World Physical Geography and Introduction to GIS) and advanced courses such as Advanced GIS and Remote Sensing of the Earth offered in G&PS.

Faculty

Thomas H. Anderson [taco@pop.pitt.edu]

In the Fall of 1997 I began to teach a new course, that is, new for me - Geology 0055. This had been the basic introductory lab course (part of Geology 0050) for departmental science majors taking Physical Geology. Upon implementation of the new Environmental Studies major it was decided that the lab would be required for all students pursuing degrees in G&PS and that the course would be expanded to include consideration of geologic hazards and their associated risks. Two sections have been offered each semester since the decision was made. I enjoy the class although it became abundantly clear to me and to the students that the quantity of material to be covered and to be graded presented unanticipated challenges. I think that as a result of modest modifications the course has evolved to the point that it is workable for all concerned. Recently Ed Lidiak and I have begun to share the course - each teaching familiar topics. This change makes a big difference especially with respect to end of semester grading when there is a heavy load.

Of course Structural Geology has been a constant. Although I fret each year about crucial(?) things that I do not include, after 25 years I am more confident than before that students will survive in spite of something I did not cover.

Increased teaching duties associated with the Geology 0055 labs during Fall, 1997 slowed research activities. I was able to spend a few days with John Dembosky in Organ Pipe National Monument where he began fieldwork in conjunction with Ph.D. research. From Arizona we traveled to Salt Lake City to the Annual Meeting of the Geological Society of America. The Winter and Spring were comparably paced - teaching labs with a break to visit Jose Luis Rodriguez in north-central Sonora, Mexico. He is mapping a large, mountainous region where rocks similar to those mapped by Mary Beth McKee may crop out. If the relationships are as we suspect, Jose Luis' work will signal the significance of gravity sliding followed by inversion as important regional manifestations of Cretaceous orogeny in this part of Mexico. By the way, after a long struggle, Mary Beth's dissertation results were published as a Geological Society of America Bulletin article entitled "Mass-gravity deposits and structures in the Lower Cretaceous of Sonora, Mexico." She has received some comments indicating that non-believers still exist but they will come around.

In May, I attended the Rocky Mountain Section Geological Society of America meeting and presented a paper co-authored with Jon Nourse entitled "Releasing Bends of the Sinistral Late Jurassic Mojave-Sonora Fault System - Principal Structures with the Southwestern Borderland of North America." Several of the principal geologists with interest in Arizona tectonics were in the audience and therefore I believe that the trip was worthy of the time and effort.

I spent a week writing with Jim and Mary Beth McKee in Wisconsin in July as has been customary for several years. This was the lull before a rush of activities occupied the following months. In August, there was a reception for Garrett and his bride of a year Qin Hong. They were married in November 1997 when she arrived from Wuhan, China. They met during the year that Garrett taught in Wuhan and after arrangements were completed Qin Hong flew to New York. Garrett was in the midst of his first semester at Cornell, where he is a graduate student in the plant genetics program, so they opted for a civil ceremony. The reception was held outside on a beautiful day complete with tent and trimmings. Qin Hong was striking in a spectacular red (for luck) and gold silk dress.

Near the beginning of the Fall Semester I attended the first national meeting of the geologic societies of Mexico which was held in Mexico City. My presentation emphasized the development of pull-apart basins in northern Mexico. A few days after my return Sara was married to Steve Weaver whom she met while working in Washington, D.C. Sara and Tanna did a great job of planning and everyone had a good time, especially the Father of the Bride! The term continued and I taught two sections of Geology lab and Structural Geology without interruption aside from attending the GSA meeting in Toronto, Ontario where I co-authored three presentations. While there I also took an informative short course on rock microstructures. Two of the papers at Toronto marked the beginning of my involvement with Puerto Rican geology. My tutors are Ed Lidiak and Wayne Jolly (Brock University) who are highly experienced and very

I haven't entirely forsaken rocks! I am continuing to use remote sensing to look at Quaternary geomorphic surface development in the eastern Mojave Desert in relation to neotectonics, and on potassium metasomatism related to Miocene detachment faulting. Results from the metasomatism study were recently published in Geology, and the Quaternary research appeared in the International Journal of Remote Sensing.

I finally have a student doing a sedimentology project in western Pennsylvania. Rob Templeton is looking at the depositional setting of the Mississippian Loyalhanna Limestone and the gradational transition upward into redbeds of the Mauch Chunk Formation. The Loyalhanna is a strange carbonate and quartz sandstone, familiar to many as the Belgium blocks from which Pittsburgh's cobblestone streets were constructed.

All in all, it's been an exciting and productive year.

Michael Bikerman [bikerman@imap.pitt.edu]

This past year was interesting on several fronts. I taught Physical Geology both Fall and Spring terms with two class field trips to West Virginia. One so foggy that it was impossible to see across either the Canaan or Germany Valleys, the other under perfectly clear skies! The teaching load continued as heavy as before, though in the classes without recitations our TA support vanished. This made for an awkward time when the projector blew out in the projection room for Clapp L-9! Enrollment in the 0800-series classes continues at a high level, and steady in the major level classes. Unfortunately, the Ore deposits class is done for – not enough takers again.

On the research side, the paper on the Masontown dike has been published, and my efforts have shifted to K-Ar dating of cryptomelanes [K-bearing manganese oxides]. These are indicators of surfaces once exposed to sub-tropical climates, and dating them is critical to understanding the history of these surfaces. The preliminary work is in press and will be presented as a poster by Akilah Prout, the undergraduate student who worked with me on the project. Field trips included the Pennsylvania Conference, and the Pittsburgh Geological Society annual events.

Travels in 1998 included a week in Nantucket studying the erosion of that glacial remnant, and enjoying the company of the first family, and later, shipmates from the Spring '91 Semester at Sea voyage. Later my wife and I did a visit to Seattle and spent two great days hiking and photographing Mt. Rainier. This was followed by my first cruise, on the Holland-America Maasdam, to southeastern Alaska. Quite different from SAS, but in its way also enjoyable. The geology of Alaska as seen from the ship [and a helicopter foray to the Juneau Icefield] was spectacular. The only fly-in-the-ointment was the loss of my slides of the Icefield by Kodak/US Postal Service! That loss was felt as I presented the December spouse night lecture to the Pittsburgh Geological Society on the glaciers of Washington and SE Alaska.

My chief responsibility as Academic Dean for the Fall 2000 voyage of Semester at Sea is the selection of faculty. That turns out to be a time consuming and most stimulating endeavor, whose success will be known in December 2000!

We have enjoyed the mild winter, decent summer, and sunny and pleasant fall - can this be global warming, residual El Niño or just good fortune?

Rosemary C. Capo [rcapo@pitt.edu]

My students and I are using a combination of field, mass balance and isotope tracer studies to model the effects of climate change on terrestrial weathering and soil forming processes over the last 2 million years. Our NSF-supported fieldwork last year included sampling soil profiles from the Desert Soil-Geomorphology Project near Las Cruces, New Mexico, and from the Kohala Peninsula, Hawaii. Ph.D. student Chuck Whipkey presented his work at the GSA meeting in Toronto, and I was a speaker and co-convenor for the Geochemical Society's GSA symposium "Geochemical Indicators of Atmospheric Inputs into Terrestrial and Marine Environments." I also gave talks at UC Davis, UC Irvine, Penn State, and St. Vincent's College.

completed his Ph.D. research which involved comparative analyses of Hawaiian and Martian lava flows, and accepted a Postdoctoral position with Proxemy Research Inc., a consulting company with ties to NASA's Goddard Space Flight Center. Ph.D. student Jeff Byrnes (who has been awarded consecutive Andrew Mellon Predoctoral Fellowships) is conducting a field and remote sensing project aimed at documenting the complex textures and networks which characterize pahoehoe lava flow fields in Hawaii. Craig Rowland, who I co-advised with Rosemary Capo, finished his M.S. work on indoor air quality in December 1998.

During the past two years, I have attended the 29th and 30th annual Lunar and Planetary Science Conferences at Johnson Space Center and was a convener for the Mars and Venus Geological Mappers' Meetings held at the U.S.G.S. Astrogeology Branch in Flagstaff. I also gave invited presentations at Case Western Reserve University (hosted by alum Ralph Harvey), the Landon School in Bethesda, MD, Penn State, and Carnegie Mellon. I have also been busy with participation in NASA's Planetary Cartography and Geologic Mapping Working Group and the Mars Site Selection Steering Committee, which will be involved with landing site selection for future Mars missions. In November 1997, alum Bob Anderson of the Jet Propulsion Laboratory returned to campus for a visit and spoke to a large and enthusiastic crowd about his efforts on the exciting Mars Pathfinder Mission. Currently, the Planetary Geosciences Group is initiating several educational outreach activities in association with Bob and JPL and through new NASA outreach initiatives.

Jack Donahue [jdonahue@salsgiver.com]

I'm finding the 1999 academic year to be quite enjoyable. I'm teaching sedimentology and stratigraphy for the first time in some fifteen years and, although I'm spending a lot of time bringing my lecture material up to date, I enjoy this thoroughly. The same is true for carbonate petrology, a graduate course I haven't taught in quite a few years. In terms of graduate students, Brian Kirchner completed his master's degree this spring. He completed a study of the occurrence and mechanisms of emplacement of sandstone clasts in the Carmichaels Formation. Amanda Reynolds, a master's student in geoarchaeology, will be going to Israel with me this summer where she will be working on a new excavation with upper, middle and, hopefully, early Bronze age material. She will be working on climatic fluctuations and comparing them to those that I have found in the Dead Sea. Garrett Sleeman, a master's candidate in geoarchaeology, may be working in the Red River delta in North Vietnam. If funding works out, he will be reconstructing the delta that occurred some 4,000 years ago and relating this to sites of the Dong Song, an early Chinese culture that existed there.

On the home front, Jessie and I are happily looking forward to becoming grandparents in about the first week in October. Jack and Lisa who live in Cleveland, gave us the happy news in early February. Mike, our older son, continues to thoroughly enjoy working with a small computer company in the DC area.

Mark A. Evans [mae6@pitt.edu]

I am truly enjoying my position as Research Assistant Professor as it has allowed me to pursue my research goals and do occasional teaching. The department has been very supportive of my activities, and Mike Bikerman has been kind enough to allow me to use part of his mass spec lab for my fluid inclusion analysis. I am having a run of success (or possibly just good luck) in that over the past year I received funding from both the National Science Foundation and the Petroleum Research Fund. The NSF grant is for examining the relationship of paleofluid flow to the late Paleozoic remagnetization event in the central Appalachians. This is a collaborative effort with Doug Elmore at the University of Oklahoma that evolved out of a Geofluids meeting in Belfast, Northern Ireland in 1997.

The PRF grant is to examine how far warm migrating fluids penetrated into the Appalachian Plateau during the Alleghanian orogeny. This is a spinoff of work I did for my post-doc at DOE and my previous NSF grant to examine paleofluid flow in the Valley and Ridge Province. This ought to be a lot of fun, as I will

Mesozoic samples from the northernmost coast of the Sea of Okhotsk. Some of these were essentially pure chert samples and had very, very low magnetic remanence. Rosemary Capo and Brian Stewart helped Max and I partially acid dissolve our sample holder to lower the remanence of this portion of the superconducting rock magnetometer.

During my field program in Kamchatka I broke my left leg. After six days with only emergency first aid and an 800-mile evacuation by "chain truck" and 10-wheeled "Kamaz" transport truck I received excellent medical care in Petropavlovsk. At Petropavlovsk I had two X-rays taken, spent about 20 minutes with the chief emergency physician, had a plaster cast put on and was given crutches to walk with. Total cost – 60 cents. Now everything is ok, although the nickname "hop-along" has become tiresome!

The third edition of "Planet Earth and the New Geosciences" (originally written by the late Victor A. Schmidt and now revised with me as a co-author) has been published and includes a CDROM and stereo red/blue glasses. It took me about a year to do the revision and build the CDROM in HTML. It was much fun to complete this project.

Hope all is well. Send e-mail! If in the virtual neighborhood please check out our web page at http://www.geology.pitt.edu.

Edward G. Lidiak [egl@vms.cis.pitt.edu]

My research activities continue to be centered on the Caribbean region. During the past year, a new volume on the "Tectonics and Geochemistry of the Northeastern Caribbean" was published as Geological Society of America Special Paper 322. I was the senior editor of the volume and contribution author to four of the research papers included in the publication. I continue to be involved in various research projects in the greater Caribbean region.

I am also an active participant in the departmental teaching mission. During the year 1998/1999 (Fall and Spring term), I taught (or am presently teaching) a total of 5.0 courses. These courses include Introduction to Geology, Mineralogy, Igneous and Metamorphic Petrology, Geology Laboratory, and Precambrian Geology. In addition, presumably because of my stellar teaching performance over the years, I have also been assigned to teach an additional Introduction to Geology course in the Summer Session. This, no doubt is a wonderful opportunity to sharpen further my teaching skills and experiences.

Who would not jump at the chance of teaching in all three terms?? Who would not, I ask you?

Bye now! My best wishes to all of you.

Harold B. Rollins [snail@pitt.edu]

Over the last year the Environmental Studies major "took off" and now includes over 80 very interesting, diverse, and enjoyable students. We are very pleased with the success of this effort. Advising and teaching in this program has been time intensive over the last year, however, and has made it difficult to pursue other activities. Several of my graduate students successfully defended their dissertations and theses over the last year. In the spring, Roman Kyshakevych finished his dissertation on GIS modeling of riverine systems and watersheds (emphasing his favorite animals - freshwater clams). Nick DeLillo finished his dissertation on the saltmarsh pryritization of the hard clam, Mercenaria mecenaria (he is now teaching at Texas A & M, Corpus Christi). Henry Prellwitz defended his dissertation on the chemistry and petrography of the Nine Mile Run slag pile. And, Albert Kollar finished his thesis dealing with Mississippian brachiopods of the Waverly Group.

I managed to be involved, over the last year, in publication of several papers on El Niño (including a couple that came out in the journal Science). I continue to work on research in that area, and presented a paper at the Foundation for Exploration and Research on Cultural Origins (FERCO) conference held in

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IN PRESS, IN REVIEW AND IN PREPARATION:

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Donahue, J., Peer B., and Schaub, R.T., 1999, The southeastern Dead Sea plain: Changing shorelines and their impact on settlement patterns of the major historical periods of the region [abs.]: History and Archaeology of Jordan, VI, Torino, Italy, *in press.*

Greeley, R., Fagents, S.A., Bridges, N.T., **Crown,** D.A., Crumpler, L.S., Mouginis-Mark, P.J., and Zimbelman, J.R., 1999, Volcanism on the Red Planet: Mars, *in* J.R. Zimbelman and T.K.P. Gregg, eds., Environmental effects on volcanic eruptions: From deep oceans to deep space: Plenum Publishers, *in press.*

Harbert, W., Heiphetz, A., Graham, R., Krlov, K., Sokolov, S., Grigoriev, and Alexutin, M., 1999, Paleomagnetism of the Mametchinskiy Peninsula, Kuyul region, northeastern Russia: Implications for development and evolution of the northwest Pacific basin: submitted Zonenshain volume, Moscow, *in review.*

Harbert, W., Kepezhinskas, P., Krylo, K., and Layer, P., 1999, Paleomagnetism and tectonics of the Kamchatka region, northeastern Russia: Implications for development and evolution of the northwest Pacific basin: Polarforschung, *in review.*

Krylov, K., Heiphetz, A., **Harbert,** W., Grigoriev, V., and Layer, P., 1999, Tectonics, geochronology, paleomagnetism and geochemistry of the Kuyul region, northeastern Russia: Implications for development and evolution of the northwest Pacific basin: submitted Zonenshain volume, Moscow, *in review.*

Marzolf, J., and **Anderson,** T.H., 1999, Mesozoic stratigraphic constraints of displacement of the Caborca terrane: submitted to Geology, *in review.*

McKee, J.W., Jones, N.W., and **Anderson,** T.H., 1999, Late Paleozoic and Early Mesozoic history of the Las Delicias terrane, Coahuila, Mexico: Geological Society of America Special Paper 340, 28 p., *in press.*

Mest, S.C., and **Crown,** D.A., 1999, Geologic history of the Reull Vallis region of Mars, *in preparation.*

Mest, S.C., and **Crown,** D.A., 1999, Geologic Map of MTM Quadrangles -40252 and -40257, Reull Vallis Region of Mars, U.S. Geological Survey, *in review.*

Peitersen, M.N., and **Crown,** D.A., 1999, Correlations between topography and intraflow width behavior in Martian and terrestrial lava flows: Journal of Geophysical Research, *in review.*

Peitersen, M.N., and **Crown,** D.A., 1999, Effects of flow transitions on Martian and terrestrial lava flow morphologies, *in preparation.*

Plaut, J.J., Anderson, S.W., **Crown,** D.A., Stofan, E.R., and van Zyl, J.J., 1999, The unique radar properties of silicic lava domes: to be submitted to Journal of Geophysical Research - Planets, *in preparation.*

Rollins, H.B., **Beratan,** K.K., and Pottinger, J., 1999, Role of storm events in Beach Ridge formation: Implications for the geomorphic history of Georgia Sea islands: to be submitted to the Journal of Coastal Research, *in preparation.*

Stofan, E.R., and **Crown,** D.A., 1999, Geologic map of the Themis Regio quadrangle of Venus: U.S. Geological Survey, *in preparation.*

Stofan, E.R., **Crown,** D.A., Anderson, S.W., and Plaut, J.J., 1999, Surface characteristics of steep-sided domes on Venus: Implications for emplacement and composition, in *preparation.*

Whipkey, C.E., **Capo,** R.C., Chadwick, O.A., and **Stewart,** B.W., 1999, The contribution of sea spray aerosols to the soil cation budget in a Hawaiian coastal environment: Chemcal Geology, *in review.*

David A. Crown

- Models for the emplacement of lava flows: Styles of effusive volcanism on Mars, *NASA*
- Geologic mapping of Reull Vallis, Mars, *NASA*
- Education/Public outreach supplement to geologic mapping of Reull Vallis, Mars, *NASA*
- The impact of Antarctic meteorites on planetary science, *National Science Foundation Conference Proposal*

Mark A. Evans

- Characterization of fluid evolution and migration during the Late Paleozoic Alleghanian orogeny: Central Appalachian plateau province, *American Chemical Society, Petroleum Research Fund*
- Collaborative research: Remagnetization and organic fluids: Testing the hypothesis in the central Appalachians, *National Science Foundation*

Bruce W. Hapke

- Remote sensing of planetary surfaces: Modeling and applications, *NASA*
- Remote sensing of planetary surfaces: Cassidy Symposium, *NASA*

William Harbert

- Collaborative research: Tectonics and paleomagnetism of Kamchatka peninsula composite terranes, northeastern Russia, *National Science Foundation*

Chiao-min (Jimmy) Hsieh

- Mapping China's past: A cartographic reconstruction of Chinese history, *Rockefeller Foundation*

Brian W. Stewart

- Quaternary paleohydrology of the western Great Basin province, USA, The radiogenic isotope record of lacustrine sediments of the Owens River system, *National Science Foundation*
- Development of variable environment laser ablation system for Mars *in situ* geochronology instrument (co-I R. Capo), *NASA, Jet Propulsion Laboratory*
- Miniature *in situ* geochronology instrument for planetary surface deployment: Breadboard development (co-I R. Capo), *NASA*
- Penn State Astrobiology Research Center (co-I R. Capo), *NASA, Astrobiology Institute*
- Acquisition of Mass Spectrometer, *University of Pittsburgh*
- *In situ* miniature age-dating laboratory for planetary surface deployment (co-I R. Capo), *NASA, Jet Propulsion Laboratory*

EL NIÑO ON THE HALF SHELL - BUD ROLLINS

[Source: *University of Pittsburgh, Researchreview, Winter 1998, page 8.]*

Studying a global climate phenomenon like the Pacific warming El Niño effect is the stuff of serious non-linear science, requiring massive computer models, vast arrays of sensors both on the sea and in space, and a willingness to see the big-picture synergism of oceans and atmosphere and their effects on all of Earth's organisms.

Or you could study clam shells.

"It turns out that clams make wonderful remote sensing devices for understanding not only the present condition in the world's oceans, but also for understanding the past," said Harold Rollins, professor of geology and planetary science at the University of Pittsburgh.

Clam shells, not giant computer models and satellite images, have given scientists a peek at the very origin of El Niño.

In fact, Rollins, along with anthropologists James Richardson of Pitt and Daniel Sandweiss of the University of Maine, believe they've been able to date the origin of El Niño by studying the coastal regions of Peru that come in direct contact with the warm Pacific waters during El Niño. But it's the so-called Mega-Niño, like the extraordinarily large effect we have experienced this winter that Rollins wants to know more about.

"Mollusks have been around a long time, remaining basically unchanged for hundreds of millions of years," said Rollins. "Some species of clam live for 200 years, and most live about 30 years. A clam grows by adding a little bit of material to its shell every day. That makes clams virtual tape recorders of their environments.

WASHINGTON HAS ITS OWN "ROCK" STAR AREA MAN HAS MADE NAME FOR HIMSELF IN FIELD OF GEOLOGY.

[Source: *THE OBSERVER-REPORTER, June 14, 1999, page 1, by Paul Snatchko*]

"...Almost every winter for the last 30 years, Anderson has set up camp amid the mountains and desert of that (Sonoran) dry region in the hopes of better understanding the history of the earth and the movements underneath its surface. ... Anderson acknowledged (geology) is not the most typical major. "You don't usually go to college saying 'Hot damn, Dad – it's rocks for me'" he joked. But it was the beginning of a life devoted to the study of rocks and minerals; one which has brought him a fair share of both acclaim and controversy.

IN SEARCH... OF LITTLE GREEN MEN

[Source: *University of Pittsburgh Researchreview, Winter 1999, page 2.*]

By now, everyone knows that when and if we earthlings discover life on other planets, it's more likely to be microbes and bacteria than the little green men of 1950s science fiction.

But with billions and billions of stars and planets, how are we to know where to look?

University of Pittsburgh geology and planetary science professors Rosemary Capo and Brian Stewart are part of the National Aeronautics and Space Administration's newly created Astrobiology Institute, created to answer the question by examining how life started here on earth.

The Astrobiology Institute, part of NASA's Origins Program, is a "virtual center" created by NASA with 11 universities and research institutions including Harvard University, UCLA, and the Johnson Space Center.

"The 'office hallways' of this virtual institute will be the fiber optic cables of the Next Generation Internet, and the groundbreaking research that this group generates will help guide our space exploration priorities well into the 21st century," said NASA Administrator Daniel S. Goldin.

Capo and Stewart are involved in NASA-funded projects through member institution Penn State.

FINDING FAULT

[Source: *University of Pittsburgh Researchreview, Winter 1999, page 10.*]

"Geology Professor Thomas Anderson is very good at finding faults. Which, as chairman of the University of Pittsburgh's Department of Geology and Planetary Science, you might expect. But that doesn't always endear him with other members of his field.

When Anderson and graduate student Mary Beth McKee submitted "Mass-gravity deposits and intrusions in the Lower, Cretaceous of Sonora, Mexico," in April 1997, editors at the GSA (Geological Society of America) Bulletin refused to publish it, despite two positive peer reviews.

The editors warned Anderson: "Your reputation will not be able to recover if you publish this." Nonetheless, he pressed them. He stood behind the research and besides, he reasoned, the editors themselves had selected the peer reviewers. His persistence paid off, and the report appeared in the December 1998 edition of GSA Bulletin.

GRADUATE PROGRAM

CURRENT GRADUATE STUDENT ENROLLMENT

William L. Beatty
Jeffrey M. Byrnes
John A. Dembosky, Jr.
Dominic C. DiMucci*
Katharine K. Hakala*
Amy Snyder Hale
Melanie Hellman
Mary Lynn Hronakes-Yurko
John O. Izzo*
Candace L. Kairies
Ann G. Kim*
James Kradyna*
Joseph Minervini
William M. McCaughtry
Scott C. Mest
Brian Peer
Jennifer L. Piatek
Timothy Pierce
Victoria Pretti
Angela M. Pompa*
Amanda C. Reynolds
Paul A. Robb
Steven J. Schatzel
Garrett E. Sleeman
Sherry L. Stafford
Robert Templeton*
Charles E. Whipkey
Sarah B. Zimmerman

*part-time students

DEGREES AWARDED

DOCTOR OF PHILOSOPHY

Nicholas J. DeLillo

Iron sulfide formation and the in-vivo pyritization of Merceneria mercenaria (Linnaeus) in the salt marshes of St. Catherines Island, Georgia

Date: August 1998
Advisor: Harold B. Rollins
Committee Members: Jean Blachere, Rosemary C. Capo, Brian W. Stewart, Jack Donahue
Employment: Assistant Professor, University of Texas A&M, Corpus Christi

Roman G. Kyshakevych

The general integrative watershed model (GIW): A landscape ecology approach to large river environmental management

Date: August 1998
Advisor: Harold B. Rollins
Committee Members: Steven Tonsor, Andrew G. Sharkey, Jr., Jack Donahue, G. Lance Lugar
Employment: Founder and Co-President, Allegheny GeoQuest

Henry S. Prellwitz

A mineralogical and geochemical study of the Nine Mile Run Slag Area, Squirrel Hill, Pittsburgh, Pennsylvania

Date: December 1998
Advisor: Harold B. Rollins
Committee Members: Timothy Collins, Jean Blachere, Edward G. Lidiak, Brian W. Stewart, Michael Bikerman
Employment: Founder and Co-President, Allegheny GeoQuest

GRADUATE STUDENT PUBLICATIONS

Byrnes, J.M., and Crown, D.A., 1998, Characteristics and distribution of pahoehoe units in the Mauna Ulu compound flow field [abs.]: Lunar and Planetary Science XXIX, Abstract 1455, Lunar and Planetary Institute, Houston (CD-ROM).

Byrnes, J.M., and Crown, D.A., 1999, Relationships between pahoehoe surface texture, topography, and lava tubes at Mauna Ulu, Kilauea volcano, Hawaii [abs.]: Lunar and Planetary Science XXX, Abstract 1298, Lunar and Planetary Institute, Houston (CD-ROM).

Crown, D.A., **Byrnes**, J.M., and Baloga, S.M., 1998, Scale-dependent characteristics of Mauna Ulu pahoehoe flows [abs.]: Lunar and Planetary Science XXIX, Abstract 1376, Lunar and Planetary Institute, Houston (CD-ROM).

Crown, D.A., Baloga, S.M., and **Byrnes**, J.M., 1999, Emplacement of pahoehoe flow fields: Scale-dependent characteristics of Mauna Ulu flows [abs.]: Lunar and Planetary Science XXX, Abstract 1379, Lunar and Planetary Institute, Houston (CD-ROM).

Dembosky, J.A., Anderson, T.H., Nourse, J.A., and Silver, L.T., 1998, Caborca, San Gabriel, and Joshua Tree: Terranes at the Southwestern Margin of North America [abs.]: The Geological Society of America Abstracts with Programs, v. 30, no. 7, p. A-355.

Diamond, W.P., and **Schatzel**, S.J., 1998, Measuring the gas content of coal: A review [abs.]: The International Journal of Coal Geology, v. 35, nos. 1-4, p. 311-332.

Garcia, F., and **Schatzel**, S.J., 1998, Patent 5,741,959 was awarded for the Portable Tester for Determining Gas Content within a Core Sample: United States Patent Office to The Department of Energy. (The invention received a 1997 R&D 100 Award from the publishers of *Research and Development* magazine.)

Kirchner, B.T. and Donahue, J., 1999, Preliminary provenance analysis of sandstone clasts in a Pleistocene lake deposit [abs.]: The Carmichaels Formation, western Pennsylvania: Geological Society of America, v. 31, no. 2, p. A-28.

Lee, M.J., **Stafford**, S.L., Capo, R.C., and Ventorini, R., 1998, Assessment of a passive wetland system to remediate aluminum contaminated abandoned mine discharges [abs.]: Geological Society of America Abstracts with Programs, v. 30, no. 7, p. A-86.

Mest, S.C., Crown, D.A., Craddock, R.A., and Zimbelman, J.R., 1998, Topographic characteristics of outflow channels in the Martian southern highlands [abs.]: Lunar and Planetary Science XXIX, Abstract 1334, Lunar and Planetary Institute, Houston (CD-ROM).

Peitersen, M.N., and Crown, D.A., 1998, Correlations between topography and intraflow width behavior in Martian and terrestrial lava flows [abs.]: Lunar and Planetary Science XXIX, Abstract 1382, Lunar and Planetary Institute, Houston (CD-ROM).

Peitersen, M.N., and Crown, D.A., 1999, Effect of flow transitions on Martian and terrestrial lava flow morphologies: Implications for modeling [abs.]: Lunar and Planetary Science XXX, Abstract 1203, Lunar and Planetary Institute, Houston (CD-ROM).

Peitersen, M.N., and Crown, D.A., 1999, Downflow width behavior of Martian and terrestrial lava flows: Journal of Geophysical Research, v. 104, p. 8473-8488.

Peitersen, M.N., and Crown, D.A., 1999,Comparison of Modeling Results for Lava Flows at Puu Oo and Olympus Mons [abs.]: American Geophysical Union, Spring Meeting, v. 80, no. 17, p. S213.

AWARDS & HONORS

PENNSYLVANIA SPACE GRANT CONSORTIUM FELLOWSHIP

SCOTT C. MEST - 1997-1998; AMY SNYDER HALE - 1998-1999

Scott Mest and Amy Hale were awarded the Pennsylvania Space Grant Consortium Fellowship for their outstanding academic record and research in an area related to the NASA space program. Scott and Amy were recommended for this award by members of their program and then by a school-wide committee.

Scott's research interest was studying the geologic history of planetary surfaces through morphologic analyses of geologic features. Of particular interest were the features that formed by fluvial processes, such as outflow channels and drainage networks, as well as features formed by the interaction of water and/or ice with volcanoes. The focus of his master's was determining the geologic history of the Reull Vallis region of Mars by detailed Viking Orbiter image analyses and geologic mapping. A further objective was to determine the origin and evolution of outflow channels and drainage networks in the Martian southern highlands.

Amy's research results will be highly relevant to such topics as the interpretation of data from the thermal emission spectrometer on the Mars Surveyor spacecraft and where the water ice detected in the polar regions of the moon by the Lunar Prospector spacecraft can exist under stable conditions. Amy is working on her PhD dissertation research that is on the subject of thermal emission from planetary soils. Her current research is focused on studying thermal energy transfer in the surfaces of atmosphereless planets so as to better interpret remotely sensed data acquired from earth based observatories and NASA planetary missions. Amy also spent part of the summer working at NASA's Jet Propulsion Laboratory in Pasadena, CA.

THE HENRY LEIGHTON MEMORIAL GRADUATE SCHOLARSHIP

BRIAN T. KIRCHNER & SHERRY L. STAFFORD - 1997-1998

MARY LYNN HRONAKES-YURKO - 1998-1999

Brian finished his MS in May 1999 and worked with his advisor Dr. Donahue. He was a member of Sigma Gamma Epsilon and the Geological Society of America. He has hopes of eventually obtaining a PhD in Geology and finding a teaching position at the college level. He received his BA from Earlham College in 1992.

Sherry is a MS student working with Dr. Capo who has had research projects involving analysis of natural waters, abandoned mine drainage, iron oxides, and other topics involving environmental geochemistry. She is a member of Sigma Gamma Epsilon and the Geological Society of America. She will be finishing up her MS in the summer of 1999 when she will begin a PhD program in G&PS continuing her education in low temperature geochemistry working with Dr. Rosemary Capo.

Mary Lynn is currently working on her master's degree where her research emphasizes the geochemistry of natural and polluted waters. Her research topics are an investigation into the freshwater mussels in French Creek, PA and correlating shell geochemistry trends to those of the ambient water chemistry in which they formed. She also sampled and analyzed three separate hydrologic events and the results were presented in a poster session at the National Geologic Society of America meeting in Toronto, Canada in October 1998. She hopes that after graduating she will obtain a position as an Environmental Scientist at an engineering or consulting firm.

THE GEOLOGICAL SOCIETY OF AMERICA

PLANETARY GEOLOGY DIVISION DWORNIK AWARD - SCOTT MEST - 1997

Scott's paper at the 1997 Lunar and Planetary Science Conference entitled Geologic Mapping of the Reull Vallis Region, Mars was selected to receive an Honorable Mention for poster presentation in the competition for the 1997 Stephen E. Dwornik Planetary Geoscience Student Paper Award of the Geological Society of America's Planetary Division. Congratulations! It was a significant achievement, and, as usual, the competition was quite intense for the award. The Planetary Geology Division had an award ceremony at the plenary session of the LPSC, at which time the plaques and certificates were presented to the 1997 winners and honorable mentions.

MELLON PREDOCTORAL FELLOWSHIP

JEFFREY M. BYRNES - 1997-1998; 1998-1999

Jeffrey Byrnes was awarded the Mellon Predoctoral Fellowship for 1997-1998 and 1998-1999.

Andrew Mellon Fellowships are awarded to students of exceptional ability and promise who are enrolled or wish to enroll at the University of Pittsburgh in programs leading to the Ph.D. in various fields of the humanities, the natural sciences and the social sciences.

UNDERGRADUATE PROGRAMS

B.S. in Environmental Geology

Graduates

Timothy Joel Drop
Barbara Jean Frey
Tara Rebecca Laishley
Ron Mart
Todd C. Myers
David Glen Sherman
Thomas M. Wright

Current Majors

Andrea M. Borradaile
John R. Boulanger
Martha J. Lee
Erica I. Love
Christopher T. Markley
Evonne M. Pacinda
Richard M. Ruffolo
Maureen K. Utz
Steven A. Wielechowski
Zachary Zrimsek

B.S. in Geology

Graduates

John Paul Danihel
Susan Elizabeth Kulp
Alexander John Lau
Michael Sean McIntyre
Cameron Lee Nix
Yvonne Marie Wilson

Current Majors

Amy L. Alexander
Kelly A. Bavuso
Douglas G. Dean
Filip Gieszczykiewicz
Michael F. Golebiewski
Erik N. Hoffmann
Scott M. Knoflicek
Heather L. Miller
Adam R. Nagle
Nicole M. Nastanski
Akilah A. Prout
Brian G. Ruskin
Jamie L. Saulsbery
Ben J. Senkowicz
Michael A. Urban
Marc R. Wagner

Geographic Information Systems (GIS) Certificate

The Geology and Planetary Science Department offers a certificate in Geographic Information Systems (GIS). GIS is a computer-based system that accommodates virtually any type of information about features that are referenced by geographical location. For example a GIS database may include both locational data and attribute data, providing a relational database capability for recording and analyzing descriptive characteristics about geographical features, both natural and manmade. One of the most important benefits of GIS analysis is the ability to spatially interrelate multiple types of information stemming from a range of sources. Such computational manipulation of geographic data is becoming increasingly important in many areas of science, government, and industry. Students who demonstrate experience with computers, particularly with geographic information systems (GIS) and digital image processing, are at a distinct advantage when looking for jobs in numerous fields, including geology, environmental science, city and regional planning, and civil engineering. The program is designed to provide students with the knowledge and skills needed for immediate success in GIS-related jobs.

Requirements for Geographic Information Systems (GIS) Certificate

The program is open to any University of Pittsburgh student. This specifically includes post-baccalaureate students -- for example, professionals seeking to expand their job-related computer skills. Approximately four terms (two academic years) will be required to complete this certificate program; it is therefore suggested that undergraduates sign up for the program by their junior year. A grade of C or better is required in all courses. Topics covered will include the nature of geographic data, map projections, the basic elements of a GIS database, sources of data, and Arc/Info (an industry-standard GIS package). Required courses include the following:

- World Physical Geography
- Introduction to GIS, GPS and Computer Methods
- Two advanced courses which have special relevance to the student's major or employment goals. Appropriate courses will be available from many different departments. Courses not on the following list may be selected contingent on approval by the certificate advisor:
- Advanced GIS) - prerequisite GEOL 1445 (GIS, GPS, and Computer Methods)
- Remote Sensing of the Earth
- Geographic Information Systems for Civil and Environmental Engineers
- Ecological Management Summer Field Course (prerequisite 1 year of Introductory Biology)
- Database Management Systems or Information Storage and Retrieval

Students must demonstrate proficiency in the application of the techniques by doing a project under the supervision of a faculty advisor. Sufficient work must be performed to earn four Independent Study or Directed Research credits. Faculty from any department may serve as the faculty advisor, but students are encouraged to work with faculty in their primary area of interest. Projects must use GIS as a major tool, and result in a paper and a map (or maps) which describe the results of the research.

AMERICAN MINERALOGIST UNDERGRADUATE AWARD

EDWARD BOLTH - 1997-1998

MICHAEL URBAN - 1998-1999

The American Mineralogist Undergraduate (AMU) Award recognizes outstanding students (identified by individual professors) who have shown an interest and ability in the discipline of mineralogy. 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 a one-year subscription to *American Mineralogist.* Dr. Edward Lidiak sponsored both years' outstanding undergraduate students.

W.A. TARR AWARD

SUSAN KULP - 1997-1998

JILL A. HARLEY - 1998-1999

AMERICAN GEOLOGICAL INSTITUTE'S MINORITY GEOSCIENCE SCHOLARSHIP (AGI-MPP)

AKILAH PROUT - 1997-1998

Congratulations to Akilah Prout who for the third year in a row is the recipient of the American Geological Institute's Minority Geoscience Scholarship (AGI-MPP).

Award recipients must be geoscience majors who are U.S. citizens and members of ethnic minority groups that are underrepresented in the geosciences. The AGI-MPP Advisory Committee selects individual scholars who appear to have particular potential for success in the geoscience profession.

The awards are supported by funding from the National Science Foundation and by contributions from geoscience corporations, professional societies, and individuals.

HUGH HENRY BRACKENRIDGE SCHOLARSHIP

M. JENNY LEE - 1997-1998

This fellowship named for the founder of the University of Pittsburgh, Hugh Henry Brackenridge, supports approximately fifteen undergraduates in the summer months for independent research projects and a roundtable discussion of progress in a weekly seminar.

Each participant receives a monthly stipend of about $800 to assure their freedom from employment, so that major commitment to seminar responsibilities in the summer can be assured. The fellowship is open to undergraduates from any field and any class, including freshmen as well as seniors. Projects may be analytic or purely creative. Brackenridge Fellows are selected on the basis of their academic record and the originality and promise of their proposed projects, as well as their aspiration to create and participate in an interdisciplinary community of students in the humanities, social sciences, natural sciences and applied disciplines.

MORRIS K. UDALL SCHOLARSHIP

MARTHA J. (JENNY) LEE - 1999-2000

Martha J. (Jenny) Lee is one of 75 students from 42 states to win the prestigious Morris K. Udall Scholarship for the 1999-2000 academic year. Jenny is the only Pennsylvania resident to receive the coveted fellowship this year. Established by Congress in 1992 to honor Congressman Morris K. Udall, the Udall Scholarships recognize U.S. students with excellent academic records and demonstrated interest in careers in the fields of environmental public policy. Lee's academic studies focus on environmental geology in preparation for a career of contribution to wiser institutional responses to environmental challenges. The Udall Scholarship provides her an award of $5,000 toward tuition, fees, books and room and board following an all-expenses-paid recognition weekend in Tucson this summer.

GEOLOGY CLUB

Website: http://www.pitt.edu/~geoclub
Email: geoclub+@pitt.edu

Geology Club Officers 1997-1998
President: Susan Kulp
Vice President: Barbara Frey
Business Manager & Secretary:
Filip Gieszczykiewicz

Geology Club Officers 1998-1999
President & Vice-President: Scott Knoflicek
Business Manager: Filip Gieszczykiewicz
Secretary: Akilah Prout
Faculty Advisors:
Michael Bikerman & William Harbert

During the past year the Geology Club has been very active and engaged in a wide variety of activities ranging from field trips to fundraising. With the understanding that geology is only truly learned when one applies what they learn in the classroom to the field, we took our annual trip to Bancroft last October 1998. During our weeklong stay we collected a wide variety of minerals ranging from uraninite and fluorite. In addition, we learned about the general geology of Ontario. With 35 people present, this was one of our largest groups to ever attend and it was a huge success.

Headed by Dr. Rollins last May we went to New York State in an effort to collect Devonian fossils. Some of the most prized finds from the trip included trilobites which were up to 5 cm in length. In addition to this, we have lead numerous trips to several fossil localities found in western Pennsylvania.

Aside from field trips, the club has decided to finally display some of the beautiful mineral specimens that have been hidden away in boxes for years. Over the next few years we will display these hidden treasures outside of the main office as our "mineral of the month." Some of the remaining samples will be placed in the museum area and rotated periodically in an effort to have all of the samples viewed.

Finally, the group succeeded in obtaining an undergraduate computer room that will have an Ethernet connection. And we started fundraising. Currently we sell items that include soft drinks, food and other snacks. Due to huge success of this project we have been able to use this money to offset the cost of our fieldtrips. Our newest fundraising effort will include the production of departmental tee shirts that are available for purchase.

Point of First Contact Program

Pitt Students Need Your Advice - Please Help Us!

The Department of Geology and Planetary Science is in the process of creating a ***Point of First Contact Program*** for G&PS students that will help smooth the transition from college to career in today's difficult job market. We want to give our students the best start on their careers we can - ***and we need the help of our alumni***.

The goal of the a ***Point of First Contact Program*** is to build an extensive database of alumni who are willing to talk to G&PS students about companies and agencies in which they work. The database will only be accessible in the G&PS main office to our students, where they will be able to research the current job market and pursue possible summer internships.

We are asking you to agree to:

- accept a prearranged telephone call from a student, either at home or work
- explain the structure of your place of employment
- provide the name of an individual in your company to whom the student might address a cover letter and resume
- if possible, suggest a 'next step' that the student might follow

We need as many alumni as possible to join this program to make it viable. We are seeking both established and recent graduates in all disciplines. Recent graduates are especially valuable because they have just gone through the process and are able to communicate their job search experience with current students, and well-established alumni have the advantage of experiences and wider personal networks. Please show you support for the Department of Geology and Planetary science by joining this program.

---------- ***Point of First Contact Program*** ----------

I would like to join the program and will talk to undergraduates in:
_____ geology _____ environmental geology _____environmental studies

Name: _____

Job Title: _____

Company: _____

Company location: _____

Company does work in the following fields: _____

Company looks for people with skills in the following field(s): _____

Is company interested in summer interns? YES/NO: _____

If yes, what background should the students have? _____

Students may telephone me at: _____ [work] _____ [home]

FAX: _____ e-mail address: _____

Special requirements to be followed by the student (*e.g.* times to call, fax first, etc):
Comments:

RETURN TO: Thomas H. Anderson, Chair, G&PS, 321 EH, U. of Pittsburgh, Pgh, PA 15260-3332.

Two meetings of the Advisory Board for Environmental Studies were held. Among issues discussed were: 1) providing adequate opportunities for developing writing and public speaking skills and 2) a change in the meeting format to involve student participation.

1998-1999 Advisory Board Bachelor of Arts in Environmental Studies

Mr. Thomas S. Baily CPCU, ARM
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Halliwell Consulting Group

Mr. Ronald S. Cusano, Esq.
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Mr. Paul G. Wiegman
Director of Science and Conservation
Western Pennsylvania Conservancy

Mr. Davitt B. Woodwell
Director, Western Pennsylvania Office
Pennsylvania Environmental Council

02/19/98 Milan Pavich, U.S. Geological Survey, ***Contrasting continental and marine records of Quaternary climate change: The importance of loess***

02/26/98 Frank Vento, Geography and Geography, Clarion University, ***Genetic stratigraphy and paleosols***

03/12/98 Charles Schultz, Environmental Geosciences Slippery Rock University, ***The Stoneridge-Fall Run landslide: Premonition, progression, and a postscript***

03/19/98 Jim Reynolds, Jr., Magstrat Ltd., LLC, ***The tectonic history of the Sierras subandinas, NW Argentina: Magnetostratigraphy applied to hydrocarbon exploration***

03/26/98 Larry Peterson, JOI Speaker, ***Climate change in the tropical Atlantic***

04/02/98 Christopher McRoberts, Department of Geology, SUNY Cortland, ***The end Triassic extinction***

04/09/98 Richard Beck, Department of Geology, Miami University of Ohio, ***Late Cretaceous ophiolite obduction and hotspot activity in the NW Himalaya as precursors to Paleocene India - Asia collision and global warming***

04/16/98 Roman Kyshakevych, Geology and Planetary Science, University of Pittsburgh, ***PhD Dissertation: The general integrative watershed model (GIW): A landscape ecology approach to large river environmental management***

09/03/98 Thomas H. Anderson, Geology & Planetary Science, University of Pittsburgh, ***G&PS Introduction***

09/10/98 Alan Binder, NASA Ames Research Center, ***Latest results from the lunar Prospector satellite and their implications for lunar rover exploration***

09/17/98 Robert J. Varga, College of Wooster, ***Structural control on hydrothermal processes in the Troodos ophiolite, Cyrpus***

09/24/98 Gerald D. Holder, Dean, School of Engineering, University of Pittsburgh, ***Gas hydrates and global warming***

10/01/98 Edward G. Lidiak, Geology & Planetary Science, University of Pittsburgh, ***An overview of the geology of Cuba***

10/08/98 David C. Greene, Denison University, ***The Roberts Mountains allochthon and the Cordilleran miogeocline in roof pendants of the eastern Sierra Nevada, California***

10/15/98 Chad Lupp, Robert Ventorini, Geology & Planetary Science, University of Pittsburgh, ***Impact of mine drainage-related iron and aluminum loading on stream biodiversity: Little Deer Creek, PA***

10/15/98 Jenny Lee, Sherry Stafford, Robert Ventorini, Geology & Planetary Science, University of Pittsburgh, ***Assessment of a passive wetland system to remediate aluminum contaminated abandoned mine discharges***

06/25/99 Kevin Righter, Lunar and Planetary Laboratory, University of Arizona, ***Applications of high pressure research to earth and planetary sciences***

06/30/99 Catherine Johnson, Department of Terrestrial Magnetism, Carnegie Institution of Washington, ***Loading of planetary lithospheres; insights from Magellan and Mars Global Surveyor***

took him until Christmas to become confident with this gadgetry.

Publications:

Brezinski, D.K., 1998, Trilobites from Lower Mississippian starved basin facies of the southern United States: Journal of Paleontology, v. 72, p. 718-725.

Brezinski, D.K., 1999, The rise and fall of late Paleozoic trilobites of the United States: Journal of Paleontology, v. 73, p. 164-175.

Brezinski, D.K., in press, New Lower Mississippian trilobites from the Chouteau Group of Missouri: Annals of Carnegie Museum of Natural History.

Douglas C. Peters (BS, 1977)

The period from early 1995 to early 1996 was the time of the closure process for the U.S. Bureau of Mines, where Doug worked as the Principal Investigator for the application of remote sensing and GIS technology to mine planning and design, mine subsidence, mine waste characterization, and various other engineering and environmental topics, both mining and non-mining. He was at the Denver Research Center for nearly 12 years (after graduating from graduate school).

The closure process for Denver, from his point of view, really started long before the official announcement was made for the entire agency in October 1995. There had been various internal plans, from the start of 1995 on up to the official announcement, to reduce the size of the agency and consolidate operations, with the configuration of remaining Research and Field Operations centers changing from plan to plan. He doesn't want to get into the various internal and external politics involved in these plans or in the official closure because that would take up another couple pages. Suffice it to say that it wasn't being driven by whether or not the country really needed the Bureau or not, or by the officially announced good intention to reduce the federal budget (which it did not!) by closing the agency.

In any event, seeing the handwriting on the wall early on, Doug dedicated himself to trying to finish up, distribute to stakeholders, and publish as much of his ongoing and recent research work as possible before closure. This consumed his attention right up to the end (February 2, 1996) and kept him from getting too embroiled in the general doom and gloom that was palpable in the Bureau's halls. Doug succeeded, with the help of several other Bureau colleagues who tried to stay productive nearly to the end, in completely closing out two projects and getting a third partially published and into a state that it could be completed outside of the Bureau apparatus later on. A fourth project could not be completed due to lack of time and funds during the closure, but he hopes to get to it one of these days and still have the data be useful to the other agencies with which the Bureau was cooperating. Doug at least had the satisfaction of producing the last Bureau Report of Investigations to come out of Denver and the last CD-ROM publication for the Bureau while it still existed as a separate agency.

The closure was painful, even devastating, to many of the Bureau employees, particularly those close to, but not eligible for, retirement. Some still are searching for full time work two years later.

Doug was fortunate in being able to start his own consulting company in early 1996, called "Peters Geosciences." He still is doing primarily remote sensing and GIS work, although now on projects that mostly have a very short time frame as compared to the long-term research we were able to pursue at the Bureau. Projects have included 1) aiding in GIS design for an oil-and-gas database company, 2) GIS database development for gold exploration and mine planning, 3) remote sensing for surface and underground coal mine planning and design, 4) GIS database development, remote sensing, and 3D geological modeling for site characterization in advance of mine reclamation, and 5) some analysis of chilled-aggregate bins for concrete production in South America. (That last one is another story he didn't have time for here!) He still misses the support structure available through the Bureau and the government in general, but he certainly doesn't miss the bureaucracy that went with it!

Doug still give talks and publishes when he gets the time and appropriate projects. He continues to be involved in various geological society functions, including serving as president-elect of the Colorado Section of the American Institute of Professional Geologists for 1998 and badgering authors and editors, in his capacity as Publications Chair for the Energy Minerals Division (EMD) of AAPG, of the coming "Atlas of Coal Geology" (on CD-ROM) being produced this year jointly by EMD and The Society for Organic Petrology. Doug also has continued as an Associate Editor for the journal "Computers & Geosciences", so all of you alumni and present students (and faculty, of course) keep him in mind if anyone out there is interested in publishing on such topics!

Give him a "virtual" shout at address "petersdc@petersgeo.com

DEPARTMENT FUNDS

_____ **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. Mrs. Flint will match gifts up to $5,000.

_____ **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. A permanent graduate scholarship fund has been established and the scholarship is awarded on the basis of merit and need.

_____ **Major Equipment Fund**
Bill and Bev Cassidy have provided the initial monies in an effort to augment and enhance departmental instrumentation. The FAS Dean Office then matched the initial amount, matched by Bev's employer, Westinghouse Corporation.

_____ **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: $_____

Alumni Response Form

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

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: Write on overleaf

Information on other departmental grads? Write on overleaf

Please return to:

THOMAS H. ANDERSON
Department of Geology and Planetary Science
321 Engineering Hall
University of Pittsburgh
Pittsburgh, Pennsylvania 15260-3332