Indiana University College of Arts and Sciences-Graduate School

HOOSIER GEOLOGIC RECORD

Alumni Newsletter of the Department of Geological Sciences

December 1990

MESSAGE FROM THE CHAIRMAN

Greetings to all Alumni of the Department of Geology from the Chairman of the Department of Geological Sciences. Yes, your I.U. departmental home has a new name -- and a new chairperson. **Bob Dodd** completed his term as chair in August and I have been selected as his replacement. Most athletes have their numbers retired after outstandingly successful careers. In this case, after Bob completed his three-year reign as chairman, the Department name was retired! More seriously, after literally years of of sometimes intense debate, the faculty voted last spring to change the name of the Department in order to better reflect its interdisciplinary scientific mission and faculty composition. We're confident that you will approve of our decision.

I assumed the Chair on August 15, even before I returned from the Field Station in Montana. So far, I have been climbing a steep and challenging mountain of learning. Fortunately, the faculty and staff have gone out of their way to be cooperative and helpful. Perhaps I'm just experiencing a second honeymoon with a new partner (although I hope not) -- just as Ginny and I celebrate the 25th anniversary of our honeymoon back in 1965. At any rate, the transition also has been smoothed with the generous help and wise advice of Bob Dodd. I am especially grateful to him for this. Also, Bob's sensitive and creative leadership of the Department for the past three years has left a very positive environment for me to enter.

There is much good news to share with you. The title of Distinguished Professor of Biogeochemistry in the Departments of Geological Sciences and Chemistry was conferred upon **John Hayes** at the annual Founder's Day ceremony last April. Also last spring, **Jim Brophy** was awarded promotion and tenure, ensuring, we hope, a long and productive career here at I.U. Shortly before the end of the spring term, students in the Department selected **Don Hattin** as recipient of the Sigma Gamma Epsilon-Texaco Award as the outstanding teacher in the Department for the previous year. We salute and congratulate each on his outstanding achievement.

We have added some new members to our Department family since the last newsletter. **Andrea Koziol** joined us in August as Visiting Assistant Professor of Mineralogy, replacing **Roy Christoffersen** who left for a research position at the University of Pennsylvania in Philadelphia. Andrea was a postdoctoral fellow with the U.S.G.S. in Menlo Park, California, just prior to joining the Department.
Haydar Al-Shukri joined the Department for a research appointment on September 1. He is conducting research in geophysics with Michael Hamburger while Gary Pavlis is on sabbatical. Haydar came to the Department from St. Louis University where he received his Ph.D. in February, 1990, in Geophysics/Seismology. **Brian Snow** recently became the Department's Computer Systems Manager. This is a new position which the College awarded us at the start of the academic year.

It is, of course, difficult for us to stand back and objectively evaluate our performance as a Department over the last year or so. Nevertheless, some signals and indicators permit us to pat ourselves on our collective back. Student teaching evaluations throughout the Department have been uniformly high. Industry has recognized our excellent student-product in a number of ways. Eight major oil companies and one major environmental firm recruited our potential graduates this fall. (By comparison, one of our chief competitors among Big Ten institutions in a neighboring state attracted just two industry recruiters!) We have received generous donations for unrestricted use in the Department from Chevron Exploration and Production Services (CEPS), Chevron, U.S.A., EXXON Educational Foundation, Shell Companies Foundation and BP Exploration. Both Shell and Chevron each continue to support a graduate fellowship. Chevron, U.S.A. and Chevron Exploration continue their long-standing traditions of providing $1,500 undergraduate scholarships in geology and geophysics. Annual $2,000 stipends have also been given us by BP Exploration and Exxon for Minority Achiever's Scholarship Awards.

Faculty/student research productivity as measured by presentations of national and international meetings reached an all-time high in 1990. For example, six faculty and students were involved in presenting papers at the AAPG meeting in San Francisco; four of our faculty were on the program of the International Sedimentology Congress held in Nottingham, England, in August and eleven faculty and students gave talks at the annual GSA meeting in Dallas in October. This productivity closely correlates with an upsurge in extramural research support received by the Department through grants in 1990. We are proud to say that our total of such funds was third highest among geology/geophysics departments in the Big Ten.

Enrollment in the Department continued along a valley path in 1990. We admitted fourteen new graduate students in the fall permitting us to maintain a graduate enrollment of sixty-five. We have only a total of thirty-four undergraduate majors in the sophomore, junior and senior classes. But the future looks much brighter, both here and across the nation. Enrollments in the sophomore mineralogy class have more than doubled in most geology departments. Our enrollment in mineralogy jumped from fourteen in 1989 to thirty-one in 1990. Really good enrollment news came from the Field Station as well; seventeen students took part in the honors introductory course as compared to an average of less than ten over the previous six years. We're confident that the majors drought has reached an end.

We have an optimistic and enthusiastic vision of the Department for the future. We are currently recruiting at a senior level for a faculty position in biogeochemistry. The College has promised two new graduate fellowships to accompany this position for the next six years. This should place our biogeochemistry program at or near the top in the world. The College also is committed to filling the next four lines vacated by retirements or relocation of existing faculty. This will provide us much needed flexibility as we carefully and deliberately conceive a ten-year plan to guide us into the next millennium. Renovations of key laboratories, with generous help from the College, is in progress and will expand. Our goal is the development of state-of-the-art laboratory and teaching facilities throughout the building within the next decade. I hope that we can count on all of you for counsel and financial support in achieving this goal.

It is impossible for me to write for the newsletter without commenting on the Geologic Field Station and our beloved Tobacco Root Mountains in southwest Montana. I accepted the Chairman's position with the understanding that I could continue as Director of the Field Station. In the summer, while I am in Montana, **Gary Lane** will serve as Acting Chair of the Department. During the academic year when my administrative energies will be devoted mostly to the Department, **David Towell**, Associate Director of the Field Station, will assume Field Station responsibilities. This arrangement will permit me to continue to realize the great satisfaction that comes from teaching geology in the field with some of my closest friends and colleagues. Moreover, the years leading to the fiftieth anniversary of the Field Station in 1999 are going to be challenging and rewarding as we adjust our program to fit the changing needs in field education dictated by the changing role of geology in society. We plan to meet these challenges with your help. **Marcia Engle**, a member of our Alumni Council, is spearheading a campaign to raise $100,000 from both I.U. and non-I.U. Field Station Alumni by the 1999 anniversary. This will provide the Field Station with an endowment large enough to meet most annual maintenance needs and it would ensure that we continue to have the finest facility of its kind in the world.

I am proud to be chosen as the leader of our Indiana University geologic community. Doubts I have about my ability to be this leader tend to dissolve as I reflect on the high quality of faculty, staff, students, and alumni making up the community.

Best regards,

Lee J. Suttner

STUDENT AWARDS

Numerous awards were presented to outstanding undergraduate and graduate students at our annual spring awards ceremony. Current scholarship and fellowship holders were also recognized. Student awards for the past year are given below.

Undergraduate

Geology Faculty Award (Brunton Award)-**Michael Stewart**
College of Arts and Sciences Alumni Association Award-**Eve Shaffer**

Junior Scholarship Award-**Eric Shock**
Beginning Geology Major Award (N. Gary Lane Award)-**Louis Bucklin**
Honorable Mention to **Kerrylea Etter** and **Joe Callis**
Chevron Scholarship in Geology-**Eve Shaffer**
Chevron Scholarship in Geophysics-**Brian Towell**
Undergraduate Research Award of Sigma Xi-**Eve Shaffer**
William A. Tarr Award-**Alice Nightengale**
Field Station Awards-**John Laribee, David Newton, Wesley Boberg**
Charles Deiss Scholarship-**Brian Towell**

Graduate

Margaret Hawn Mirable Award (for the outstanding student paper presented at the 1989 AAPG Meeting held in Bloomington-**John Guthrie**
John B. Patton Award (for support of research on Indiana geology)-**John Guthrie**
Estwing Award (Hammer)-**Doreen Zaback**
Graduate School Alumni Association and Department of Geology Honors Award-**Glenn Hieshima**
Outstanding Associate Instructor (Undergraduate)-**David Jacques**
Outstanding Associate Instructor (Graduate)-**Barbara Gruver**
Cumings Award-**Denver Harper**
AGU Horton Fellowing for 1990-91-**Barbara Gruver**
Shell Oil Fellowship-**Mark Williams**
Chevron Oil Company Fellowship in Geophysics-**Robert Mellors**
University Graduate School Fellowship-**Jane Hultberg**
Grassman Fellowship-**Clifford Ambers**
Oil Dri Fellowship-**Karan Keith**
Geochemistry Fellowship-**Glenn Hieshima**
Best Student Paper Award, Clay Minerals Society Annual Meeting-**Jessica Elzea**
Runner Up-**Cliff Ambers**

GRADUATE STUDENT GRANTS

Glenn Bear was awarded the National Society of Exploration Geophysics Academic Scholarship Award beginning Fall, 1990. The award is $1,000 and is renewable for the duration of Glenn's schooling.

Mark Schult, Don Hattin, and **Jim Farlow** of the Fort Wayne campus have received a two-year, $5000 intercampus research grant from the Research and Graduate School fund to help support Mark's studies of reptile and amphibian trackways in the Abo Formation (Permian) of southern New Mexico.

Patty Merkley received a grant from the Indiana Academy of Science for her M.S. research on the Ste. Genevieve Limestone.

John Holbrook received grants from GSA, AAPG, and Sigma Xi to support his doctoral field research.

DEPARTMENTAL NEWS

The department has a new chairman and a new name. We are now the **Department of Geological Sciences. Lee Suttner** has assumed the chairmanship following the resignation of **Bob Dodd**. Bob has served as chairman for the past three years, and has now returned to full-time teaching and research.

At the annual Founder's Day ceremonies in April, **John Hayes** was awarded a distinguished professorship. John, who has a half-time appointment in geology as well as in chemistry, is the first recipient of a distinguished professorship in our department.

At the end of the past academic year, **Roy Christoffersen** resigned his appointment as Assistant Professor of Mineralogy. He has taken a research position in material science at the University of Pennsylvania. Roy remains an adjunct member of our faculty.

Andrea Koziol has joined our faculty as a visiting assistant professor of mineralogy. Her appointment is for one year. Andrea received her Ph.D. degree in 1988 from the University of Chicago. For the past year she has been a postdoctoral fellow at the U.S.G.S. in Menlo Park.

Haydar Al-Shukri, Ph.D. from St. Louis University, has joined the department as a research associate and Visiting Assistant Professor for a one-year appointment. Dr. Al-Shukri is also teaching one of our graduate courses in geophysics while **Gary Pavlis** is on sabbatical leave at the Lamont-Doherty Geophysical Laboratory.

We have hired **Brian Snow** as computer systems manager to help us with our many computer-related needs. He will be involved with maintaining our computer network, handling software problems, teaching and working with individual faculty on computer-related needs, and doing some programming.

Part of the funding for the computer position was obtained by eliminating our rock preparator position. We will maintain our rock preparation facility for use by students but will no longer have a full-time preparator. We will have thin and polished sections made on contract by commercial firms.

SGE presented the annual outstanding teaching award to **Don Hattin.**

Renovation work is nearing completion on laboratory facilities in our rock mechanics labs (lab facilities for **Bruce Douglas**) and a new mineral separation lab (facilities primarily for **Bob Wintsch**). The darkroom facilities on the second floor are also being expanded.

The laboratory that used to have the seismic (analog) processing unit is now a "computer room" that serves as the hub of much of the geophysical faculty and graduate research. Housed in Room 414, it has two SUN Workstations, several Macintosh and IBM PCs, and a wide range of supporting equipment of printers, plotters, tape drives, etc. A unique aspect of the room is the number of computers directly purchased from geophysical alumni contributions. Many thanks from the faculty and graduate students!

During the past academic year, the department has awarded seven bachelors degrees, nineteen masters degrees, and one Ph.D. degree.

The following faculty members will be gone for all or part of the coming academic year on sabbatical leave: **Hattin, Merino, Murray, Pavlis,** and **Towell.**

Mike Hamburger and **Norman Hester** have been in the headlines this past year. Indiana has had a series of earthquake tremors in the New Madrid seismic zone. These have been sufficiently large to catch the public's (and media's) attention. For example, we have experienced earthquakes of 3.8 on January 24 (near Corydon), 3.5 on January 27, and 2.9 on January 29. More recently, there have been tremors near Portland,

Indiana (magnitude 3.0) and Cape Girardeau, Missouri (magnitude 4.5). The I.U. geophysics group, led by **Hamburger** and Research Associate **Haydar Al-Shukri**, mounted a one-week field survey to record aftershocks of the event. The group deployed three portable microearthquake recorders in the rural area surrounding the September 26 mainshock, and recorded some eight small aftershocks in the ensuing week. Earthquakes (and Mike Hamburger) continued to be "in the news" until December 3, when a major midwest earthquake was predicted by Iben Browning. We wish to reassure all alumni that no tremors were felt and the geology building still stands!

Development of facilities for isotopic mass spectroscopy is continuing in the Biogeochemical Laboratories of **Lisa Pratt** and **John Hayes**. In November they received a new Finnigan MAT model 252 instrument for isotope-ratio-monitoring measurements. Applications include reconstruction of the record of atmospheric CO_2 abundances from isotopic data.

During the 1991 spring semester a new course on Sequence Stratigraphy will be taught by **Lisa Pratt, Lee Suttner**, and **Brian Keith**. The course will focus on practical recognition of genetic units and bounding surfaces using outcrop, well-log, and seismic data. Each student and faculty member involved in the course will present a sequence stratigraphic reconstruction in an area of their research interest. The course will culminate with a field trip to the Book Cliffs region of Utah led by Exxon geologists.

A field-oriented course that is targeted at the professional needs of faculty and students is only possible with strong industrial support. We are grateful to British Petroleum and Exxon for their assistance in the planning, teaching, and funding of this endeavor. Funds will be used to support invited speakers and to cover a portion of the field expenses for faculty and students. In addition to fifteen faculty and students in stratigraphy and sedimentology, faculty with research interests in geophysics, structural geology, geochemistry, igneous petrology, and metamorphic petrology will participate in both the course and field trip.

The following oil companies inteviewed in our department this year BP Exploration, Inc., **Kim Thomas**, interviewer; Shell Oil Company, **Allan Scardina**, interviewer; Chevron U.S.A., Inc., **Matthew Mikulich**, interviewer; Exxon, **Mark Solien**, interviewer; ARCO Oil and Gas Research Geoscience, **Bill Hughes**, interviewer; ARCO Oil and Gas Exploration, Dallas Spear, interviewer; Texaco, Inc., **George Kreider**, interviewer; Chevron Exploration and Production Services, **Charles Chernoff**, interviewer.

GEOLOGIC FIELD STATION

The 42nd summer at the Geologic Field Station in the Tobacco Root Mountains was a successful one. Two sections of G429 were once again offered. Although, for the second year in a row, total enrollment in the two options dropped below 100, it remained the same as in 1989 with 80 students registered. It was especially pleasing that we had the largest enrollment in many years in G111-112 (Introduction to Geology) at the Field Station. Efforts are being made to use this course more effectively than in the past in the recruitment of new undergraduate majors in the geological sciences.

Changes in the physical facilities continue to be made at the Field Station. Remodeling of the resident manager's house began this summer and is being completed this fall. Included is an addition to the southside of the house to provide a large living room and dining area with an inside fireplace and splendid views of the Station and the

Tobacco Root Mountains in three directions. The kitchen has been remodelled and much of the previous living room has become a new bedroom. We're extremely pleased and appreciative, and so are Resident Manager **Gary Hinton** and his family Mary Sue, Hope, and Dusty, about the long-needed improvements in their accommodations.

The 1990 Field Station students and staff were the first group to miss out on the pleasures of late afternoon refreshments in Cardwell enroute back to the Station. The Cardwell General Store, run for many decades by the Wilkinson family and then the Fells, shut down last spring. More bad news was received this fall when we learned that the Borden Lounge and Hotel/Restaurant in Whitehall was also closed. We're all hoping that a new owner will be found to re-open it by next summer.

ALUMNI COLLEGE

Plans are well along for an Alumni College, a week of outdoor historical and natural sciences activities at the Field Station during August 1991, immediately after the end of Option II of G429. **Gary Lane** (I.U.) and **Tom Straw** (Western Michigan) will lead two consecutive one-week sessions: August 17-24 and August 24-31. The Alumni College will be designed around intellectually stimulating and physically invigorating field trips. Activities are planned in geology, botany, astronomy, and mining. Enrollment will be limited to the first 30 persons to register in each session, and it is anticipated that there will be many more alumni who will want to take part in this program than we will be able to accommodate. A brochure is under preparation and should be available soon. For further information, write to: I.U. Alumni College, Department of Geological Sciences, Bloomington IN 47405.

INDIANA GEOLOGICAL SURVEY

Sheila Webster has joined the staff as a survey editor.

Steve Brown (M.S. Wisconsin,'90) has joined the Environmental Geology Section. The total number of professional geologists in the section is now six. In addition, a large number of graduate students from the department work on an hourly basis and conduct thesis research as part of various programs.

The Indiana Geological Survey received at $100,000 grant from four petroleum companies (Arkala, BP, CNG and Shell). **Brian Keith**, in conjunction with personnel from the Kentucky and Ohio Geological Survey, proposed a study of the newly discovered pre-Mount Simon basin in the tri-state area. It is hoped that this study, under the auspices of the Cincinnati Arch Consortium, will lead to further acquisition of seismic data and drilling of deep research core holes.

John Comer and **Nancy Hasenmueller** are participants in a one-year project with representatives of the Illinois and Kentucky surveys (the Illinois Basin Consortium). Study of the natural gas potential of the New Albany shale in the Illinois Basin is funded by the Gas Research Institute. **Wes Boberg** (M.S.,'90) has been hired as a full-time investigator on the project.

Ray René conducted his third year of CDP seismic profiling to investigate deep structures of the Illinois basin in southwestern Indiana. His work was supported by

ARPEX (Industrial Associates Research Program in Exploration Seismology) and by the National Earthquake Hazards Reduction Program. This work utilized a 96-channel seismic recording system donated by SERCEL, Incorporated.

Following the retirement of **Dan M. Sullivan** from the Petroleum Section, **John A. Rupp** has been promoted to head of the section. The section continues to be engaged in the historical tasks of investigating the conventional petroleum potential of the state and curation of records for wells drilled. The recent price increase has spurred an increase in the activity of the petroleum industry utilizing the section as a source of information on drill hole data for oil and gas exploration. In addition to conventional petroleum activity, the section is involved in numerous inquiries and projects involving the new fields of horizontal drilling, coal-bed methane and shale gas.

IGS hosted the Great Lakes section-SEPM field conference on October 20, 1990, on the Salem Limestone. The chief organizer was **Todd Thompson**. Other leaders, all IU alumni, were **Al Archer**, **Howard Feldman**, and **Craig Moore**, as well as **Eric Kvale** of the IGS.

FACULTY RESEARCH GRANTS

A substantial number of research grants to faculty are currently in progress or will soon begin funding. Included are the following:

A. Basu (NASA) - Petrologic Evolution of Lunar and Meteorite Parent Body Regolith

J. Dunning (Sabbagh Associates) - Partners in Applied Research: Measurement of Electromagnetic Fields Using Small Inductive Pickup Coils

J. Dunning (Dow Chemical) - Ceramic Research (PAR Project)

M. Hamburger and Gary Pavlis (USGS)(with Terry Pavlis, University of New Orleans) - Seismicity and Crustal Structure in an Active Collisional Orogen, Sovient Central Asia

M. Hamburger (NSF) - Tectonics of Subductional Zone Terminations: A Case Study in Northernmost Tonga

M. Hamburger (NSF)(with Robert Reilinger, M.I.T.) - Application of Global Positioning System Measurements to Continental Collision in Soviet Central Asia

M. Hamburger and Gary Pavlis (IRIS) - Seismotectonic and Data Visualization Studies of the Kirghizia Region, Soviet Central Asia

D. Hattin (NSF) - Upper Cretaceous Thoracican Cirripeds of the Central Great Plains: Taxonomic, Biostratigraphic and Paleocologic Analysis

J. Hayes and Lisa Pratt (DOE) - Isotopic Studies of the Biogeochemical Cycle of Carbon Relationships Between pCO_2 and the abundance of ^{13}C in sedimentary matter

J. Hayes and Lisa Pratt (DOE)(With Andy Knoll, Harvard) - Organic Geochemical and Tectonic Evolution of the Midcontinent Rift System: Organic Geochemistry and Micropaleontology

J. Hayes and Lisa Pratt (DOE) - Gas Chromatograph-Mass Spectometer for Organic Geochemical Research

J. Hayes (NASA) - Isotopic Biogeochemistry

J. Hayes (NSF) - A Carbon Isotopic Record of CO_2 Levels During the Late Quaternary

J. Hayes - Also engaged in collaborative work with colleagues at Chevron Oil Field Research Coporation and at Shell Development Corporation

E. Merino (Am. Chem.) - Petrographic, Analytical, and Kenetic Study of the Diagenesis of Mesozoic Arkoses, Connecticut

E. Merino (NSF) - Self-Organization in Agate: Textures, Composition, and Dynamic Crystallization Modelling

G. Pavlis (NSF) - Appraisal of Relative Earthquake Location Errors

G. Pavlis (IRIS) - Seismotectonic and Data Visulatization Investigations for the Eurasian Seismic Students Program

G. Pavlis (IRIS) - Use of a Small Aperture Array for Earth Structure, Seismotectonic and Earthquake Prediction Studies in the United States with the Soviet Academy of Sciences

G. Olyphant (IDNR)(with IGS personnel) - Reclamation Feasibility of Friar Tuck Abandoned Mine Complex

G. Olyphant (IDNR)(with IGS personnel) - Hydrologic Conditions of a Subsidence Affected Area around Cannelburg, IN

G. Olyphant (USGS)(with IGS personnel) - Contemporary and Historical Eolian Sand Transport in a Coastal Dune Environment, South Shore Lake Michigan, Indiana

L. Pratt (Chevron Oil) - Research in the Field of Sulphur in Organic Compounds

L. Pratt (NSF) - Geochemical and Stable Isotopic Study of the Corg-S-Fe-Mn System in Anoxic Paleoenvironments

L. Pratt (DOE) - Gas Chromatograph-Mass Spectrometer for Organic Geochemical Research

V. Ranganathan (Am. Chem. PRF) - The Dynamics of Groundwater Flow Associated with Perched Brine Plumes above Salt Domes

E. Ripley (NSF) - Mechanisms of Platinum-Group Element Enrichment and the Nature of the Hydrothermal System at the Babbitt Deposit, Duluth Complex, Minnesota

M. Savarese (IU Grant-in-Aid) - Effects of Moving Fluid on the Paleobiology of Benthric Invertebrates

L. Suttner (Am. Chem.) - Environmental Controls on Petrology of Sandstone in a Pennsylvania Fan-Delta

L. Suttner (NSF) - Regional Tectonic-Stratigraphic Analysis of Late Jurassic-Early Cretaceous Cordilleran Foreland Basin

R. Wintsch (NSF) - Fault Mechanics: The Role of Mineral Reactions in Fault Rock

R. Wintsch (NSF) - Thermochronology Applied to the Metamorphic and Tectonic History of the Merrimack, Nashoba, and Hope Valley Zones, Southeastern New England

DEPARTMENT OF GEOLOGICAL SCIENCES FACULTY AND STAFF

Professor: **Abhijit Basu, James Brophy, J. Robert Dodd, John Droste, Jeremy Dunning, Michael Hamburger, Donald Hattin, John Hayes, Norman Hester, Andrea Koziol, Noel Krothe, N. Gary Lane** (Associate Chairman), **Enrique Merino, Haydn Murray, Greg Olyphant, Lawrence Onesti, Peter Ortoleva, Gary Pavlis, Lisa Pratt, Vishnu Ranganathan, Edward Ripley, Albert Rudman, Michael Savarese, Lee Suttner** (Chairman), **David Towell, Robert Wintsch**

Research Scientists: **Haydar Al-Shukri, Michael Dorais, Bruce Douglas, Alan Horowitz,**

Librarian: **Lois Heiser**

Administrative Assistant: **Sarah Burton**

Staff: **Patty Byrum**, Senior Secretary, Business Office
Ruth Droppo, Faculty Secretary, Third Floor
Mark Gilstrap, Analytical Chemist
Janice Harste, Faculty Secretary, Fourth Floor
Eric Hartke, Drafting Technician
Gary Hinton, Resident Manager, Field Station
Mary Iverson, Student Records
Mary La Rue, Faculty Secretary, Fifth Floor
Charles Miller, Machinist
Kim Schulte, Senior Secretary, Main Office
Kimberly Sowder, Drafting Technician
Terry Stigall, Electronics Technician
Kay Strahm, Secretary, Geologic Field Station
Steven Studley, Mass Spec Mgr.
James Tolen, Draftsman

Professors Emeritus: **Robert Blakely, Judson Mead, Robert Shaver, Charles Vitaliano**

FACULTY NEWS

Abhijit Basu is continuing his lunar research supported by NASA and terrestrial research supported by the I.U. Foundation (to which many alumni contribute). He was elected Secretary (three-year term) of the Society for Advanced Study, and is in the second of a three-year appointment in the Honors Division. His student, **Eve Shaffer**, presented a paper at the 21st Lunar and Planetary Science Conference in which about 700 scientists from about 18 countries participated.

Bob Dodd attended GSA, AAPG, and IAS meetings this past academic year. He was among four faculty who attended and made presentations at the 13th International Sedimentological Congress in Nottingham this summer. Others faculty in attendance were **Abhijit Basu, Don Hattin and Lee Suttner.**

Enrique Merino has given invited lectures at the Material Science Institute of Princeton University, and at the Department of Geological & Geophysical Sciences of the University of Chicago. He has obtained an NSF grant to continue research on the genesis of volcanic agates and their layers of twisted chalcedony crystals. He will be on sabbatical from January to June, 1991, at the University of Aix-Marseille, France, where he will lecture, offer a course on low-temperature alteration, write, and do research on laterites. His student, **Yifeng Wang**, obtained a GSA student grant and has been invited to spend January to June, 1991, at the University of Aix-Marseille, France, to continue research on laterite and calcrete genesis with Professor Daniel Nahon.

It has been a busy year, as usual, for **Haydn Murray**. He organized the Keller Kaolin 90 Symposium at the 1990 Annual Meeting of the Clay Minerals Society at the University of Missouri-Columbia, October 6-11. There were fourteen papers presented by Indiana University faculty, students, and alumni. The Keller Kaolin 90 Symposium will be published as a special paper by the Clay Minerals Society, with Haydn as the editor. In addition, he was recently named a fellow of the Indiana Academy of Science, named president elect of the American Institute of Professional Geologists, and elected to a three-year term of the Board of the American Geological Institute.

Indiana University has been designated as the Midwestern Regional Center for the new National Institute for Global Environmental Change. **John Hayes** and **Lisa Pratt**

will participate initially with their studies of carbon dioxide levels through examination of sedimentary organic matter.

Abhijbit Basu's honors course on "Meteorites and Geological Processes in Planets" recently obtained the loan of rare meteorite fragments from NASA. The fragments are believed to have come from Mars and were found in 1976 in Seymour, Indiana.

Bloomington was recently chosen as a site for the National Seismic Network Station. Installation should begin this winter.

Terry Pavlis, **Gary Pavlis**' identical twin, will join **Mike Hamburger** for structural geology field work in Soviet Tadjikistan.

Daniel Nahon, Professor of Geology at the University of Aix-Marseille, will be a Fellow of the Institute for Advanced Study for six weeks in May-June of 1990. He has pioneered research in weathering alterations and geochemical geomorphology.

Dave Towell is on sabbatical leave this fall. He's improving his skills in using both microcomputers and the VAX cluster in his senior and graduate geochemistry courses. Also included was a trip to Cambridge to visit MIT.

Edward Ripley attended the 8th International Association on the Genesis of Ore Depositions (IAGOD) Symposium in Ottawa, Canada (August 1990) and presented a paper with **Raul Lira** (Visiting Research Associate from the University of Cordoba, Argentina) entitled "Geochemical Studies of the Rodeo de Los Molles REE and Th deposit, Las Chacras Ratholith, Central Argentina." **Ripley** presented a paper with Nur Iskandar Taib at the Goldschmidt Conference on Geochemistry, Baltimore (May 1990) entitled "Geochemical Studies of PGE-enrichment in the Babbitt Cu-N Deposit, Duluth Complex, Minnesota. A third paper was presented at GSA (Dallas) entitled "Se/S Ratios of Country Rocks and Sulfide Mineralization in the Babbitt Area of the Duluth Complex, Minnesota: Further Evidence for Distal Sulfur Addition.

Lisa Pratt has been named as one of eleven lecturers for the 1990-91 AAPG Distinguished Lecture Series. Most of the speakers will go on two two-week tours. Lisa's topic is "Paleoceanography and Paleolimnology of Petroleum Source Rocks."

Dave Dilcher, who has now moved on to Florida, was elected to the National Academy of Sciences in spring 1989.

Gary Lane attended the Society of Vertebrate Paleontology annual meeting in Lawrence, Kansas, October 9-12. He gave a poster session on fossil footprints from Indiana as well as a talk on casting techniques. He also directed a Continuing Education field trip on October 6 on the Mt. Carmel fault in Monroe and Lawrence Counties.

Don Hattin attended the following meetings and presented papers: North-central Section, GSA, DeKalb, Illinois; Annual Meeting, GSA, Dallas, Texas. He also presented a poster at the International Sedimentological Congress, Nottingham, England.

IN MEMORIAM

Excerpts of Memorial to **Eugene Callaghan** (1904-1990) by Paul Dean Proctor, Department of Geology, Brigham Young University. "A native of the west, but later a citizen of the world, Eugene Callaghan passed away suddenly on January 8, 1990, two days short of his 86th birthday. His career in geology spanned almost 62 years and touched many lives and many places. Completing his B.A. and M.A degrees at Oregon, Pat went on to Columbia University, where he completed his doctoral dissertation on a mapping and interpretive geological study. After World War II, Pat joined Charles Deiss at Indiana University and set about organizing an economic geology program. Friend

Charles Vitaliano joined the group; Brian Mason, Jay Leith, John Patton, Jud Mead, and others were added to the basic staff. Pat Callaghan set a pace of long hours at the university that few were able to match. Frank Kottlowski notes how he enthralled his students at Indiana University, and later at the University of Utah. Pat's career changed when he accepted the position as director of the Bureau of Mines and Geology at Socorro, New Mexico, and later joined the University of Utah as associate director of the Utah Geological and Mineralogical Survey and professor. As a newly appointed chairman, Pat served effectively and well until mandatory retirement in 1972. Eugene Callaghan is survived by his two sons, Curtis John Callaghan of Petropolis, Brazil, and William Callaghan of Salt Lake City. Four grandchildren also survive him: Curtis and Karen, children of Curtis and Fatima; and Kathleen and Brinton, children of William and Mary.

STUDENT AND ACADEMIC PROFILES

Postdoctoral research appointments are playing an increasingly important role in the earth sciences. As a Bloomington example, "postdocs" presently working with **John Hayes** and **Lisa Pratt** in the Biogeochemical Laboratories are **John Jasper, Eric Lichtfouse, Fabien Kenig,** and **David Hollander**. They represent an interesting diversity of backgrounds. **Jasper** did his undergraduate work at the University of Chicago, majoring in biology and geophysical sciences, and obtained his Ph.D. in the MIT/Woods Hole program in chemical oceanography. At Bloomington, he's working on a carbon-isotopic technique for reconstruction of CO_2 levels in ancient environments. **Lichtfouse** was trained as a chemical engineer at the University of Lyon, France, then obtained his Ph.D. in organic geochemistry at the University of Strasbourg, France. At Bloomington, he has participated in a study of the biogeochemistry of the paleoenvironment of the Green River Shale. **Kenig** obtained both his undergraduate and doctoral degrees in geosciences at the University of Orsay, in Paris, carrying out his doctoral research at the Institut Français du Pétrole. At Bloomington, **Kenig** is working on an isotopic study of late Precambrian materials. **Hollander** obtained his B.S. in chemistry at UC/San Diego, an M.S. in oceanography at UC/Santa Cruz, and a Ph.D. in geosciences at the Technische Hochschule in Zurich, Switzerland. Recently, he, too, has been a postdoc at the Institut Français du Pétrole. At Bloomington, he'll work on studies of the effect of increased CO_2 levels on the marine planktonic community. The salaries and research expenses of all these individuals, who have made very important contributions to the scientific activity of the department, have been supported entirely by federal grants from NASA, NSF, and the Department of Energy.

Jane Hultberg was awarded the University Graduate School Fellowship for 1990-91 academic year. She attended Beloit College in Beloit, Wisconsin, for three years and then started working for the National Park Service in their "Volunteers in Parks" program for a year and a half, working part of the time in Death Valley National Monument and the remainder at Assateague Island National Seashore in Virginia. She returned to school at University of California at Santa Barbara (B.S. in environmental studies, 1978). For the next 10-1/2 years she worked for the Brooklyn Children's Museum in New York City, curating the natural history collections (thousands of minerals, hundreds of mounted birds, fossils, shells, skeletal material). She began taking evening classes at Hunter College and graduated in June 1990 (B.A. in geology).

Rob Mellors is a new Ph.D. graduate student in geophysics. He is originally from Ohio and attended Ohio State University (B.S. in geology), then graduated from Cornell University with an M.S. in seismology, after having completed a thesis on the seismicity of the New Hebrides island arc. He arrived here after working at the Center for Earthquake Research at Memphis State University, where he was employed as a mini-computer specialist aiding with seismological research. Rob's interest in geophysics was sparked by the opportunity to do field work in Antarctica his senior year at Ohio State. His travels have also included New Zealand and Hawaii. Rob was awarded the Chevron Fellowship for the 90-91 academic year.

Mark Williams was awarded the Shell Fellowship for the 90-91 academic year. He graduated from Pennsylvania State University (B.S. in Geosciences). His research interests are in combining field and mathematical study of geomorphologic and hydrogeologic systems. He was employed with a consulting firm for seven years as a computer programmer/systems analyst working on a variety of projects with applications ranging from business to engineering.

ALUMNI NEWS

Jomaah A. Alawi (Ph.D.,'85) is Assistant Professor of Economic Geology, King Saud University, Saudi Arabia.

William F. Althoff (B.S.,'67) has left state service for ground-water consulting, since May 1988. Aviation writing is an avocation for him and his first book, *SKY SHIPS*, was published August 1990. He has made two unforgettable visits as a guest of the Canadian Government to High Arctic, researching his next book.

Al Archer (M.A.,'79;Ph.D.,'83), **Mark Brown** (M.S.,'87), and **Howard Feldman** (M.A.,'84;Ph.D.,'87) were on campus October 20 to help lead the Great Lakes Section, SEPM field trip. Local alums **Greg Thompson** and **Craig Moore** (Ph.D.,'87) also helped lead the field trip.

Bill Ausich (M.A.,'76;Ph.D.,'78) has received the Schuchert Award of the Paleontological Society as the outstanding paleontologist in the country under age 40. Bill is an associate professor at Ohio State University.

Jack W. Baker (B.S.,'58) has accepted a promotion to the Arizona Department of Environmental Quality as a project specialist funded by RCRA starting in June of 1989. His son, Steve, works for the State Department of Agriculture as a microbiologist; his daughter, Janet, is finishing her M.A. at T.C.U.; his son, Mike, is a salesman in California. His wife, Carolyn, is manager of a school supply store. They get some of the Indiana basketball and football games on network and cable TV.

I. Lynus Barnes (B.S.), a senior scientist of chemistry and geochemistry at the National Institute of Standards and Technology, died in his home in Gaithersburg on January 11, 1990. Dr. Barnes was internationally recognized as an expert in mass spectrometry.

Paul B. Basan (B.A.,'65) has moved to England and started his own consulting group (Applied Reservoir Technology Ltd.). They specialize in the integration of geological, geophysical and engineering data, and seminars. Their first research project concerned measurement of pore geometry by image analysis.

Michael J. Becker (M.S.,'88) has worked as a hydrogeologist for Dunn Geoscience Corporation in Albany, New York, since September 1988.

John Bernitz (M.S.,'87) is an environmental lawyer in New Haven, Connecticut.

Robert Beyke (B.S.,'84) is currently employed as a project geologist with Heritage Remediation/Engineering in Indianapolis. He manages projects involving hydrogeologic investigations and remediations. His wife, Beth, had their first child in March, 1990, named Jillian. They are expecting their second child in June, 1991.

Wes Boberg (M.S.,'90) has a part-time teaching position at IUPUI-Columbus and a part-time research position with the IGS.

David Bolton (A.M.,'80) is working as a hydrogeologist for the Maryland Geological Survey, and is the project chief for a statewide study of ambient groundwater quality of shallow aquifers in the state of Maryland.

Scott Broekstra (M.S.,'86) returned to school after working for Tenneco and Shell in Lafayette, Louisiana. He is pursuing a law degree at Oregon State University, starting in the fall of 1990.

Jim Brown (B.S.,'83) is a hydrogeologist/environmental scientist with the U.S. EPA in Washington, D.C. His primary responsibilities include the statistical analysis of ground-water monitoring data, and the development of ground-water monitoring regulations and guidance documents. He is also pursuing an M.S. in Environmental Engineering at Virginia Polytechnic Institute and State University-Falls Church.

Susan Bush (A.B.,'79) was appointed Director of the Division of Waste Management in the Natural Resources and Environmental Protection Cabinet. The appointment was made by Cabinet Secretary Carl Bradley.

Brooke Clements (B.S.,'82) is currently working on a masters degree in economic geology at the University of Arizona.

Greg Dipple (B.S.,'86) is finishing a Ph.D. at Johns Hopkins.

Tom Dombrowski (M.A.,'82) is with Georgia Kaolin Company Research Department, Springfield, New Jersey.

Ken Ebbott (M.S.,'85) is employed as a Hydrogeologist at Hydro-Search Inc. in Brookfield, Wisconsin.

Nancy A. Paredes Ellenberger (B.S.,'84) is with the Defense Mapping Agency in Washington, D.C. She has lived in Maryland for four years, is married to a fellow I.U. graduate (Anthropology and Arabic) and has a 9-year-old daughter and another child on the way.

Jessica Elzea (M.S.,'87;Ph.D.,'90) is with McCrome Laboratories in Chicago.

Mark Filippini (B.S.,'79;M.A.,'81) is recently married, living in Moraga, California, and working for an environmental consulting firm in San Francisco managing their environmental programs and cleaning up after the earthquake.

Mike Finton (B.S.,'70) is Supervising Engineer and Manager of Hazardous Waste Services for Ebasco, a subsidiary of ENSERCH, in Columbus, Ohio. This is a small operations office with four geologists and five engineers.

Zorka Antolovic Foster (M.S.,'90) is working for Shell in Bakersfield.

Pat Arkin Gerdsen (B.S.,'50) left geology after attending graduate school at Columbia University and University of Cincinnati and curating at the geology museum at the University of Cincinnati. She has been a school psychologist for 20 years while her husband has been medical director of Children's Hospital, Oakland, California. She backpacks every summer in California and Idaho, and serves as geologist for her women's group. Three grown children: one son is a pediatrician, one a lawyer, and the daughter is a high school geology teacher.

Robert Harper (M.S.,'90), graduate student from Haslett, Michigan, enriches his love of earth materials in a unique way. He is a smokejumper who leaps into forest fires to fight them. From June to August he leaves geology behind and fights fires in

the rural West. Harper did not work as a smokejumper last season in order to complete his master's thesis (M.S., '90). But he misses jumping and plans to return once again before looking for a job. Speaking of jumping, Rob also took the leap into matrimony when he and Shawn Boehm were married at Beck Chapel in October. Congratulations!

Paul Heger (M.A.,'81) is working for Mobil Oil Company in Stavanger, Norway.

Stephen W. Henderson (B.S.,'70;M.A.,'74) and his wife Kitty announce the birth of their daughter, Sarah, on January 7, 1990.

Phil Hiestand (M.A.,'72) moved back to Indiana after working for Wyeth Laboratories and Burroughs Corporation in the Philadelphia area. He is currently a supervisory computer scientist at the Naval Aeronautics Center in Indianapolis. All of the geologic maps accumulated while at I.U. made sense again when he returned to Indiana.

Tomás S. Hirschmann (B.S.,'59;M.A.,'63) is General Manager of Swissboring Overseas Corp. Ltd., Guatemala, Central America, a major European contract drilling and grouting firm. From 1980 through 1989 the company was responsible for constructing one of the largest cement grout curtains in the world, at the El Cajón Dam, Republic of Honduras. Tom's wife, Becky, is an Illinois native who also received her bachelor's degree at I.U. Their children are David, who earned a bachelor's degree at Duke University and works in Washington, D.C., and Annie, who graduated in 1990 from the University of Florida. Becky hosted Dr. Donald Hattin and his wife Marge, who visited Guatemala during spring break. Don Hattin was his faculty advisor during the M.S. program at I.U., back in the Pre-Cambrian.

Stephanie Hrabar (M.A.,'67) is President-Elect of the Texas section of American Institute of Professional Geologists.

John Johnson (M.S.,'88) is working for Oil Recovery Systems (Hydrogeology Consulting) in upstate New York and Vermont.

Jim King (Ph.D.,'83) has left GAI Consultants in Pittsburgh and is now back in Indiana, near Fort Wayne, working as senior hydrogeologist and project manager at PCS.

Alan Laferriere (A.M.,'81;Ph.D.,'87) is still working for Exxon but has had a change of position. In June he was transferred from Exxon Company, U.S.A., to Exxon Production Research Company, Exploration Concepts Division. He works with the Carbonate Facies Group.

Greg Mack (M.A.,'75;Ph.D.,'77) received the Rausch Award from New Mexico State University. This is a university-wide award given for outstanding teaching.

Chris Maples (M.S.,'85;Ph.D.,'85), of the Kansas Geological Survey, has received a $9,300 grant from the National Geographic Society to excavate and record fossils.

Shirley Martinson (M.A.T.,'69) has changed careers and recently entered the christian ministry full-time.

Dave Mathews (B.S.,'59;M.A.,'60) continues as a Senior Geophysicist with Unocal. He looks forward to retirement in 1991, at which time he plans to remain in Alaska and do some serious fishing and gardening.

Craig A. McCammack (B.S.,'82) was recently promoted to Assistant Project Geologist with Applied Geosciences, Inc., Tustin, California. AGI is an environmental consulting firm specializing in site assessments prior to real estate transactions, where hazardous materials are of concern (leaking underground fuel tanks, etc.). He has been with AGI since 1986. They are expecting their first child in early May.

Scott McCready (B.A.,'82) has worked as a hydrogeologist and environmental scientist for Ross Environmental Services in Grafton, Ohio (near Cleveland), since January 1990. He is in charge of the groundwater monitoring program. Before going

with Ross, he worked for over five years for Geosciences Research Associates and then two years in the Geology Section at the Indiana Department of Environmental Management. He and his wife, Dawn, have a daughter, Kelly, and expected another child in May 1990.

Roland Merkl (M.S.,'85;Ph.D.,'89)-is with SUD CHEMIE, Munich, Germany.

John R. Mitchell (B.S.,'70;M.A.,1972), and his wife Marilou, died in an ambush attack in the Phillipines on February 23, 1990. John was working as an independent geologic consultant. John's brother, **Jim**, also received a degree in geology at I.U. (M.A.,'68;Ph.D.,'72).

George T. Moore (M.A.,'54;Ph.D.,'56) is Senior Research Geologist for Chevron Oil Field Research Co. (La Habra, CA). He is working in the field of paleoclimatology doing paleoclimate modeling limitations on a Cray MP. Thus far early Late Permian and Late Jurassic simulations have been completed and reported on at several meetings and in the literature. This work in the frontier of our science is both stimulating and exciting.

Dan Petzold (M.S.,'87;Ph.D.,'90) has a one-year appointment on the geology faculty at Bucknell College for the 1990-1991 year. Dan defended his Ph.D. dissertation in May, 1990.

Bob Pruett (M.S.,'88) is with Georgia Kaolin Company Research Department, Springfield, Illinois.

Steve Saines (M.A.,'83) is Senior Scientist with Todd Giddhep & Associates, Inc. in Pennsylvania, where he has worked for three years. His wife Sherri is half through with a Masters in Library Science from Classen University. They have two children, George (4 years) and Alex (1-1/2 years).

Tim Salter (B.S.,'78;Ph.D.,'88) is with Thiele Kaolin Company, Sandersville, Georgia.

Otto Sardi (Ph.D.,'69) is a Professor of Geology at Connecticut State University, having been chairman. He also served recently as a Mellon Fellow at Yale University. He and his wife, Henriette, have three daughters, two of them are graduate engineers and the third is studying engineering at Case Western Reserve University. The family is planning a visit to Hungary this year.

Al Shultz (M.A.,'80;Ph.D.,'86) has been an Assistant Professor at the University of Alabama since graduating from I.U. His research is on Gulf Coast sediments and computer applications in sedimentary geology. He has been teaching G111-112 at the I.U. Field Station since 1987. He and his wife Kathie have three children: Peter, Martin, and Katina.

Synthia Smith (B.S.,'78) is the Production Geological Training Coordinator for Exxon Company, USA. As such, she oversees training and develops and maintains production geology courses for all their domestic-overseas geologists and geophysicists. It's a different kind of prospecting: looking for ideas and trends that will help to discover how to get the last drop out of current producing properties, and then how to train people cost-effectively in those new ideas.

Dennis Sponable (M.S.,'89) was given the Cumings Award for 1990 for his thesis: "A geophysical study of the Pennsylvanian strata of Indiana: generation of synthetic seismograms from resistivity amd velocity logs. The Cumings Award is given for student research on Indiana Geology.

William Swanson (B.S.,'86;M.S.,'88), geophysicist with Exxon, returned to Indiana University in October and presented a colloquium entitled "Chalky Deep: A Successful Team Effort in a Mature Hydrocarbon Province."

Gene Taylor (B.S.,'50;M.A.,'52) is residing with Dottie in the Jackson, Missouri area. Since the oil business is so sorry, he feels that he is semi-retired. He is enjoying traveling. He missed the summer camp reunion, but would be very interested in attending a reunion of the first year's group, of which he was a member.

Margaret Thomas (M.S.,'89) is working with an environmental firm in Houston.

Tom Toth (B.S.,'86;M.S.,'89) is with the Department of Natural Resources for Minnesota.

J. Scott Uttley (M.A.,'69), wife Hari and their four boys returned to the Rocky Mountain area after three years in Bakersfield, California. He is now a senior consulting geologist with ECL-Bergeson in permeability studies in the South China Sea, petrophysical mapping in Qatar, and evaluation of fields in Bolivia.

Greg Wahlman (B.A.,'72;M.A.,'75) has lived in Houston for 10 years with Joani and their 2-year-old daughter Katie. He works for Amoco Production Company as the Regional Biostratigrapher for the Africa and Middle East Region. Most of his technical work concerns the micropaleontological and microfacies analyses of Paleozoic and Mesozoic carbonate sequences. His dissertation on Ordovician mollusks from the University of Cincinnati will be published in 1990 as a USGS Professional Paper.

Steven Walker (M.A.,'78) is employed by Harding-Lawson Associates, Novato, California, as a Senior Hydrogeologist involved in ground-water contamination studies, aquifer restoration, and water well design. He now lives in Vallejo with wife JoAnne and son Robert, 1-1/2 years of age.

Paula Weiss (M.A.,'81) is Head Curator of the Ocean Drilling Program's East Coast Core Repository located at Lamont-Doherty Geological Observatory in Palisades, New York.

Dianne White (B.S.,'88) is now working for Metcalf-Eddy, a waste engineering company in Chicago.

Dietrich Whitesides (B.S.,'86) has taken a position as staff hydrogeologist with R.L. Stolby & Associates, Inc., in Denver, Colorado.

Larry D. Woodfork (B.S.,'64;M.A.,'65) is director of West Virginia Geological and Economic Survey in Morgantown, West Virginia.

Marty Yates (M.A.,'84;Ph.D.,'87) is a Research Scientist and Director of Electron Microprobe Laboratory, University of Maine.

ALUMNI COUNCIL MEMBERS - DEPARTMENT OF GEOLOGICAL SCIENCES

Abhijit Basu
Robert Blakely
Wayne Bundy
J. Robert Dodd
Marcia Engle
Michael Graham
Stephan Graham
Lester Logue
Jud Mead
Ann Petricca
Frank Pruett
Robert Shrock
Don Six
Thomas Straw
Lee Suttner
Kim Thomas
Dan Tudor
Steve Young

I.U. ALUMNI PARTY, DALLAS TX, OCTOBER 29, 1990

The Department and the College of Arts and Sciences Alumni Association sponsored a reception at the annual GSA meetings in Dallas in October. The reception was well attended by a number of faculty, students, alumni and friends. Below is a list of those in attendance. A few of the names were difficult to read, so if we missed anyone or misread your writing we apologize.

Robert L. Anstey, Bill Ausich, Regina Ausich, Steve Baedke, John Bahr, Ken Bork, Dave Bottjer, Richard L. Bowen, Jim Brophy, Joan Brophy, Gerald P. Brophy, Clint M. Brown, Brenda J. Buck, Bob Burger, Bob Cassie, Ron Chase, Chuck Cluck, Roger J. Cuffey, Pete Dahl, Greg Dipple, Joann Dodd, Bob Dodd, Mike Dorais, Carl N. Dramod, Seth Edwards, Mason Estes, Howard R. Feldman, Dan Frederick, Kate Freeman, Verne M. Friberg, James E. Gaiser, Paul Genovese, Barb Gruver, Eric Gyllenhail, Marge Hattin, Don Hattin, Tom Hendrix, Nina Hendrix, Glenn Hieshima, John Holbrook, Marilyn C. Huff, G.F. Huff, Ray Ingersoll, Jay L. Jackson, Calvin James, Bill Jones, Suzanne Kairo, Alan Jay Kaufman, Jim Keith, Angela Klein, Kase Klein, Larry Knox, Mike "Ron" Lambert, Rip Langford, Darrell Leap, Myra Leap, Dick Liebe, Robert Maliva, Chris Maples, Glenn Mason, Geoff Mathews, Mike May, D. F. Merriam, Theresa Messina, Cheryl Metz, Peggy Meyers, Jim Meyers, Art Mirsky, Haydn Murray, Liz Nelson, Alice Nightengale, Joseph Pachut, Mark patzkowsky, Lisa Pratt, Unni Rowell, Mike Savarese, Al Schneider, Nelson Shaffer, Michael Soreghan, Lynn Soreghan, Jim Steidtmann, Tom Straw, Lee Suttner, Ross Taylor, Mark A. Tinker, Kathy Troost, Ross Vandrey, Richard W. Walker, Bill Wayne, John Webster, Stephen G. Wells, Pia Wiegel, Bruce Wilkinson, Roy E. Williams, and **An Yin.**

ACKNOWLEDGMENTS

The 1990 Alumni Newsletter was compiled and edited by Professor Albert Rudman. Janice Harste contributed a number of hours assisting with the wordprocessing and a number of related duties necessary for publication of this year's edition.

The College of Arts and Sciences Alumni office contributed partially to offsetting the printing expenses of this newsletter as well as the mailing costs. The Alumni mailroom handled distribution. We appreciate their assistance.

PHOTOGRAPHS

We would be pleased if you could loan us interesting photographs (prints or negatives), especially those showing people from your time in the Department. Depending upon the theme, how many other photos we have,how well they might be printed and reproduced, etc., we might be able to use them, if not next year, then perhaps in a subsequent year. If you do submit photos, please be sure to provide as much related information as you can. Also, be sure to include your name and address so we may return the photos to you later.

Fig. 1. Alumni Council. January 12-13, 1990.
Row 1: Left to right: Bob Blakely, Kim Thomas, Marcia Engle, Jayne Sieverding, Ann Petricca, and Doug Reynolds.
Row 2: Left to right: Tom Straw, Steve Graham, Steve Young, Frank Pruett, Dan Tudor, Mike Graham, and Bob Dodd (Chair).
Absent from photo: A. Basu (teaching a class)

Figures 2 and 3. Pat Gerdsen, B.S., '50, sent us some interesting photographs from an April 15-16, 1950, field trip. Fig. 2 shows two familiar faculty faces, **Ralph Esarey** and **J.J. Galloway**. Fig. 3 is our puzzler-of-the-year. A modest prize will be awarded for identification of at least three of the student geologists shown. Here is a clue: they are looking at the New Albany black shale in Tunnel Mill, Indiana.

We hope that you will consider making a donation to the Department of Geological Sciences. Please make your check payable to:

I.U. FOUNDATION

You may specify that your donation go to any of the various funds which are maintained by the I.U. Foundation for the Department of Geological Sciences. You may specify a particular fund: Geological Sciences (department's general account); Ralph E. Esarey (geological research in Indiana); Galloway/Perry (research/educational needs of graduate students in paleontology, stratigraphy and paleoecology); Judson Mead Field Station (student/faculty support at the field station); John B. Patton (research on geology in Indiana); William Thornbury (student research in physical geology, with preference for geomorphology and glacial); Cumings/Malott (to encourage superior work by staff/students in geological sciences); Charles Deiss (to support scholarships to Field Station); Arch McPheeters Student Loan (short-term no-interest loans to geology majors); Excellence in Geology (undergrad scholarships, graduate research, summer field training), or the Geologic Field Station Maintenance Fund (improvements to physical facilities).

In 1988 a university account was established in memory of John B. Patton which specifies funds for the Library. Contributions to this fund should be made to Indiana University rather than the Foundation. Contributions of a general nature will be placed in the Department of Geological Sciences fund.

Mail your gift to:

Lee J. Suttner, Chair
Department of Geological Sciences
Indiana University
1005 East 10th Street
Bloomington, IN 47405

PLEASE FILL OUT THIS SHEET AND RETURN IT TO US SO WE HAVE YOUR NEWS FOR THE NEXT NEWSLETTER. IF YOU HAVE A CHANGE OF ADDRESS, BE SURE TO INCLUDE IT.

NAME: DEGREE(S) YEAR(S)

ADDRESS:

MY NEWS IS:

PLEASE CHECK IF YOU WOULD BE WILLING, IF CONTACTED, TO CONSULT WITH OUR GRADUATES CONCERNING EMPLOYMENT, CAREER CHOICES, ETC. IN YOUR GEOGRAPHIC AREA AND/OR WITH YOUR COMPANY:

☐

Please mail this sheet to:

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1005 East 10th Street
Bloomington, IN 47405