

HOOISIER GEOLOGIC RECORD

Alumni Newsletter of the Department of Geology

December 1988

MESSAGE FROM THE CHAIRMAN

This has been an eventful year in the history of the Geology Department. We have added a new faculty member, Vishnu Ranganathan, and a new professional staff member, Bruce Douglas. Bob Shaver retired from our faculty at the end of 1987 after some 40 years of distinguished service to the Department, the Survey, and the University. We are now in the process of finding a faculty member to fill Bob's position. In September, we received the sad news of the death of John Patton, Professor Emeritus of Geology, former chairman of the Department, and director of the Survey. John has made tremendous contributions to the Department through the years, and we miss him greatly.

Several of our faculty have received honors during the past year. Lee Suttner received an award from SEPM for co-authoring the best paper in the Journal of Sedimentary Petrology for 1986. He also received the Neil A. Miner Award from NAGT in recognition of his exceptional contributions to the stimulation of interest in the earth sciences. This was a great year for Lee! John Patton received an award from ASTM in recognition of his meritorious contributions to that society. Don Hattin recently received an outstanding teaching award from the IU Alumni Association. The IU School of Continuing Studies gave John Droste an award in recognition of his outstanding teaching in the independent learning program. Our own students gave Jim Brophy an award for his outstanding teaching. The faculty voted to make Richard Owen Awards to two of our outstanding alumni, George Ericksen and Robert Boyer.

Several laboratories have been extensively renovated this summer and fall. Except for a few nagging problems that still need to be corrected, that work is now mostly complete. We plan to make more renovations during the next year. We learned recently that an addition to our building is scheduled for the late 1990's, and we are rapidly outgrowing our 27 year old building-which some of us still think of as the "new" building. The Survey has received approval to construct a sample preparation laboratory about two blocks from the building, and

they have generously invited us to share in using that facility.

The next few years should be exciting times for our department. The new president of IU and our new dean of the College of Arts and Sciences are both dynamic individuals who are striving to make IU an ever more outstanding university. We are being challenged to make the Department of Geology one of the most outstanding departments in both teaching and research in the country. But it is also a time of budgets stretched to the limit. We are especially concerned about maintaining the quality of our library in a time of rapidly expanding costs and slowly expanding budgets. In the face of an aging facility and declining enrollments, we are challenged to maintain the quality of our Montana-based field program, probably the premier field program in the country. With support from the University and our alumni, we are sure that we can meet these challenges.

Best regards,

Bob Dodd

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. The Senior Faculty Award was given to Sam Niemann of Speedway and Ross Vandrey of Indianapolis received the Junior Award. The Charles Deiss Field Station Scholarship was presented to Matthew Slagel of Lafayette. Mary Parke of Warsaw received both the William Tarr Award from Sigma Gamma Epsilon and the Arts and Sciences Alumni Association Award. Additional Field Station Scholarships were awarded to John Laribee of New Salisbury, Michael Miller of Zionsville, Sam Niemann of Speedway, Alice Nightengale of New Albany, Neil Suits of East Lansing, Michigan, and Deborah Zervas of Flossmoor, Illinois. Deborah Zervas also received the Chevron Oil Company Undergraduate Scholarship in Geophysics and an Undergraduate Honors Division Scholarship. Matthew Slagel of Lafayette was awarded the Chevron Oil Company Undergraduate Scholarship in Geology and also a Senior Achievement Award from the Honors Division. Matt was also elected to Phi Beta Kappa National Honorary Society.

Graduate fellowship holders who were honored were Paul Anderson of Honolulu, Hawaii (Chevron Oil Company Fellowship in Geophysics), Andrew Malone of San Clemente, California (Shell Oil Company Fellowship), Kelly Ahlschwede of Crete, Nebraska (Graduate School Fellowship), Glenn Hieshima of Mill Valley, California (Graduate Minority Fellowship), Richard Flores of Pailin, New Jersey (Graduate Minority Fellowship), Carol Bangs of Metairie, Louisiana (Patricia Roberts Harris Fellowship), Thomas Dombrowski of Warner Robbins, Georgia (Grassman Fellowship),

Roland Merkl of Ansbach, Federal Republic of Germany (Oil Dri Corporation Fellowship), and Katherine Freeman of Potomac, Maryland (NASA Graduate Student Researchers Fellowship).

Additional awards honoring graduate students for academic performance were the Graduate School Alumni Association Award given to William Swanson of Merrillville and the Estwing Company Award presented to Mark Brown of Farmington, New Mexico.

Teaching awards for outstanding service as associate instructors were also presented. Signe Wurstner of Dayton, Ohio received the award for courses for non-majors with Robert Pruett of Madison, Wisconsin earning the award for courses for majors. Sigma Gamma Epsilon presented a new award for excellence and commitment in education by a faculty member, and James Brophy became the first recipient.

JOHN BARRATT PATTON - IN MEMORIUM

John Barratt Patton passed away on September 16, 1988 following a lengthy period of ill health. He retired as Professor of Geology, State Geologist, and Director of the Indiana Geological Survey on July 1, 1986. John was the 12th State Geologist and served for 27 years, the longest tenure of any person in that position.

John was born on July 1, 1915 in Marion, Indiana, and attended public schools in Marion and Anderson. He enrolled at I.U. in 1934 where he majored in chemistry, graduating in 1938. He was an outstanding student and was elected to Phi Beta Kappa. John decided to go to graduate school in geology and received the A.M. degree in 1940. He joined Magnolia Petroleum Company as an exploration geologist working in the Texas Gulf Coast area and in the Illinois Basin during his seven years with Magnolia. In 1947, Dr. Charles Deiss, the State Geologist, persuaded John to return to Indiana to head the Industrial Minerals Section of the Indiana Geological Survey. John pursued additional graduate studies at I.U. on a part-time basis while he was employed full-time at the Survey and completed requirements for the Ph.D. degree in 1954. In 1951, John was promoted to the position of principal geologist of the Indiana Geological Survey, and in 1952 he was appointed an associate professor in the Department of Geology in addition to his job as principal geologist with the Survey. In 1955, he was promoted to full professor and in 1959 he became Chairman of the Department of Geology, State Geologist, and Director of the Indiana Geological Survey. In 1971, the University decided that the Department and Survey needed separate heads, so John continued as State Geologist and Director of the Survey as well as Professor of Geology, but resigned as Chairman of the Department of Geology.

John was instrumental in the design and construction of the Geology Building. The departmental wing was occupied in 1962 and

the Survey wing in 1964. He was a dedicated public servant of the highest integrity who served the University and the State of Indiana for 39 years. John was a role model for students and professional geologists, a skilled administrator and teacher, and an advisor and friend to many students, professional geologists, faculty members, staff members, and many persons in the minerals industry in Indiana. He authored or coauthored more than eighty papers, delivered scores of invited addresses to geological and civic groups, and led innumerable geologic field trips for service, hobby, museum, educational, and professional groups.

He received many awards including the Public Service Award from AAPG in 1983, was elected a Distinguished Member of the Society of Mining Engineers in 1985, was made a Kentucky Colonel and a Sagamore of the Wabash in 1986, received the Richard Owen Award from the Department of Geology in 1986, in 1988 received the Award of Merit from the American Society for Testing and Materials and was the recipient of numerous other awards as well, including the Centennial of Science Award in 1966 from the University of Notre Dame in recognition of his research contributions to the State of Indiana. Service appointments included the National Research Council, the Interstate Oil Compact Commission, the Ohio River Valley Water Sanitation Commission, the North American Commission on Stratigraphic Nomenclature, the Indiana Energy Development Board, the Bloomington Environmental Quality and Conservation Commission, and he was the former president of the Association of State Geologists and the Indiana Academy of Science.

John loved Indiana University from the time he entered in 1934 until his death in 1988. He and his wife, Jean (nee Glenn) had four sons, Barratt, Roger, Jamie, and Ian. Jamie, a C-130 pilot in the U.S. Air Force was killed in an airplane crash in 1982. John and Jean always had an open door to visitors to their home and many present and former students, colleagues, neighbors, and professional visitors will remember their hospitality and the pleasant and congenial discussions at 809 Sheridan Road.

Much more could be said concerning the many facets of John Patton's long and dedicated career in geology. John was one of the best listeners to both professional and personal problems. He was a problem solver, a dedicated achiever, a tireless public servant, and congenial host. He will be sorely missed by his former students, colleagues, and friends but will always be remembered as a pillar of stone at Indiana University for his good will, honesty, wisdom, dedication, and his excellent communication skills by spoken and written words.

Haydn H. Murray

PATTON LIBRARY FUND

Several people have asked us how they might express their

appreciation for John Patton's outstanding contributions and their sense of loss upon his death. Because of John's special interest in the library, Gary Lane has suggested that those wishing to make a contribution in memory of John could do so by contributing to a library fund. Jean Patton has agreed that this is an appropriate way to express our feelings toward John.

We have established a special committee which will select books to be purchased from this fund. Book plates will be affixed to these books stating that they have been contributed as a memorial to John Patton. Not only is this a nice memorial to John, but also it will help us to maintain our collections in the face of severe university budget restrictions on the purchase of books.

If you wish to contribute to this fund, please make your check payable to Indiana University (not the IU Foundation) and earmark it for the John Patton Library Memorial Fund. The checks should be sent to the Department of Geology, Indiana University, Bloomington, IN 47405.

DEPARTMENTAL NEWS

The Department of Geology Alumni Council held its annual meeting in Bloomington on January 15-16, 1988. The first day centered around reports on the undergraduate and graduate programs, computer and geophysics facilities, the Geology Library, Field Station, and the Indiana Geological Survey. A social hour and potluck dinner at the Univeristy Club Rooms in the Indiana Memorial Union was held Friday evening. The employment roundtable for students was repeated again this year on Saturday morning with council members providing a discussion of employment opportunities in a wide variety of areas. We very much appreciate their informative counsel for both students and faculty alike and are especially pleased by the impressive number of council members who donated their time to attend. Included from beyond Bloomington were Wayne Bundy, Marcia Engle, Dick Gibson, Frank Kottowski, Ellen Lake, Janet Borgerding-Murphy, Frank Pruett, Doug Reynolds, Jayne Sieverding, Tom Straw, Dan Tudor, and John Utgaard. A photograph of the council members is included with this newsletter.

The budget crisis for the I.U. Libraries continues and we again have been forced to eliminate subscriptions to a significant number of serial publications. At this time, we have been able to continue to receive our most important journals, but it is becoming increasingly difficult to determine which periodicals to discontinue. Unfortunately, in order to maintain necessary serials, we have found it necessary to spend practically our entire acquisitions budget such that we only have a few hundred dollars left for monographs. Contributions by individuals or corporations to the Department of Geology dedicated toward the purchase of monographs are especially

appreciated.

Support from alumni and other friends, both individual and corporate, continues to greatly assist us in meeting our needs and improve the quality of the Department. Chevron, Shell, Standard, and Texaco have been most generous with major support for undergraduate, graduate, and unrestricted use. Not only these, but all of your contributions large and small have been of great importance in enabling us to provide better undergraduate and graduate programs than would otherwise be possible with just our university budget. We are indeed grateful!

Laboratory renovation and office changes continue this year. Lisa Pratt's laboratory space is now well toward completion on the third floor as are new laboratory facilities for Jim Brophy, Ed Ripley, and Lee Suttner. Dr. Vishnu Ranganathan, our new physical hydrologist, will be moving to fourth floor space currently used by Enrique Merino. Dr. Bruce Douglas now has the position of Research Scientist and will be occupying space on the fourth floor with Jeremy Dunning where they are collaborating in rock mechanics research. Abhijit Basu, Enrique Merino, and Lee Suttner will all be moving to the fifth floor within the next year to consolidate our sedimentology research laboratories. One lab is already nearly finished for use for sedimentology research.

The student computer laboratory just outside the Geology Library on the sixth floor has been substantially expanded with much of the funding coming from a grant from Texaco. Recent additions include two more Macintosh computers, several IBM-compatible computers, associated printers and an impressive assortment of new software. We appreciate the assistance of Texaco and others who have made these additions possible. The University also has provided funds so that every faculty member who wants a faculty work station with a microcomputer, printer, and some software can have one. Nearly everyone has taken advantage of this and continued annual funding is enabling us to upgrade existing computer equipment, purchase additional hardware (e.g. laser printers), software (e.g. the Department is moving to WordPerfect 5.0 for word processing), and under the leadership of our computer committee chaired by Gary Pavlis, we are currently networking the fourth floor (and ultimately probably the entire building) with a Sun file server and Ethernet transceivers.

In October, the Department again participated in the Physics, Astronomy, Geology Open House for high school science teachers and their students. Mike Hamburger and Bruce Douglas organized our part of the program with help from several other faculty and students. John Hayes gave one of the three featured talks and spoke on the greenhouse effect. Gary Pavlis simulated an earthquake with an explosive charge in Dunn Woods which was recorded with a seismometer. Approximately 1,200 to 1,500 persons attended the one-day open house. Demonstrations and laboratory visits in the Geology Building were provided for interested participants. We hope this program will stimulate interest in geology as an undergraduate major at I.U.

It was good to see many of you at the alumni receptions held in Denver at the GSA meeting this fall and in Houston at the AAPG meeting last spring. The turnouts were splendid. We will also have an alumni reception at the AAPG meeting in San Antonio in April. We hope that many of you will join us there.

No year would be complete without an earthquake. Although not equalling last year's Lawrenceville, Illinois earthquake of June 11, 1987 (5.0 on the Richter scale), some of us felt and our geophysicists recorded a quake of 4.5 magnitude centered near Ashland, Kentucky on September 6. Kim Schulte, our third floor secretary, appeared briefly on Indianapolis TV because she informed a reporter here to interview Mike Hamburger that she had felt the earthquake in Bloomfield.

FORTIETH ANNIVERSARY OF GEOLOGIC FIELD STATION

The Geologic Field Station will celebrate its 40th anniversary next summer. In 1949, Professors Charles F. Deiss and Charles J. Vitaliano took the first group of students to the newly built station at the confluence of South Boulder River and Carmichael Creek at the north end of the Tobacco Root Mountains. Prior to construction of the Station, post-World War II students at Indiana University shared a field facility with Princeton University at Red Lodge, Montana. In fact, the earliest group of Indiana students to do geology in the Tobacco Roots was the 1948 class (see photo below). This class worked along the South Boulder River while on a field trip Professors Deiss and Vitaliano led out of Red Lodge.

In 1949, students arrived in the midst of on-going construction at the Station. The resident manager's house, lodge, office, and sleeping and bath facilities were the only permanent buildings (see photo). Since then, the number of buildings has quadrupled; a classroom, library, laboratory, and an additional office building have been added in addition to significant expansion in faculty, staff and student quarters (see photos). Over the last five years, extensive renovation has taken place. The electrical system throughout the Station has been replaced, over \$125,000 has been spent remodeling the lodge and kitchen, and planning is in progress to replace the water and septic systems. Expansion of both the resident manager's house and faculty/staff housing is expected to follow.

In 1949, 42 students and six faculty/staff were in residence at the Station. G429, the undergraduate majors course, was the only offering. In the early 1980's, during the peak years of enrollments in geology, two sections of G429, each enrolling approximately 70 students and taught by twelve faculty and associate instructors occupied the Station. Additionally, 30-35 students, faculty, and staff were involved in introductory geology and graduate research seminars. This past summer the total enrollment in the two sections of G429 dropped to 95,

reflecting the low number of geology majors throughout the country.

For the summer of 1989, a total of 60 scholarships ranging in value from \$150-\$400 will be awarded on a competitive basis to students enrolling in G429. We hope that this major scholarship program, made possible by generous individual and corporate donations, will help to insure that the I.U. Geologic Field Station continues to attract a majority of outstanding geology majors from across the United States.

INDIANA GEOLOGICAL SURVEY

The Indiana Geological Survey is making a major initiative to expand its environmental geology program. Since its creation 18 months ago, the Environmental Geology Section has completed a major report on sources of radon for Indiana, has been a participant with the Department of Natural Resources Division of Water in three studies of water drainage basins, has worked cooperatively with the DNR Reclamation Division on a major project for reclaiming an abandoned coal mine, and is doing a study on naturally-occurring contaminants in ground water for the U.S. Environmental Protection Agency. One additional environmental geologist has been hired to increase our cooperative research efforts with the Indiana Department of Environmental Management and the Division of Water. A request has been submitted to the state legislature in the biennial budget for two additional professional positions and support personnel to move the Geological Survey into areas of environmental geochemistry and environmental geophysics. Additional laboratory space has already been approved for the expanded program.

Subsidence in areas underlain by underground coal mines in southwestern Indiana endangers many existing structures and is a potential danger to new buildings. Quadrangle maps constructed by geologists in the Coal Section show the location of known mines. Data for the maps were compiled from historical literature, government-agency files, and current fieldwork. The maps have been popular and are used mostly by landowners, the coal industry, and insurance companies.

A new publication, "Geology and Petroleum Production of the Illinois Basin, Volume 2", is now available through the Publications Section for \$28.75 prepaid. The 272-page book is a collection of oilfield case studies and brief regional reports pertinent to petroleum geology and production. The publication, which is a joint effort of the Illinois and Indiana-Kentucky Geological Societies, was organized and edited by Charles Zuppann, Brian Keith, and Stanley Keller. Seventy-one authors contributed to the volume.

Plans have been initiated for the development of a petroleum research effort which will be directed at recovering bypassed oil

which has been estimated at 490 million barrels for the Illinois Basin. Use of the Survey's excellent set of subsurface records to recognize and define stratigraphic heterogeneities will be a key for the success of this program.

Funds have been appropriated for the construction of a new laboratory facility to replace the "Quonset Hut". The 6,000 sq. ft. structure will be dedicated for the most part to sample preparation, testing, and analysis of Quaternary materials.

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. BROPHY (NSF)- A detailed petrologic study of Kanaga and Seguan: an attempt to confirm the temporal evolution of Aleutian arc centers.

J. DUNNING (Dow Chemical)- Chemical weakening of ceramics.

J. DUNNING (NSF)- Chemical weakening of geologic materials.

J. DUNNING (Sabbagh Associates)- Measurement of electromagnetic fields using small inductive pickup coils.

M. HAMBURGER (USGS)- Spatial and temporal patterns of seismicity in the Garm region, USSR: applications to earthquake prediction and collisional tectonics.

D. HATTIN (NSF)- Upper Cretaceous cirripeds of the central Great Plains: taxonomic, biostratigraphic, and paleoecologic analysis.

J. HAYES (DOE), (with L. Pratt)- Organic geochemical and tectonic evolution of the Midcontinent Rift system.

J. HAYES (NASA)- Isotopic biogeochemistry.

J. HAYES (NSF)- Isotopic biogeochemistry of biomarkers and paleobarometry of CO₂.

J. HAYES (Amer. Chem. Soc.)- Carbon isotopic studies of organic diagenesis.

J. HAYES (Finnigan Corp.)- Development of an on-line isotope ratio monitoring gas chromatograph/mass spectrometer.

S. MANCHESTER (NSF)- Systematic affinities, age and biogeographic relationships of fossil floras from the Eocene Clarno Formation of Oregon.

P. ORTOLEVA (NSF)- Mathematical modelling of metamorphic differentiation.

G. PAVLIS (DEPT. OF INTERIOR)- Seismotectonics of the Central Calaveras fault.

G. PAVLIS (NSF)- Crustal imaging through geotomography and wavefield migration of reflected head waves: application to the Kentland dome.

G. PAVLIS (USGS)- Discrimination of space-time clustering in central California earthquake sequences.

L. PRATT (Shell Develop. Co.)- Production and migration of hydrocarbons in rift-basin lacustrine systems.

L. PRATT (DOE), (with J. Hayes)- Organic geochemical and tectonic evolution of the Midcontinent Rift system.

L. PRATT (NSF)- Geochemical and stable isotopic study of the C_{org}-S-Fe-Mn system in anoxic paleoenvironments.

E. RIPLEY (NSF)- Distribution and genesis of platinum group elements in the Dunka-Road and Bassitt Cu-Ni deposits, Duluth Complex, Minnesota.

L. SUTTNER (NSF)- Regional tectonic-stratigraphic analysis of a late Jurassic - early Cretaceous cordilleran foreland basin.

L. SUTTNER (Amer. Chem. Soc.)- Environmental controls on the petrology of sandstone in a Pennsylvanian fan-delta.

R. WINTSCH (NSF)- Geochemical assessment of mass transfer volume and volume change during slaty cleavage development.

R. WINTSCH (NSF)- Fault mechanics: the role of mineral reactions in fault rocks.

R. WINTSCH (NSF)- Thermochronology applied to the metamorphic and tectonic history of the Merrimack, Nashoba, and Hope Valley zones, southeastern New England.

DEPARTMENT OF GEOLOGY FACULTY AND STAFF

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

Research

Scientists: Michael Dorais, Bruce Douglas, Alan Horowitz, Steve Manchester

Librarian: Lois Heiser

Secretaries: Sarah Burton, Administrative Assistant
Patty Byrum, Senior Secretary, Business Office
Mary Iverson, Student Records
Kay Strahm, Geologic Field Station
Kim Schulte, Faculty Secretary, Third Floor
Janice Harste, Faculty Secretary, Fourth Floor
Wanda Pennington, Faculty Secretary, Fifth Floor

Staff: Gary Bayer, Thin Section Preparator
Mark Gilstrap, Analytical Chemist
Gary Hinton, Field Station Resident Manager

Charles Miller, Machinist
Kimberly Sowder, Drafting Technician
Terry Stigall, Electronics Technician
Steve Studley, Electronics Technician
Jim Tolen, Draftsman
Lori Zinn, Drafting Technician

Professors

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

FACULTY NEWS

ABHIJIT BASU was recently elected President of the Great Lakes Section of the SEPM.

JIM BROPHY was presented with the Texaco-Sigma Gamma Epsilon Award for excellence and commitment in education, a new teaching award instituted by our students this past spring.

DON CARR received the Hal Williams Hardinge Award of the American Institute of Mining, Metallurgical and Petroleum Engineers, this for his outstanding achievement in the field of industrial minerals.

DAVE DILCHER has just been awarded the prestigious Tracy M. Sonneborn Award for 1988-89. This is presented each year by I.U. to one faculty member who has achieved distinction both as a teacher and as a scholar. Also included is a \$4,000 summer fellowship and a \$2,000 grant-in-aid. On November 16, Dave presented the Sonneborn Lecture of 1988 entitled, "The Past is Prologue: Paleobotany and Today's Responsibilities". Earlier, in September and October, Dave visited Adelaide, Australia where he gave a talk to the South Australian Geological Society and presented a seminar at the Department of Geology, University of Adelaide.

BOB DODD is working on the revision of his paleoecology textbook co-authored with Bob Stanton and hopes to finish it this year. He also plans to go to a conference in London, England next May to present a paper on sea level history during the Neogene in the Kettleman Hills area, California. Bob and Joann joined Dave and Lindsay Towell for an exciting week in Yellowstone National Park during the first week in January.

JOHN DROSTE is the recipient of the School of Continuing Studies Teaching Excellence Award which honors outstanding teaching and recognizes creative time and energy devoted to non-traditional students.

MIKE HAMBURGER, with substantial support from the USGS, initiated successful US-Soviet collaboration on seismological investigations at the earthquake prediction test area in Soviet Central Asia. He also served as a member of the US delegation to the US-Soviet working group meetings on earthquake prediction exchange held in Menlo Park, California in early July.

DON HATTIN was honored with a Graduate School-College of Arts and Sciences Alumni Association Distinguished Teaching Award

presented on November 4. He was the lead speaker in a symposium entitled "SEPM Global Sedimentary Geology of the Cretaceous" at the AAPG Annual Convention in Houston.

JOHN HAYES convened and ran the Gordon Research Conference on Organic Geochemistry held at Holderness School, Plymouth, New Hampshire, August 15-19.

ALAN HOROWITZ reports that he is recovering from the traumatic experience of moving his office from G525 to G501-G503 necessitated by the fifth floor renovations for our sedimentology program. However, with a little more space now, he is comfortably settled behind a microcomputer obtained this year through University funds given to the Department.

BRIAN KEITH received the A.I. Levenson Memorial Award for the best paper presented at the 1987 Columbus, Ohio meeting of the Eastern Section of the AAPG. His talk was entitled "Tectonic influence on sedimentation patterns, Upper Ordovician of eastern North America". Brian also recently served as Treasurer of the Eastern Section of AAPG.

NOEL KROTHER attended a conference in Guilin City, Peoples Republic of China, October 6-23, sponsored by the International Association of Hydrogeologists and entitled "Karst Hydrogeology and Karst Environment Protection".

GARY LANE attended a four-day symposium on Paleozoic biogeography and paleogeography held at Oxford University, England where he presented a paper coauthored with Dr. George Sevastopulo of Trinity College - Dublin. At the GSA meeting in Denver, Gary finished his term as President of the Paleontological Society and presented the presidential address. He will continue on the Society's Council for an additional year as past-president and will chair the Society Medal Committee.

RAUL LIRA, a visiting professor from the University of Cordoba, Argentina, is studying rare earth element mineralization in the Achala batholith, Argentina through research in Ed Ripley's laboratories.

STEVE MANCHESTER was elected in August as Chairman of the Paleobotanical Section of the Botanical Society at the Society's meetings in Davis, California. Steve also has been selected by the National Academy of Sciences as a participant in an interacademy scientific exchange program with Czechoslovakia during the summer of 1989. He will spend one month in Prague working with paleobotanists on fossil plant genera shared between the Tertiary of North America and central Europe.

ENRIQUE MERINO gave a talk on the tetrahedral aluminum content of low-temperature silicates at the Geological Congress of Spain held June 27-July 1 in Granada, Spain.

HAYDN MURRAY was elected 1988 president of the Illinois-Indiana Section of the American Institute of Petroleum Geologists. In May, he attended the International Bauxite Congress in Brazil sponsored by the International Committee for the study of bauxite and alumina and was elected vice-president of the International Committee and president of the North American Sub-Group. In May and June, Haydn was retained by the

Chilean Government to evaluate several industrial minerals deposits in Chili. He also gave a keynote address at an international symposium on industrial minerals held in Santiago on June 9-10. In October, Haydn was one of twenty participants in a workshop of the National Materials Advisory Board held at the National Academy of Sciences in Washington, D.C. on the role of science and technology on the competitiveness of the U.S. minerals and metals industry. In addition, he was nominated as the speaker of the year by the Indiana Academy of Science and gave the main address at the annual meeting held at Notre Dame University in November. He will also give this address, on the industrial minerals and their importance to our domestic economy, at six other universities around the State. Finally, Haydn steps down as President of the Society of Mining Engineers at the end of this year.

PETER ORTOLEVA has finished his book Geochemical Self-Organization. In July, he chaired a session at the Thermodynamics of Natural Processes Conference run by the IAGC in Strasbourg, Germany.

LISA PRATT was a keynote speaker in August at the national meeting of the SEPM, and she also visited Venezuela as a member of a U.S. Government committee to evaluate the oil and natural gas resource potential for the Venezuelan state-run oil companies.

ED RIPLEY will chair a symposium on ore deposits and the modeling of their geochemical, isotopic, and geologic framework at the International Geological Congress, Washington, D.C., 1989. He was also a participant in a workshop held recently at the USGS in Reston, Virginia on "New frontiers in stable isotope research: laser probes, ion probes, and small sample analysis".

BOB SHAVER has joined the Working Group on Subdivision of the Pennsylvanian System, an arm of the International Union of Geological Sciences Subcommittee on Carboniferous Stratigraphy. He also is an honorary member of the Selection Committee of the Society of Economic Paleontologists and Mineralogists.

LEE SUTTNER received notice somewhat after last year's newsletter that he and his co-author, Prodip Dutta (Ph.D. '83), received the 1986 best paper award for the Journal of Sedimentary Petrology. In addition, at the 1988 Geological Society of America and Associated Meetings in Denver, Lee was given the prestigious Neil A. Miner Award of the National Association of Geology Teachers which recognizes outstanding contributions to geological education. He joins Jud Mead, Emeritus Professor of Geophysics, a previous recipient, to make I.U. one of only two universities to have had more than one winner of the Miner Award.

DAVE TOWELL continues to serve on the Bloomington Faculty Council as well as the Student Affairs Committee, Subcommittee on Student Athletes, and Radiation Safety Committee. As editor of this newsletter, he appreciates your personal contributions and suggestions. Lindsay and Dave were thrilled by their week in Yellowstone National Park last January with Joann and Bob Dodd and consider the experience equal to the Grand Canyon float trip

of the early 1970's.

CHARLES VITALIANO and Dorothy have both been invited to participate in the forthcoming Third International Scientific Congress on the Volcano of Thera (Santorini). The Congress will convene on Santorini and last for six days in August-September 1989.

BOB WINTSCH is on sabbatical leave with the U.S.G.S in Reston, Virginia where he is using thermochronologic techniques to establish the cooling histories of several terranes in eastern New England.

ALUMNI NEWS

GARY ACTON (BS, '84) is at Northwestern University, Evanston, Illinois. He received the best student paper award for the 1987 Spring AGU Meeting, Tectonophysics Section. His research covered generalized rift propagation and microplate kinetics.

ALLEN F. AGNEW (Prof., '63-69) is Courtesy Professor at Oregon State University, Corvallis, teaching hydrogeology and engineering geology courses in alternate fall quarters. He is also Chairman of the Oregon Ground Water Advisory Committee and the Oregon Board of Geologist Registration. In addition, three of his kids and seven grandchildren are within 100 miles and there's "not much time for lickin spoons....have RV, will travel".

DICK ALEXANDER (Ph.D., '72) is completing his fifth year as Chairman, Department of Geosciences, Rider College, Lawrenceville, New Jersey. Last year he spent a sabbatical leave at Dunstaffnage Marine Research Laboratory in Oban, Scotland and this year he has been Chairman of the Northeastern Section of the Paleontology Society. Dick also teaches in the Penn State University Continuing Education Program at Shoals Marine Laboratory, Gulf of Maine and Marine Biological Station, Bermuda.

JOHN WAYNE ALLISON ('48) earned the Board of Governors BA degree from Governors State University, University Park, Illinois in the spring of 1988. He is also researching the Griffin Oil Boom of the Wabash River Valley and expects to publish a book on this topic.

ALLEN ARCHER (PhD, '83) attended and gave a paper at the four-day symposium in August 1988 at Oxford, England, on Paleozoic Biogeography and Paleogeography.

CECILIA ARMSTRONG (BS, '88) commenced work as a geologist for Exploration Logging, Inc. of Houston, Texas in June 1988 and worked on offshore Gulf of Mexico rigs for several months before being hired by an independent oil company as a geologist-geophysicist where she is learning seismic stratigraphy.

ROBERT BIEBERMAN (AB, '48; MA, '50) retired on May 1, 1988 as Senior Petroleum Geologist after 38 years of service with the New Mexico Bureau of Mines and Mineral Resources at Socorro, New

Mexico.

DIANE CAMERON (BA,'82) is Nuclear Waste Education Project Manager for the League of Women Voters Education Fund in Washington, D.C. and will be organizing a series of workshops for local citizen leaders on the technical, environmental, and regulatory aspects of nuclear waste disposal. She is also active on the Radioactive Waste Disposal Committee and the Toxic Waste Workgroup of the International Association for Impact Assessment.

ANDREW CAMPBELL (BS,'77) has been promoted to Associate Professor at New Mexico Institute of Mining and Technology, Socorro. During this year, he has been building a stable isotope laboratory funded by NSF. Last year he spent five weeks in Spain, Portugal, and England and four weeks in China studying tungsten deposits.

BRIAN CHEW (BA,'79) has been promoted to Senior Hydrogeologist and Environmental Services Manager for Law Engineering, Inc., Greenville, South Carolina. He has been with Law Engineering for eight years and specializes in ground water contamination assessments and design and implementation of remedial programs.

JANET CRAMPTON (BS,'55) is now Public Information Manager and Managing Editor of EOS, American Geophysical Union, Washington, D.C.

KURT M. CUFFEY, son of ROGER CUFFEY (BA,61;MA,'65;PhD,'66) was selected as one of the ten high-school seniors nationwide named as scholarship winners in the 47th annual Westinghouse Science Talent Search. His project was a morphometric analysis of glaciated valleys in Montana. Kurt follows his brother Clifford, his father Roger, and an aunt who were all Westinghouse winners, certainly a tremendous accomplishment for a single family.

LIZ CODY (BS,'78) and CLYDE CODY (MA,'77) are moving to St. Paul, Minnesota where Clyde is presently working as a hydrogeologist for Twin City Testing Corporation and Liz will begin training in computer programming.

JODI CUTLER (MS,'87) is employed by Environs, Princeton, New Jersey.

PETE DeCELLES (MS,'84;PhD,'84) of the University of Rochester has been awarded a grant of \$35,000 by the American Chemical Society to study petrologic controls and tectonic setting of a middle Tertiary fan delta sequence in Southern California.

WILLIAM DIXON, JR. (BS,'58;MA,'66) works for the Northeastern Illinois Office of the Illinois Geological Survey where he has been involved in studies to determine geological-geotechnical conditions at the Illinois site proposed for the superconducting super collider. In April, he was appointed to a two-year term as editor of the quarterly AEG News for the Association of Engineering Geologists.

TOM DOBECKI (Ph.D.,'72) has recently become Vice-President of LaFehr and Chan Technologies (LCT), Inc. of Denver, a geophysical service and research group serving petroleum, ground

water, and engineering industries. Tom continues as Associate Professor of Geophysics at the Colorado School of Mines.

PRODIP DUTTA (PhD, '83) of Indiana State University received the best paper award for 1966 in the Journal of Sedimentary Petrology for an article co-authored with Lee Suttner of I.U..

GUY FELTON (MS, 'expected, '89) is employed as a hydrogeologist with Law Engineering, a geotechnical, environmental, and construction materials consultant company in Houston, Texas

SUSAN (VUKE) FOSTER (BA, '73) received a masters degree from the University of Montana in 1982 and has been employed as a geologist for the Montana Bureau of Mines and Geology since 1981, mostly doing geologic mapping in central and eastern Montana. She was married in 1985 to Fess Foster, mine geologist at the Golden Sunlight Mine, Whitehall, Montana.

ROY FUNKHOUSER (MA, '83) is presently employed as a hydrogeologist and lives in Louisville, Kentucky. He was married to Christine Ann Macri of Bloomington in June 1988.

BILLY GILES (MS, '87) is employed by the Indiana Department of Natural Resources, Indianapolis.

ROD HACKLER (BS, '85) is a doctoral candidate in geological sciences at Northwestern University. He recently married Laurie K. Ragnar of Wilmette, Illinois. She is a 1987 graduate in business economics from I.U. Bloomington.

BRUCE HARGAN (BS, '75) is currently employed by the Aramco Company in Saudi Arabia where he is involved in petroleum and mineral exploration as a geophysicist.

JOHN HECKARD (MA, '63) retired as a partner from Dames and Moore in 1985. John is now working nearly full time as a private consultant, primarily in ground water and hazardous waste.

NORMAN KING (PhD, '72) taught for several years at the University of Tennessee, Chattanooga, before entering the oil industry. He left Tennessee to join Getty Oil in Denver, Colorado, and eventually was employed by Ladd Petroleum. While a geological manager at Ladd, Norm was instrumental in the discovery of a 100-million barrel oil field in the offshore Santa Maria basin, California by a consortium of companies, including Ladd. Subsequently, Norm entered a new field of endeavor, purchasing a corporation, Documentation Specialists, Inc. and serves as its president. His company does technical writing, emphasizing software documentation and policies and procedures manuals, and some of its clients include Mountain Bell, Digital Equipment Corporation, and Hewlett-Packard.

THERESE KWIECIEN (BS, '80) is working as a geophysicist/computer coordinator in Onshore Exploration for Texaco in New Orleans. She informs us that she very much enjoyed being back on campus in October to help recruit for Texaco.

FRED HUBERT LATIMER (AB, '37) retired in 1978 from Sun Company after spending 40 years working for that company as a geologist, manager of geology, and exploration manager throughout U.S. and Canada. After three subsequent years of consulting, he retired professionally and now enjoys golf, gardening

woodworking, and world travel.

JERRY LINEBACK (PhD, '64) has moved from Senior Geologist, Robertson Research, Inc., Houston, Texas to Assistant State Geologist and Program Manager for Hydrology, Georgia Geologic Survey.

PRESTON McGRAIN (AB, '40; MA, '42) was awarded honorary membership in the Geological Society of Kentucky last year.

CHRIS MAPLES (MS, '85; PhD, '85) has been awarded a grant of \$18,000 by the American Chemical Society to study the coral taxonomy and biostratigraphy of the Tuscumbia and Monteagle limestones of northern Alabama.

DAVID MATHEWS (BS, '59; MA, '60) is a senior geophysicist with Unocal in Anchorage, Alaska. He reports that after 20 years in Alaska he's beginning to master gardening in the far north having in recent years won ribbons at the state fair for apples, herbs, vegetables, and flowers, although he hasn't yet come close to the record for giant cabbage (83-1/2 lbs.)!

JAY MONROE (BS, '81) has become District Geophysicist, Terra Resources, Inc., Oklahoma City. Previously he was Senior Geophysicist, Gulf Oil, Houston.

MARTY MORAN (MS, '87) is currently employed by Delta Consultants, Minneapolis-St. Paul, Minnesota.

MARK NICKELSON (MAT, '74) is a consulting hydrogeologist and project manager for hazardous waste site investigations and remediation for Environmental Science and Engineering, Inc., working principally on Superfund sites located east of the Mississippi. Mark is also a member of ASTM Section D-18.21 on Ground Water.

CAROLYN OLSON (MA, '77; PhD, '79), research scientist with the U.S. Geological Survey in Reston, Virginia, received a Fulbright grant to support research in Norway this past summer on the weathering of glacial deposits in relation to ground water flow patterns of a regional watershed system in the central part of the country. Also included were studies on the effects of acid rain on watershed processes.

MELISSA PERUCCA (MS, '88) is employed by the Defense Mapping Agency, Aerospace Center, St. Louis, Missouri. She is a photoanalyst and provides stereophotogrammetrically compiled digital data for advanced D.O.D. weapons and navigation systems, flight simulators, and chart compilation.

B. V. RAO (PhD, '81) is employed as a geologist with Woodward and Clyde Company, Louisiana.

KEN RIDGEWAY (MS, '86) received an American Geological Institute scholarship in the Minority Participation Program. His award is being used for Ph.D. study at the University of Rochester.

GARY STUMPF (MA, '81) is currently assigned as the only staff hydrogeologist for Mobil Oil Marketing Operations in the U.S.. He provides guidance and direction to consultants involved in environmental cleanups at sites across the country. He and his wife Susan enjoy living in the Washington, D.C. area.

BRENDA BOMBER THARP (BS, '78) worked for Shell Oil Company

from 1980-1984, mainly in the Michigan Basin. She currently works for Conoco, Alaska on their offshore lease sale. In September 1986, she was married in Bloomington to Paul Tharp, a geophysicist at Conoco.

KIM KODIDEK THOMAS (BS,'80;MA,'84) visited the Department in October, interviewed job applicants, and presented a check for \$4,000 on behalf of Standard Oil Division of British Petroleum for unrestricted use by the Department. We are indeed grateful.

GREG TIPPLE (BS,'72) has completed his twelfth year working for the Texas Water Commission in Austin where he is head of the remedial investigation unit in the Superfund Section. His office oversees the work of environmental consultants performing site investigations and feasibility studies at national priority list sites in the state.

JOHN TWEDDALE (MS,'87) is a hydrogeologist with C.C. Johnson and Malhotra of Grand Rapids, Michigan.

PEG VISHER (MA,'81) is a consultant for Arvada Company and President, 1987-88 of the Denver Chapter, Association for Women Geoscientists.

WILLIAM VON OSINSKI (AB,'35) is retired and living in Regina, Saskatchewan, Canada.

SCOTT WARNER (MS,'86) is employed by Golder Associates, Seattle, Washington and recently presented a colloquium address to the Department of Geology, Bloomington on the subject of an overview of well testing for nuclear waste repository siting.

JOHNNY WATERS (MA,'76;PhD,'78) has been awarded a grant of \$20,000 by the American Chemical Society to study the echinoderm biostratigraphy of the Pride Mountain Formation in Alabama and Mississippi. He also attended and presented a paper at the four-day symposium in August 1988 at Oxford University, England, on Paleozoic Biogeography and Paleogeography.

JAMES R. WELCH (MA,'76) passed away on May 19, 1988 in the Glass Mountains, Texas, where he was doing field work. Jim had lived and worked since 1976 in Billings, Montana and is survived by his wife Nancy in Billings and by his family in Pana, Illinois. While at I.U., Jim was quite active in research and publication and was sole author or joint author of six papers from 1976 through 1978. While in Billings, Jim worked for MAPCO, Inc., the State of Montana, and did independent consulting. We extend our condolences to his family.

BECKY ROBERTSON WILLIAMSON (BS,'83) is moving from Northern Arizona University to Blacksburg, Virginia where her husband, Mark Williamson, will begin doctoral studies in geochemistry at VPI. Becky hopes to find a teaching position there in one of the community colleges.

ALUMNI COUNCIL MEMBERS - DEPARTMENT OF GEOLOGY

Abhijit Basu
Robert Blakely
Wayne Bundy
J. Robert Dodd
Marcia Engel
Wayne Fowler
Richard Gibson
Frank E. Kottlowski
Ellen Lake
Lester Logue

Ann M. Petricca
Frank Pruett
Douglas W. Reynolds
Robert R. Shrock
Jayne L. Sieverding
W. Thomas Straw
Daniel Tudor
John E. Utgaard
Steve Young

A number of persons in some of the photos below have not been identified. We will be appreciative if you can help us find these names.



Fig. 1. Alumni Council. January 15-16, 1988. Front: L-R, Marcia Engel, Ellen Lake, Jayne Sieverding. Rear: L-R, John Patton, Janet Borgerding-Murphy, Bob Dodd, Dick Gibson, Abhijit Basu, Tom Straw, John Utgaard, Dan Tudor, Frank Kottlowski, Wayne Bundy, Bob Blakely, Doug Reynolds, Frank Pruett.



Fig. 2. Dedication of the four limestone benches in the lobby of the Geology Building, September 1988. Persons especially responsible for these centennial memorials include, L-R: Bob Dodd, Jay Kaufman, Gary Lane. (Not present, John Patton).



Fig. 3. G429, Summer 1949, Red Lodge, Montana. First row: L-R, Tom Hendrickson, Judy and Peter Vitaliano, Bob Stewart, Charles Vitaliano, J.R. Taylor (?), two Princeton visitors; Second row: L-R, N. Basiu, P.D. Yund, three Princeton visitors; Third row: L-R, G. Lyau, Dick Horton, J. Hamilton, J. Gianotti; Fourth row: Julian Kane; Fifth row: L-R, Taylor and Mrs. Thom, Dorothy Vitaliano, Mrs. Wadsworth, Bob Faith, Mrs. Blaschke (sp), Bob Sublette, Dallas Fiandt (?), Johnny Hughes, unknown person.



Fig. 4. Upper campus, I.U. Geologic Field Station, 1949. L-R: Lodge, office, tent, resident manager's house, tent.

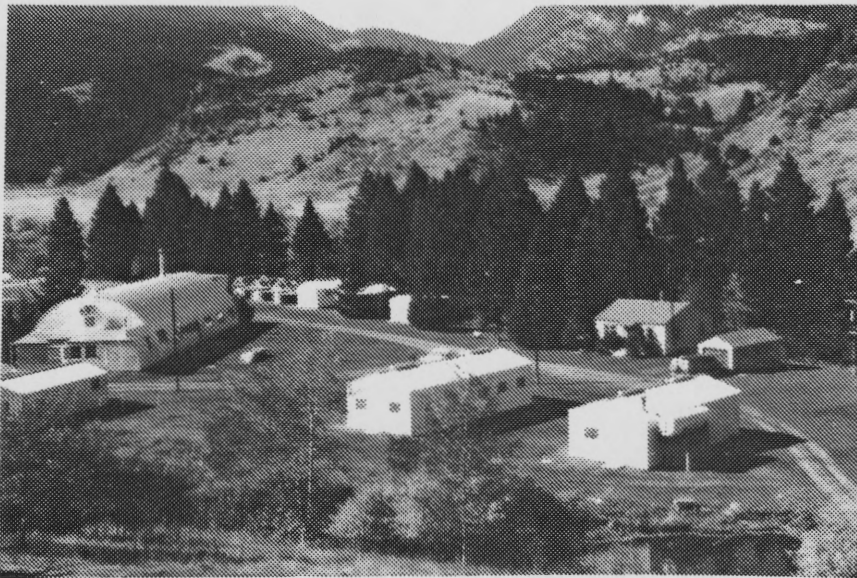


Fig. 5. Upper campus, I.U. Geologic Field Station, Fall 1988. L-R: Storeroom, lodge, three tent frames, A.I. dorm, two office buildings, classroom/library, laundry/shower facilities, resident manager's house and garage. Not shown, six house trailers for faculty and staff, four small dorms, and a tent frame.



Fig. 6. I.U. Alumni reception, GSA meeting, New Orleans, LA, November 1967. L-R: Jack Sunderman, Tom Straw, Dick Liebe, Bob Dodd, Ken Bork, Roger Cuffey.



Fig. 7. I.U. Alumni reception, New Orleans, November 1967. L-R: Warren Meinschein, C. H. Raitz, Paul Proctor, Frank Kottlowski, Richard E. ?.

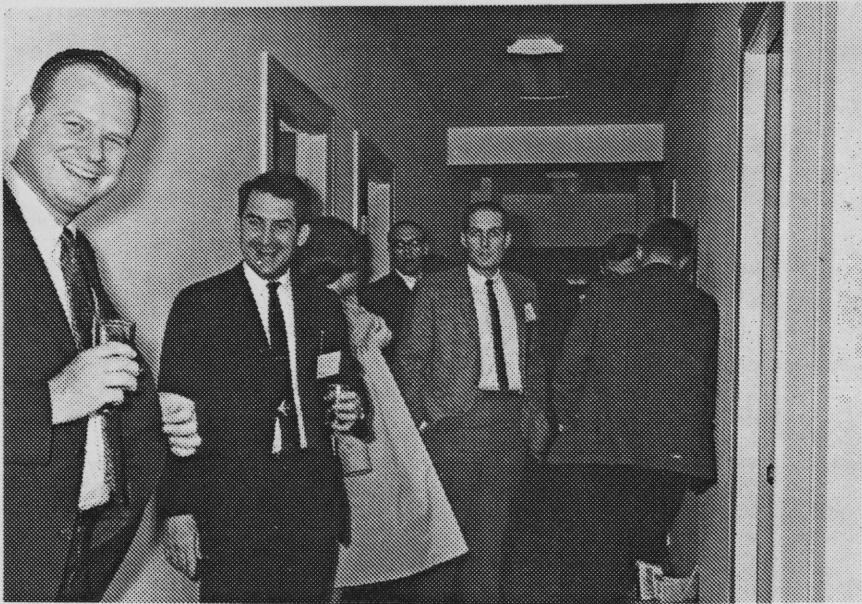


Fig. 8. I.U. Alumni reception, New Orleans, November 1967. L-R: Lee Suttner, Ben Richards, unidentified woman, Milt Wiltse, Tom Hendrix.

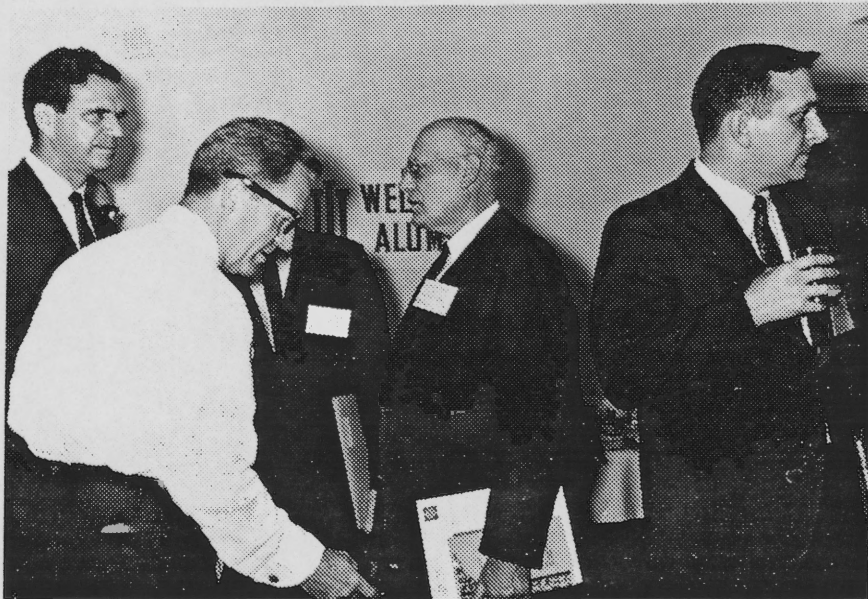


Fig. 9. I.U. Alumni reception, New Orleans, November 1967. L-R: Unidentified man, John Patton, Bob Shrock, Tom Straw.

We hope that you will consider making a donation to the Geology Department. You may do this by making your check payable to:

I.U. Foundation - Department of Geology

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 Geology. These include the following funds: Ralph E. Esarey, Galloway/Perry, Judson Mead Field Station, John B. Patton, William Thornbury, Cumings/Malott, Charles Deiss, Arch McPheeters Student Loan, and Excellence in Geology Funds. If you would prefer not to specify one of these funds, your contribution will be placed in the Department of Geology Fund which is used for a variety of projects for improvement of teaching and research in the Department.

Mail to: Department of Geology
Indiana University
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): YEARS(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: Department of Geology
Indiana University
Bloomington, IN 47405