As we are rapidly moving into 1985, let us here at UPJ wish for you and yours a very Happy New Year. And remember, when income tax time comes again, just as it has for "lo these many years", remember all contributions are deductable.

The main news from the department can be seen in this type; it has that unmistakable dot matrix look. We now have an Apple IIe computer, and are still learning our way around it and various programs; some purchased and others produced by some of the students. Dr. Kaktins put it to work this fall with the Hydrology class. Thanks to Sean Sherlock ('84), the hydro students no longer have to plot hydrographs Dr. Brice has plans for it in the Igneous and Metamorphic class in this winter term. Remember the CIPW calculations? Andy Ford is working on a BASIC program to take all the work out of doing CIPW. The graphics potential will come in handy for Dr. Fry and the structure class. Perhaps we can get the machine to do plunge, dip and strike. How nice that will be. But, of course, nothing like the GOOD OLD DAYS-!

Speaking of Dr. Fry, this winter term, 1985, has the first class in Invertebrate Paleontology under his guidence. Over the summer Dr. Brice was able to bring literally a truck load of fossils from Cornell. Tom Mastrorocco ('85) worked all last fall sorting some of them for use in the Paleo class. Also, we have purchased several collections of the more common fossils for use in the paleo lab activities. Paleontology is long overdue and is a most welcome addition to the curriculum.

By the way, we welcome guest lectures by any alumni who feel the inclination to impart some hard-earned wisdom - or even as an excuse to visit the "old school" once again. Especially important is insight into the practical aspects of employment within the profession. Even if you can't visit in person, letters with advice on your particular speciality or area of work will be passed along to our current students. Think about us in ways other than cash - but don't forget in teaching. Remember all those sec une the cash!

We are in the process of evaluating our course requirements for the geology concentration and proposing several major changes, especially in the Secondary Concentration area. A few years back the University increased the Distribution-of-Studies requirements so that students now have to have FOUR courses in each division instead three. Even in the Natural Sciences our students have to take either biology or psychology. As a result many of our people were so tied up with DOS courses, they had little time for the extra geology classes. By changing the Secondary Concentration to two courses, we hope to gain some breathing space for our students. The changes are still in the proposal stage, and we would appreciate any comments by our alumni. The proposed new requirements are included at the back of the newsletter, 16 out per se second of legitimes blo pot as find as sizes

The other major change in the department has been the enforcement of a minimum QPA to stay in the Geology program. Now, in order to remain with the department, a student must maintain a 2.0 or better; which,

in actual fact, is just the University regulation, but we have started enforcing it. When someone drops below a 2.0, there is a one term probation period to correct the situation. If there is no improvement by the next term, then the person is transfered to an undeclared status until the grades are back to a 2.0. When this is accomplished the person can transfer back to geology. In addition, we are now requiring all students who transfer into geology from other areas to have at least a 2.0 QPA or they are put on an automatic probation for one term. During this time we expect them to show substantial progress toward correcting the problems by getting at least a 2.5 or better. We hope that by requiring students to stay within the University requirements, they will, at least, be able to graduate when the time comes.

FACULTY NOTES

Dr. Fry attended the fall 1984 Field Conference of Pennsylvania Geologists and all three of the faculty went to the one in 1983.

Dr. Fry will be heading for the Caribbean during the Spring of 1985. He and Dr. Doris Brown of the Biology Department will be taking students on another study trip to the islands. Space is still available, so grab your trunks and come along!

Dr. Kaktins is hard at work with a co-author from the Pittsburgh Geological Society on a paper concerning the drainage basins of Pennsylvania for a volume to be published by the Society. Speaking of the PGS, the department will host their annual field trip in the late spring. Uldis and Teri attended the Geomorphology Symposium in Binghamton, N.Y. last fall. Word has it though that this was just an elaborate scheme to leave the two little ones at Grandma's and escape for a week-end. To those of you who suffered through geomorph lab, we're happy to report that Marie Morisawa is doing well - her stature gave Teri hope that there's a place in the world for ..hmmm. short geologists!?

Drs. Kaktins and Brice are presenting a poster session at the up-coming North East/GSA meeting about the Conemaugh Gap and its value in teaching. Remember all those sections you measured? Now they can be made public!

Speaking of Dr. Brice, he has kept to his usual busy schedule since the last Alumni Update. During the spring of 1983 Bill and Heather had to make another trip to Tasmania on family business. It is never an easy journey and this time Heather was still on crutches due to an auto accident in February of 1982. But she made the trip well and Bill got to give a few seminars and go on some fieldtrips around Hobart. They also visited North Island New Zealand where some friends took them to the thermal areas around Rotorua. During a visit to an uncle in Queensland, Bill was able to get into the Glasshouse Mountains north of Brisbane. Don't you pity the upcoming petrology class? Now they have to contend with New Zealand and Queensland rocks as well as the old standbys. In October of 1984 Dr. Brice was invited to participate in the dedication activities for the new geology building at Cornell. He and Heather prepared a large display of department memorabilia for the opening day and Bill gave a seminar on the history of the department at Cornell. This is part of a complete department history on which he is working and hopes to complete in the very near future. A portion of the work is to be published as part of a GSA volumn due to come out in 1985 or 86. The summer of 1985 will mark the tenth year Bill has taught the summer geology classes at Cornell. He seems to be quite a fixture there, at least for the summers.

The latest FLASH!!! Hold on to your hats! Guess who has been seen wearing a TIE and sport coat to class??? The little old bearded wonder himself! It's beginning to look like a real fashion show at times.

DEPARTMENT HAPPENINGS

Since the last UP-DATE, we have had two sets of Division Scholars.

For 1983, Anne Veeger and Brenda Lint:

Anne had a 3.81 QPA in 41 credits of geology and a 3.50 overall. She was a Presidential Scholar during her four years at UPJ. During the summer of 1982, she travelled through parts of southern France and Switzerland studying the geology. After returning from Europe, Anne attended fieldcamp in the Rocky Mountains of Colorado run by Waynesburg State University. Anne, Brenda Lint, Aaron Keno, and Teri and Uldis did a sedimentation study of the former Mill Creek Reservoir during the 1982-83 academic year. She served as President of the Geology Club in 1982-83 and was one of our first student laboratory assistants, working in both Physical Geology and Structural Geology laboratories. At the present time she is in her second year of the Master's program in hydrology at Syracuse University. Last winter she worked for a few weeks on a ship doing seismic research off the coast of Florida.

Brenda had a 3.82 in 39 geology credits and a 3.70 overall. Brenda came to UPJ after a successful tour of duty with the United States Army and started her classes in the winter of 1979. She was a member of the Phi Eta Sigma Honorary Society. During the winter of 1982, Brenda was awarded a Chancellor's Undergraduate Teaching Fellowship by the University of Pittsburgh to work on a petrographic manual with Dr. Brice. The manual of photomicrographs of thin-sections is now being used in the Igneous and Metamorphic Petrology classes. Brenda and Bill Brice will be presenting a poster session about the manual at the up-coming North East/GSA meeting in March 1985. Brenda served as the student assistant in the mineralogy and petrology sequence her senior year, and worked on the sedimentation project mentioned above. Like Anne, Brenda is the second year of the Master's program in hydrology at Syracuse University.

Brenda and Anne have been mildly irritated by references to the "Hydrology Twins". How can two students from the same small Western Pennsylvania School who graduate at the same time, attend the same graduate school, share the same major and advisor, and share an apartment possibly be called TWINS???? They don't look alike at all. Next year they can laugh about it all the way to the bank!

For 1984, Richard Beam and J. Scott Roberts:

Richard was with the department almost from his first days at UPJ; something that is unusual in itself. He had a 3.6 in his 46 geology credits and a 3.5 overall. Richard was the student assistant in the mineralogy and petrology sequence during his senior year, and was a student member of the Geological Society of America and the American Association of Petroleum Geologists. Currently Richard is employed by a consulting firm in the Pittsburgh area.

Scott came to UPJ with a B.S. in History from California State College of Pennsylvania. Even though he was in the department for only two years, he had an impressive record. Scott had a 3.9 QPA in his 42 credits of geology, and worked as a student assistant in the Historical Geology classes. He was Vice President of the Geology Club his last year at UPJ.

Two of our students, Steve Gordon and David Tschachler worked as interns with the Pennsylvania Geologic Survey last summer. From all reports it was a very good experience for both of them.

The Geology Club (Jeff Kelly, President; Scott Gallaher, Vice President; Dave Tercek, Treasurer) had a great Christmas party in the Log Cabin late last fall. The food was very good and plentiful; the company marvelous; and the music danceable. The eSPYonage provided the musical entertainment for the evening. Jack Brice, sporting a beard as dark as his father's used to be, is one of the guitarists in the band and Jack is making quite a name for himself in Rock, but with the guitar and singing, not the kind his father knows.

Thanks to the talent and skill of Dave Wiley, of physics lab fame, the small glass window in the door of room 231 has been replaced with a beautiful stain-glass geologic cross section showing a volcano, sedimentary strata, and some intrusives. Late in the afternoon when the sun is coming through it, the volcano really seems to be erupting. The window is a very beautiful addition to our work area.

Early in the fall term, before the freezing weather set in, a few hardy souls went up to the Adirondack Mountains. We stopped by to see Eleanor Wheeler, of course, and when bad weather, in the form of a rain storm hit, the group retreated to Eleanor's for one night. The second night was spent in the Lake Durant Camp ground. As a token of our appreciation for all the many times Mrs. Wheeler has provided hospitality to our UPJ groups, we have made her an honorary member of the Geology Club and sent her a blue sweat shirt, complete with logos on the front and back.

DONATIONS

We are pleased and proud to announce the following additions to our display and working collections and to the department.

Mr John Fluder of Windber gave us two more large Sigillaria fossils; one small enough to be used in class and the other has joined his first donation in the large diplay at the Krebs Hall main entrance.

Dr. and Mrs. William Frank continue to enrich our mineral displays with some truly magnificent samples. Among the many specimens they gave us this fall are some beautiful native silver and gold samples which were added to the ERIC FLUCK MEMORIAL COLLECTION. They also donated several pieces of native copper which went both on display and into the working collections.

Mr. Ralph Mostoller, father of George Mostoller, Chairman of the Engineering Technology Division, gave us some out-of-print USGS Folios and several fossil seeds. The seeds, or possibly fossil fruits, are the first from the local area that we have in our collections, and they are a very useful addition to the department.

Mr. Glenn Spangenberg who works for a copper mining company in Arizona sent us a nice suite of samples taken across a porphyry copper deposit. The samples were brought to us by Dr. and Mrs. Frank who visited the mine last summer. This suite will be very useful in the Economic Geology class which will be in the schedule in the Winter of 1984.

Because Dr. Brice has been a member of the Elk's Scholarship screening committee for the past several years, the Johnstown Elks Club donated \$100.00 to the department. This money was put to good use as we purchased a nice fossil dinosaur footprint and several new mineral samples for the ERIC FLUCK MEMORIAL COLLECTION.

Several of our alumni have remembered us. Gary Hill and Denise Barlock-Hill donated \$150.00 which will be used to purchase a collection of carbonate rocks and thin sections; something we've needed for the Sedimentation and Stratigraphy class for quite a while. Also, with all the igneous and metamorphic rock collections around the department, it's about time the soft rock people had a turn. We especially appreciate the generosity of Denise and Gary because they are "one of us."

Neil Coleman ('77) donated Wang & Anderson's book on ground water modeling plus a number of programs from this text that he translated from FORTRAN to BASIC. These will be used by the hydrology classes.

Jim Horrell gave the department a number of Pennsylvania Survey volumes and other publications.

Jeff Mazur remembered us recently by donating a sample he collected on the first western field trip back in 1975. The sample shows cross-bedding, normal bedding, and several small faults. Just what we need for exams with questions like, "What happened here?"

About a year ago Dr. Sheldon Clare, who is in the UPJ Chemistry Department, made a trip to Argentina to visit some relatives and while we was there he contacted the geology department at Cordobo University. The final outcome was the donation of a very fine cast of a fossil spider which we have mounted in a wall case, built especially for it by Charles Eash and his co-workers in the UPJ Maintainence Department. The ADVOCATE article is reproduced below.



Bill Brice, in addition to hauling back all the fossils, also brought several boxes of books which were donated to UPJ Library by the Cornell Geology Department. That department was moving into a new building and closing out much of the department library. The second copies of many publications are now housed in the geology work room.

Fred Baldassare ('84) generously donated a new coffee maker to the department. Now the professorial types, and students, can get their morning caffine fix is style! Now longer is there a line waiting for the pot to boil.

Last, but far from least, in October 1984, Dr. and Mrs. Bryan Fluck, whose generosity created the ERIC FLUCK MEMORIAL COLLECTION in 1972, are making it possible for us, at last, to construct a fluorescent mineral display. We have wanted, and needed, such a display for many years, but until now we just didn't have the resources to have it constructed. When completed, the display will have timer switches to control the white light and UV lights so that all a person will have to do is push one button to see the samples in ordinary light and under ultra-violet. At the moment the actual location for the display is not determined, but it will join one of the existing displays we have in Krebs Hall. In addition, Dr. and Mrs. Fluck are supplying the funds for us to purchase several museum quality fossil specimens; possibly we will be able to find some vertebrate specimens to add to the collections. The Fluck family continue to be strong supporters of our department and our students.

While on the subject of donations, we now have the funds set aside for one or possibly two fieldcamp scholarships; something we have wanted to do for some time now, and, finally, we have the money. But, when these funds are exhausted, the only way we will be able to do this again is through your generosity. The average fieldcamp now costs over \$1000.00 and few of our students can afford it. Yet, all of them should have this learning experience. So, please, won't you help? Remember us; especially when you need just one more tax deduction!

Send your donation to:

Office of Public Affairs
Biddle Hall
University of Pittsburgh at Johnstown
Johnstown, PA 15904.

Be sure to specify that your <u>donation</u> is <u>for</u> the <u>Geology</u> and <u>Planetary</u> Science Department. Otherwise the money goes into an <u>unrestricted</u> account.

VISITORS TO THE DEPARTMENT

We have had many visitors drop by and say hello, and so, we may miss one or two in this little summary. If anyone is over looked it is just an oversight and the result of faulty record keeping.

During October of 1984 a voice from the past stopped by to say hello, Linda "Jeni" Pearson ('76). Those who went on the first western trip will remember her well. She is back in the area for a while. She left us an address this time and it has been added to the alumni list attached to the newsletter. It was so nice to see her again. Hopefully it won't be so long between visits next time.

We also had a visitor from the very near past, JoAnne Ostrosky ('83), who is living in Dayton, Ohio now and working for I.B.M., but is thinking of trying her hand at teaching. She dropped by to make sure everyone was studying the idiot blocks. JoAnne said that I.B.M. passed over most of the people with degrees in business and hired those with degrees in science. Enough said!

Last fall, Merle Lauer made his annual visit to the mineralogy class with his traveling gem and gemstone program. As always, very few passed the quiz at the end of the class. Merle is doing pretty well, but he did have to have knee surgery last spring which is still giving him a bit of trouble. He is still at 206 Bloomfield Ave, 15904, and the mail is still being delivered there, provided someone drops him a note!

Just as an added item: Ten years ago this spring, we took the first of two western field trips which Merle helped to create, not only with his expertise, but by his financial support as well. In fact, without the donations that Merle made, we would not have had enough money to get out of town, let alone all the way to Arizona. What about a reunion under THE TREE at Paria? Anyone interested? Dr. Sally Dick has already expressed her interest in another trip. Contact Dr. Brice. If there is enough interest, perhaps something can be arranged. If not at THE TREE, then perhaps here in Johnstown. Let us know how you feel.

Last fall John Paone and Anne Veeger ('82) presented a seminar for the hydrology class, and Sean Sherlock ('84) started our winter term with a talk for the petrology class.

This winter term got off to a good start with seminars given by Sean Sherlock, for the petrology class, and Chris Laughrey, for the Sed/Strat class.

Others who stopped by to say hello; Greg Bunk (all the way from London), Glenn Johnson (from New Orleans), Sean Sherlock (from Flagstaff, Arizona), Anne Veeger and Brenda Lint (from Syracuse), Jeff Mazur and Chris Laughrey (from Pittsburgh), Gary and Denise Hill (Vail, Colorado), Brenda Hockensmith (Dayton, Ohio), and Roxy Pebbley (from Texas).

When you are in Johnstown, drop by as say hello. As we said before, we really welcome seminars by our graduates. This way the current students can see what happens after graduation, and learn more about what is happening in geology outside of UPJ.

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As we have received very little information from our people out there in the real world, this section will be unusually small this time. Please, let us know what you are doing and where you are doing it! Without your input, the UP-DATE isn't much of an up-date.

Our congratulations go the several newly, or at least since the last UP-DATE in 1983, married couples:

Gary Hill ('81) and Denise Barlock-Hill ('81) returned to Pennsylvania last summer to be married. The reception turned out to be a geology alumni reunion as well as celebration of their marriage. The horse and carriage used to get the bride and groom to the church added a real touch of class. They are living in Vail, Colorado where Gary is working in construction and Denise is still working for BEXCO. On a recent visit to Johnstown, they were showing photographs of their block of land up on a hillside, a stable hillside we presume (or else all our course work has gone for naught) near Vail. The view was really great. We want to be invited to the house warming.

Roger ('82) and Barb Fairbank were married in Johnstown last August 1984.

Mike ('79) and Jeannie Layton were married in Texas, but we're not certain when. How about a letter Mike?

Rick ('80) and Annette Borkowski were married last August in Texas. Annette is working on her Master's at PSU while Rick is completing his Ph.D. (Isn't that called Piling (it) Higher and Deeper?)

Congratulations of another sort go to our people who have created more future geologists since our last UP-DATE:

Kathy ('82) and David Pebley have a son, Billy Joe. We wonder if that is a family name or if they were influenced by the music business.

Debbie and Charles Ledney ('84) recently had a baby girl, Nicole.

Margie and Aaron Keno ('83) are the proud parents of Kyle Aaron, born April 24, 1984. (Sure has a funny middle name?)

Kim ('82) and Mark Matthews have girl to add to our list, Mallory Ann, September 18, 1984.

Paul Buceri and his wife now have a baby boy. We're weak on names, so Paul, how about a short note to bring us up to date?!!

Larry and Barb Mitchell had twins, first set to any of our students as far as we know. Barbara and Patricia were a year old last October. With Robbi, who turned 5 last July, that makes three for them.

Considering the work involved, perhaps this is the best section for the following announcement. Our congratulations to Chris Laughrey (*77) on the publication of PETROLOGY AND RESERVOIR CHARACTERISTICS OF THE LOWER SILURIAN MEDINA GROUP SANDSTONES, ATHENS AND GENEVA FIELDS, CRAWFORD COUNTY, PENNSYLVANIA; Mineral Resource Report # 85, Pennsylvania Geologic Survey Publication, 1984. Everything you always wanted to know about Medina sandstones, but were too timid to ask!!! Well done Chris!

The following is a list of our people who are currently in graduate school. If we've missed any one, please let us know for the next UP-DATE:

Anne Veeger('83) and Brenda Lint ('83) - Syracuse University
Sean Sherlock ('84) - Northern Arizona University
Chris Strzempka ('84) - Kent State University
Mark Rys ('82) - Wright State University
Rick Borkowski ('81) - Ph.D. program at Penn State
Chris Laughrey ('77) - Ph.D. program at Pitt in Oakland
Teri Kaktins - Penn State

According to the passage of time, the following should have completed their Master's, but we have received no word. Pleeeaaase, let us know what is happening:

David Silko ('81) - Wright State University Lisa Vomero ('82) - Arizona State University David Miller ('82) - Colorado State University

Brenda Hockensmith ('82) is in the final stages of her thesis for a Master's from Wright State. Our best wishes to Brenda for a successful thesis defense.

Our congratulations go to the following whom we know have completed their Master's Degree:

Chris Laughrey ('77) - University of Pittsburgh

Pat Bowling ('82) - New Mexico Institute of Mining and Technology

Add one more world traveller to our list, Greg Bunk ('80) has moved to the London office of AMOCO. During work hours he is concerned with the oil prospects in Western Africa. After hours he's concerned with golfing in the ancestral home of golf, Scotland. Watch that English beer, Greg, cellar temperature, you know!

Glenn Johnson, our other world traveller, has gone from EXLOG (South America) to EPA (Philadelphia) back to EXLOG (OFFSHORE) in only a few short months. EXLOG has him working along the Gulf Coast and on a recent vacation to Acapulco (must be tough), he, among other things, decided to do a little scuba diving. Another student of ours, Chris Laughrey (*77), is well know for his scuba diving abilities, but Chris CAN SWIM!!!. Word has it that Glenn overlooked that little detail. Ah well, the wildman strikes again!!

Pat Bowling ('82), after completing his Master's at New Mexico I. M. & T., is now working for the Institute.

Jim Horrell travels a bit also, but so far all of it in the USA. Jim went from Virginia to California and is presently back in Johnstown.

Chris Laughrey ('77), who is still holding forth with the Oil and Gas Division of the Pennsylvania Geologic Survey in Pittsbrugh, was the man in charge of the AAPG conference in Pittsbrugh last fall. Jack Feldbinger (with us before we even had a program), Rick Borkowski ('80), and Mark Kiem ('82) were among the UPJ graduates at this meeting.

Jeff Mazur (really a psychology graduate, but we claim him!) dropped by to say hello last fall. He is still working for General Refractories Company in Pittsburgh.

Don and Nancy Cutshall, who were in Merle Lauer's Gemstone class a number of years ago, have for several years operated a jewelery shop in the Richland Mall. Recently they moved their base of operations to a new location near the K-Mart end of the Mall. "Kwon's" is a beautiful store and they can be justly proud of it. Also, Nancy has completed her gemological course and is now a fully registered Gemologist. Congratulations. Nancy's brother, Alex, has taken over the little kiosk which is now called "THE GEM MART".

Denny Mehall has started his own core sampling and processing business in Houston and recently opened a branch in New Orleans. Need any recent graduates, Denny?

Some of you may remember Jackie Eck from 1983 when she briefly joined the department to round out her education. After getting the edges taken off in a few geology classes, she is now working for CORE LABORATORY in Dallas, Texas (Denny Mehall's old working place). She really enjoys the work, but she didn't believe a person could get a job in two days in Texas. Now she is a believer!

IS IT TRUE DEPARTMENT

Joe Trocano is working in Florida? Is there room for more of us down there?

Terry Downs is teaching algebra in the Greensburg area?

Don Hrapchak, Mark Kocan, and John Soyka are all working for the SAME consulting firm in Virginia?

Denise Barlock-Hill has hit every one of her oil prospects?

Patty Sendlosky is in Germany working for an Armed Forces newspaper?

Glenn Johnson has not wrecked a car since January 1st, 1985?

Greg Bunk bought a Kilt? Or is that Greg MacBunk?

Jim Horrell bought 500 yards of pig innards just to make 30 pounds of sausage?

Jeff Kelly (1857) has been named Party Man of the Year?

Lastly, we want to extend a very warm note of thanks to all of our alumni who have assisted our current students with job hunting tips, advice, and, in some cases, hospitality while they were searching for a position. We especially want to acknowledge the very generous support shown by: Chris Carroll ('83), Denny Mehall , Ed Fiffick (*76), Denise Barlock-Hill, Denis Zielinski (*75), Glenn Johnson, Josh Bowers ('84), Neil Coleman, and George Katrancha ('75).

Then we can have another UP-DATE. Let us hear from YOU!!!

STOP THE PRESSES! A late breaking story - Lisa T. M. Vomero has just about completed her Master's at Arizona State and has taken a position with Cella Barr Associates, a consulting firm in Phoenix, Arizona.

ALUMNIA DATA FORM RETUR	N TO THE DEPARTMENT, PLEASE
NAME	YEAR OF GRADUATION
HOME ADDRESS	PHONE #
EMPLOYER	PHONE #
ADDRESS	Spane of you may remember Jackse
MARRIED SPOUSE'S NAME	UPJ GRAD. YEAR
CHILDREN (BIRTH DATES AND NAME(S))	Job in two pays on rease now
PLEASE USE THE REMAINING SPACE TO BRING US UP TO	DATE ON WHAT YOU MAVE BEEN DOING!

PROMOTIONS, CHANGE OF WORK LOCATIONS, PUBLICATIONS, DEGREES, ETC, ETC, ETC,....

Revised January 1985

BACHELOR OF SCIENCE IN NATURAL SCIENCES

GEOLOGY CONCENTRATION

resciolating is an outline of the required and suggested elective rese for all students who have elected the Geology Concentration of the Natural Science Degree Program.

CLOLOGY COURSES

. The following courses constitute the geology core and are required of all students electing the geology concentration.

CORE GEOLOGY COURSES - REQUIRED - ALL CORE GEOLOGY COURSES MUST BE COMPLETED WITH A GRADE OF 'C' OR BETTER.

Credit	М	1	4	4	4	4	1 (S-U) 1	M	A STATE OF THE PARTY IN
Title	Physical Geology	Physical Geology Laboratory	Historical Geology	Mineralogy	Igneous & Metamorphic Petrology	Sedimentation & Stratigraphy	Abstract & Froposal Freparation (S-U)	Structural Geology	Structural Geology Laboratory
Number	015	017	016	101	103	104	108	111	113
S	SHS	GPS	SAS	SPS	GPS	GPS	BPS	GPS	BPS

Geology Core Requirements

25 credits

II. GEOLOGY ELECTIVES;

 FROM THE FOLLOWING LIST A MINIMUM OF TWO (2) COURSES MUST BE COMPLETED:

Paleontology	spo
Title Hydrology Geomorphology Invertebrate Paleontologo	Geological Field Methods
Number GPS 105 GFS 115 GPS 120	GPS 157
0 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	GPS

Minimum Geology Electives 8 Credits

 OTHER GEOLOGY ELECTIVES: Courses in this list are to be chosen in concert with the student's academic advisor to ensure the broadest possible background in geology. Students are urged to include as many of these courses as possible.

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GPS 039	4 274	GPS 163	GPS 165	GPS 170
	039 Geology	039 Geology 100 Senior P 130 Economic	039 Geology of 100 Senior Proj 130 Economic Ge 163 Land-use Pi	039 Geology 100 Septor P 130 Economic 163 Land-use 165 History

Variable Credit in this Catagory

O ADDITIONAL REQUIRED RELATED COURSES:

Where there are course choices, those listed as "Recommended" are suggested as the curricula for students who are planning to continue their studies in graduate school.

Physics: One year; with laboratories.

Recommended: 015/017 and 016/018 (Mathematics prerequisites and co-requisites); 10 credits OR

010/013 and 011/014; 8 Credits

Chemistry: One year; with laboratories.

011/013 and 012/014; 10 credits

Mathematics: Calculus I

Recommended: 022 or 032; 4 Credits.

012 3 Credits.

Computer Science: One semester

Recommended: FORTRAN language programing 3 Credits.

BASIC language programing 3 credits.

Additional Analysis Course:

Recommended: A one semester course in Statistical Analysis.

Math 112 OR PSY 027 OR SOC SCI 002; 3 or 4 credits

A second course in computer Sciences.

Related Courses

DR.

27 to 31 credits

(0) REQUIRED NON-GEOLOGY ELECTIVES:

Students must do a minimum of two (2) courses from the following lists and at least one (1) must come from Part 1. Some courses selected in this part may count also for Distribution of Studies credit.

Students must elect one (1) from the following:

7. The additional	Geography 142 Engineering CET 122 Engineering CET 141 English 192	Deat. and Number
The additional required elective must come from the following	Cartography Photogrammetry and Photo Interpretation 3 Environmental Pollution 3 Technical Writing 3	Title
from the following	Interpretation 3	Credit

list unless two courses have been selected in Part C-1 above, or a substitution is made with permission of the academic advisor. The student is reminded that some of these courses have prerequisites.

Engineering Technology ET 011 Engineer ET 020 Elementr	Chemistry 025* 030* 113*	Biology 115* 117*	Dept. and Number
Technology Engineering Drawing Elementry Surveying	Analytical Chemistry Fundamentals of Organic Chemistry Inorganic Chemistry	Environmental Biology Limnology	ber Title
ы ы.	441	44	Credi

					Geo
123	117	081	031	021	graphy
Resource Management	Environmental Perception	Earth and Man	Geography of the United States	Physical Geography	

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Variable Credit in Fart C

- Course has prerequisites Check University Catalog for details
- Û DISTRIBUTION OF STUDIES AND OTHER UNIVERSITY REQUIREMENTS

One year of Freshman English or equivalent

- Distribution of Studies:
- Natural Sciences: One term of Biology or Psychology (Other D.O.S. courses included in major requirements.)
- N Social Sciences: Humanities; Four courses
 - See specific D.O.S. information sheet.

Four courses

Credits from required courses: 106 maximum - 97 minimum

- See specific D.O.S. information sheet.

Additional electives must be taken, preferrably in geology to make the total 120 as required for graduation.

Fage 4

AND FORKER STUDENTS GRADUATES, ASSOCIATES,

- PA. Tom (1980), Penn-Laurel Associates, Central City, 169 C Street, Johnstown, PA. 15906 Bachovchin,
- Eadowski, Tom (1981), Exploration Services, Inc., Parkersburg, West Virginia flome: 2905 Cambria Ave., Windber, PA. 15963 Phone: (811) 167-5365
- Ealdassare, Alfred James (1984), Varsity Shop Home: 203 Belmont Street, Johnstown, PA. 15904
- Beam, Bichard L. (1984), Earth Inc., 7505 Brighton Rd., Piffsburgh, PA. 15202 Home: R.D.3, Somerset, PA., 15501 Prone: (811,) 445-9797 412-734-1191
- Seatty, Barry (1984), Exploration Services, Inc., Parkersburg, West Virginia Home: RD#1, Box 516, Home, PA., 15747
 Phone: (412) 397-2515
- (Bensko) Pebley, Kathleen (1982), Home: P.O. Box 1882, Riverview, Florida 33569
- Boes, Chris (1979), Geomechanics, Inc., Belle Vernon, PA., (412) 929-3341 Home: 1500 Knights Drive, Apt. 332, Librarn, PA., 15129 Phone: (412) 854-5583
 - Sorkowski, Rick (1980), Graduate School: Penn State, State College, PA. Home: F211-L2W Waupelani Drive, State College, PA., 16801 Phone: (814) 234-7779
- Dowers, Josh (1983), Exploration Services, Inc., Parkersburg, West Virginia
 (303) \$21-5353
 Hone: RDW Stoystown, PA, 15563
 Phone: (811,) 893-5700
- Fowling, Pat (1981), Graduate School: New Mexico Institute of Mining and Technology Home: Box 3442, C.S., Socorro, New Mexico 87801
- (Buell) Stern, Patricia (1976), Self-Employed-gemcutting Home: 270 W. Sanner Street, Somerset, PA, 15501 Phone: (814) 445-4867
- Bunk, Greg (1980), Amoco, Exploration Geophysicist, Houston, Texas Hone: 758-B Memorial Mews, Houston, Texas, 77079
- Cairns, Tim (1981), Precision Logging, Houston, Texas Home: P.O. Box 115, Stahlstown, PA, 15687
- Carpenter, Tony, Jownstown-Cambria County Airport, Jownstown, Pa Home: 101 Rodney Drive, Jownstown, Pa, 1590L Phone: (81L) 266-5305
- Carroll, Christine (1981), 4948 Schuyler Drive, Annadale, Virginia, 22003 Home: 208 Parkedge Rd. Pittsburgh, PA 15220

- Ciacco, Jeffrey A. (1984), Exploration Services, Inc., Parkersburg, West Virginia Home: 20 Warie Rd., Latrobe, PA, 15650
 Phone: (112) 539-6692
- Claycomb, Joan (1983), Cambria County Courthouse, Mineral Assessment Office Home: RD #4 Box 437, Ebensburg, PA, 15931
 Phone: 472-7261
- Home: 10318 Crestmoor Drive, Silver Spring, Maryland, 20901 Coleman, Neil (1977), Nuclear Regulatory Commission
- Conn, Greg (1981), Home: RD #1 Box 172, Confluence, PA, 15424
- Craft, Pat (1983), Exploration Services, Inc., Parkersburg, West Virginia Home: CB #31, South Fork, PA, 15906
- PA Ebensburg, Ralph (1979), L. Robert Kimball Engineering, Inc., 753 Napoleon Street, Johnstown, PA, 15904 Home-(814) 535-2025; Business-(814) 472-7700 Cunningham,
- Home: RD #1, Imler, PA, 16655 Dibert, Madean
- Dobson, Ed (1980), Berger Associates, Camp Hill, FA, (717)763-7391 Home: 730 Tower Road, Enola, Pa, 17025 Phone: (717) 763-1018
- Elliot, Donald
- Home: 120 Orchard Spring Road, Pittsburgh, PA, 15220
- Fairbank, Roger (1983), Eastern States Exploration Co., 452 Main Street, P.O. Box 156
 Reynoldsville, PA, 15851, 653-9095
 Home: 345 Main Street, Apt. B, Reynoldsville, PA, 15851
- Felbinger, John (1974), U.S. Geological Survey, Water Resources Division, Pittsburgh, PA, Home: 18 West Manilla Avenue, Pittsburgh, PA, 15220 Phone: Business-(412) 644-2864
- Fiffick, Ed (1976), Core Laboratories, Inc., 5295 Hollister Rd., Houston, Texas 770WO Home: 3737 Hillcraft Apt. 378, Houston, Texas 77057
 Phone: Business-(713)&60-9600
- Home: RD #1 Box 35, Windber, PA, 15963 Gaydis, Bob
- Gibson, Don (1978), Jownstown Tribune-Democrat, Jownstown, PA Home: 400 Main Street, Windber, PA, 15963

- wk, Serald I. (1981) Home: 531 Brazil Lane, Conemaugh, PA, 15909 Phone: (814) 322-1927
- Hawk, Jon (1981), Appalachian Coal Surveys, Pittsburgh, PA, Home: Shelton Drive, New Stanton, PA, 15672
 Phone: (412) 925-5023
- Hill, Gary (1981), Home: 915 Red Sandstone Circle, Apt. 11-A, Vail, CO
- Hirish, Jo (1982), Texas Instruments, Dallas, Texas Hore: 13450 Maham Road, Copper Creek #526, Dallas, Texas 75420 Phone: (214) 644-0065
- Hochstein, Charles, U.S. Air Force Home: 11L James Street, Johnstown, PA, 15902
- Hockensmith, Brenda (1982), Graduate School: Wright State University, Ohio Home: 1662 Kauffman Avenue, Fairborn, Ohio, 45324
- Phone: 535-1453
- Hrapchak, Donald (1984), 6469 Little River tpk., Annadale, Virginia, 22003 Home: RD #6 Box 237, Johnstown, PA, 15909 Phone: (814) 749-7053
- Hughes, Harry (1984) Home: RD #1 Box 300, Mineral Point, PA, 15942 Phone: (814) 322-4632
- Illig, Donald Home: 703 Dimuth Street, Johnstown, PA, 15904
- Izticki, James Home: 255 West LOth Street, Erie, PA, 16508 Phone: (814) 864-9532
- Johnson, Glenn (1962), Exlog, Inc., Houston, Texas Home: c/o Exlog, Inc., S. A. Division, 10627 Kinghurst Drive, Houston, Texas 77099 (Permanent Address: RD #2, Rockwood, PA, 15557)
- Katrancha, George (1975), DER, Ebensburg, PA Home: Box 117 Dunlo, PA, 15930 Phone: Business-472-9666; Home-487-5103
- Kaschak, Steve, Citco, Oklahoma City, Oklahoma ione: LiOl N.W. Expressway, Apt. CBL6-132, Oklahoma City, Oklahoma, 73116 Phone: Business-(405) 949-4400
- Keir, Mark (1983), Maryland Bureau of Mines, Frostburg, Maryland Home: 133 W. Main Street, P.O. Box 877, Somerset, PA, 15501 Phone: (814) 443-4176
- Keno, Aaron (1983), MMT, Oklahoma City, Oklahoma Home: 7813 S. Douglas Avenue, Oklahoma City, Oklahoma, 73139

- (Kestermont) Minesteel, Judy, Masteller Coal, Co., Cumberland, Md. Home: 25 Richards Way, LaVale, Maryland, 21502 Phone: (301) 729-5783
- Kinback, Jerry (1983) Home: Box L3, Salix, PA, 15952 Phone: L87-5030
- Klug, George (1982) Home: 131 Stormer Pl., Johnstown, PA, 15901 Phone: (814) 539-1571
- (Knepper) Hagadorn, Donna (1976), Phoenixville Hospital, Phoenixville, PA Home: 50 Estate Road, Boyertown, PA, 19512 Phone: (215) 367-R070
- Kocan, Mark, 6469 Little River, Turnpike, Annadale, Virginia, 22003
- Kondisko, Allana Home: 62h Prospect Street, Portage, PA, 159h6
- Lauer, Merle Home: 206 Bloomfield Avenue, Johnstown, PA, 1590L Phone: (81L) 266-1815
- Laughrey, Chris (1977), Pennsylvania Geological Survey, Pittsburgh PA Home: 70-E Colony Square, Pittsburgh, PA, 15239 Phone: Home-(412) 327-5643; Business-(412) 565-5030
- Layton, Mike (1979), Mobil Oil, Dallas, Texas Home: 8215 Southwestern Blwd., Apt. 2015, Houston, Texas, 75206 Phonas: (214) 363-0810
- Ledney, Charles M. (1984), Exploration Services, Inc. Home: 910 Somerset Avenue, Windber, PA, 15963 Fhone: 288-6415
- Lewellen, Ronald B. (1984)
 Home: 406 Chandler Avenue, Johnstown, PA, 15906
 Phone: (814) 536-0597
- Lint, Brenda (1983), Graduate School: Syracuse University
 Home: 102 Roney Lane, Apt. #31, Syracuse, New York, 13210
 Phone: (315) 478-6993
- Lizanic, Ted (1978), Gulf Oil, Houston, Texas
 Phone: Home-(713) 780-4026; Business- (713) 754-1925
- Lydic, Allen C. (1984)
 Home: Grandview Drive, Greensburg, PA, 15601
 Phone: (412) 836-4459
- Manges, Eric (1984), Musser Engineering, Reels Corner, PA Homes RD #3 Confluence, PA, 15424 Phones (814) 395-5276
- Marsh, Roger, Graduate School: South Florida Home: 108 Clayton Drive, Johnstown, PA, 15904 Phone: 266-5114

Harino, Frank, Penelec, Johnstown, PA Hone: 1017 Hillside Trail, Johnstown, PA, 15905 Phone: Eusiness-533-8111; Home-255-5498

Mastrine, Leonard Homes, Tripoli Street, Colver, PA, 15927

Mallews, Kim, (Mark), (daughter-Mallory Ann, born Sept. 18,1984)
Hone: 269 Schoolhouse Rd., Jourstown, PA
Phone: 266-5264

M2211, Jeff (1976), General Refactories Co., 600 Grant St., Room 3000, Pittsburgh, PA,15219 Home: 1005 Kirsopp Ave., Pittsburgh, PA, 15220 Phone: Home- (412) 343-6453; Business-(412) 562-6000

McLaughlin, Laura (1984) Horre: 816 Lindsay Rd., Carnegie, PA, 15106 Menall, Dennis, Erco Energy Resources Co., Houston, Texas, 77060 Hone: 4615 Sherwood Lane, Houston, Texas, 77082 Phone: Home-(713) 693-9824; Business-(713) 820-4871

Mehall, James (1981), Erco Energy Resources Co., Inc., Houston, Texas Home: 625 Elanche St., Beaverdale, PA, 15921

Mengel, John Home: 429 Newcomb Drive, Mt. Holly, New Jersey, 08060 Mercier, Fike, Citgo Home: 1422 East List Street, Apt, 41, Tulsa, Oklahoma Mick 1.m ak . Michard, Penelec; owner - Pathfinder Photo, Ligomier, Pathfinder Box 25, Rector, Pa. 15677
Phone: Home - (412) 238-4547; Business - (412) 238-5060

Willer, Dave (1950), Graduate School: Colorado State University Home: 2238 Moffet Drive, Fort Collins, CO 80526 Phone: (303) 266-4903

Miller, Jeff Home: 3253 Elton Road, Johnstown, PA 15904 Phone: 266-6581 Mobile Johnstown, PA 1590L Home: R.D. 2, Box Lil, Johnstown, PA 1590L

Minesteel, John (1979), Masteller Coal Co., Cumberland, MD Home: 25 Richards Way, LaVale, MD 21502 Phone: (301) 729-6783

Oldham, Dave (1975), MSF Oil, Denver, CO Home: P.O. Box 225, Conifer, CO ROU33 Paresi, Bill(1979), Eaton Operating, Houston TX 77036

Parnell, James, P&R Coal Company, Leront Furnace, PA Hone: Box L37, Lemont Furnace, PA 15456
Phone: (L12) 438-4326

Parker, Steve. Home: 535 Highland Avenue, Jenkintown, PA 19046 Phone: (215) 887-8659

Frone: (CL2) oct-co59
Pearson, Linda Jeni, Pearson's Dry Cleaners, P.O. Box 1h2, Emportum, PA 15834

Peters, John (1979), Pennsylvania Geological Survey, Pittsburgh Home: 345 Stoystown Rd., Somerset, PA, 15501 Phone: (314) 445-6385 Pfahl, Daniel (1980), MSA Communication Sciences, San Jose, California Home: 3201 Loma Verele Drive, Apt. #35, San Jose, California, 95117 Phone: (408) 374-3578

Phillips, 3onzell (1977), Home: 1225 High Street, Petersburg, Virginia, 23603

Roberts, Douglas Home: RD #3, Box 337, Johnstown, PA,1590L Phone: (814) 536-4068 Roberts, J. Scott (1984), Conticoal, Indiana, PA Home: 609 Summit Avenue, Johnstown, PA, 15935 Phone: (814) 288-4714 Rushin, John, Schlumberger Home: 168 Garfield Street, Johnstown, PA, 15906 Rys, Mark, (1982), Graduate School: Wright State University, Dayton, Ohio, 45435 Home: 151 West 36th Street, Erie, PA, 16508

Salay, Mark (1981), U.S. Bureau of Reclamation Home: 4949 Manitoba Drive, Apt. #706, Alexandria, Virginia, 22312

Sendlosky, Pat (1978), Army Times-oversees

Shaw, Eruce (1980), Analex, 15430 E. Batavia Drive, Auropa, CO, 80011 Home: Writz c/o Analex

Sherlock, Sean (1984), Graduate School: North Arizona University, Flagstaff, Arizona Home: 1220 B Pinegrove, Flagstaff, Arizona, 86001 Phone: (602) 774-0764

Sholtis, Shirley (1975), L. Robert Kimball and Associates, Ebensburg, Pa. Home: 834 Mine 37, Windber, Pa., 15963

Silko, Dave, Graduate School: Wright State University, Dayton, Ohio Home: 171 Pine Street, Conemau:h, PA, 15909
Phone: (81L) 535-4762

Sincak, Fike (1977), Board of Assessment Appeals, County of Cambria, Ebensburg, FA, 159 Home: 1019 Scalp Avenue, Johnstown, PA, 15904. Phone: Business-L172-5440; Home-266-2780

SlateSfa: Tenyand Ciedy (Kesterment) R. Peyin School District Fhone: 267-5651
Children: Jason-May 31,1977
Mark-May 9, 1983

Smith, Ray, W_m (1983), Home: RD #L Box 295, Johnstown, PA, 15905 Phone: (81L) 288-3827

Smithmeyer, John (1978),
Home: 701 Talemwood Ct., Laurenceville, Georgia, 30245
Phone: (404) 972-7412

Soyka, John, 6469 Little River Turnpike, Annadale, Virginia, 22003

Steele, Brian (1931), Western Geophysical, Houston, Texas Home: 9800 Club Creek Drive, Apt. 606, Houston, Texas, 77036

Strmempka, Chris (1984), Graduate School: Kent State University Home: 1102 Lake Street, Kent, Ohio, 44290 Phone: (216) 673-0543

(Suboleski) Slonka, Joan (1979), Virginia Electric And Power Company Home: 10004 Cutter Drive, Richmond, Virginia, 23235
Phone: (804) 272-8644

Thomas, David H. (1981)
Home: 431 S. Queen Street, Littlestown, PA

Tomczak, Paul Home: 219 New Jersey Avenue, Paint Pleasant Beach, New Jersey, 08742 Trocano, Joseph M., Sr. Geology Phone: (412) 835-3749 (5-7 pm)

Usnik, Jean (1976), Energy Center, Inc., Geochemical Testing Division, RD #2 Somerset, PA, 15501 Home: Rear 704 Tayman Avenue, Somerset, PA, 15501 Phone: Business-(814) 443-1671

(VenValkenberg) Pfeiffer, Anita (1975)
Home: Boxbergring 5, 6900 Heidelberg, West Germany

Veeger, Anne (1983), Graduate School: Syracuse University
Home: 102 Roney Lane, Apt. #31, Syracuse, New York, 13210
Phone: (315) L78-6993

* Vomero, Idsa (1981), Graduate School: Arizona State University, Tempe, Arizona, 85287 Home: 1216 E. Vista Del Cerro, Apt. # 1118, Tempe, Arizona, 85281

Werner, Robert Home: 1120 Macon Avenue, Pittsburgh, PA, 15218

* Lisa is now working at CELLA BARR ASSOCIATES, 5062 N. 19th Ave., Phoenix, AZ 85015

Wilcox, Dave (1980), Graduate School: West Virginia University (graduated)

(Wilt) Ewing, Sharon (1975), Richland Middle School, Math Teacher (grades 6-8) Home: 1200 Cambria Avenue, Windber, PA, 15963
Phone: (814) 167-1890

Wolfson, Rick (1980), Western Geophysical, Denver, Colorado (Do not mail to this address)

Zielinski, Denis (1975), U.S. Environmental Protection Agency, Enforcement Division, .
Sixth and Walnut Street, Philadelphia, PA, 19106
Home: 277 Peppermill Road, Berlin, New Jersey, 08009
Fhone: Eusiness-(215) 597-0804

Zubal, John (1979) Home: Box 382, St. Michael, PA, 15951