



*Earth & Environmental Sciences*

**RUTGERS-NEWARK**



# THE NEWARK SUPERGROUP

## ALUMNI NEWSLETTER

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Volume 1

Fall 2005

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### **WELCOME TO THE 2005 ACADEMIC YEAR!**

Thank you for your enthusiastic reception to our alumni group and newsletter. By far the most popular piece was the Old Fogies Corner. Everyone appears to have enjoyed trying to identify the old faculty members. The Department of Earth and Environmental Sciences continues on its strong drive towards becoming a premier applied Earth Sciences program. In addition to reporting on this progress, we have some new projects for your consideration.

### **PERSONNEL CHANGES**

After an exhaustive search to fill the position vacated by Dr. Manspeizer, Dr. Yuan Gao was hired as a new Assistant Professor (see her profile later in the newsletter). She joins Drs. Yee and Slater in the new departmental direction of high output environmental research scientists. Dr. Warren Manspeizer retired this year after a terminal sabbatical in Spring 2005 thus ending a four-decade career at Rutgers University. He is now Professor Emeritus. Dr. John Puffer announced his retirement at the end of the 2005-2006

academic year. He will take a terminal sabbatical in the spring of 2006. Dr. Victoria Hover was reevaluated for tenure and promotion but was unsuccessful. She left the department at the end of June 2005 for a tenure-track position at University of Louisiana at Lafayette (Hurricane Katrina missed her). Dr. Lee Slater applied for and was granted tenure and promotion to Associate Professor. He received the prestigious Board of Governors Award for outstanding research during this process.

### **UNDERGRADUATE PROGRAMS**

#### The Geology Major

Students concentrating in Earth and Environmental Sciences include those in “**Classic Geology**” or “**Environmental Geology.**” These undergraduate programs continued to attract some of the better students as majors from among those who take our introductory geology courses primarily as part of the college laboratory science requirement. Practically all of our geology majors who graduated during this period chose the Environmental Geology option and are already employed in industry. Although the

number of majors began low during this period, eight students declared Geology majors during the year. The increased price of energy has attracted many to consider careers in Geology which may increase our numbers in coming years.

#### The Environmental Sciences Major

This interdisciplinary and intercollegiate major (biology, chemistry (NJIT), geology) continued to be successful with about 25 majors in total. The faculty of our department participated both in terms of offering required courses as well as administering the program. Changes to the program requiring a minor in one of the participating sciences were agreed upon.

#### Service Courses

The offering of courses for the NCAS laboratory science and natural science requirements has been one of the department's major tasks. During previous years we have been unable to offer enough sections of introductory courses (lecture and laboratory) to satisfy student demand. Newly allocated TA's plus other budget improvements during the past few years have allowed us to offer more sections of introductory courses (both lecture and laboratory) to satisfy most of the student demand. The new interdisciplinary course in Natural Disasters continues to attract more students than can be accommodated. A companion course in Environmental Disasters attracts significant numbers and the renovated course in Weather and Climate has now become popular. This year we serviced about 750 students in the laboratory science courses and 200-250 students in natural science courses.

## **GRADUATE PROGRAMS**

There are now approximately 35 students in the graduate programs administered by the department. Applications from top quality candidates on an international basis remains strong and we are competitive with major universities on a national basis. We now enroll students who have full offers from schools such as Penn State, University of Texas at Austin and University of California at Davis and even get transfer students from schools like Washington University among others. The graduate program is still making good progress towards becoming one of the best in the region. It reached a major benchmark this year when we graduated our first PhD candidate in departmental history.

#### M.S. In Environmental Geology

This program, a collaboration between the Departments of Geological Sciences at Rutgers-New Brunswick, Civil and Environmental Engineering at NJIT and us, had its sixth full year of operation in 2003-2004. It now enrolls about 10 part-time students.

#### M.S. and Ph.D in Environmental Science

This program, a collaboration among the departments Chemistry (NJIT), Biological Sciences and this Department has just completed its sixth academic year. The Ph.D. track in Geology has allowed this Department to obtain graduate teaching assistants for its introductory laboratory courses. Of the current students we have 10 graduate students on some sort of support both TA and RAs. The caliber of the graduate students and program in general has improved to the point where it is now comparable to some major state programs in the area if not the country.

## **FACULTY ACCOMPLISHMENTS**

The five faculty members served on several departmental, campus and university projects as committee or task force members. They also served the profession and participated in scholarly activity that produced significant publications.

### Research and Publications

For the period 2004-2005, five of the six faculty produced 1 field guide and 14 refereed papers and chapters in journals and professional volumes. This is extremely high output for the Earth Sciences and comparable with the best of departments on a national level. Most of the papers are of world-class caliber. In addition, they published one regional geologic map. They also participated in approximately \$1.1 million in external support and \$100,000 in department scholarships from external support. Several new faculty in Biological Sciences strongly overlap the new faculty in Earth and Environmental Sciences. New collaborations are already beginning and we eagerly anticipate future collaborative research programs and projects.

### **Dr. Yuan Gao \*NEW\***

Dr. Yuan Gao obtained a BS in analytical chemistry from NanKai University, China in 1981, and MS (1990) and PhD (1994) degrees both in Oceanography at the University of Rhode Island, with thesis research in marine-atmospheric chemistry. After graduation, Dr. Gao's research, based at Rutgers University New Brunswick and Princeton University, has been focusing on studies on both global and regional scales.

Dr. Gao's research on the global scale includes the trans-Pacific transport of Asian dust and dust-ocean biosphere interactions with respect to aeolian iron fertilization in the ocean and its impact on carbon cycles. Dr. Gao's regional research aims at air pollution in New Jersey, including characterization of PM<sub>2.5</sub> air particulate matter and toxic trace elements and atmospheric deposition of air pollutants, in particular atmospheric nitrogen, to the New Jersey coastal water.

Dr. Gao's research was and has been sponsored by NASA, NSF, NOAA NJ Sea Grant, NJ State Department of Environmental Protection, Hudson River Foundation, and NJ Meadowlands Commission. Dr. Gao has served as a principal investigator for a number of research projects, including a current one funded by NASA with a budget of \$0.9 million, in which Dr. Gao works with an interdisciplinary research team of scientists from Rutgers, Princeton, MIT, and NASA.

Dr. Gao taught widely at both graduate and undergraduate levels before joining Rutgers Newark. The subjects she taught include Air Resource Management, Environmental Geology, Environmental Chemistry, Weather and Climate, and Earth Environment.

### **Dr. Gates:**

Dr. Gates continued his field research in the Hudson Highlands. Roughly one third of an NJN documentary "The Highlands Rediscovered" released this year is devoted to Dr. Gates' work. Two of his graduate students have been conducting research on bedrock and environmental problems in the Highlands. He has also been continuing his work on geoscience education. He made a videotape of the Environmental

Geology lab sequence and produced a new manual. He also established the Highlands Environmental Research Institute (HENRI) (<http://henri.Newark.Rutgers.edu>) this year and served as president of the National Association of Geoscience Teachers-Eastern Section and President-elect of the Geological Association of New Jersey. Dr. Gates was chosen for Who's Who in America for 2006.

**Dr. Puffer:**

This year Dr. Puffer continued his work on projects in the New Jersey Highlands and the igneous rocks of the Newark Basin. He continued an active role in the Geological Association of New Jersey including the editing of the 2004 field guide. Recent studies include copper mineralization in the Newark Basin among many others.

**Dr. Slater:**

This year Dr. Slater worked with four Ph.D. students, a postdoctoral scientist and a Masters student on the following projects: (1) Laboratory studies of the electrical properties of reactive iron wall barriers (2) Laboratory studies of microbial mediated metal sulfide precipitation (3) Laboratory studies of the electrical properties of organic soils and processes controlling peatland formation (4) development of high resolution geophysical technologies for wetland characterization. The work has been published in four peer-reviewed journal articles and presented in conference papers. Dr. Slater applied for and was granted tenure and promotion to Associate Professor and received the prestigious Rutgers Board of Governors Award for outstanding research. He was recently named Associate Editor of the

prestigious journal Water Resources Research.

**Dr. Yee:**

Dr. Yee has set up the new state-of-the-art Microbial Geochemistry Laboratory at Rutgers-Newark in the York Center at NJIT. He has been conducting research on experimental microbial geochemistry, chemical reactions at the cell-water interface; biologically induced mineral formation; application of synchrotron radiation-based spectroscopy, electron microscopy, and molecular genetic techniques to geomicrobiological investigations. Dr. Yee published four well-received papers in professional journals this year and has been working with two PhD candidate graduate students and several MS students. He continues to serve as Associate Editor of Geochemical News.

**RUTGERS-NEWARK AT GANJ**

Don't forget to attend the GANJ (<http://www.ganj.org>) meeting this year on October 8. The field trip will a traverse across the central Newark basin and is hosted by the College of New Jersey in Trenton. Alumnus and current Rutgers-NB faculty member Dr. Roy Schlishe will lead a stop as will former graduate student Steven Laney. Dr. Puffer will give a talk at the technical session with a Rutgers-Newark student and Dr. Gates is President-elect. Alumnus Suzanne Macoay (O'Malley) is on the GANJ board and will be present. Dr. Paul Olsen of Lamont-Doherty will be the keynote speaker and will lead one stop as will Dr. Greg Herman of the NJDEP Geological Survey. It will be one of the better meetings and trips.

### A LITTLE HELP?

We could use your help with a couple of new projects. First, we want to get the MS program moving. We are revamping our offerings to cater to environmental professionals both in terms of content and convenience. In addition to the two environmental geophysics courses offered by Dr. Slater (electrical and seismic/potential field) and the old standby Environmental Geology, Dr. Yee will offer a class in Bioremediation this spring and Dr. Gao will offer a class in Air Pollution Sampling Methods. These topics are their specialties NJIT offers graduate classes in GIS, Solid Waste Management and Hydrogeology among many others to complement our offerings. They can be taken by all R-N students at no additional charge. The page following is

a flier for the program. Please print it out and post it around your company. If you know other people in other companies, please forward it to them. We are looking to double our enrollment by next year. Please help us meet that goal.

Second we would like to enhance our summer intern program. If you are interested in hiring current undergraduate students, please fill out the intern form and send it back to me (or preferably, send an electronic version) sometime in the spring semester.

Finally, if you would like to send a message to your former classmates, there is also a form to write a note (or preferably, send an electronic version) to be published in the next issue.

Have a good year and please feel free to contact me with any suggestions for the Alumni Group.

### Please Spread the Word!

We are still missing a large number of alumni from our list. Please spread this newsletter around to any alumni you are in touch with or send me their contact information directly. If you have not already done so, please send your contact information to [agates@andromeda.rutgers.edu](mailto:agates@andromeda.rutgers.edu) as soon as possible. Thank you for your help.

Announcing the newly minted Dr. Xavier Comas, the first PhD ever in the history of the department. He is now on a Post-Doctoral Fellowship here at Rutgers.



## The Old Fogies Corner

### Dr. Andreas Vassiliou

Dr. Vassiliou was appointed to the position of Professor Emeritus after 33 years of devoted service to the Department and University. He distinguished himself as a teacher, having won the highest University award for "Excellence in Teaching (the Warren I. Susman Award). He was also an effective administrator, having served as chairperson of this Department for 18 years.

For the last couple of years, he has been teaching this Department's Summer Session offerings in introductory geology laboratory courses (Planet Earth and Environmental Geology). He expects to continue this for the next few years. For the rest of the year, he works on a couple of books, one of which is a historical novel about the life of a foreign student in New York City. He expects to publish in the Fall of 2006. He is also involved in several cultural and social associations and is the President of two of them that contribute to scholarship funds (the American Cyprus Congress and the American Academy Alumni Assoc.).

He still lives in Morris Plains, NJ with his wife of 39 years, Marika. He has two grandchildren from his first daughter. His other daughter was married last June. He also enjoys an occasional "gambling excursion" to Atlantic City with some of his many friends.



# EARN AN **MS** DEGREE AT NIGHT!

## FROM **RUTGERS UNIVERSITY-** **NEWARK**

### **PROGRAM OFFERINGS:**

#### **ENVIRONMENTAL GEOLOGY (MS)**

- Thesis and Non-Thesis Options
- Many concentrations to choose from

#### **ENVIRONMENTAL SCIENCES (MS/PhD)**

- Joint Program with NJIT (Both names on diploma)
- Thesis and Non-Thesis Option
- Geology, Biology, Chemistry, Environmental Science background

**20 to 25** classes per semester to choose from at Rutgers-Newark & NB, NJIT and Cook College  
All 6-9 pm one night per week to accommodate you.

#### **Classes in:**

GIS                      Bioremediation                      Hydrogeology  
Air Pollution              Environmental Geophysics & more

**CONTACT:** Dr. A.E. Gates, [agates@andromeda.rutgers.edu](mailto:agates@andromeda.rutgers.edu),  
<http://geology.newark.edu>, (973) 353-5100

**ALUMNI GROUP DATA SHEET FOR NEW MEMBERS**

NAME \_\_\_\_\_ YEAR \_\_\_\_\_

1) Would you rather have the newsletter sent electronically (preferable for us) in word or pdf? If so, give us your permanent e-mail address here:

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Would you rather have it in hardcopy through snail mail? If so, please provide us with a current mailing address:

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2) We will summarize the news of the department in the newsletter including personnel changes, research programs, announcements and academic programs. What else would you like to see? (circle all that apply)

- a) Stories about other alumni?
- b) A message board to post notes to the other alumni?
- c) An employment opportunities section?
- d) Stories about the history of the department?
- e) Make a suggestion \_\_\_\_\_

3) Would you seriously consider attending (ie: you would come if your schedule permits) an alumni geologic field trip including faculty and current students? Y N (circle one).

4) Would you seriously consider attending (ie: you would come if your schedule permits) an alumni picnic or social function (dinner, etc.) including faculty and current students? Y N (circle one).

5) Would you seriously consider attending (ie: you would come if your schedule permits) an edutainment function like a trip to a museum or other exhibit (with input from a faculty member or alumnus) including faculty and current students? Y N (circle one).

6) Would you seriously consider attending (ie: you would come if your schedule permits) a sponsored booth at a conference like Geological Society of America? Y N (circle one).

7) Do you have any other suggestions to run a better Earth Science alumni group?

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Return completed forms to:

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**A NOTE TO MY FORMER CLASSMATES**

NAME \_\_\_\_\_ YEAR \_\_\_\_\_

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**INTERNSHIP FORM**

Contact Person \_\_\_\_\_

Contact Information \_\_\_\_\_

Company \_\_\_\_\_

Job Description \_\_\_\_\_

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Background Needed \_\_\_\_\_

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Salary \_\_\_\_\_