

BARNARD CHEMISTRY DEPARTMENT NEWSLETTER

June 2002

Greetings to alumnae and friends. The class of 2002 has graduated, reunion is over, so it is time to reflect on the academic year and bring you up to date on the college, the department, the faculty, the students, and those alumnae about who we have recent news. As you may have noticed, there was, alas, no 2001 newsletter, due to an overwhelming pile of administrative tasks, so this year's issue will bring you news of two years. We hope to resume an annual schedule henceforth.

NEWS OF THE COLLEGE

Things go well at the college. The decennial Middle States review was completed during the 2000-2001 academic year. As those of you familiar with the process are aware, colleges like Barnard do not worry about re-accreditation, but they often take advantage of this review to engage in broad self-scrutiny. The recurrent theme in the Barnard self-study report was the importance of maintaining and balancing the four distinct and complementary pieces of Barnard's identity: (1) a liberal arts college (2) for women (3) affiliated with Columbia University (4) in New York City. Now is the time to act upon some of the recommendations of that review. The Barnard Trustees are engaged in significant long-range planning. For those of us who were here through some of Barnard's hard times, this is welcome. Barnard will never have the resources of some of the institutions with which it competes for the best students, but it is a definite plus to be looking confidently at the future rather than worrying about survival.

Space will always be a challenge for a college with a four-acre campus in New York City, but New Yorkers know how to thrive in limited space. At Barnard, we must make the most of our existing buildings, and plan future space wisely. There has been a good deal of renovation in recent years. Scheduled for completion this summer is the renovation of Lehman Auditorium, the large lecture hall in Altschul. The basic design will remain the same: the steeply banked seats and good acoustics have worked well in the past, but what we will gain is a clean, fresh look, better (and more flexible) lighting, and multimedia capability. It has been quite frustrating in recent years that the room used for a good proportion of introductory science teaching at Barnard was so out-of-date.

Those who have been accompanying children looking at colleges know that elaborate student centers are the latest thing; Smith and Wellesley both have them under construction. Columbia's student center, Lerner Hall, recently replaced Ferris Booth. Barnard has neither the space nor the money to build a competing facility. Fortunately, we have less need for an extensive center for student life, since, in a very real sense, NYC is our campus. But there is a pressing need for performance space, for meeting space, for display space, and for classroom space. McIntosh center is heavily used today, but does not make good use of its precious real estate. So lots of thinking is going on about a multi-purpose building. It will be interesting to see how this evolves.

The other very critical space need is for faculty housing. A fixed number of apartments in Columbia housing is available to Barnard faculty and staff, but that number falls woefully below demand. Recruiting young faculty is an increasingly difficult task, when affordable housing within reasonable commuting distance is harder and harder to find. The Barnard trustees have identified this as a high priority problem, but solutions are hard to find.

Andrew M. Manshel recently became Barnard's Vice-President for Finance. An attorney, he served as an executive of the Bryant Park Restoration Corp., so he knows how to get things done in NYC. We are very optimistic that he brings the right kind of involved leadership to that part of the college. An additional good sign: he lives in the neighborhood.

Barnard hosts a variety of interesting symposia and conferences. We found two of particular interest this year. The first was the October 2001 *Barnard Summit on Leadership for Women* that brought an extraordinary constellation of accomplished women to the campus for a one-day event. Among speakers and panelists were Janet Reno, Marian Wright Edelman, Carol Gilligan, and Sheila Wellington. We found the remarks of Harvard Business School Professor Rosabeth Moss Kanter especially moving. Student leaders from a number of campuses convened in advance, and brought a powerful young voice to the event. What was wonderful was the huge turnout of alumnae, many of whom had not been drawn to campus events before.

The second conference of particular interest, *Balancing the Equation: Where are the Women and Girls in Science, Engineering, and Technology?* was co-sponsored by Barnard and the National Council for Research on Women. The symposium accompanied the publication of a report with the same title. The March 2002 conference had a mix of plenary events and workshops. The morning plenary, moderated by **President Judith Shapiro**, included panelists Evelyn Hammonds, Nancy Hopkins, Sue Rosser, and **Marisa Buzzeo '01**, a recent department chemistry graduate who also participated in the Education program. Much of the focus of the afternoon sessions was on pre-college education. Lots of teachers were present, and had much to say. NYC Schools Chancellor Harold O. Levy participated in the wrap-up panel. Students enrolled in the new chemistry department's Senior Colloquium attended the conference, and found it very interesting.

The Hughes Science Pipeline Project at Barnard supports a number of activities at the college, including student summer research internships, and an annual Distinguished Women in Science lecture. This April, Martha McClintock, Professor of Psychology of the University of Chicago, spoke on "Scents and Sensibility: Pheromonal and Social Control of Fertility and Health".

It would be incomplete to write a summary of the year's events without some mention of September 11. Like everyone else, we were stunned by the attack. Barnard was lucky: so far as we know no students or alumnae were killed, but family members close to faculty were lost. Some students were unhappy that classes resumed the following day, but we believe that this was the wise decision: unless directly involved, little purpose was to be served by sitting dazed in front of the TV (the few stations still broadcasting) looking for information or solace, and just seeing those horrifying images over and over again. We are proud of the way that students went about their business of learning, while also seeking ways to reflect and to be of service.

NEWS OF THE DEPARTMENT

Several faculty and staff have joined the department. **Prof. Dina Merrer** arrived in August 2001. A physical organic chemist who studies carbene reaction mechanisms, Dr. Merrer did her undergraduate work at Smith College, her Ph.D. at Rutgers, and postdoctoral work at Ohio State, in the lab of Matthew Platz. With the addition of Prof. Merrer, the department now has two organic chemists. It makes sense that they occupy the same floor, so they can interact and share equipment. Hence Prof. Lessinger gave his 7th floor office and research space to Dr. Merrer, and moved to the small office at the end of the corridor on the 8th floor. At the same time, the office and lab space of the 7th floor previously occupied by Prof. Robie was converted to research space for organic chemistry students. This was a pressing need, since the enrollments in the organic chemistry laboratories are sufficiently high that it is no longer practical for research students to share the teaching labs during termtime. In addition, the move made available a small office to be used by visiting and part-time faculty.

We welcomed **Prof. Elizabeth Kujawinski** in January 2002. She completed her Ph.D. in chemical oceanography at the MIT/Woods Hole Oceanographic Institute Program in Oceanography in June 2000. Prior to her arrival at Barnard, she held a postdoctoral research appointment at Ohio

State University. Formally a member of the Environmental Science Department, she holds teaching responsibilities in our department as well. Dr. Kujawinski's research in the role bacteria play in the fate of aqueous pollutants in the environment will provide interesting research opportunities for students in both departments. Two students will be working with her this summer.

We were sorry to lose **Abigail Ahing** as department administrator, but her brother was able to pay more for her excellent administrative skills in his growing business. We are very pleased that **Maria Hasapoglou** was able to step into this position. Ms. Hasapoglou, who has a B.A. from NYU, where she majored in French, and minored in both chemistry and dramatic literature, handles department orders, keeps track of the budget, maintains the department web pages, arranges the luncheons, and does many other very important tasks.

Barnard provides some teaching reductions to Assistant Professors at various critical points along the path towards tenure, so visiting faculty teach occasional courses. **Dr. Joy Thomas Kunjappu** taught Intermediate General Chemistry (BC3232y), the last term of the premedical sequence, this past semester, and will do so again next year. Dr. Kunjappu, who received his Ph.D. in Organic Photochemistry from the University of Bombay, is also an adjunct faculty member at Yeshiva University.

Exciting news! **Prof. Linda Doerr** won the Emily Gregory Award this year. This award for excellent teaching is especially prestigious since it is based on student nomination essays. The winning essay was written by **Abigail Smenton '03**. The award dinner in April was a festive occasion for all. Prof. Doerr was recognized for her skill in the classroom, for her direction of student research, but especially for her sensitive and supportive mentoring.

Each fall, we invite students who have done chemistry or chemistry related summer research to participate in a mini-symposium. It is wonderful to hear about the wide variety of projects. The following students worked in the Barnard chemistry department in summer 2001: **Christine Musich '02** and **Tiffany de Simone '02**, working with Prof. Ann Shinnar, **Marisa Buzzeo '01** and **Matt Pellow CC'03** working with Prof. Linda Doerr, **Elnaz Menhaji '02** working with Prof. Christian Rojas, and **Kiryn Haslinger '02** working with Prof. Sally Chapman. Chemistry and biochemistry majors who worked elsewhere included **Nazia Quraishi '02**, who worked at Merck, **Thanh-Nha (Sandy) Cao '02**, who worked at CU P&S in the laboratory of Dr. Skopicki, **Miki Kim '02** and **Jennifer Lo '03** both of whom worked at Wyeth-Ayerst, **Kseniya Petrova '03** who worked at Jackson Lab in Maine, and **Esther Francisco '03** who worked at Columbia-Presbyterian.

The fall 2001 chemistry department luncheon speaker was **Prof. Sally Solomon** from the Department of Chemistry at Drexel University, who talked about (and gave) chemical demonstrations. In the spring, **Prof. Virginia Cornish** from the Columbia Chemistry department gave a very interesting talk about her research "Chemical Complementation: A Genetic Assay for Evolution and Proteomics".

Six faculty and students attended the Nichols Award Symposium and Banquet this spring, honoring Prof. Alan MacDiarmid of Penn. Prof. MacDiarmid, 2000 Nobel Laureate, brought along his Nobel Prize medal, and offered to pass it around to students so they could say that they were "Nobel prize holders". It was a fascinating symposium on modern materials development, and a wonderful opportunity to meet and hear this charming and unassuming man.

805 Altschul, used for many chemistry classes, was renovated last summer. There is now built-in projection equipment, including video, CD, and networked computer. This has made it much more convenient to use Powerpoint presentations as well as various simulation software in courses. We still use lots of chalkboard: we believe that students still learn from the process of

seeing things written. This is especially true with things like organic structures. But chemistry is highly visual, and there are wonderful images that can enliven and inform lectures, so we are all experimenting with finding the appropriate mix of pedagogical tools.

We are in the planning process for extensively renovating the 7th floor of Altschul. The immediate need is to have adequate ventilation and hood space to run modern organic chemistry laboratory courses, but we also want to be sure that we take advantage of the opportunity to reconfigure the available space to provide for teaching and research for the future. We have tentative plans that look very promising; architects are converting these into plans that can be shared with prospective donors. It is an important first step in addressing a critical need in the department.

We continue to have wonderfully talented and dedicated students. Special recognition for the 2001-2002 academic year went to the following:

CRC Prize for excellence in First Year Chemistry	Danielle Rudich '04
ACS-PMSE Prize for excellence in Organic Chemistry	Alexis Sabo'03
ACS Prize for excellence in Analytical chemistry	Alexis Sabo'03
Marie Reimer Prize: outstanding junior Chemistry major	Rayna Goldstein and Kseniya Petrova
American Institute of Chemists Prize: outstanding seniors in Chemistry and Biochemistry	Kathryn Curran and Lisa Perlson
Ira and John Kauderer Prize: premedical student majoring in chemistry	Kathryn Curran '02
Hughes Summer Internship	Kate Zelenova '03 and Seung (Stephanie) Hong '03

Prizes won in college-wide competition:

Bernice G. Segal Summer Internship	Abigail Smenton '03
Gertrud Bunger Zufall prize: junior premedical student	Kseniya Petrova '03
Barbara Ann Liskin Prize	Kathryn Curran '02
Alpha Zeta Club Graduate Scholarship	Kathryn Curran '02
Frank Gilbert Bryson Prize	Kathryn Curran '02

Senior theses in 2001-2002:

Student	Mentor	Project Title
Katie Curran	Ann Shinnar	Properties of Bromotryptophan and its Role in Intestinal Antimicrobial Peptides Isolated from Hagfish
Kiryin Haslinger	Sally Chapman	Dynamics of Bimolecular Collisions: A Computational Study of Energy Transfer between Pyrazine and HX Diatoms
Miki Kim	Linda Doerrer	The Synthesis of Nickel Complexes with an Open Coordination Site that can bind to Nitrogen Oxides
Elnaz Menhaji	Christian Rojas	Studies towards the Synthesis of the Allosamidin Amino Disaccharide
Christine Musich	Ann Shinnar	Biosynthesis of Squalamine in Different Shark Species

Elnaz Menhaji and **Christine Musich** spoke about their thesis research projects at the 50th Annual Undergraduate Research Symposium of the ACS New York Chemistry Students' Association at Hofstra in May 2002.

Eleven Chemistry and Biochemistry majors have just graduated. Some of their plans for next year are definite, others tentative. Some plan to work for a year or so before further studies.

Monique Bryan is planning to work for a year, while she applies to medical school. She is also considering pharmacy.

Thanh-Nha (Sandy) Cao applied to several pharmacy schools, and is still waiting to hear. If she doesn't get in this time around, she plans to work for a year or two and reapply.

May Chiu is looking for work.

Kathryn Curran will be attending the Columbia College of Physicians and Surgeons. Katie, a Centennial Scholar, was elected to $\phi\beta\kappa$ at the end of her junior year, won, in addition to the prizes mentioned above, the Barbara Ann Liskin Prize and the Alpha Zeta scholarship prize. To top this, at graduation it was announced that she was the winner of the Frank Gilbert Bryson Prize. This prize is awarded by vote of the senior class to the member of their class who has made the greatest contribution to Barnard during the college years. Wow!

Linda Mbeki finished her exams at University College London. She reports no specific plans for the future but we believe she is heading to South Africa to spend some time with her family.

Elnaz Menhaji, elected to $\phi\beta\kappa$, has been accepted into the Ph.D. program in chemistry at Yale. She has decided to defer her admission and spend a year in Ireland, doing organic research at Trinity College, Dublin, in the lab of Dr. David Grayson.

Christine Musich was also elected to $\phi\beta\kappa$ at the end of her junior year. She will be working in the medicinal chemistry department at Albany Molecular Research, Inc. She learned about this company this past February, when Dr. Jay Reddy, a friend of Prof. Rojas, visited Barnard and gave a talk to students about the drug development process and employment opportunities at the B.A. level.

Kiryn Haslinger has an exciting job, working with Dr. James D. Watson, helping edit his memoirs. In addition to writing a senior thesis, Kiryn was editor of the *Barnard Bulletin* this past fall, so she has the requisite combination of skills. Kiryn is thinking about going to graduate school in the future.

Miki Kim will be working at Gyma Laboratories of America, on Long Island. There she will be joining **Gabrielle Yen '84**, who called the department recruiting recent graduates. We are always happy to help make such connections.

Nazia Quraishi is looking for work. Nazia did research this past year in Prof. Nakanishi's lab at Columbia.

Lisa Perlson, a chemistry major who did research in the laboratory of Prof. Ronald Breslow at Columbia, presented last year her Centennial Scholar project, on comparing AIDS policy toward African immigrants in France and England. This was in connection with Lisa's other major, political science. Lisa was elected to $\phi\beta\kappa$ at the end of her junior year. She is entering the Ph.D. program in Chemistry at Stanford.

DEPARTMENT NEWS FOR 2000-2001

Since we did not issue a newsletter for the previous academic year, we would like report here some important student accomplishments. Prizes for the 2000-2001 academic year were as follows:

CRC Prize for excellence in First Year Chemistry
ACS-PMSE Prize for excellence in Organic Chemistry
ACS Prize for excellence in Analytical chemistry

Hyon Ju Park '03
Christine Musich '02
Lisa Perlson '02

Marie Reimer Prize for outstanding junior Chemistry major

Kathryn Curran '02

American Institute of Chemists Prize for outstanding senior

Jing Lucy Sun '01

Ira and John Kauderer Prize for premedical student majoring in chemistry

Joan Shu '01

Hughes Summer Internship

Kiryn Haslinger '02 and Christine Musich '02

Bernice G. Segal Summer Internship

Linda Mbeki '02

Eleanor Elliot Prize

Kathryn Curran '02

Grace Potter Rice fellowship

Jing Lucy Sun '01

Senior theses in 2000-2001:

Student	Mentor	Project
Jing Lucy Sun	Ann Shinnar	Cloning the cDNA encoding Antimicrobial Peptides from Larval Sea Lamprey Intestine <i>Petromyzon marinus</i>
Joan Shu	Ann Shinnar	Biosynthesis of Squalamine: Isolation of Sulfotransferase and Polyamine Condensing Enzyme from the Dogfish Shark Liver
Marisa Buzzeo	Linda Doerrer	Polyfluorinated Aryloxiide Ligands in Transition metal and Main Group Metal Chemistry
Lara Crock	Samuel Silverstein P&S	CD36 mediates Hydrogen Peroxide Secretion by Mononuclear Phagocytes Exposed to Oxidized Low-density Lipoproteins

NEWS OF THE FACULTY

Professor **Leslie Lessinger** has certainly been very busy lately. He continues as both chair of the Chemistry Department and co-director of the Centennial Scholars Program, both of which need a lot of organization to keep them running smoothly. Running searches for faculty members, both new and for leave replacements, and selecting students as Centennial Scholars, takes time and attention. Other important projects included setting forth a detailed argument to increase the size of the chemistry department, based on comparative data and our desire to meet our increasing teaching commitments and provide a strong research environment, and developing detailed plans for the long overdue renovation of our organic chemistry laboratories. All we need now is the money and the staff to do the work!

Prof. Lessinger returned to teaching Quantum Chemistry, one of his favorites, and what is now called Integrated Laboratory (formerly called Physical Chemistry Laboratory or Advanced Laboratory). Innovations in these courses include student use of a sophisticated molecular modeling computer program, Spartan, that can calculate all sorts of things: normal vibrational modes, and show the molecules moving on the screen; energy levels and electron density distributions, bond strengths, and so on. A web-based periodic table program is used to explore properties of the elements. The laboratory course now makes very good use of the X-ray powder diffractometer. A new experiment includes the synthesis of a complex oxide, yttrium/gadolinium iron garnet $(Y,Ga)_3Fe_5O_{12}$, at high temperature, and investigation of solid solutions and magnetic properties. This experiment is part of a new course on the chemistry and physics of materials that is under development.

Two senior Centennial Scholars did science-related projects: **Kathryn Curran '02**, a biochemistry major working in Dr. Shinnar's laboratory here at Barnard, and **Yana Pikman '02**, a biology major, who worked in the laboratory of Dr. Robert Fisher at the Memorial Sloan-Kettering Cancer Center on the mechanism of DNA repair in fission yeast.

Prof. Sally Chapman enjoys teaching General Chemistry I (BC1601x). Barnard's more selective admissions is evident, especially in the bottom third of the class. (The top students are as talented as ever.) A decade ago, there was a sizeable cohort for whom mathematics anxiety was a serious stumbling block. This is no longer so: most students are confident about math. What math they know is sometimes a problem: geometry has all but disappeared from high schools, so students' ability to describe molecular geometry can be limited. A generation ago a molecule would not have been called "a planar pyramid". Lab skills are another challenge, as some students seem to have very little experience doing anything manual. But our reward is seeing tremendous growth as students gain confidence. A great deal of credit goes to **Mrs. Olympia Jebejian** and her team of patient but demanding lab instructors.

In the spring, Prof. Chapman taught Introduction to Thermodynamics and Kinetics (BC3252) for the first time in many years. She experimented with an all-Powerpoint lecture format. As part of kinetics, she used a software package *Chemical Kinetic Simulator* (available free from IBM), which can handle quite complex kinetic mechanisms. Homework problems included investigating explosion limits in mixtures of H₂ and O₂. She also taught the new Senior Colloquium (BC3590), a course that replaces the major exam as the exit requirement for those students not doing research, and she coordinated the Senior Thesis Seminar.

Prof. Chapman's main research focus continues to be energy transfer in the collisions of vibrationally excited pyrazine with diatomic bath collision partners. This work is related to laser experiments done in Prof. Flynn's lab at Columbia. **Natalie Seiser '97** did the experiments with CO as the collision bath gas. Sally has given talks about her research at a 60th birthday symposium in honor of Prof. William Miller at Berkeley in March, 2001, at the XVIII Conference on the Dynamics of Molecular Collisions, in Colorado in July 2001, at Brookhaven National Lab in December 2001, and at the ACS Middle Atlantic Regional Meeting (MARM) in May 2002. At MARM, she was an invited participant in a memorial symposium for Prof. Nina Roscher of American University. This symposium was organized by Barnard chemistry alumna, **Patricia Paulette '61**, who works at the National Academy of Sciences.

A related paper, "Classical Trajectory Study of Energy transfer in Pyrazine-CO Collisions" was published in *The Journal of Physical Chemistry A* **2000** 105, 2858. Coauthors on the paper included Cortney Higgins, a 2000 summer undergraduate research student visiting Columbia from Hendrix College, along with Natalie Seiser, Quan Ju, and Prof. George Flynn from Columbia.

Prof. Chapman has just completed two three-year terms as Chair of the Advisory Board of the Petroleum Research Fund (PRF). Thanks to a restructuring, the annual PRF grant program increased in 2002 from about \$15 million to \$25 million, and several new programs were launched. Prof. Chapman also said farewell to the ACS Committee on Professional Training. Among her recent activities on behalf of CPT she analyzed data from a library survey with particular emphasis on SciFinder Scholar. CPT is trying to find ways to make this very powerful (and very expensive) product of Chemical Abstracts more accessible to colleges. Some of the survey results were presented at a talk at the Chicago ACS meeting, and have been published in the *CPT Newsletter*.

Prof. Chapman has enjoyed her involvement with COACH, a group of senior academic women chemists organized to try to improve the situation (and number) of women in the academic ranks in chemistry. COACH meets twice a year, and has raised significant funds from various agencies. The group sponsors workshops at ACS and other professional meetings. Prof. Chapman enjoyed catching up with **Karen Goldberg '83** at a COACH workshop in Orlando this April. Related to her COACH activities, Sally reviewed a book about women in science for *Chemical and*

Engineering News. While her reaction to the reviewed book was mixed, she does strongly recommend another of the same subject: *Why So Slow?* by Virginia Valian.

From time to time, Prof. Chapman participates in reviews of chemistry departments at other institutions. This is an interesting task that provides an additional opportunity to think about the program here. In the last two years, she has reviewed Mount Holyoke College and Yeshiva University. In the latter she enjoyed talking to **Gail Horowitz '80**, who runs the organic labs.

Prof. Ann Shinnar is working very hard to complete several manuscripts in time for her tenure consideration this coming fall. Prof. Shinnar and her students work in three general areas. She presented results in one area, her work in antimicrobial peptides, at two meetings in summer 2001: the American Peptide Symposium in San Diego, and the Protein Society meeting in Philadelphia. At the latter, her paper "Cathelicidins from Primitive Fish: Antimicrobial Peptides from Hagfish and Lamprey" included the sequence of a cysteine-rich antimicrobial peptide from larval lamprey intestines, based on contributions from **Sheng-Ching Wang '97**, **Olga Fishman '98**, **Rachel Mandell '96** (who recently worked part-time in Ann's lab) and **Lucy Sun '01**. A second research area involves antimicrobial aminosterols, such as squalamine, found in sharks. **Joan Shu '01** and **Christine Musich '02** have worked to develop an efficient mini-scale extraction procedure with which they surveyed livers from a variety of shark species, provided by shark biologists. The third research front is investigating the bromination of tryptophan in hagfish. Ann was awarded a Petroleum Research Fund Type G grant for this research area, based on research conducted by **Li-Min Yang '97**, **Claudine Lombardi '98**, **Joanne Bautista '99**, and **Sophia Fu '01**. **Katie Curran '02** has taken this project in new directions for her senior thesis. Working with **Mrs. Su Qing Liu**, Prof. Shinnar continues to make improvements in the Biochemical Laboratory Techniques courses (BC3355 and 3357).

Prof. Christian M. Rojas worked with an excellent group of Barnard students during the past year. With **Elana Levites-Agababa '02**, **Elnaz Menhaji '02**, and **Lisa Perlson '02**, Prof. Rojas published "Amidoglycosylation via Metal-Catalyzed Internal Nitrogen Atom Delivery," in *Organic Letters* **2002**, *4*, 863-865. Earlier work with students **Cindy Kan '00**, **Charli Long '01**, **Moushumi Paul '99**, **Christina Ring '00**, and **Sarah Tully '00** "Photo Amidoglycosylation of an Allal Azidoformate. Synthesis of β -2-Amido Allopyranosides" was published last year in *Organic Letters* **2001**, *3*, 381-384. The Rojas group continues to study new methods for nitrogen atom transfer and their application to amino sugar synthesis. Prof. Rojas will give a talk at the Boston ACS meeting in August and hopes to see Barnard Chemistry alumnae there.

Last fall Professor Rojas taught the Advanced Organic Chemistry Laboratory. The course made excellent use of the Department's new 300 MHz NMR instrument. In the spring semester Rojas taught Organic Chemistry I to a class of 121 students. Especially popular were the tequila shot demonstration and stories about laboratory fires, explosions, and poisonings. Christian and his wife, Christine, have small two daughters: Sydney and Alice. It is a great treat for all to see them at various departmental events like the picnic last summer.

Prof. Linda Doerrer taught Inorganic Chemistry (BC3271) again this fall, with half the class coming from Columbia. She co-taught General Chemistry I (BC1601) lab with Prof. Chapman and in the spring taught Quantitative and Instrumental Analysis again with Mrs. Jebejian. Prof. Doerrer and **Marisa Buzzeo '01** presented a poster based on Marisa's thesis work at the ACS meeting in San Francisco in April 2001. Marisa continued to work in Linda's lab over the 2001 summer, where she was joined by **Linda Mbeki '02** and **Matthew Pellow CC'03**.

Miki Kim '02 did her senior thesis with Prof. Doerrer this year, and was joined in the lab by **Abigail Smenton '03**, **Sahar Saddoughi '03**, **Josh Wittenberg CC'02**, and **Marisa Buzzeo '01**.

In March, the lab was visited by Prof. Richard Compton and his graduate student Jay Wadhawan from Oxford University, who have collaborated with Prof. Doerrerr on some cyclic voltammetric studies. This work was presented by Prof. Doerrerr at the ACS meeting in Orlando in April 2002.

Recent publications include a book review, "*Transition Metal Carbonyl Cluster Chemistry* by Paul J. Dyson and J. Scott McIndoe" in *The Journal of Chemical Education* **2002**, **79**, 677-678, and a research paper by Franz, Katherine J.; Doerrerr, Linda H.; Spingler, Bernhard; Lippard, Stephen J. "Pentacoordinate Cobalt(III) Thiolate and Nitrosyl Tropocoronand Compounds" in *Inorganic Chemistry* **2001**, **40**, 3774-3780.

This academic year Prof. Doerrerr was awarded a grant from the ACS Petroleum Research Fund as well as a prestigious NSF CAREER award. Prof. Doerrerr has also joined the Columbia University Nanotechnology Science and Engineering Center, a consortium of four schools (CU, BC, CCNY, Rowan) and many industrial collaborators doing research into the successor to the silicon chip. To cap off a banner year, as mentioned earlier (but worth saying twice!), Linda won the Emily Gregory Award. Prof. Doerrerr has been awarded a Special Assistant Professor Leave for the coming academic year. She will be visiting different laboratories in the U.S. and the U.K.

Prof. Dina Merrer greatly enjoyed her first year at Barnard. She taught Organic II lecture in the fall, and the Advanced Lab in the spring. She was very impressed by the quality, motivation, and curiosity of the Barnard students, and had a lot of fun teaching them in class. Dina spent the fall semester setting up her research lab. During the spring, **Aidan Flaherty '04** and **Ekaterina (Kate) Zelenova '03** did some research in Prof. Merrer's lab on intermolecular carbene reactions with cyclopropenes. Kate is continuing her research this summer in Dina's lab as a Howard Hughes Research Fellow, and will do a senior thesis next year. **Alexis Sabo BC '03** is also working in the Merrer lab this summer as a New York Science Education Fellow. Dina's research on carbene reactions with small ring compounds has been funded by a \$35,000 grant from the Petroleum Research Fund of the ACS; her research on the bimolecular kinetics of reactions of stable carbenes has been supported by Research Corporation (\$35,000). In addition, Dina has received an allocation of supercomputer time from the National Center for Supercomputing Alliance for high-level *ab initio* calculations. The results of some of these calculations will be presented at the Reaction Mechanisms Conference in Columbus, Ohio, in July 2002.

Prof. Elizabeth Kujawinski's research interests lie at the interface between chemistry and biology, namely, the interactions of microorganisms (protozoa) with organic contaminants in aquatic systems. Within this broad research area, her current research foci include isolating protozoa from the Hudson River, examining their role in organic matter cycling in aquatic systems, and exploring the impact of these organisms on the fate and transport of organic contaminants in select aquatic systems. She is mentoring two Barnard students this summer. She presented her work in an oral presentation entitled "Application of Fourier transform ion cyclotron resonance mass spectrometry to the structural characterization of aquatic organic matter" at the 2002 AGU/ASLO Ocean Sciences Meeting in Honolulu. In addition, Liz was invited by Dr. Neil Blough to give a talk at the University of Maryland in the Analytical Chemistry seminar series in April 2002: "Molecular-level characterization of natural organic matter: Use of ESI FT-ICR mass spectrometry". She brought greetings back to the department from **Dorothy Beckett '80** who is a on the faculty there. She was also invited to write a review for the journal *Environmental Forensics* entitled "Electrospray ionization Fourier ion cyclotron resonance mass spectrometry: Characterization of complex environmental mixtures".

Dr. Toby Holtz teaches general and organic chemistry lab sections, manages the organic chemistry stockroom, and helps with demonstrations for General Chemistry. She also advises first years and sophomores. Dr. Holtz's daughter Razelle graduated from Barnard in 2002, with honors

in Anthropology. Toby and her husband, who teaches at JTS, have two children at Queens College and two now in graduate school.

In addition to assisting in several upper-level laboratory courses, **Mrs. Su Qing Liu** is working towards her Master's degree at City College.

Mrs. Olympia Jebejian supervises the general chemistry laboratories in the fall term and maintains the laboratory for general and analytical chemistry in the spring. She also advises first and second year students. For many summers, Mrs. Jebejian has taught chemistry in the Higher Education Opportunity Program (HEOP), a rigorous six-week program for economically and educationally disadvantaged students, in preparation for their starting the fall semester at Barnard. The program in summer 2001 was unusually large, so accommodating everyone in the lab was a special challenge. Mrs. Jebejian feels very rewarded when HEOP students take General Chemistry I and do very well. On a personal note, Olympia's daughter, **Maria Stepanian '95**, had her first child, Robert Shahe Stapanian, on August 1, 2001.

Gwen Buchanan, Administrative Assistant for the Physics and Astronomy and Chemistry departments, served on jury duty in April, 2001, and ended up sitting on an insurance fraud case that lasted seventeen days. She commented: "When the person at the coffee cart knew how I liked my coffee -- that told me this was a long case." But she found the process interesting. After a decade of being a Mac user, Gwen has gone with the tide at Barnard, and converted to PC. Significantly more help is available at the college for PC users.

NEWS OF FORMER FACULTY AND STAFF

Prof. Chapman enjoyed catching up with **Dr. Elise Megehee** at the ACS Middle Atlantic Regional Meeting (MARM), in Fairfax VA in May 2002. Dr. Megehee, who is the Clare Booth Luce professor of Chemistry at St. John's University on Long Island, presented two posters in inorganic chemistry and one relating to a summer program for high school students for which she is the P.I.

Also at MARM was **Dr. Pamela Brown**, who worked in the advanced chemistry lab a few years ago. She gave a poster about her activities in peer-led team-learning (PLTL) at NYC Technical College. CUNY is a leader in this area of NSF-sponsored systemic educational reform in chemistry.

Prof. Dan Robie is also in the CUNY system. He is in the chemistry department at York College.

Prof. Chapman encounters **Prof. Dan Libby** and his wife, Carol, at ACS functions from time to time. Dr. Libby is at Moravian College in Bethlehem PA, where he continues to have both an active undergraduate research program in biochemistry and a deep interest in new pedagogy.

We enjoy seeing **Dr. Grace King** from time to time. She lives in the neighborhood, and takes advantage of cultural events in the city, like concerts and the opera. She loves going to New Hampshire each summer.

NEWS OF ALUMNAE

Class of 2001

Marisa Buzzeo spent the summer after graduation working in the laboratory of Dr. Richard Compton in the Physical Chemistry Lab at Oxford UK. This past year, she worked as a lab Associate in our department helping teach sections of general chemistry, worked in Prof. Doerrer's lab, took graduate courses in the fall, and taught high school chemistry at Bronx High School of Science in the spring, completing the requirements for teaching certification. She begins graduate school this fall at Oxford.

Patty Chiu is working for her Masters in Public Administration at NYU's Robert F. Wagner School of Public Service, majoring in Health Policy and Management, which she expects to complete in May 2003. In addition to taking courses, that give her "insight into the business aspects of medicine and the many factors causing the current healthcare crisis", she interns at the Asian American Federation, helping them establish AIDS/HIV prevention programs. In September, she will start an administrative residency at the Lutheran Medical Center. "Besides gaining knowledge into the many aspects of managing a hospital, one of the main topics I hope to gain insight on is how Lutheran is able to provide culturally competent healthcare to a diverse patient population". Patty is applying to medical school for the fall of 2003.

After graduation, **Lara Crock** continued working in Dr. Sam Silverstein's lab at P&S. She will enter the M.D./Ph.D. at Washington University in St. Louis this fall. Congratulations, Lara!

As of May 2001, **Joan Shu** was headed off to Istanbul for a three-week mission trip. In the fall, Joan started medical school, at New York Medical College.

Jing Lucy Sun is in a Ph.D. program at Stanford, in the department of Structural Biology. She spent the summer of 2001 working on research projects at Barnard and at Rockefeller.

Alison Rinderspacher majored in English. However in the course of completing her chemistry minor (and doing research in the Environmental Science department), she became more and more excited about chemistry. She entered the chemistry Ph.D. program at Dartmouth this past fall.

Classes of 1996-2000

We enjoyed occasional postcards from Peru, where **Charli Long '00** had a Fulbright Fellowship for the 2000-01 academic year. When **Christina Ring '00** came for a visit, they shared a wonderful trip to the south of Peru. Since September 2001, Charli has been in the Ph.D. program in chemistry at the University of Pennsylvania, and Christina is in medical school at the University of Colorado.

Sarah Tully '00 is enjoying graduate school at Caltech. She has joined the lab of a new professor there, Linda Hsieh-Wilson. They are studying the role of glycosaminoglycans on the surface of neurons and how they aid in synapse development, using organic synthesis techniques. Sarah "really likes Caltech. The department here is amazing. All the faculty members are very accessible, and that is very nice." She also writes "Southern CA is also nice, from what I have seen". Graduate students do spend most of their lives in the lab.

Thalia Robakis '99 sent some corrections to our last newsletter. She spent the major portion of the year before entering medical school in Greece, doing molecular biology in the Kardasis laboratory at the University of Crete. She is in the MD/PhD program at Columbia, so she is at both P&S and GSAS; in the latter she is in the department of Neurobiology and Behavior. She also pointed out that we reported **Claudine Lombardi '98** at the wrong medical school: Claudine is also at P&S. In fact Claudine and Thalia lived next door to each other. Thanks for the corrections.

Fawzia Qazi '99 wrote last year from California: "Believe it or not, I am a chemistry teacher. I just completed my first year as a high school chemistry and physics teacher. After graduation, I was working in finance (for Honeywell) for a while and then I did some work as an environmental scientist with an environmental consulting company. I wasn't really happy with what I was doing and fell into teaching. I love it. During the summer and the fall 2001, I will be teaching at Peninsula Academy (chemistry and math) and applying to grad school. My short term goal is to pursue a MS in Chemistry at California State University Long Beach." Since that letter, Fawzia was accepted to CSULB so she has done courses and research this year. Good luck Fawzia: we need good teachers, and are sure you are stellar in the classroom!

Sunita Pradhan '99 also wrote recently: "I have become very involved in my mom's computer consulting business. I overlook all operations and from payroll and billing to marketing and legal issues. My mom and I have also partnered in the development of software applications. Together, we have designed an online service that provides a forum for parents, students, teachers, school staff and helping professionals to connect in one online arena. [A step towards cyber-education for all, if you will.] Our primary goal was to provide a tool for parents to conveniently become involved in their children's education. However, over the past two years of development, the website has become so much more than providing many features and benefits to all members of the system. We are currently in the midst of speaking with different focus groups in New Jersey, New York and Maryland to obtain a market test of our product. I am truly excited about this program. The skills and discipline I learned through working towards my chemistry degree sure have helped."

Moushumi Paul '99 stopped by for a visit in June 2001. She is enjoying graduate work in Chemistry at the University of Illinois (Urbana). (She finished her first year in the top 5% of the class.) The first term was a bit stressful, since the entering class was larger than anticipated so competition for spaces in research groups was tough, but things worked out: she now has two advisors! The first paper involving her graduate work was published in *Nature*. Moushumi misses NYC, but she does see and talk to classmates from Barnard often. She passed her qualifying exams in December.

Hannah Storrie '99 e-mailed in February 2002, encouraging us to attend a talk at Columbia given by her research adviser at Northwestern, Prof. Samuel Stupp. (We did, and found the work fascinating). Hannah adds: "I just started my 3rd year and have made some big steps in my project in the last couple of months. Hopefully, it will only take 1 or 2 more experiments to have a nice story put together. Otherwise, I moved into Chicago--I missed city living--which has been really fun and have been dating a great guy for a little over a year. I'm still liking grad school, but I'm beginning to want to be in the "real" world."

Jamie Geier '99 wrote a year ago from Berkeley: "I'm in a different lab now, at the end of my first year, Dr. Packer (whose lab I was in by direct admit) retired!! I was so scared when I found out! But the program was really nice and offered to pay for me for a year while I did rotations in other labs so now I've landed in an Immunology lab with Dr. Schlissel. I took my first immunology class last year and loved it but he's not your usual immunologist, he works on VDJ recombination so I'm doing a lot of biochemistry and molecular biology. I'm having a great time, working VERY hard..."

Bonnie Koo '99 works at Morgan Stanley Dean Witter. While she enjoys her work, she is looking for something more rewarding for the long term, so she has just finished the grueling task of reviewing for and taking MCAT's. She received her EMT certification and will be working at the Central Park medical unit soon. She plans to take a course in genetics (or some other science) this fall, and Spanish next spring. Bonnie lives close to Barnard, so we enjoy seeing her now and then.

Jennifer Fung '99 and her husband Jason Kong sent an announcement of the birth of their daughter Ashley in June 2001. Jennifer wrote to Mrs. Jebejian: "maybe someday Ashley will have the honor to be your student, too."

Hui-Yun (Noreen) Chen '98 writes "After graduation, I worked as a Research Technician at Albert Einstein College of Medicine for about one and a half years. I found it very interesting to do biomedical research work and have decided to pursue a career in biomedical research. I recently left the job at Einstein and moved to Albany. I plan to find a Research Technician position in the Capital Region and then get prepared for graduate study in the field of Biomedical Engineering."

Eileen Doyle Bayman '97 completed her M.A. in Chemistry at Rutgers. She comments: "I'm really proud of it, and the work I have done to accomplish it." She and her husband, Darren, moved to San Diego a year ago. While applying to the Ph.D. program at UCSD-Scripps, Eileen decided to work for a year or two. She has been working at Pfizer, enjoying learning about life in big pharma.

Ayodele Green '97 received her M.D. from Temple in 2001. She is a resident in Urban Family Practice at Beth Israel in NYC.

Natalie Seiser '97 completed her Ph.D. in physical chemistry in the Chemistry department at Columbia, and promptly entered medical school, at Einstein.

Prof. Chapman was pleased to see **Jennifer Nightingale '97** on upper Broadway quite recently, with son William (10 months) in a backpack. Jennifer keeps busy with William, and works at the child care facility of her church.

Camay Chiu '96 (M.D. SUNY Downstate) is in the anesthesia residency program at P&S. She passed her boards and was licensed in December. Congratulations, Camay!

Classes of 1990-1995

Rebecca Lipsitz '95 completed her PhD at UC San Diego in January 2001 and is now a postdoc at NIH in Bethesda MD, working on high-resolution NMR in the laboratory of Dr. Nico Tjandra.

Amy Law '95 writes "After the completion of my M.S. in chemistry from the University of Rochester in 1997, I came to University of Maryland at Baltimore for pharmacy school. I am currently in the final year of the Pharm.D. program and am about to graduate in May [2001]. I have accepted an offer from Novartis Pharmaceuticals as an outcomes research fellow. So I guess my research training during my tenure at Barnard was not wasted. I finally realized that my desire is still in research, just not in bench science. The fellowship is two years of learning about study design and analysis of outcomes and pharmacoeconomic studies. During the first year, I will be at Duke Clinical Research Institute at Duke University where I will take some research methodology classes and participate as a research assistant. Then, I will relocate to NJ where Novartis is located. I have also recently gotten engaged to an attorney in New York. We are planning to marry at 2002 when I relocate back to NJ." Sounds very exciting. Congratulations, Amy.

Ogei Yar '94 wrote a long letter to Dr. Lessinger last summer. Ogei completed her M.D. at the University of Oklahoma. She described her initial surprise, after Barnard, at the learning style expected in medical school: massive memorization, with independent thinking discouraged. (Ogei is not alone in this reaction: in a recent visit, **Inessa Gendlina '98** described a very similar medical school experience at the University of Miami. Both found their training much more satisfying once the clinical work began.) Ogei started in internal medicine, with a residency at the University of Alabama in Birmingham. She then chose cardiology: "there is something about the pump and all that blood that sets my blood zinging". Ogei was one of the first to send a message of concern and support on 9/11: she had been in downtown Oklahoma City for that bombing, so she was all too familiar with the devastation. Most recently, Dr. Lessinger had a wonderful e-mail from Ogei who was on a two-month tour of Europe.

Linda Liou DeJesus '93 writes "My older child, Isabela Lynn, is now 7 years old and enjoys reading and science. I had my second child, Gabriel Daniel, who is now one year and 3 months. I got my M.B.A. last month. I recently joined Waters Corporation (the HPLC company) as their U.S. Sales Manager, managing the sales activities for all their chemistry related products." Linda and her family live in Farmington, CT. She misses NYC, but visits often. She encourages others to consider her rewarding career choice, and is happy to offer advice (and even job opportunities).

Charlotte (Chuckie) Pooley Deckhart '92, now the mother of two, left her job at Ligand, and is now a "home-based domestic engineer".

Naomi Basicakes '92 started out as a chemist, with a Ph.D. from Penn State, and postdoctoral work in Idaho. She then made a career shift, obtaining a certificate in programming from Penn State, Abington. She lives in suburban Philadelphia and works for Applied Micro Systems.

We were very sorry to hear of the death of **Paulette Rodriguez-Berry '92** in an automobile accident in October. Paulette, a gynecologist, was on the staff at JFK Medical Center in Edison NJ. Our sympathies go to Paulette's husband and parents. We remember her fondly.

Irene Sterquelle '90 wrote in February 2001. She was finishing her law degree at Brooklyn Law in June, having been a part-time student while she worked for NYC Transit. She was also engaged, and planned a November wedding.

Classes of the 70's and 80's

Orit Saigh '89 stopped by for a visit in November 2001. She and her family had recently moved back to the city. Orit has an M.D. from Tufts, and did her residency in General Medicine at UCSF. Her husband is beginning a faculty position at Rockefeller. They have two children, a daughter 3½, and a son six months.

Una O'Doherty '87, who has an M.D/Ph.D. from Cornell/Rockefeller, is in the Department of Pathology & Laboratory Medicine at the University of Pennsylvania. She works on HIV-1 infection in resting T cells and dendritic cells.

Dawn Cohen '86 stopped by for a visit during her reunion in 2001. Dawn, who has a Ph.D. in Computer Science from Rutgers, works at Wyeth Laboratories in NJ. She and her husband have two children, Annapurna, now age 5, and Siddhartha, now a year old. Dawn keeps in touch with **Cheryl Wills '86** who is a very successful forensic psychiatrist.

Ainat Beniaminovitz '86, is Assistant Professor of Medicine at Columbia P&S (where she received her M.D.) Her research involves detecting and modulating rejection after cardiac transplantation, dyspnea (shortness of breath) in patients with congestive heart failure, and exercise tolerance before and after cardiac transplantation.

Georgia Arvanitis '82 is on the faculty at The College of New Jersey. She is Treasurer of the Division of Business Development and Management at the ACS. She continues to do inorganic chemistry: work with two students was presented at MARM in May 2002.

Also visiting the department from her 2001 Barnard reunion was **Esther Siegfried '81**. Esther, who has a Ph.D. in molecular biology from Washington University and did postdoctoral work at Harvard, is an Assistant Professor of Biology at Penn State. Her research group works on signal transduction in *Drosophila*.

We have enjoyed seeing **Mandy Milgram Burkhoff '80** in the elevators in Altschul recently! She has been teaching part-time in the biology department at Barnard. For more of Mandy's news, see the spring 2002 Barnard alumnae magazine.

Classes before 1980

Freya Schnabel '78 (M.D. NYU) is Chief of the Breast Surgery Division at Columbia Presbyterian. Her list of honors and awards is quite extensive. She is kind enough to participate in programs at Barnard and Columbia from time to time. This March she participated in a panel "Current Topics in Women's Health Care, Across the Generations" at Columbia's Kraft Center for Jewish Student Life.

We were very pleased to read that **Jackie Barton '74** was elected to the National Academy of Sciences. It is a pleasure seeing Jackie when she is on campus for Barnard trustee meetings.

Ruth Lewin Sime '60 reviewed *The Politics of Excellence: behind the Nobel Prize in Science*, for *Chemical and Engineering News*. Prof. Sime recently retired from Sacramento City College.

Brigit Morris '52 writes that, even though she no longer knows the professors, she enjoys reading the department newsletter. After graduating and having four children, she went to law school. She is "still a hard-working patent attorney" in Princeton NJ. She recommends this "wonderful career: it keeps you in touch with what is new, is also very well paid, and meshes well with combining career and family obligations. Also you never have to quit until your mind goes!"

Marilyn Loeb '51 wrote in February 2001. She recalled with great warmth the endless support given to her by **Prof. Helen Downes** and **Grace King**, when she was a struggling student in freshman chemistry, saying "this all led to a challenging and rewarding career as a biochemist". (Dr. Loeb received her Ph.D. in biochemistry from Penn in 1958.)

At the October 2001 Barnard Summit on Leadership for Women, Prof. Chapman enjoyed meeting **Nora Robell '48**, who has retired from teaching at James Madison High School. They enjoyed talking about science and math education issues.

CLOSING REMARKS

As usual, we take this opportunity to remind you of two important funds at the college. Both continue to grow, thanks to your generosity. **The Edward J. King Memorial Fund**, in honor of Prof. King, chemistry Chair from 1960 to 1973, provides research assistance for junior faculty, a critical need in the intellectual life of the college. **The Bernice G. Segal Memorial Fund** originated with a fund set up by Prof. Segal in her lifetime, assigning a share of the proceeds of her textbook. The fund, which provides summer fellowships for science students to do research at Barnard, continues as a memorial to her. Prof. Segal recognized what is only more true today: without generous stipends, financial pressures prevent needy students from availing themselves of important research opportunities. To make a donation to either fund, please send a check to the Development Office, payable to Barnard College. *Please specify clearly the fund to which you wish your gift applied.*

Keep in touch. We enjoy hearing from you and sharing your news. Faculty e-mail addresses are (initial-name)@barnard.edu, e.g. llessinger@barnard.edu and schapman@barnard.edu. Phone calls {Chapman: 212-854-2098, Lessinger: 212-854-8461} and old-fashioned mail are welcome, too. Our apologies if any news above is incorrect: we sometimes assemble information from incomplete sources and not always reliable memory. If you are surprised to find yourself mentioned, we added a few items based on random internet Google searches. Please write, and we will happily make corrections or add more personal details.

With warmest regards,

Sally Chapman
Professor

Leslie Lessinger
Professor and Chair



Chapman, Doerrler, Rojas, and Lessinger talk, while Abigail Ahing cuts her good-bye cake.

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