

July 1998 Issue No. 6

QChem Chronicles

Alumni Weekend

*The dates for the upcoming
Alumni Weekend are
25, 26 and 27 September.*

*Departmental Reception
Saturday, 26 September
10 to noon*

Frost Wing 218B

Please come to see us!

Department of Chemistry, Queen's University, Kingston, Ontario



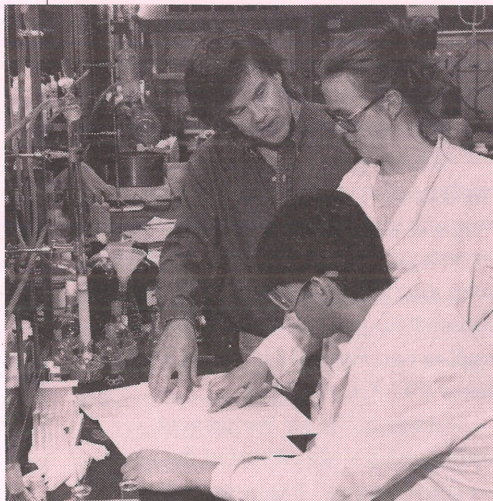
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Bader Chair

Through the generosity of Dr. Alfred Bader, the benevolent benefactor of Queen's, outstanding entrepreneur in chemical business, and astute art collector and historian, the Bader Chair in Organic Chemistry was established in the Department of Chemistry. Recently, Principal Leggett announced that Queen's has been able to attract Dr. Victor Snieckus, an internationally recognized organic chemist, as the inaugural Bader Chair holder. Dr. Stan Brown, Head of the Department of Chemistry noted that "the appointment of Victor Snieckus to the Department comes at a time when the Department is in a state of rebuilding and I feel that we have found an extremely strong and vibrant candidate for our program." According to Dr. Bader, "Queen's could not have found an abler and more enthusiastic chemist."

Dr. Snieckus, previously a Monsanto/NSERC Industrial Chair at the



Dr. Victor Snieckus, the Bader Chair in Organic Chemistry, working at his University of Waterloo laboratory with two of his students.

University of Waterloo, brings to Queen's expertise in organic synthesis. Specifically, Dr. Snieckus has discovered and developed new synthetic methods which have found broad application not only in university research but in the pharmaceutical and agrochemical industries worldwide on large scale for the creation of beneficial drugs and crop protection of the 21st century. "Synthetic chemists may be viewed as Lego block builders; we aim to develop new types of blocks (starting materials), bridge them together in different ways (invent synthetic methodologies), and create a multitude of new products ranging from a replacement for aspirin to a combination drug for AIDS and beyond" quips Snieckus. "To me, the most exciting times in our research are created when, through my consulting, short courses, and lectures in industry, I am confronted with some chemical reaction, some technology that they cannot do or need to overcome. I come back and pose this (without, of course revealing the proprietary aspects of the work) to my students as a challenge. The stimulus is incredible: it stimulates the fundamental work that needs to be done and it tells the students that what they may achieve has practical and beneficial endpoints. My aim at Queen's is to continue this tradition and contribute, with leadership of Stan Brown and a strong faculty, to building a world-class educational and research chemistry department. Clearly, we are indebted to Alfred Bader for the visionary endowment which will make this happen."

Dr. Snieckus assumed the Bader Chair appointment on July 1, 1998.

New Chemistry Building

The building project for the Chemistry Complex has developed a great deal of momentum over the past year. The programming has been completed as well as assessments on the current building conditions. What came out of this was very surprising.

Initially, there were two options for the project: completely renovate the existing complex or build a new building on the existing site that would incorporate the existing structures of Gordon Hall and Nicol Hall. At the end of the study, it was apparent to everyone involved that both of these options would impose severe limitations on the design of a building that would see the Department into the 21st century. Option 3, a new building on a new site, was added at the end of these discussions. The new site will be beside Stirling Hall on the land currently used by the St. Lawrence building. The administration and the architects are working on the precise siting details, keeping in mind that any new development must adhere to the 1994 Master Plan. The most interesting aspect of this development is that the proposed cost of the project is significantly less than either of the first two options.

More good news for the project is that the administration and the governing bodies of the University have endorsed this project as the number one priority for the campus. Having passed that hurdle, we expect to go to the design stage of the project this summer with the possibility of going to tender late in 1999. This is a very exciting time in the Department and we expect to be very busy with this project for the next 3 to 4 years.

Chemistry Receives \$846,334 for 500 MHz NMR Spectrometer

The Chemistry Department had just been awarded \$846,334 from the Natural Sciences and Engineering Research Council (NSERC) for a high-field 500 MHz nuclear magnetic resonance (NMR) spectrometer. Awarded to a group of 13 researchers led by Dr. Stan Brown, the Head of the Department, this is the largest major installation grant given by NSERC in the 1998-99 competition.

"It is fantastic!", says Dr. Gang Wu, a young Assistant Professor and the Department's NMR spectroscopist. This new spectrometer will allow us to tackle more difficult problems such as to study metal ions in biological systems.

NMR spectroscopy is the most powerful and versatile analytical technique that chemists use routinely for such diverse tasks as identifying intermediates in the

products of chemical reactions, determining molecular structures, monitoring dynamic processes, or investigating the binding of drug molecules to receptors. In the past few years, tremendous technological advances in instrumentation and methodology have resulted in a new generation of digital NMR systems that offer unprecedented sensitivity, stability and efficiency. The presence of such a state-of-the-art NMR spectrometer at Queen's will not only dramatically increase the research productivity, but also make new cutting-edge research possible. Impacts of these research activities will be broad and significant, ranging from advancement of basic knowledge, to the development of new materials with interesting properties, to the discovery of new drugs. This new modern

instrument will also provide a key training function for the graduate students and postdoctoral fellows by exposing them to the latest NMR technologies.

Graduate Studies News

Congratulations to the following recipients of scholarships and fellowships: OGS and NSERC:

NSERC Postgraduate Scholarships: **David Bryce, Geoff Moeser, Marni Jones, David Thompson**

NSERC Postdoctoral Fellowship: **Oreola Donini and Andrew Vaino**

OGS Postgraduate Scholarships: **Alison Borrajo, Heidi Chen, Glen Crossley, Guilin Duan, Sean Ewart, David Pedersen, Simon Reid**

Two students received teaching assistantship awards in 1998: **Susan Swansburg** was awarded the William P. Doolan Prize in Chemistry, while **Darren Clark** won the Educational Excellence Teaching Assistantship Award from the Faculty of Applied Science. **Kirsten Exall** was awarded a Best Student Poster prize from the Ontario Chapter of the American Water Works Association at their 1998 conference, while **Andrew Baer** and **David Thompson** were awarded Outstanding Poster prizes at the 30th Ontario Inorganic Discussion Weekend in November.

Neish Competition: The 1998 Neish

Competition was held on April 8th at Queen's University. The winners of this year's competition were **Viola Hoo** (first place), **Matt Simpson** (second place) and **Scott Woodland** (third place)

Retirement of Professor Warren E. Baker

Professor Warren Baker has retired from the Department of Chemistry. He joined the Department 13 years ago as Professor of Chemistry and NSERC/ DuPont Industrial Research Professor and quickly established a strong research group in reactive polymer processing which included the supervision of 18 postgraduate students plus numerous postdoctoral fellows, research associates and undergraduate students. Many former members of his research group are currently employed in the polymer industry in Ontario.

Dr. Baker has taken up an industrial position in Toronto but will maintain ties with the University through his position as Emeritus Professor of Chemistry.

Suzanne Fortier

Suzanne Fortier was awarded the 1998 Clara Benson award for distinguished contributions to chemistry by a woman. She also received the Communications and Information Technology



*Suzanne Fortier
Professor of Chemistry
and Vice-Principal,
Research.*

Ontario Innovation Awards for Entrepreneurship, with Janice Glasgow and Evan Steeg of the department of Computing and Information Science.

Dr. Fortier is a crystallographer by training. Her research interest in the development of methods for determining the structure of proteins has led to an inter-disciplinary research program in Molecular Scene Analysis. At the core of this program, which integrates methodologies derived from chemistry, machine learning and artificial intelligence, is the design and implementation of a knowledge-based system for the determination, interpretation and analysis of crystal structures. This research includes several new areas of investigation, ranging from automated map interpretation to data mining. Her research is supported by NSERC as well as two Federal Centres of Excellence (PENCE and IRIS).

Additionally, Dr. Fortier was appointed Vice-President of the Natural Sciences and Engineering Research Council of Canada (NSERC) on January 21, 1998. Suzanne holds the position while continuing to fill her role as Vice-Principal (Research) at Queen's.

Queen's employees who received staff awards at the Principal's Reception in December 1997

(L to R)(front) Ted Ison, Joyce Zakos, Deborah Stirton-Massey, Irene Lafleche

(L to R)(back) Tom Hunter, Len Rose, Principal Leggett, Scott Meskis, Pat Mulligan



Staff Award Winners: The Chemistry Tech Team

Award winners are: Ted Ison, Tom Hunter, Len Rose, Scott Meskis and Pat Mulligan, Undergrad Laboratory Technologists.

Principal's citation: "Words in job descriptions don't constrain the dream team. Well beyond the world of prep and clean-up, testing new experiments, and maintaining complex equipment, they share their substantial collective pool of expertise to change and improve safety standards, enhance lab programs, and assist researchers with experimental design. Because they care, troubled student chemists find and make solu-

tions! Problem-solvers all, our team's reputation for trouble-shooting extends also to careful problem identification, fast implementation, and confident repair. And the team meets demands of technological change head-on. Bringing their insights to the door of mountains of material, computer courses, and manufacturers seminars, they use their evolving information base to make equipment choices for quality."

Together they have served the Department of Chemistry for over 90 years. Congratulations on this well-deserved award.

Departmental Student Council

During the past academic year the Departmental Student Council (DSC) was very active. As you all probably know, November was the National Chemistry Week. This week was celebrated by an amazing pub crawl for all graduate and undergraduate students organized by DSC. At the same time the DSC organized a "Chemistry in the Kitchen" event especially designed for elementary students as an introduction to the World of Chemistry. The DSC representatives spent a couple of days visiting the neighbourhood elementary schools and promoting the National Chemistry Week. In the month of February the Chemistry DSC along with the undergraduate chair hosted an INFO night for 1st and 2nd year students who were considering further studies in chemistry. During the annual Banquet in March a new tradition was started by the DSC, an award was introduced for an outstanding undergraduate student in chemistry. The first recipient of this award was a third year student Melissa Rathier.

This year was the first year when two seminars were hosted especially for undergraduate students. The first seminar was in March, where Dr. Reimer (a professor of RMC Department of Chemistry and Chemical Engineering) lectured on environmental

issues in the Canadian Arctic. The second seminar was conducted in April by Dr. Wilkinson (an RCMP forensic chemist from Ottawa) on the use of DNA in police investigations.

Congratulations

Professor **Donal Macartney** received the Award for Teaching Excellence in Chemistry from the Graduating Class of 1998 in March.

Professor **Brian Hunter** received an honourable mention in the First Year Applied Science Teaching and Learning Award for the Fall 1997 academic term. This award is given annually to the instructor who, in the opinion of the students, created the best teaching and learning environment in the classroom.

Almeria Natansohn

Almeria Natansohn was awarded one of the 1997 Queen's University Prizes for Excellence in Research and was elected Fellow of the Royal Society of Canada in 1998. Her research on azobenzene-based polymers for photonic applications is done in collaboration with Prof. Paul Rochon (Physics, Royal Military College, and adjunct professor of chemistry at Queen's) and is funded by NSERC and by the Optoelectronic Polymer Program of the Office of Naval Research, U. S. These materials will probably be widely used in the next century in future optical computers and other photonic gadgets. Dr. Natansohn is also studying more down-to-earth polymer materials using solid-state NMR spectroscopy.

*Almeria Natansohn and her research group.
(L to R) Stephan Freiberg,
Bill Zhu, Zeai Hua, Xian
Tong Li, Lana Fisher, Dennis
Hore, Hongshi Yu, Gabriel
Iftime, Claudiu Neagu,
Almeria Natansohn, Cristina
Cojocariu, Gheorghe
Cojocariu, Bing Lin*



We've Heard From

Luc Girard (Ph.D. 1992)

- is at Research and Development, Petro-Canada Lubricants, Mississauga, Ontario

Dhimant Patel

(B.Sc. Hons. 1993, M.Sc. 1995)

- moved this May to England to join his wife Binita, a Pediatrician in London
- on July 1 will be Market Manager of Building Products, Rohm and Haas Company, European Region, London, England
- e-mail: dpatel@i-way.co.uk

Steve Wright (B.Sc. 1984, M.Sc. 1985)

- is on faculty of the Physics Department, Fachhochschule Ostfriesland, Constantiaplatz 4, 26723 Emden, Germany

Please write and let us know what's new with you and what is your preferred way for us to stay in touch with you....

A Note from Stan Brown

The past year has been hectic indeed and the Department is rocketing forward. In the Fall, the Department prepared a major installation grant application for an NMR machine and submitted it to NSERC. Its awarding in April, 1998, will provide the Department with one of the finest NMR facilities in Canada. That, coupled with the recruitment of Dr. Francoise Sauriol as the Department Instrument Manager, will enhance the Department's teaching and research environment. Dr. Sauriol will join us in August/September.

April also gave us good news concerning equipment grants from NSERC, and roughly \$325,000 were secured in addition to the NMR grant of \$846,000. Also in April, the University confirmed that the new Chemistry Building would proceed forward, and so we can look forward to much needed new facilities probably by 2002.

In July, Dr. Victor Snieckus joined the Department as the first Bader Chair. The Snieckus research group of about 15-20 researchers will be located in temporarily refurbished labs on the 5th floor of Frost.

Next year promises to be hectic, and at the same time exciting for the Department's research and teaching. I look forward to your comments and support, and hope to see you at the Alumni Weekend in September.

