



Faculty of Arts and Science
Queen's Chemistry Innovation Council MINUTES
October 3, 2003

QCIC Attendees:

Dr. Nick Darby (Dow Chemical Company)
Dr. Jan Oudenes (Alphora Research Inc.)
Mr. Barry Robins (Davos Chemical Corp.)
Mr. David Thomas (AXYS Group Limited)
Dr. Dinesh Vyas (Bristol Meyers Squibb Co.)
Dr. Robert Young (Merck Frost Canada & Co.)
Dr. Ron Zelonka (DuPont Canada Co.)
Mr. Burton Branch (Neill & Gunter Engineering Consultants)
Dr. Walter Chan (Ontario Ministry of the Environment)
Mr. Cory Johnston (Fisher Scientific)
Mr. Paul Matteau (PPM & Associates)
Dr. Iain Trevena (MDS Nordion)

Guests:

Dr. Alan Cameron (ProMetic Biosciences Inc.)
Mr. Brian Robins (Davos Chemical Corp.)

Regrets:

Dr. Dale Cameron (Micrologix Biotech Inc.)
Mr. Bruce Chernoff (Caribou Capital Corp.)
Mr. Jamie Hallman
Dr. Montse Llinas-Brunet (Boehringer Ingelheim (Canada) Inc.)
Dr. Wayne Schnarr (Oncolytics Biotech Inc.)
Mr. Darwin Wilson (Dow Chemical Canada)

Queen's Faculty Attendees:

Dr. David Wardlaw
Dr. Cathy Crudden
Dr. Natalie Cann
Dr. Hugh Horton
Dr. Richard Oleschuk
Dr. Peter Loock
Dr. Mike Baird
Dr. Stan Brown
Dr. Stephen Brown
Dr. Philip Jessop

Dr. Diane Beauchemin
Dr. Micahael Mombourquette
Dr. Bob Lemieux
Dr. Donal Macartney?
Dr. Suning Wang?
Dr. Ralph Whitney?

[list may be incomplete since I did not observe all Room 202 entries/exits]

Kathy O'Brien (Development Officer)
Lisa Knechtle [Chemistry volunteer staff]

Student Presenters:

Theresa McCromick, 4th year, CHEM MAJOR
Heather Husch, 3rd year CHEM MAJOR

Continental Breakfast

Welcome and Introductions

Kingsley Ward welcomed everyone and explained the purpose of the Queen's Chemistry Innovation Council and its role and relationship with the Department of Chemistry. Kingsley asked everyone in the room to stand and make a brief introduction to the group.

David Wardlaw made a few introductory remarks expressing his delight at the turn out and thanking everyone for their participation. David noted that the Council is now three years old and is having an effect on the Department. Some of the member companies have funded seminar series which has made a huge difference to the Department. Cathy Crudden is the Seminar Series Coordinator. New equipment has had a huge impact on the Department. The Challenge Funds have raised over \$150K – a project that has been greatly supported by the members of the QCIC. David talked about the importance of the intangible benefits of the Council including building relationship and industry connections and introducing Faculty to the members of the QCIC.

David thanked Stan Brown and Doug Puffer for their insight in creating the Council. He thanked Kathy O'Brien, Myrna Horton and Lisa Knechtle for organizing the event.

New Members Forum

Kingsley welcomed the new members to the QCIC and each new member of the QCIC was asked to stand and make a brief introduction about their educational background and career history. New members to the Council include: Burton Branch, Walter Chan, Cory Johnston, Paul Matteau, Iain Trevena.

Plenary Lecture – “You Know it Don’t Come Easy: Creating Commerce from University Research”

Dr. Nick Darby presented his insights into the world of venture capital and how universities can work more effectively with corporations to mutual benefit:

- Companies have abandoned basic research – the problem lies in the companies’ lack of skills to turn basic research into commerce.
- There is a huge opportunity for universities: participation means a bigger playground, long-term, sustainable sources of revenue, but a university must be involved and responsive.
- Dow Venture Capital Group Strategy – invest to make money on equity appreciation, while providing options to Dow for new business growth; markets and technologies that Dow understands and can influence; there must be a real VC in the deal; and, invest in strategic plays only if main businesses are supportive and enthusiastic.
- Dow Venture Capital Group tactics: diversify risk as limited partner in VC funds; invest side-by-side in especially exciting and relevant deals to maximize returns.

John Molloy – Discussion on Plenary Lecture

John Molloy introduced a discussion on the plenary lecture with opening remarks about the **“Stability in Deals not Dollars”**. John indicated that almost all the money from venture capital companies is being placed in existing companies and it is a real struggle to find money for new deals. Invention disclosure and patent filing activity in U.S. and Canadian universities is increasing significantly and this is starting to generate a fair amount of money. Licensing income at the top 25 U.S. universities has increased over a five year period: in 1995 there was \$245M generated by 10 universities with greater than \$5M; in 2000, there was an increase of \$922M among 25 universities with greater than \$5M.

Among Canadian universities, there are three or four that are very good at licensing income. Queen’s has about \$140M in basic research funding. Queen’s had a significant increase in disclosures last year and \$20M over the last four years through PARTEQ. A lot of the money has gone back to the university – some to CFI Grants and some to the Cancer Research Institute. This is a very risky business for Queen’s.

There are trends in commercializing research:

- A lot of money is going into basic research.
- No money is spent on “what do you do with the results and how do we capitalize?”
- There are a lot more discoveries and a time lag exists.
- More universities are getting involved in a technology transfer arm and this has increased competition.
- Venture capitalist want qualified deals – they have to see the added value to discovery before committing to money and people.

- There is a consolidation and thinning of receptor capacity – not as many companies get licensing and there is a need to find a way of dressing up intellectual capital.
- There is an emphasis on economic development and more entrepreneurial faculty.
- There is much competition so the need is for money and the right kind of people.

Paul Matteau asked John Molloy if there was a way to raise funds and tie it into the fundraising needs of the university. John expressed concern about not “burning up” the money of individuals. There are angel investments on specific projects and spin offs have raised \$370M. The problem is that over the last three to four years we have not seen opportunities that we would want to build a company around. There is a need to find a real elegant solution for a real big problem. A bigger tax break would be gained from investing in a venture capital opportunity rather than giving to Queen’s. Kingsley suggested that you risk losing money on a venture capital project.

Jan Oudenes raised the issue of inventions in technology transfer which often results in failure due to poor documentation and a poor correlation of lab notes, samples and spectra data. He sees a lot of opportunities that take over half a year to process but end up having to go back because of poor processing at the outset.

Mike Baird made the point that research directions are affected by company needs and intellectual property ownership is impacted when Faculty to Faculty communication pipelines falter.

Bob Young suggested that when it comes to researchers and technology, people don’t appreciate the time factor. Compounds that are developed are looked at and then nothing is done, people and companies get uninterested. The technology in universities versus companies demonstrates a huge time differential and people need to be more realistic. Faculty need to deal with companies that don’t “take away their baby” – they have to take a chance and know that they may not get the whole pot of gold.

John Molloy indicated that the expectations of universities is unrealistic when it comes to returns. “I need upfront money” – realistic on returns at the start of the food chain but with time it gets diluted and everyone needs to keep this in focus.

Jan Oudenes stated that it is to the advantage of Canadian universities that intellectual property rules are inconsistent. Time is money. This is a controversial issue.

Nick Darby said that there are policies around the world but the idea is how do we get the most. Issues will go away if everyone protects their position but head towards the same end.

Paul Matteau asked if entrepreneurship is a factor in promotion for Faculty. David Wardlaw indicated that those who do get involved in Parteq need to be intimately involved in pitching the ideas. This takes time away from other areas of promoting their career, especially for younger academics.

Stephen Brown told the group that he has written a business plan for his research group, as was recommended to him. He has to build into the research partnership a long standing relationship that will help build back activity to the research group and create money and partnership. There is recognition within the Department if you're involved in contract research, then you are active in research.

John Molloy indicated that the Chemistry Department is the most productive department on campus and it's a great group to work with.

Chemistry Faculty Talks – presentation materials available upon request

Cathy Crudden – *Molecular Chirality: The synthesis of right and left handed molecules and materials.*

Natalie Cann – *Modeling of chiral fluids and chiral interfaces.*

Hugh Horton – *Chemical force microscopy: a means for rapidly assessing materials used in chiral separation technologies.*

Break

Richard Oleschuk – *Rapid Analysis Using Polymeric Lab-on-a-chip Devices*

Peter Looock – *Imaging of Molecular Dynamics: how laser technology can be used to look at very simple chemical reactions (breaking of a bond or ionization) in complete quantum-mechanical detail.*

Lunch & Chernoff Building Tour (Eddy Campbell, Associate Dean, Faculty of Arts & Science in attendance)

QCIC Member Talks –presentation materials available upon request

Dinesh Vyas – Bristol Myers Squibb Co. – *"Drug Discovery at Bristol Myers Squibb Co."*

Jan Oudenes – Alphora Research Inc. – *"Alphora Research Inc., a process technology company"*

Burton Branch – Neill & Gunter Engineering Consultants – *"Pulp & Paper Research in Canada – Help! We are sinking!"*

STUDENT PRESENTATIONS

Theresa and Heather, both upper year students in Chemistry, discussed their experience working in both the Frost Building and now Chernoff Hall. They emphasized the benefits of working with new, up-to-date equipment which allows them to be more competitive when looking for jobs in the summer and when they graduate. They discussed the collegiality of the environment at Chernoff and the ability due to the layout of Chernoff Hall, for upper year students to interact with new students.

Kingsley Ward asked if the building has influenced students to major in Chemistry, when they may not have otherwise. The students agreed that this does play a big role in deciding and the decision after first year was heavily influenced by the atmosphere and opportunities within the Chemistry Department.

Chemistry Faculty Talks

Mike Baird- *Novel Titanium-based Anti-cancer Drugs*

Stephen Brown – *new method of monitoring E.Coli in drinking water*

Diane Beauchemin – *on-line leaching with ICP-MS detection for the assessment of the mobility of metals in the environment and the bioavailability of elements of food.*

In-Camera Session

A private discussion led by Kingsley Ward and David Wardlaw ensued among QCIC members. The topics for discussion were (King Ward has summary of some of this, summary was prepared in advance of meeting by DMW)

- Chemistry Undergraduate Equipment Fund.
- External guest lectures on careers and the chemical industry in undergrad courses.
- Short courses for professionals.
- Academic staffing outlook for the Department.
- Status of new academic development plan for Department.

Recommendations from QCIC Members:

- Pursue short course(s) for professionals, choosing area carefully and possibly working with School of Business
- Survey students on what they would like to hear from external guest lecturers.
- The Chairman requested each member carefully consider today's meeting content with a view to:
 - Interest to industry and government members
 - Items for further meeting agendas
- The Chairman stated that a questionnaire would be sent shortly to all QCIC members and he asked that all members carefully review and provide timely feedback.

Meeting Adjourned.