Journeys in Innovation

June 18-19, 2009
Hamilton, Ontario
McMaster Innovation Park
Welcome to Innovation Showcase 2009 - Journeys in Innovation. The road to innovation is indeed a journey with many unexplored paths. At McMaster, we’re working hard to ensure that innovation is a common destination for our research community, no matter what route is taken to get there.

We’re working to create a culture of innovation and commercialization - a culture that allows us to capture the true value of our research and contribute to the economic and social prosperity of our city, province and country.

There is no better place for this to happen than the McMaster Innovation Park.

Whatever route you choose, I wish you all the best on your innovation journey.

Welcome to our second annual McMaster Innovation Showcase. For 2009, our theme is “Journeys in Innovation.” It is, I think, an apt metaphor. Innovation isn’t like your daily commute or even a summer vacation; it’s a journey in the truest sense, with possibilities and peril at every turn.

As the host of this year's showcase, the McMaster Industry Liaison Office aims to help build the innovation economy in our region by connecting businesses with the research discoveries and inventions of McMaster and Hamilton's hospitals.

It is my truest hope that this showcase will be the first leg of a much longer journey. A journey our office can make with you.

Finally, I’d like to thank our sponsors, whose vision and generosity made this event possible.

Bon voyage,

Executive Director, McMaster Industry Liaison Office
Welcome to Hamilton and to Innovation Showcase 2009. The City of Hamilton is excited to be a partner in this initiative as we know, innovation is key to prosperity.

The City of Hamilton has been working closely with McMaster to grow Hamilton’s economy and we’ve made some great strides. With a common goal of innovation, the opportunities are limitless. Combine our world-class institution, our diverse economy and our ideal location with the power and potential of the McMaster Innovation Park, and we’ve got all the ingredients necessary to build a stronger, healthier and more vital community.

The time for innovation is now. The place for innovation is Hamilton. We invite you to be a part of it.

Fred Eisenberger
MAYOR OF HAMILTON

Do the math:
1 innovative and world-class institution
+ 1 diverse and open economy
= unlimited investment opportunities

To learn how McMaster University and the City of Hamilton are working together to grow Hamilton’s economy, visit: investinhamilton.ca
Thursday, June 18

8 a.m.  Registration and breakfast in the atrium

8:45 a.m.  Welcome Address by Mo Elbestawi, Vice-President, Research & International Affairs, McMaster University

Plenary Address

9 a.m.  Plenary Speaker: Bob Young, co-founder of Red Hat, founder and CEO of Lulu.com digital publishing, and owner of the Hamilton Tiger-Cats.

As co-founder and former CEO and Chairman of Red Hat from 1993-2000, Bob Young was responsible for the early success of Red Hat. Red Hat is credited with driving the global, industry-wide adoption of open source development practices. A true open source visionary, Young’s efforts developing Red Hat into a household name have won him prestigious honors, such as Business Week Magazine’s “Top Entrepreneurs” for 1999. His book, “Under the Radar,” chronicles how Red Hat’s open source strategy successfully won wide industry acceptance in a market previously dominated by proprietary, binary-only systems.

Today, Young is the founder and CEO of Lulu.com, a premiere international marketplace for new digital content on the Internet, with more than 300,000 recently published titles and more than 15,000 new creators from 80 different countries joining each week.

Highlighting McMaster Research

9:45 a.m.  Stéfan Sinclair, Dept. of Communication Studies & Multimedia  
BonPatron.com: Monetizing a Web-based Academic Resource

10 a.m.  Laurel Trainor, Dept. of Psychology, Neuroscience & Behaviour  
The Power of Music: Research Applied to Optimizing Child Development and Building Better Communities

10:15 a.m.  Mel Rutherford, Dept. of Psychology, Neuroscience & Behaviour  
The Development of a Fast and Objective Screening Tool for Early Autism

10:30 a.m.  Break

10:45 a.m.  Saeid Habibi, Dept. of Mechanical Engineering  
Dual-redundant Electro-Hydrostatic Actuation System

11 a.m.  Rafael Kleiman, Dept. of Engineering Physics  
New Technology for Higher Efficiency Solar Cells

Contract Research: Leveraging Funding

11:15 a.m.  Moderator: Mac Braid, Deputy Director, CANMET Materials Technology Laboratory

Panel members:

•  David Wilkinson, Dean of the Faculty of Engineering, McMaster University
•  Bradley Fox, Director of Business Development, Ontario Centres of Excellence
•  Barbara Muir, Director of Research Partnerships Program, Natural Sciences & Engineering Research Council of Canada
•  Len Lucier, Partner, Deloitte

Lunch

12:15 p.m.  Buffet lunch served in the atrium
Keynote Address
12:30 p.m. Ontario’s Minister of Research and Innovation, The Honourable John Wilkinson

John Wilkinson was first elected to the Ontario legislature in 2003 as the MPP for Perth-Middlesex. He was re-elected in 2007 as the MPP for Perth-Wellington and was subsequently named Minister of Research and Innovation. Wilkinson previously served as the Parliamentary Assistant to Premier Dalton McGuinty in his capacity as Ontario’s first Minister of Research and Innovation. Wilkinson is the first Certified Financial Planner elected to the Ontario legislature.

Contract Research: Industry/Academia Collaboration
1:30 p.m. Moderator: Jeffrey Weitz, Dept. of Medicine, McMaster University

Panel members:
- Mehran Anvari, Dept. of Surgery, McMaster University
- Mark Larché, Dept. of Medicine, McMaster University
- Tim Reedman, Director of Medical Robotics, MDA
- Steven Harris, Chief Executive Officer, Circassia Holdings

Highlighting McMaster Research
2:30 p.m. William Bensen, Dept. of Medicine Rendezvous with boneDestiny: How knowledge translation, leading to better outcomes, is the next leap forward in medical care

2:45 p.m. Justin Nodwell, Dept. of Biochemistry & Biomedical Sciences Small Molecule Discovery: Finding Chemical Matter that will lead to New Drugs

3 p.m. James Mahony, Dept. of Pathology & Molecular Medicine Novel Peptidomimetic Inhibitors for Bacterial and Viral Infections

3:15 p.m. Break

3:30 p.m. Ravi Selvaganapathy, Dept. of Mechanical Engineering High-Throughput Microinjection Device for Drug Discovery Applications


Reception
4 p.m. Sponsored by the Golden Horseshoe Biosciences Network

DIAMOND AND SCHMITT ARCHITECTS
- Master Planning • Programming
- Academic Buildings • Research Facilities
- Sustainable Design

MTtech
MLL MILLER THOMSON LLP
- Registration & Spinoffs
- Patent & Trademark Agents

Are you the founder, owner or manager of a growing technology company in Southwestern Ontario?
Do you have complete confidence in your product and service offerings but less certainty about the business structure protecting your valuable intellectual property?
Is cost always a consideration?
If your answer to all three questions is ‘yes!’ — then MTtech is for you.
MTtech is, quite simply, the easiest way to buy first-rate comprehensive legal advice and protection for every stage of your business at a guaranteed fixed cost.
If you would like to receive a more detailed MTtech information package, please contact:
Lorelei Graham at 1.866.658.0092 or mtech@millerthomson.com
Friday, June 19

8 a.m.  Registration and breakfast in the atrium

8:45 a.m. Welcome by Elsie Quaite-Randall, Executive Director, McMaster Industry Liaison Office

Plenary Address

9 a.m.  Plenary Speaker: Daniel Mothersill, President, National Angel Capital Organization

Daniel Mothersill is a serial entrepreneur and a serial Angel investor, with hands-on experience in industries ranging from telecommunications, to green technologies, to resources, to IT. In the last decade, he has founded and financed seven companies and spun off three of these as profitable enterprises. He is founder of the Ciris Group of Companies and president and founding member of the National Angel Capital Organization (the national voice of Canadian Angel investors). He created and heads the Angel Network Program for Ontario’s Ministry of Research and Innovation. This program is dedicated to developing core standards for Angel investments in Ontario and seeding the formation and expansion of formal Angel groups.

Equipping Technology for Success—McMaster’s Internal Resources for Commercialization

9:45 a.m.  Moderator: Cheryl Jensen, Vice-President – Academic, Mohawk College

Panel members:

- Elsie Quaite-Randall, Executive Director, McMaster Industry Liaison Office
- Darlene Homonko, Executive Director, Golden Horseshoe Biosciences Network
- Rick Anderson, Director of Business Development, Focus Business Consulting
- Rafik Loufty, Director of the Xerox Centre for Engineering, Entrepreneurship and Innovation at McMaster University

10:30 a.m. Break
Taking Technology To Market- External Resources For Commercialization

11 a.m. Moderator: Daniel Mothersill, President, National Angel Capital Organization

Panel members:
• Ty Shattuck, Vice President & COO, Trivaris
• Darren Lawless, Director of R&D, Monteco Ltd.
• Sunny Kumar, Investment Manager, Investment Accelerator Fund

Lunch

12:15 p.m. Buffet lunch served in the atrium

Celebrating McMaster Success

1:30 p.m. Moderator: John Wallace, Dept. of Medicine & Scientific Director of the Farncombe Family Digestive Health Research Centre, McMaster University

Panelists:
• Chang-Qing Xu, Dept. of Engineering Physics, McMaster University & Founder, C2C Link
• Gora Ganguli, President & Chief Executive Officer, VitaSound Audio Inc.
• Magdalena Janus, Dept. of Psychiatry & Behavioural Neurosciences, McMaster University
• Cristian Nuñez and Adrian Kitai, co-founders, Liquid Fiber Displays Inc.
• Heather Sheardown, Dept. of Chemical Engineering, McMaster University and Scientific Director of the 20/20: NSERC Ophthalmic Materials Network

Awards Ceremony and Closing Reception

3 p.m. Reception in the atrium

• Innovators of Distinction
• Champions of Innovation
• Poster Awards
• McMaster Innovator Awards

Discover why many of the world’s most original thinkers rely on Bereskin & Parr LLP for IP guidance. One of Canada’s leading intellectual property law firms, we combine depth of expertise with a dedication to tailored service that builds lasting trust.

For more information on the services provided by Bereskin & Parr, contact:
Patricia Folkins Partner, Patent Agent
905.817.6101 pfolkins@bereskinparr.com

Bereskin & Parr LLP
www.bereskinparr.com
TORONTO MISSISSAUGA WATERLOO MONTREAL
Creating a product or service is one way researchers can transfer their research discoveries and inventions back to society. The newly created McMaster Innovator Awards recognize those researchers who have achieved commercialization success. Sponsored by the Vice-President of Research & International Affairs, these awards aim to encourage a culture of innovation, commercialization and entrepreneurship within the McMaster community.

Two awards will be given this year:

- McMaster Innovator of the Year Award
- McMaster Lifetime Innovator Award

McMaster Innovator Award Nominees

**Mehran Anvari, Professor of Surgery**
Dr. Anvari was one of the first surgeons in Canada to use robotics in surgery and directs the Centre for Surgical Invention and Innovation (CSII). This year he secured a Centre of Excellence for Commercialization and Research award for CSII. This centre will develop and commercialize robotic platforms for targeted, minimally invasive surgical and medical interventions. The centre has received approximately $14.8 million from both the federal government and private partners, including MDA.

**Suzanna Becker, Professor of Psychology, Neuroscience and Behaviour**
Professor Becker developed an innovative hearing aid technology, called the NeuroCompensator. This technology improves hearing aid performance in noisy situations, such as crowds, where traditional hearing aids have difficulty. The technology has been licensed by Vitasound which is now conducting pre-clinical trials with NeuroCompensator-based hearing aids. In April, Vitasound launched its NeuroCompensator-based hearing aid at the AudiologyNOW trade show.

**Leslie Berry, Assistant Professor of Pediatrics**
Professor Berry is a career researcher at McMaster University, studying coagulation mechanisms and clinical treatment. His research results have been adopted commercially as a superior systemic anticoagulant and an anti-thrombotic surface coating. Recently, he developed a new thrombin-generation assay that has been licensed to an international diagnostic company, a second project is poised for a market launch in 2009.

**Wei Chen, Postdoctoral Fellow of Chemical Engineering**
Wei Chen’s recent research has focused on the problems in the manufacturing of paper. He has invented a new wet-web strength enhancing additive for the paper making industry. This microgel based technology has the potential to solve a core problem for paper manufactures. In addition, this new technology promises to make paper more recyclable.

**Gordon Guyatt, Professor of Clinical Epidemiology and Biostatistics**
Dr. Guyatt has played a crucial role in developing a number of highly successful, disease-specific, health-related, Quality-of-Life Questionnaires. Their development involved extensive research and careful validation. The questionnaires developed by Guyatt and his colleagues have provided the medical research field with powerful tools to assess outcomes. The value of these tools is demonstrated by the respect they receive from the pharmaceutical, academic, private and clinical communities and by their extensive usage.

**Simon Haykin, Distinguished University Professor of Electrical & Computer Engineering**
Professor Haykin’s research has resulted in breakthrough developments in the field of cognitive radio. His work is a multidisciplinary approach that brings together ideas in statistical signal processing, stochastic control, and information theory with well-known theories from neuroscience, statistical learning theory and game theory. This approach has applications in a wide range of communication systems and devices such as mobile handhelds and hearing aids. Haykin’s work has garnered significant interest from several companies and organizations.

**Jack Hirsh, Professor Emeritus of Medicine**
Dr. Hirsh has had immense impact on medical care through several innovations. His work on low molecular weight heparin changed the standard of care for thrombotic patients. Hirsh also helped develop devices for bedside monitoring of anticoagulant treatment. His work on oral anticoagulants led to the now standard International
Normalized Ratio for accurately assaying patient levels. Furthermore, Hirsh helped establish the value of aspirin in the prevention of stroke. Hirsh led the creation of the Henderson Research Centre. Finally, Hirsh has mentored many other innovators, helping them evaluate their inventions and bring their products to market.

**John MacGregor, Distinguished University Professor Emeritus of Chemical Engineering**

For decades, Professor MacGregor has studied multivariate statistics technology at McMaster University, gaining many professional accolades. Over the years, industrial partners have sought out his lab for help in solving their thorniest problems, and MacGregor was an early leader in accepting sponsored research. MacGregor founded ProSensus Inc., a high tech company aimed at exploiting the multivariate analysis technology developed in his research group. ProSensus, which has an exclusive license with McMaster, currently employs six full-time engineers, selling services and products to mainly Fortune 500 companies.

**James Mahony, Professor of Pathology and Molecular Medicine**

In conjunction with Luminex Molecular Diagnostics, McMaster virologist Dr. James Mahony developed a respiratory viral panel that can detect most common respiratory viruses in a few hours. The test recently received regulatory approval for use in several jurisdictions, including Canada, the United States and Europe. More recently, he has developed novel therapeutics for *Pseudomonas aeruginosa*, *Chlamydia pneumoniae*, and *Influenza*.

**Peter Mascher, Professor of Engineering Physics**

Professor Mascher’s expertise in silicon photonics, thin film deposition, silicon nanocrystals, and rare-earth doping has led to a prestigious career over the past decade. Notably, Mascher’s collaboration with Group IV Semiconductor Inc. of Ottawa helped attract committed investors and accelerate commercialization of a breakthrough in energy-efficient, solid-state lighting technology.

**Ann Mohide, Associate Professor of Nursing**

Professor Mohide spearheaded the development of an educational tool, Let’s Talk about Discussion™, for teaching skills that can make discussions more productive. The game fosters effective discussion by teaching the skills needed for problem-solving and collaborative learning. Mohide worked with the McMaster Industry Liaison Office to transform the idea into a market-ready product, which is now available for online purchase.

**Heather Sheardown, Associate Professor of Chemical Engineering**

In the past year, Professor Sheardown invented two methods of using hydrogels in ophthalmic applications. The first invention creates an artificial intraocular lens for treatment of cataracts. The second invention uses a material to deliver therapeutics to the back of the eye in a controlled and sustained manner. She is also the principal investigator of the 20/20: NSERC Ophthalmic Materials Network.
This year the poster competition will use the expertise of all our attendees to determine which posters describe the most innovative approach and commercialization ready solution to a problem. The poster competition represents a spectrum of investment opportunities, attendees are invited to invest in the best posters using the MILO Money in your registration package. Once you've had an opportunity to review the posters, we invite you to invest your MILO Money by placing it in the investment envelope at each poster. How you invest it is up to you. Place it all in one hot prospect or hedge your bets with several posters. In addition, there are some deep pocketed investors (the official poster judges) with larger sums of money to invest. At Friday’s closing reception we will announce the winners in this marketplace of ideas.

Poster Titles and Authors

1. Method and Apparatus for Treating Periprosthetic Fractures of the Distal Femur
   **Author:** Mitchell J. Winemaker

2. Immobilization of Corn Trypsin Inhibitor Reduces the In Vitro Procoagulant Properties of Catheter Surfaces
   **Authors:** Jonathan W. Yau, Alan R. Stafford, James C. Fredenburgh and Jeffrey I. Weitz

3. The Institute of Interprofessional Health Sciences Education (IIHSE): A Demonstration of an Online Interprofessional Education Curriculum
   **Authors:** G. Damiani-Taraba, P. Solomon, S. Baptiste, P. Hall, R. Luke, C. Orchard, E. Rukholm and L. Carter

4. Microstructural Stability of Magnesium Alloys during High Temperature Deformation
   **Authors:** Zhan (Maggie) Gao and David S. Wilkinson

5. Optimal Power Allocation for Orthogonal Relay Systems
   **Authors:** Rayyaz Ahmed and Tim Davidson

6. Development of an Automated Software Program to Determine Fat Cell Size Parameters and Dysfunction in Human Subjects of Different Ethnicities and Different Levels of Obesity
   **Authors:** Alex Zhao, Michelle Melone, Justina Rizkall and, Shirya Rashid

7. Communications Technology Solutions for Enhanced Privacy and Security of Medical Records
   **Author:** Sommer Abdel-Fattah

8. Detection of Protein-Protein Interactions in Living Cells with Dual Expression Recombinase Based (DERB) Vector
   **Authors:** Jian Ping Lu, Laura K. Beatty and Jebonathan H. Pintus

   **Authors:** John F. Connolly and Amabilis H. Harrison

10. A New Anchor to Delay Delamination in Concrete Beams Strengthened with CFRP Laminate
    **Authors:** Ahmed A. B. Mostafa and Ghani Razaqpur

11. High-throughput Microinjection in a Microfluidic Format
    **Authors:** Arash Noori and Ravi Selvaganapathy

12. Inhibition of Collagen Synthesis to Treat Cancer
    **Authors:** Kyle B. Stephenson, Mathieu Gigoux, Natasha Kazdhan, Vettai Ananthanarayanan and Brian D. Lichty

13. Potentiating Cancer Immunotherapy Using an Oncolytic Virus
    **Authors:** Byram Bridle, Kyle Stephenson, Jeanette Boudreau, Sandeep Koshy, Natasha Kazdhan, Jonathan Bramson, Brian Lichty and Yongbong Wan

14. The Iconic Pain Assessment Tool
    **Authors:** Chitra Lalloo, James L. Henry and Emilie McMabon-Lacharite

15. Discovery of Agents Targeting Breast Cancer Stem Cells
    **Authors:** Andrew Giacomelli, Adele Girgis-Gabardo, Maria Kondratiev, Jan Blanchard, Cecilia Murphy, Eric Brown, and John Hassell

16. PatraTec: The Bioactive Paper Company
    **Authors:** Mercedes Salas and Chris Hall

17. The Implementation and Progress in the Use of Early Development Instrument (EDI)
    **Authors:** C. Walsh, R. Raas and M. Janus
18. Get in Motion: Telehealth Physical Activity Counseling  
Authors: Kathleen A. Martin Ginis, Jenn Hobol, Kelly P. Arbour and Amy E. Latimer

19. Promoting the Concept of Personhood in Practice  
Authors: Anju Joshi and Teresa D’Elia

20. Impact of Clinical Caremaps in Primary Care for Heart Failure Management - Results from the Congestive Heart Failure Assessment and Management in Primary Care (CHAMP-C) Clinical Trial  
Authors: Catherine Demers, Yao Wang and Ritesh Gupta

Author: Peter Kavsak

22. Tricorder: A Handheld Scanner for Atmospheric, Electromagnetic and Spatial Measurements  
Authors: Peter Jansen and Kevin Wright

23. Design of a Novel Robotic Surgical Instrument  
Authors: Heather Ker and Gary Bone

24. Search For Lincosamide Nucleotidytransferase Inhibitors: A Promise for Continued use of Clindamycin Against Methicillin-resistant Staphylococcus Aureus (MRSA) Infections  
Author: Kirandeep Bhullar

Author: Wei Chen

26. ErgoTotal from Heal-A-Pain  
Author: Mohammed Khalaf and David Potter

27. A Database System Coupled with RFID Technology to Inventory and Track Anatomical Specimens  
Authors: Jennifer Robertson and Bruce Wainman

28. ADD-COMP: An Automated Digital Medication Management System  
Authors: Gary Hasey, Sophia Follick and Rajiv Dayal

29. A Screening Methodology for Implementing Cost Effective Energy Conservation Measures  
Authors: Samir E. Chidiac, Eric Catania and Lynn Perry

30. Thellungiella Stress Genomics for Sustainable Agriculture  
Authors: Elizabeth Weretilnyk, Robin Cameron and Peter Summers

31. Adding Post Consumer Waste Materials in Concrete Masonry Blocks  
Authors: Sylvia Mibaljevic and Samir Chidiac

32. 20/20: NSERC Ophthalmic Materials Network  
Authors: Lynda Bruce and Heather Sheardown

33. Solar Window  
Authors: Wei Zhang and Adrian Kitai

34. Patient-tailored Bone Implants  
Authors: Terry Sachlos and Pina D’Agostino

35. Heat Treatment of Metal Parts: Modeling and Optimization  
Authors: Alaa A. Hassan and Mohamed S. Hamed

36. Healthcare Integrated Database Solution (OSCAR McMaster) for Developing Countries  
Authors: Rosemary Mohammed and David Chan

37. Cubature Kalman Filtering: A New Practical Tool for Aerospace and Industry  
Authors: Arasaratnam Ienkaran and Simon Haykin

38. Can Vibration Analysis be used to Evaluate Knee Osteoarthritis?  
Authors: Siamak Salari and John MacGregor

Authors: Sergio Aguirre and Yingfu Li

40. Cognitive Tracking Radar  
Authors: Arasaratnam Ienkaran and Simon Haykin

41. A Dedicated EMR for Pain Management Practice  
Authors: Norm Buckley, Dan Meyer and James Paul

42. Design of an Electro-ocular and Temperature sensing device for the Non-invasive Health Monitoring System  
Author: Aiyush Bansal
Thank You

The McMaster Innovation Showcase is brought to you by McMaster University’s Office of the Vice President, Research & International Affairs, and the McMaster Industry Liaison Office (MILO). Additional support was provided by the following sponsors.

Gold Sponsors

MDA

CIX

Ontario Centres of Excellence

Where Next Happens

Golden Horseshoe Biosciences Network

Solutions for Life

Silver Sponsors

MTech

Hamilton

McMaster Nuclear Reactor

50

1969-2009

Diamond and Schmitt Architects

McMaster Innovation Park

Bronze Sponsors

Bereskin & Parr

Intellectual Property Law

Ross & McBride LLP

Lintack Architects Incorporated

Deloitte

Supporting Sponsors

be

3M

Masters Insurance

imc

Contractors & Engineers

Ira McDonald Construction Ltd.

Additional Support from

The Hamilton Spectator

Mohawk College of Applied Arts and Technology

ArrowCan Partners

König & Consultants