

Kartik Sameer Madiraju  
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7655 Rue Tremblay  
Brossard, Quebec, Canada  
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## EDUCATION

- Master of Science; Bioresource Engineering Thesis; McGill University, 2012-2013 (CGPA: 3.98/4.00)
- Bachelor of Engineering; Chemical Engineering, Environmental Studies; McGill University, 2008-2012
- Diploma of Collegial Studies; Honours Pure and Applied Sciences; CEGEP Marianopolis, 2006-2008; CRC of 32.8 (**Dean's Honour Roll**)
- Fluent in English, French and Hindi; Conversational in Telugu

## TECHNICAL EXPERTISE

- Programming: C Basic and FORTRAN 90, Office
- Process Modeling: Aspen HYSYS, LabView, WinGEMS, AutoCad (working knowledge), P&ID development, unit operations (heating, drying, separations, reaction engineering, mass transfer, protein purification/isolation); pulp and paper chemistry, process engineering and design
- Laboratory: bacterial cultures (cyanobacteria, *E.coli*, yeast, *Geobacter*); reactor design/optimization; chemical purification (vacuum filtration, chromatography, distillation); analysis of <sup>1</sup>H, <sup>13</sup>C and IR spectra; experimental design and statistical modeling

## WORK EXPERIENCE

### INSIGHT COLLABORATIVE FELLOW (2013-2014)

*Supervisors: Mr David Seibel (President), Mr Patrick McWhinney (CEO), Insight Collaborative*

- Boston: received training in conflict management, negotiation and effective communication; able to provide training workshops in conflict resolution; attended two training workshops offered by Insight Partners and CMPartners
- India: as a Visiting Fellow with biodiversity conservation group Navdanya, facilitated feedback between course participants and interns to staff members with the goal of improving course offerings and Navdanya practices; gave workshops on handling difficult conversations; lectured on citizenship and democracy
- Pacific: as a Visiting Fellow with Palau Conservation Society, will be working on capacity building, conflict resolution and environmental protection outreach, specifically related to sustainable fisheries management.

### RESEARCH ASSOCIATE (2004-2012)

*Supervisors: Dr Vijaya Raghavan, Dr Robert Kok, Dr John Sheppard, Department of Bioresource Engineering, McGill University*

- Conducted research to optimize electricity output and wastewater treatment in a microbial fuel cell.
- Designed a novel photosynthetic microbial fuel cell to convert carbon dioxide to electricity
- Discovered a new method of electricity production using magnetic bacteria in a specially designed reactor

### PROCESS ENGINEERING CONSULTANT (January 2011-December 2011)

*Supervisor: Mr Mat Fokas, KSH Solutions, Inc.*

- Designed a recycled fibre de-inking plant for a high-profile client in the pulp and paper industry.
- Provided material and energy balances, piping and instrumentation diagrams, plant layouts, design criteria and cost analysis.
- As part of the final project for Chemical Engineering undergraduates at McGill, received the highest grade for the whole module

### CAMPAIGN ASSISTANT (June 2010)

*Supervisor: Mr Jason Jacobs, Greenpeace India*

- disseminated information and obtained endorsement from various lawyers, Supreme Court judges and legal organizations regarding changes to the Liability Bill for Nuclear Damages in India that would improve transparency, accountability and environmental protection.
- Secured support from more than twenty relevant parties, with which several amendments to the bill were approved within legislative and executive houses in India.

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- Ensured that worker rights as enshrined in the Indian Constitution were protected

#### LEGAL/POLICY INTERN (July-August 2010)

*Supervisor: Advocate M.C. Mehta, M.C. Mehta Environmental Foundation*

- conducted policy and technical research, attended press conferences and briefings and assisted on a campaign to protect the Ganges River
- Combined efforts resulted in the cancellation of 300 hydroelectric dam projects by the Indian Ministry of Environment and Forestry. Furthermore, a 130 km stretch of the river system was declared “Eco-sensitive” and prohibited from future industrial development
- Thousands of villagers who faced displacement were allowed to continue their way of life

#### TUTOR (January 2011-May 2012)

*Employer: Mr Philip Cutler, Founder and CEO, Laurus Educational Services*

- Specializing in math, science, writing and public speaking. Appointed Head Tutor in January 2012

### **SELECTED ACHIEVEMENTS**

- Les Offices jeunesse internationaux du Quebec Travel Award 2013 (700 CAD)
- McGill Graduate Research and Enhancement Travel Award 2013 (1000 CAD)
- Insight Collaborative Insight Fellowship 2013-2014
- McGill University Graduate In-Course Academic Scholarship 2013 (1500 CAD)
- McGill Graduate Research and Enhancement Travel Award 2012 (1000 CAD)
- SSMU Sustainability Case Competition 2011 1<sup>st</sup> Place Champion (1000 CAD)
- Canadian Millennium Scholarship Fund Excellence Award 2009-2010 (4000 CAD)
- Public Speaking Champion at the 2009 Lord Dorchester Cup Debating Tournament
- Top Speaker and Finalist at the 2009 McGill Novice In-House Tournament
- Dr. Bessie F. Lawrence International Summer Science Institute Fellowship (2006) (10 000 CAD)
- Sanofi Aventis BioGENEIOUS Challenge 1<sup>st</sup> Place Regional and 3<sup>rd</sup> Place National Final 2006 (4500 CAD)
- 3-time Intel ISEF First-in-Category Winner, 3-time Canada Wide Science Fair medalist, 4-time Super Expo-Sciences Provincial Fair medalist (2003-2007)

### **PUBLICATIONS, PATENTS & PRESENTATIONS**

- **Madiraju, K.S.** “The Roots of our Ecological Crisis” and “Principled Negotiation Workshop”. Invited Lecturer, Malaviya Center for Peace Research, Banaras Hindu University, India. Oct. 29- Nov. 1, 2013.
- **Madiraju, K.S.** “The Canadian Context: energy”. *Global Sustainable Communities Design Handbook, Part V, Chapter 11*. Elsevier Press. 2014
- **Madiraju, K.S.,** Brown, P.G. “Exploring Ecological Civic Duty for Grassroots Environmental Justice”. Seminar, 12<sup>th</sup> Environmental Justice and Global Citizenship Conference, Oxford University, England. July 10-12, 2013.
- **Madiraju, K.S.** “Bacterial Batteries”. Oral Presentation, 9<sup>th</sup> Interdisciplinary Graduate Studies Research Symposium, McGill University, March 27-28, 2013. **Award for Best Talk on Sustainability**
- **Madiraju, K.S.** “Microscopic Reactors for Macroscopic Change”. Selected Speaker, 3 Minutes to Change the World Symposium, McGill University, Montreal, Canada. March 21, 2013
- **Madiraju, K.S.** “Unlearning: Local Steps Towards Effective Global Environmental Policy”. Invited Lecturer, Marianopolis College, Montreal, Canada. March 2013
- **Madiraju, K.S.** “Lessons from Science Fair”. Keynote Speaker for the 2013 Centennial Regional High School Science Fair. February 19, 2013
- **Madiraju, K.S.** “India and Canada: Our Shared Environmental History and Challenges”. Keynote Speaker for the India Canada Friendship Circle Event held in Ottawa, Ontario, December 2, 2012.
- **Madiraju, K.S.,** Lyew, D., Kok, R. and Raghavan, V., 2012. Carbon neutral electricity production by *Synechocystis* sp. PCC6803 in a microbial fuel cell. Poster Presentation at the 2<sup>nd</sup> International PlantPower Symposium in Wageningen University, The Netherlands.

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- **Madiraju, K.S.** “Modernity and Tradition in India: Redefining Culture in the Environmental Context”. Invited Speaker at the 2012 Festival of India Event held in Ottawa, Ontario August 10-12, 2012.
- **Madiraju, K.S.**, Lyew, D., Kok, R., Raghavan, V., 2011. Carbon neutral electricity production by *Synechocystis sp.* PCC6803 in a microbial fuel cell. *Bioresource Technology*, Vol. 110, 214-218.
- **Madiraju, K.S.** *Places you never thought science would take you*. *Imagine Magazine*, Vol. 20, No. 2, 2011.
- **Madiraju, K.S.** *Clean and Green? The Hydropower Debate*. *Imagine Magazine*, Vol. 19, No. 1, 2011.
- Sheppard, J.D. and **Madiraju, K.** *Generation of electropotential using bacterial culture*. US Patent No. US7749727 B1. Filed: Jul. 13, 2007; Issued: Jul. 6, 2010.
- **Madiraju, K.S.** “Environmental Ethics and the Modernity Complex: Lessons from the Loharinag Pala Controversy”. *Unto Mother Ganga, Part III, Chapter 19*. Central Chinmaya Mission Trust, Mumbai, 2010.
- **Madiraju, K.** *How Bacteria May Fuel the Future* *Imagine Magazine*, Vol. 15, No. 4, 2008.

## COMMUNITY INVOLVEMENT

- (2012-present) Proposed and created a new certificate program at Marianopolis College—Environmental Studies Certificate—that aims to increase environmental awareness among students and empower them to make environmentally conscious lifestyle choices. This is the first program of its kind at Marianopolis.
- (2010-2012) Alumni Coordinator for Youth Science Canada (responsible for maintaining alumni network, developing mentorship and spear-heading outreach programs)
- (2010-2011) Director of the Debating Competition at the Canadian Engineering Competition
- (2008-2009) Tournament Director, CUSID Central Novice Championships (organized a tournament for over 200 individuals including food, accommodation and festivities on a limited budget)
- (2008-2009) U1 Representative of Chemical Engineering to the Engineering Undergraduate Society and the Chemical Engineering Undergraduate Council (made announcements, attended meetings and assisted in department events)