

# Alexander Grant

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## Education

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- PhD in Chemical Engineering** 2015-  
*Justin Notestein Group, Northwestern University, Evanston, Illinois*
- Bachelor of Engineering, Chemical, Minor in Philosophy** 2010-2015  
*McGill University, Montreal, Quebec*

## Research

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- PhD Student** 2015-  
*Notestein Research Group, Northwestern University*
- Discovering new catalysts for direct methanol synthesis from CO<sub>2</sub>.
  - Leading design and construction of the Solar Fuel Institute's solar fuel production demo unit.
- Visiting Researcher** 2015  
*Carmen Environmental Chem. Lab, Universidad Nacional Autónoma de México (UNAM)*
- Found optimal reaction conditions for MCM-41/TiO<sub>2</sub> photocatalyst for wastewater remediation.
  - Successfully crowdfunded \$1000 by creating *Experiment.com*'s 1<sup>st</sup> ever project in Latin America.
- Research Intern** 2014  
*Powder Technology Lab, École Polytechnique Fédérale de Lausanne (EPFL)*
- Modeled colloidal interactions of magnetic nanoparticles for cancer hyperthermia treatment.
- Undergraduate Researcher** 2013  
*Electrochemistry and Corrosion Lab, McGill University*
- Developed novel W/Sn/Sb-coated photo-electrodes for the treatment of organic wastewaters.
- Analytical Laboratory Assistant** 2012  
*Terragon Environmental Technologies, Montreal*
- Developed a sludge-dewatering technique for an electrocoagulated black water waste stream.
- Laboratory Assistant** 2010  
*Muck Crops Research Station, University of Guelph*
- Collected crop samples and recorded data for the station's annual research publication.

## Entrepreneurial Experience

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- Co-Founder, Advisor** 2016-  
*Lilac Solutions Inc. - www.lilacsolutions.com*
- Developing an advanced lithium extraction process for the battery industry.
- Founder, Manager** 2016-  
*Escondido - www.instagram.com/escondidochicago*
- Escondido is a pan-North American underground restaurant in Chicago, IL.
- Founder** 2016  
*Ferra (Northwestern NUvention Energy Program)*
- Identified beachhead markets and value propositions for commercializing metal fuels technology.

## Leadership

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**Technology of Energy Seminar Leader** 2015-Present  
*Northwestern Energy and Sustainability Consortium*

- Leading seminars on energy technologies for a curated multidisciplinary class of students.

**Vice President, Academic** 2014-2015  
*Engineering Undergraduate Society of McGill University*

- Chaired committee that spends over \$500k yearly of student fees for lab and TA expenses.
- Created a funding scheme for curriculum enhancement with environmental sustainability.

**Team Leader** 2014  
*Team Dédale, 2014 Biomimicry 3.8 Institute Student Design Challenge*

- Led McGill's team in the International Biomimicry 3.8 Design Competition.
- Tied for 1<sup>st</sup> prize and was subsequently published in *TreeHugger* and *Make:* magazines.

**Science Outreach Guide** 2011-2014  
*Redpath Museum, Montreal, Canada*

- Gave tours of the oldest independent natural history museum in Canada.

## Awards

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**ISEN Cluster Fellowship** - Northwestern (\$US 15,000) 2016  
**University Fellowship** - Northwestern (\$US 30,000) 2015  
**International Academic Mobility Support** - UNAM (\$MX 32,000) 2015  
**Faculty of Chemistry Grad School 50th Ann. Travel Stipend** - UNAM (\$MX 7,500) 2015  
**McGill International Experience Award** - McGill (\$CA 5,625) 2015  
**Graduation with Distinction** - McGill 2015  
**Dean's Honor List - DiPierro Family Scholarship** - McGill (\$CA 2,000) 2014  
**Excellence in Research Award** - EPFL (6,900 CHF) 2014  
**1<sup>st</sup> Prize, Biomimicry Student Design Challenge** - Biomimicry 3.8 Inst. (\$US 2,000) 2014  
**1<sup>st</sup> Prize, Summer Research Poster Fair (Water and Environment)** - McGill 2013  
**Shell Summer Undergraduate Research Award** - McGill (\$CA 5,625) 2013  
**NSERC Undergrad Student Research Award** - Terragon Environmental (\$CA 3,000) 2012  
**J.W. McConnell Entrance Scholarship** - McGill (\$CA 3,000) 2010  
**1<sup>st</sup> in Class, Governor General's Award for Academic Excellence** - STA S.S. 2010

## Talks

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**Development of Photoelectrodes for the Treatment of Organic Wastewaters**  
*6th International DAAD Alumni Seminar (UNAM). Panel of experts talk.* 5 Jun. 2015  
*TISED Symposium on Sustainable Industry. Poster presentation.* 26 Mar. 2014  
*Engineering Undergraduate Society TechWeek 2014. Poster presentation.* 24 Jan. 2014  
*McGill Engineering Research Showcase. Poster presentation.* 22 Oct. 2013  
*Undergraduate Research in Engineering Poster Fair. Poster presentation.* 15 Aug. 2013

**Biomimetic Design: First Intelligence, then Technology**  
*McGill Chemical Engineering Research Day. Plenary lecture.* 18 Nov. 2014  
*Canadian Chemical Engineering Conference 2015 Niagara Falls. Talk.* 20 Oct. 2014

**The Air Ballast Biomimetic Cargo Ship**  
*Global Engineering Week 2015. Invitational lecture.* 24 Mar. 2015  
*CHEE 515: Biomimetic Surface Engineering. Class lecture.* 16 Sept. 2014