

JUSTIN M. NOTESTEIN

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EDUCATION

Princeton University	Chemical Engineering, <i>magna cum laude</i>	B.S.E. 2001
	Certificate in Materials Science and Engineering	
University of California, Berkeley	Chemical Engineering	Ph.D. 2006
Univ. Illinois, Urbana-Champaign	Chemistry Postdoctoral Fellow	2006-2007

PROFESSIONAL EXPERIENCE

2007 Assistant Professor, Chemical and Biological Engineering, *Northwestern University*
The Notestein group researches engineering approaches to atom-precise materials for heterogeneous catalysis and selective adsorption. Our group focuses on reactions and processes essential to sustainable energy development and selective oxidations including utilization of renewables and photocatalysis.

2009 Affiliate, International Institute of Nanotechnology, *Northwestern University*

2009 Affiliate, Northwestern Institute for Sustainable Practices, *Northwestern University*

2007 Member, Center for Catalysis and Surface Science, *Northwestern University*

2006-07 Post-Doctoral Research Associate, Chemistry, *University of Illinois, Urbana Champaign*
Grafted oligomers were developed for switchable porous surfaces in sensing and separations.

2001-06 Doctoral Student, Chemical Engineering, *University of California, Berkeley*
A new class of hybrid organic-inorganic materials based on grafted calixarenes was synthesized and characterized for host-guest adsorption and oxidation catalysis.

2000-01 Undergraduate Researcher, Chemical Engineering, *Princeton University*
Ring-opening metathesis and anionic polymerization were combined to synthesize diblock copolymers.

RESEARCH NEWS and RECOGNITION

DuPont Young Professor Award, 2011, 2012
"Mover and Shaker", The Catalysis Review magazine, 2011
3M Non-Tenured Faculty Award, 2010, 2011, 2012
Young Investigator Award, International Catalysis Congress, 2008
Camille and Henry Dreyfus New Faculty Award, 2007
Phi Beta Kappa Fellowship, CA alpha chapter, 2006
National Science Foundation Graduate Student Fellowship, 2001-2004

"Science Concentrate" in *Chem. Eng. News*, Oct 29, 2012
"Partnering with Industry" Feature story, McCormick magazine, Spring 2012
"Dow Commits to Advance R & D in Leading U.S. Universities." Press release, 2011
"Dow Chemical Awards 'Methane Challenge' Grants." Press release, January 2008
"Science Concentrate" in *Chem. Eng. News*, Dec 6, 2004

PUBLICATIONS * corresponding author % undergraduate or high school author

1. C. P. Canlas, J. Lu, N. A. Ray, N. A. Grosso-Giordano%, J. W. Elam, S. Lee, R. E. Winans, P. C. Stair, R. P. Van Duyne, and J. M. Notestein*, "Shape-Selective Sieving Layers on an Oxide Catalyst Surface," *Nature Chem.*, **2012**, 4, 1030-1036.
2. D. Prieto-Centurion, A. M. Boston%, J. M. Notestein*, "Structural and electronic promotion with alkali cations of silica-supported Fe(III) sites for alkane oxidation," *J. Catal.*, **2012**, 296, 77-85.
3. K. R. Bjorkman, N. J. Schoenfeldt, J. M. Notestein, L. J. Broadbelt*, "Microkinetic modeling of cis-cyclooctene oxidation on heterogeneous Mn-tmtacn complexes," *J. Catal.*, **2012**, 291, 17-25.

4. J. M. Notestein*, "Review: R. Sebesta (ed): Enantioselective Homogeneous Supported Catalysis," *Catal. Lett.*, **2012**, *142*, 1150-1151.
5. P. Young, J. M. Notestein*, "The Role of Amine Surface Density on Carbon Dioxide Adsorption on Functionalized Mixed Oxide Surfaces," *ChemSusChem*, **2011**, *4*, 1671-1678.
6. N. J. Schoenfeldt, Z. Ni, A. W. Korinda, R. J. Meyer, J. M. Notestein*, "Manganese Triazacyclononane Oxidation Catalysts Grafted under Reaction Conditions on Solid Co-Catalytic Supports," *J. Am. Chem. Soc.*, **2011**, *133*, 18684-18695.
7. N. J. Schoenfeldt, J. M. Notestein*, "Solid Co-catalysts for Immobilizing and Activating Manganese Triazacyclononane Oxidation Catalysts," *ACS Catal.*, **2011**, *1*, 1691-1701.
8. A. B. Thompson, S. Cope%, T. D. Swift%, J. M. Notestein*, "Adsorption of n-Butanol from Dilute Aqueous Solution with Grafted Calixarenes," *Langmuir*, **2011**, *27*, 11990-11998.
9. D. Prieto-Centurion, J. M. Notestein*, "Surface speciation and alkane oxidation with isolated Fe sites on silica," *J. Catal.*, **2011**, *279*, 103-110.
10. N. J. Schoenfeldt, A. W. Korinda, J. M. Notestein*, "A heterogeneous, selective oxidation catalyst based on Mn triazacyclononane grafted under reaction conditions," *Chem. Commun*, **2010**, *46*, 1640-1642.
11. N. Morlanes, J. M. Notestein*, "Grafted Ta-calixarenes: tunable, selective catalysts for direct olefin epoxidation with aqueous H₂O₂," *J. Catal.*, **2010**, *275*, 191-201.
12. N. Morlanes, J. M. Notestein*, "Kinetic study of cyclooctene epoxidation with aqueous hydrogen peroxide over silica-supported calixarene-Ta(V)," *Appl. Catal. A* **2010**, *387*, 45-54.
13. J. M. Notestein*, C. Canlas, J. Siegfried%, J. S. Moore, "Covalent grafting of m-phenylene-ethynylene oligomers to oxide surfaces," *Chem. Mater.* **2010**, *22*, 5319-5327.
14. A. Solovyov, J. M. Notestein, K. A. Durkin, A. Katz*, "Graftable chiral ligands for surface organometallic materials: calixarenes bearing asymmetric centers directly attached to the lower rim," *New J. Chem.* **2008**, *32*, 1314-1325.
15. J. M. Notestein, L. R. Andrini, A. Solovyov, F. G. Requejo, A. Katz*, E. Iglesia*, "The role of outer-sphere surface acidity in alkene epoxidation catalyzed by calixarene-Ti(IV) complexes," *J. Am. Chem. Soc.* **2007**, *129*, 15585-15595.
16. J. M. Notestein, A. Katz*, E. Iglesia*, "Photoluminescence and charge transfer complexes of calixarenes grafted on TiO₂ nanoparticles," *Chem. Mater.* **2007**, *19*, 4998-5005.
17. J. M. Notestein, L. R. Andrini, V. I. Kalchenko, F. G. Requejo*, A. Katz*, E. Iglesia*, "Structural assessment and catalytic consequences of the oxygen coordination environment in grafted Ti-calixarenes," *J. Am. Chem. Soc.* **2007**, *129*, 1122-1131.
18. J. M. Notestein, A. Katz*, "Enhancing heterogeneous catalysis through cooperative hybrid organic-inorganic interfaces," *Chem. Eur. J.* **2006**, *12*, 3954-3965.
19. J. M. Notestein, A. Katz*, E. Iglesia*, "Energetics of small molecule and water complexation in hydrophobic calixarene cavities," *Langmuir* **2006**, *22*, 4004-4014.
20. J. M. Notestein, E. Iglesia, A. Katz*, "Grafted metallocalixarenes as single-site surface organometallic catalysts," *J. Am. Chem. Soc.* **2004**, *126*, 16478-16486.
21. A. Katz*, P. DaCosta, A. C. P. Lam%, J. M. Notestein, "The first single-step immobilization of a calix[4]arene onto the surface of silica," *Chem. Mater.* **2002**, *14*, 3364-3368.
22. J. M. Notestein%, L. B. W. Lee, R. Register*, "Well-defined diblock copolymers via termination of living ROMP with anionically polymerized macromolecular aldehydes," *Macromolecules* **2002**, *35*, 1985.
23. J. Notestein%, N. Helias, W. E. Wentworth*, J. G. Dojahn, E. C. M. Chen, S. D. Stearns, "A unique qualitative GC experiment for an undergraduate instrumental methods course using selective photoionization detectors," *J. Chem. Ed.* **1998**, *75*, 360-364.

PATENTS

24. "Alkane Oxidation Catalysts," J. M. Notestein, N. J. Schoenfeldt, A. W. Korinda, United States Patent Application 61/550,595, **2011**.
25. "Immobilized Calixarenes and Related Compounds and Process for their Production" A. Katz, E. Iglesia, J. M. Notestein, United States Patent 6,951,690, **2005**.

COMPLETED MANUSCRIPTS

26. B. Thompson, R. Scholes[%], J. M. Notestein*, "Selectivity trends in the uptake of ABE components over modified calixarene-silica hybrid adsorbents," *Langmuir*.
27. C. P. Canlas, N. A. Grosso-Giordano[%], J. M. Notestein*, "Reaction pathway for the conversion of 5-hydroxymethylfurfural to methyl levulinate," *ChemSusChem*.
28. P. D. Young, P. J. Santos[%], J. M. Notestein*, "Activation of supported amines by Ti-SiO₂ for Knoevenagel condensation," *Chem. Commun.*

INVITED EXTERNAL PRESENTATIONS by JMN

underline indicates most significant

Symposium honoring Jeffrey Moore, ACS National Meeting, Indianapolis, September 2013

Keynote Lecture, Calixarenes 12, St. Johns, Newfoundland, Canada, July 2013

Department Seminar, Chemistry, University of Wisconsin Madison, February 2013.

Department Seminar, Chemical and Biological Engineering, Northwestern University, October 2012

Symposium honoring Enrique Iglesia, AIChE National Meeting, Pittsburgh, October 2012

Keynote Lecture, Catalysis Gordon Conference, Colby Sawyer College, NH, June 2012

Symposium honoring Enrique Iglesia, Division of Catalysis Science and Technology, ACS Fall National Meeting, San Diego, CA, March 2012

Department Seminar, Chemical and Biological Engineering, Princeton University, March 2012

Award lecture, DuPont, Wilmington DE, October 2011

Corporate meeting, 3M, St. Paul MN, October 2011

Symposium on templated assembly of inorganic nanomaterials, Materials Engineering and Sciences Division, AIChE National Meeting, Minneapolis MN, October 2011

Invited poster, Department of Energy Contractors Meeting, 'Heterogeneous Catalysis,' Annapolis MD, October 2011

Keynote Lecture, 15th International Symposium on Relation between Homogeneous and Heterogeneous Catalysis, Berlin, September 2011

Corporate meeting, The Dow Chemical Company, Midland MI, August 2011

Hydrotreating Symposium, Energy and Fuels Division, ACS National Meeting, Denver CO, August 2011

Symposium honoring Harold Kung, Division of Catalysis Science and Technology, ACS National Meeting, Anaheim CA, March 2011

Invited poster, Department of Energy Contractors Meeting, 'Homogeneous Catalysis,' Annapolis MD, June 2010

Symposium honoring Christopher Jones, Division of Catalysis Science and Technology, ACS National Meeting, San Francisco, March 2010

Department Seminar, Chemical Engineering, University of Illinois at Chicago, January 2010

Invited poster, Department of Energy Contractors Meeting, 'Heterogeneous Catalysis,' Annapolis MD, June 2009

Annual Meeting, UNICAT, Fritz Haber Institute, Berlin, Germany, May 2009

Annual Meeting, Institute for Catalysis in Energy Processes, Northwestern University, April 2009

Department Seminar, Environmental Engineering, Northwestern University, February 2009

Workshop, 2nd Northwestern-Berkeley-Heidelberg Workshop on Catalysis, Heidelberg Germany, September 2008

Department Seminar, Center for Catalysis and Surface Science, Northwestern University, January 2008

Corporate Meeting, UOP, September 2007

Departmental Colloquium, Chemical Engineering, MIT, 2006

Departmental Colloquium, Chemical and Biological Engineering, Northwestern University, 2006

Departmental Colloquium, Chemical Engineering, Stanford University, 2006

CONFERENCE PRESENTATIONS by JMN or GROUP (>75)

2011 MRS Spring National Meeting

2012, 2011, 2009, 2008, 2007, 2004, 2003, AIChE National Meetings

2012, 2011, 2009, 2008, 2004, 2003 ACS National Fall and/or Spring Meetings

2011, 2009, 2005 22nd, 21st and 19th North American Catalysis Society Meetings

2012, 2011, 2009 Chicago Catalysis Club Spring Symposium

2012, 2008 International Congress on Catalysis

2012 Catalysis Gordon Conference

EDUCATION EXPERIENCE and RECOGNITION

McCormick (School of Engineering) Advisor of the Year, *Northwestern University*, 2009-2010

Associated Student Government Faculty Honor Roll, *Northwestern University*, 2010, 2008

Dow Outstanding Teaching Assistant Award, *UC Berkeley*, 2002

Assistant Professor, *Northwestern University*

Process Economics, Design & Evaluation (undergraduate), F07, F08, W10

Analysis of Chemical Process Systems (undergraduate), W08, W09, F09, F10, F11, F12

Kinetics and Reactor Design (graduate), F09, F12

Chemical Product Design (undergraduate), W12

Participation in NSF-funded educational study, "Critical Thinking Initiative in STEM," 2011-2013

Invited lecturer, "Reconceptualizing the Research Paper," for the Teaching, Learning, & Technology series of workshops at Northwestern University, Spring 2010, 2011

Searle Teaching Fellow, a selective program at Northwestern University that develops teaching strategies, assessment methods, and project-based learning, 2008-2009.

Grant recipient, "Chemical Product Design: A New Course and a Theme for Independent Undergraduate Research," Alumnae Association of Northwestern, 4/2011-6/2012

UNDERGRADUATE AND HIGH SCHOOL STUDENT RESEARCH MENTORING %indicates published

UNDERGRADUATE: Mr. PJ Santos%, 2012; Ms. Rachel Scholes%, 2011-2012; Mr. Andrew Boston%, 2011; Mr. Nicolas Grosso%, 2011-2012; Mr. Joshua Kaplan, 2011; Ms. Sydney Cope%, 2010; Ms. Lisa Felberg, 2009-2010 (Berkeley PhD); Mr. Theodore D. Swift% (Delaware PhD), 2009; Mr. John Siegfried%, 2008-2009; Mr. David Gabriel, 2008-2009

REU: Mr. Alex Baron (University of Miami at Ohio), 2009 (NSEC); Mr. Stephen Brand (NU), 2011 (MRSEC); Mr. Andrew Karas (Polytechnic University of NY), 2012

HIGH SCHOOL: Ms. Nishida Kumar (Illinois Math and Science Academy, IMSA) 2011-2012, Ms. Ashley Radee (IMSA) 2011-2012, Ms. Elizabeth Ott (IMSA) 2010-11; Mr. Samir Mishra (IMSA) 2009-10; Ms. Jessie Salter (Evanston Township High School) 2010.

COLLABORATIONS: Prof. Greg Mowry, University of St. Thomas, St. Paul MN (a primarily undergraduate institution)

TALKS: Wildcat Days visit week, April 2012; MRSEC REU lecture series, July 2010

RESEARCH ADVISING

STUDENTS ADVISED (11): Bo Zhenyu, 2012-2017 (PhD MSE, joint with Prof. Bedzyk); Nicholas Thornberg, 2012-2017 (PhD); Rachel Watson, 2012-2017 (PhD); Christian Contreras, 2011-2013 (MS); Sara Yacob, 2011-2016 (PhD); Mark Bachrach, 2010-2015 (PhD Chemistry, joint with Prof. Marks); Todd Eaton, 2010-2015 (PhD, joint with Prof. Gray); Anthony Thompson, 2009-2014 (PhD); Dario Prieto-Centurion, 2008-2013 (PhD); Pria Young, 2008-2013 (PhD, BP); Andrew Korinda, 2007-2012 (PhD, Hemlock Semiconductor)

POSTDOCTORAL SCHOLARS SPONSORED (6): Patricia Ignacio-deLeon, 2012-; Sunyoung Park, 2012-; Chieh-Chao Yang (joint with Prof. Weitz), 2012-; Christian Canlas, 2010-2012 (n/a); Nicholas Schoenfeldt, 2008-2011 (UOP); Natalia Morlanés-Sánchez, 2009-2011 (KAUST)

THESES COMMITTEES: Stephanie Kwon, PhD ChE 2016; DelRae Haag, PhD ChE 2016; Kevin Schwartzburg, PhD EnvE 2016; Tasha Robinson, PhD Chem 2015; Natalie Ray, PhD Chem 2014; Di Wu, PhD ChE 2013; John Galloway, PhD ChE 2013; Kathryn Bjorkman, PhD ChE 2012; Neema Mashayekhi, PhD ChE 2012; Ivan Konstantinov, PhD ChE 2011; Eric Mondor, MS ChE 2010; Erin Himmelpach, MS ChE 2010; Gloria Emberger, PhD ChE 2010; Sean Oxford, PhD ChE 2010; Michael Missaghi, PhD ChE 2010; Kevin Schulte, MS ChE 2009; Shara Dellatore, PhD ChE 2008

STUDENT GROUP MENTORING

American Institute of Chemical Engineers Advisor, Chicago Club Academic Liaison, 2008-

Omega Chi Epsilon Student Chapter Advisor, 2008-

ACHIEVEMENTS BY GROUP MEMBERS

NIH – Initiative to Maximize Student Development Fellowship 2011-2013 (Yacob)
Christine Mirzayan Science & Technology Policy Fellowship, National Academies, 2012 (Young)
First Place Poster, Undergraduate Poster Session, AIChE Annual National Meeting 2012 (Grosso-Giordano)
Carl Storm Fellowship, Catalysis Gordon Conference 2012 (Yacob)
George Thodos Teaching Assistant award 2012 (Contreras)
Separations Division Travel Award, AIChE Annual Meeting 2012 (Thompson)
Catalysis and Reaction Engineering Division Travel Award, AIChE Annual Meeting 2012 (Young)
Catalysis and Reaction Engineering Division Travel Award, AIChE Annual Meeting 2011 (Prieto)
Kokes Travel Award, North American Catalysis Society, 2011 (Prieto)
Northwestern University Graduate Leadership Council, Elected Chair, 2011 (Young)
MRSEC Fellow, 2010-2011 (Young)
McCormick Graduate Leadership Council, Elected Chair, 2010-2011 (Young)
Women's Initiative Committee Travel Award, AIChE Annual Meeting 2010 (Young)
ISEN Cluster Fellowship, 2009-2010 (Young)
George Thodos Teaching Assistant award 2009 (Korinda)
Link Energy Fellowship, runner up 2009 (Prieto)
Ryan Nanotechnology Fellowship 2008 (Prieto)

COMMUNITY OUTREACH

Career Day for Girls, Host Laboratory. Career Day is the College of Engineering's largest outreach program targeting local and regional junior high and high school girls. Developed hands-on demonstrations on the principles of catalysis and associated analytical tools for: ~20 girls, ~70% African American, Feb. 2010 and ~30 girls, ~50% Latina, Feb. 2011. (Young)
Meaningful Science Consortium (MSC) Project Showcase Reviewer, Spring 2008. MSC develops curricula for the Chicago Public Schools. (Notestein)
CLIMB program Scientific Skills Lecturer, Fall 2008. CLIMB is dedicated to increasing the diversity of scientists entering professional careers. (Notestein)
Science on Saturdays, Host laboratory. Children from the general public "learn about the cutting edge in materials research directly from the people who are making discoveries." A demonstration was developed using diffuse reflectance spectroscopy to 'fingerprint' materials brought in by the children, 2008. (Korinda)
Participation in 'Science in the Classroom,' which led basic science lessons and experiments for 3rd graders at a school in an underprivileged Chicago neighborhood, 2011-2012. (Bachrach)
Mentoring for high school regional and state science fairs. Project using algae to reduce VOCs in automobile tailpipe emissions won gold at regional and state levels, 2011-2012, (Bachrach)
Project EXCITE tutoring at local schools, 2011-2012 (Eaton)
CHANSE program, middle school hands-on science experiments, 2008. (Korinda)

OTHER UNIVERSITY SERVICE

Selection Committee, Chemical Engineering PhD Students, 2009-
Selection Committee, British and Selective Scholarships, University-wide, 2009-
Selection Committee, Phi Beta Kappa, 2008-
Responsible conduct of research lecture series, "Effective oral and written scientific communication", Department of Chemical and Biological Engineering course, 2012
Advisory Board, Clean Catalysis Center, Northwestern University Center for Catalysis and Surface Science, 2012-
Working with Industry symposium, McCormick School of Engineering, 2012.
Chemical Engineering Debates, 2008, 2009, 2010

PROFESSIONAL SERVICE

Organizing committee, ACS Division of Catalysis, 2010-

Steering committee, Midwest Regional AIChE Conference, 2013

Academic liaison, Chicago section of the AIChE, 2009-

Organic Reactions Catalysis Society Editorial Board, 2012

Session Chair or Co-Chair, 2012 National AIChE, Fundamentals of Oxide Catalysis, Fundamentals of Supported Catalysis; 2011 NACS, Selective Oxidation; 2011 National AIChE, Fundamentals of Oxide Catalysis, Fundamentals of Supported Catalysis; 2010 National AIChE, Fundamentals of Oxide Catalysis, Fundamentals of Supported Catalysis; 2009 National AIChE, Reaction Engineering in Pharmaceuticals and Fine Chemicals, Fundamentals of Supported Catalysis; 2009 Fall National ACS, Division of Catalysis Science and Technology; 2009 NACS, Catalyst Preparation; 2008 AIChE, Catalyst Preparation; 2007 AIChE, Catalyst Preparation

Symposium Organizer: 2013 Spring National ACS, Frustrated Acid-Base Pairs, Division of Catalysis; 2011 Midwest Regional AIChE, Student Poster Session; 2011 Spring National AIChE, Student Poster Session; 2010 National ACS, Photocatalysis; 2010 Midwest Regional AIChE, 2009 Chicago Regional AIChE.

Reviewer for NSF panels, ACS PRF, DOE Graduate Fellowships, 2011, 2009 North American Catalysis Meeting, 2008 International Catalysis Congress, *Catal. Lett.*, *Chem. Eng. J.*, *Fuel*, *J. Am. Chem. Soc.*, *Appl. Catal.*, *Org. Proc. Res. Dev.*, *J. Catal.*, *Energy and Fuels*, *Ind. Eng. Chem. Res.*, *J. Phys. Chem.*, *Organometallics*, *Int. J. Hydrogen Energy*, *Langmuir*, *ACS Nano*, *ACS Catal.*, *Green Chem.*, *ChemSusChem*, and others.

EXTERNAL ACADEMIC COLLABORATORS

Argonne National Lab: Larry Curtiss, Jeffrey Elam, Jeffrey Greeley, Christopher Marshall, Jeffrey Miller, Randall Winans

Brookhaven National Laboratory: Eric Stach

Dow Chemical Company: Peter Nickias, Devon Rosenfeldt, Beata Kilos, Rui Cruz, Kurt Hirsekorn, David West, Jack Kruper

DuPont de Nemours & Company: Namal deSilva

Georgia Technological Institute: Carsten Sievers

Purdue University: Nicholas Delgass, Fabio Ribeiro

Toyota Motor and Engineering: Paul Fanson

University of Illinois, Chicago: Randall Meyer

University of Virginia: Matt Neurock

University of Wisconsin: James Dumesic, Manos Mavrikakis

University of Virginia: Matt Neurock

INTERNAL ACADEMIC COLLABORATORS

Linda Broadbelt, Harold Kung, Randall Snurr (ChBE)

Kimberley Gray (EnvE)

Joseph Hupp, Tobin Marks, Sonbinh Nguyen, Peter Stair, Richard van Duyne, Eric Weitz (Chem)

CURRENT AND COMPLETED SUPPORT

- Title:** Institute for Catalysis in Energy Processes Renewal (Peter Stair, PI)
Sponsor: DOE/BES/Chemical Sciences
Period: 09/01/2012 to 08/31/2015
Period: 09/01/2009 to 08/31/2012
- Title:** Project 1 (lead PI)
Sponsor: The Dow Chemical Company
Period: 10/28/2011 to 10/27/2016
- Title:** Project 2 (lead PI)
Sponsor: The Dow Chemical Company
Period: 10/24/2011 to 10/23/2016
- Title:** Templating Routes to Supported Oxide Catalysts by Design (sole PI)
Sponsor: DOE/BES/Chemical Sciences (DE-SC0006718)
Period: 09/01/2011 to 08/31/2014
NOTE: Represents alternate funding mechanism for proposal submitted to the Early Career Research Program, with duration 06/01/11 to 5/31/16
- Title:** DuPont Young Professor Grant (sole PI)
Sponsor: DuPont
Period: 09/01/2011 to 08/31/2014
- Title:** Booster: Understanding and control of photocatalysts for CO₂ photoreduction to fuels (co-PI w/ K. Gray)
Sponsor: Initiative for Sustainability and Energy at Northwestern
Period: 09/01/2011 to 08/31/2012
- Title:** Project (sole PI)
Sponsor: Toyota Motor Engineering and Manufacturing
Period: 09/01/2010 to 08/31/2013, renewing annually
- Title:** 3M non-tenured faculty grant (sole PI)
Sponsor: 3M
Period: 04/01/2010 to 03/31/2013
- Title:** Seed: Controlling nanoparticle surface and bulk with graded organic-inorganic interfaces (sole PI)
Sponsor: NSF MRSEC at Northwestern (DMR 0520513)
Period: 01/01/2010 to 02/29/2012
- Title:** Atom-precise adsorption sites from grafted, porous oligomers (sole PI)
Sponsor: National Science Foundation, CBET, Separations (CBET 0933667)
Period: 09/01/2009 to 08/31/2013
- Title:** Doctoral New Investigator: Surface organometallic chemistry for improved performance and understanding of hydrodenitrogenation catalysis (sole PI)
Sponsor: American Chemical Society Petroleum Research Fund
Period: 09/01/2009 to 08/31/2013
- Title:** EFRC: Institute for Atom-efficient Chemical Transformations (Chris Marshall, PI)
Sponsor: Argonne Subcontract/DOE/BES
Period: 08/01/2009 to 07/31/2014

Title: Booster: Hybrid materials for binding and activating CO₂ in artificial photosynthesis (sole PI)
Sponsor: Initiative for Sustainability and Energy at Northwestern
Period: 06/01/2009 to 05/31/2010

Title: Dow Methane Challenge: Methane conversion by nanoengineered catalyst environments and soft oxidants (Tobin Marks, PI)
Sponsor: Dow Chemical Company
Period: 02/01/2008 to 12/02/2011

Title: Camille and Henry Dreyfus New Faculty Award: Novel oxidation catalysts from surface-grafted organometallics to form cooperative organic-inorganic interfaces for energy needs and sustainability (sole PI)
Sponsor: Camille and Henry Dreyfus Foundation
Period: 09/01/07 to 08/31/2012