

# Michael S. Doescher, Ph.D.

Research Assistant  
Department of Computer Sciences  
University of Wisconsin - Madison  
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## Education and Professional Achievements

### **Graduate Education; University of Wisconsin, Madison: GPA 3.89**

M.S. in Computer Sciences 2015.

Graduate Minor in Mathematics. 2016

Ph.D in Computer Sciences. Advisor: Eftychios Sifakis. Anticipated Summer 2019

### **College Professor; Benedictine College, Atchison Kansas**

Associate Professor: Department of Chemistry and Biochemistry. 2011-2013.

Assistant Professor: Department of Chemistry and Biochemistry. 2005-2011.

### **Research Scientist, University of Nebraska, Lincoln**

Research Scientist: MRSEC Research Program. University of Nebraska, Lincoln. Summer 2006.

### **Postdoctoral Researcher; Naval Research Laboratory; Washington, DC**

Postdoctoral Associate at the US Naval Research Laboratory 2002–2005

*Humidity Sensing with Manganese Oxide Nanoarchitectures.*

Advisor: D.R. Rolison

### **Graduate Education; University of South Carolina, Columbia: GPA 3.93**

Ph.D. in Physical Chemistry 1997–2002

*Charge Transport in Conjugated Organic Oligomers: Anodic Stripping Voltammetry and Nanostructured Array Electrodes*

Advisor: M.L. Myrick

### **Undergraduate Education; University of the People; Online: GPA 3.97**

### **Undergraduate Education; Benedictine College; Atchison, KS: GPA 4.00**

### **Undergraduate Education; Luther College; Decorah, IA: GPA 3.83**

## **Courses Taught - Benedictine College**

Extraordinary Chemistry (CH 198)  
General Chemistry I and II (CH103, CH104)  
General Chemistry Lab I and II (CH104, CH105)  
Advanced General Chemistry I and II (CH 123, CH124)  
Electrochemistry (CH330)  
Inorganic Chemistry (CH441)  
Advanced Inorganic Chemistry (CH 398)  
Thermodynamics (CH 380)  
Thermodynamics Lab (CH382)  
Environmental Thermodynamics Laboratory (CH 387)  
Quantum Chemistry and Dynamics (CH483)  
Quantum Chemistry and Dynamics Lab (CH484)  
Introduction to research (CH280 and CH281)  
Directed Research (CH480)

## **Committee and Administrative Responsibilities**

Faculty Development Committee (Chair 2011-2012)	2009-2012
Teaching and Learning Subcommittee: North Central Accreditation	2007-2009
Grievance Committee (Two terms)	2006-2010
START Internship program (Midwest Grain Products)	2008
General Chemistry Laboratory Coordinator; Benedictine College	2005-2103
Academic Advisor to 26 Students (Fall 2012) and 84 students total	2006-2013
Chemistry Department Web Page Administrator	2005-2008
Benedictine College Chemistry Club Faculty Co-Advisor	2009-2012
ACS Wakarusa Valley Section Speaker Selection Committee	2006-2013
Search Committees: Dean of Enrollment Management, Engineering Program Director, and five searches for the Department of Chemistry and Biochemistry.	

## **Professional Memberships**

American Chemical Society  
ACS Wakarusa Valley Section  
Phi Beta Kappa

## Grants and Awards

- 2006 MRSEC Fellowship: University of Nebraska, Lincoln. *Electrochemical synthesis of segmented nickel-bismuth-nickel nanowires.*
- 2006 Benedictine College Discovery Program. *Metal Nanowire Electrosynthesis.*
- 2007 Benedictine College Discovery Program. *Electrosynthesis of a Bismuth Thermoelectric Generator.*
- 2007 Benedictine College Discovery Program. *MnO<sub>2</sub> Microbolometers?*
- 2007 Benedictine College Discovery Program. *Der Hindenburg Unfall!*
- 2009 Benedictine College Discovery Program. *Glassy Images - Where Space Meets the Eye! Holographic Film Preparation*

## Awards and Recognition

- 2011 IDEA diagnostic instrument for faculty teaching evaluation: scored in top 10% of teachers in the nationwide IDEA database.
- 2010 Benedictine College Service Award
- 2005 NRC/ASEE Postdoctoral Research Publication Award for “Using an Oxide Nanoarchitecture to Make or Break a Proton Wire”
- 2002 Graduate Student Day Scholarly Poster Award: University of South Carolina Graduate School
- 2002 IRIX Pharmaceuticals Award: University of South Carolina Department of Chemistry and Biochemistry Graduate Student Research Competition
- 2001 Tomas A. Hirschfeld Award: FACSS 2001 Detroit, MI
- 2001 Durig Graduate Student Travel Award: USC Department of Chemistry and Biochemistry
- 2001 Graduate Student Day Award: University of South Carolina Graduate School
- 2001 Graduate Student Research Poster Competition: USC Department of Chemistry and Biochemistry
- 2000 Society for Applied Spectroscopy Student Poster Award: FACSS 2000 Nashville, TN
- 2000 Department of Energy: Graduate Student Award to Attend the 50<sup>th</sup> Annual Meeting of Nobel Laureates: Lindau, Germany
- 1998 NSF Graduate Research Fellowship: Honorable Mention
- 1998 DOD Graduate Research Fellowship: Honorable Mention
- 1997 Bayer Corporation Scholarship
- 1997 Phi Beta Kappa, National Honor Society

## Publications - Computer Science

1. N. Mitchell, M. Doescher, E. Sifakis. "A Macroblock optimization for Grid-Based Nonlinear Elasticity." Eurographics/ACM SIGGRAPH Symposium on Computer Animation, **2016**.

## Publications - Chemistry

1. C. Laberty-Robert, J.W. Long, E.M. Lucas, K.A. Pettigrew, R.M. Stroud, M.S. Doescher, and D.R. Rolison. "Sol-gel derived ceria nanoarchitectures: Synthesis characterization and electrical properties." *Chem. Mater.* **2006**, *18*, 50-58.
2. M.S. Doescher, J.J. Pietron, B.M. Dening, J.W. Long, C.P. Rhodes, C.A. Edmondson, and D.R. Rolison. "Using an oxide nanoarchitecture to make or break a proton wire." *Anal. Chem.* **2005**, *77*, 7924-7932.
3. P. E. Colavita, P. Miney, L. Taylor, M.S. Doescher, A. Molliet, J. Reddic, J. Zhou, D. Pearson, D. Chen and M. L. Myrick. "Copper Coated Self-Assembled Monolayers: Alkanethiols and Prospective Molecular Wires" *Topics in Fluorescence Spectroscopy, Volume 8: Radiative Decay Engineering*, C.D. Geddes and J.R. Lakowicz, eds., Springer Science and Business Media: New York, **2005**, pages 275-303.
4. E.M. Lucas, M.S. Doescher, D.M. Ebenstein, K.J. Wahl, and D.R. Rolison. "Silica aerogels with enhanced durability, 30-nm mean pore size, and improved immersibility in liquids." *J. Non-Cryst. Solids.* **2004**, *108*, 244-252.
5. C.P. Rhodes, J.W. Long, M.S. Doescher, B.M. Dening, and D.R. Rolison. "Charge insertion into hybrid nanoarchitectures: mesoporous manganese oxide coated with ultrathin poly(phenylene oxide)." *J. Non-Cryst. Solids.* **2004**, *350*, 73-79.
6. C.P. Rhodes, J.W. Long, M.S. Doescher, J.J. Fontanella, and D.R. Rolison. "Nanoscale polymer electrolytes: ultrathin electrodeposited poly(phenylene oxide) with solid-state ionic conductivity." *J. of Phys. Chem. B* **2004**, *108*, 13079.
7. M.S. Doescher, U. Evans, P.E. Colavita, P.G. Miney, and M.L. Myrick. "Construction of a nanowell electrode array by electrochemical gold stripping and ion bombardment." *Electrochem. Solid State Lett.* **2003**, *6*, C112.
8. P.E. Colavita, M.S. Doescher, A. Molliet, U. Evans, J. Reddic, J. Zhou, D. Chen, P.G. Miney, and M.L. Myrick. "Effects of metal coating on self-assembled monolayers on gold. 1. copper on dodecanethiol and octadecanethiol." *Langmuir* **2002**, *18*, 8503.
9. U. Evans, P.E. Colavita, M.S. Doescher, M. Schiza, and M.L. Myrick. "Construction and characterization of a nanowell electrode array." *Nano Lett.* **2002**, *2*, 641.
10. M.S. Doescher, J.M. Tour, A.M. Rawlett, and M.L. Myrick. "Stripping voltammetry of Cu overlayers deposited on self-assembled monolayers: field emission of electrons through a phenylene ethynylene oligomer." *J. Phys. Chem.* **2001**, *105*, 105.
11. U. Evans, O. Soyemi, M.S. Doescher, U. Bunz, L. Kloppenberg, and M.L. Myrick. "Spectroelectrochemical study of the oxidative doping of polydialkylphenyleneethynene using iterative target transformation factor analysis." *The Analyst* **2001**, *126*, 508.

12. A.D. Cohen, A.M. Bailey, M.L. Myrick, M.S. Doescher, W.C. Riese, S. Thibodeaux, and R. Enrico. "Applications of atomic force microscopy to study of artificially coalified peats." *Soc. Org. Petrology* **1998**, *15*, 23.

## **Presentations**

Benedictine College: Discovery Day 2011. Poster Presentation: M. Skorey, M. Doescher. "Fabrication of a Nitrogen Laser."

Benedictine College: Discovery Day 2010. Poster Presentation: M. Weaver, G. Callanan, M. Skorey, M. Doescher. "Glassy Images: Where Space Meets the Eye."

Benedictine College: Discovery Day 2008. Oral Presentation: E. Weis, T. Locascio, K. Stluka, C. Piontek, M. Doescher. "Der Hindenburg Unfall!"

Benedictine College: Discovery Day 2008. Poster Presentation: W. Baldwin, A. Bishop, M. Doescher. "Thermal Imaging with Manganese Oxide."

Benedictine College: Discovery Day 2008. Poster Presentation: J. Essner, S. Baker, M. Doescher. "Heat to Electricity: The Untold Mysteries--Revealed."

Benedictine College: Discovery Day 2007. Poster Presentation: S. Baker, J. Essner, M. Doescher. "Ni-Bi-Ni Nanowires."

Benedictine College: Discovery Day 2007. Poster Presentation: K. Buyle, K. Wentz, S. Sabata, A. Bishop, M. Doescher. "Ambigels Manganese Oxide Synthesis."

Benedictine College: Discovery Day 2006. Poster Presentation: K. Buyle, M. Hu, M. Doescher. "Manganese Oxide Ambigels."

National Research Council Associateship Programs, 50<sup>th</sup> Anniversary: National Academies, Washington, DC. 19 November 2004. Poster Presentation: M.S. Doescher, J.J. Pietron, B.M. Dening, J.W. Long, C.P. Rhodes, D.R. Rolison. "Using an oxide nanoarchitecture to make or break a proton wire."

MRS 2004: Materials Research Society Fall Meeting, Boston, MA. 29 November–3 December, 2004. Oral Presentation: M.S. Doescher, J.J. Pietron, J.W. Long, D.R. Rolison. "Humidity sensing with manganese oxide ambigel nanoarchitectures."

ISA7 2003: 7<sup>th</sup> International Symposium on Aerogels, Alexandria, VA. 2–5 November 2003. Oral Presentation: M.S. Doescher, J.J. Pietron, B.M. Dening, J.W. Long, and D. R. Rolison. "Manganese oxide ambigels as sensors."

ECS 2003: 204<sup>th</sup> Meeting of the Electrochemical Society, Orlando, FL. 12–17 October 2003. INVITED Oral Presentation: M.S. Doescher, J.J. Pietron, B.M. Dening, J.W. Long and D.R. Rolison. "Manganese oxide ambigel films: Synthesis, characterization, and sensing application."

USC NanoCenter Symposium on Nanoelectronics and Nanomaterials, Columbia, SC. 19 April 2002. Poster: M.S. Doescher, M.L. Myrick. "Electron transport in organic oligomer self-assembled monolayers."

Pittcon 2002: Pittsburg Conference on Analytical Chemistry, New Orleans, LA. 17–22 March 2002. Oral presentation: M.S. Doescher, U. Evans, P. E. Colavita, and M.L. Myrick. "Gold nanoelectrode arrays for studying the electronic properties of conjugated organic oligomers."

SEAAC 2001: Southeast Association of Analytical Chemistry Conference, Columbia, SC. 1–3 November 2001. Poster: M.S. Doescher, and M.L. Myrick. "Electron transport in conjugated oligomer SAMs."

FACSS 2001: Federation of Analytical Chemistry and Spectroscopy Societies, Detroit, MI. 7–12 October 2001. Oral presentation: M.S. Doescher, and M.L. Myrick. "Electron transport in conjugated oligomer SAMs."

Pittcon 2001: Pittsburg Conference on Analytical Chemistry, New Orleans, LA. 4–9 March 2001. Oral presentation: M.S. Doescher and M.L. Myrick. "Electrochemical Measurement of Energy Barriers to Electron Transport in Conjugated Oligomer SAMs."

Pittcon 2001: Pittsburg Conference on Analytical Chemistry, New Orleans, LA. 4–9 March 2001. Poster: M.S. Doescher, U.M. Evans, and M.L. Myrick. "Atomic force microscopy of electrochemically doped conducting polymers."

SEAAC 2000: Southeast Association of Analytical Chemistry Conference, Greenville, NC. 5–7 October 2000. Poster: M.S. Doescher, U.M. Evans, and M.L. Myrick. "AFM of electrochemically doped conducting polymers."

FACSS 2000: Federation of Analytical Chemistry and Spectroscopy Societies, Nashville, TN. 24–28 September 2000. Poster: M.S. Doescher, U.M. Evans and M.L. Myrick. "Atomic force microscopy of electrochemically doped conducting polymers."

Pittcon 2000: Pittsburg Conference on Analytical Chemistry, New Orleans, LA. 12–17 March 2000. Oral Presentation: M.S. Doescher and M.L. Myrick. "Barriers to electron transport in conjugated oligomer SAMs."

SERMACS 99: Southeast Regional Meeting of the American Chemical Society, Knoxville, TN. 17–20 October, 1999. Poster: M.S. Doescher and M.L. Myrick. "Electron transport through molecular wire ultramicroelectrodes?"