**Bart J. Dahl**
Department of Chemistry
University of Wisconsin-Eau Claire
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## EDUCATION

2002-2006 University of Oregon, Eugene, OR. Ph. D. in Organic Chemistry
Graduate Dissertation: *The Design and Synthesis of Prototypical Artificial Molecular Motors: Studies of Directed Bond Rotation in Chiral Biaryls.*
Advisor: Bruce P. Branchaud

1995-2001 University of Wisconsin - Oshkosh, Oshkosh, WI. B. S. in Chemistry, *Magna cum Laude*
Undergraduate Thesis: *Probing Molecular Surface Adsorption with Electrochemical Pb Underpotential Deposition on Polycrystalline Au Surfaces.*
Advisor: Xiangqun Zeng

## PROFESSIONAL EXPERIENCE

2015-present University of Wisconsin - Eau Claire, Eau Claire, WI. Associate Professor of Chemistry

2010-2015 University of Wisconsin - Eau Claire, Eau Claire, WI. Assistant Professor of Chemistry

2009-2010 University of Saint Thomas, Saint Paul, MN. Assistant Professor of Chemistry

2008-2009 Trinity University, San Antonio, TX. Visiting Assistant Professor of Chemistry

2007-2008 Trinity University, San Antonio, TX. Postdoctoral Research Associate
Advisor: Nancy S. Mills

2001-2002 Sigma-Aldrich Fine Chemicals, Sheboygan Falls, WI. Associate Chemist

## TEACHING EXPERIENCE

### University of Wisconsin - Eau Claire

2010-present Advanced Synthesis Laboratory
Organic Chemistry I and II Lecture and Laboratory
General Chemistry I Lecture and Laboratory

University of Saint Thomas

2009-2010 Organic Chemistry I and II Lecture and Laboratory

Trinity University

2008-2009 Organic Chemistry I and II Lecture and Laboratory
2007-2008 Organic Chemistry Laboratory and General Chemistry Laboratory

University of Oregon

2004-2006 Teaching Assistant for Advanced Organic Synthesis Summer Laboratory
2002-2003 Teaching Assistant for Green Organic Chemistry Laboratory

## EXTERNALLY-FUNDED RESEARCH GRANTS

University of Wisconsin - Eau Claire

2014 Research Corporation Cottrell College Science Award (22480): "Smart Terphenyls: Synthesis and Study of Planar Conjugated Compounds Capable of Dual-Input Geometry Switching." Role: PI. Funding: $45,000. 7/1/2014-6/2016

2012 R21CA157395 NIH/NCI CA10-005: Innovative Molecular Analysis Technologies for Cancer. "Label-free, real-time detection of kinase activity in vitro and in single cells using surface-enhanced Raman spectroscopy." PI: Laurie Parker, Purdue University, West Lafayette, IN. Role: Key Collaborator (synthesis of deuterated amino acid monomers). Funding: $10,612. 7/2012-6/2013.

2011 American Chemical Society PRF-51259-UNI1. "The Design, Synthesis, and Characterization of "Smart" Donor-Acceptor Biaryls." Role: PI. University of Wisconsin-Eau Claire, Eau Claire, WI. Funding: $50,000. 9/2011-8/2013

University of Saint Thomas

2010 National Science Foundation CHE-0959322. "MRI-R2: Acquisition of a 400 MHz Nuclear Magnetic Resonance (NMR) Spectrometer." Role: Co- PI. University of Saint Thomas, Saint Paul, MN. Funding: $246,000. 3/2010.

## INTERNALLY-FUNDED RESEARCH GRANTS

University of Wisconsin - Eau Claire

2015 Workshops and Special Projects Travel, "Travel to an NSF Grants Writing Workshop." University of Wisconsin-Eau Claire. Funding: $375. 5/2015.

Summer Research Experience for Undergraduates Grant, "Soluble Crankshaft Lactones with Oligoethylene Glycols." Role: PI. University of Wisconsin-Eau Claire. Funding: $5,200. 7/2015-5/2016.

2014 Faculty/Student Research Collaboration Grants, "Tuning the Optical Properties of Dibenzo[b,d]pyrylium Dyes and Analysis of their Halochromism: Comparing Monophenyl and Terphenyl Spacers." Role: PI. University of Wisconsin-Eau Claire. Funding: $2,800. 9/2014-5/2015

Faculty/Student Research Collaboration Grants, "Synthesis and Study of Soluble "Smart" Terphenyls with Two Different Solubilizing Groups." Role: PI. University of Wisconsin-Eau Claire. Funding: $2,800. 9/2014-5/2015

2013 Faculty-Student Research Collaboration Grant, "Synthesis of Soluble "Smart" Terphenyls." Role: PI. University of Wisconsin-Eau Claire. Funding: $2,800. 9/2013-5/2014.

Faculty-Student Research Collaboration Grant, "Continuing Studies on Tuning the Optical Properties of Dibenzo[b,d]pyrylium Dyes and Analysis of their Halochromism." Role: PI. University of Wisconsin-Eau Claire. Funding: $2,800. 9/2013-5/2014.

Summer Research Experience for Undergraduates Grant, "Tuning the Optical Properties of Dibenzo[b,d]pyrylium Dyes and Analysis of their Halochromism." Role: PI. University of Wisconsin-Eau Claire. Funding: $5,100. 7/2013-5/2014.

2012 Faculty-Student Research Collaboration Grant, "Biaryl Sultine Molecular Switches." Role: PI. University of Wisconsin-Eau Claire. Funding: $2,800. 9/2012-5/2013.

Faculty-Student Research Collaboration Grant, "Synthesis of Terphenyl Lactone Switches." Role: PI. University of Wisconsin-Eau Claire. Funding: $2,800. 9/2012-5/2013.

Summer Research Experience for Undergraduates Grant, "Synthesis of Redox Switchable Terphenyls." Role: PI. University of Wisconsin-Eau Claire. Funding: $5,100. 7/2012-5/2013.

2011 Faculty-Student Research Collaboration Grant, "Synthesis of Soluble Monodisperse Oligophenyl Ladder Lactones." Role: PI. University of Wisconsin-Eau Claire. Funding: $2,800. 9/2011-5/2012.

Summer Research Experience for Undergraduates Grant, "Exploring Donor-Acceptor Bridged Biphenyl Sultine Systems: Synthesis and Characterization." Role: PI. University of Wisconsin-Eau Claire. Funding: $6,800. 7/2011-5/2012.

2010 Faculty-Student Research Collaboration Grant, "Exploring Bridged Biphenyl Systems as Molecular Switches: Synthesis and Characterization." Role: PI. University of Wisconsin-Eau Claire. Funding: $2,800. 11/2010-5/2011

## HONORS AND AWARDS

University of Wisconsin - Eau Claire

2015 University of Wisconsin – Eau Claire Emerging Mentor in Research, Scholarship, and Creative Activity

2014 University of Wisconsin – Eau Claire Chemistry Professor of the Year

2013-2014 University of Wisconsin Libraries Research Fellow.

2012 First Place Award in the Physical, Chemical, Mathematical, and Computer Science category at the 20$^{th}$ Annual UW-Eau Claire Student Research Day (Awarded to research student Erick Carlson).

Trinity University

2008 Postdoctoral Workshop for Prospective Chemistry Faculty Travel Grant

University of Oregon

2004-2006 National Science Foundation IGERT Fellowship (awarded 3 times)

2003-2004 US Department of Education GAANN Fellowship

University of Wisconsin - Oshkosh

2000-2001 The American Institute of Chemists Foundation and the Northeast Wisconsin Section of the American Chemical Society Outstanding Senior Chemistry Major
UW-Oshkosh Department of Chemistry Alumni Research Award

American Chemical Society Undergraduate Award in Analytical Chemistry

1999-2000 Gilbert F. and Katherine L. Pollnow Scholarship for Outstanding Achievement in Physical Chemistry

## PEER REVIEWED PUBLICATIONS

### University of Wisconsin - Eau Claire

Dressler, Justin J.; Miller, Sarah A.; Meeuwsen, Brian T.; Riel, Asia Marie S.; Dahl, Bart J. "The Synthesis of Terphenyl Dilactones with Crankshaft Architectures." *Tetrahedron* **2015**, *71*, 283-292.

Prust, Erin E.; Carlson, Erik J.; Dahl, Bart J. "6-Aryldibenzo[b,d]pyrylium Salts: Synthesis and Characterization of a Reversible pH-Driven Optical and Spectroscopic Response." *Tetrahedron Lett.* **2012**, *53*, 6433-6435.

Carlson, Erik J.; Riel, Asia Marie S.; Dahl, Bart J. "Donor-Acceptor Biaryl Lactones: pH-Induced Molecular Switches with Intramolecular Charge Transfer Modulation." *Tetrahedron Lett.* **2012**, *53*, 6245-6249.

Mills, Nancy S.; Cheng, Francine E.; Baylan, Joseph M.; Tirla, Cornelia; Hartmann, Jennifer L.; Patel, Kiran C.; Dahl, Bart J.; McClintock, Sean P. "Dications of 3-Phenyl-indenylidene Dibenzo[a.d]cycloheptene: The Role of Charge in the Antiaromaticity of Cationic Systems." *J. Org. Chem.* **2011**, *76*, 645-653. (Written while at UWEC based on work done at Trinity).

### Trinity University

Dahl, Bart J.; Mills, Nancy S. "Antiaromaticity in Distal Bisfluorenyl Dications Separated by Multiple Discrete Spacer Units." *Org. Lett.* **2008**, *10*, 5605-5608.

Dahl, Bart J.; Mills, Nancy S. "Antiaromatic Spacer-Bridged Dications Generated by Superacid Induced Ionization." *J. Am. Chem. Soc.* **2008**, *130*, 10179-10186.

### University of Oregon

Dahl, Bart J.; Branchaud, Bruce P. "180° Unidirectional Bond Rotation in a Biaryl Lactone Artificial Molecular Motor Prototype." *Org. Lett.* **2006**, *8*, 5841-5845.

Lin, Ying; Dahl, Bart J.; Branchaud, Bruce P. "Net Directed 180° Aryl–Aryl Bond Rotation in a Prototypical Achiral Biaryl Lactone Synthetic Molecular Motor." *Tetrahedron Lett.* **2005**, *46*, 8359-8362.

Dahl, Bart J.; Branchaud, Bruce P. "Synthesis and Characterization of a Functionalized Chiral Biaryl Capable of Exhibiting Unidirectional Bond Rotation." *Tetrahedron Lett.* **2004**, *45*, 9599-9602.

## PRESENTATIONS

### University of Wisconsin - Eau Claire

Kitzrow, Jonathan P.; Patrow, Joel G.; Prust, Erin R.; Carlson, Erik. J.; Dahl, Bart J. "Synthesis and comparison of various 6-aryldibenzo[b,d]pyrylium salts." 23rd Annual UWEC Student Research Day (CERCA), Eau Claire, WI, April 27- May 1, 2015. Poster Presentation.

Kitzrow, Jonathan P.; Patrow, Joel G.; Prust, Erin R.; Carlson, Erik. J.; Dahl, Bart J. "Synthesis and Halochromism of 6-Aryldibenzo[b,d]pyrylium Salts." 7th Annual Wisconsin Science and Technology Symposium. University of Wisconsin-Eau Claire, Eau Claire, WI. July 21, 2014.

Dressler, Justin J.; Miller, Sarah A.; Dahl, Bart J. "Terphenyl Dilactone pH and Redox-Driven Molecular Switches." 22nd Annual UWEC Student Research Day, Eau Claire, WI, April 28-May 2, 2014. Poster Presentation.Patrow, Joel G.; Dahl, Bart. J. "The Synthesis and Halochromism of 6-Aryldibenzo[b,d]pyrylium Salts." 22nd Annual UWEC Student Research Day, Eau Claire, WI, April 28- May 2, 2014. Poster Presentation.

Dressler, Justin J.; Miller, Sarah A.; Dahl, Bart J. "Terphenyl Dilactone pH and Redox-Driven Molecular Switches." 13th Annual University of Wisconsin-System Symposium for Undergraduate Research and Creative Activity, Milwaukee, WI, April 11, 2014. Poster Presentation.

Patrow, Joel G.; Dahl, Bart. J. "The Synthesis and Halochromism of 6-Aryldibenzo[b,d]pyrylium Salts." 13th Annual University of Wisconsin-System Symposium for Undergraduate Research and Creative Activity, Milwaukee, WI, April 11, 2014. Poster Presentation.

Dahl, Bart J. "pH-Driven Geometry Switching in Conjugated Planar Organic Molecules." University of Wisconsin-Oshkosh. Oshkosh, WI, Oct 4, 2013. Invited Oral Presentation.

Meeuwsen, Brian T.; Dahl, Bart. J. "Synthesis of Deuterated, Protected Amino Acids-Tyrosine and Serine." 21st Annual UWEC Student Research Day, Eau Claire, WI, May 1-2, 2013. Poster Presentation.

Patrow, Joel G.; Dahl, Bart J. "The Synthesis and Halochromism of 6-Aryldibenzo[b,d]pyrylium Salts." 21st Annual UWEC Student Research Day, Eau Claire, WI, May 1-2, 2013. Poster Presentation.

Sortedahl, Nicholas J.; Meeuwsen, Brian T.; Dahl, Bart J. "Progress toward a propeller-shaped oligophenyl lactone with reversible geometry switching." 21st Annual UWEC Student Research Day, Eau Claire, WI, May 1-2, 2013. Poster Presentation.

Riel, Asia Marie S.; Dahl, Bart J. "Biphenyl and terphenyl lactone pH-driven molecular switches." 21st Annual UWEC Student Research Day, Eau Claire, WI, May 1-2, 2013. Poster Presentation.

Patrow, Joel G.; Prust, Erin R.; Carlson, Erik J.; Dahl, Bart J. "Synthesis and halochromism of 6-aryldibenzo[b,d]pyrylium salts." Abstracts of Papers, 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11, 2013, ORGN-659. Poster Presentation.

Sortedahl, Nicholas J.; Meeuwsen, Brian T.; Dahl, Bart J. "Progress toward a propeller-shaped oligophenyl lactone with reversible geometry switching." Abstracts of Papers, 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11, 2013, ORGN-656. Poster Presentation.

Riel, Asia Marie S.; Carlson, Erik J.; Ahola, Zachary J.; Dahl, Bart J. "Biphenyl and terphenyl lactone pH-driven molecular switches." Abstracts of Papers, 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11, 2013, ORGN-654. Poster Presentation

Dahl, Bart J. "pH-driven geometry switching in conjugated planar organic molecules."Abstracts of Papers, 245th ACS National Meeting & Exposition, New Orleans, LA, United States, April 7-11, 2013, ORGN-6. Invited Oral Presentation

Riel, Asia M. S.; Dahl, Bart J. A "Smart" Biphenyl Lactone Containing a Nitro Acceptor and Methoxy Donor." 20th Annual UWEC Student Research Day, Eau Claire, WI, April 30-May 2, 2012. Poster Presentation.

Sortedahl, Nicholas J.; Dahl, Bart J. "Synthesis and Study of Monodispersed Oligophenyl Lactones." 20th Annual UWEC Student Research Day, Eau Claire, WI, April 30-May 2, 2012. Poster Presentation.

Wiltgen, Hilary, E.; Dahl, Bart J. "Synthesis and Characterization of "Smart" Biaryl Sultines." 20th Annual UWEC Student Research Day, Eau Claire, WI, April 30-May 2, 2012. Poster Presentation.

Carlson, Erick J.; Dahl, Bart J. "Synthesis and Study of Methoxy-Donor/Cyano-Acceptor Biphenyl and Terphenyl Lactones." 20th Annual UWEC Student Research Day, Eau Claire, WI April 30-May 2, 2012. Poster Presentation.

Carlson, Erick J.; Dahl, Bart J. "Synthesis and study of methoxy-donor cyano-acceptor biphenyl and terphenyl lactones." Abstracts of Papers, 243rd ACS National Meeting & Exposition, San Diego, CA, United States, March 25-March 29, 2012, ORGN-109. Poster Presentation.

Riel, Asia M.; Dahl, Bart J. "Smart biphenyl lactone containing a nitro acceptor and methoxy donor capable of pH-driven dihedral angle switching." Abstracts of Papers, 243rd ACS National Meeting & Exposition, San Diego, CA, United States, March 25-March 29, 2012, ORGN-108. Poster Presentation.

Dahl, B. J. "Flat to Fun: Making Molecules with Shapes that Influence Function" UWEC Faculty Forum Series, Eau Claire, WI, November 16, 2011. Invited Oral Presentation.

Carlson, E.; Riel, A.; Dahl B. J. "The Design, Synthesis, and Characterization of "Smart" Donor-Acceptor Biaryls" 19th Annual UWEC Student Research Day, Eau Claire, WI May 2-4, 2011. Poster Presentation.

University of Oregon

Dahl, B. J.; Lin, Y.; Branchaud, B. P. "Unidirectional Aryl-Aryl Bond Rotation in Biaryl Lactone Prototypical Synthetic Molecular Motors" Abstracts of Papers, 231st ACS National Meeting, Atlanta, GA, United States, March 26-30, 2006, ORGN-665. Oral Presentation

Dahl, B. J.; Branchaud, B. P. "Toward Synthetic Molecular Motors: Studies of Chiral Biaryls Designed to Exhibit Unidirectional Bond Rotation" Abstracts of Papers, 229th ACS National Meeting, San Diego, CA, United States, March 13-17, 2005, ORGN-217. Poster Presentation.Dahl, B. J.; Lin, Y.; James, Z.; Schwenger, T.; Branchaud, B. P. "In Pursuit of Chiral Biaryl Synthetic Molecular Motors and Ratchets" University of Oregon Materials Science Institute Annual Retreat, Skamania Lodge, WA, United States, September 2005. Poster Presentation.

Dahl, B. J.; Lin, Y.; Branchaud, B. P. "The Design and Synthesis of Functionalized Chiral Biaryls Capable of Exhibiting Molecular Motor Properties" University of Oregon Materials Science Institute Annual Retreat, Timberline Lodge, OR, United States, September 2004. Invited Oral Presentation.

Dahl, B. J.; Linke, H.; Branchaud, B.P. "Nanomachines" Oregon Nanoscience and Microtechnologies Institute Open House Meeting, Corvallis, OR, United States, April 2004. Poster Presentation.

Dahl, B. J.; Branchaud, B. P. "Toward single molecule motors: Exploring unidirectional bond rotation" Abstracts of Papers, 227th ACS National Meeting, Anaheim, CA, United States, March 28-April 1, 2004, ORGN-351. Poster Presentation.

Dahl, B. J.; Branchaud, B. P. "Synthetic Molecular Motors" University of Oregon Materials Science Institute Annual Retreat, Timberline Lodge, OR, United States, September 2003. Poster Presentation.

PROFESSIONAL MEMBERSHIPS

American Chemical Society, Organic Division

## SYNERGYSTIC ACTIVITIES

Faculty Advisor for the UWEC ACS-SA. 2012-present

Journal Manuscript Referee: Organic Letters; Optics Express; Desalination and Water Treatment Science and Engineering Referee; Tetrahedron Letters; Journal of Chemical Education; ACS Applied Materials and Interfaces; The Chemical Educator

Grants Proposal Referee: American Chemical Society Petroleum Research Fund; UWEC Office of Research and Sponsored Programs

Textbook Reviewer: McGraw-Hill Online Homework