

DEANNA L. ZUBRIS

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EDUCATION

- Ph.D., Chemistry** July 2000
California Institute of Technology, Pasadena, CA
Advisor: Professor John E. Bercaw
Investigations of the Origin of Stereocontrol in Syndiospecific Ziegler-Natta Polymerizations
- B.S., Chemistry, magna cum laude** May 1995
University of Rochester, Rochester, NY
Advisor: Professor William D. Jones
Synthesis of cobalt and rhodium organometallic complexes for C-C bond activation studies

PROFESSIONAL EXPERIENCE

- Villanova University, Villanova, PA* August 2022–Present
Director, Chemistry Graduate Program
- Villanova University, Villanova, PA* August 2021–Present
Professor of Chemistry
- Villanova University, Villanova, PA* August 2009–Present
Associate Professor of Chemistry
- Villanova University, Villanova, PA* August 2002–August 2009
Assistant Professor of Chemistry
- Harvard University, Cambridge, MA* September 2000–July 2002
National Institutes of Health Postdoctoral Fellow
Advisor: Professor Andrew G. Myers
Developed methodology for the synthesis of a library of piperazines with varying substitution

HONORS

- 2022 Honors Thesis Mentor Award, *Honors Program*, Villanova University.
- 2019 Elizabeth Bingham Mentoring Award, *Association for Women in Science – Philadelphia*.
- President, *Sigma Xi*, Villanova Chapter, Villanova University, Fall 2017–Spring 2018.
- President, *Phi Beta Kappa, Sigma Chapter of PA*, Villanova University, Fall 2005–Spring 2010.
- ACS Younger Chemists Committee Leadership Development Award*, October 31, 2004.
- National Institutes of Health Postdoctoral Fellowship*, 2000–2002.
- Dow Chemical Company Travel Fellowship*, Department of Chemistry, Caltech, 1998.
- Phi Beta Kappa National Honor Society (Iota of New York)*, 1995.

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PROFESSIONAL AFFILIATIONS

American Chemical Society, 1994–present, member (inorganic, organic, and polymer divisions).
Sigma Xi, 2004–present, member.

PUBLICATIONS

(* denotes corresponding author)

Independent Publications as Principal Investigator at Villanova University

(*student co-authors are underlined*)

Thierer, L. M.; Jenny, S. E.; Shastri, V.; Donley, M. R.; Round, L. M.; Piro, N. A.; Kassel, W. S.; Brown, C. L.; Dudley, T. J.; Zubris, D. L.* Amino pyridine iron(II) complexes: characterization and catalytic application for Atom Transfer Radical Polymerization and Catalytic Chain Transfer. *J. Organomet. Chem.* **2020**, *924*, 121456.

Lazzara, N.; Rosano, R.; Vagadia, P.; Giovine, M.; Bezpalko, M.; Piro, N.; Kassel, W.; Boyko, W.; Zubris, D.; Schrader, K.; Wedge, D. E.; Duke, S.; Giuliano, R.* Synthesis and Biological Evaluation of 6-[(1R)-1-hydroxyethyl]-2,4a(R),6(S),8a(R)-tetrahydropyrano-[3,2-b]-pyran-2-one and Structural Analogs of the Putative Structure of Diplopyrone. *J. Org. Chem.* **2019**, *84*, 666-678.

Lovett, D. M.; Thierer, L. M.; Santos, E. E. P.; Hardie, R. L.; Dougherty, W. G.; Piro, N. A.; Kassel, W. S.; Cromer, B. M.; Coughlin, E. B.; Zubris, D. L.* Structural analysis of imino- and amino-pyridine ligands for Ni(II): Precatalysts for the polymerization of ethylene. *J. Organomet. Chem.* **2018**, *863*, 44-53.

Rotella, M.; Bezpalko, M.; Piro, N.; Lazzara, N.; Kassel, W. S.; Zubris, D.; Giuliano, R.* Synthesis, x-ray crystallographic and computational analysis of 2,3-dideoxy- α/β -D-erythro-hexopyranosyl cyanides. Anomeric effect of the cyano group. *Stereochemistry and Global Connectivity: The Legacy of Ernest L. Eliel Volume 1* (pp. 155-170), **2017**.

Zubris, D. L.*; Minbiole, K. P. C.*; Wuest, W. M.* Polymeric Quaternary Ammonium Compounds: Versatile Antimicrobial Materials. *Current Topics in Medicinal Chemistry* **2017**, *14*, 305-318. Invited review article.

Vagadia, P. P.; Brown, S. P.; Zubris, D. L.; Piro, N. A.; Boyko, W. J.; Kassel, W. S.; Giuliano, R. M.* Stereoselective Synthesis of 7-Deoxy-1,2;3,4-Di-O-Isopropylidene-D-glycero- α -D-galacto-Heptopyranose. *Carbohydrate Chemistry: Proven Synthetic Methods, Volume 3, Chapter 31*, **2015**.

Dudley, T. J.; Beck, J. E.; Santos, E. E. P.; Johnston, K. A.; Kassel, W. S.; Dougherty, W. G.; Boyko, W. J.; Zubris, D. L.* Conformational Analysis via Calculations and NMR Spectroscopy for Isomers of the Mono(imino)pyridine Ligand, 2- $\{(2,6\text{-Me}_2\text{-C}_6\text{H}_3)\text{NC}(i\text{-Pr})\}$ C₅H₄N. *RSC Adv.* **2012**, *2*, 6237-6244.

Steves, J. E.; Kennedy, M. D.; Chiang, K. P.; Kassel, W. S.; Dougherty, W. G.; Dudley, T. J.; Zubris, D. L.* Synthesis of a bulky bis(imino)pyridine ligand: A methodology for systematic variation of steric bulk and energetic implications for metalation. *Dalton Trans.* **2009**, 1214–1222.

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Axtell, J. A.; Thai, S. D.; Morton, L. A.; Kassel, W. S.; Dougherty, W. G.; Zubris, D. L.* Syntheses of *rac/meso*-{PhP(3-*t*-Bu-C₅H₃)₂}-Zr{RN(CH₂)₃NR}, structural analyses of *rac*-{PhP(3-*t*-Bu-C₅H₃)₂}-Zr{RN(CH₂)₃NR} (where R is SiMe₃ or Ph), and *meso* to *rac* isomerization. *J. Organomet. Chem.* **2008**, *25*, 3741–3750.

Zubris, D. L.* Doubly Bridged Metallocenes for Stereoselective Propylene Polymerization. In *Stereoselective Polymerization with Single-Site Catalysts*, Baugh, L. S., Canich J. M., Eds.; Taylor & Francis: Boca Raton, FL, 2008, pp. 101–134. Invited book chapter.

Supervised Publications

Chirik, P. J.; Zubris, D. L.; Ackerman, L. J.; Henling, L. M.; Bercaw, J. E. Preparation of *ansa*-Niobocene and *ansa*-Tantalocene Olefin Hydride Complexes as Transition State Analogs in Metallocene-Catalyzed Olefin Polymerization. *Organometallics* **2003**, *22*, 172–187.

Perthuisot, C.; Edelbach, B. L.; Zubris, D. L.; Simhai, N.; Iverson, C. N.; Muller, C.; Satoh, T.; Jones, W. D. Cleavage of the Carbon-Carbon Bond in Biphenylene using Transition Metals. *J. Mol. Catal. A: Chem.* **2002**, *189*, 157–168.

Zubris, D. L.; Veghini, D.; Herzog, T. A.; Bercaw, J. E. Reactivity and Mechanistic Studies of Stereocontrol for Ziegler-Natta Polymerization Utilizing Doubly-Silylene Bridged Group 3 and Group 4 Metallocenes. In *Olefin Polymerization: Emerging Frontiers*; Arjunan, P., McGrath, J. E., Hanlon, T. L., Eds.; ACS Symposium Series 749; American Chemical Society: Washington, DC, 2000, pp 2–14.

Millar, S. P.; Zubris, D. L.; Bercaw, J. E.; Eisenberg, R. On the Mechanism of Dihydrogen Addition to Tantalocene Complexes. *J. Am. Chem. Soc.* **1998**, *120*, 5329–5330.

Perthuisot, C.; Edelbach, B. L.; Zubris, D. L.; Jones, W. D. C-C Activation in Biphenylene. Synthesis, Structure, and Reactivity of (C₅Me₅)₂M₂(2,2'-biphenyl) (M = Rh, Co). *Organometallics* **1997**, *16*, 2016–2023.

Herzog, T. A.; Zubris, D. L.; Bercaw, J. E. A New Class of Zirconocene Catalysts for the Syndiospecific Polymerization of Propylene and its Modification for Varying Polypropylene from Isotactic to Syndiotactic. *J. Am. Chem. Soc.* **1996**, *118*, 11988–11989.

RECENT EXTERNAL GRANT SUPPORT

Jean Dreyfus Lectureship for Undergraduate Institutions: The Camille and Henry Dreyfus Foundation, Inc., Award period: 10/28/20–10/28/23. \$18,500.

Petroleum Research Fund (PRF) Undergraduate Research Grant. Award period: 9/01/19–8/31/22; currently under a no-cost extension. “Probing the role of ligand electronics in iron catalyzed ATRP,” \$70,000.

INVITED PRESENTATIONS

“Metal catalyzed polymerizations.” Ursinus College, Collegeville, PA, February 13, 2023.

“Nickel and iron complexes for metal catalyzed polymerizations.” Susquehanna University, Selinsgrove, PA, September 27, 2019.

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"Polymer chemistry and catalytic applications." Bryn Mawr College, Bryn Mawr, PA, February 5, 2018.

"Nickel and iron complexes for metal catalyzed polymerizations." Philadelphia Inorganic Colloquium, Swarthmore College, Swarthmore, PA, October 28, 2017.

"Development of imino and amino pyridine iron(II) catalysts for Atom Transfer Radical Polymerization (ATRP)." Invited oral presentation at the 2017 Mid Atlantic Regional Meeting (MARM), Hershey, PA, June 4-6, 2017. Abstract: MARM-385.

"Sterically hindered ligands for nickel(II): novel catalysts for polyethylene formation." Haverford College, Haverford, PA, April 17, 2015.

"Structural analysis of mono(imino)pyridine ligands for Ni(II) : Precatalysts for the oligomerization of ethylene." Invited oral presentation at the 248th National Meeting of the American Chemical Society, San Francisco, CA, August 10-14, 2014. Abstract: INOR-404.

"Sterically hindered ligands and their metal complexes: novel catalysts for polyolefin formation." St. John's University, Queens, NY, December 5, 2013.

"Structural analysis of mono(imino)pyridine ligands for Ni(II): precatalysts for the oligomerization of ethylene." Invited oral presentation at the 246th National Meeting of the American Chemical Society, Indianapolis, IN, September 8-12, 2013. Abstract: INOR-237.

"Synthesis of sterically hindered bis(imino)pyridine ligands and structural implications for metalation." St. Joseph's University, Philadelphia, PA, October 14, 2009.

"Synthesis of sterically hindered bis(imino)pyridine ligands." The State University of New Jersey, Rutgers – Camden, Camden, NJ, March 3, 2008.

CONTRIBUTED PRESENTATIONS

(presenter is underlined)

Rongo, A.; Garcia, N.; O'Donnell, K.; Gau, M. R.; Carroll, P.; Zubris, D. L.* "Copper(I) CNC pincer complexes: Synthesis, characterization, and opportunities for catalysis." Oral presentation at the Spring National Meeting of the American Chemical Society, Indianapolis, IN, March 26-30, 2023.

Bernhard, D. M.; Zubris, D. L.*; Casillas, E.* "Synthesis of chelating ligands containing ring-expanded *N*-heterocyclic carbenes." Poster presentation at the Spring National Meeting of the American Chemical Society, Indianapolis, IN, March 26-30, 2023.

Farry, K.; O'Donnell, K.; Garcia, N.; Zubris, D. L.* "Synthesis of amino pyridine ligands for use in iron(II) polymerization catalysts." Poster presentation at the Philadelphia Inorganic Colloquium, Villanova University, Villanova, PA, October 29, 2022.

Huwar, J.; Zubris, D. L.* "Synthesis, characterization, and metalation of two oxygen-functionalized *N*-heterocyclic carbene (NHC) ligands with silver." Poster presentation at the Philadelphia Inorganic Colloquium, Villanova University, Villanova, PA, October 29, 2022.

Rongo, A.; Garcia, N.; O'Donnell, K.; Gau, M. R.; Carroll, P.; Zubris, D. L.* "Copper(I) CNC pincer complexes: Synthesis, characterization, and opportunities for catalysis." Poster

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presentation at the Philadelphia Inorganic Colloquium, Villanova University, Villanova, PA, October 29, 2022.

Garcia, N.; O'Donnell, K.; Zubris, D. L.* "Synthesis of bis-NHC ligands and their corresponding iron (II) complexes for use in polymerization of petroleum derived monomers." Poster presentation at the Philadelphia Inorganic Colloquium, St. Joseph's University, Philadelphia, PA, November 9, 2020.

Cheng, D.; Fish, Z.; Ngo, D. K.; Casillas, E. G.*; Zubris, D. L.* "A Family of Chelating Ligands Containing Ring Expanded N-Heterocyclic Carbenes." Poster presentation at the Philadelphia Inorganic Colloquium, St. Joseph's University, Philadelphia, PA, November 9, 2020.

Thierer, L. M.; Jenny, S. E.; Shastri, V.; Donley, M. R.; Ngo, D. K.; Piro, N. A.; Bezpalko, M. W.; Kassel, W. S.; Casillas, E. G.; Zubris, D. L.* "Atom Transfer Radical Polymerization: Challenges and Opportunities for Iron Catalysts." 2019 Poster presentation at the Gordon Research Seminar and Gordon Research Conference in Organometallic Chemistry, Salve Regina University, Newport, RI, July 6-12, 2019.

Shastri, V.; Thierer, L. M.; Jenny, S. E.; Donley, M. R.; Round, L. M.; Piro, N. A.; Kassel, W. S.; Brown, C. L.; Dudley, T. J.; Zubris, D. L.* "Development of imino and amino pyridine iron(II) catalysts for Atom Transfer Radical Polymerization (ATRP)." Poster presentation at the 255th National Meeting of the American Chemical Society, New Orleans, LA, March 18-22, 2018. Abstract: INOR-852.

Jenny, S. E.; Thierer, L. M.; Donley, M. R.; Round, L. M.; Piro, N. A.; Kassel, W. S.; Zubris, D. L.* "Application of amino and imino pyridine iron(II) catalysts in Atom Transfer Radical Polymerization." Oral presentation at the 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2-6, 2017. Abstract: INOR-1444.

Whitermore, Z. D.; Duggan, S. M.; Jennings, M. C.; Wuest, W. M.; Minbirole, K.; Zubris, D. L.* "Synthesis and characterization of multi-cationic quaternary ammonium containing polymers." Poster presentation at the 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2-6, 2017. Abstract: POLY-406.

Donley, M. R.; Jenny, S. E.; Dudley, T. J.; Zubris, D. L.* "Ligand development for iron catalyzed Atom Transfer Radical Polymerization." Poster presentation at the 253rd National Meeting of the American Chemical Society, San Francisco, CA, April 2-6, 2017. Abstract: INOR-373.

Jenny, S. E.; Donley, M. R.; Thierer, L. M.; Round, L. M.; Piro, N. A.; Kassel, W. S.; Zubris, D. L.* "Development of iron(II) catalysts for Atom Transfer Radical Polymerization." Poster presentation at the ACS-Philadelphia Section 17th Annual Student Poster Session, University of the Sciences, Philadelphia, PA, March 27, 2017.

Jenny, S. E.; Donley, M. R.; Thierer, L. M.; Round, L. M.; Piro, N. A.; Kassel, W. S.; Zubris, D. L.* "Development of iron(II) catalysts for Atom Transfer Radical Polymerization." Poster presentation at the Philadelphia Inorganic Colloquium, Villanova University, Villanova, PA, November 5, 2016.

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Shastri, V.; Zubris, D. L.* "Ligand Development for Iron Catalyzed Atom Transfer Radical Polymerization." Poster presentation at the Philadelphia Inorganic Colloquium, Villanova University, Villanova, PA, November 5, 2016.

Whitermore, Z. D.; Duggan, S. M.; Minbirole, K.; Zubris, D. L.* "Synthesis and Characterization of Multi-Cationic Quaternary Ammonium Containing Polymers." Poster presentation at the Philadelphia Inorganic Colloquium, Villanova University, Villanova, PA, November 5, 2016.

Jenny, S. E.; Donley, M. R.; Thierer, L. M.; Round, L. M.; Piro, N. A.; Kassel, W. S.; Zubris, D. L.* "Development of iron(II) catalysts for Atom Transfer Radical Polymerization." Poster presentation at the 252nd National Meeting of the American Chemical Society, Philadelphia, PA, August 21-25, 2016. Abstract: INOR-474.

Donley, M. R.; Shastri, V.; Zubris, D. L.* "Ligand Development for Iron Catalyzed Atom Transfer Radical Polymerization." Poster presentation at the Mid-Atlantic Seaboard Inorganic Symposium (MASIS), University of Pennsylvania, Philadelphia, PA, July 20, 2016.

Jenny, S. R.; Thierer, L. M.; Donley, M. R.; Round, L. M.; Boyko, W. J.; Piro, N. A.; Kassel, W. S.; Zubris, D. L.* "Synthesis and Characterization of Iron(II) Catalysts for Atom Transfer Radical Polymerization (ATRP)." Poster presentation at the Mid-Atlantic Seaboard Inorganic Symposium (MASIS), University of Pennsylvania, Philadelphia, PA, July 20, 2016.

Thierer, L. M.; Round, L. M.; Piro, N. A.; Kassel, W. S.; Zubris, D. L.* "Development of imino and amino pyridine iron(II) catalysts for Atom Transfer Radical Polymerization." 2015 Poster presentation at the Gordon Research Conference in Organometallic Chemistry, Salve Regina University, Newport, RI, July 16-17, 2015.

Thierer, L. M.; Zubris, D. L.* "Development of imino and amino pyridine iron (II) catalysts for Atom Transfer Radical Polymerization." Poster presentation at the Philadelphia Inorganic Colloquium (PIC), University of the Sciences, Philadelphia, PA, February 7, 2015.

Thierer, L. M.; Round, L. M.; Zubris, D. L.* "Development of imino and amino pyridine iron (II) catalysts for Atom Transfer Radical Polymerization." Poster presentation at the Mid-Atlantic Seaboard Inorganic Symposium (MASIS), Temple University, Philadelphia, PA, July 30, 2014.

Lovett, D. M.; Piro, N. A.; Dougherty, W. G.; Kassel, W. S.; Cromer, B. M.; Coughlin, E. B.; Zubris, D. L.* "Sterically hindered (imino)pyridine Ni(II) complexes: precatalysts for the oligomerization of ethylene." Poster presentation at the Mid-Atlantic Seaboard Inorganic Symposium (MASIS), Temple University, Philadelphia, PA, July 30, 2014.

Shamberg, J.; Rauh, M.; Jaeger, N.; Boyko, W. J.; Zubris, D. L.* "Synthesis Of *Ansa*-Zirconocenes with 4-Carbon Alkene Linkers through Ring Closing Metathesis." Poster presentation at the Mid-Atlantic Seaboard Inorganic Symposium (MASIS), Temple University, Philadelphia, PA, July 30, 2014.

Shamberg, J.; Rauh, M.; Jaeger, N.; Boyko, W. J.; Zubris, D. L.* "Synthesis Of *Ansa*-Zirconocenes with 4-Carbon Alkene Linkers through Ring Closing Metathesis." Poster presentation at the ACS-Philadelphia Section 14th Annual Student Poster Session, University of the Sciences, Philadelphia, PA, March 24, 2014.

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Zubris, D. L.*; Duffin, T. O.; Santos, E. E. P.; Hardie, R. L.; Beck, J. E.; Johnston, K. A.; Lovett, D. M.; Dougherty, W. G.; Kassel, W. S.; Lagalante, A. F.; Boyko, W. J.; Dudley, T. J. "Structural analysis of mono(imino)pyridine ligands for Ni(II) : precatalysts for the oligomerization of ethylene." 2012 Poster presentation at the Gordon Research Conference in Organometallic Chemistry, Salve Regina University, Newport, RI, July 12, 2012.

Rauh, M.; Jaeger, N.; Boyko, W. J.; Zubris, D. L.* "Asymmetric Bis(imino)pyridine Ligands for Ethylene Polymerization Catalysis." Poster presentation at the ACS-Philadelphia Section 12th Annual Student Poster Session, Temple University, Philadelphia, PA, February 23, 2012. This poster was awarded second place in the undergraduate division.

Duffin, T. O.; Hardie, R. L.; Kennedy, M. D.; Dudley, T. J.; Zubris, D. L.* "Asymmetric Bis(imino)pyridine Ligands for Ethylene Polymerization Catalysis." Poster presentation at the ACS-Philadelphia Section 12th Annual Student Poster Session, Temple University, Philadelphia, PA, February 23, 2012. This poster was awarded honorable mention in the graduate division.

Santos, E. E. P.; Johnston, K. A.; Lovett, D. M.; Hardie, R. L.; Dougherty, W. G.; Kassel, W. S.; Lagalante, A. F.; Boyko, W. J.; Dudley, T. J.; Zubris, D. L.* "Synthesis of mono(imino)pyridine ligands complexed with Ni(II) as precatalysts for the oligomerization of ethylene." Poster presentation at the ACS-Philadelphia Section 12th Annual Student Poster Session, Temple University, Philadelphia, PA, February 23, 2012.

Johnston, K. A.; Zubris, D. L.* "Mono(imino)pyridine nickel(II) catalysts for polyethylene generation." Oral presentation at the 75th Intercollegiate Student Chemist Convention, Regional, West Chester University, West Chester, PA, April 16, 2011.

Hardie, R. L.; Kennedy, M. D.; Axtell, J. C., Steves, J. E.; Kassel, W. S.; Dougherty, W. G.; Dudley, T. J.; Zubris, D. L.* "Studies on asymmetric bis (imino) pyridines and their synthetic precursors." 41st American Chemical Society Middle Atlantic Regional Meeting (MARM), Regional, Wilmington, DE, April 13, 2010.

Axtell, J. C.; Thai, S. D.; Morton, L. A.; Kassel, W. S.; Dougherty, W. G., Jr.; Zubris, D. L.* "Synthesis and meso to rac isomerization of *rac/meso-ansa*-zirconocenes with a phosphine linker." Oral presentation at the 237th National Meeting of the American Chemical Society, Salt Lake City, UT, March 22-26, 2009. Abstract: INOR-596.

Steves, J. E.; Kennedy, M. D.; Chiang, K. P.; Kassel, W. S.; Dougherty, W. G., Jr.; Dudley, T. J.; Zubris, D. L.* "Synthesis of a sterically hindered bis(imino)pyridine compound as a potential ligand for iron(II)." Oral presentation at the 237th National Meeting of the American Chemical Society, Salt Lake City, UT, March 22-26, 2009. Abstract: INOR-595.

Kennedy, M. D.; Steves, J. E.; Chiang, K. P.; Kassel, W. S.; Dougherty, W. G., Jr.; Dudley, T. J.; Zubris, D. L.* "New methodology for synthesis of C_s - and C_1 -symmetric bis(imino)pyridines and energetic implications for metalation." Poster presentation at the 237th National Meeting of the American Chemical Society, Salt Lake City, UT, March 22-26, 2009. Abstract: INOR-529.

Zubris, D. L.*; Morton, L. A.; Thai, S. D. "Synthesis and characterization of novel *ansa*-zirconocenes with a phosphine linker." Oral presentation at the 39th Middle Atlantic Regional Meeting of the American Chemical Society, Collegeville, PA, May 16-18, 2007. Abstract: MARM-010.

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Morton, L. A.; Zubris, D. L.* "Synthesis and characterization of $\text{PhP}(\eta^5\text{-}t\text{-BuCp})_2\text{ZrCl}_2$: A novel *ansa*-zirconocene with a phosphine linker." Poster presentation at the 233rd National Meeting of the American Chemical Society, Chicago, IL, March 25-29, 2007. Abstract: INOR-962.

Thai, S. D.; Daundikhed, N. S.; Zubris, D. L.* "Progress toward the synthesis of $[(\text{Me}_2\text{Si})(\text{PhC}=\text{CPh})\{\eta^5\text{-C}_5\text{H}_2\text{-4-}t\text{-Bu}\}_2]\text{ZrCl}_2$." Poster presentation at the 233rd National Meeting of the American Chemical Society, Chicago, IL, March 25-29, 2007. Abstract: INOR-952.

Chiang, K. P.; Zubris, D. L.* "Synthesis of Pyridine-bis(imine) Ligands." 70th Annual Intercollegiate Student Chemists Convention, Ursinus College, Collegeville, PA, April 22, 2006.

Chong, A. A.; Zubris, D. L.* "Progress Toward the Synthesis of Silicon/Phosphorous Doubly-Bridged Group 4 Metallocenes." Poster presentation at the annual student poster session of the Catalysis Club of Philadelphia, Claymont, DE, January 20, 2005.

Daundikhed, N.; Zubris, D. L.* "Progress Towards the Synthesis of an Etheno-Silyl Doubly-Bridged *ansa*-Zirconocene Catalyst for the Polymerization of α -Olefins." Poster presentation at the annual student poster session of the Catalysis Club of Philadelphia, Claymont, DE, January 20, 2005.

Chong, A. A.; Zubris, D. L.* "Progress Toward the Synthesis of Silicon/Phosphorous Doubly-Bridged Group 4 Metallocenes." Poster presentation at the 32nd Northeast Regional Meeting of the American Chemical Society, Rochester, NY, October 31-November 3, 2004. Abstract: GEN-081.

Zubris, D. L.; Chirik, P. J.; Henling, L. M.; Bercaw, J. E. "Olefin adducts of group 5 metallocenes as models for Ziegler-Natta polymerization." Oral presentation at the 218th National Meeting of the American Chemical Society, New Orleans, LA, August 22-26, 1999. Abstract: INOR-522.

Zubris, D. L.; Henling, L. M.; Day, M. W.; Bercaw, J. E. "Synthesis and reactivity of doubly (silylene-bridged) group 3 metallocenes." Poster presentation at the 217th National Meeting of the American Chemical Society, Anaheim, CA, March 21-25, 1999. Abstract: INOR-152.

Millar, S. P.; Zubris, D. L.; Bercaw, J. E.; Eisenberg, R. "Parahydrogen induced polarization in hydrogen addition to tantalocene complexes." Oral presentation at the 215th National Meeting of the American Chemical Society, Dallas, TX, March 29-April 2, 1998. Abstract: INOR-024.

Internal Presentations (presenter is underlined)

Acosta, E.; Rongo, A.; Zubris, D. L.* "Synthesis and solubility of CNC pincer ligand triflate salts." Villanova University Undergraduate Research Symposium, November 10, 2023.

Huwar, J.; Zubris, D. L.* "Synthesis, characterization, and computational analysis of oxygen-functionalized *N*-heterocyclic carbene ligands and associated silver(I) complexes." Villanova University Undergraduate Research Symposium, November 10, 2023.

Malik, S.; Farry, K.; Zubris, D. L.* "Synthesis and characterization of imino-pyridine iron(II) complexes." Villanova University Undergraduate Research Symposium, November 10, 2023.

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Bernhard, D. M.; Zubris, D. L.*; Casillas, E.* "Synthesis of chelating ligands containing ring-expanded *N*-heterocyclic carbenes." Villanova University Graduate Research Symposium, October 27, 2023.

Farry, K.; O'Donnell, K.; Garcia, N.; Zubris, D. L.* "Synthesis of amino pyridine ligands for use in iron(II) polymerization catalysts." Villanova University Undergraduate Research Symposium, November 11, 2022.

Huwar, J.; Zubris, D. L.* "Synthesis, characterization, and metalation of two oxygen-functionalized *N*-heterocyclic carbene (NHC) ligands with silver." Villanova University Undergraduate Research Symposium, November 11, 2022.

Rongo, A.; Garcia, N.; O'Donnell, K.; Gau, M. R.; Carroll, P.; Zubris, D. L.* "Copper(I) CNC pincer complexes: Synthesis, characterization, and opportunities for catalysis." Villanova University Undergraduate Research Symposium, November 11, 2022.

Rongo, A.; Garcia, N.; O'Donnell, K.; Zubris, D. L. "Synthesis, Characterization, and Metalation of Three Novel *N*-Heterocyclic Carbene (NHC) Ligands." Poster presentation at the 2022 Sigma Xi Villanova Chapter Research Poster Symposium, Villanova University, Villanova, PA, April 1, 2022.

Rongo, A.; Garcia, N.; O'Donnell, K.; Zubris, D. L. "Synthesis, Characterization, and Metalation of Three Novel *N*-Heterocyclic Carbene (NHC) Ligands." Villanova University Undergraduate Research Symposium, November 12, 2021.

Garcia, N.; O'Donnell, K.; Zubris, D. L.* "Synthesis of bis-NHC ligands and their corresponding iron (II) complexes for use in polymerization of petroleum derived monomers." Villanova University Undergraduate Research Symposium, September 13, 2019.

Cheng, D.; Fish, Z.; Ngo, D. K.; Casillas, E. G.*; Zubris, D. L.* "A Family of Chelating Ligands Containing Ring Expanded *N*-Heterocyclic Carbenes." Villanova University Undergraduate Research Symposium, September 13, 2019.

Shastri, V.; Zubris, D. L.* "Development of Imino and Amino Pyridine Iron(II) Catalysts for Atom Transfer Radical Polymerization." Oral presentation at the 2019 Senior Student Thesis Presentations, Department of Chemistry, Villanova University, Villanova, PA, May 3, 2019.

Shastri, V.; Thierer, L. M.; Jenny, S. E.; Donley, M. R.; Round, L. M.; Piro, N. A.; Kassel, W. S.; Brown, C. L.; Dudley, T. J.; Zubris, D. L.* "Development of imino and amino pyridine iron(II) catalysts for Atom Transfer Radical Polymerization (ATRP)." Poster presentation at the Oliver G. Ludwig Alumni Symposium, Celebrating 100 Years of the Department of Chemistry, Villanova University, March 22, 2019.

Shastri, V.; O'Donnell, K.; Minbiole, K. P. C.; Zubris, D. L.* "Synthesis and amine functionalization of a co-poly(oxetane) for use in antimicrobial polyQACs." Poster presentation at the Oliver G. Ludwig Alumni Symposium, Celebrating 100 Years of the Department of Chemistry, Villanova University, March 22, 2019.

Shastri, V.; O'Donnell, K.; Minbiole, K. P. C.; Zubris, D. L.* "Synthesis and amine functionalization of a co-poly(oxetane) for use in antimicrobial polyQACs." Villanova University Undergraduate Research Symposium, September 21, 2018.

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Shavin, A. C.; Boyko, W.; Zubris, D. L.* "Synthesis and Development of Two Ligands for Iron Catalyzed Atom Transfer Radical Polymerization." Villanova University Undergraduate Research Symposium, September 21, 2018.

Donley, M. R.; Zubris, D. L.* "Ligand development for iron catalyzed Atom Transfer Radical Polymerization." Oral presentation at the 2018 Silvestri Day Senior Student Thesis Presentations, Department of Chemistry, Villanova University, Villanova, PA, May 1, 2018.

Shastri, V.; Zubris, D. L.* "Development of Imino and Amino Pyridine Iron(II) Catalysts for Atom Transfer Radical Polymerization." Poster presentation at the 2018 Sigma Xi Villanova Chapter Research Poster Symposium, Villanova University, Villanova, PA, April 27, 2018.

Shastri, V.; Whitermore, Z. D.; Duggan, S. M.; Jennings, M. C.; Wuest, W. M.; Minbiole, K.; Zubris, D. L.* "A new approach to the synthesis of quaternary ammonium containing polymers." Villanova Undergraduate Summer Research Poster Session, September 8, 2017.

Shavin, A. C.; Donley, M. R.; Samples, E.; Dobereiner, G. E.; Zubris, D. L.* "Progress towards the synthesis of novel light-absorbing copolymers and development of electron-rich ligands for iron-catalyzed ATRP." Villanova Undergraduate Summer Research Poster Session, September 8, 2017.

Donley, M. R.; Jenny, S. E.; Dudley, T. J.; Zubris, D. L.* "Ligand development for iron catalyzed Atom Transfer Radical Polymerization." Poster presentation at the 2017 Sigma Xi Villanova Chapter Research Poster Symposium, Villanova University, Villanova, PA, April 28, 2017.

Jenny, S. E.; Donley, M. R.; Thierer, L. M.; Round, L. M.; Piro, N. A.; Kassel, W. S.; Zubris, D. L.* "Development of iron(II) catalysts for Atom Transfer Radical Polymerization." Villanova Undergraduate Summer Research Poster Session, September 21, 2016.

Donley, M. R.; Shastri, V.; Zubris, D. L.* "Ligand Development for Iron Catalyzed Atom Transfer Radical Polymerization." Villanova Undergraduate Summer Research Poster Session, September 10, 2016.

Palenchar, P.*; Zubris, D. L.*; Donley, M. R., "When do students learn chemistry?" Poster presentation at the 2016 Teaching and Learning Strategies at Villanova, VITAL, Villanova University, Villanova, PA, May 11, 2016.

Round, L. M.; Thierer, L. M.; Zubris, D. L.* "Development of imino and amino pyridine iron(II) catalysts for atom transfer radical polymerization." Villanova Undergraduate Summer Research Poster Session, September 10, 2014.

Zubris, D. L.*; Duffin, T. O.; Santos, E. E. P.; Hardie, R. L.; Beck, J. E.; Johnston, K. A.; Lovett, D. M.; Dougherty, W. G.; Kassel, W. S.; Lagalante, A. F.; Boyko, W. J.; Dudley, T. J. "Structural analysis of mono(imino)pyridine ligands for Ni(II) : precatalysts for the oligomerization of ethylene." 2014 Oliver G. Ludwig Alumni Symposium, Villanova University, March 14, 2014.

Shamberg, J.; Rauh, M.; Jaeger, N.; Boyko, W. J.; Zubris, D. L.* "Synthesis Of *Ansa*-Zirconocenes with 4-Carbon Alkene Linkers through Ring Closing Metathesis." 2014 Oliver G. Ludwig Alumni Symposium, Villanova University, March 14, 2014.

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Lovett, D. M.; Zubris, D. L.* “The synthesis of mono(imino)pyridine nickel(II) catalysts for polyethylene generation.” Sigma Xi Research Day, Villanova, PA, April 26, 2013.

Lovett, D. M.; Zubris, D. L.* “Mono(imino)pyridine nickel (II) catalysts for polyethylene generation.” Villanova Undergraduate Summer Research Poster Session, September 19, 2012.

Lovett, D. M.; Zubris, D. L.* “Mono(imino)pyridine nickel (II) catalysts for polyethylene generation.” Villanova Undergraduate Summer Research Poster Session, September 20, 2011.

Johnston, K. A.; Zubris, D. L.* “Mono(imino)pyridine nickel (II) catalysts for polyethylene generation.” Villanova Undergraduate Summer Research Poster Session, September 21, 2010.

Zubris, D. L.* "Sterically hindered ligands and their metal complexes: novel catalysts for polyolefin formation." Professional Development Seminar, Villanova University, Department of Chemistry, September 16, 2008.

Axtell, J.C.; Thai, S. D.; Zubris, D. L.* “Synthesis and Characterization of Singly Bridged Zirconocenes with Phosphine Linkers.” Villanova Undergraduate Summer Research Poster Session, September 25, 2007.

Steves, J. E.; Zubris, D. L.* “Synthesis and Characterization of a Pyridine bis(imine) Ligand Precursor.” Villanova Undergraduate Summer Research Poster Session, September 25, 2007.

Thai, S. D.; Daundikhed, N. S.; Zubris, D. L.* “Progress toward the synthesis of $[(\text{Me}_2\text{Si})(\text{PhC}=\text{CPh})\{\eta^5\text{-C}_5\text{H}_2\text{-4-}t\text{-Bu}\}_2]\text{ZrCl}_2$.” Sigma Xi Research Day, Villanova, PA, April 27, 2007. Poster awarded 1st prize for chemistry.

Chiang, K. P.; Zubris, D. L.* "Synthesis of Pyridine-bis(imine) Iron Compounds." Villanova Undergraduate Summer Research Poster Session, October 4, 2005.

Chiang, K. P.; Zubris, D. L.* "Synthesis of Pyridine-bis(imine) Iron Compounds." Villanova Undergraduate Summer Research Poster Session, September 28, 2004.

Chiang, K. P.; Zubris, D. L.* "Synthesis of Pyridine-bis(imine) Iron Compounds." Villanova Undergraduate Summer Research Poster Session, October 9, 2003.

EXTERNAL GRANT SUPPORT AND EQUIPMENT DONATIONS

National Science Foundation – Major Research Instrumentation (NSF – MRI). Minbirole, K. P. (PI), Egger, A. (co-PI), Giuliano, R. M. (co-PI), Umile, T. (co-PI), and Zubris, D. L. (co-PI). Award Period: 8/1/18–7/31/21. "MRI: Acquisition of a 500 MHz Nuclear Magnetic Resonance (NMR) Spectrometer to Enhance Undergraduate Research and Teaching at a Primarily Undergraduate Institution," \$510,990.

Equipment donation – Additives Division of Arkema, King of Prussia, PA, July 2007. Obtained laboratory glassware (net worth approximately \$5,000).

Petroleum Research Fund (PRF) Type G Research Grant. Award period: 9/01/06–8/31/08. “Doubly Bridged Metallocenes with Two Distinct Interannular Linkers: Synthesis and Regioselectivity for alpha-Olefin Polymerization,” \$35,000.

Equipment donation – Additives Division of Atofina Chemicals, King of Prussia, PA, May 2004. Obtained laboratory glassware (net worth approximately \$5,000).

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Equipment donation – GlaxoSmithKline, King of Prussia, PA, August 2003.
Obtained laboratory equipment (net worth approximately \$25,000).

Equipment donation – Ortho Clinical Diagnostics, Philadelphia, PA, December 2002.
Obtained gas chromatograph and ancillary components (net worth approximately \$20,000).

National Institutes of Health – National Research Service Award Postdoctoral Fellowship.
Award period: 2000-2002. “New Methods for Carbon Bond Formation.” Research carried out at Harvard University, grant number: 1 F32 GM20838-01.

VILLANOVA UNIVERSITY GRANT SUPPORT

Villanova University Summer Grant Program. Summer 2019. “Efficient and sustainable iron catalysts for transforming “less active monomers” (LAMs) into new materials,” \$12,500.

Villanova Institute of Teaching and Learning (VITAL) Mini-Grant, Villanova University. Zubris, D. L. (co-PI) and Palenchar, P. (co-PI). Award Period: 8/31/15–4/29/16. "Assessment as a Catalyst for Change in General Chemistry Lab I," \$6,455.50.

Faculty Development Grant, Villanova University, College of Liberal Arts and Sciences, March 2012, \$1,684.

Villanova University Summer Research Fellowship (SRF) and Research Support Grant (RSG). Summer 2003. “Coordination Polymerization of 1,1-Disubstituted Olefins,” \$9,700.

STUDENT RESEARCH COLLABORATORS – UNDERGRADUATE

Enzo Acosta: anticipated B.S. 2026. Researcher from Summer 2023-present.

Sophie Malik: anticipated B.S. 2026. Researcher from Summer 2023-present.

Kimora Farry: anticipated B.S. 2024. Researcher from Summer 2022-present.

Jessica Huwar: anticipated B.S. 2024. Researcher from Summer 2022-present.

Austin Rongo: anticipated B.S. 2024. Researcher from Summer 2021-present.

David Cheng: B.S. Biochemistry, May 2022. Current employer: Thomas Jefferson University Hospital.

Zoe Fish: B.S. Chemistry, May 2022. Current status: Ph.D. candidate at the University of Minnesota, Department of Chemistry.

Nicole Garcia: B.S. Chemistry, May 2022. Senior thesis title, “Metal-catalyzed synthesis of isoprene polymers with optimized isomer distribution.” Current employer: Johnson Matthey.

Katelynn O'Donnell: B.S. Chemistry, May 2021. Senior thesis title, “Synthesis of aminopyridine iron (II) catalysts for use in polymerization of isoprene.” Current status: Ph.D. candidate at the University of Massachusetts, Amherst, Department of Polymer Science and Engineering.

Vai Shastri: B.S. Chemistry, May 2019. Senior thesis title, “Development of Imino and Amino Pyridine Iron(II) Catalysts for Atom Transfer Radical Polymerization.” Current status: Ph.D. candidate at the University of Michigan, Department of Chemistry.

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Anna Shavin: B.S. Chemistry, December 2018. Current employer: Labcorp Drug Development: Covance.

Marianne Donley: B.S. Chemistry, May 2018. Senior thesis title, "Ligand development for iron catalyzed Atom Transfer Radical Polymerization." Current employer: Covestro.

Lindsey Round: B. S. Chemistry, May 2015. Obtained J.D. and M.S. in Forensic Science from Syracuse University. Current status: Associate at Saidman DesignLaw Group, LLC.

Maggie Johnson: B. S. Chemistry, May 2014. Obtained M.S in Pharmacology and Physiology from Drexel University. Current employer: Janssen.

Danielle Lovett: B. S. Chemistry, May 2013. (M.S. Chemistry, May 2015). Member of leadership team at Chemours for *The Women's Network*. Current employer: Chemours.

Michael McGetrick: B. S. Chemistry, May 2013. Obtained M.A. in Defense and Strategic Studies, Asia-Pacific Concentration from the U.S. Naval War College. Current status: Congressional Liaison for the U.S. Navy.

Katie Johnston: B. S. Chemistry, May 2012. Obtained Ph.D. in Chemistry from the University of Pittsburgh. Current status: Postdoctoral fellow in Food Science at Cornell University.

Margaret Rauh: B.S. Chemistry, May 2012. Current employer: AbbVie.

Jonathan Axtell: B. S. Chemistry, May 2010. Obtained Ph.D. in Chemistry from MIT. Served as Postdoctoral Fellow in Chemistry at the University of California, Los Angeles. Current employer: Dow.

Janelle Steves: B. S. Chemistry, May 2010. Obtained Ph.D. in Chemistry from the University of Wisconsin - Madison. Served as Postdoctoral Fellow in Chemistry at Princeton University. Current employer: GlaxoSmithKline

Susan Thai: B. S. Chemistry, December 2005. Current employer: U.S. Patent Office.

Margaret Greene: B.S. Chemistry, May 2005. Obtained Ph.D. in Chemistry from the University of California - Irvine. Current employer: BASF.

Karen Chiang: B.S. Chemistry, May 2006. Obtained Ph.D. in Chemistry from the University of Rochester. Current employer: Science Educator at Uncommon Schools, Rochester, NY.

Jennie Dilemma: B.S. Comprehensive Science, May 2003. Deceased.

STUDENT RESEARCH COLLABORATORS – M.S. AND POSTDOCTORAL

Gricelda Arredondo: co-advised with Dr. Eduard G. Casillas, anticipated M.S. 2025.

Donald Merle Bernhard: co-advised with Dr. Eduard G. Casillas, M.S. degree pending.

Anna Shavin: M.S. Chemistry, July 2021. M.S. thesis title, "Synthesis and Computational Studies of a Series of Mono(imino)pyridines with Thiol Substituents." Current status: Labcorp Drug Development: Covance.

Dalyna Ngo: co-advised with Dr. Eduard G. Casillas, M.S. Chemistry, April 2019. M.S. thesis title, "The Synthesis of Novel Chelating Ligands for Iron containing Ring Expanded *N*-Heterocyclic Carbenes." Current employer: Eurofins Lancaster Laboratories PSS, LLC.

DEANNA L. ZUBRIS

Zachary Whitermore: co-advised with Dr. Kevin P. C. Minbirole, M.S. Chemistry, April 2017. M.S. thesis title, "Synthesis and Characterization of Multi-Cationic Quaternary Ammonium Containing Polymers." Current employer: Physical Sciences Inc.

Sarah Jenny: M.S. Chemistry, April 2017. M.S. thesis title, "Development of Iron(II) Complexes for use in Atom Transfer Radical Polymerization (ATRP)." Current employer: Frontage Labs.

Laura Thierer: M.S. Chemistry, July 2015. M.S. thesis title, "Mono(imino)- and mono(amino)pyridine iron (II) catalysts for Atom Transfer Radical Polymerization." Current status: postdoctoral fellow at Villanova University.

Danielle Lovett: M.S. Chemistry, May 2015. M.S. thesis title, "Synthesis of mono(imino)pyridine ligands for Ni(II) catalyzed polymerizations and Synthesis of asymmetric bis(imino)pyridine ligands for Fe(II) catalyzed polymerizations." Current employer: Chemours.

Jonathan Shamberg: M.S. Chemistry, August 2014. M.S. thesis title, "Progress Towards the Synthesis of a Novel 4-Carbon Linked *ansa*-zirconocene: $[(CH_2(CH_3)C(CH_3)CH_2)-(3-t-BuC_5H_3)_2]ZrCl_2$." Current employer: Quaker Houghton.

Purav Vagadia: co-advised with Dr. Robert M. Giuliano, M.S. Chemistry, July 2014. M.S. thesis title, "Progress Toward the Synthesis of (-)-Diplopyrone." Current employer: Northwestern University.

Tess Duffin: M.S. Chemistry, June 2012. M.S. thesis title, "Synthesis of a Series of Mono(imino)pyridines And Synthesis of and Computational Studies on C_1 -Symmetric Bis(imino)pyridine Ligands." Current employer: AGC Chemicals Americas.

Earl Santos: M.S. Chemistry, June 2012. M.S. thesis title, "Novel and Previously Reported Mono(imino)pyridine-based Nickel(II) Complexes: Synthesis and Structural Determination and Novel Mono(imino)pyridine-based Nickel(II) Complex for Use as an Alkene Polymerization Catalyst." Obtained dental degree from Lake Erie College of Osteopathic Medicine – School of Dental Medicine. Current employer: Clearwater Dentistry.

Nathalie Jaeger: M.S. Chemistry, April 2011. M.S. thesis title, "Synthesis of and computational studies on novel *ansa*-zirconocenes containing 2-carbon and 4-carbon alkene linkers." Current employer: Periodic Products, Fort Lauderdale, FL.

Rachel Hardie: M.S. Chemistry, July 2010. M.S. thesis title, "Synthesis of mono(imino) pyridine ligands and corresponding nickel(II) complexes and synthesis of a C_1 -symmetric bis(imino) pyridine ligand." Current employer: Warner Regulatory Associates.

Margaret Kennedy: M.S. Chemistry, July 2009. M.S. thesis title, "Synthesis of and computational studies on C_s - and C_1 - symmetric bis(imino) pyridine ligands." Obtained M.A. in Defense and Strategic Studies from the U.S. Naval War College. Current employer: U.S. Coast Guard.

Susan Thai: M.S. Chemistry, December 2008. M.S. thesis title, "Progress towards the synthesis of novel *ansa*-zirconocenes containing alkene or phosphine linkers." Current employer: U.S. Patent Office.

Laurel Morton (teaching/research postdoctoral fellow): Fall 2005–Spring 2007. Current status: Adjunct Faculty in Chemistry at Bridgewater College and James Madison University.

DEANNA L. ZUBRIS

Ronald Weber: M.S. Chemistry, May 2006. M.S. thesis title, "Synthesis of pyridine-bis(imine) iron compounds for future polymerization studies." Current employer: Airgas USA.

Alice Chong: Spring 2004–Summer 2005. Obtained Pharm.D. from Notre Dame of Maryland University. Current status: pharmacist, Johns Hopkins Hospital.

Navneeth Daundikhed: M.S. Chemistry, August 2005. M.S. thesis title, "Progress towards the synthesis of a doubly chelating metallocene analog and a doubly bridged *ansa*-metallocene for the polymerization of α -olefins." Current employer: Keystone Industries.

COLLABORATORS

Dr. Walter J. Boyko – Villanova University
Dr. Patrick Carroll – University of Pennsylvania
Dr. E. Bryan Coughlin – University of Massachusetts – Amherst
Dr. Graham E. Dobereiner – Temple University
Dr. Timothy J. Dudley – University of Minnesota – Crookston
Dr. William G. Dougherty – Susquehanna University
Dr. Eduard G. Casillas – Villanova University
Dr. Robert M. Giuliano – Villanova University
Dr. Michael R. Guo – University of Pennsylvania
Dr. Wm. Scott Kassel, Dr. Mark W. Bezpalko – Villanova University
Dr. Kevin P. C. Minbiolo – Villanova University
Dr. Jared J. Paul – Villanova University
Dr. Nicholas Piro – Albright College
Dr. Masoud Soroush, Mr. Patrick Corcoran – Drexel University

TEACHING EXPERIENCE

<u><i>Undergraduate courses taught to date</i></u>	Organic Chemistry Laboratory I
Inorganic Chemistry I & II	Organic Chemistry Laboratory II
Inorganic Chemistry Laboratory I & II	Professional Development Seminar
General Chemistry II	
General Chemistry II for Engineers	<u><i>Graduate (M.S.) courses taught to date</i></u>
General Chemistry Laboratory II	Advanced Inorganic Chemistry I
Criminalistics Laboratory	Introductory Polymer Chemistry
Organic Chemistry II (co-taught)	Organometallics

Race & Justice Dialog Institute, Office of Diversity, Equity and Inclusion, Workshop Participant: May 16–19 and August 31, 2022. This workshop helps prepare a cohort of instructors to support pilot offerings of the University Race & Justice Dialog Course (RJDC). Best practices in teaching pedagogy and dialog were shared by guest speakers. Workshop participants developed innovations for current courses and/or a content-focused version of the RJDC.

DEANNA L. ZUBRIS

Organic Chemistry Laboratory Coordinator: August 2012–May 2016. I served as the faculty laboratory coordinator for all sections of CHM 2201 (Organic Chemistry Laboratory I) and CHM 2202 (Organic Chemistry Laboratory II) that are taught during Fall (10 sections), Spring (11 sections), and Summer session (4 sections). On a weekly basis, I shared detailed experimental lab procedures, pertinent spectral data, instructor information, and detailed grading rubrics. I gathered TA and instructor feedback and used this to make improvements in lab protocols. I instituted biweekly TA training sessions to run experiments (1-2 experiments per meeting), discuss lab tips, safety issues, grading suggestions, etc.

Curricular Assessment for General Chemistry Lab I: August 2015–April 2016. During the 2015-2016 academic year, I worked as a co-PI for a *Villanova Institute of Teaching and Learning (VITAL) Mini-Grant* (with co-PI Dr. Peter Palenchar, Villanova University). We completed a multi-faceted assessment of General Chemistry Lab I to better align course content with faculty expectations and to work towards improved student retention of key learning objectives as monitored by periodic post-course surveys.

SELECTED PROFESSIONAL SERVICE ACTIVITIES

Reviewer – research activities

Editorial Advisory Boards

Member of the Editorial Advisory Board of the journal *Organometallics*, 2017–2022.

Journal Submissions Peer Review

Peer reviewer for *Organometallics*, *Journal of Organometallic Chemistry*, *ChemPlusChem*, and *Polymer International*.

External reviewer for a Rank and Tenure dossier, on three occasions

Grant Proposals: Ad Hoc Reviews

Department of Energy (DOE), National Science Foundation (NSF), Petroleum Research Fund (PRF), Research Corporation (RC), Maryland Industrial Partnerships (MIPS), and Kentucky Science and Engineering Foundation (KSEF).

Grant Proposals: Panel Reviews

Member of site visit team for a NSF Center for Chemical Innovation (CCI) – Phase II.

Panelist for the NSF Chemistry Division, on seven occasions.

Conference Organization

Hosted the *Philadelphia Inorganic Colloquium* at Villanova University, Villanova, PA, October 19, 2022; November 5, 2016.

Session co-chair and presider for *Organometallic Chemistry Session*, 45th Middle Atlantic Regional Meeting of the American Chemical Society, Hershey, PA, June 4-6, 2007.

Presided over *Organic Chemistry General Session II*, 39th Middle Atlantic Regional Meeting of the American Chemical Society, Ursinus College, Collegeville, PA, May 16-18, 2007.

DEANNA L. ZUBRIS

Discussion leader

Discussion leader, “Metal-Ligand Cooperativity: Organometallics at the Energy Frontier,” *Organometallic Chemistry Gordon Research Seminar*, July 6-7, 2019.

Reviewer – educational activities

Pre-publication reviewer for *Carraher’s Polymer Chemistry*, by Charles E. Carraher, Jr., 11th Edition.

Pre-publication reviewer for *Organometallic Chemistry*, by Gary O. Spessard and Gary L. Miessler, 2nd Edition.

Reviewed test questions for the *AP Exam in Chemistry*, 2023.

Wrote and reviewed test questions for the *Educational Testing Service*, chemistry division, 2004-2005; general science division, 2005-2006.

Wrote and reviewed test questions for the chemistry test of the *Graduate Record Examinations (GRE Chemistry test)*, 2005.

Poster Judge

67th *Intercollegiate Student Chemists’ Conference*, Villanova University, April 5, 2003 (also served as judge coordinator); *Sigma Xi Research Day*, Villanova University, April 4, 2003, April 23, 2004, April 25, 2009, April 27, 2012, April 24, 2015, April 28, 2017, and April 1, 2022; *Bryn Mawr College Mathematics and Science Graduate Research Symposium*, Bryn Mawr College, October 3, 2003.

Outreach Activities

Participated in hands-on chemistry outreach activities: *12th Annual Student Research Symposium, “Research the Possibilities”*, in conjunction with the National Consortium for Specialized Secondary Schools of Mathematics, Science and Technology, Villanova University, June 5, 2005; *EYH/PAGES*, an ACS WCC sponsored program for 6th grade girls, at Chestnut Hill College, November 3, 2007, April 4, 2009, November 8, 2014, and April 16, 2016; *AAUW Tech Savvy* at Agnes Irwin School on April 29, 2017, Panelist, *Female Scientists in Academia Discussion Panel*, University of Pennsylvania, March 26, 2009.

Mentorship

Panelist, “Mentorship Component: Career Trajectories and Perspectives,” *Organometallic Chemistry Gordon Research Seminar*, July 6-7, 2019.

Mentor for *Chemistry Women Mentorship Network (Chem WMN)*, Spring 2018–present.

Mentor for *Caltech – the Women’s Mentorship Program*, Spring 2016–Spring 2018.

SELECTED DEPARTMENT, COLLEGE, AND UNIVERSITY SERVICE ACTIVITIES

Member, *Master’s Summer Research Fellowship Evaluation Committee*, College of Liberal Arts and Sciences, Fall 2022–present.

Member, *University Diversity Leadership Council*, August 2022–Present.

DEANNA L. ZUBRIS

Member, *Aequitas Task Force Member Group 8b: Presidential Task Force on Race*, February 2021– Present.

Member, *VISIBLE Affiliated Faculty*, January 2021– May 2023. Member, *VISIBLE Advisory Committee*, August 2023 – present. *VISIBLE: Villanova Initiative to Support Inclusiveness and Build Leaders*, funded through an NSF ADVANCE Institutional Transformation Grant.

Member, *Diversity, Equity, and Inclusion Committee*, College of Liberal Arts and Sciences, Fall 2019–present.

Member, *Graduate Dean Search Committee*, College of Liberal Arts and Sciences, Spring 2019.

Member, *Faculty Scholar Advisory Team*, under the direction of the Associate Vice Provost for Research, Villanova University, Fall 2016–Spring 2020.

Chair/Co-Chair, Fall 2017–Spring 2022. Member, Fall 2023–present. *Diversity and Inclusion Committee*, Department of Chemistry,

Faculty Co-Advisor, *Villanova Chemistry Peer Mentorship Program*, Department of Chemistry, Summer 2017–Summer 2022.

Member, *Departmental Chair's Advisory Committee*, Department of Chemistry, December 2021–December 2023.

Co-Chair, *Communications and Alumni Relations Committee*, Department of Chemistry, Spring 2016–Fall 2019.

Member, *College Third Year Review Committee*, College of Liberal Arts and Sciences, Spring 2016–Spring 2017.

Co-chair, *University Awards Committee*, Faculty Congress, Fall 2014–Spring 2016.

Member, *College Awards Committee*, College of Liberal Arts and Sciences, Spring 2014.

Member, *University Task Force on the Online Undergraduate Degree for Adult Part-Time Students*, Summer 2013.

Member, *Search Committee for Director of the Honors Program*, College of Liberal Arts and Sciences, Fall 2010.

Member, *College Assessment Committee/Assessment Liaison for Chemistry*, College of Liberal Arts and Sciences, Fall 2009–Fall 2015.

Chair, *Assessment Committee*, Department of Chemistry, Fall 2009–Fall 2015.

Member, *Departmental Committee*, Department of Chemistry, Fall 2009–Summer 2018.

Member, *Graduate Committee*, Department of Chemistry, Fall 2002–Spring 2010; Spring 2014–Fall 2014; Fall 2019–Spring 2022.

Member, *Departmental Rank and Tenure Committee*, Department of Chemistry, Fall 2009, Fall 2010, Fall 2011, Fall 2013 (two cases), Fall 2017, Fall 2018 (two cases), Fall 2019, Fall 2020 (two cases), Fall 2021 (two cases), Fall 2022 (three cases), and Fall 2023 (two cases). *Departmental 3rd Year Review Committee*, Department of Chemistry, January 2011, January 2015, January 2016 (two cases), January 2017, and January 2022. Committee chair on four occasions.

DEANNA L. ZUBRIS

Member, *Organic Faculty Member Search Committee*, Department of Chemistry, Fall 2019.

Member, *Biochemistry Faculty Member Search Committee*, Department of Chemistry, Fall 2011.

Member, *Analytical/Biochemistry/Organic Chemistry Faculty Member Search Committee (two positions available)*, Department of Chemistry, Fall 2010.

Co-chair, *Inorganic Chemistry Faculty Member Search Committee*, Department of Chemistry, Fall 2007.

Member, *Theoretical Chemistry Faculty Member Search Committee*, Department of Chemistry, Fall 2004.

Member, *Committee on Members in Course, Phi Beta Kappa*, Spring 2004–Spring 2010.

Member, *VITAL (Villanova Institute for Teaching and Learning) Sciences Advisory Committee*, Fall 2007–Spring 2010.

Member, *CLAS Status of Women Faculty Committee*, Fall 2005–Summer 2007.

Member, *Curriculum Committee*, Department of Chemistry, Fall 2007–Fall 2013.

Member, *Peer Teaching Committee*, Department of Chemistry, Fall 2003–Spring 2004, Spring 2009, Spring 2010; ad-hoc Fall 2018-present.