

Dr. Malika Jeffries-EL

Associate Professor

**BOSTON
UNIVERSITY**

Department of Chemistry
590 Commonwealth Ave
Boston, MA 02130

Email: malikaj@bu.edu
Office: (617) 358-5089
Fax: (617) 353-6466

PROFESSIONAL APPOINTMENTS

Associate Professor	Department of Chemistry Boston University Research areas: Organic electronics/semiconductors	2016 – present Boston, MA
Associate Professor	Division of Materials Science Boston University	2016 – present Boston, MA
Visiting Professor	Department of Chemistry Massachusetts Institute of Technology	2014 – 2015 Cambridge, MA
Associate Professor	Department of Chemistry Iowa State University	2012 – 2015 Ames, IA
Assistant Professor	Department of Chemistry Iowa State University	2005 – 2012 Ames, IA
Postdoctoral Fellow	Department of Chemistry (<i>with Prof. Richard D. McCullough</i>) Carnegie Mellon University	2002 – 2005 Pittsburgh, PA
Mendenhall Fellow	Department of Chemistry Smith College	2000 – 2001 Northampton, MA

EDUCATION

Ph.D.	<i>Organic Chemistry (with Prof. R.M. Tarkka)</i> The George Washington University <i>Dissertation: "Synthesis and Characterization of Conjugated Polymers Using A-B Monomers."</i>	2002 Washington, DC
M. Phil.	<i>Organic Chemistry (with Prof. R.M. Tarkka)</i> The George Washington University	1999 Washington, DC
B.A.	Chemistry and Africana Studies Wellesley College	1996 Wellesley, MA

AWARDS, HONORS AND FELLOWSHIPS

- **Stanley C. Israel Regional Award for Advancing Diversity in the Chemical Sciences** **2015**
The Stanley C. Israel Regional Award recognizes individuals and/or institutions whom have advanced diversity in the chemical sciences and significantly stimulated or fostered activities that promote inclusiveness within the region.
- **Martin Luther King Jr. Visiting Professorship** **2014**
The Massachusetts Institute of Technology Dr. Martin Luther King Jr. Visiting Professor Program enhances and recognizes the contributions of outstanding scholars. Participants are chosen for their contributions to their professions, and their potential contributions to the intellectual life of MIT.
- **Iota Sigma Pi Agnes Fay Morgan Research Award** **2013**
Awarded to a Female Chemist or Biochemist under the age of 40.
- **ACS-Women Chemists Committee Rising Star Award** **2012**
Recognizes exceptional early to midcareer female American chemists across all areas.

- **Iowa State University College of Liberal Arts and Sciences Diversity Award** **2011**
Recognizes faculty and staff who have advanced the College's vision for diversity through their teaching, scholarship, service, or campus-community outreach.
- **Gordon Research Conference- Carl Storm Underrepresented Minority Fellowship** **2009**
Supports the participation of minority scientists to attend Gordon Research Conferences.
- **National Science Foundation (NSF) CAREER Award** **2009**
The Faculty Early Career Development (CAREER) Program is the NSF's most prestigious award. It supports the early career activities of those teacher-scholars who effectively integrate research and education within the context of the mission of their organization.
- **National Organization of Black Chemist and Chemical Engineers (NOBCChE) Lloyd N. Ferguson Young Scientist Award** **2009**
Award granted to a young scientist who has demonstrated excellence in their field.
- **3M Untenured Faculty Award** **2008**
Sponsored by the 3M Company, the award recognizes the recipient's exceptional promise.
- **NOBCChE Agilent Professional Development Award** **2008**
This award funded by the Agilent Company provided support for a minority faculty member to attend one of its technical workshops and two online training courses.
- **American Chemical Society PROGRESS/Dreyfus Lectureship** **2008**
This program provides travel support to female faculty members at research extensive universities to present technical talks at other research extensive universities.
- **Science Spectrum Magazine Emerald Honors (Most Promising Young Scientist)** **2006**
Sponsored by Science Spectrum Magazine, a career development publication serving multicultural communities, the award honors the best among minority scientist.
- **The Gregory L. and Kathleen C. Geoffroy Faculty Fellowship** **2005**
The Geoffroy Faculty Fellowship was established by ISU President and Mrs. Geoffroy to support the teaching and research program of an Assistant Professor in the College of Liberal Arts & Sciences. The Geoffroy Fellowship was for a period of four years.
- **Five College's Visiting Scholars Fellowship** **2001**
This Fellowship provides year-long residencies for doctoral students completing dissertations. The program supports scholars from under-represented groups and/or with unique interests whose engagement in the Academy will enrich scholarship
- **NOBCChE Eastman Kodak Dr. Theophilus Sorrell Award** **2000**
The award recognizes outstanding minority graduate students who have made significant contributions to science and/or engineering research.
- **ACS Women Chemists Committee Travel Grant** **1999**
The WCC and Eli Lilly and Company sponsor this program to provide funding for pre-professional female chemists to travel to meetings to present research.
- **Dr. Benjamin Van Evera Memorial prize** **1998**
This prize is awarded to the most effective Graduate Teaching Assistants in the Chemistry Department at the George Washington University.

EDITORIAL AND ADVISORY BOARDS

- [Chemical Sciences Roundtable](#) – National Academy of Sciences, Engineering and Medicine **2017-**
- External Advisory Board- University of Texas-EI Paso/UC-Santa Barbara NSF – PREM **2016-**
- External Advisory Board- University of Delaware NSF – ADVANCE program **2015-**
- College Board – AP Development Curriculum & Content Development **2014-**
- Editorial Board Journal of Material Chemistry C **2013-**
- [OXIDE](#) (Open Collaborative on Diversity Equity) Advisory Board **2013-**

- Editorial Advisory Board *Macromolecules* **2013 – 2015**
- Advisory Board ACS Women Chemist of Color Initiative **2010 – 2013**
- Editorial Advisory Board *Chemical and Engineering News* **2009 – 2012**

PROFESSIONAL MEMBERSHIPS

- American Chemical Society 1997-
 - Division of Organic Chemistry, ACS 1997-
 - Division of Polymer Chemistry, ACS 2002-
 - Division of Polymeric Materials Science and Engineering, ACS 2010-
- National Organization of Black Chemist and Chemical Engineers (NOBCChE) 1996-
- Sigma Xi Initiated in 2001
- Iota Sigma Pi 2013-
- Materials Research Society 2014-

PUBLICATIONS

37. Hale, B.J.; Elshobaki, M.; Gebhardt, R.; Wheeler, D.; Stoffer, J. Tomlinson, A.L.; Chaudhary, S.; Jeffries-EL, M. "Evaluating the influence of heteroatoms on the electronic properties of aryl[3,4-c]pyrroledione based copolymers". *Polymer*, **2017**, 109, 85–92. DOI: [10.1016/j.polymer.2016.12.013](https://doi.org/10.1016/j.polymer.2016.12.013).
- Chavez, R; Cai, M; Tlach, B.C.; Wheeler, D.L.; Kaudal, R; Tomlinson, A.L.; Shinar, R; Shinar, J.; and **Jeffries-EL, M.** "Benzobisoxazole cruciforms: A tunable, cross-conjugated platform for the generation of deep blue OLED materials." *J. Mater. Chem C*, **2016**, 4, 3765-3773. DOI: [10.1039/C5TC03622D](https://doi.org/10.1039/C5TC03622D)
35. Bhuwarka, A.; Ewan, M.D.; Mike, J.F.; Elshobaki, M.; Chaudhary, S. and Jeffries-EL, M.* "Synthesis and photovoltaic properties of 2,6-bis(2-thienyl) benzobisazole and 4,8-bis(thienyl)-benzo[1,2-*b*:4,5-*b'*]dithiophene copolymers". *J. Poly. Sci. A*, **2016**, 54, 316 – 324. DOI: [10.1002/pola.27793](https://doi.org/10.1002/pola.27793)
34. Bhuwarka, A.; Mike, J.J.; Intemann, J.J.; Ellern, A.; Jeffries-EL, M.* "A Versatile and Efficient Synthesis of Bithiophene-Based Dicarboxaldehydes." *Org. Biomol. Chem.*, **2015**, 13, 9462-9470. DOI: [10.1039/c5ob01135c](https://doi.org/10.1039/c5ob01135c)
- For a highlight see "Bridged Bithiophene Building Block". *Synfacts* **2015**; 11(10): 1044. DOI: [10.1055/s-0035-1560294](https://doi.org/10.1055/s-0035-1560294)
33. Bhuwarka, A.; Ewan, M.D.; Mike, J.F.; Elshobaki, M.; Kobilka, B.M.; Carr, J., Chen, Y., Chaudhary, S. and Jeffries-EL, M.* "Synthesis Characterization and Photovoltaic Properties of Dithenylbenzobisazole-Dithienosilole Copolymer. *J. Poly. Sci. A*, **2015**, 53 (13), 1533 – 1540. DOI: [10.1002/pola.27603](https://doi.org/10.1002/pola.27603)
32. Jeffries-EL, M.*; Kobilka, B.M.; and Hale, B.J. "Optimizing the performance of conjugated polymers in organic photovoltaic cells by traversing group 16." *Macromolecules*, **2014**, 47(21), 7253-7271. DOI: [10.1021/ma501236v](https://doi.org/10.1021/ma501236v). **Invited Perspective.**
31. Tlach, B.C., Tomlinson, A.L., Morgan, K.D., Collins, C.R., and **Jeffries-EL, M.*** "Evaluation of the Impact of Extended Conjugation on the Optoelectronic Properties Benzo[1,2-*d*:4,5-*d'*]bisoxazole Polymers". *Aust J. Chem.*, **2014**, 67, 711-721. DOI: [10.1071/CH13528](https://doi.org/10.1071/CH13528)- **Invited manuscript for a special issue on physical organic chemistry.**
30. Kobilka, B.M., Hale, B.J., Ewan, M.D., Dubrovskiy, A.V., Nelson, T.L., Duzhko, V. and **Jeffries-EL, M.*** "Influence of heteroatoms on photovoltaic performance of donor-acceptor copolymers based on 2,6-di(thiophen-2-yl)benzo[1,2-*b*:4,5-*b'*]difurans and diketopyrrolopyrrole". *Polym. Chem* **2013**, 4, 5329-5336. DOI: [10.1039/C3PY00138E](https://doi.org/10.1039/C3PY00138E)- **Invited manuscript for a special issue on conjugated polymers.**
29. Balaji, G., Esfahani, M.S., Joshi, P., Bhattacharaya, J., **Jeffries-EL, M.**, Dalal, V.* "Synthesis and Photovoltaic Properties of a Furan-Diketopyrrolopyrrole-Fluorene Terpolymer" *Eur. Polym. J.*, **2013**, **49**, 3921-3928. DOI: [10.1016/j.eurpolymj.2013.08.021](https://doi.org/10.1016/j.eurpolymj.2013.08.021)
28. Hellerich, E.S., Intemann, J.J., Cai, M. Liu, R., Ewan, M.D. Tlach, B.C., **Jeffries-EL, M.** Shinar, R.*

- and Shinar, J. "Fluorescent polymer guest: small molecule host solution-processed OLEDs". *J. Mater. C* **2013**, 1, 5191-5199. [DOI:10.1039/C3TC31019A](https://doi.org/10.1039/C3TC31019A)
27. Tlach, B.C., Tomlinson, A.L., Ryno, A., Knobler, D. and **Jeffries-EL, M.*** "Influence of Conjugation Axis on the Optical and Electronic Properties of Aryl-Substituted Benzobisoxazoles." *J. Org. Chem.* **2013**, 78 (13), 6570–6581. [DOI: 10.1021/jo4007927](https://doi.org/10.1021/jo4007927).
 26. Hinkens, D.M., Chen, Q., Siddiki, M.K., Gosztola, D., Tapsak, M., Qiao, Q., **Jeffries-EL, M.**, Darling, S.B.* Model Compounds based on Poly(p-phenylenevinyleneborane) and Terthiophene: Investigating the p-n Junction in Diblock Copolymers. *Polymer*, **2013**, 54, 3510-3520. [DOI:10.1016/j.polymer.2013.05.008](https://doi.org/10.1016/j.polymer.2013.05.008)
 25. Intemann, J. J.; Mike, J. F.; Cai, M.; Xiao, T.; Shinar, R.; Shinar J.S; **Jeffries-EL, M.*** "Synthesis, Characterization and Electroluminescence Properties of Poly(flourenevinylene benzobisthiazoles)." *J. Poly. Sci. A.*, **2013**, 51, 916-923. [DOI: 10.1002/pola.26449](https://doi.org/10.1002/pola.26449)
 24. Intemann, J.J.; Hellerich, E.S.; Tlach, B.C.; Ewan, M.D. Barnes, C.A.; Bhuwarka, A.; Cai, M.; Shinar, J.; Shinar, R. and **Jeffries-EL, M.*** "Altering the Conjugation Pathway for Improved Performance of Benzobisoxazole-Based Polymer Guest Emitters in PLEDs." *Macromolecules*, **2012**, 45, 6888-6897. [DOI: 10.1021/ma300821m](https://doi.org/10.1021/ma300821m).
 23. Kobilka, B. M.; Dubrovskiy, A. V.; Ewan, M. D.; Tomlinson, A. L.; Larock, R. C.; Chaudhary, S.; **Jeffries-EL, M.***: "Synthesis of 3,7-diiodo-2,6-di(thiophen-2-yl)benzo[1,2-b:4,5-b']difurans: functional building blocks for the design of new conjugated polymers." *Chem. Commun.* **2012**, 48, 8919-8921. [10.1039/C2CC34070D](https://doi.org/10.1039/C2CC34070D). - *Invited manuscript for a special issue on aromaticity*.
 22. Klimavicz, J.S.; Mike, J.F.; Bhuwarka, A.; Tomlinson, A.L.; **Jeffries-EL, M.*** "Synthesis of Benzobisoxazole Based D-π-A-π-D Organic Chromophores with Variable Optical and Electronic Properties." *Pure Appl. Chem.*, **2012**, 84, (4), 991-1004. [DOI:10.1351/PAC-CON-11-10-23](https://doi.org/10.1351/PAC-CON-11-10-23). *Invited manuscript for a special issue for the 14th International Symposium on Novel Aromatic Compounds (ISNA-14), Eugene, USA, 24–29 July 2011*.
 21. Bhuwarka, A.; Mike, J. F.; He, M. Intemann, J.J.; Nelson, T.; Ewan, M.D.; Roggers, R.A.; Lin, Z.; **Jeffries-EL, M.*** "Quaterthiophene-Benzobisazole Copolymers for Photovoltaic Cells: Effect of Heteroatom Placement and Substitution on the Optical and Electronic Properties." *Macromolecules*, **2011**, 44 (24), 9611 – 9617. [DOI: 10.1021/ma202133e](https://doi.org/10.1021/ma202133e).
 20. Tlach, B.C.; Tomlinson, A.L.; Bhuwarka, A.; **Jeffries-EL, M.*** "Tuning the Optical and Electronic Properties of 4,8-Disubstituted Benzobisoxazoles via Alkynyl Substitution." *J. Org. Chem*, **2011**, 76 (21), 8670 – 8681. [DOI: 10.1021/jo201078w](https://doi.org/10.1021/jo201078w).
 19. Mike, J. F.; Intemann, J.J.; Cai, M.; Xiao, T.; Shinar, R.; Shinar, J.; **Jeffries-EL, M.*** Efficient Synthesis of Benzobisazole Terpolymers Containing Thiophene and Fluorene. *Polym. Chem.* **2011**, 2, 2299 - 2305. [DOI: 10.1039/C1PY00218J](https://doi.org/10.1039/C1PY00218J).
 18. Zhao, L.; Pang, X.; Adhikary, R.; Petrich, J.; **Jeffries-EL, M.** and Lin, Z.* "Organic-Inorganic Nanocomposites by Placing Conjugated Polymers in Intimate Contact with Quantum Rods." *Adv. Mater.* **2011**, 23, 2844 – 2849. [DOI: 10.1002/adma.201100923](https://doi.org/10.1002/adma.201100923).
 17. Mike, J F.; Nalwa, K.; Makowski, A. J.; Putnam, D.; Tomlinson A.; Chaudhary, S. and **Jeffries-EL, M.*** "Synthesis, Characterization and Photovoltaic Properties of Poly(thiophenevinylene) Benzobisoxazoles." *Phys. Chem. Chem. Phys.* **2011**, 13, 1338 – 1344. [DOI:10.1039/C0CP00353K](https://doi.org/10.1039/C0CP00353K)
 16. Intemann, J. J.; Mike, J. F.; Cai, M.; Bose, S.; Xiao, T.; Mauldin T.; Shinar, J.; Shinar, R.; **Jeffries-EL, M.*** "Synthesis and Characterization of Poly (9,9-dialkylfluorenevinylene benzobisoxazoles): New Solution Processable Electron-Accepting Conjugated Polymers." *Macromolecules*, **2011**, 44 (2) 248 – 255. [DOI:10.1021/ma102010s](https://doi.org/10.1021/ma102010s).
 15. Mike, J. F.; Makowski, A.; **Jeffries-EL, M.*** "Synthesis and Characterization of Organic-Soluble Poly(Phenylenevinylene)Benzobisoxazoles." *J. Poly. Sci. A*, **2010**, 48 (6), 1456 – 1460. [DOI: 10.1002/pola.23869](https://doi.org/10.1002/pola.23869).
 14. Mike, J. F.; Makowski, A.; Ellern, A.; **Jeffries-EL, M.*** "Facile Synthesis of 2,6-Disubstituted Benzobisthiazoles: Functional Monomers for the Design of Organic Semiconductors." *J.Org. Chem.*, **2010**, 75(2), 495 – 497. [DOI: 10.1021/jo9023864](https://doi.org/10.1021/jo9023864)

- For a highlight see: Mike, J. F.; Makowski, A.; Ellern, A.; **Jeffries-EL, M.** “Versatile Monomers for Conjugated Polymer Synthesis”. *Synfacts*, **2010**, 4, 0419.
- 13. Byun, M.; Laskowski, R.; Qiu, F.; Jeffries-EL, M.; Lin, Z. “Hierarchically Structured Regioregular Conjugated Polymer Patterns via Controlled Evaporative Self-Assembly.” *Soft. Mat.*, **2009**, 5 (8), 1585 – 1586. [DOI: 10.1039/b822998h](https://doi.org/10.1039/b822998h).
- 12. Mike, J. F.; Makowski, A.; **Jeffries-EL, M.*** “An Efficient Synthesis of 2,6-Disubstituted Benzobisoxazoles: New Building Blocks for Organic Semiconductors.” *Org. Lett.*, **2008**, 10(21), 4915 – 4918. [DOI: 10.1021/ol802011y](https://doi.org/10.1021/ol802011y).
- For a highlight see: Mike, J. F.; Makowski, A.; **Jeffries-EL, M.**, *ChemInform* 40 (12), 12-183, 2009.
- 11. Xu, J.; Wang, J.; Mitchell, M.; Mukherjee, P.; **Jeffries-EL, M.**; Petrich, J.; Lin, Z. “Organic-Inorganic Nanocomposites via Directly Grafting Conjugated Polymers onto Quantum Dots.” *J. Am. Chem. Soc.*, **2007**, 129(42), 12828 – 12833. [DOI: 10.1021/ja074133x](https://doi.org/10.1021/ja074133x)

❖ *from postdoctoral appointment*

10. Bhatt, M.P.; Magurudeniya, H.D.; Sista, P.; Sheina, E.E.; **Jeffries-EL, M.**; Janesko,* McCullough, R.D; and Stefan, M.C. “Role of the transition metal in Grignard metathesis polymerization (GRIM) of 3-hexylthiophene.” *J. Mater. Chem. A*, **2013**, 1, 12841-12849. [DOI: 10.1039/C3TA13258G](https://doi.org/10.1039/C3TA13258G)
9. Iovu, M.C.; **Jeffries-EL, M.**; Sheina, E.E.; McCullough, R.D. “Conducting Regioregular Polythiophene Block Copolymer Nanofibrils Synthesized by Reversible Addition Fragmentation Chain Transfer Polymerization (RAFT) and Nitroxide Mediated Polymerization (NMP).” *Macromolecules*, **2007**, 40 (14) 4733 – 4735. [DOI: 10.1021/ma070406x](https://doi.org/10.1021/ma070406x)
8. Li, B.; Santhanam, S.; Schultz, L.; **Jeffries-EL, M.**; Iovu, M.C.; Sauv , G.; Cooper, J.; Zhang, R.; Revelli, J.C.; Kusne, A.G.; Snyder, J.L.; Kowalewski, T.; Weiss, L.E.; McCullough, R.D.; Fedder, G.K.; Lambeth, D.N. “Inkjet Printed Chemical Sensor Array Based on Polythiophene Conductive Polymers.” *Sensors and Actuators B. Chemical*, **2007**, 123(2), 651 – 660. [DOI:10.1016/j.snb.2006.09.064](https://doi.org/10.1016/j.snb.2006.09.064).
7. Widge, A.S.; **Jeffries-EL, M.**; Cui, X.; Lagenaur, C.F.; Matsuoka, Y. “Self-Assembled Monolayers of Polythiophene Conductive Polymers Improve Both Biocompatibility and Electrical Impedance of Neural Electrodes.” *Biosensors and Bioelectronics*, **2007**, 22, 1723 – 1732. [DOI:10.1016/j.bios.2006.08.011](https://doi.org/10.1016/j.bios.2006.08.011).
6. Iovu, M.C.; **Jeffries-EL, M.**; Zhang, R.; Kowalewski, T.; McCullough, R.D. “Conducting Block Copolymer Nanowires Containing Regioregular Poly(3-Hexylthiophene) and Polystyrene.” *J. Macromol. Sci., Part A*, **2006**, 41, 1991 – 2000. [DOI: 10.1080/10601320600997906](https://doi.org/10.1080/10601320600997906).
5. Li, B.; Iovu, M.C.; **Jeffries-EL, M.**; Sauv , G.; Zhang, R.; Cooper, J.; Santhanam, S.; Schultz, L.; Revelli, J.C.; Kusne, A.G.; Kowalewski, T.; Snyder, J.L.; Weiss, L.E.; Fedder, G.K; McCullough, R.D.; Lambeth, D.N. “Volatile Organic Compound Detection using Nanostructured Copolymers.” *Nano Lett.*, **2006**, 6(8), 1598 – 1602. [DOI: 10.1021/nl060498o](https://doi.org/10.1021/nl060498o).
4. Zhang, R.; Li, B.; Iovu, **M.C.**; **Jeffries-EL, M.**; Sauve, G.; Cooper, J.; Jia, S.-J.; Tristam-Nagle, S.; Smilgies, D.M.; Lambeth, D.N.; McCullough, R.D.; Kowalewski, T. “Nanostructure Dependence of Field-Effect Mobility in Regioregular Poly(3-hexylthiophene) Thin Film Field Effect Transistors.” *J. Am. Chem. Soc.*, **2006**, 128(11) 3480 – 3481. [DOI: 10.1021/ja055192i](https://doi.org/10.1021/ja055192i)
3. **Jeffries-EL, M.**; Sauv , G.; McCullough, R.D. “Facile synthesis of end-functionalized regioregular poly(3-alkylthiophene)s via modified Grignard metathesis reaction.” *Macromolecules*, **2005**, 38, 10346 – 10352. [DOI: 10.1021/ma051096q](https://doi.org/10.1021/ma051096q).
2. Iovu, M.C.; **Jeffries-EL, M.**; Sheina, E.E.; Cooper, J.R.; McCullough, R.D. “Regioregular Poly(3-alkylthiophene) Conducting Block Copolymers.” *Polymer*, **2005**, 46 (19), 8582 – 8586. [DOI:10.1016/j.polymer.2005.05.035](https://doi.org/10.1016/j.polymer.2005.05.035).
1. **Jeffries-EL, M.**; Sauv , G.; McCullough, R.D. “In-situ End Group Functionalization of Regioregular Poly (3-alkylthiophene) using the Grignard Metathesis Polymerization Method.” *Adv. Mat.*, 2004, 16, 1017 – 1019. [DOI: 10.1002/adma.200400137](https://doi.org/10.1002/adma.200400137).

PUBLICATIONS IN SUBMISSION OR PREPARATION

- Jeffries-EL, M. Hale, B.J. "From high performance materials to organic electronics" Invited manuscript in preparation for Accounts of Chemical Research.

BOOK CHAPTER

Jeffries-el, M.; McCullough, R.D. Regioregular Polythiophenes. In handbook of conducting polymers, 3rd ed / edited by Terje A. Skotheim and John Reynolds. Ed.; Skotheim, T. A., Reynolds, John R., ed. London: Boca Raton, Fla, 2007; pp 331-380.

PATENTS

Inventors: McCullough, Richard D., Sauve, Genevieve, Iovu, Mihaela and Jeffries-EL, Malika

Title: Monocapped conductive polymers with alkenyl or alkynyl end groups and block copolymers therefrom. U.S. Patent Application: 2010/0117030 A1.

Inventors: Jeffries-EL, Malika, Tlach, Brian C. Intemann, Jeremy J.

Title: Conjugated polymer and semiconductor devices including the same. U.S. Patent application 2014/0275459.

SUPERVISION OF THESIS PROJECTS

1. Drochner, Dana L. "[Rational design and characterization of electron-deficient heterocycles for organic photovoltaic materials.](#)" Ph.D Thesis, Iowa State University, Ames, IA 2015
2. Ewan, Monique D. "[Evaluation and optimization of photovoltaic cells comprised from benzodifuran and benzobisoxazole based polymers.](#)" Ph.D Thesis, Iowa State University, Ames, IA 2015
3. Hale, Benjamin J. "[Influence of heterocycle substitution in \$\pi\$ -functional materials for organic photovoltaics.](#)" Ph.D Thesis, Iowa State University, Ames, IA 2015
4. Bhuwalka, Achala "[Design and Synthesis of Organic Semiconducting Materials Based on Novel Heterocycles.](#)" Ph.D Thesis, Iowa State University, Ames, IA, 2014
5. Tlach, Brian C. "[Elucidating the reactivity and structure-property relationships in benzobisoxazoles for the rationale design of conjugated materials.](#)" Ph.D Thesis, Iowa State University, Ames, IA 2014
6. Kobilka, Brandon M. "[Evaluating chalcogen heteroatoms in conjugated polymers for organic electronics.](#)" Ph.D. Thesis, Iowa State University, Ames, IA, 2013
7. Intemann, Jeremy J. "[Developing Benzobisazole-Containing Conjugated Polymers for Organic Semiconducting Applications.](#)" Ph.D. Thesis, Iowa State University, Ames, IA, 2012.
8. Klimavicz, James S. "[Synthesis of donor-acceptor benzobis\(oxazole\) small molecules.](#)" M.S. Thesis, Iowa State University, Ames, IA 2012.
9. Mike, Jared J. "[Synthesis and Characterization of New Conjugated Materials Based on Benzobisazoles and Their Incorporation into Electronic Devices.](#)" Ph.D. Thesis, Iowa State University, Ames, IA, 2011.
10. Laskowski, Robyn L. "[Synthesis of Novel Telechelic Polythiophenes](#)". M.S. Thesis, Iowa State University, Ames, IA, 2009.
11. Mitchell, Michael H. "[Synthetic Approaches to Novel Functionalized Polythiophenes](#)". M.S. Thesis, Iowa State University, Ames, IA, 2007.

FUNDING (Only current funding is listed; total funding since arrival at ISU in 2005 is ~1.87 Mil)

- Modular design of novel monodisperse oligomers.
PI: Malika Jeffries-EL, co-Ps Joseph Shinar and Ruth Shinar
Agency: National Science Foundation
Type & Dates: CHE 9/1/14 – 8/31/17
Funding: \$595,672
- Tunable Conjugated Polymers Based on Benzodichalcogenophenes.
PI: Malika Jeffries-EL,
Agency: National Science Foundation
Type & Dates: DMR 5/1/14 – 4/30/17

Funding: \$366,000

FEATURED IN SCIENTIFIC AND NONSCIENTIFIC MEDIA

- Featured in [Bostonia](#) Summer 2016
- Featured in [BU Research May 2016](#)
- Diversity and outreach efforts highlighted in [RSC Chemistry World Magazine](#)
- Featured in the [LAS Link Magazine Spring 2015](#)
- Featured in [Steve's LAS Blog March 3rd 2015](#)
- Featured in the National Science Foundations publication "[Broader Impacts Perspectives](#)", 2014.
- Profiled in the Journal of Physical Organic Chemistry ([Volume 27, Issue 6](#), 463–464, June 2014)
- Outreach efforts featured on ISU homepage Fall 2012
- Diversity and outreach efforts highlighted in LAS Link Magazine Fall 2011
- Featured in NBC Learn Program Chemistry Now – "[The chemistry of polyamides.](#)"
- Research highlighted in ISU Research and Economic report 2011
- Research highlighted by ISU press release 4/28/11
- Featured in Ames tribune 5/1/11
- Featured in the Materials Science Society Bulletin
 - ✓ Press release featured on many additional sites including: The National Science Foundation, www.sciencedaily.com, scienceblog.com, and esciencenews.com.
- Guest editorial in In Chemistry, April/May 2011
- Pictured in Chemical and Engineering News, 2/28/11
- Pictured in ISU Advance Brochure January 2009
- Featured in an article on becoming an educator, In Chemistry, November/ December 2009
- Guest editorial in the Des Moines Register February 2008
- Pictured in ISU Visions Magazine Fall 2008
- Featured in Campaign ISU Fall 2007
- Featured in ISU Visions Magazine Fall 2006
- Featured in Around LAS Fall 2005

LECTURES

Plenary, Keynote and Named Lectures

1. "Synthesis and Characterization of 2,6-Disubstituted Benzobisazoles: New Building Blocks for Conjugated Materials." Lloyd Ferguson Young Investigator Award Symposia Keynote Address. National Organization for the Professional Advancement of Black Chemist and Chemical Engineers (NOBCChE) 36st Meeting, St. Louis, MO, 14th, April 2009.
2. "Design and Synthesis of Conjugated Polymers Based on Benzobisazoles." University of Maryland at College Park, 4th Annual NOBCChE lecturer, 12th May 2010.
3. "Design and Synthesis of Conjugated Polymers via the Road Less Travelled." University of Pennsylvania, Department of Chemistry, 4th Annual NOBCChE lecturer, 8th November 2012.
4. "Taking the road less travelled: My journey to the Ivory Tower." California State University—Los Angeles, Department of Chemistry, 18th Annual Lloyd N. Ferguson Lecturer, 8th February, 2013.
5. "Living in a Materials World: Designing Organic Semiconductors for Advanced Applications" Cal Poly Pomona, Department of Chemistry- 8th Elisheva "Chevy" Goldstein Lecturer- 15th, May 2015.
6. "Design and Synthesis of Organic Semiconductors for Advanced Applications" and "Taking the Road Less Traveled: My Journey to the Ivory Tower"; University of Minnesota Mankato 27th Annual Ford

lecturer- 29th, August 2016.

7. University of California – Santa Barbara Dow Foundation Distinguished Lecturer- TBD
8. 2017 Ken and Nancy Long Chemistry Lecturer at Westminster College-TBD
 - **2005**
9. “Designing Molecules for Futuristic Applications.” Iowa State University, Department of Chemistry (ChemCy), 4 October.
 - **2006**
10. “Design and Synthesis of Conjugated Polymers for Advanced Applications.” Department of Chemistry, 28 March. Spelman College, Department of Chemistry.
11. “Design and Synthesis of Conjugated Polymers: From Wellesley Student, to University Professor Wellesley College.” Department of Chemistry, 9 June.
 - **2007**
12. “Design and Synthesis of Conjugated Polymers for Advanced Applications.” Iowa State University, Department of Chemical and Biological Engineering, 8 February.
13. “Design and Synthesis of Novel π -Conjugated Systems.” University of Texas at San Marcos, Department of Chemistry, 19 October.
14. “Design and Synthesis of Conjugated Polymers for Advanced Applications.” Alabama State University, 20 November.
 - **2008**
15. “Design of Novel Building Blocks for the Synthesis of Conjugated Polymers.” University of Wisconsin-Plattsville, Department of Chemistry, 22 October.
16. “Synthesis of Novel Conjugated Polymers based on Benzobisoxazoles.” University of Connecticut, Polymer Program, Storrs, CT, 5 December.
 - **2009**
17. “Adventures in Organic Chemistry: The Synthesis of Novel Conjugated Polymers for use in Solar Cells.” North Georgia College and State University, Department of Chemistry, Dahlonega, GA, 16 January.
18. “Design and Synthesis of Novel Conjugated Polymers for use in Organic Semiconducting Applications.” University of Iowa, Department of Chemical Engineering, 5 February.
19. “Synthesis of Novel Conjugated Polymers Based on Benzobisoxazoles.” St. Louis University, Department of Chemistry, 17 April.
20. “Synthesis of Novel Conjugated Polymers Based on Benzobisoxazoles.” Diverse Future Faculty Workshop, 8 August.
21. “Synthesis and Characterization of 2,6-Disubstituted Benzobisazoles: New Building Blocks for Conjugated Materials.” Organic Division Young Academic Investigators Symposium. American Chemical Society 238th National Meeting, Washington, DC, 28th, August 2009.
22. “Design and Synthesis of Conjugated Polymers for Advanced Applications.” University of Wisconsin-Eau Claire, Department of Chemistry, 18 September.
23. “Synthesis of Conjugated Polymers Based on Benzobisazoles.” Case Western Reserve University, Macromolecular Science and Engineering Colloquia, 25 September.
24. “Design and Synthesis of Conjugated Polymers for Advanced Applications.” Grinnell College, Department of Chemistry, 7 October.
25. “Synthesis of Novel Conjugated Polymers based on Benzobisazoles.” North Dakota State University,

Department of Chemistry, 15 October.

26. "Synthesis of Conjugated Polymers Based on Benzobisazoles." Washington University, Department of Chemistry, 29 October.
27. "Synthesis of Conjugated Polymers Based on Benzobisazoles." Iowa State University, Department of Materials-Science and Engineering, 19 November.

• **2010**

28. "Design and Synthesis of Conjugated Polymers for Advanced Applications." Xavier University, Department of Chemistry, 4 February.
29. "Design and Synthesis of Conjugated Polymers Based on Benzobisazoles." Tulane University, Department of Chemistry, 5 February.
30. "Design and Synthesis of Conjugated Polymers Based on Benzobisazoles." University of Texas at Arlington, Department of Chemistry, 5 March.
31. "Synthesis and Characterization of New Polymers Based on Benzobisazoles." Polymeric Materials Science and Engineering, Division Young Academic Investigators Symposium. American Chemical Society 239th National Meeting, San Francisco, CA, 23rd, March.
32. "Design and Synthesis of New Thiophene Containing Polymers for use in Photovoltaic Applications." Polymeric Materials Science and Engineering Division, Polymers for Energy Applications Symposium. American Chemical Society 239th National Meeting, San Francisco, CA, 22nd, March
33. "Design and Synthesis of Conjugated Polymers Based on Benzobisazoles." University of Texas at Austin, Department of Chemistry, 30 April.
34. "Synthesis of Conjugated Polymers Based on Benzobisazoles." 9th In International Symposium on Functional π -Electron Systems, Atlanta, GA, 25th, May.
35. "Design and Synthesis of Conjugated Polymers Based on Benzobisazoles." Rutgers University, Department of Chemistry, 4 June.
36. "Toward the Synthesis of End-Group Functionalized Regioregular Poly(3-alkylthiophene)s via the "Living" Grignard Metathesis Reaction." New Catalyst and Catalysis for Polymer Synthesis Symposium. American Chemical Society 240th National Meeting, Boston, MA, 22nd, August.
37. "Synthesis and Characterization of Tunable Conjugated Polymers Based on Benzobisazoles." University of Texas at Dallas, Department of Chemistry, 27 August.
38. "Synthesis and Characterization of Tunable Conjugated Polymers Based on Benzobisazoles." Carnegie Mellon University, Department of Chemistry 3 September.
39. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." University of California at Los Angeles, Department of Chemistry, 30 September.
40. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." University of Arkansas, Department of Chemistry and Biochemistry, 4 October.
41. "Design and Synthesis of Conjugated Polymers for Advanced Applications." Carleton College, Department of Chemistry, 29 October.
42. "Design and Synthesis of New Materials based on Benzobisazoles." Purdue University, Department of Chemistry, 20 October.
43. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." University of Pennsylvania, Department of Chemistry, 8 November.
44. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." Massachusetts Institute of Technology, Program in Polymer Science and Technology, 8 December.
45. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles."

University of New Hampshire, Department of Chemistry, 9 December.

• **2011**

46. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." University of Minnesota, Department of Chemistry, 11 April.
47. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." University of Washington, Department of Chemistry, 20 April.
48. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." University of Wisconsin-Madison, Department of Chemistry, 3 May.
49. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." University of Cincinnati, Department of Chemistry, 20 May.
50. "Conjugated Polymers for Optoelectronic Applications." Polymers Gordon Research Conference, Hadley, MA, 8 June.
51. "Tuning the Optical and Electronic Properties of Benzobisoxazoles via Substitution." International Symposium on Novel Aromatic Systems, Eugene, OR, 26 June.
52. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." Miami University of Ohio, Department of Chemistry, Miami, OH, 22 September
53. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." Colorado State University, Department of Chemistry, Denver, CO, 26 September
54. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." Louisiana State University, Department of Chemistry, Baton Rouge, LA, 30 September
55. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." Louisville University, Department of Chemistry, Louisville KY, 14 October

• **2012**

56. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." University of Iowa, Department of Chemistry, 9 February
57. "Adventures in Organic Chemistry: Designing Materials for Advanced Applications." Cornell College, Department of Chemistry, 6 March
58. "Design and Synthesis Of Conjugated Polymers For Advanced Applications." American Chemical Society- Women Chemist Committee Rising Star Symposia, 25 March
59. "Adventures in Organic Chemistry: Designing Materials for Advanced Applications." Drake University, Department of Chemistry, 30 March
60. "Adventures in Organic Chemistry: Designing Materials for Advanced Applications." Program for Women in Science Symposia-William Patterson College, College of Arts and Sciences, Trenton NJ, 28 April
61. "Influence of Conjugation Pathway on the Optical and Electronic Properties of Benzobisoxazoles Based Polymer." IUPAC World Polymer Congress, 24th June
62. "Influence of Conjugation Pathway on the Optical and Electronic Properties of Benzobisoxazole Containing Polymers." International Conference on Synthetic Metals (ICSM), 12th July
63. "Teaching Old Polymers New Tricks: Novel Conjugated Materials Based on Benzobisazoles." Southern Methodist University, Department of Chemistry, 12th September
64. "Adventures in Organic Chemistry: Designing Materials for Advanced Applications." St Thomas University, Department of Chemistry, 12th October 30
65. "Design and Synthesis of Conjugated Polymers for Advanced Applications." University of Minnesota-

MFRC-IRG-3 Seminar, October 15th

66. "Design and Synthesis of Conjugated Polymers for Advanced Applications." Howard University, Department of Chemistry, 26th October

• **2013**

67. "Developing novel organic semiconductors for optoelectronic applications." University of Iowa, Department of Physics, 25th January

68. "Design and Synthesis of Conjugated Polymers for Advanced Applications." California State University—Los Angeles, Department of Chemistry, 7th February

69. "Design and Synthesis of Conjugated Polymers for Advanced Applications." NOBCCHE Western regional meeting, March 25th

70. "Tuning the Properties of Organic Semiconductors via Chemical Synthesis." Physical Organic Chemistry Gordon Research Conference, 23rd June

71. "Synthesis of Extended π -Conjugated Materials for Organic Semiconducting Applications." *Graduate Research Symposium*, 22nd July

72. "Design and synthesis of novel conjugated polymers for use in photovoltaic cells." *IUPAC World Chemistry Congress*, 8th August

73. "Designing materials for advanced applications" University of North Carolina at Charlotte, 16th September

74. "Making Molecules" Bradley University, 26th September

75. "Design and synthesis of novel conjugated polymers for use in photovoltaic cells." Midwestern Regional Meeting, 26th October

76. "Design and Synthesis of Conjugated Polymers for Advanced Applications." Imperial College London, Materials Science Department, 7th November

• **2014**

77. "Molecular Engineering of Conjugated Polymers for Advanced Applications." Center for Solar and Thermal Energy Conversion, University of Michigan, 13th March

78. "Past, present and future of polybenzobisazoles" American Chemical Society Polymer Chemistry Division- Synthesis and Applications of Conjugated Materials: Contributions from Texas and Beyond Symposia, 18th March

79. "Tuning the properties of organic semiconductors via atomic engineering." Department of Chemistry, University of Nebraska-Lincoln, 21st March

80. "Tuning the properties of organic semiconductors via atomic engineering." Department of Chemistry, University of California Santa Cruz, 12th May

81. "Design and synthesis of novel conjugated polymers for use in photovoltaic cells". Materials Research Society Fall meeting, 3rd December

• **2015**

82. "Making Molecules." Department of Chemistry, Smith College, 19th February

83. "Tuning the Properties of Organic Semiconductors Via Atomic Engineering." Department of Chemistry, John Hopkins, 23rd February

84. "Towards conjugated polymer photovoltaic cells from low-cost starting materials." ACS-Spring meeting- Energy and Material II Symposium, 23rd March

85. "Making Molecules." Department of Chemistry and MARC program, University of West Florida- 10th April

86. "Designing Materials for High-Tech Applications" MIT- Martin Luther King Jr. Professor Luncheon Series- 15th April
87. "Tuning the Properties of Organic Semiconductors Via Atomic Engineering." Department of Chemistry, Southern Illinois University-1st May
88. "Tuning the Properties of Organic Semiconductors Via Atomic Engineering." Program for Polymers and Soft Materials, MIT- 6th May
89. "Tuning the Properties of Organic Semiconductors Via Atomic Engineering." Department of Chemistry, Oregon State University- 21st May
90. "Designing Organic Semiconductors for Advanced Applications." Department of Chemistry, University of Oregon- 22nd May
91. "Living in a Materials World: Designing Organic Semiconductors for Advanced Applications." Wellesley College, Summer Science Program- 24th June
92. "Tuning the Properties of Organic Semiconductors Via Atomic Engineering". Boston University 4th June
93. "Design and synthesis of tunable cross-conjugated organic semiconductors". 12th International Symposium on Functional π -Electron Systems, Seattle, WA, 25th, July.
94. "Benzobisoxazole cruciforms: New tunable cross-conjugated materials for organic electronics." The International Chemical Congress of Pacific Basin Societies (Pacifichem). Honolulu, HI, 17th December
 - **2016**
95. "Tuning the properties of organic semiconductors via atomic engineering." Innovations in Materials Chemistry Symposium, sponsored by PPG Industries and the University of Pittsburgh, 5th May
96. "Navigating a Pathway to the Ivory Tower" Clarkson University Early Career Colloquium in Chemistry, Potsdam, NY, 9th June.
97. "Design and synthesis of cross-conjugated organic semiconductors." 36th Reaction Mechanisms Conference – RMC 2016, St. Louis MO, 28th June
98. "Tuning the properties of organic semiconductors via atomic engineering." Emory University, Atlanta GA, 28th September
99. "From molecules to materials: designing organic semiconductors for advanced applications." 2017 Henry Hill Lecturer, Northeastern Section of the American Chemical Society, Boston MA. 13th October.
100. "Tuning the properties of organic semiconductors via atomic engineering." Linus Pauling Award Symposium. Pacific Lutheran University, Tacoma WA, 12th November
 - **2017**
101. "Designing Organic Semiconductors for Advanced Applications." Department of Chemistry, University of Toronto- 3rd February

Prior to initial faculty appointment

- "The Synthesis of Novel Conjugated Polymers for the Study of Structure-Property Relationships." Mt Holyoke College, Department of Chemistry, 8 March 2001.
- "Towards the Development of Polythiophene Based Sensors." PPG Industries, 2 September 2003.
- "Towards the Development of Polythiophene Based Sensors." Youngstown State University,

Department of Chemistry, 28 October 2003.

- Union of Underrepresented Students Seminar, Smith College, March 9 2003.
- Keynote Speaker, National Society of Black Engineers (NSBE) end of year banquet University of Pittsburgh Chapter, April 2003.
- "Designing Molecules for Futuristic Applications." Iowa State University, Department of Chemistry (ChemCy), 4 October.
- "Design and Synthesis of Regioregular Poly-(3-alkylthiophenes): Novel Polymers, Novel Properties." Wellesley College, Department of Chemistry, 10 October 2004.

INVITED TO PARTICIPATION IN WORKSHOPS & SUMMER SCHOOLS

1. Invited Participant, USA-Japan Workshop, Osaka Japan, 13 December, 2008
2. Invited Participant, NSF Physical Organic Workshop, Austin, Tx, 6 January, 2010.
3. Invited Participant, Joint China-U.S. Workshop for Women Researchers in Chemistry", Beijing, China, October 24th – 29th, 2011.

CONTRIBUTED CONFERENCE PRESENTATIONS

From independent career

1. "Efficient Synthesis of Regioregular Polythiophene Block Copolymers." Jeffries-EL, M.*; Mitchell, M.H. American Chemical Society 42nd Regional Meeting, Kansas City, MO, October 19th, November 2007. *Oral Presentation.*
2. "Efficient Synthesis of Regioregular Polythiophene Block Copolymers." Jeffries-EL, M.*; Mitchell, M.H. National Organization for the Professional Advancement of Black Chemist and Chemical Engineers (NOBCChE) 35st Meeting, Philadelphia, PA, 20th, April 2008. *Oral Presentation.*
3. "Synthesis of novel conjugated polymers based on benzobisoxazoles." Jeffries-EL, M.*; Mike, J.F. 8th International Symposium on Functional π -Electron Systems (Gratz, Austria), 21st, July 2008. *Oral Presentation.*
4. "Synthesis of nanostructured regioregular poly(3-hexylthiophene) block copolymers via "click" chemistry." Jeffries-EL, M.*; Mike, J.F.; Intemann, J.J.; Makowski, A.J. American Chemical Society 236th National Meeting, Philadelphia, PA, 20th, August 2008. *Oral Presentation.*
5. "Design and Synthesis of Alkyne Functionalized Regioregular Polythiophenes." Jeffries-EL, M.*; Kobilka, B.M.; Laskowski, R.L.; Mitchell, M.M. Gordon Research Conference Polymers, South Hadley, MA 22nd, June 2009. *Poster Presentation.*
6. "Synthesis and Characterization of Conjugated Polymers Containing Benzobisazoles." Mike, J.F.; Inteman, J.J.; Makowski, A.J.; Tlach, B.C.; Bhuwalka, A.; and Jeffries-EL, M.* National Organization for the Professional Advancement of Black Chemist and Chemical Engineers (NOBCChE) Northeast Regional Meeting, Philadelphia, PA, 5 - 6 2010. *Oral Presentation.*
7. "Design and synthesis of tunable benzobisoxazoles for the development of n-type conjugated materials." Jeffries-EL, M.*; Mike, J.F.; Intemann, J.J.; and Makowski, A.J. American Chemical Society 241st National Meeting, Anaheim, CA, 27 - 31, March 2011. *Oral Presentation.*
8. "Benzodifurans: New building blocks for the synthesis of conjugated polymers." Jeffries-EL, Malika; Kobilka, Brandon M.; Ewan, Monique D.; Hale, Benjamin J.; Tomlinson, Aimee L. American Chemical Society 244th National Meeting, Philadelphia, PA, 20th, August 2012. *Oral Presentation.*

From graduate and postdoctoral work

1. "Synthesis and Characterization of Head-to-Tail Polyazomethines." Jeffries-EL, M.*; Benneyworth, B.; and Tarkka, R.M. American Chemical Society 219th National Meeting, San Francisco, California, March 26th, 2000. *Poster Presentation.*
2. "Synthesis and Characterization of Head-To-Tail Polyazomethines." Jeffries-EL, M.*; Benneyworth, B.; and Tarkka, R.M. National Organization for the Professional Advancement of Black Chemist and

- Chemical Engineers (NOBCChE) 27th National Meeting, Miami, Florida, April 20th, 2000. *Poster Presentation*.
3. "Synthesis and Characterization of Asymmetrically Substituted Aromatic Schiff-Base Polymers." Jeffries-EL, M.*; Ambrosio, K.M.; and Tarkka, R.M. American Chemical Society 221st National Meeting, San Diego, California, April 1st, 2001. *Poster Presentation*.
 4. "Synthesis and Characterization of Asymmetrically Substituted Aromatic Schiff-Base Polymers." Jeffries-EL, M.*; Benneyworth, B.; and Tarkka, R.M. National Organization for the Professional Advancement of Black Chemist and Chemical Engineers (NOBCChE) 28th National Meeting, Baltimore, Maryland, April 11th, 2001. *Oral Presentation*.
 5. "Synthesis of Novel Glycopolythiophenes." Jeffries-EL, M.*; Zaiger, K.; and McCullough, R.D. National Organization for the Professional Advancement of Black Chemist and Chemical Engineers (NOBCChE) 29th National Meeting New Orleans, March 26th, Louisiana, 2002.
 6. "Synthesis of Novel Glycopolythiophenes." Jeffries-EL, M.*; Zaiger, K.; and McCullough, R.D. American Chemical Society 223rd National Meeting, Orlando, Florida, April 1st, 2002. *Poster Presentation*.
 7. "Facile Synthesis of Novel Polymers Based on 3-Methylthiophene." Jeffries-EL, M.; Ewbanks, P.; Laird D.; and McCullough, R.D. National Organization for the Professional Advancement of Black Chemist and Chemical Engineers (NOBCChE) 30th National Meeting, Indianapolis, Indiana, 15th, April, 2003. *Oral Presentation*.
 8. "End Group Modification of Regioregular Poly (3-alkylthiophene)s." Jeffries-EL, M.; Sauv , G.; and McCullough, R.D. Air Force Office of Scientific Research-Multidisciplinary Research Program of the University Research Initiative (AFOSR-MURI) Annual Review Meeting, Santa Barbara, February 20th, 2003. *Poster Presentation*.
 9. "Synthesis and Characterization of a Diverse Group of Regioregular Poly(3-alkylthiophenes) for use in Integrated Sensors." Jeffries-EL, M.; Iovu, M.C.; Cooper, J.; Sauv , G.; Sreedharan, P.; and McCullough, R.D. Air Force Office of Scientific Research-Multidisciplinary Research Program of the University Research Initiative (AFOSR-MURI) Annual Review Meeting, West Virginia, February 18th 2004. *Poster Presentation*.
 10. "In Situ End Group Functionalization of Regioregular Poly(3-alkylthiophenes) via Modified Grignard Metathesis (GRIM) Polymerization." Jeffries-el, M.; Sauv , G.; Iovu, M.C.; and McCullough, R.D. American Chemical Society 227th National Meeting, Anaheim, California, 30th March, 2004. *Poster Presentation*.
 11. "In Situ End Group Functionalization of Regioregular Poly(3-alkylthiophenes) via Modified Grignard Metathesis (GRIM) Polymerization." Jeffries-El, M.; Sauv , G.; Iovu, M.C.; and McCullough, R.D. National Organization for the Professional Advancement of Black Chemist and Chemical Engineers (NOBCChE) 31st Meeting, San Diego, CA, 1th, April 2004. *Oral Presentation*.
 12. "In Situ End Group Functionalization of Regioregular Poly(3-alkylthiophenes) via Modified Grignard Metathesis (GRIM) Polymerization." Jeffries-El, M.; Sauv , G.; Iovu, M.C.; and McCullough, R.D. 6th International Symposium on Functional π -Electron Systems, Ithaca, NY, 15th, June 2004. *Poster Presentation*.
 13. "End Functionalization Poly(3-alkylthiophenes) as Building Blocks for the Synthesis of Diblock Copolymers." Jeffries-EL, M.*; Iovu, M. C.; Sheina, E.E.; Sauv , G.; and McCullough, R.D. American Chemical Society 227th National Meeting, Philadelphia, PA, 22nd, August 2004. *Oral Presentation*.
 14. "Single Chip Multimodal Integrated Nanosensors: Electroactive Polymers – Synthesis." Jeffries-El, M.; Iovu, M.C.; Sauv , G.; Rule, G. and McCullough, R.D. Air Force Office of Scientific Research-Multidisciplinary Research Program of the University Research Initiative (AFOSR-MURI) Annual Review Meeting, Maui, Hawaii, February, 2004. *Poster Presentation*.

Research Training

Postdoctoral Associates (2 total)

Name	Dates	Current Position, Title
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Dr. Jessica Shaw March 2017 – present
 Dr. Diane Hinkens (NSF-ACC Fellow) June 2010-August 2011 Postdoctoral Fellow
 Dr. Balaji Ganapathy (Split with Prof. V. Dalal) May 2012-December 2013

Graduate Students (15 total)

Name	Dates	Position after ISU
1. Nicole Berry	November 2016- present	
2. David Wheeler	November 2016- present	
3. Amy Brown	November 2014- present	
4. Alfred Burney-Allen	November 2014- present	
5. Carmen Gott	November 2014- present	
6. Evan Muller	November 2013 – present	
7. Ramiro Chavez	November 2012 – present	
8. Monique Ewan	November 2010 – Fall 2015	Intel
9. Benjamin Hale	November 2009 – Fall 2015	
10. Dana Drochner	November 2009 – Fall 2015	
11. Achala Bhuiwarka	November 2008 – Fall 2014	Intel
12. Brian Tlach	November 2008 – Fall 2014	Siegwerk, Inc.
13. Dr. Brandon Kobilka	November 2007 – Fall 2013	Postdoctoral Fellow, U. Wisconsin
14. James Kilmavicz	Fall 2010 – Summer 2013	Math department at ISU
15. Dr. Jeremy Intemann	Spring 2007 – Spring 2012	Postdoctoral Fellow, U. Washington
16. Dr. Jared Mike	Summer 2006 – Fall 2011	Postdoc at Texas A and M
17. Dr. Tim Mauldin	Spring 2007 – Fall 2011	IBM.
18. Michael Mitchell	Spring 2006 - Fall 2007	St. Gobain coatings.
19. Robyn Laskowski	Fall 2006 - Fall 2009	Pioneer.
20. Emerald Wilson	Fall 2006 – Fall 2007	Hach Chemical.

Undergraduate Students (24 total)

Name	Dates	Next Step
1. Kristina Nugent	Summer 2015 – Fall 15	
2. Emily Stender	Fall 2014	
3. Jon Stoffer	Fall 2013 – Spring 2014	
4. Kyle Krager	January 2013 – December 2013	
5. Lindsey Hannam	Spring 2013	
6. Matthew Hirsch	Spring 2013	
7. Daniel Hoebelheinrich	Spring 2012	
8. Dawn Knoble	Spring 2012	
9. Peng Yi	Spring 2011	
10. Logan Wells	Spring 2011	
11. Luke Rolling	Summer 2010	
12. Kaitlyn Mahoney	Summer 2010	
13. James Kilmavicz	Spring 2010	
14. Scott Meester	Spring 2010	
15. Andrew Makowski,	Summer 2008, Fall 2009	
16. Zachary Martin	Summer 2009 – Fall 2009	
17. Jason Hester	Summer 2009	
18. Austin Strohbehn	Spring 2008 – Fall 2009	U.I. Medical School
19. Stephen Maffet	Summer 2008	
20. Joshua Choi,	Spring 2008	
21. Joy Jackson,	UAPB Summer 2007	Ph.D ISU 2012
22. Laura Larabee	Spring 2007	
23. Robert Mason	Spring 2006 – Spring 2007	
24. Nicholas West	Spring 2006 – Spring 2007	

25. Jared Austin Spring 2006

High School Students (6 total)

<u>Name</u>	<u>Dates</u>
1. Hwawang (Jaime) Lee (BU RISE)	Summer 2016
2. Anna (BU GROW)	Summer 2016
3. Abdisalan Omar (ACS Project Seed)	Summer 2014
4. Luis Martinez (ACS Project Seed)	Summer 2012 and 2013
5. Nia Johnson (Ames High School Intern Program)	Spring/Summer 2011
6. Chyna Williams (pipelines program)	Summer 2008

Named twice as the faculty member who helped them achieve during the annual Student Scholars and Leaders Recognition Ceremony. (Maria Mangano 2009, Austin Strobehn 2010).

UNIVERSITY SERVICE

Department of Chemistry

1. 2012-2014 Faculty search committee.
2. 2013 -14 Mentor, PFF Program (Advisees Geetika Chadka, Elham Tavolsi)
3. 2012 -13 Mentor, PFF Program (Advisees Kathlyn Mahoney, Christie Beck)
4. 2012- Mentor ACS Project SEED (Luis Alvarez)
5. 2010 – Undergraduate Student Advisor
6. 2010 – HHMI Faculty Learning Community
7. 2009 Faculty Advisor ISU ACS Younger Chemist Society
8. 2010 – 2011 Undergraduate Advising Committee
9. 2007 – present GAANN Fellowship selection committee.
10. 2005 – present Member, Graduate Recruiting and Admissions Committee.
11. 2005-present Mentor Freshman Honors Program.
12. 2006 - 2007 Mentor, Preparing Future Faculty Program (Advisee Stacey Stoffregen)
13. 2008- present Mentor Pipelines Program (Chyna Williams)
14. POS Committee Member (20 Active students, 69 graduated/departed)

University Wide

1. **2013-** ISU Healthy Campus Initiative
2. **2012-** Faculty Chair, Black Faculty and Staff Association
3. **2011-** Advisory Board Iowa EPSCoR Broader Impacts Council
4. **2011-** Presenter- Sciencebound Saturday
5. 2011 Mentor Partnerships for Science and Engineering Program (Nia Johnson)
6. 2005 – Faculty co-Advisor, Iowa State Chapter of NOBCCHE
7. 2010 - 2011 Search Committee-Dean College of Liberal Arts and Sciences
8. 2009 – 2010 2050 Challenge Task Force
9. 2008-2010 Member, Steering Committee: African and African American Studies Department.

10. 2008 Presenter- Sciencebound Saturday
11. 2008 Poster judge Graduate Minority Assistantship Program (GMAP) Annual research symposium
12. 2008 Participant ISU foundation fundraising campaign video
13. 2008 Moderator, Ames Lab High School Science Bowl
14. 2007 Moderator, Ames Lab High School Science Bowl
15. 2006 Facilitator Early Outreach Program
16. 2006 Judge, Ames Lab High School Science Bowl
17. 2006 Participant WISE transfer student workshop
18. 2005- 2010 Mentor and Recruiter, Iowa Alliance for Graduate Education and the Professoriate (AGEP)

PROFESSIONAL SERVICE

Professional Societies

1. 2014 - 2016 Program Committee- ACS Polymer Division
2. 2014- 2016 Member at Large- ACS Organic Division
3. 2013 Undergraduate Education Advisory Board (ACS)
4. 2011- 2015 Councilor- Ames Local Section of the American Chemical Society (ACS)
5. 2010-2013 ACS Society Committee on Education (SocED)
6. **2008-** Mentor-Diverse Future Faculty Workshop
7. 2006 – 2008 ACS Joint Subcommittee on Diversity
8. 2004 – 2007 Graduate Education Advisory Board (ACS)
9. 2003 – 2005 Membership recruitment and retention task force (ACS)
10. 2002 – 2009 Younger Chemist Committee (YCC) Associate (ACS)
11. 2008 – 2009 Chair-YCC Society Interface and Outreach Subcommittee (SIO)
12. 2006 – 2007 YCC Program Chair
13. 2003 – 2006 NOBCChE national meeting session chair, polymer chemistry
14. undisclosed ACS Awards
15. undisclosed NOBCCHE Awards committee