

PSARAS LAMAR MCGRIER

EDUCATION

- 2010 Ph.D. Organic/Polymer Chemistry, Georgia Institute of Technology (GT), Atlanta, GA
2004 B.S. Chemistry, University of South Carolina, Aiken (USCA), Aiken, SC

PROFESSIONAL EXPERIENCE

- 2013-Present Assistant Professor, Department of Chemistry and Biochemistry, The Ohio State University (OSU), Columbus, OH
2010-2013 Postdoctoral Scholar, Northwestern University, Evanston, IL
Research Advisor: Professor Sir Fraser Stoddart
2010-2005 Research and Teaching Assistant, Department of Chemistry & Biochemistry, GT, Atlanta, GA
Research Advisor: Professor Uwe Bunz
2004-2005 Lecturer, USCA, Aiken, SC

HONORS AND AWARDS

- 2016 Recipient of the OSU Institute for Materials Research (IMR) Exploratory Materials Research Grant
2015 Recipient of the American Chemical Society Petroleum Research Fund Doctoral New Investigator Grant
2013 Recipient of the GT Facilitating Academic Careers in Engineering and Science (FACES) and National Science Foundation (NSF) Career Initiation Grant
2010 Recipient of the GT-FACES and NSF Postdoctoral Grant (\$35,000)
2010 Recipient of the GT Center for Organic Photonics and Electronics (COPE) Travel Grant (\$1,000)
2008 The 8th International Symposium on Functional π -Electron Systems (F π 8) Poster Winner for “Hydroxy Cruciforms: Amine-Responsive Fluorophores”
2005-2010 GT-FACES Fellow
2001-2004 South Carolina Legislative Incentive for Future Excellence (LIFE) Scholar

PUBLICATIONS (AT OSU)

- [18] **Metalation of a Mesoporous Three-Dimensional Covalent Organic Framework.** Baldwin, L. A.; Crowe, J. W.; Pyles, D. A.; McGrier, P. L.* *submitted*.
- [17] **The Excited State Intramolecular Proton Transfer Properties of Three Salicylideneaniline-Based Chromophores with Extended Conjugation.** Jagadesan, P.; Whittemore, T.; Beirl, T.; Turro, C.; McGrier, P. L.* *submitted*.
- [16] **Luminescent Covalent Organic Frameworks Containing a Homogeneous and Heterogeneous Distribution of Dehydrobenzoannulene Vertex Units.** Crowe, J. W.; Baldwin, L. A.; McGrier, P. L.* *J. Am. Chem. Soc.*, **2016**, *138*(32), 10120-10123.
- [15] **Synthesis of Benzobisoxazole-Linked Two-Dimensional Covalent Organic Frameworks and Their Carbon Dioxide Capture Properties.** Pyles, D. A.; Crowe, J. W.; Baldwin, L. A.; McGrier, P. L.* *ACS Macro Lett.* **2016**, *5*(9), 1055–1058.
- [14] **2D Covalent Organic Frameworks with Alternating Triangular and Hexagonal Pores.** Baldwin, L. A.; Crowe, J. W.; Shannon, M. D.; Jaroniec, C. P.; McGrier, P. L.* *Chem. Mater.*, **2015**, *27* (18), 6169-6172. (#5 most downloaded article Sept. - Oct. 2015)

PUBLICATIONS (PRIOR TO OSU)

- [13] **A Water Soluble pH-Triggered Molecular Switch.** Grunder, S.[†]; McGrier, P. L.[†]; Whalley, A. C.; Boyle, M. M.; Stern, C.; Stoddart, J. F. *J. Am. Chem. Soc.*, **2013**, *135*(47), 17691-17694. († equal contributions)
- [12] **ExBox: A Polycyclic Aromatic Hydrocarbon Scavenger.** Barnes, J.; Juriček, M.; Strutt, N.; Frascioni, M.; Sampath, S.; Giesener, M.; McGrier, P. L.; Bruns, C.; Stern, C.; Sarjeant, A.; Stoddart, J. F. *J. Am. Chem. Soc.*, **2013**, *135*(1), 183-192. (Cover Page)
- [11] **A Neutral Naphthalene Diimide [2]Rotaxane.** Jacquot de Rouville, H. P.; Lehi, J.; Bruns, C. J.; McGrier, P. L.; Frascioni, M.; Sarjeant, A. A.; Stoddart, J. F. *Org. Lett.*, **2012**, *14*(20), 5188-5191.
- [10] **Synthesis, Structure, and Metalation of Two New Highly Porous Zirconium Metal-Organic Frameworks.** Morris, W.; Voloskiy, B.; Demir, S.; Gandara, F.; McGrier, P. L.; Furukawa, H.; Cascio, D.; Stoddart, J. F.; Yaghi, O. M. *Inorg. Chem.*, **2012**, *51*(12), 6443-6445.
- [9] **Hydroxydialkylamino Cruciforms: Amphoteric Materials with Unique Photophysical Properties.** McGrier, P. L.; Solntsev, K. M.; Zuccherro, A. J.; Miranda, O. R.; Rotello V. M.; Tolbert, L.; Bunz, U. H. F. *Chem. Eur. J.* **2011**, *17*(11), 3112-3119. (Frontispiece)
- [8] **Hyperbranched Conjugated Polymers: Postfunctionalization.** Kub, C.; Tolosa, J.; Zuccherro, A. J.; McGrier, P. L.; Subramani, C.; Khorasani, A.; Rotello, V. M.; Bunz, U. H. F. *Macromolecules.* **2010**, *43*(5), 2124-2129.
- [7] **Cross-Conjugated Cruciform Fluorophores.** Zuccherro, A. J., McGrier, P. L., Bunz, U.

H. F. *Acc. Chem. Res.* **2010**, *43*(5), 397-408. (Cover page)

- [6] **Acidochromicity of Bisarylethynylbenzenes: Hydroxy versus Dialkylamino Substituents.** Brombosz, S. M., Zuccherro, A. J., McGrier, P. L., Bunz, U. H. F. *J. Org. Chem.* **2009**, *74*(23), 8909-8913. (Featured Article)
- [5] **Cruciform-Silica Hybrid Materials.** Zuccherro, A.J., Shiels, R.A., McGrier, P. L., Alicia To, M., Jones, C. W., Bunz, U. H. F. *Chem. Asian. J.* **2009**, *4*(2), 262-269.
- [4] **Hydroxycruciforms: Amine-Responsive Fluorophores.** McGrier, P. L.; Solntsev, K. M.; Miao, S.; Tolbert, L. M.; Miranda, O. R.; Rotello, V. M.; Bunz, U. H. F. *Chem. Eur. J.* **2008**, *14*(15), 4503-4510. (Cover page)
- [3] **Anomalous Photophysics of Bis(hydroxystyryl)benzenes: A Twist on the Para/Meta Dichotomy.** Solntsev, K. M.; McGrier, P. L.; Fahrni, C. J.; Tolbert, L. M.; Bunz, U. H. F. *Org. Lett.* **2008**, *10*(12), 2429-2432.
- [2] **Hydroxy-cruciforms.** McGrier, P. L.; Solntsev, K. M.; Schonhaber, J; Brombosz, S; Tolbert, L. M.; Bunz, U. H. F. *Chem. Commun.* **2007**, 2127-2129.
- [1] **Evaluation of Melt Rate Through Higher Waste Loading.** Lorier, T. H., McGrier, P. L. *Environmental Issues and Waste Management Technologies in the Ceramic and Nuclear Industries IX.* **2006**, Volume 155 (eds J. D. Vienna and D. R. Spearing), John Wiley & Sons, Inc., Hoboken, NJ, USA. DOI:10.1002/9781118407004.ch25

INVITED LECTURES

- [10] **Department of Chemistry and the Center for Photochemical Sciences Colloquium. Bowling Green State University, Bowling Green, OH; April 26, 2017.** "Synthesis and Design of Functional Covalent Organic Frameworks"
- [9] **Chemistry Department Colloquium. Southern Illinois University, Carbondale, IL; Nov. 4, 2016.** "Synthesis and Design of Functional Covalent Organic Frameworks"
- [8] **47th Central Regional Meeting of the American Chemical Society, Covington, KY, May 18-21, 2016.** Controlled Assembly of Functional Supramolecular Materials, "*Design & Synthesis of Dehydrobenzoannulene-based 2D Covalent Organic Frameworks*".
- [7] **47th Central Regional Meeting of the American Chemical Society, Covington, KY, May 18-21, 2016.** Organic Chemistry: Design of Functional Macromolecules, "*Synthesis and Design of Benzoxazole-Linked Covalent Organic Frameworks*".
- [6] **15th Material Science and Technology National Meeting, Columbus, OH; October 4-8, 2015.** *Hybrid Organic-Inorganic Materials for Alternative Energy.* "Metal-Doped Covalent Organic Frameworks: From Practical Designs to Gas Storage Applications"
- [5] **250th American Chemical Society National Meeting, Boston, MA; August 16-20, 2015.** *Division of Energy and Fuels: Porous Materials for Energy and Sustainability from Discovery to Application.* "Synthesis and Design of Functional Covalent Organic Frameworks"

- [4] **Physics Department Exploration of Novel Complex Materials (ENCOMM) Seminar, The Ohio State University, Columbus, OH; April 22, 2015.** “Synthesis and Design of Functional Covalent Organic Frameworks”
- [3] **Chemistry Department Colloquium. Youngstown State University, Youngstown State, OH; April 3, 2015.** “Synthesis and Design of Functional Covalent Organic Frameworks”
- [2] **249th American Chemical Society National Meeting, Denver, CO; March 22-26, 2015.** *Division of Polymer and Material Science (PMSE): Design Principles of Functional Macromolecular Materials.* “Synthesis and Design of Functional Porous Organic Polymers”
- [1] **First Ohio Conference on Sustainable Use of Greenhouse Gases, Columbus, OH; August 18, 2014.** “Novel Porous Materials for CO₂ Uptake and Sequestration.”

CONFERENCE PRESENTATIONS

- [6] **Gordon Research Conference: Polymers, South Hadley, MA; 14-19 June 2015.** “Synthesis and Design of Functional Porous Organic Polymers” Poster Presentation.
- [5] **14th International Symposium of Novel Aromatic Compounds, Eugene, Oregon; July 2011.** “*Cruciform Metal-Organic Frameworks*” Poster Presentation.
- [4] **9th International Symposium on Functional π -Electron Systems (F π 9), Atlanta, Georgia; May 2010.** “Hydroxy-Dialkylamino Cruciforms: Novel Materials With Unique Photophysical Properties” Poster Presentation.
- [3] **National Organization for the Professional Advancement of Black Chemists and Engineers (NOBCCHE); Atlanta, Georgia, March 2010.** “Hydroxycruciforms: Amine Responsive Fluorophores” Poster Presentation.
- [2] **8th International Symposium on Functional π -Electron Systems (F π 8), Graz, Austria; July 2008.** “Hydroxycruciforms: Amine Responsive Fluorophores” Poster Presentation.
- [1] **South Carolina Academy of Science, Chemistry Session, Clemson, South Carolina; March 2003.** “*Melt Rate Improvement for the DWPF: Higher Waste Loading Testing*”

RESEARCH FUNDING

- [3] **PI:** Psaras McGrier, PI **Funding Period:** 09/01/16-08/31/17
 “Synthesis and Design of Novel Graphyne and Graphdiyne-Based Metal-Organic Frameworks”
Sponsor: OSU-IMR Exploratory Materials Research Grant
Amount: \$40,000
- [2] **PI:** Psaras McGrier, PI **Funding Period:** 09/01/15-08/31/17
 “Synthesis and Design of Novel Metal-Doped Porous Organic Polymers: The Enhancement of π -Complexation with Small Unsaturated Hydrocarbons”

Sponsor: American Chemical Society Petroleum Research Fund (55562-DNI7)
Amount: \$110,000

[1] **PI:** Psaras McGrier **Funding Period:** 09/01/13-08/31/18
“Synthesis & Design of Novel Luminescent Covalent Organic Frameworks: Functional Porous Materials for Environmental Safety & Gas Storage Applications”
Sponsor: GT-FACES and NSF
Amount: \$30,000

TEACHING

Fall 2013-2015 CHEM 2510: Organic Chemistry I

Spring 2015 & 2016 CHEM 5420: Organic Spectroscopy

SERVICE

Within the Department of Chemistry and Biochemistry at OSU:

Fall 2013-Present Graduate Admissions Committee

Fall 2015-Present Inorganic/Organic Seminar Co-Coordinator

Fall 2014-Present Mentor to the student National Organization for Professional Advancement of Black Chemists and Chemical Engineers (NOBCCChE) chapter at OSU. Presented an invited NOBCCChE career development seminar entitled “How to Obtain a Job in Academia: The Process and Challenges” to the undergraduate, graduate, and postdoctoral students across many diverse fields (e.g., chemistry, biochemistry, physics, and engineering) at OSU.

Summer 2014, 2016 Organic Division Oral Exam Committee

Member of many (>15) Ph.D candidacy exams, M.S. Thesis, and Ph.D. Dissertation Committees.

Other Synergistic Activities:

Reviewer for *Polymer Chemistry*, *Journal of Materials Chemistry C*, *Inorganica Chimica Acta*, *ACS Macro Letters*, *Journal of the American Chemical Society*, *ACS Applied Materials & Interfaces*, *Chemical Communications*.

Session Organizer for the 47th Central Regional Meeting of the American Chemical Society (CERMACS), Covington, Kentucky; 18-21 May 2016. Session Topic: *Functional Porous & Polymeric Materials: Synthesis, Properties & Applications*.

DEGREES AWARDED

M.S., August 2015 Toni Beirl

SUPERVISED CO-WORKERS

Postdoctoral Researchers:

Fall 2015-Present Dr. Pradeep Jagadesan

Spring 2016-Present Dr. Pezhman Arab

Graduate Students:

Fall 2013-Present Luke Baldwin

Fall 2013-Present Jonathan Crowe

Spring 2014-Present Grace Eder

Spring 2015-Present David Pyles

Undergraduate Students:

Fall 2015-Present Benjamin Walker

Fall 2015-Present Benjamin Clark

Summer 2015 D'Ann Abreu

Summer 2016 Jeremiah Kinsey (REU, Alabama A&M University)

MEMBERSHIP AND AFFILIATIONS

Fall 2002-Present Kappa Alpha Psi Fraternity, Inc. Member

Fall 2004-Present USCA Alumni Association

Fall-2010-Present GT Alumni Association

Fall 2014-Present American Chemical Society (ACS) Member

Fall 2015-Present ACS Division of Polymeric Materials and Engineering (ACS-PMSE) Member