

# Justin G. Kennemur

Curriculum Vitae – August 2024

Department of Chemistry & Biochemistry, Florida State University, 95 Chieftan Way DLC 110,  
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## EDUCATION

2010                      Ph.D. Polymer Chemistry. North Carolina State University. Raleigh, NC.  
Advisor: Bruce M. Novak.

2002                      B.S. Chemistry. Radford University. Radford, VA.

## PROFESSIONAL APPOINTMENTS

2020 – present            Associate Professor. Department of Chemistry & Biochemistry. Florida  
State University. Tallahassee, FL.

2014 – 2020              Assistant Professor. Department of Chemistry & Biochemistry. Florida  
State University. Tallahassee, FL.

2011 – 2014              Post-Doctoral Associate. Department of Chemistry. Department of  
Chemical Engineering & Materials Science. University of Minnesota.  
Minneapolis, MN. Advisors: Marc A. Hillmyer and Frank S. Bates.

2002 – 2005              Chromatography Analyst. Polymer Solutions Incorporated. Blacksburg,  
VA.

## AWARDS AND HONORS

2023                      Developing Scholar Award – Florida State University

2023                      Secretary (elected) – Division of Polymer Chemistry - ACS

2023                      Editorial Advisory Board - *Macromolecules*

2021                      *Polymer Chemistry (RSC)* Pioneering Investigator

2020                      Editorial Advisory Board – *Polymer Chemistry*

2019                      ACS Editors' Choice – *Macromolecules*

2018                      ACS PMSE Young Investigator

2018                      National Science Foundation CAREER Award

2018                      Florida State University Undergraduate Teaching Award

2018                      *Macromolecular Rapid Communications (Wiley)* Young Talents

2018                      *Polymer Chemistry (RSC)* Emerging Investigator

2018                      College of Arts & Sciences Dean's Faculty Travel Award

- 2015 ACS Petroleum Research Fund - Doctoral New Investigator Award
- 2015 First Year Assistant Professor Summer Award. Florida State University.
- 2010 American Chemical Society POLY/PMSE - AkzoNobel Student Award in Applied Polymer Science.
- 2010 American Chemical Society, North Carolina Section, Richard D. Gilbert Award in Polymer Science, First Place - Oral Presentation.
- 2010 Phi Lambda Upsilon Award for Excellence. North Carolina State University.
- 2009 American Chemical Society, North Carolina Section, Richard D. Gilbert Award in Polymer Science - Best Poster.
- 2009 NCSU Graduate Research Symposium Award Winner, PAMS Division.
- 2007 Award for Outstanding Research Accomplishments in Chemistry, Chemistry Poster Session. North Carolina State University.
- 2001 Dr. Rogers F. Lambert Endowed Scholarship in Chemistry. Radford University.
- 2000 Dale Snead Boxley Scholarship. Radford University.
- 1998 CRC Press LLC Chemistry Freshman Achievement Award. Radford University.

## **PUBLICATIONS –Corresponding Author(s) in Bold**

### Independent Career

41. Leo, C. M.; Alonzo, S. N.; Grumbles, E.; **Kennemur, J. G.** Sulfonated Aromatic Polypentenamers – Scope of the Acetyl Sulfate Reaction. *Macromolecules*, **2024**, *XX*, XXXX-XXXX. <https://doi.org/10.1021/acs.macromol.4c01145>
40. Leo, C. M.; Jang, J.; Corey, E. J.; Neary, W. J.; Bowman, J. I.; **Kennemur, J. G.** Comparison of Polypentenamer and Polynorbornene Bottlebrushes in Dilute Solution. *ACS Polym. Au*, **2024**, *4*, 235–246. <https://doi.org/10.1021/acspolymersau.3c00052>
39. **Tashiro, K.**; Guillory, G. A.; Marxsen, S. F.; Kennemur, J. G.; **Alamo, R. G.** Crystal Structures of *isotactic* and *atactic* Poly(1-pentamethylene alcohol). *Macromolecules*, **2023**, *56*, 5993–6002. <https://doi.org/10.1021/acs.macromol.3c01060>
38. Coia, B. M.; Hudson, L.; Specht, A.; **Kennemur J. G.** Substituent Effects on Torsional Strain in Cyclopentene Derivatives: A Computational Study. *J. Phys. Chem. A*, **2023**, *127*, 5005–5017. <https://doi.org/10.1021/acs.jpca.3c02267>
37. Leo, C. M.; **Kennemur, J. G.** A New CAMMP-ing Ground for Polymers. *Nature Syn*, **2022**, *1*, 917–918. (Invited News & Views Article) <https://doi.org/10.1038/s44160-022-00198-y>
36. Guillory, G. A.; Marxsen, S. F.; Alamo, R. G.; **Kennemur, J. G.** Precise Isotactic or Atactic Pendant Alcohols on a Polyethylene Backbone at Every Fifth Carbon: Synthesis, Crystallization, and Thermal Properties. *Macromolecules*, **2022**, *55*, 6841–6851, <https://doi.org/10.1021/acs.macromol.2c01090>

35. Nguyen, N.; Blatt, Michael P.; Kim, K.; **Hallinan, D. T.**; **Kennemur J. G.** Investigating the Miscibility and Lithium Ion Transport in Blends of Poly(ethylene oxide) with a Polyanion Containing Precisely-spaced Delocalized Charges. *Polym. Chem.* **2022**, *13*, 4309–4323. <https://doi.org/10.1039/D2PY00605G>
34. Beery, D.; Stanisauskis, E.; McLeod, G. M.; Das, A.; Guillory, G. A.; Kennemur, J. G.; **Oates, W. S.**; **Hanson, K. H.** Enabling Lower Energy Light Harvesting in Stilbene-Based Photomechanical Polymers via Triplet Sensitization. *ACS Appl. Polym. Mater.* **2022**, *4*, 4081–4086. <https://doi.org/10.1021/acsapm.2c00660>
33. Paren, B. A.; Nguyen, N.; Ballance, V.; Hallinan, D. T.; Kennemur J. G.; **Winey, K. I.** Superionic Li-Ion Transport in a Single-Ion Conducting Polymer Blend Electrolyte. *Macromolecules*, **2022**, *55*, 4692–4702. <https://doi.org/10.1021/acs.macromol.2c00459>
32. Coia, B. M.; Werner, S.; **Kennemur, J. G.** Conformational Bias in Density Functional Theory Ring Strain Energy Calculations of Cyclopentene Derivatives: Towards Predictive Design of Chemically Recyclable Elastomers. *J. Polym. Sci.*, **2022**, *60*, 3391–3403. <https://doi.org/10.1002/pol.2022020202> (Invited Submission - Treating the Plastics Problem: From Renewable Feedstocks and Degradability to Recycling)
31. Kim, K.; Nguyen, N.; Marxsen, S. F.; Smith, S.; Alamo, R. G.; **Kennemur, J. G.**; **Hallinan, D. T.** Ionic Transport and Thermodynamic Interaction in Precision Polymer Blend Electrolytes for Lithium Batteries. *Macromol. Chem. Phys.* **2021**, *222*, 2100269. <https://doi.org/10.1002/macp.202100269>
30. Yarolimek, M. R.; Coia, B. M.; Bookbinder, H. R.; **Kennemur, J. G.** Investigating the Effect of  $\alpha$ -Pinene on the ROMP of  $\delta$ -Pinene. *Polym. Chem.* **2021**, *12*, 5048–5058. (Invited submission to themed collection: Sustainable Polymers) <https://doi.org/10.1039/D1PY00931A>
29. Paren, B. A.; Thurston, B. A.; Kanthawar, A.; Neary, W. J.; Kendrick, A.; Maréchal M.; Kennemur, J. G.; **Stevens, M. J.**; **Frischknecht, A. L.**; **Winey, K. I.** Fluorine-Free Precise Polymer Electrolyte for Efficient Proton Transport: Experiments and Simulations. *Chem. Mater.* **2021**, *33*, 6041–6051. <https://doi.org/10.1021/acs.chemmater.1c01443>
28. Yarolimek, M. R.; Bookbinder, H. R.; Coia, B. M., **Kennemur, J. G.** Ring-Opening Metathesis Polymerization of  $\delta$ -Pinene: Well-Defined Polyolefins from Pine Sap. *ACS Macro Lett.*, **2021**, *10*, 760–766. <https://doi.org/10.1021/acsmacrolett.1c00284>
27. Yarolimek, M. R.; **Kennemur, J. G.** Exploration of mandelic acid-based polymethacrylates: Synthesis, properties, and stereochemical effects. *J. Polym. Sci.*, **2020**, *58*, 3349–3357. <https://doi.org/10.1002/pol.20200638>

26. Paren, B. A.; Thurston, B. A.; Neary, W. J.; Kendrick, A.; Kennemur, J. G.; Stevens, M. J.; **Frischknecht, A. L.; Winey, K. I.** Percolated Ionic Aggregate Morphologies and Decoupled Ion Transport in Precise Sulfonated Polymers Synthesized by Ring-Opening Metathesis Polymerization effects. *Macromolecules*, **2020**, *53*, 8960–8973. <https://doi.org/10.1021/acs.macromol.0c01906>
25. Fultz, B. A.; Breery, D. A.; Coia, B. M.; Hanson, K.; **Kennemur, J. G.** “Catalyst Free Removal of Trithiocarbonate RAFT CTAs from Poly(vinylpyridine)s Using Tris(trimethylsilyl)silane and Light” *Polym. Chem.* **2020**, *11*, 5962–5968. (Invited Submission: Pioneering Investigators 2021) <https://doi.org/10.1039/D0PY01104E>
24. Fultz, B. A.; Terlier, T. Dunoyer de Segonzac, B.; **Verduzco, R.; Kennemur, J. G.** “Nanostructured Films of Oppositely Charged Domains from Self-Assembled Block Copolymers” *Macromolecules*, **2020**, *53*, 5638–5648. <https://doi.org/10.1021/acs.macromol.0c00707>
23. Guillory, G. A.; **Kennemur, J. G.** Investigating the Effects of Bulky Allylic Substituents on the Regioregularity and Thermodynamics of ROMP on Cyclopentene. *Eur. Polym. J.* **2019**, *120*, 109251. <https://doi.org/10.1016/j.eurpolymj.2019.109251>
22. Neary, W. J.; Isais, T. A.; **Kennemur, J. G.** Depolymerization of Bottlebrush Polypentenamers and their Macromolecular Metamorphosis. *J. Am. Chem. Soc.* **2019**, *141*, 14220–14229. <https://doi.org/10.1021/jacs.9b05560>
21. Kieber III, R. J.; Ozkardes, C.; Sanchez, N.; **Kennemur, J. G.** Cationic Copolymerization of Isosorbide Towards Value-added Poly(vinyl ethers). *Polym. Chem.* **2019**, *10*, 3514–3524. <https://doi.org/10.1039/C9PY00590K>
20. **Kennemur, J. G.** Poly(vinylpyridine) Segments in Block Copolymers: Synthesis, Self-Assembly, and Versatility. *Macromolecules*, **2019**, *52*, 1354–1370. <http://dx.doi.org/10.1021/acs.macromol.8b01661>
19. Neary, W. J.; **Kennemur, J. G.** Polypentenamer Renaissance: Challenges and Opportunities. *ACS Macro Lett.*, **2019**, *8*, 46–56. <http://dx.doi.org/10.1021/acsmacrolett.8b008855>
18. Neary, W. J.; Fultz, B. A.; **Kennemur, J. G.** Well-Defined and Precision-Grafted Bottlebrush Polypentenamers from Variable Temperature ROMP and ATRP. *ACS Macro Lett.*, **2018**, *7*, 1080–1086. <http://dx.doi.org/10.1021/acsmacrolett.8b00576>
17. Kendrick IV, A.; Neary, W. J.; Delgado, J. D.; Bohlmann, M.; **Kennemur, J. G.** Precision Polyelectrolytes with Phenylsulfonic Acid Branches at Every Five Carbons.

- Macromol. Rapid Commun.*, **2018**, *34*, 1800145 (Invited Submission - Young Talents 2018)  
<http://dx.doi.org/10.1002/marc.201800145>
16. Kieber III, R. J.; Neary, W. J.; **Kennemur, J. G.** Viscoelastic, Mechanical, and Glasstomeric Properties of Precision Polyolefins Containing a Phenyl Branch at Every Five Carbons. *Ind. Eng. Chem. Res.*, **2018**, *57*, 14, 4916–4922. <http://dx.doi.org/10.1021/acs.iecr.7b05395>
  15. Brits, S.; Neary, W. J.; Palui, G.; **Kennemur, J. G.** A new echelon of precision polypentenamers: Highly isotactic branching at every five carbons. *Polym. Chem.*, **2018**, *9*, 1719–1727. (Invited Submission - Emerging Investigators 2018)  
<http://dx.doi.org/10.1039/C7PY01922J>
  14. **Kennemur, J. G.**; Bates, F. S.; Hillmyer, M. A. Revisiting the Anionic Polymerization of Methyl Methacrylate. *Macromol. Chem. Phys.*, **2018**, *219*, 1700282. (Invited Submission - Living Anionic Polymerization – Part II: Further Expanding the Synthetic Versatility for Novel Polymer Architectures) <http://dx.doi.org/10.1002/macp.201700282>
  13. Kieber III, R. J.; Silver, S. A.; **Kennemur, J. G.** Stereochemical effects on the mechanical and viscoelastic properties of renewable polyurethanes derived from isohexides and hydroxymethylfurfural. *Polym. Chem.* **2017**, *8*, 4822–4829.  
<http://dx.doi.org/10.1039/C7PY00949F>
  12. Neary, W. J.; **Kennemur, J. G.** Variable Temperature ROMP: Leveraging Low Ring Strain Thermodynamics to Achieve Well-Defined Polypentenamers. *Macromolecules* **2017**, *50*, 4935–4941. <http://dx.doi.org/10.1021/acs.macromol.7b01148>
  11. Misichronis, K.; Chen, J.; Imel, A.; Kumar, R.; Thostenson, J.; Hong, K.; Dadmun, M.; Sumpter, B. G.; **Kennemur, J. G.**; Hadjichristidis, N.; Mays, J. W.; **Avgeropoulos, A.** Investigation on the Phase Diagram and Interaction Parameter of Poly(styrene-*b*-1,3-cyclohexadiene) Diblock Copolymers. *Macromolecules* **2017**, *50*, 2354–2363.  
<http://dx.doi.org/10.1021/acs.macromol.7b00104>
  10. Neary, W. J.; **Kennemur, J. G.** A Precision Ethylene-Styrene Copolymer with High Styrene Content from Ring-Opening Metathesis Polymerization of 4-Phenylcyclopentene. *Macromol. Rapid Commun.* **2016**, *37*, 975–979. <http://dx.doi.org/10.1002/marc.201600121>

*During Post-Doctoral Studies*

9. **Kennemur, J. G.**; **Hillmyer, M. A.**; **Bates, F. S.** Sub-5 nm Domains in Ordered Poly(cyclohexylethylene)-*block*-poly(methyl methacrylate) Block Polymers for Lithography. *Macromolecules*, **2014**, *47*, 1411-1418. <http://dx.doi.org/10.1021/ma4020164> )

8. Kennemur, J. G.; Hillmyer, M. A.; Bates, F. S. Rheological Evidence of Composition Fluctuations in an Unentangled Diblock Copolymer Melt near the Order-Disorder Transition. *ACS Macro Lett.* **2013**, *2*, 496-500. <http://dx.doi.org/10.1021/mz4001892>
7. Kennemur, J. G.; Hillmyer, M. A.; Bates, F. S. Synthesis, Thermodynamics, and Dynamics of Poly(4-*tert*-butylstyrene-*b*-methyl methacrylate). *Macromolecules* **2012**, *45*, 7228-7236. <http://dx.doi.org/10.1021/ma301047y>

#### During Graduate Studies

6. Wilcox, R. J.; Folmer, J. C. W.; Kennemur, J. G.; Martin, J. D. Synthesis of Luminescent Nitroxobenzene Oligomers by Aluminum Chloride Catalyzed Dehydration of Nitrobenzene. *Polyhedron*, **2015**, *103*, 35-43. <http://dx.doi.org/10.1016/j.poly.2015.07.077>
5. Kennemur, J. G.; Novak, B. M. Hierarchical Chirality in Polycarbodiimides. *Isr. J. Chem.* **2011**, *51*, 1041-1051. <http://dx.doi.org/10.1002/ijch.201100030>
4. Kennemur, J. G.; DeSousa, J. D.; Martin, J. D.; Novak, B. M. Reassessing Helical Polycarbodiimide Regioregularity Using Solution Infrared Spectroscopy. *Macromolecules* **2011**, *44*, 5064-5067. <http://dx.doi.org/10.1021/ma2005052>
3. Kennemur, J. G.; Novak, B. M. Advances in Polycarbodiimide Chemistry. *Polymer* **2011**, *52*, 1693-1710. <http://dx.doi.org/10.1016/j.polymer.2011.02.040>
2. Kennemur, J. G.; Kilgore, C. A., Novak, B. M. Adjusting Conformational Switching Behavior of Helical Polycarbodiimides Through Substituent Induced Polarity Effects. *J. Polym. Sci. Part A: Polym. Chem.* **2011**, *49*, 719-728. <http://dx.doi.org/10.1002/pola.24484>
1. Kennemur, J. G.; Clark, IV, J. B.; Tian, G.; Novak, B. M. A New, More Versatile Optical Switching Helical Polycarbodiimide Capable of Thermally Tuning Polarizations  $\pm 359^\circ$ . *Macromolecules* **2010**, *43*, 1867-1873. <http://dx.doi.org/10.1021/ma902657d>

#### PATENTS

##### Provisional/Pending

8. Kennemur, J. G.; Singleton, N. Z. Modular Polypentenamers for Direct Functionalization. U.S. Provision Patent Appl. 63/567,380. March 19, 2024
7. Hallinan, D. H.; Kennemur, J. G., Winey, K. I., Paren, B. A.; Kim, K.; Blatt, M. P. Polymer Blends Having Improved Ion Conductivity, Devices, and Methods. U.S. Patent Appl. Number 18/056,652. March 18, 2023.

##### Issued

6. Kennemur, J. G.; Yarolimek, M. R. Polymers Derived from Biomass. U.S. Patent 11,897,987. Feb 13, 2024.
5. Kennemur, J. G.; Fultz, B. A. Block Copolymers, Membranes and Methods U.S. Patent 11,459,420. Oct 4, 2022.
4. Kennemur, J. G.; Cyclopentene Monomers and Methods of Polymerization. U.S. Patent 11,136,426. Oct 15, 2021.
3. Kennemur, J. G.; Neary W. J. Polystyrene Sulfonate Analogs and Methods. U.S. Patent 10,640,587. May 5, 2020.
2. Hustad, P. H.; Bates, F. S.; Hillmyer, M. A.; Kennemur, J. G. Poly(cyclohexylethylene)-Polyacrylate Block Copolymers, Methods of Manufacture Thereof and Articles Comprising the Same. U.S. Patent 10,202,479. Feb 12 2019.
1. Hustad, P. H.; Trefonas, P. F.; Bates, F. S.; Hillmyer, M. A.; Kennemur, J. G. 2011. Polystyrene-Polyacrylate Block Copolymers, Methods of Manufacture Thereof and Articles Comprising the Same. U.S. Patent 9,127,113. Sept 8, 2015.

## GRANTS

### Active

- 2024 *Acquisition of a Differential Scanning Calorimeter for Essential Thermal Characterization of Materials.* Florida State University – CRC Equipment and Infrastructure Enhancement Grant (EIEG). \$70,195. J. Kennemur (PI)
- 2023 – 2026 *Elucidating Ring Opening Metathesis Copolymerization Thermodynamics of Monomers with Dissimilar Ring Strain Energies.* National Science Foundation (CHE-MSN). \$459,804. J. Kennemur (PI)
- 2022 – 2025 *The Role of Local Structure and Dynamics on Proton and Hydroxide Transport in Ion-Conducting Polymers.* \$2,205,000. Department of Energy (DOE) Basic Energy Sciences (BES). K. Winey (PI – UPenn), J. Kennemur (Co-PI – FSU), M. Hickner (Co-PI – Penn State U.), Amalie Frischknecht (Sandia National Laboratory).
- 2022 *Fluorine-Free Polymers for Proton Conductivity.* Seed Research Foundation Project with Lubrizol Corporation. \$100,735. J Kennemur (PI)
- 2021 *Sustainable Plastics from Biorenewable Pine Resin.* FSU-CRC Planning Grant. \$24,805. J. Kennemur (PI)
- 2018 – 2025 *CAREER: Bridging the Gap Between Bottlebrush and Comb Polymers with Precision Macroinitiators to Generate New Elastomeric Materials.* National Science Foundation (DMR-Polymers). 1750852. \$534,049. J. Kennemur (PI)

Past

- 2018 – 2021 *Impact of Ion Transport and Dissociation on Polymer Electrolyte Battery Rate Capability.* National Science Foundation (CBET). 1804871. \$346,659. D. Hallinan (PI), J. Kennemur (co-PI)
- 2015 – 2017 *Petroleum Derived Triblock Terpolymer Templates for Dual-Metal Patterning of Square-Patterned Rectangular Nanostructures.* Petroleum Research Fund – Doctoral New Investigator Grant. American Chemical Society. 55378-DNI7. \$110,000. J. Kennemur (PI)
- 2015 *FYAP: New Material Opportunities from Renewable Biomass: Revisiting the Emulsion Polymerization of Vinyl Furan.* FSU CRC First Year Assistant Professor Program, \$20,000  
J. Kennemur (PI)

**INVITED CONFERENCE / WORKSHOP PRESENTATIONS (Principle Investigator)**

- 2024 *Keynote Speaker. “The Kennemur Group: Celebrating 10 Years of New Polymers from 5-Membered Rings”.* 2024 American Chemical Society Florida Annual Meeting and Exposition (FAME). Palm Harbor, FL. June 01, 2024.
- 2024 *“Utilization of Block Polymers towards Nano-Structured Charge Mosaics”* Minnesota Block Polymer Conference 2024. Minneapolis, MN. Apr. 12, 2024.
- 2023 *“Design and Exploration of Precision Isotactic Ethylene-Vinyl Alcohol Systems”* 18<sup>th</sup> Pacific Polymer Conference 2023 (PPC18). Polyolefins Topical Symposium. Puerto Vallarta, Mexico. Dec. 5, 2023.
- 2023 *“Exploration of Dynamic Bottlebrush Systems and their Structure-Property Relationships”* American Chemical Society National Meeting and Exposition. ACS Award in Polymer Chemistry Symposium in Honor of Karen I. Winey. San Francisco, CA. Aug. 15, 2023.
- 2023 *“Utilizing ROMP to Create Regioregular and Isotactic Materials Outside Typical Polyolefins”* American Chemical Society National Meeting and Exposition. PMSE Symposium on Advances in Metathesis Polymerizations. Indianapolis, IN. Mar. 27, 2023.



- 2022 “Marc Likes Biomass-Based Polymers and ROMP: So Here’s Both!” American Chemical Society National Meeting and Exposition. POLY Mark Senior Scholar Award Symposium in Honor of Marc Hillmyer. Chicago, IL. August 20, 2022
- 2022 “Oppositely Charged Self-Assembled Block Copolymers: The Pursuit of Nano-Scale Charge Mosaics” American Chemical Society Florida Annual Meeting and Exposition (FAME). Materials Section. Palm Harbor, FL. Aug 06, 2022.
- 2022 “Flexible and Periodic Phenylsulfonated Materials through ROMP: Synthesis and Unique Assemblies” American Chemical Society Florida Annual Meeting and Exposition (FAME). Florida Award Symposium in Honor of Brian Benicewicz. Palm Harbor, FL. Aug 05, 2022.
- 2022 “Accessing Precise, Amorphous, and More Flexible Phenylsulfonated Materials through ROMP” ACS Division of Polymer Chemistry: Polymers for Fuel Cells, Energy Storage, and Conversion Workshop. Napa, CA. May 16, 2022.
- 2022 “Leveraging Equilibrium Polymerization Thermodynamics to Produce New Materials and Chemically Recyclable Elastomers” American Chemical Society Southwest Georgia Section (SOWEGA) Virtual Meeting. February 17, 2022.
- 2021 “Utilizing RAFT to Make Charge Mosaic Thin Films with Polyvinylpyridine Segments and Insight on Photo-Driven CTA Removal from these Systems” ACS Division of Polymer Chemistry: Controlled Radical Polymerization Workshop. Charleston, SC. November 15, 2021.
- 2021 “Structure-Property-Function of Polypentenamer Systems” Southeast Regional Meeting of the ACS (SERMACS), Birmingham, AL. November 11, 2021.
- 2019 “Nanostructured Charge Mosaics from Self-Assembled Block Polymers: Efficacy and Challenges” Advanced Membrane Materials and Technologies Workshop. University of Pennsylvania, Philadelphia, PA. December 17, 2019.
- 2019 “Polypentenamer Bottlebrushes in Metastable Equilibrium: Quantitative RCM Depolymerization and Transformation to New Architectures” International Symposium on Stimuli-Responsive Materials. Windsor, CA. October 22, 2019.
- 2019 “Value-Added Poly(vinyl ethers) through Cationic Copolymerization of Glycol-Derivatized Isosorbide” International Symposium on Materials from Renewables (ISMR 2019). Athens, GA. October 9, 2019.

- 2019 “Performance Elastomers from New Advances in Ring Opening Metathesis Polymerization of Low-Strain Cycloalkenes” Advances in Polyolefins Workshop 2019 (APO2019). Rohnert Park, CA. September 24, 2019.
- 2019 *Keynote Speaker*. “Self-Immolative Bottlebrushes and their Transformations” American Chemical Society Florida Annual Meeting and Exposition (FAME). POLY/PMSE-Materials Symposium. Palm Harbor, FL. May 10, 2019
- 2018 “Five Alive: Functional Polypentenamers towards a New Class of Bottlebrush Systems” American Chemical Society 256<sup>th</sup> National Meeting and Exposition. PMSE Young Investigator Award Symposium. Boston, MA. August 20, 2018.
- 2018 “Influencing Sustainable Polymers with Isohexide Stereochemistry: Synthesis and Material Investigations” American Chemical Society 256<sup>th</sup> National Meeting and Exposition. PMSE Symposium on Stereochemical Enhancement of Material Properties. Boston, MA. August 19, 2018.
- 2018 “Low strain, more gain: Harnessing Polypentenamers towards Complex Precision Architectures” American Chemical Society 255<sup>th</sup> National Meeting and Exposition. PMSE Symposium on Synthesis and Self-Assembly of Polymer with Complex Architectures. New Orleans, LA March 20, 2018.
- 2017 “Dynamic Polymers from Low Strain Cycloalkenes” American Chemical Society 254<sup>th</sup> National Meeting and Exposition. PMSE Symposium on Dynamic Chemistry in Polymer Materials. Washington D.C., August 23, 2017.
- 2017 “Can We Leverage Equilibrium Thermodynamics to Unlock New Well-defined Polymeric Materials?” American Chemical Society Florida Annual Meeting and Exposition (FAME). Materials Section. Palm Harbor, FL. May 05, 2017.
- 2017 “Taking Charge of Polymeric Materials with Precision Spacing of Functional Groups” Joint Symposium of the Florida Chapter of the American Vacuum Society (FLAVS) and the Florida Society for Microscopy. University of Central Florida – Student Union. Orlando, FL. March 6, 2017.
- 2015 “Understanding the Interaction Parameter for Next Generation Lithographic Patterning Materials: Sub-10 nm Domains from Highly Incompatible Block Polymer Segments” American Chemical Society Florida Annual Meeting and Exposition (FAME). POLY/PMSE Section. Palm Harbor, FL. May 9, 2015.

**INVITED UNIVERSITY & INDUSTRY LECTURES (Principle Investigator)**

22. North Carolina State University. Department of Chemistry Colloquium Seminar Series. Raleigh, NC. May 2, 2024.
21. Kraton Corporation, External Seminar Series. Virtual Seminar. Houston TX. Apr 17, 2024.
20. Texas Tech University, Department of Chemistry, Lubbock, TX. Apr 12, 2023.
19. Carnegie Mellon University, Department of Chemistry, Pittsburgh, PA. Mar 1, 2023.
18. University of Alabama, Department of Chemistry and Biochemistry, Tuscaloosa, AL. Nov 11, 2022.
17. University of West Florida, Department of Chemistry, Pensacola, FL. Nov 4, 2022.
16. University of Maryland, Department of Chemistry, College Park, MD. Sept 15 2022.
15. National Institute of Standards (NIST) Materials Science and Engineering Division Colloquium Series. Gaithersburg, MD. Sept 14, 2022 .
14. The Dow Chemical Company, Technical Community Organization (TCO) External Seminar Series. Virtual Seminar. Collegeville, PA. Jul 30, 2020.
13. Virginia Polytechnic Institute and State University, Department of Chemistry and Macromolecules Innovation Institute, Blacksburg, VA. March 27, 2019.
12. ExxonMobil Chemical Company, Baytown, TX. Mar 22, 2019.
11. North Carolina State University, Department of Chemistry, Raleigh, NC. Mar 11, 2019.
10. University of Southern Florida, Department of Chemistry, Tampa, FL. March 7, 2019.
9. Louisiana State University, Department of Chemistry, Baton Rouge, LA. Feb 22, 2019.
8. University of Southern Mississippi, School of Polymer Science and Engineering, Hattiesburg, MS. Feb 20, 2019.
7. Pennsylvania State University, Department of Material Science, College Park, PA. Feb 6, 2019.
6. University of North Carolina, Department of Chemistry, Chapel Hill, NC. Jan 31, 2019.
5. University of Central Florida, NanoScience Technology Center, Orlando, FL. Jan 24, 2019.
4. University of Florida, Department of Chemistry, Gainesville, FL. Jan. 22, 2019.
3. University of Akron, Department of Polymer Science, Akron, OH. Oct. 5, 2018.
2. Case Western Reserve University, Department of Chemistry, Cleveland, OH. Oct. 4, 2018.
1. Rice University, Department of Materials Science & NanoEngineering, Houston, TX. Feb. 15, 2018.

**CONTRIBUTED CONFERENCE PRESENTATIONS (Principle Investigator)**

- 2024 *Oral Presentation.* IUPAC MACRO 2024 – The 50<sup>th</sup> World Polymer Conference. “Synthesis of Precision Non-Fluorinated Polyolefins towards New Proton and Ion Conducting Membranes” Warwick University, Warwick, UK, England. July 01, 2024.
- 2024 *Oral Presentation.* American Chemical Society National Meeting and Exposition. “An End to a Means: The Challenge in Making and the Ease in Chemically Recycling Polypentenamers” POLY Division. New Orleans, LA. March 20, 2024.
- 2023 *Poster Presentation.* Gordon Research Conference – Polymers. “Polyethylene with Precise Atactic or Isotactic Pendants at Every 5<sup>th</sup> Carbon” South Hadley, MA. June 6, 2023
- 2021 *Oral Presentation.* Southeast Regional Meeting of the ACS (SERMACS), “Poly[(4-vinylpyridine)-*b*-(*t*-butyl methacrylate)] as a Promising Precursor System to Charge Mosaics: Nanostructured Thin Films of Oppositely Charged Domains” Birmingham, AL. November 12, 2021.
- 2021 *Oral Virtual Presentation.* 262<sup>nd</sup> American Chemical Society National Meeting and Exposition. “Turning Pine Sap into Precise Polyolefins through Ring Opening Metathesis Polymerization” Atlanta, GA & Virtual. August 22–26, 2021.
- 2019 *Poster Presentation.* Gordon Research Conference – Polymers. “Dynamic Bottlebrush Systems from a Polypentenamer Scaffold” South Hadley, MA. June 9–14, 2019.
- 2019 *Oral Presentation.* 257<sup>th</sup> American Chemical Society National Meeting and Exposition. “Thermodynamics of Bottlebrush Systems from Low Strain Cycloolefins” POLY Division. Orlando, FL. March 31, 2019.
- 2018 *Oral Presentation.* Bordeaux Polymer Conference. “Exploring the Five-Carbon Structure-Property Genome of Precision Polyolefins” Bordeaux, France. May 28 – 31, 2018.
- 2017 *Oral Presentation.* 253<sup>rd</sup> American Chemical Society National Meeting and Exposition. “Variable temperature ROMP: Achieving targeted molar mass and low dispersities from low ring-strain monomers” POLY Division. San Francisco, CA. April 03, 2017.
- 2017 *Poster Presentation.* Gordon Research Conference – Polymers. “Effect of Isohexide Stereochemistry on Properties of Renewable Polyurethanes” South Hadley, MA. June 11-16, 2017.

- 2017 *Oral Presentation.* American Physical Society March Meeting 2017. "Synthesis and Properties of a Precision Sulfonated Trimethylene-Styrene Polyelectrolyte" New Orleans, LA. March 16, 2017.
- 2016 *Poster Presentation.* Gordon Research Conference – Polymer Physics. "Exploring the Five-Carbon Branch Topology on Precision Polyolefins" South Hadley, MA. July 24-29, 2016.
- 2016 *Oral Presentation.* 251<sup>st</sup> American Chemical Society National Meeting and Exposition. "Precision Polyolefins from Substituted Cyclopentenes" POLY Division. San Diego, CA. March 13, 2016.
- 2015 *Poster Presentation.* Gordon Research Conference – Polymers. "Emerging Research in the Kennemur Group" South Hadley, MA. June 14-19, 2015.
- 2015 *Oral Presentation.* American Chemical Society Florida Annual Meeting and Exposition (FAME). "Understanding the Interaction Parameter for Next Generation Lithographic Patterning Materials: Sub-10 nm Domains from Highly Incompatible Block Polymer Segments" POLY/PMSE Section. Palm Harbor, FL. May 9, 2015.

#### **FSU CAMPUS AND DEPARTMENTAL TALKS (Principle Investigator)**

- 2024 "Synthesizing Advanced Polymers for Function, Clean-Energy, and Sustainability" FSU Chemistry and Biochemistry Departmental Seminar Series. August 09, 2024.
- 2019 "High-Five: Five Years of Research Polymerizing Five-Membered Cycloolefins". FSU Chemistry and Biochemistry Departmental Seminar Series. August 30, 2019.
- 2019 "The Plastics Age: The Good, the Bad, and the Future" FSU Coastal and Marine Laboratory Conservation Lecture Series. (General Public Lecture) May 16, 2019.
- 2018 "The Entropy-Enthalpy Battle of Ring Opening Polymerizations and the Aftermath of an Unexplored Structure-Property Genome" FAMU-FSU Department of Chemical and Biological Engineering Seminar. Sept. 28, 2018.
- 2016 "Precision Polyolefins from Substituted Cyclopentenes" FSU Materials and Energy Hiring Initiative Seminar Series. March 31, 2016.
- 2015 - 2019 "Laboratory Safety: Insights from my own Journey" EH&S and Department of Chemistry and Biochemistry Safety in Research Fall Seminar Series. Nov. 16, 2015; Nov. 28, 2016; Nov. 6, 2017; Oct. 28, 2018; Nov. 4, 2019.

- 2015 "Amplification of Block Polymer Interaction Parameters through Chemical Structure Modification: A Blueprint for Rational Design" FSU-FAMU Chemical and Biological Engineering Graduate Research Seminar Series. Sept. 4, 2015.
- 2014 "The Plastic Age: Current Challenges and Research Opportunities in Polymer Synthesis" Materials Science and Engineering Seminar Series. Sept. 17, 2014.

### TEACHING EXPERIENCE (Principle Investigator)

#### Florida State University (\*self-developed)

- CHM-4455/5450\* Polymer Chemistry. Co-listed Undergraduate and Graduate Course. F19, F21, F23.
- CHM-5225 Advanced Organic Spectroscopy. Graduate Course. S23.
- CHM-5718\* Synthetic Polymers. Graduate Course. S16, F17.
- CHM-5901\* Directed Focus Course: Scholarly Writing Techniques. S17.
- CHM-2211 Organic Chemistry II. F20, S22.
- CHM-2210 Organic Chemistry I. F15, F16, S18, F18, S19, S20, F22, F24.

### SERVICE TO PROFESSION

- 2023–present Editorial Advisory Board – *Macromolecules* (ACS Publications)
- 2023–present Secretary (elected) – ACS Division of Polymer Chemistry (POLY). 3–year term.
- 2020–present Faculty Advisor –The ACS POLY/PMSE Student Chapter at FAMU-FSU
- 2020–present Editorial Advisory Board – *Polymer Chemistry* (RSC Publications)
- 2018–2022 ACS POLY Division – Webmaster and new website co-designer
- 2018–2022 ACS POLY Division – Publicity/Marketing/Outreach Committee
- 2022 *Symposium Co-Organizer*. "Advances in the Synthesis, Characterization, Modeling and Application of Bottlebrush Polymers" PMSE Division. American Chemical Society National Meeting and Exposition. Chicago, IL. August 21–26, 2023.

- 2019 *Symposium Co-Organizer. "Synthesis and Properties of Densely Grafted Polymers"* Division of Polymer Chemistry (POLY). 257<sup>th</sup> American Chemical Society National Meeting and Exposition. Orlando, FL. March 31 - April 4, 2019.
- 2019 *Doolittle Award Judge.* 257<sup>th</sup> American Chemical Society National Meeting and Exposition. Orlando, FL. March 31 - April 4, 2019.
- 2018 *Symposium Co-Organizer. "Synthesis and Self-Assembly of Polymers with Complex Architectures"* Polymeric Materials Science and Engineering (PMSE) Division. 255<sup>th</sup> American Chemical Society National Meeting and Exposition. New Orleans, LA. March 18-21, 2018.
- 2018 *Symposium Organizer. "Bridging New Polymer Chemistry and Polymer Physics"* Division of Polymer Physics (DPOLY). American Physical Society (APS) March Meeting. Los Angeles, CA. March 5-9, 2018.
- 2017 *Poster Judge.* Sci-Mix PMSE/POLY Division Session. 254<sup>th</sup> American Chemical Society National Meeting and Exposition. Washington D.C., August 20-14, 2017.
- 2017 *Session Leader.* Gordon Research Conference – Polymers. South Hadley, MA. June 11-16, 2017.
- 2017 *Poster Judge.* American Chemical Society - Florida Section Annual Meeting and Exposition (FAME). Palm Harbor, FL. May 4 - 6, 2017.
- 2017 *Poster Judge.* Sci-Mix PMSE/POLY Division Session. 253<sup>rd</sup> American Chemical Society National Meeting and Exposition. San Francisco, CA. April 2-6, 2017.
- 2016 *Faculty Advisor.* PMSE/POLY Student Symposium. American Chemical Society - Florida Section Annual Meeting and Exposition (FAME). Palm Harbor, FL. May 5-7, 2016.
- 2016 *Poster Judge.* American Chemical Society - Florida Section Annual Meeting and Exposition (FAME). Palm Harbor, FL. May 5 - 7, 2016.
- 2016 *Poster Judge.* Sci-Mix PMSE/POLY Division Session. 251<sup>st</sup> American Chemical Society National Meeting and Exposition. San Diego, CA. March 13 – 17, 2016.
- Referee *Nature Chemistry, Nature Communications, Nature Synthesis, Journal of the American Chemical Society, Angewandte Chemie., Chemical Science, ACS Macro Letters, Macromolecules, ACS Applied Polymer Materials, Polymer Chemistry, RSC Applied Polymers, Journal of Polymer Science, Macromolecular Rapid Communications, Macromolecular Chemistry and Physics, Organometallics, Macromolecular Materials and*

*Engineering, Applied Surface Science, European Polymer Journal, Polymer, Polymer International, Polymers, Polymer Engineering and Science, Green Chemistry, Ionics,.*

Reviewer NSF, ACS-PRF, CASIS, NSERC, BioPACIFIC MIP

Panelist NSF DMREF 2019, NSF CHE 2022, NSF DMR 2023, NSF CHE 2023

## **DEPARTMENTAL & UNIVERSITY SERVICE**

2022 – present	Promotion and Tenure Evaluations Committee
2022 – present	Committee on Auxiliaries, Infrastructure, and Operations (CIAO)
2022 – present	Graduate Curriculum and Advising Committee (GCAC)
2021 – 2022	Chair: Graduate Recruitment and Admissions Committee
2020 – 2022	Web & Marketing Committee
2019 – 2022	Department Faculty Additions Committee
2019 – 2020	Curriculum Oversight Committee
2019 – 2020	Department Graduate Curriculum & Awards Committee.
2016 – 2020	Department Seminar Committee – Organic Division Seminars.
2015 – present	Creator and administrator of “FSU Polymers” interdisciplinary email list-server.
2018 – 2019	Department Capital Resource and Space Committee
2017 – 2020	Department Graduate Advising and Awards Committee
2016 – 2018	Department Curriculum Committee – Organic Division
2015 – 2020	Mentor for FSU Undergraduate Research Opportunities Program.
2015 – 2017	Department Graduate Recruitment & Admissions Committee.
2014 – 2018	Department Materials Characterization Laboratory Committee.
2024	Chair: Chemistry of Health: Biomaterials – Hiring Committee.
2024	Gregory Choppin Endowed Chair Search Committee
2023	FSU Health Departmental Hiring Initiative – Steering Committee
2019	Hiring Committee
2018	Hiring Committee

## **PROFESSIONAL AFFILIATIONS**

2022 – present	American Association for the Advancement of Science (AAAS)
2016 – present	American Physical Society (DPOLY Division)
2005 – present	American Chemical Society (PMSE and POLY Divisions).

## **SUPERVISION AS PRINCIPLE INVESTIGATOR**

### **Post-Doctoral Researchers**

Goutam Palui	2015 – 2017	(Staff Fellow – OSC, U.S. FDA)
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Chinnadurai Satheeshkumar 2023 – present

### Doctoral Students

Robert J. Kieber III	2014 – 2019	(Sr Manufacturing Coating Eng. – Corning)
William J. Neary	2014 - 2019	(Assistant Professor – UC Riverside)
Brandon A. Fultz	2014 – 2020	(Faculty – University of West Florida)
Mark R. Yarolimek	2016 – 2021	(Polymer Application Scientist - Promerus)
Nam Nguyen	2016 – 2021	(PTD Etch Module Engineer – Intel)
Gina A. Guillory	2017 – 2022	(Product Dev. Chemist – Bomar/Dymax)
Brianna M. Coia	2019 – 2023	(Product Scientist – Birla Carbon)
Courtney M. Leo	2019 – 2024	(Post Doctoral Scholar – Arizona State U.)
Jaehoon Jang	2021 – present	
Nath-Eddy Moody	2022 – present	
Nadia Zana Singleton	2022 – present	
Laura Deloso	2023 – present	
Liam Radeke	2023 – present	

### Masters Students

Stefan Brits	2015 – 2018	(Architecture Program at UT-Austin)
Taylor Isais	2017 – 2021	(Research Scientist – Johnson Controls)
Benjamin Abraham	2019 – 2022	(R&D Scientist – Factorial Energy)
Emily Grumbles	2021 – 2023	(Polymer Film Engineer– Electric Hydrogen)

### Undergraduate Students

Samantha Silver	2014–2018	(Process Engineer – Corning)
Garrett Abrahamsen	2015–2016	(Graduate Student at USM – Morgan Lab)
Hana Nicole Grubb	2015–2016	
Michele Bohlmann	2016–2017	(USF Medical School)
Beatriz Dunoyer de Segonzac	2016–2018	(Honors Thesis) (USF Medical School)
Trevor Hine	2016–2018	
Aaron Kendrick	2016–2019	(Graduate Student at SCRIPPS)
Cuneyt Ozkardes	2017–2019	(FSU Medical School)
Lindsay Hughes	2018–2020	
Brooke Sabin	2019–2020	(Graduate Student at UF – Sumerlin Group)
Jason Define	2019–2021	(Polymer Lab Technician – BASF)
Heather Bookbinder	2019–2021	(Medical Asst. – TLH Derm. Assoc.)
Ethan Corey	2020–2023	(Graduate Student at Emory U.)
Sarah Werner	2021–2022	
Caroline Crowder	2021–2022	(Graduate Student at USF)

Karl Kinner	2021–2023
Mackenzie Ehrhardt	2021–2023
Joshua Weltman	2021–2022
Ana Pereira	2022–2023
August Specht	2022–2023
Skylar Alonzo	2022–2024
Presley Santiago	2023–2024
Luke Hudson	2022–2024
Kayla Downarowicz	2023–2024
Sophia Henges	2023–present

### Student Mentee Awards and Recognitions (Bold are non-FSU awards)

- 2024 – Nadia Singleton – Dean’s Award for Doctoral Excellence (DADE).
- 2024 – Courtney Leo – ACS POLY Division Best General Papers Oral Presentation Award.**
- 2024 – Nath-Eddy Moody – ACS PMSE Division Centennial Poster Award.**
- 2024 – Jaehoon Jang – FSU Graduate Summer Research Fellowship for Collaboration with Oak Ridge National Laboratory (FSU)
- 2024 – Nadia Singleton – Howard W. Smoyer Graduate Service Award (FSU)
- 2024 – Courtney Leo – Crowell-Tatum-Dawkins Graduate Fellowship (FSU)
- 2024 – Courtney Leo – Zachary Tolchin Award for Excellence in Organic Chemistry (FSU)
- 2023 – Nath-Eddy Moody – McKnight Doctoral Fellowship (Florida Education Fund)**
- 2023 – Laura Deloso – SPEAR Fellowship (FSU)
- 2023 – Karl Kinner – Departmental Service and Citizenship Award (FSU)
- 2023 – **Brianna Coia – ACS POLY/PMSE Excellence in Graduate Polymer Research Symp.**
- 2023 – Brianna Coia – Phillip Schlenoff Graduate Student Travel Award (FSU)
- 2022 – Brianna Coia – ACS POLY Graduate Student Travel Award (ACS POLY)**
- 2022 – Brianna Coia – Chery and Joel Rosenfield Endowment Award (FSU)
- 2022 – Gina Guillory – Graduate Teaching Excellence Award in Organic Chemistry (FSU)
- 2020 – Mark Yarolimek - Graduate Teaching Excellence Award in Organic Chemistry (FSU)
- 2019 – William Neary – ACS POLY/PMSE Excellence in Graduate Polymer Research Symp.**
- 2019 – Aaron Kendrick – Undergraduate Research Award (FSU)
- 2019 – Mark Yarolimek – Florida ACS Meeting (FAME) Best Poster Award**
- 2018 – Aaron Kendrick – FSU Arts and Sciences Travel Grant
- 2018 – William Neary – Outstanding Poster Award (NGRPC)**
- 2018 – William Neary – Graduate Student Award for Excellence in Organic Chemistry (FSU)
- 2016 – Sam Silver – Florida ACS Meeting (FAME) Best Poster Award**