Rebekka S. Klausen, Ph.D.
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Research Synopsis

I identify innovative synthetic paradigms that control material structure from the atom to the bulk, enabling the emergence of new properties, across a diverse class of material types (polyolefins to inorganic conjugated polymers to small molecules). Signature achievements include the atomically precise synthesis of complex, silicon-framework conjugated polymers, new approaches to controlling relative configuration in stereogenic-at-silicon (macro)molecules, the discovery that single atom Si-incorporation into polymers positively ameliorates mechanical stress and strain, and identification of a universal, transformable monomer to access polar polyolefins inaccessible from traditional feedstocks.

Professional Experience

Professor, Johns Hopkins University	2024–present
Second Decade Society Associate Professor, Johns Hopkins University	2019–2023
Second Decade Society Assistant Professor, Johns Hopkins University	2018–2019
Assistant Professor, Johns Hopkins University	2013–2018
Postdoctoral Research Scientist, Columbia University	2011–2013

Education & Training

Postdoctoral Research Scientist, Columbia University, New York, NY 2011–2013
Advisor: Prof. Colin Nuckolls

Ph.D. Organic Chemistry, Harvard University, Cambridge, MA 2005–2011
Advisor: Prof. Eric N. Jacobsen, Thesis: *Benzoic Acid and Thiourea Co-Catalysis*

B.S. Biochemistry *cum laude*, Boston College, Chestnut Hill, MA 2001–2005
Advisor: Prof. Steven D. Bruner

Awards and Achievements as a JHU Faculty Member

2022 *ACS Macro Letters / Biomacromolecules / Macromolecules* Young Investigator Award.
2022 National Finalist, Blavatnik Award for Young Scientists (Chemistry).
2021 Young Leaders Program, Science and Technology in Society (STS) Forum (virtual).
2021 National Finalist, Blavatnik Award for Young Scientists (Chemistry).
2021 American Chemical Society (ACS) Award in Pure Chemistry.
2018 NSF CAREER Award.
2017 Sloan Research Fellowship.
2017 Catalyst Award, Johns Hopkins University.
2017 Marion Milligan Mason Award for Women in the Chemical Sciences.
2017 ACS Division of Organic Chemistry, Young Academic Investigator.
2017 ACS Division of Polymeric Materials: Science & Engineering (PMSE) Young Investigator.
2016 Braude Award, Maryland Section of the American Chemical Society.
2015 Early Career Research Award, Department of Energy.
2015 Doctoral New Investigator Award, Petroleum Research Fund.

Publications (* = corresponding author, † = undergraduate co-author)

(60) Nechmad, N. B.; Campos, L. M.; Craig, S. L.; Deng, C.; Diodati, J.; Ekim, S. D.; Garcia, E.; Gong, J. P.; Herzog-Arbeitman, A.; Huang, X.; Johnson, J. A.; Kalow, J. A.; Kemmerling, R. E.; Kevlishvili, I.; Kitos Vasconcelos, A. P.; Klausen, R. S.; Kulik, H. J.;

Leganés Bayón, J.; Ma, Y.; Mcfee, E.; Mendenhall, J.; Moore, J. S.; Nelson, A.; Olsen, B. D.; Rubinstein, M.; Schindler, C. S.; Sottos, N. R.; Steinmetz, N. F.; Wei, S.; Xie, F. "Reimagining Polymer Networks from Molecule to Material" *Macromolecules*, Accepted: November 6, 2025.

(59) Mediavilla, B. A.; Siegler, M. A.; Klausen, R. S.* "1,2-Migratory Ring Expansion in a BN Naphthalene." *Org. Chem. Biomol*. **2025**, *23*, 10321-10329. DOI: 10.1039/D5OB01286D.

(58) Jiang, Q.; Coschigano, M. G.; Mediavilla, B. A.; Melvin, S. J.; Gittens, A. J.; Klausen, R. S.* "Stereoregular-at-silicon hybrid conjugated polymers" *Polym. Chem.* **2025,** *16*, 3857-3863, DOI: 10.1039/D5PY00405E

(57) Fang, F.; Wentz, K. E.; Molino, A.; Folster, C.; Williams, J.; Siegler, M. A.; Klausen, R. S.* "Homologous Ladder Cyclohexasilanes" *Angew. Chem. Int. Ed*. **2025**, *64*, e202506054, DOI: 10.1002/anie.202506054.

(56) Wentz, K. E.*; Molino, A.; Jiang, G. Q.; Gerke, C. S.; Siegler, M. A.; Thoi, V. S.; Wilson, D. J. D.; Klausen, R. S.* "Synthesis and Redox Behavior of Si–Si Dimeric 9-Methylsilafluorene". *Dalton Trans.* **2025***,* 54, 6167–6173, DOI: 10.1039/D5DT00097A.

(55) Melvin, S. J.; Yao, Y.; Huang, X..; Bell, R. C.; Kemmerling, R. E.; Kevlishvili, I.; Berg, A. C.†; Kitos Vasconcelos, A. P.; Nelson, A.; Kulik, H. J.; Craig, S. L.; Klausen, R. S.* "Enabling Selective Mechanochemical Scission of Network Crosslinks by Exchanging Single Carbon Atoms for Silicon." *J. Am. Chem. Soc*. **2025** *147*, 6006–6015, DOI: 10.1021/jacs.4c16323.

(54) Wentz, K. E.; Gittens, A. F.; Klausen, R. S. "Precise Synthesis of Complex Si–Si Molecular Frameworks" *J. Am. Chem. Soc.* **2025**, *147*, 2938–2959, DOI: 10.1021/jacs.4c12646.

(53) Wakefield, H. IV; Fromel, N. J.; Jiang, J.†; Kevlishvili, I.; Yao, Y.; Craig, S. L.; Kulik, H. J.; Klausen, R. S.* "Isomer-Driven Polymerization, Depolymerization, and Reconstruction". *Polym. Chem*. **2024**, *15*, 5016–5022. DOI: 10.1039/D4PY01281J.

(52) Coschigano, M. C.; Gregory, S. L.†; Catazaro, J.; Rossini, A. J.; Klausen, R. S.* "Poly(Cyclosilane) Postpolymerization Hydrosilylation" *Macromolecules* **2024**, *57*, 4085, DOI: 10.1021/acs.macromol.3c02110.

(51) Wakefield, H.; Melvin, S. J.; Jiang, J. †; Kevlishvili, I.; Siegler, M. A.; Craig, S. L.; Kulik, H. J.; Klausen, R. S.* "Angle-Strained Sila-Cycloalkynes." *Chem. Commun*. **2024** *60*, 4842–4845, DOI: 10.1039/D4CC00439F

(50) Song, Y.; Chen, N.; Jiang, Q.; Mukhopadhyay, T.; Wondmagegn, W.; Klausen, R. S.; Katz, H. E. "Selective Detection of Functionalized Carbon Particles based on Polymer Semiconducting and Conducting Devices as Potential Particulate Matter Sensors" *Small*, **2024**, *20*, 2310527, DOI: 10.1002/smll.202310527.

(49) Mukhopadhyaya, T.; Wagner, J.; Lee, T. D.; Ganley, C.; Tanwar, S.; Raj, P.; Li, L.; Song, Y.; Melvin, S.J.; Ji, Y.; Clancy, P.; Barman, I.; Thon, S.; Klausen, R. S.; Katz, H.E.* "Solution-doped donor-acceptor copolymers based on diketopyrrolopyrrole and 3, 3'-bis (2-(2-(2-methoxyethoxy) ethoxy) ethoxy)-2, 2'-bithiophene exhibiting outstanding thermoelectric power factors with p-dopants" *Adv. Funct. Mater.* **2024**, *34*, 2309646, DOI: 10.1002/adfm.202309646.

(48) Melvin, S. J.; Mediavilla, B. A.; Ambrosius, E. G.†; Jiang, Q.; Fang, F.; Ji, Y.; Mukhopadhaya, T.; Katz, H. E.; Klausen, R. S.* "RAFT Polymerization of an Aromatic Organoborane for Block Copolymer Synthesis." *Polym. Chem.* **2023**, *14*, 4454–4464, DOI: 10.1039/D3PY00706E.

(47) Wentz, K. E.; Yao, Y.; Kevlishvili, I.; Kouznetsova, T. B.; Mediavilla, B. A.; Kulik, H. J.; Craig, S. J.; Klausen, R. S.* "Systematic Investigation of Silicon Substitution on Single Macromolecule Mechanics." *Macromolecules* **2023**, *56,* 6776–6782, DOI: 10.1021/acs.macromol.3c01066.

(46) Wentz, K. E.; Klausen, R. S.* "A Greener Vision for P–C Bond Formation" *ACS Cent. Sci.* **2023**, *9*, 1515–1517, DOI: 10.1021/acscentsci.3c00943. (Invited *FirstReactions*)

(45) Guan, W.; Lu, L.; Gittens, A. F.; Jiang, Q.; Klausen, R. S.*; Lin, S.* "Electrochemical Strategy to Si–Cl Homo- and Heterocoupling." *Angew. Chem. Int. Ed*. **2023**, e202303592, DOI: 10.1002/anie.202303592.

(44) Wakefield, H.; Kevlishvili, I; Wentz, K. E.; Yao, Y.; Kouznetsova, T. B.; Melvin, S. J.; Ambrosius, E. G.†; Yao, G.; Herzog-Arbeitman, A.; Siegler, M. A.; Johnson, J. A.; Craig, S. L.; Kulik, H. J.; Klausen, R. S.* "Synthesis and Ring-Opening Metathesis Polymerization of a Strained *trans*-Silacycloheptene and Single-Molecule Mechanics of Its Polymer." *J. Am. Chem. Soc*., **2023**, *145*, 10187–10196, DOI: 10.1021/jacs.3c01004.

(43) Husted, K. E. L.; Brown, C.M.; Shieh, P.; Kevlishvili, I.; Kristufek, S. L.; Accardo, J. V.; Cooper, J. C.; Zafar, H.; Klausen, R. S.; Kulik, H. J.; Moore, J. S.; Sottos, N. R.; Kalow, J. A.; Johnson, J. A.* "Remolding and Deconstruction of Industrial Thermosets via Carboxylic Acid-catalyzed Bifunctional Silyl Ether Exchange." *J. Am. Chem. Soc*., **2023**, *145*, 1916–1923, DOI: 10.1021/jacs.2c11858.

(42) Gittens, A. F.; Jiang, Q.; Siegler, M. A.; Klausen, R. S.* "Conjugation in Isomeric Cyclosilane Thioethers." *Organometallics*, **2022**, *41*, 3762–3769, DOI: 10.1021/acs.organomet.2c00501.

(41) Ji, Y.; Catazaro, J.; Jiang, Q.; Melvin, S. J.; Jiang, J.†; Klausen, R. S.* "Characterization of Styrene-Vinyl Alcohol Copolymers by CP-MAS NMR Spectroscopy." *Macromolecules*, **2022**, *55*, 7032–7038, DOI: 10.1021/acs.macromol.2c01009.

(40) Jiang, Q.; Gittens, A.; Wong, S.†; Siegler, M. A.; Klausen, R. S.* "Highly Selective Addition of Cyclosilanes to Alkynes Enabling New Conjugated Materials." *Chem. Sci.* **2022**, *13*, 7587–7593, DOI: 10.1039/D2SC01690G.

(39) (Book Chapter) Klausen, R. S.*; Ballestero-Martínez, E.; "Organosilicon and Related Group 14 Polymers", Invited Chapter for *Comprehensive Organometallic Chemistry IV*. Editors: Karsten Meyer, Dermot O'Hare, Gerard Parkin. May 2022. DOI: 10.1016/B978-0-12-820206-7.00098-6.

(38) Fang, F.; Jiang, Q.; Klausen, R. S.* "Poly(cyclosilane) Connectivity Tunes Optical Absorbance." *J. Am. Chem. Soc*. **2022**, *144*, 7834–7843, DOI: 10.1021/jacs.2c01820.

(37) Wakefield, H.; Jiang, Q.; Klausen, R. S.* "Azaborine Isomer Effects on Benzylic Ion Stability and Reactivity: Consequences for BN2VN Ionic Polymerization." *Org. Biomol. Chem*. **2022**, *20*, 1407–1414, DOI: 10.1039/D1OB02467A.

(36) Ballestero Martìnez, E.; Ferguson, J. T.; Siegler, M. A.; Klausen, R. S.* "Isolation of a Cyclopentasilane from Magnesium Reduction of a Linear Hexasilane." *Eur. J. Org. Chem*. **2021**, *33*, 4641–4646, DOI: 10.1002/ejoc.202100768. (Invited submission for Silicon Chemistry in Organic Synthesis special issue)

(35) Barrett, B. J.; Jimenez, D.†; Klausen, R. S.*; Bragg, A. E.* "Intramolecular Photoinduced Charge Transfer and Recombination Dynamics in Vinyl-Arene Terminated Organosilanes." *J. Phys. Chem. B*, **2021**, *125*, 8460–8471, DOI: 10.1021/acs.jpcb.1c01297.

(34) Ji, Y.; Klausen, R. S.* "Chain Transfer to Solvent in BN 2-Vinylnaphthalene Polymerization." *J. Polym. Sci.* **2021**, *59*, 2355–2602, DOI: https://doi.org/10.1002/pol.20210362. (Invited submission for Early Career Investigator special issue)

(33) Jiang, Q.; Wong, S.†; Klausen, R. S.* "Effect of Polycyclosilane Microstructure on Thermal Properties." *Polym. Chem*. **2021**, *12*, 4785–4794, DOI: 10.1039/D1PY00383F.

(32) Ferguson, J. T.; Jiang, Q.; Marro, E. A.; Siegler, M. A.; Klausen, R. S.* "Long Range Coupling in Cyclic Silanes." *Dalton Trans*. **2020**, *49*, 14951–14961. DOI: 10.1039/D0DT03163A.

(31) Folster, C. P.; Nguyen, P. N.†; Klausen, R. S. "Reductive Halocyclosilazane Polymerization." *Dalton Trans*. **2020**, *49*, 16125–16132, DOI: 10.1039/C9DT04468J. (Invited submission for New Talent: Americas issue)

(30) Ji, Y.; Zhou, T.†; van de Wouw, H. L.; Klausen, R. S.* "Organoborane Strategy for Polymers Bearing Alcohol, Ester, and Lactone Functionality." *Macromolecules*, **2020**, *53*, 249–255, DOI: 10.1021/acs.macromol.9b02201.

(29) Burns, D. A.; Press, E. M.; Siegler, M. A.; Klausen, R. S.; Thoi, V. S.* "Structural Dynamism of 2D Oligosilyl Metal-Organic Frameworks." *Angew. Chem. Int. Ed*. **2020**, *59*, 763–768, DOI: 10.1002/anie.201912911. (Highlighted as a "Hot Paper")

(28) Marro, E. A.; Folster, C. P.; Press, E. M.; Im, H.†; Ferguson, J. T.; Siegler, M. A.; Klausen, R. S.* "Stereocontrolled Syntheses of Functionalized *cis*- and *trans*-Siladecalins." *J. Am. Chem. Soc*. **2019**, *141*, 17926–17936, DOI: 10.1021/jacs.9b09902.

(27) Dorn, R. W.; Marro, E. A.; Hanrahan, M. P.; Klausen, R. S.*; Rossini, A. J.* "Microstructural Investigation of Poly(1,4Si6) by 29Si Solid-State NMR Spectroscopy and DFT Calculations." *Chem. Mater*. **2019**, *31*, 9168–9178, DOI: 10.1021/acs.chemmater.9b03606.

(26) Marro, E. A.; Klausen, R. S.* "Silicon-Inspired Conjugated Polymers." *Chem. Mater*. **2019**, *31*, 2202–2211, DOI: 10.1021/acs.chemmater.9b00131. (ACS Editor's Choice, Invited Perspective for "Up and Coming" Series)

(25) van de Wouw, H. L.; Klausen, R. S.* "BN Polystyrenes: Emerging Optical Materials & Versatile Intermediates." *J. Org. Chem.*, **2019**, *84*, 1117–1125, DOI: 10.1021/acs.joc.8b02921. (Invited *JOCSynopsis*)

(24) Purkait, T. K.; Press, E. M.; Marro, E. A.; Siegler, M. A.; Klausen, R. S.* "Low-Energy Transition in SiB Rings." *Organometallics*, **2019**, *38*, 1688–1698, DOI: 10.1021/acs.organomet.8b00804. (Featured on Front Cover)

(23) Mendis, S. N.; Zhou, T.†; Klausen, R. S.* "Syndioselective Polymerization of a BN Aromatic Vinyl Monomer." *Macromolecules,* **2018**, *51*, 6859–6864, DOI: 10.1021/acs.macromol.8b01707.

(22) van de Wouw, H. L.; Awuyah, E. C.†; Baris, J. I.;† Klausen, R. S.* "An Organoborane Vinyl Monomer with Styrene-like Radical Reactivity: Reactivity Ratios and Role of Aromaticity." *Macromolecules* **2018**, *51*, 6359–6368, DOI: 10.1021/acs.macromol.8b01368.

(21) Marro, E. A.; Press, E. M. Siegler, M. A.; Klausen, R. S.* "Directional Building Blocks Determine Linear and Cyclic Silicon Architectures." *J. Am. Chem. Soc.* **2018**, *140*, 5976–5986, DOI: 10.1021/jacs.8b02541.

(20) Folster, C.; Klausen, R. S.* "Metallocene Influence on Poly(Cyclosilane) Structure and Properties." *Polym. Chem*. **2018**, 9, 1938–1941, DOI: 10.1039/C8PY00312B.

(19) van de Wouw, H. L.; Lee, J. Y.†; Awuyah, E.†; Klausen, R. S.* "A BN Aromatic Ring Strategy for Tunable Hydroxy Content in Polystyrene." *Angew. Chem. Int. Ed*. **2018**, *57*, 1673–1677, DOI: 10.1002/anie.201711650.

(18) Marro, E. A.; Press, E. M.; Purkait, T.; Jimenez, D.†; Siegler, M. A.; Klausen, R. S.* "Cooperative Noncovalent Interactions Induce Ion Pair Separation in Diphenylsilanides." *Chem. Eur. J.* **2017**, *23*, 15633–15637, DOI: 10.1002/chem.201704217.

(17) van de Wouw, H. L.; Lee, J. Y.†; Klausen, R. S.* "Gram-Scale Free Radical Polymerization of an Azaborine Vinyl Monomer." *Chem Commun*. **2017**, *53*, 7262–7265, DOI: 10.1039/C7CC02300F.

(16) Zhou, J.; Folster, C. P.; Surampudi, S. K.; Jimenez, D.†; Klausen, R. S.; * Bragg, A. E.* "Asymmetric Charge Separation and Recombination in Symmetrically Functionalized σ-π Hybrid Oligosilanes." *Dalton Trans*. **2017**, *46*, 8716–8726, DOI: 10.1039/C7DT00384F. (Featured on Front Cover)

(15) Press, E. M.; Marro, E. A.; Surampudi, S. K.; Siegler, M. A.; Tang, J.; Klausen, R. S.* "Poly(cyclosilane): A Polymer Inspired by Crystalline Silicon." *Angew. Chem. Int. Ed*. **2017**, *56*, 568–572, DOI: 10.1002/anie.201610208. (Highlighted as a "Hot Paper")

(14) Zhou, J.; Surampudi, S. K.; Bragg, A. E.;* Klausen, R. S.* "Photoinduced Charge Separation in Molecular Silicon." *Chem. Eur. J.*, **2016**, *22*, 6204–6207, DOI: 10.1002/chem.201600846.

(13) van de Wouw, H. L.; Lee, J. Y.†; Siegler, M. A.; Klausen, R. S.* "The Innocent BN Bond." *Org. Biomol. Chem*. **2016**, 14, 3256–3263, DOI: 10.1039/C5OB02309B.

(12) van de Wouw, H. L.; Chamorro, J.†; Quintero, M.†; Klausen, R. S.* "Opposites Attract: Organic Charge Transfer Salts." *J. Chem. Educ.*, **2015**, *92*, 2134–2139, DOI: 10.1021/acs.jchemed.5b00340.

(11) Surampudi, S.; Yeh, M.-L.; Siegler, M. A.; Hardigree, J. F. M.; Kasl, T. A.†; Katz, H. E.; Klausen, R. S.* "Increased Carrier Mobility in End-Functionalized Oligosilanes." *Chem. Sci.*, **2015**, *6*, 1905–1909, DOI: 10.1039/C4SC03274H.

(10) Klausen, R. S.; Kennedy, C. R.; Hyde, A. M.; Jacobsen, E. N. "Chiral Thioureas Promote Enantioselective Pictet–Spengler Cyclization by Stabilizing Every Intermediate and Transition State in the Carboxylic Acid-Catalyzed Reaction." *J. Am. Chem. Soc*. **2017**, *139*, 12299–12309. DOI: 10.1021/jacs.7b06811

(9) Su, T. A.; Li, H.; Klausen, R. S.; Kim, N.; Neupane, M.; Leighton, J.; Steigerwald, M. L.*; Venkataraman, L.*; and Nuckolls, C.* "Silane and Germane Electronics." *Acc. Chem. Res*. **2017**, *50*, 1088–1095. DOI: 10.1021/acs.accounts.7b00059

(8) Su, T. A.; Li, H.; Klausen, R. S.; Widawsky, J. R.; Batra, A.; Steigerwald, M. L.; Venkataraman, L.; Nuckolls, C.* "Tuning Conductance in pi-sigma-pi Single-Molecule Wires." *J. Am. Chem. Soc.*, **2016**, *138*, 7791–7795. DOI: 10.1021/jacs.6b04394

(7) Su, T. A.; Li, H.; Zhang, V.; Neupane, M.; Batra, A.; Klausen, R. S.; Kumar, B.; Steigerwald, M. L.; Venkataraman, L.; Nuckolls, C.* "Single-Molecule Conductance in Atomically Precise Germanium Wires." *J. Am. Chem. Soc.*, **2015**, *137*, 12400–12405. DOI: 10.1021/jacs.5b08155

(6) Klausen, R. S.; Widawsky, J.; Su, T. A.; Li, H.; Steigerwald, M. L.; Venkataraman, L.*; Nuckolls, C.* "Evaluating Atomic Components in Fluorene Wires." *Chem. Sci.*, **2014**, *5,* 1561–1564. DOI: 10.1039/C4SC00064A

(5) Su, T. A.; Widawsky, J. R.; Li, H.; Klausen, R. S.; Leighton, J.*; Steigerwald, M. L.*; Venkataraman, L.*; Nuckolls, C.* "Silicon Ring Strain Creates High Conductance Pathways in Single-Molecule Circuits." *J. Am. Chem. Soc.* **2013**, *135*, 18331–18334. DOI: 10.1021/ja410656a

(4) Klausen, R. S.; Widawsky, J.; Steigerwald, M. L.; Venkataraman, L.; Nuckolls, C.* "Conductive Molecular Silicon." *J. Am. Chem. Soc*. **2012**, *134*, 4541–4544. DOI: 10.1021/ja211677q

(3) Ahn, S.; Aradhya, S. V.; Klausen, R. S.; Capozzi, B.; Roy, X.; Steigerwald, M. L.; Nuckolls, C.*; Venkataraman, L.* "Electronic Transport and Mechanical Stability of Carboxyl Linked Single Molecule Junctions." *Phys. Chem. Chem. Phys*. **2012**, *14*, 13841–13845. DOI: 10.1039/C2CP41578J

(2) Yunmi, L.; Klausen, R. S.; Jacobsen, E. N.* "Practical Enantioselective Synthesis of Tetrahydro-γ-carbolines Catalyzed by a Chiral Thiourea and Benzoic Acid." *Org. Lett.* **2011**, *13*, 5564–5567. DOI: 10.1021/ol202300t

(1) Klausen, R. S.; Jacobsen, E. N.* "Weak Brønsted Acid-Thiourea Co-catalysis: Enantioselective, Catalytic Protio-Pictet–Spengler Reactions." *Org. Lett.* **2009**, *11*, 887–890. DOI: 10.1021/ol802887h

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(4) U. S. Provisional Patent Application Entitled: "Network Toughening by Silicon doped Crosslinkers".

(3) U.S. Provisional Patent Application 63/571,231. Filed: March 28, 2024. Entitled: "Synthesis and ring-opening metathesis polymerization of a strained *trans*-silacycloheptene and single-molecule mechanics of its polymer". Co-inventors: Klausen, R. S. (JHU); Wakefield, H. W. (JHU); Melvin, S. J. (JHU); Craig, S. L. (Duke); Kevlishvili, I. (MIT); Kulik, H. J. (MIT).

(2) U.S. Provisional Patent Application 17/781,455. Filed: December 2, 2020. Entitled: "Organoborane strategy for polymers bearing lactone, ester, and alcohol functionality." Co-inventors: Klausen, R. S. (JHU), Ji, Y. (JHU).

(1) Patent US11518830B2. Application granted: December 6, 2022. Entitled: "Organoborane polymers for tunable hydrophilicity and wettability" Co-inventors: Klausen, R. S. (JHU), van de Wouw, H. L. (JHU), Lee, J. (JHU).

CHRONOLOGICAL LIST OF INVITED PRESENTATIONS

1. **North Carolina State University**, Raleigh, NC — 11/2025
2. **The Scripps Research Institute**, San Diego, CA — 09/2025
3. **University of California San Diego**, San Diego, CA — 09/2025
4. **ACS Fall 2025: National Meeting**, Washington, DC — 08/2025
   Symposium: Dynamic Polymer Networks
5. **ACS Fall 2025: National Meeting**, Washington, DC — 08/2025
   Symposium: *ACS Macro Letters* Award in honor of Julia Kalow
6. **Main Group Chemistry Workshop**, Telluride, CO — 06/2025
7. **Cornell University**, Department of Chemistry, Ithaca, NY — 05/2025
8. **Vassar College**, Department of Chemistry
9. **Indiana University**, Department of Chemistry, Bloomington, IN — 04/2025
10. **ACS Spring 2025 National Meeting**, San Diego, CA — 03/2025
    Symposium: Molecule to Material Insights in Polymer Networks
11. **ACS Spring 2025 National Meeting**, San Diego, CA — 03/2025
    Symposium: Modern Approaches to Post-Polymerization Modification
12. **Georgia Institute of Technology**, Student Polymer Network, Atlanta, GA — 11/2024
    Student-Invited Speaker (Student Polymer Network)
13. **University of Delaware**, Department of Chemistry, Newark, DE — 09/2024
14. **Stereochemistry Gordon Research Conference**, Newport, RI — 07/2024
15. **50th IUPAC World Congress**, University of Warwick, Coventry, England — 07/2024
16. **French American Chemical Society**, Paris, France — 06/2024
    Plenary Lecture
17. **Momentive Silicones**, Tarrytown, NY, Virtual — 05/2024
18. **University of British Columbia**, Department of Chemistry — 03/2024
19. **ACS Spring 2024 National Meeting**, New Orleans, LA — 03/2024
    Symposium: Fresenius Award in Honor of Maxwell Robb
20. **University of Michigan**, Department of Chemistry — 01/2024
21. **Princeton University**, Department of Chemistry — 11/2023

22. **University of Utah**, Department of Chemistry 11/2023
23. **University of Kansas**, Department of Chemistry 10/2023
24. **ACS Fall 2023 National Meeting**, San Francisco, CA 08/2023
    Symposium: ACS Award in Pure Chemistry in Honor of Julia Kalow
25. **ACS Fall 2023 National Meeting**, San Francisco, CA 08/2023
    Symposium: *Journal of Polymer Science* Innovation Award in Honor of Emily Pentzer
26. **UMASS Amherst**, Polymer Science & Engineering 06/2023
27. **Polymers Gordon Research Conference**, South Hadley, MA 06/2023
28. **University of California Riverside**, Department of Chemistry 05/2023
29. **ACS Spring 2023 National Meeting,** Indianapolis, IN 03/2023
    Symposium: Harry Gray Award for Creative Work in Inorganic Chemistry by a Young Investigator in Honor of Robert J. Gilliard, Jr.
30. **Harvard-MIT Joint Inorganic Seminar,** Cambridge, MA 01/2023
31. **Stony Brook University**, Department of Chemistry 01/2023
32. **US-Japan Hybrid Materials Workshop**, Mishima, Japan, Virtual 12/2022
33. **University of Rochester**, Department of Chemistry 10/2022
34. **ACS Fall 2022 National Meeting,** Chicago, IL 08/2022
    Keynote Speaker, PMSE Future Faculty Symposium
35. **ACS Fall 2022 National Meeting**, Chicago, IL 08/2022
    Symposium: Design of Polymers Towards Upcycling
36. **ACS Fall 2022 National Meeting**, Chicago, IL 08/2022
    Award Lecture, *ACS Macro Letters/Biomacromolecules/Macromolecules* Young Investigator Award in honor of Prof. Rebekka Klausen and Prof. Changle Chen
37. **Tosoh Polymer Conference**, Los Angeles, CA 06/2022
38. **University of Toronto**, Virtual 05/2022
39. **Global Inorganic Discussion Weekdays (GIDW),** Virtual 03/2022
40. **Pacifichem**, Virtual 12/2021
    Symposium: Unusual Structure and Reactivity in the Main Group: From Fundamental to Functional Materials
41. **Pacifichem,** Virtual 12/2021
    Symposium: Silicon Polymers
42. **RSC Desktop Seminar with Dalton Transactions**, Virtual 12/2021
43. **University College London**, Chemical & Physical Society, Virtual 11/2021
44. **19th International Symposium on Silicon Chemistry**, Virtual, France 07/2021
45. **Colorado State University**, Virtual 05/2021
46. **ACS Spring 2021 National Meeting**, Virtual 04/2021
    Symposium: Frontiers in Conjugated Polymers
47. **ACS Spring 2021 National Meeting**, Virtual 04/2021
    Symposium: Modern Methods in Polymer Synthesis
48. **Dalhousie University**, Virtual, Halifax, Nova Scotia, Canada. 04/2021
49. **ACS Spring 2021 National Virtual Meeting**, Virtual 03/2021
    Award Lecture, ACS Award in Pure Chemistry in honor of Rebekka Klausen
50. **University of Minnesota**, Virtual, Department of Chemistry 03/2021
51. **Wayne State University**, Virtual, Department of Chemistry 02/2021
52. **University of Washington**, Virtual, Department of Chemistry 10/2020
53. **260th American Chemical Society Fall Meeting**, Virtual 08/2020
    Symposium: Mark Young Scholar Award in honor of Frank Leibfarth
54. **Harvard University**, Department of Chemistry and Chemical Biology 02/2020
55. **University of Victoria**, Department of Chemistry, British Columbia 01/2020

Xerox Lecture

56. **Next Generation Smart Materials Workshop**, Savannah, GA 12/2019
57. **University of Florida**, Department of Chemistry 11/2019
58. **Virginia Polytechnic Institute**, Macromolecules Innovation Institute 09/2019
59. **US-Japan Polymer Symposium**, Stanford University, Palo Alto, CA 06/2019
60. **Michigan State University**, CORE-CM 11/2018
61. **University of Michigan**, Department of Chemistry 11/2018
62. **Columbia University**, MRSEC 10/2018
63. **The Pennsylvania State University**, Department of Chemistry 10/2018
64. **New York University**, Department of Chemistry 10/2018
65. **University of Pennsylvania**, Department of Chemistry 10/2018
66. **University of North Carolina**, Department of Chemistry 09/2018
67. **Duke University**, Department of Chemistry 09/2018
68. **256th American Chemical Society Fall Meeting**, Boston, MA 08/2018
    Symposium: Tosoh Lectureship Series: Nanostructured Polymers.
69. **256th American Chemical Society Fall Meeting**, Boston, MA 08/2018
    Symposium: Dynamic Bonds for Structurally Precise Polymeric Materials
70. **256th American Chemical Society Fall Meeting**, Boston, MA 08/2018
    Symposium: *The Journal of Organic Chemistry/Organic Letters* Award Symposium
71. **US-Japan Meeting on Organic/Inorganic Hybrid Materials**, Newark, NJ 06/2018
72. **4th Functional Polymeric Materials Fusion Conference**, Bahamas 06/2018
73. **49th Silicon Symposium**, Edmonton, Canada 05/2018
74. **Cornell University**, Department of Chemistry 05/2018
75. **University of New Hampshire**, Department of Chemistry 04/2018
76. **Dartmouth University**, Department of Chemistry 04/2018
77. **255th American Chemical Society Spring Meeting**, New Orleans, LA 03/2018
78. **Case Western Reserve University**, Department of Chemistry 11/2017
79. **University of California, Los Angeles**, Department of Chemistry 10/2017
80. **California Institute of Technology**, Department of Chemistry 10/2017
81. **254th American Chemical Society Fall Meeting**, Washington, DC 08/2017
    Symposium: Division of Organic Chemistry Young Academic Investigator
82. **254th American Chemical Society Fall Meeting**, Washington, DC 08/2017
    Symposium: Unconventional Building Blocks
83. **University of Maryland, College Park**, Department of Chemistry 05/2017
84. **253rd American Chemical Society Spring Meeting**, San Francisco, CA 04/2017
    Symposium: PMSE Young Investigator
85. **Georgetown University**, Department of Chemistry 02/2017
86. **American Academy of Arts and Sciences**, Washington, DC 12/2016
    Award Lecture, Marion Milligan Mason Award
87. **University of Delaware**, Department of Chemistry 11/2016
88. **Braude Award Lecture**, Hopkins Club 10/2016
    Award Lecture, Braude Award, Maryland Section of the American Chemical Society
89. **Franklin and Marshall College**, Department of Chemistry 09/2016
90. **University of Richmond**, Department of Chemistry 09/2016
91. **Reaction Mechanisms Conference**, St. Louis, MO 06/2016
92. **46th Silicon Symposium**, University of California, Davis 06/2015
93. **Shippensburg University**, Department of Chemistry 10/2014
94. **Susquehanna University**, Department of Chemistry 09/2014
95. **Bloomsburg University of Pennsylvania**, Department of Chemistry 03/2014

96. **Towson University**, Department of Chemistry 02/2014
97. **Johns Hopkins University**, Condensed Matter Physics 12/2013
98. **Johns Hopkins University**, Materials Science and Engineering 10/2013

TEACHING

Spring 2025	AS.030.206 Organic Chemistry II (287 students)
Fall 2024	AS.030.677 Advanced Organic Synthesis I (24 students)
Spring 2024	AS.030.206 Organic Chemistry II (296 students)
Fall 2023	AS.030.677 Advanced Organic Synthesis I (20 students)
Spring 2023	AS.030.206 Organic Chemistry II (211 students)
Fall 2022	*COVID Teaching Relief for Associate Faculty*
Spring 2022	AS.030.626 Advanced Mechanistic Organic Chemistry II (9 students)
Fall 2021	AS.030.677 Advanced Organic Synthesis I (23 students)
Spring 2021	AS.030.626 Advanced Mechanistic Organic Chemistry II (8 students)
Fall 2020	AS.030.677 Advanced Organic Synthesis I (16 students)
Spring 2020	AS.030.626 Advanced Mechanistic Organic Chemistry II (12 students)
Fall 2019	AS.030.677 Advanced Organic Synthesis I (23 students)
Spring 2019	*Parental Leave*
Fall 2018	*Junior Faculty Leave*
Spring 2018	AS.030.626 Advanced Mechanistic Organic Chemistry II (13 students)
Fall 2017	AS.030.677 Advanced Organic Synthesis I (13 students)
Spring 2017	AS.030.228 Intermediate Organic Chemistry Laboratory (23 students)
Fall 2016	AS.030.677 Advanced Organic Synthesis I (17 students)
Spring 2016	*Parental Leave*
Fall 2015	AS.030.677 Advanced Organic Synthesis I (13 students)
Spring 2015	AS.030.228 Intermediate Organic Chemistry Laboratory (28 students)
Fall 2014	AS.030.677 Advanced Organic Synthesis I (19 students)
Spring 2014	*Teaching Relief*
Fall 2013	AS.030.677 Advanced Organic Synthesis I (6 students)

LEADERSHIP AND SERVICE

1. **Associate Editor**, *Polymer Chemistry*, 2023–present
2. **Scientific Advisory Board**, The Kaufman Foundation, Pittsburgh, PA
3. **Editorial Advisory Board Member**
    a. *Chemical Science*, 2023–2025
    b. *Macromolecules*, 2019–2021
4. **Executive Leadership Team**, NSF Center for the Chemistry of Molecularly Optimized Networks (MONET), 2021–present
5. **Founder and Coordinator**, Pathways to Your Career Seminar Series, 2014–2022
6. **Division and University Committee Service**
    a. KSAS *ad hoc* Budget Alignment Working Group (2025–present)
    b. Provost's Faculty Budget Advisory Committee (2025–2030, 5-year term)
    c. Sightline Faculty Advisory Committee (2025–present)
    d. Energy Minor Oversight Committee, Ralph O'Connor Sustainable Energy Institute (ROSEI) (2025-present).
    e. Completed Service: Return to Research Workgroup (Grad Student/PD Subcommittee), 2020 Planning Commission; Krieger School of Arts and Sciences (KSAS) Academic Grievance Committee (2021 and 2025)
7. **Department Committee Service**

a. Graduate Curriculum Committee (2017–present)
b. Theoretical Chemistry Associate/Full Professor Hiring Committee (2025–present)
c. Completed Service: External Chair Hiring Committee (2024–2025), Ad Hoc Chairman Selection Committee (2020, 2024), Graduate Admissions (2018-2020), Graduate Recruiting (2017-2019), Inorganic Materials Junior Faculty Search (2014–2015)

8. **Outreach**
   a. Vice Director of Informal Scientific Communication MONET (the NSF Center for Chemistry of Molecularly Optimized Networks)
   b. 2022 Art of Polymers concert with Multiverse concert series
   c. *Mechanophore* and *Materials Science of Soccer* outreach activity kit, as seen in C&EN
   d. ACS Kids Zone, Ask a Chemist (March 2025 National Meeting)
9. **Service to the Profession**
   a. American Chemical Society (ACS) National Awards Selection Committee, 2023–2025 Award Years (Chair, 2025)
   b. Reviewer: Beckman Foundation, National Science Foundation, Department of Energy, Petroleum Research Foundation