

# Severin T. Schneebeli, PhD

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## PROFESSIONAL EXPERIENCE

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### The University of Vermont, Burlington VT (July 2014 – Present)

- Assistant Professor of Chemistry, PI of the Mesosynthesis Research Group
- Investigating new methods of controlled covalent and non-covalent synthesis at the nano- and mesoscale. Invented (i) [chirality-assisted synthesis](#) for precise molecular shape control and (ii) the first [enantioselective electrophilic aromatic nitration](#) process.
- Exploring efficient ways to build sequence- and shape-defined macromolecules with new living polymerization techniques and by synthetic transcription/replication. Potential applications include the creation of (i) artificial antibodies, (ii) enzyme-inspired catalyst as well as (iii) self-assembled materials for energy storage and conversion.

## EDUCATION

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### Northwestern University, Evanston, IL (Sept 2011 – June 2014)

- International Institute for Nanotechnology (IIN) Postdoctoral Fellow working on the synthesis and computer-aided design of hierarchical functional nanomaterials
- Advisor: Professor Sir Fraser Stoddart (2016 Nobel Laureate in Chemistry)

### Columbia University, New York, NY (Aug 2006 – Aug 2011)

PhD in Chemistry with Distinction (Oct 2011) / MPhil (May 2010) / MA (Oct 2007)

- Guthikonda and Upjohn Predoctoral Fellow focused on interdisciplinary research of organic synthesis as well as theoretical and computational chemistry
- Joint Advisors: Professors Ronald Breslow and Richard A. Friesner
- Doctoral Thesis: “Computers for Chemistry and Chemistry for Computers: From Computational Prediction of Reaction Selectivities to Novel Molecular Wires for Electrical Devices”
- Cumulative GPA: 4.0/4.0

### University of Zurich, Zurich, Switzerland (Aug 2003 – Aug 2006)

BA in Chemistry (Aug 2006)

- Cumulative GPA: 5.7/6.0
- Summer Research in Computational Chemistry with Professor Kim Baldrige

## RESEARCH EXPERIENCE

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### Postdoctoral Research, Stoddart Laboratory, Northwestern University (Sept 2011 – June 2014)

- Assembled rigid macrocycles into functional nanotubes for chemical and mechanical sensing.
- Discovered two new families of macrocycles as building blocks for synthetic nanotubes (i) the asararenes, and (ii) homochiral molecular prisms with through-space electron sharing and anion-induced  $\pi$ - $\pi$  stacking.
- Performed quantum mechanical (QM) calculations and molecular dynamics (MD) simulations to predict the operation mechanisms of molecular machines.

**Doctoral Research**, Breslow and Friesner Laboratories, Columbia University (Sept 2006 – Aug 2011)

- Bridged computation and experiment for the design and synthesis of single-molecule electronic devices and the prediction of selectivities for organic and enzymatic reactions.
- Investigated the conductance of molecular wires at the single molecule level in order to build smaller and faster electronic devices, in collaboration with the Venkataraman research group.
- Key findings include (i) two novel methodologies for creating highly conductive electrical contacts between gold electrodes and carbon atoms of single molecules, (ii) the first single molecular, partially antiaromatic wire and (iii) charge transport mechanisms through molecular wires with parallel paths.
- Developed accurate structure-based computational methods to predict sites of P450-enzyme mediated drug metabolism and enantioselectivities of organocatalyzed reactions. Improved the accuracy of Density Functional Theory (DFT) for non-covalent bonding interactions with empirical corrections, which have been implemented in the commercial software package Jaguar from Schrödinger Inc.

**SCIENTIFIC AWARDS / DISTINCTIONS**

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- NSF CAREER Award 2019
- U.S. Army Research Office Young Investigator Award 2018
- International Institute for Nanotechnology (IIN) Postdoctoral Fellowship, Northwestern University, Evanston, IL 2011–2013
- ACS Postdoc to Faculty Workshop Travel Award, Indianapolis, IN 2013
- NSF Future Faculty Workshop “Leaders of Tomorrow” Participant, Georgia Tech, GA 2013
- DOE Travel Award to attend the ISMSC-8 Conference in Arlington, VA 2013
- Hammett Award in Chemistry for Excellence in Studies and Research toward the PhD, Columbia University, awarded to the top Graduate Student 2011
- Arun Guthikonda Memorial Fellowship in Organic Chemistry, Columbia University, awarded to the top Fourth Year Graduate Student 2010–2011
- Best Scientific Poster Award, Columbia University Nanoscale Science and Engineering Center Retreat, Short Hills, NJ 2009
- Upjohn Fellowship for Academic Excellence, Columbia University 2007–2008
- Young Researcher Participant, 18th Meeting of Nobel Prize Winners in Chemistry, Lindau, Germany 2006
- Scholarships from the Alfred Werner Legate at the University of Zurich, Switzerland, awarded for Academic Excellence 2005/2006
- Member of the Swiss National Team at the 34th International Chemistry Olympiad, Groningen, the Netherlands for High School Researchers 2002

**RESEARCH PUBLICATIONS (INDEPENDENT CAREER)**

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\* = Corresponding Author

1. J. P. Campbell, S. C. Rajappan, T. J. Jaynes, M. Sharafi, Y.-T. Ma, J. Li, **S. T. Schneebeli**.\* “Enantioselective Electrophilic Aromatic Nitration — A Chiral Auxiliary Approach” *Angew. Chem. Int. Ed.* **2019**, 58, 1035–1040, **Inside Back Cover**.
2. X. Zhao, C. Liao, J. B. Ferrell, Y. Ma, **S. T. Schneebeli**, J. Li. “A Top-Down Multiscale Approach to Simulate Peptide Assembly” *J. Chem. Theory Comput.* **2019**, ASAP, **Front Cover**.

3. J. Ferrell, J. P. Campbell, D. R. McCarthy, K. T. McKay, M. Hensinger, R. Srinivasan, X. Zhao, A. Wurthmann, J. Li,\* **S. T. Schneebeli**.\* “Chemical Exploration with Virtual Reality (CEVR) in Organic Teaching Laboratories” *J. Chem. Ed.* **2019**, Submitted.
4. M. V. Sheridan, P. Gamm, **S. T. Schneebeli**, R. Breuer, M. Schmittel, W. E. Geiger.\* “The Effect of Large Electrolyte Anions on the Sequential Oxidations of Bis(fulvalene)diiron Attached to Glassy Carbon by an Ethynyl Linkage” *Langmuir* **2018**, *34*, 1327–1339.
5. M. Sharafi, J. P. Campbell, S. C. Rajappan, N. Dudkina, D. L. Gray, T. J. Woods, J. Li, **S. T. Schneebeli**.\* “Crystal-Packing-Driven Enrichment of Atropoisomers” *Angew. Chem. Int. Ed.* **2017**, *56*, 7097–7081. Highlighted in [UVM CAS News](#).
6. K. E. Murphy, J. L. Bocanegra, X. Liu, H.-Y. K. Chau, P. C. Lee, J. Li, **S. T. Schneebeli**.\* “Precise Through Space Control of an Abiotic Electrophilic Aromatic Substitution Reaction” *Nature Commun.* **2017**, *8*, 14840.
7. C. Liao, X. Zhao, J. Liu, **S. T. Schneebeli**, J. C. Shelley, J. Li.\* “Capturing the Multiscale Dynamics of Membrane Protein Complexes with All-Atom, Mixed-Resolution, and Coarse-Grained Models” *Phys. Chem. Chem. Phys.* **2017**, *19*, 9181–9188.
8. M. Sharafi, Z. J. Weinert, I. M. Cohen, C. Liao, M. Ivancic, J. Li\*, **S. T. Schneebeli**.\* “Controlled Self-Assembly Inside C-Shaped Polyaromatic Strips” *Synlett* **2016**, *27*, 2145–2149. Special Issue on the “Synthesis of Non-planar Polyaromatic Compounds”.
9. M. V. Sheridan, K. Lam, M. Sharafi, **S. T. Schneebeli**,\* W. E. Geiger.\* “Anodic Methods for Covalent Attachment of Ethynylferrocenes to Electrode Surfaces: Comparison of Ethynyl Activation Processes” *Langmuir* **2016**, *32*, 1645–1657.
10. X. Liu, Z. J. Weinert, M. Sharafi, C. Liao, J. Li,\* **S. T. Schneebeli**.\* “Regulating Molecular Recognition with C-Shaped Strips Attained by Chirality-Assisted Synthesis” *Angew. Chem. Int. Ed.* **2015**, *54*, 12772–12776. **VIP, Inside Cover**, Highlighted in [Angew. Chem. Int. Ed.](#), [Popular Mechanics](#), and [io9](#).
11. C. Liao, M. E. Selvan, J. Zhao, J. Slimovitch, **S. T. Schneebeli**, M. Shelley, J. Shelley, J. Li.\* “Melittin Aggregation in Aqueous Solutions: Insight from Molecular Dynamics Simulations” *J. Phys. Chem. B* **2015**, *119*, 10390–10398.

#### RESEARCH PUBLICATIONS (PRE- AND POSTDOCTORAL)

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1. E. J. Dale, D. P. Ferris, N. A. Vermeulen, J. J. Henkelis, I. Popovs, M. Juríček, J. C. Barnes, **S. T. Schneebeli**,\* and J. F. Stoddart.\* “Cooperative Reactivity in an Extended-Viologen-Based Cyclophane.” *J. Am. Chem. Soc.* **2016**, *138*, 3667–3670.
2. Y. Wu, R. M. Young, M. Frasconi, **S. T. Schneebeli**, P. Spent, D. M. Gardner, K. E. Brown, F. Würthner,\* J. F. Stoddart,\* M. R. Wasielewski.\* “Ultrafast Photoinduced Symmetry-Breaking Charge Separation and Electron Sharing in Perylenediimide Molecular Triangles.” *J. Am. Chem. Soc.* **2015**, *137*, 13236–13239.
3. C. Cheng, P. R. McGonigal, **S. T. Schneebeli**, H. Li, N. A. Vermeulen, C. Ke, J. F. Stoddart.\* “An Artificial Molecular Pump.” *Nature Nanotech.* **2015**, *10*, 547–553.
4. P. R. McGonigal, H. Li, C. Cheng, **S. T. Schneebeli**, M. Frasconi, L. S. Witus, J. F. Stoddart.\* “Controlling Association Kinetics in the Formation of Donor-Acceptor Pseudorotaxanes.” *Tetrahedron Lett.* **2015**, *56*, 3591–3594.
5. Y. Wu, M. Frasconi, D. M. Gardner, P. A. McGonigal, **S. T. Schneebeli**, M. R. Wasielewski,\* J. F. Stoddart.\* “Electron Delocalization in a Rigid Cofacial Naphthalene-1,8:4,5-bis(dicarboximide) Dimer” *Angew. Chem. Int. Ed.* **2014**, *53*, 9476–9481.

6. N. L. Strutt, H. Zhang, S. T. Schneebeli, J. F. Stoddart.\* “Amino-functionalized Pillar[5]arene.” *Chem. Eur. J.* **2014**, *20*, 10996–11004.
7. Z. Liu, J. Lei, M. Frascioni, X. Li, D. Cao, Z. Zhu, **S. T. Schneebeli**, G. C. Schatz, J. F. Stoddart.\* “A Square-Planar Tetracoordinate Oxygen-Containing Ti<sub>4</sub>O<sub>17</sub> Cluster Stabilized by Two 1,1'-Ferrocenedicarboxylato Ligands” *Angew. Chem. Int. Ed.* **2014**, *53*, 9193–9197.
8. C. J. Bruns, M. Frascioni, J. Iehl, K. J. Hartlieb, **S. T. Schneebeli**, C. Cheng, S. I. Stupp,\* J. F. Stoddart.\* “Redox Switchable Daisy Chain Rotaxanes Driven by Radical–Radical Interactions.” *J. Am. Chem. Soc.* **2014**, *136*, 4714–4723.
9. A. J. Avestro, D. M. Gardner, N. A. Vermeulen, E. A. Wilson, **S. T. Schneebeli**, A. C. Whalley, M. E. Belowich, R. Carmieli, M. R. Wasielewski,\* J. F. Stoddart.\* “Gated Electron Sharing within Naphthalene Diimide-based Oligorotaxanes.” *Angew. Chem. Int. Ed.* **2014**, *53*, 4442–4449.
10. Z. Liu, G. Liu, Y. Wu, D. Cao, J. Sun, **S. T. Schneebeli**, M. S. Nassar, C. A. Mirkin, J. F. Stoddart.\* “Assembly of Supramolecular Nanotubes from Molecular Triangles and 1,2-Dihalohydrocarbons. *J. Am. Chem. Soc.* **2014**, *136*, 16651–16660.
11. R. W. Miller, A. K. Duncan, **S. T. Schneebeli**, D. L. Gray, A. C. Whalley.\* “Synthesis and Structural Data of Tetrabenzo[8]circulene.” *Chem. Eur. J.* **2014**, *20*, 3705–3711.
12. C. J. Bruns, J. Li, M. Frascioni, **S. T. Schneebeli**, J. Iehl, H.-P. J. de Rouville, S. I. Stupp, G. A. Voth,\* J. F. Stoddart.\* “An Electrochemically and Thermally Switchable Donor-Acceptor [c2]Daisy Chain Rotaxane.” *Angew. Chem. Int. Ed.* **2014**, *53*, 1953–1958.
13. K. J. Hartlieb, A. K. Blackburn, **S. T. Schneebeli**, R. S. Forgan, A. A. Sarjeant, C. L. Stern, D. Cao, J. F. Stoddart.\* “Topological Isomerism in a Chiral Handcuff Catenane.” *Chem. Sci.* **2014**, *5*, 90–100.
14. R. S. Forgan, A. K. Blackburn, M. M. Boyle, **S. T. Schneebeli**, J. F. Stoddart.\* “The Topological and Chemical Implications of Introducing Oriented Rings to [3]Catenanes.” *Supramol. Chem.* **2014**, *26*, 192–201, Special Issue.
15. **S. T. Schneebeli**, M. Frascioni, Z. Liu, Y. Wu, D. M. Gardner, N. L. Strutt, C. Cheng, R. Carmieli, M. R. Wasielewski,\* J. F. Stoddart.\* “Electron Sharing and Anion- $\pi$  Recognition in Molecular Triangular Prisms.” *Angew. Chem. Int. Ed.* **2013**, *52*, 13100–13104, **VIP, Back Cover**.
16. N. L. Strutt, **S. T. Schneebeli**, J. F. Stoddart.\* “Stereochemical Inversion in Difunctionalised Pillar[5]arenes.” *Supramol. Chem.* **2013**, *25*, 596–608, Special Issue.
17. **S. T. Schneebeli**, C. Cheng, K. J. Hartlieb, N. L. Strutt, A. A. Sarjeant, C. L. Stern, J. F. Stoddart.\* “Asararenes – A Family of Large Aromatic Macrocycles.” *Chem. Eur. J.* **2013**, *19*, 3860–3868. **Cover Art, VIP, Highlight** in *Chem. Views* (Feb 2013) and *Angew. Chem. Int. Ed.* (Mar 2013).
18. H. Vazquez, R. Skouta, **S. T. Schneebeli**, M. Kamenetska, R. Breslow,\* L. Venkataraman,\* M. S. Hybertsen.\* “Probing the Conductance Superposition Law in Single-Molecule Circuits with Parallel Paths.” *Nature Nanotech.* **2012**, *7*, 663–667. See also the News & Views article in *Nature Nanotech.* (Oct 2012). **Highlight** in *Pro-Physik* and *Brookhaven National Laboratory News* (Sept 2012).
19. A. N. Basuray, H.-P. J. de Rouville, K. J. Hartlieb, T. Kikuchi, N. L. Strutt, C. J. Bruns, M. W. Ambrogio, A. J. Avestro, **S. T. Schneebeli**, A. C. Fahrenbach, J. F. Stoddart.\* “The Chameleonic Nature of Diazaperopyrenium Recognition Processes.” *Angew. Chem. Int. Ed.* **2012**, *51*, 11872–11877.
20. M. Tagliacuzzi, V. A. Amin, **S. T. Schneebeli**, J. F. Stoddart, E. A. Weiss.\* “High-Contrast Photopatterning of Photoluminescence within Quantum Dot Films through Degradation of a Charge-Transfer Quencher.” *Adv. Mater.* **2012**, *24*, 3617–3621. **Cover Art**.
21. J. C. Heckel, A. L. Weisman, **S. T. Schneebeli**, M. L. Hall, L. J. Sherry, S. M. Stranahan, K. H. Dubay, R. A. Friesner,\* K. A. Willets.\* “Polarized Raman Spectroscopy of Oligothiophene Crystals To Determine Unit Cell Orientation.” *J. Phys. Chem. A* **2012**, *116*, 6804–6816.

22. W. Chen, J. Widawsky, H. Vazquez, **S. T. Schneebeli**, M. Hybertsen,\* R. Breslow,\* L. Venkataraman.\* “Highly Conducting  $\pi$ -Conjugated Molecular Junctions Covalently Bonded to Gold Electrodes.” *J. Am. Chem. Soc.* **2011**, *133*, 17160–17163. **Highlight** in *C&E News* (Oct 2011).
23. J. Li, **S. T. Schneebeli**, J. Bylund, R. Farid, R. A. Friesner.\* “IDSite: An Accurate Approach to Predict P450-Mediated Drug Metabolism.” *J. Chem. Theory Comput.* **2011**, *7*, 3829–3845.
24. Z. Cheng, R. Skouta, H. Vazquez, J. R. Widawsky, **S. T. Schneebeli**, W. Chen, M. S. Hybertsen,\* R. Breslow,\* L. Venkataraman.\* “*In situ* Formation of Highly Conducting Covalent Au–C Contacts for Single-Molecule Junctions.” *Nature Nanotech.* **2011**, *6*, 353–357. **Highlight** in *C&E News* (Oct 2011).
25. **S. T. Schneebeli**, A. D. Bochevarov, R. A. Friesner.\* “Parameterization of a B3LYP specific Correction for Dispersion Interactions on a Gigantic Dataset of CCSD(T) Quality Non-Covalent Interaction Energies.” *J. Chem. Theory Comput.* **2011**, *7*, 658–668.
26. **S. T. Schneebeli**, M. Kamenetska, Z. Cheng, R. Skouta, R. A. Friesner, L. Venkataraman,\* R. Breslow.\* “Single-Molecule Conductance through Multiple  $\pi$ - $\pi$ -Stacked Benzene Rings Determined with Direct Electrode-to-Benzene Ring Connections.” *J. Am. Chem. Soc.* **2011**, *133*, 2136–2139. **Cover Art. Highlight** in *Nature Materials* (Mar 2011).
27. **S. T. Schneebeli**, M. Kamenetska, F. W. Foss Jr., H. Vazquez, R. Skouta, M. Hybertsen,\* L. Venkataraman,\* R. Breslow.\* “The Electrical Properties of Biphenylenes.” *Org. Lett.* **2010**, *12*, 4114–4117.
28. **S. T. Schneebeli**, M. L. Hall, R. Breslow,\* R. A. Friesner.\* “Quantitative DFT Modeling of the Enantiomeric Excess for Dioxirane-Catalyzed Epoxidations.” *J. Am. Chem. Soc.* **2009**, *131*, 3965–3973.

#### REVIEW ARTICLES

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1. J. P. Campbell, M. Sharafi, K. E. Murphy, **S. T. Schneebeli**\* “Precise Molecular Shape Control of Linear and Branched Strips with Chirality-Assisted Synthesis” *Supramol. Chem.*, Submitted. Special Issue, Highlighting Emerging/Early Career Supramolecular Chemists in North America.
2. C. Liao, M. Poujol de Molliens, **S. T. Schneebeli**, M. Brewer, G. Song, D. Chatenet, K. M. Braas, V. May, J. Li\* “Targeting the PAC1 Receptor for Neurological and Metabolic Disorders” *Curr. Top. Med. Chem.* **2018**, Accepted.
3. N. L. Strutt, H. Zhang, **S. T. Schneebeli**, J. F. Stoddart.\* “Functionalizing Pillar[n]arenes.” *Acc. Chem. Res.* **2014**, *47*, 2631–2642.
4. Z. Liu, **S. T. Schneebeli**, J. F. Stoddart.\* “Second-Sphere Coordination Revisited.” *Chimia* **2014**, *68*, 315–320.
5. R. Breslow,\* **S. T. Schneebeli**. “Structure-Property Relationships in Molecular Wires.” *Tetrahedron* **2011**, *67*, 10171–10178.

#### BOOK CHAPTERS

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1. **S. T. Schneebeli**, N. L. Strutt, C. Cheng, J. F. Stoddart.\* “Pillararene-related Macrocycles.” In *Monographs in Supramolecular Chemistry*, Vol. 18 (Pillararenes), Royal Society of Chemistry, Cambridge, U.K., **2016**, 278–307.

## ISSUED PATENTS

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1. J. F. Stoddart, **S. T. Schneebeli**, M. Frasconi, Z. Liu. “Redox Active Triangular Organic Materials” Provisional patent application filed on 9/3/2014. U.S. Patent application filed on 9/3/2015. U.S. Patent number 20160130271.

## INVITED SEMINARS / PRESENTATIONS

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1. University of Connecticut, Department of Chemistry, Storrs, CT (December 2018). “Bending Synthetic Polymers into Well-defined Shapes with Increasing Complexity.”
2. University of Zurich, Department of Chemistry, Zurich, Switzerland (December 2018). “Bending Synthetic Polymers into Well-defined Shapes with Increasing Complexity.”
3. University of Houston, Department of Chemistry, Houston, TX (November 2018). “From Chirality-Assisted Synthesis to Polymer Replication and Translation with Increasing Complexity.”
4. Georgetown University, Department of Chemistry, Washington, DC (March 2018). “From Chirality-Assisted Synthesis to Polymer Replication and Translation with Increasing Complexity.”
5. University of Maryland — College Park, Department of Chemistry and Biochemistry, College Park, MD (March 2018). “From Chirality-Assisted Synthesis to Polymer Replication and Translation with Increasing Complexity.”
6. Worcester Polytechnic Institute, Department of Chemistry and Biochemistry, Worcester, MA (Feb. 2018). “Directing Electrophilic Aromatic Substitution Reactions from Above and Underneath Aromatic Rings.”
7. Sun Yat-Sen University, School of Chemistry, Guangzhou, P. R. China (Jan 2018). “Directing Electrophilic Aromatic Substitution Reactions from Above and Underneath Aromatic Rings.”
8. The University of Vermont, Advanced Materials for Energy and Bioengineering Applications (AMEBA) Symposium, Burlington, VT (Dec 2017). “Extending Chirality-Assisted Synthesis with Novel Building Blocks Created with Through-space-directed SEAr Reactions.”
9. University of Heidelberg, Institute of Organic Chemistry, Heidelberg, Germany (Aug 2017). “From Chirality-Assisted Synthesis to Polymer Replication and Translation.”
10. University of Basel, Department of Chemistry, Basel, Switzerland (June 2017). “From Precise Molecular to Macromolecular Shape Control.”
11. University of Fribourg, Department of Chemistry, Fribourg, Switzerland (June 2017). “From Precise Molecular to Macromolecular Shape Control.”
12. Carnegie Mellon University, Department of Chemistry, Pittsburgh, PA (Feb 2017). “*En Route* to Shape-Defined Precision Polymers.”
13. Saint Michael’s College, Department of Chemistry, Colchester, VT (Feb 2017). “From Molecular Wrenches to Well-defined Polymers.”
14. The University of Vermont, Advanced Next Generation Energy Leadership (ANGEL) Symposium, Burlington, VT (Oct 2016). “Toward Precise Molecular Shape Control.”
15. The 252nd ACS National Meeting, Philadelphia, PA (Aug 2016). “Toward Precise Molecular Shape Control.”
16. The 251st ACS National Meeting, San Diego, CA (March 2016). “Freeform Light-Responsive Spirals.”

17. The University of Vermont, Advanced Materials for Energy and Bioengineering Applications (AMEBA) Symposium, Burlington, VT (Dec 2015). “Bioinspired Functional Nanomaterials Built with Chirality-Assisted Synthesis.”
18. The 250th ACS National Meeting, Boston, MA (Aug 2015). “Complex Nanoscale Shapes Created with Chirality-Assisted Synthesis.”
19. The University of Vermont, Department of Chemistry, Burlington, VT (March 2014, Special Seminar). “Molecular Engineering of One-Dimensional Conductive Materials.”
20. South University of Science and Technology of China, Department of Chemistry, Shenzhen, P. R. China (Feb 2014, Special Seminar). “Molecular Engineering of One-Dimensional Conductive Materials.”
21. Nanyang Technological University, School of Materials Science and Engineering, Singapore (Feb 2014, Special Seminar). “Molecular Engineering of One-Dimensional Conductive Materials.”
22. Institute of Science and Technology Austria, Klosterneuburg, Austria (Feb 2014, Special Seminar). “Molecular Engineering of One-Dimensional Conductive Materials.”
23. ETH Zurich, Department of Chemistry and Applied Biosciences, Zurich, Switzerland (Feb 2014, Special Seminar). “Molecular Engineering of One-Dimensional Conductive Materials.”
24. Cornell University, Department of Chemistry and Chemical Biology, Ithaca, NY (Jan 2014, Special Seminar). “Molecular Engineering of One-Dimensional Conductive Materials.”
25. University of British Columbia, Department of Chemistry, Vancouver, BC, Canada (Jan 2014, Special Seminar). “Molecular Engineering of One-Dimensional Conductive Materials.”
26. Princeton University, Department of Chemistry, Princeton, NJ (Jan 2014, Special Seminar). “Molecular Engineering of One-Dimensional Conductive Materials.”
27. The University of Chicago, Department of Chemistry, Chicago, IL (Jan 2014, Special Seminar). “Molecular Engineering of One-Dimensional Conductive Materials.”
28. Carnegie Mellon University, Department of Chemistry, Pittsburgh, PA (Dec 2013, Special Seminar). “Molecular Engineering of One-Dimensional Conductive Materials.”
29. Massachusetts Institute of Technology, Department of Chemistry, Cambridge, MA (Nov 2013, Special Seminar). “Molecular Engineering of One-Dimensional Conductive Materials.”
30. The 246th ACS National Meeting, Indianapolis, IN (Sept 2013). Functional Nanomaterials by Design. “Assembly of Rigid Macrocycles into Functional Covalent Nanotubes.”
31. Physical Organic Chemistry Gordon Research Seminar, Holderness, NH (June 2013, Discussion Leader). “Novel Functional Materials and Supramolecular Chemistry.”
32. Self-Assembly and Supramolecular Chemistry Gordon Research Seminar, Les Diablerets, Switzerland (May 2013, Discussion Leader). “Small Molecule & Macromolecular Self-Assembly.”
33. Columbia University, Department of Chemistry, New York, NY (Jan 2013, Special Seminar). “Towards NanoScale Devices.”
34. University of Basel, Basel, Switzerland (Oct 2012, Host: E. Constable). “Asararenes – Large Aromatic Macrocycles as Building Blocks for Covalently Bonded Nanotubes.”
35. Università della Svizzera Italiana (USI), Lugano, Switzerland (Oct 2012, Host: M. Parrinello). “Single-Molecule Conductance of Molecular Wires with Parallel Paths.”
36. University of Zurich, Zurich, Switzerland (Oct 2012, Host: K. Baldrige). “Towards Covalently Bonded, Self-Assembled Macrocyclic Nanotubes.”
37. Schrödinger, Inc., New York, NY (May 2011). “IDSite — Accurate Prediction of P450 mediated Sites of Metabolism.”
38. The 241st ACS National Meeting, Anaheim, CA (Mar 2011). Recent Progress in Catalytic and Biomimetic Chemistry. “Progress towards Highly Conducting Molecular Wires.”

39. Chemical Synthesis Research Symposium, Columbia University, New York, NY (Jan 2011). "Synthesis and Single-Molecule Conductance of New Molecular Wires."
40. Columbia University Nanocenter Symposium, New York, NY (Oct 2010). "Boosting Single Molecule Conductance with New Gold-to-Molecule Contacts."
41. Columbia University Nanocenter Symposium, New York, NY (Dec 2009). "Molecular Nanowires."
42. Columbia University Synthesis Literacy Group, Member Presentation, Columbia University, Department of Chemistry, New York, NY (Sept 2008). "Named Reactions: Corey-Bakshi-Shibata and Related Reductions."

### SELECTED POSTER PRESENTATIONS

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1. Self-Assembly and Supramolecular Chemistry Gordon Research Conference, Les Diablerets, Switzerland (May 2017). Kyle T. McKay, Mona Sharafi, Kyle E. Murphy, Dillon R. McCarthy, Joseph P. Campbell, **Severin T. Schneebeli**. "En Route to Shape-defined Precision Polymers."
2. RSC Macrocyclic and Supramolecular Chemistry Meeting, Glasgow, UK (Dec 2013). **Severin T. Schneebeli**, Marco Frasconi, Zhichang Liu, Yilei Wu, Chuyang Cheng, Nathan L. Strutt, J. Fraser Stoddart. "Electron Sharing in Molecular Nanotubes."
3. 8th International Symposium on Macrocyclic and Supramolecular Chemistry, Arlington, VA (July 2013). **Severin T. Schneebeli**, Marco Frasconi, Zhichang Liu, Yilei Wu, Chuyang Cheng, Nathan L. Strutt, J. Fraser Stoddart. "Macrocycles as Building Blocks for Functional Nanostructures."
4. Physical Organic Chemistry Gordon Research Conference and Seminar, Holderness, NH (June 2013). **Severin T. Schneebeli**, Marco Frasconi, Zhichang Liu, Yilei Wu, Chuyang Cheng, Nathan L. Strutt, J. Fraser Stoddart. "Rigid Triangular Macrocycles with Delocalized Radical Anions."
5. Self-Assembly and Supramolecular Chemistry Gordon Research Seminar and Conference, Les Diablerets, Switzerland (May 2013). **Severin T. Schneebeli**, Marco Frasconi, Zhichang Liu, Yilei Wu, Chuyang Cheng, Nathan L. Strutt, Karel J. Hartlieb, J. Fraser Stoddart. "Nanotubes and Wires from Rigid Macrocycles."
6. Northwestern CCIS Symposium, Evanston, IL (May 2012). **Severin T. Schneebeli**, Chuyang Cheng, Nathan L. Strutt, Karel, J. Hartlieb, Julien Iehl, J. Fraser Stoddart. "Pillararenes and Asararenes: Novel Macrocycles for the 21<sup>st</sup> Century."
7. Columbia Nanocenter Symposium, New York, NY (June 2011). **Severin T. Schneebeli**, Rachid Skouta, Maria Kamenetska, Latha Venkataraman, Ronald Breslow. "Progress towards Highly Conducting Molecular Nanowires."
8. The 241st ACS National Meeting, Anaheim, CA (March 2011). **Severin T. Schneebeli**, Maria Kamenetska, Zhanling Cheng, Rachid Skouta, Latha Venkataraman, Ronald Breslow. "Molecular Electronics with Multiple  $\pi$ - $\pi$ -Stacked Aromatic Layers and with Partially Antiaromatic Biphenylene Cores."
9. ACS Younger Chemists Committee Research Symposium, New York, NY (March 2011). **Severin T. Schneebeli**, Maria Kamenetska, Zhanling Cheng, Rachid Skouta, Latha Venkataraman, Ronald Breslow. "Synthesis of Molecular Wires with Antiaromatic Character and Single-Molecule Conductance through Multiple Stacked  $\pi$ -Systems."
10. Columbia University Nanoscale Science and Engineering Center Retreat, Short Hills, NJ (April 2009). **Severin T. Schneebeli**, Rachid Skouta, Maria Kamenetska, Latha Venkataraman, Ronald Breslow. "Nanowires with Parallel Conduction Pathways."



## COURSES TAUGHT

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- Chemistry 242: Advanced Organic Chemistry II, The University of Vermont (Spring 2018 and 19)
- Chemistry 141: Organic Chemistry I, The University of Vermont (Fall 2017 and 18)
- Chemistry 241: Advanced Organic Chemistry I, The University of Vermont (Fall 2014, 15, and 16)
- Chemistry 251: Physical Organic Chemistry, The University of Vermont (Spring 2015 and 16)
- Chemistry 214: Polymer Chemistry, The University of Vermont (Spring 2017)

## EXTERNAL GRANT SUPPORT

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- National Science Foundation — CAREER Award (CHE-1848444), July 2019 – June 2024.  
“CAREER: Ribosome-inspired Synthesis of Precision Polymers.”  
Award Amount: \$678,647. Role: PI.
- USDA NIFA Program — SEED Grant (2018-07583), May 2019 – May 2021 (Recommended).  
“Nanocages for Assessing Saffron Quality: Advanced Tools for an Emerging High-value Crop”  
Award Amount: \$180,830. Role: PI. Co-PIs: Margaret Skinner (UVM Plant and Soil Science) and Jianing Li (UVM Chemistry)
- U.S. Army Research Office — Young Investigator Proposal (71015-CH-YIP), Feb 2018 – Dec 2020.  
“An Exponential Amplification Strategy for Precision Polymeric Materials.”  
Award Amount: \$351,137. Role: PI.
- National Science Foundation — Continuing Grant (CHE-1609137), July 2016 – June 2019.  
“Programmable Catalysts Designed to Replicate Flexible Polymers.”  
Award Amount: \$414,268. Role: PI.

## INTERNAL GRANT SUPPORT

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- UVM Office of the VP for Research — REACH Seed Grant, May 2015 – Aug 2016. “Freeform Molecular Helices: Tiny Springs for Strong and Flexible Materials.” Award Amount: \$23,352.  
Role: PI; Co-PI: Patrick C. Lee (UVM Engineering).
- UVM Office of the VP for Research — FISAR Seed Grant, Jan 2016 – Feb 2018. “Triggered Release of Active Catalyst from Polymer Capsules.” Award Amount: \$40,000. Role: Co-PI; PI: Patrick C. Lee (UVM Engineering); Co-PI: Michael Radermacher (UVM Biophysics).

## PROFESSIONAL ACTIVITIES

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### Manuscript Reviewer

- Particle & Particle Systems Characterization (Feb 2019 – Present)
- Nano Letters (Nov 2018 – Present)
- Angewandte Chemie International Edition (Sept 2018 – Present)
- Current Opinion in Structural Biology (Feb 2018 – Present)
- Organic Chemistry Frontiers (Nov 2016 – Present)
- Macromolecules (April 2016–Present)
- Journal of the American Chemical Society (Aug 2015 – Present)
- Journal of Organic Chemistry (April 2015 – Present)
- Chemical Communications (June 2013 – Present)
- RSC Advances (Oct 2013 – Present)

- Physical Chemistry Chemical Physics (Aug 2014 – Present)
- Journal of Nanoelectronics and Optoelectronics (March 2015 – Present)

#### **Grant Reviewer**

- NSF Panel Member
- American Chemical Society Petroleum Research Fund
- Branco-Weiss Foundation
- Foundation for Frontier Research in Chemistry, France

#### **Textbook Reviewer**

- Organic Chemistry Textbooks for Pearson Education, *Inc.* (March 2015 – Present)

#### **Service at the University of Vermont**

- Graduate Standards Committee, Department of Chemistry (Aug 2014 – Present)
- Safety Committee, Department of Chemistry (Aug 2014 – Present)
- Academic Planning Committee, Department of Chemistry (Sept 2016 – Nov 2016)
- Graduate Admissions Committee, Department of Chemistry (Jan 2017 – Present)
- Chair of the Publicity Committee, Department of Chemistry (Sept 2017 – Present)
- Faculty Senator for the Department of Chemistry (Sept 2017 – Present)

#### **Scientific Outreach**

- Organizer & Presenter, Chemistry Fun, ECHO Center, Burlington, VT (April 2018)
- Organizer & Presenter, Chemistry Fun, ECHO Center, Burlington, VT (Oct 2016), Shown [on NBC5 Presented](#) the Group's Findings to the Brazilian Internet TV Channel Nano Alerta (Jan 2016)
- Mentored a Team of Local High School Students to Investigate Bioplastics (Nov 2015 – Mar 2016)
- Organizer & Presenter, ACS National Chemistry Week, ECHO Center, Burlington, VT (Oct 2015)
- Lecturer, French American Science Festival, Chicago, IL (Oct 2011 and Oct 2012)
- Peer Advisor, Columbia University International Office, New York, NY (Summer 2008)
- Lecturer, Columbia University Girls Science Day, New York, NY (Nov 2007)

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### **LANGUAGES**

- German (native)
- English (fluent in reading, writing and speaking)
- French (fluent in reading, writing and speaking)
- Mandarin (basic reading and speaking)
- Latin (reading)

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### **PROFESSIONAL AFFILIATIONS**

- American Chemical Society (2010 – Present)
- Chicago Council on Science and Technology (2011–2014)
- New York Academy of Sciences (2006–2011)
- Elected Member of the Swiss Study Foundation (2003–2011)