

Rafael Verduzco

Professor

Chemical and Biomolecular Engineering and Materials Science and NanoEngineering
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Professional Preparation

| Institution | Major/Area | Degree | Date |
|------------------------------------|----------------------|---------|---------------|
| Rice University | Chemical Engineering | BS | 5/2001 |
| California Institute of Technology | Chemical Engineering | MS | 5/2003 |
| California Institute of Technology | Chemical Engineering | PhD | 5/2007 |
| Oak Ridge National Laboratory | Nanoscience | Postdoc | 3/2007-6/2009 |

Appointments

| | |
|-----------------|--|
| 07/2020-present | Professor, Chemical and Biomolecular Engineering and Materials Science and NanoEngineering, Rice University |
| 01/2022-06/2022 | Visiting Faculty Associate, Division of Chemistry and Chemical Engineering, California Institute of Technology |
| 01/2022-06/2022 | Visiting Faculty Associate, Dornsife College of Letters, Arts, and Sciences, University of Southern California |
| 07/2016-06/2020 | Associate Professor, Chemical and Biomolecular Engineering and Materials Science and NanoEngineering, Rice University |
| 07/2009-06/2016 | Louis Owen Assistant Professor, Chemical and Biomolecular Engineering and Materials Science and NanoEngineering, Rice University |
| 03/07-06/09 | Postdoctoral Associate, Center for Nanophase Materials Sciences, Oak Ridge National Laboratory |
| 05/04-08/04 | NSF EAPSI Fellow, Pohang Institute of Technology, Pohang, South Korea |
| 09/01-03/07 | Graduate Student, Chemical Engineering, California Institute of Technology |

Awards and Honors

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|----------------|--|
| April 2021 | George R. Brown Superior Teaching Award |
| May 2020 | Rice Research + Teaching University Award |
| August 2017 | Best Fundamental Paper – STS AIChE |
| October 2015 | <i>Europhys Lett.</i> Young Investigator Prize, ILCEC |
| September 2015 | HENAAC Great Minds in STEM award |
| December 2013 | NSF CAREER Award |
| November 2012 | Best Fundamental Paper – STS-AIChE |
| June 2012 | John S. Dunn Foundation Collaborative Research Award (w. JG Jacot) |
| July 2012 | ACS Petroleum Research Fund Doctoral New Investigator Award |
| July 2009 | Louis Owen Assistant Professor Chair in Chemical Engineering |
| June 2004 | National Science Foundation EAPSI Fellow |
| August 2001 | James Irvine Foundation Fellowship |
| August 2001 | National Defense Science and Engineering Graduate Fellowship |
| May 2001 | Graduated <i>summa cum laude</i> |
| May 2001 | Thomas W. Moore award in Chemical Engineering |

Selected Service

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| 2022-2023 | Associate Department Chair | Chemical and Biomolecular Engineering, Rice University |
| 2022 | American Institute of Chemical Engineers (AIChE) | Vice-Chair for Materials Engineering and Sciences Division (MSDE) |
| 2022-2023 | American Chemical Society (ACS) | Member-At-Large, Division of Polymeric Materials Science and Engineering (PMSE) |
| 2023-2026 | American Physical Society (APS) | DPOLY Programming Committee |

Research Support (Current and Past)

- (40), Co-PI, Subsea Systems Institute (SSI, Title: Sensors Based on Organic Electrochemical Transistors (OECTs) for Deep Sea Leakage and Chemical Detection, \$60,000, 03/2023 – 09/2024)
- (39), PI, National Science Foundation (NSF, Title: EFRI ELiS: Living Microbial Sensors for Real-Time Monitoring of Pathogens in Wastewater, \$1,999,271, 01/2023 – 12/2026)
- (38), Co-PI, National Science Foundation (NSF, Title: SemiSynBio-III: Hybrid cell-semiconducting polymer systems that decode cytosolic information using RNA-regulated electron transfer, \$1,500,000, 09/2022 – 08/2025)
- (37), PI, National Alliance for Water Innovation (NAWI, Title: Copper Recovery from Mining Wastewater with Ion-Selective Electrodialysis, \$1,207,895, 08/2022 – 07/2025)
- (36), PI, Welch Foundation (Title: New Concepts for Selective Ion Transport in Charged Polymers, \$300,000, 06/2022 – 05/2025)
- (35), Co-PI, Army Research Office MURI (ARO, Title: Faster, More Efficient, and Hybrid Computation in Microbial Bioelectronic Systems, \$6,249,999, 06/2022 – 05/2026)
- (34), PI, Office of Naval Research (ONR, Title: X-ray Photoelectron Spectroscopy (XPS)/Hard Energy photoelectron spectroscopy (HAXPES) for Fast, Multiplexed, and Autonomous Underwater Bioelectronic Sensors, \$1,230,000, 04/2022 – 10/2023)
- (33), PI, Defense Advanced Research Projects Agency (DARPA, Title: Real-Time Amperometric Platform Using Molecular Imprinting for Selective Detection of SARS-CoV-2 (RAPID), \$1,000,000, 03/2021 – 12/2021)
- (32), Co-PI, National Science Foundation (Title: EFRI DChEM: Electrifying CO₂ From Point Sources into Pure Liquid Fuels, \$2,000,000, 09/2020 – 08/2024)
- (31), Co-PI, Office of Naval Research (Title: Fast, Multiplexed, and Autonomous Bioelectronic Sensors Based on Engineered Exoelectrogens, \$1,125,000, 05/2020 – 04/2023)
- (30), PI, Jacobs Engineering (Title: Quantification of Silver Complexes in Potable Water, \$50,000, 04/2020 – 01/2021)
- (29), Co-PI, Department of the Interior (Title: Advancing pervaporation for the treatment of concentrates in inland desalination, \$25,000, 03/2020 – 08/2021)
- (28), PI, National Science Foundation (Title: Collaborative Research: Solution Processing with Entropy-Controlled Stratification of Architecturally-Complex Polymer Blends, \$267,996, 01/2019 – 12/2022)
- (27), PI, Rice University Creative Ventures (Title: Rice Center for Flexible Power, \$50,000, 01/2019 – 12/2019)
- (26), PI, ARO URAP/HSAP program (Title: Optically Actuated Liquid Crystal Elastomer Micropumps, \$7,500, 05/2019 – 09/2019)
- (25), Co-PI, SubSea Systems Institute (Title: Flexible Low-Temperature Lithium Ion Batteries for Subsea Applications, \$38,000, 08/2019 – 07/2022)
- (24), Co-PI, National Science Foundation (Title: NRT: A Bioelectronics Incubator for Training Students (BITS) at the Cell/Material Interface, \$2,999,025, 09/01/2018 – 08/31/2023).
- (23), Co-PI, National Science Foundation (Title: RoL: EAGER: DESYN-C3: Using synthetic energy-harvesting materials at the cell surface to reduce low potential ferredoxins within the cytosol for metabolic applications, \$300,000, 09/01/2018 – 08/31/2020).

- (22), PI, Army Research Office (Title: Modular Click Synthesis of Liquid Crystal Elastomers, \$200,000, 09/01/2018 – 02/28/2020).
- (21), PI, Welch Foundation for Chemical Research (Title: Charge Transport in Conjugated Ladderphanes and Network-Stabilized Conjugated Polymers, \$240,000, 06/01/2018 – 05/31/2021)
- (20), PI, National Science Foundation (Title: Research Experience for Teachers in Nanoengineering with a Focus on Leadership \$200,000, 08/01/18 – 07/31/21).
- (19), PI, Army Research Laboratory (Title: 2-D Kevlar through Novel Materials Synthesis \$500,000, 09/01/2017 –08/31/2020).
- (18) Co-PI, National Science Foundation., (Title: Nanotechnology REU with a Focus on Community Colleges, \$327,818, 05/01/18 – 04/28/21).
- (17), PI, National Science Foundation (Title: Collaborative Research: Universal Processing Approaches for Functional Brush Surfaces through Bottlebrush Polymers, \$288,789, 07/01/16-6/31/19)
- (16), PI, National Science Foundation (Title: MRI: Acquisition of Time-of-Flight Secondary Ion Mass Spectrometer (TOF-SIMS) for high-resolution 3-D materials analysis, \$1,166,249, 07/01/16-6/31/19).
- (15), PI, National Science Foundation (Title: Collaborative Research: Next-Generation, Simultaneously Ion- and Electron- Conducting Block Copolymer Binders for Battery Electrodes, \$199,999, 09/01/16-08/31/19).
- (14), Co-PI, National Science Foundation. (Title: Nanosystems Engineering Research Center for Nanotechnology Enabled Water Treatment Systems \$18,500,000, 08/01/15 – 07/31/20).
- (13) PI, Welch Foundation for Chemical Research. (Title: Charge Separation in Well-Defined Donor-Acceptor Block Copolymer Interfaces, \$195,000, 06/01/15 – 05/31/18).
- (12) Co-PI, National Science Foundation., (Title: Nanotechnology REU with a Focus on Community Colleges, \$327,818, 05/01/15 – 04/28/18).
- (11) PI, National Science Foundation CAREER Award. (Title: Multi-Functional Organic Electronics Through All-Conjugated Block Copolymers, \$501,731, 07/01/14 – 06/30/19).
- (10) Co-Investigator, American Heart Association. (Title: Use of liquid crystal elastomer substrates to condition human cardiomyocyte precursors and generate 3-D layered tissues, \$154,000, 01/01/14 – 12/31/15).
- (9) PI, National Science Foundation. (Title: Collaborative Research: Hybrid Block Copolymer Electrodes for Electrochemical Energy Storage, \$197,225, 09/01/13 – 08/31/16).
- (8) PI, National Science Foundation. (Title: Collaborative Research: Block Copolymer Compatibilizers for Controlled Morphology and Interfacial Properties in Polymer-Fullerene Blends, \$227,549, 07/01/13 – 06/30/16).
- (7) Co-PI. Advanced Energy Consortia. (Title: Functionalized Nanoparticles for Enhanced Oil Recovery at High Temperature and Salinity , \$960,000, 07/01/13 – 05/31/15).
- (6) PI, Gulf Coast Consortia, Dunn Collaborative Research Award. (Title: Multi-layered cardiac patches from dynamic surfaces, \$100,000, 01/01/13 – 12/31/14).
- (5) PI, ACS Petroleum Research Fund Doctoral New Investigator Award. (Proposal Title: Understanding Side-Chain Flexibility in Bottlebrush Polymers, \$100,000, 09/01/12 – 08/31/15).
- (4) PI, NASA Research Seed Grant (Title: Bottlebrush Polymers for Encapsulation and Delivery, \$20,000, 01/01/12 – 12/31/12).
- (3) PI, Shell Center for Sustainability. (Title: All-Conjugated Block Copolymer Photovoltaics, \$46,000, 01/01/12 – 12/31/12).
- (2) PI, Rice IBB Hammill Innovations Grant. (Title: Biomimetic Reconfigurable Hairy Skins, \$25,000, 08/01/10 – 07/31/11).
- (1) PI, Welch Foundation for Chemical Research. (Title: Synthesis of multi-block and graft conjugated copolymers, \$180,000, 06/01/10 – 05/31/13).

Peer-Reviewed Journal Publications

(*denotes corresponding author, ‡denotes undergraduate co-author)

128. D Zhu, Y Zhu, Y Chen, Q Yan[‡], H Wu, C-Y Liu, X Wang, LB Alemany, G Gao, TP Senftle, Y Peng, X Qu, and R Verduzco*. "Three-Dimensional Covalent Organic Frameworks with pto and mhq-z Topologies Based on Tri- and Tetratopic Linkers," *Nature Commun.* **2023**, accepted for publication.
127. RM DuChanois, L Mazurowski, H Fan, R Verduzco, O Nir, and M Elimelech*. "Precise Cation Separations with Composite Cation-Exchange Membranes: Role of Base Layer Properties," *Environ. Sci. Technol.* **2023**, DOI: 10.1021/acs.est.3c00445
126. Y Li, S Park, K Sarang, H Mei, CP Tseng, Z Hu, D Zhu, X Li, J Lutkenhaus, and R Verduzco*. "Mixed Ionic–Electronic Conduction Increases the Rate Capability of Polynaphthalenediimide for Energy Storage," *ACS Polymers Au*, **2023**, DOI: 10.1021/acspolymersau.2c00066.
125. S Khalil, MD Meyer, A Alazmi, MHK Samani, P-C Huang, MG Barnes, AB Marciel, and R Verduzco*. "Enabling Solution Processible COFs through Suppression of Precipitation during Solvothermal Synthesis," *ACS Nano*, **2022**, 16, 20964 – 20974. DOI: 10.1021/acsnano.2c08580.
124. D Zhu, Q Yan, Y Zhu, A Ajnsztajn, MM Rahman, PM Ajayan, and R Verduzco*. "Solvent-Induced Incremental Pore Collapse in Two-Dimensional Covalent Organic Frameworks," *ACS Materials Letters*, **2022**, 4, 2368 – 2374. DOI: 10.1021/acsmaterialslett.2c00672.
123. NC Nnorom, T Rogers, A Jain, A Alazmi, WC Elias, RM DuChanois, K Flores, JL Gardea-Torresday, M Cokar, M Elimelech, MS Wong, and R Verduzco*. "Sulfonated polymer coating enhances selective removal of calcium in membrane capacitive deionization," *J. Mem. Sci.* **2022**, 662, 120974. DOI: 10.1016/j.memsci.2022.120974.
122. D Lee, N Charpota, H Mei, T Terlier, D Pietrzak, GE Stein*, and R Verduzco*. "Impact of Processing Effects on Surface Segregation of Bottlebrush Polymer Additives," *Macromolecules*, **2022**, 55, 8908 – 8917. DOI: 10.1021/acs.macromol.2c01418
121. NL Senehi, MR Ykema, R Sun, R Verduzco, LB Stadler, YJ Tao, and PJJ Alvarez*. "Protein-imprinted particles for coronavirus capture from solution," *J. Sep. Sci.*, **2022**, 45, 4318 – 4326. DOI: 10.1002/jssc.202200543.
120. D Zhu, JJ Zhng, X Wu, Q Yan[‡], F Liu, Y Zhu, X Gao, MM Rahman, BI Yakobson, PM Ajayan, and R Verduzco*. "Understanding fragility and engineering activation stability in two-dimensional covalent organic frameworks," *Chem. Sci*, **2022**, 13, 9655. DOI: 10.1039/D2SC03489A.
119. Z Shan, M Wu, D Zhu, X Wu*, K Zhang, R Verduzco, and G Zhang*. "3D Covalent Organic Frameworks with Interpenetrated pcb Topology Based on 8-Connected Cubic Nodes," *J. Am. Chem. Soc.*, **2022**, 144, 5728. DOI: 10.1021/jacs.2c01037.
118. CP Tseng, F Liu, X Zhang, P-C Huang, I Campbell, Y Li, JT Atkinson, T Terlier, CM Ajo-Franklin, JJ Silberg, and R Verduzco*. "Solution-Deposited and Patternable Conductive Polymer Thin-Film Electrodes for Microbial Bioelectronics," *Adv. Mater.* **2022**, 34, 2109442. DOI: 10.1002/adma.202109442.
117. M Barnes, S Cetinkaya, A Ajnsztajn, and R Verduzco*. "Understanding the effect of liquid crystal content on the phase behavior and mechanical properties of liquid crystal elastomers," *Soft Matter*, **2022**, 18, 5074. DOI: 10.1039/D2SM00480A.

116. J Chen, K Zuo, Y Li, X Huang, J Hu, Y Yang, W Wang, L Chen, A Jain, R Verduzco, X Li, and Q Li*. "Eggshell Membrane Derived Nitrogen Rich Porous Carbon for Selective Electrosorption of Nitrate from Water," *Water Res.*, **2022**, 216, 118351. DOI: 10.1016/j.watres.2022.118351
115. RM Duchanois, M Heiranian, J Yang, CJ Porter, Q Li, X Zhang, R Verduzco, and M Elimelech*. "Designing polymeric membranes with coordination chemistry for high-precision ion separations," *Sci. Adv.*, **2022**, 8, eabm9436. DOI: 10.1126/sciadv.abm9436.
114. C Yang, et al. "Consensus statement: Standardized reporting of power-producing luminescent solar concentrator performance," *Joule*, **2022**, 6, 8. DOI: 10.1016/j.joule.2021.12.004.
113. R Bansal, R Verduzco, MS Wong, P Westerhoff, S Garcia-Secura*. "Development of nano boron-doped diamond electrodes for environmental applications," **2022**, 907, 116028. DOI: 10.1016/j.jelechem.2022.116028.
113. H Mei, TS Laws, T Terlier, R Verduzco*, and GE Stein*. "Characterization of polymeric surfaces and interfaces using time-of-flight secondary ion mass spectrometry," *J. Poly. Sci.*, **2022**, 60, 1174. DOI: 10.1002/pol.20210282.
112. S Susarla, G Chilkoor, JR Kalimuthu, MASR Saadi, Y Cui, T Arif, T Tsafack, AB Puthirath, P Sigdel, B Jasthi, PM Sudeep, L Hu, A Hassan, S Castro-Pardo, M Barnes, S Roy, R Verduzco, MG Kibria, T Filleter, H Lin, SD Solares, N Koratkar, V Gadhamshetty, MM Rahman, PM Ajayan*. "Corrosion Resistance of Sulfur-Selenium Alloy Coatings," *Adv. Mater.*, **2021**, 33, 2104467. DOI: 10.1002/adma.202104467.
111. Y Zhu, D Zhu, Y Chen, Q Yan[‡], C-Y Liu, K Ling, Y Liu, D Lee, X Wu*, TP Senftle*, and R Verduzco*. "Porphyrin-based donor-acceptor COFs as efficient and reusable photocatalysts for PET-RAFT polymerization under broad spectrum excitation," *Chem. Sci.*, **2021**, 12, 16092. DOI: 10.1039/D1SC05379E
110. TK Rogers, S Guo, L Arrazola[‡], S Garcia-Segura, MS Wong*, and R Verduzco*. "Catalytic Capacitive Deionization for Adsorption and Reduction of Aqueous Nitrate," *ES&T Water*, **2021**, 1, 2233 – 2241. DOI: 10.1021/acsestwater.1c00195
109. H Mei, JP Mahalik, D Lee, TS Laws, T Terlier, GE Stein, R Kumar, and R Verduzco. "Understanding Interfacial Segregation in Polymer Blend Films with Random and Mixed Side Chain Bottlebrush Copolymer Additives," *Soft Matter*, **2021**, 17, 9028 – 9039. DOI: 10.1039/d1sm01146d.
108. H Mei, TS Laws, T Terlier, R Verduzco, and GE Stein. "Characterization of polymeric surfaces and interfaces using time-of-flight secondary ion mass spectrometry," *J. Polym. Sci.*, **2021**, 60, 1174. DOI: 10.1002/pol.20210282.
107. D Zhu, Z Hu, TK Rogers, M Barnes, C-P Tseng, H Mei, LM Sassi, Z Zhang, MM Rahman, PM Ajayan, R Verduzco. "Patterning, Transfer, and Tensile Testing of Covalent Organic Framework Films with Nanoscale Thickness," *Chem. Mater.*, **2021**, 33, 6724 – 6730. DOI: 10.1021/acs.chemmater.1c01179.

106. J Qu, X-X Dai, J-S Cui, R-X Chen, X Wang, Y-H Lin, R Verduzco, and H-L Wang*. "Hierarchical polyaromatic hydrocarbons (PAH) with superior sodium storage properties," *J. Mater. Chem. A.*, **2021**, 9, 1654 – 16564. DOI: 10.1039/D1TA03101E.
105. RM DuChanois, CJ Porter, C Violet, R Verduzco, and M Elimelech. "Membrane Materials for Selective Ion Separations at the Water-Energy Nexus," *Adv. Mater.*, **2021**, 33, 210312. DOI: 10.1002/adma.202101312
104. D Zhu, G Xu, M Barnes, Y Li, C-P Tseng, Z Zhang, J-J Zhang, Y Zhu, S Khalil, MM Rahman, R Verduzco, and P M Ajayan. "Covalent Organic Frameworks for Batteries," *Adv. Funct. Mater.* **2021**, 31, 2100505. DOI: 10.1002/adfm.202100505
103. D Zhu, Y Zhu, Q Yan, M Barnes, F Liu, P Yu, C-P Tseng, N Tjahjono, P-C Huang, MM Rahman, E Egap, PM Ajayan, R Verduzco "Pure Crystalline Covalent Organic Framework Aerogels," *Chem. Mater.* **2021**, 33, 11, 4216 – 4224. DOI: 10.1021/acs.chemmater.1c01122
102. D Zhu, Z Zhang, LB Alemany, Y Li, N Nnorom, M Barnes, S Khalil, MM Rahman, PM Ajayan, and R Verduzco*. "Rapid, Ambient Temperature Synthesis of Imine Covalent Organic Frameworks Catalyzed by Transition-Metal Nitrates," *Chem. Mater.* **2021**, 33, 9, 3394 – 3400. DOI: 10.1021/acs.chemmater.1c00737
101. X Li, Y Li, K Sarang, J Lutkenhaus*, and R Verduzco*. "Side-Chain Engineering for High-Performance Conjugated Polymer Batteries," *Adv. Funct. Mater.*, **2021**, 31, 2009263. DOI: 10.1002/adfm.202009263.
100. D Zhu, X Li, Y Li, M Barnes, CH Tseng, S Khalil, MM Rahman, PM Ajayan, and R Verduzco*. "Transformation of One-Dimensional Linear Polymers into Two-Dimensional Covalent Organic Frameworks Through Sequential Reversible and Irreversible Chemistries" *Chem. Mater.*, **2020**, 33, 1, 413 – 419. DOI: 10.1021/acs.chemmater.0c04237.
99. IJ Campbell, D Kahanda, JT Atkinson, ON Sparks, J Kim, CP Tseng, R Verduzco, GN Bennett, and JJ Silberg*. "Recombination of 2Fe-2S Ferredoxins Reveals Differences in the Inheritance of Thermostability and Midpoint Potential," *ACS Synth. Biol.*, **2020**, 9, 12, 3245 – 3253. DOI: 10.1021/acssynbio.0c00303
98. K Zuo, X Huang, X Liu, EMG Garcia, J Kim, A Jain, L Chen, P Liang, A Zepeda, R Verduzco, J Lou, and Q Li*. "A Hybrid Metal–Organic Framework–Reduced Graphene Oxide Nanomaterial for Selective Removal of Chromate from Water in an Electrochemical Process," *Env. Sci. & Tech.* **2020**, 54, 20, 13322 – 13332. DOI: 10.1021/acs.est.0c04703
97. CP Tseng, GN Bennett, JJ Silberg, and R Verduzco. "100th Anniversary of Macromolecular Science Viewpoint: Soft Materials for Microbial Bioelectronics," *ACS Macro Letters*, **2020**, 9, 11, 1590 - 1603. DOI: 10.1021/acsmacrolett.0c00573
96. K Miyagi, H Mei, TS Laws, T Terlier, GE Stein, and R Verduzco. "Analysis of surface segregation of bottlebrush polymer additives in thin film blends with attractive intermolecular interactions," *Macromolecules*, **2020**, 53, 15, 6720 – 6730. DOI: 10.1021/acs.macromol.0c00744
95. H Mei, AH Mah, Z Hu, Y Li, T Terlier, GE Stein, and R Verduzco. "Rapid Processing of Bottlebrush Coatings through UV-Induced Cross-Linking," *ACS Macro Lett.*, **2020**, 9, 1135 – 1142. DOI: 10.1021/acsmacrolett.0c00384.

94. D Zhu and R Verduzco. "Ultralow Surface Tension Solvents Enable Facile COF Activation with Reduced Pore Collapse," *ACS Appl. Mater. Interfaces*, **2020**, *12*, 29, 33121 – 33127. DOI: 10.1021/acsami.0c09173.
93. ER Thomas, A Jain, SC Mann, Y Yang, MD Green, WS Walker, F Perreault, ML Lind, R Verduzco. "Freestanding self-assembled sulfonated pentablock terpolymer membranes for high flux pervaporation desalination," *J. Mem. Sci.*, **2020**, *613*, 118460. DOI: 10.1016/j.memsci.2020.118460.
92. Z Hu, C Sun[‡], A Lin, J Jackson[‡], T Terlier, D Owolabi, H Mei, Y Li, Y Wang, S Sidhik, F Hao, Y Yao, A Mohite, and R Verduzco. "Improved Mechanical Durability of High-Performance OPVs Using Semi-Interpenetrating Networks," *Adv. Opt. Mater.*, **2020**, *8*, 18, 2000516. DOI: 10.1002/adom.202000516.
91. BA Fultz, T Terlier, B Dunoyer de Segonzac, R Verduzco, and JG Kennemur. "Nanostructured Films of Oppositely Charged Domains from Self-Assembled Block Copolymers," *Macromolecules*, **2020**, *53*, 13, 5638 – 5648. DOI: 10.1021/acs.macromol.0c00707
90. E García-Díaz, D Zhang, Y Li, R Verduzco, and PJJ Alvarez. "TiO₂ microspheres with cross-linked cyclodextrin coating exhibit improved stability and sustained photocatalytic degradation of bisphenol A in secondary effluent," *Water Res*, **2020**, *183*, 116095. DOI: 10.1016/j.watres.2020.116095
89. KT Sarang, X Li, A Miranda, T Terlier, E-S Oh, R Verduzco, JL Lutkenhaus. "Tannic Acid as a Small-Molecule Binder for Silicon Anodes," *ACS Appl. Energy Mater.*, **2020**, *3*, 7, 6985 – 6994. DOI: 10.1021/acsaem.0c01051.
88. S Jung, Y Cui, M Barnes, C Satam, S Zhang, RA Chowdhury, A Adumbumkulath, O Sahin, C Miler, SM Sajadi, LM Sassi, Y Ji, MR Bennett, M Yu, J Friguglietti, FA Merchant, R Verduzco, S Roy, R Vajtai, JC Meredith, JP Youngblood, N Koratkar, MM Rahman, PM Ajayan. "Multifunctional Bio-Nanocomposite Coatings for Perishable Fruits," *Adv. Mater.* **2020**, *32*, 26, 1908291. DOI: 10.1002/adma.201908291.
87. D Zhu, LB Alemany, W Guo, and R Verduzco. "Enhancement of crystallinity of imine-linked covalent organic frameworks via aldehyde modulators," *Polym. Chem.*, **2020**, *11*, 4464 – 4468. DOI: 10.1039/D0PY00776E.
86. M Barnes, SM Sajadi, S Parekh[‡], MM Rahman, PM Ajayan, and R Verduzco. "Reactive 3D Printing of Shape-Programmable Liquid Crystal Elastomer Actuators," *ACS Appl. Mater. Interfaces*, **2020**, *12*, 25, 28693 – 28699. DOI: 10.1021/acsami.0c07331
85. R Verduzco* and MS Wong. "Fight PFAS with PFAS," *ACS Central Sci.*, **2020**, *6*, 4, 453 – 455. Invited First Reaction. DOI: 10.1021/acscentsci.0c00164.
84. A Miranda, K Sarang, B Gendensurn, E-S Oh, JL Lutkenhaus, R Verduzco*. "Molecular design principles for polymeric binders in silicon anodes," *Mol. Syst. Des. Eng.*, **2020**, *5*, 709 – 724. *Invited Review*. DOI: DOI: 10.1039/C9ME00162J
83. H Mei, TS Laws, JP Mahalik, J Li, AH Mah, T Terlier, P Bonnesen, D Uhrig, R Kumar*, GE Stein*, and R Verduzco*. "Entropy and Enthalpy Mediated Segregation of bottlebrush copolymer additives to thin film interfaces," *Macromolecules*, **2019**, *52*, 8910. DOI: 10.1021/acs.macromol.9b01801

82. A Miranda, X Li, AM Haregewoin, K Sarang, JL Lutkenhaus*, R Kostecki*, R Verduzco*. "A comprehensive study of hydrolyzed polyacrylamide as a binder for silicon anodes," *ACS Appl. Mater. Interfaces*, **2019**, *11*, 44090. DOI: 10.1021/acsami.9b13257
81. GE Stein*, TS Laws, R Verduzco*. "Tailoring the Attraction of Polymers Towards Surfaces," *Macromolecules*, **2019**, *52*, 4787 – 4802. DOI: 10.1021/acs.macromol.9b00492
80. MM Rahman, AB Putirath, A Adumbumkulath, T Tsafack, H Robatjazi, M Barnes, Z Wang, S Kommandur, S Susarla, SM Sajadi, D Salpekar, F Yuan, G Babu, K Nomoto, SM Islam, R Verduzco, SK Lee, HG Xing, PM Ajayan*. "Fiber Reinforced Layered Dielectric Nanocomposite," *Adv. Funct. Mater.*, **2019**, 1900056. DOI: 10.1002/adfm.201900056
79. X Li, H An, J Strzalka, JL Lutkenhaus*, and R Verduzco*. "Self-doped conjugated polymeric binders improve the capacity and mechanical properties of V₂O₅ cathodes," *Polymers*, **2019**, *11*, 589. DOI: 10.3390/polym11040589
78. K Sarang, A Miranda, H An, ES Oh, R Verduzco*, and JL Lutkenhaus*. "Poly(fluorene-*alt*-naphthalene diimide) as n-type polymer electrode for energy storage," *ACS Appl. Polym. Mater.*, **2019**, *1*, 1155 – 1164. DOI: 10.1021/acsapm.9b00164
77. A Jain, C Weathers[‡], J Kim, MD Myer, SW Walker, Q Li, and R Verduzco*. "Self-assembled, sulfonated pentablock copolymer as cationic exchange coatings for membrane capacitive deionization," *Mol. Syst. Des. Eng.*, **2019**, *4*, 348 – 356. DOI: 10.1039/C8ME00115D
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Invited Presentations

80. “Materials and Processes for Ion-Selective Separations,” 2023 Spring ACS Meeting, Indianapolis, IN, March 2023.
79. “Molecular Engineering and Processing of Covalent Organic Frameworks,” University of Illinois at Urbana Champagne, Department of Chemical and Biomolecular Engineering, December 2021.
78. “Molecular Engineering and Processing of Covalent Organic Frameworks,” Arizona State University, Department of Chemical Engineering, October 2021.
77. “Optimizing the double-network structure of liquid crystal elastomers for shape programming and 4D printing,” 2021 Fall ACS Spring National Meeting, August 2021.
76. “Designing surface-active bottlebrush polymer additives,” 2021 ACS Spring National Meeting, April 2021.
75. “Controlling Surface Chemistry using Bottlebrush Polymer Additives,” Penn State University, March 2021.
74. “Next Generation Technologies based on Conjugated Polymers,” CIQA, Saltillo, MX, March 2021.
73. “Efficient and Mechanically Robust Organic Photovoltaics through Self-Assembly,” University of Southern California, November 2020.
72. “Making brushy surfaces with bottlebrush additives,” ACS Colloids Meeting, June 2020.
71. “Modifying films, surfaces, and interfaces using bottlebrush copolymer additives,” University of Akron, February 2020.
70. “Modifying films, surfaces, and interfaces using bottlebrush copolymer additives,” Ohio State University, January 2020.
69. “Visualization of Surface-Active Bottlebrush Additives through Time-of-Flight Secondary Ion Mass Spectroscopy,” University of Massachusetts Amherst, December 2019.
68. “Challenges and Opportunities of Organic Photovoltaics,” Toshiba Technical Society, Houston, TX, November, 2019.

67. "Direct Shape Programming of Liquid Crystal Elastomers," International Liquid Crystal Elastomers Conference, Eindhoven, Netherlands, September 2019.
66. "Next Generation Electronics: Soft, Smart, and Integrated," LASER Houston, September 2019.
65. "Additive Manufacturing of Shape Responsive Liquid Crystal Polymer Networks," Rice Additive Manufacturing, Performance, and Tribology Center Meeting, August 2019.
64. "Three-dimensional morphological analysis of polymer blends through combined ToF-SIMS/AFM," 15th International Conference on Polymers for Advanced Technologies, College Station, August 2019.
63. "Current and Future Trends in Photovoltaic Technologies," Offshore Technology Conference, Houston, Texas, May 6, 2019.
62. "Engineering Mechanical Flexibility in Organic Photovoltaic Blends and Tailoring Surface Properties using Bottlebrush Polymer Additives," Carnegie Mellon University, April 23, 2019
61. "Visualization of Surface-Active Bottlebrush Additives through Time-of-Flight Secondary Ion Mass Spectroscopy," University of Houston, April 19, 2019
60. "Bioelectronics for Energy, Health, and Sensing," National Science Foundation, Washington, DC, February 20, 2019
59. "Molecular Engineering for Flexible Organic Photovoltaics and Surface Active Bottlebrush Additives," Tulane University, January 25, 2019
58. "Time-of-Flight Secondary Ion Mass Spectroscopy Applications from Organic Electronics to Forensic Science," Sekisui Research, November 20, 2018
57. "Achieving Flexibility and Programmable Shape Changes in Polymeric Networks and Devices University of Southern Mississippi, September 11, 2018.
56. "Achieving Flexibility and Programmable Shape Changes in Polymeric Networks and Devices," University of Houston, April 5, 2018.
55. "Ion-Selective and High Capacity Electrodes for Membrane Capacitive Deionization," ACS Spring Meeting, New Orleans, LA, March 7, 2018.
54. "Block Copolymers for Morphology Control and Mechanical Stability in Bulk Heterojunction Organic Photovoltaics," ACS Macromex Meeting, Los Cabos, MX, December 5, 2017.
53. "Intelligent Flexible Materials: From Self-Assembled Photovoltaics to Programmable Elastomers," UT Dallas, March 24, 2017
52. "Simultaneously ion- and electron-conductive binders for energy storage," APS March Meeting, New Orleans, LA, March 15, 2017.
51. "Liquid Crystal Elastomers with a Fast, Dynamic, and Tunable Response," Kent State University, March 1, 2017

50. "Bottlebrush Additives for Functional Thin Film Coatings," University of Houston, Society of Plastics Engineers, February 15, 2017.
49. "Polymers for Energy and Medicine," Society of Plastic Engineering, University of Houston, January 23, 2017.
45. "Conjugated Polymer and Block Copolymer Additives in Bulk Heterojunction OPVs," American Institute of Chemical Engineering Annual Meeting, San Francisco, CA, November 16, 2016.
44. "Conjugated polymer and block copolymer additives in bulk heterojunction OPVs," American Chemical Society Southwest Regional Meeting, Galveston, TX, November 11, 2016.
43. "Entropy-mediated segregation of bottlebrush polymer additives," American Chemical Society Southwest Regional Meeting, Galveston, TX, November 10, 2016.
42. "Entropy-mediated segregation of bottlebrush polymer additives," Texas Soft Matter Meeting, Dallas, TX, August 12, 2016.
41. "Structure and Conformation of Bottlebrush Polymers and Assemblies Determined by Small-Angle Neutron Scattering," American Conference on Neutron Scattering, Long Beach, CA, July 12 2016.
40. "Synthesis, Alignment and Spontaneous Shape-Change in Epoxy-Based Liquid Crystal Elastomers," Phoenix, CA, MRS Spring Meeting, March 29, 2016.
39. "All-conjugated block copolymer additives and compatibilizers for organic photovoltaics," San Diego, CA, ACS Spring Meeting, March 15, 2016.
38. "Tailoring Interfaces in Soft Materials through Block Copolymer and Bottlebrush Additives," PRISM/PCCM Fall 2015 Seminar Series, December 9, 2015, Princeton, NJ.
36. "Energy Storage and Photovoltaics through Block Copolymer Self-Assembly," MRS Fall meeting, December 2015, Boston, MA.
36. "Dynamic Cell Culture through Liquid Crystal Elastomer Composites," MRS Fall Meeting, December 2015, Boston, MA
35. "Electromechanically Responsive Liquid Crystal Elastomer Nanocomposites for Active Cell Culture" International Liquid Crystal Elastomers Conference, October 4, Erice, Italy.
34. "Conjugated Block Copolymer Photovoltaics," *IX International Congress on Chemical Sciences, Technology and Innovation*, Quimicuba, October 2015, Havana, Cuba
33. "Block Copolymer Compatibilizers for Organic Photovoltaic Blends," 250th ACS FALL Meeting, August 18, 2015, Boston, MA.
32. "Conjugated Block Copolymers for Energy Storage and Self-Assembled Photovoltaics," Workshop on Frontiers of Block Copolymer Self Assembly, NSLS-II/CFN Joint Users Meeting, May 18 2015.
31. "Block Copolymer Self-Assembly for Photovoltaics, Energy Storage, and Responsive Coatings," 4th International Grubb's Symposium, April 10 2015, Ningbo, China

30. "Morphology of All-Conjugated Block Copolymer Thin Films: Self-Assembly, Crystallization, and Phase Separation," APS Spring Meeting, March 2, 2015, San Antonio, TX.
29. "Functional Polymeric Materials: Block Copolymer Photovoltaics and Shape Responsive Liquid Crystal Elastomers," University of Houston, February 20, 2015, Department of Electrical Engineering, Houston, TX.
28. "Charge Separation and Photovoltaic Performance of All-Conjugated Block Copolymers" Gulf Coast Consortia Workshop: Light-Driven Processes in Bio-Inspired Materials. December 15, 2014, Rice University, Houston, TX
27. "Morphology and Charge Separation in All-Conjugated Block Copolymer Photovoltaics," ACS Macromex Meeting, December 4, 2014, Puerto Vallarta, Mexico.
26. "All-Conjugated Block Copolymer Photovoltaics," AIChE Annual Meeting, Emerging Areas in Polymer Science and Engineering Plenary Session, November 17, 2014, Atlanta, GA
25. "All-Conjugated Block Copolymer Photovoltaics," 2014 NorTex Nano Summit, Rice University, October 14, 2014, Houston, TX.
24. "Bottlebrush Polymers as Additives for Tailoring Thin Film Properties," Department of Chemical & Biomedical Engineering, University of Southern Florida, October 3, 2014.
23. "Structure and Photovoltaic Performance of All-Conjugated Block Copolymers" National Graduate Research Polymers Conference, Baton Rouge, LA, June 2, 2014.
22. "Charge and Energy Transfer in All-Conjugated Block Copolymers," 30th International Conference of the Polymer Processing Society, June 10, 2014
21. "Block Copolymer Cathodes for Electrochemical Energy Storage," Los Alamos National Laboratory, May 28, 2014.
20. "Morphology and Charge Separation in All-Conjugated Block Copolymers," CNM/APS/EMC user conference, May 12, 2014.
19. "Synthesis, morphology, and optoelectronic properties of donor-acceptor all-conjugated block copolymers," 247th ACS Spring Meeting, March 18, 2014.
18. "Polymer Nanocomposites using Bottlebrush Polymers," Materials Science and Engineering Department, SUNY Stonybrook, July 2, 2013
17. "Structure and Photovoltaic Performance of All-Conjugated Block Copolymers," Center for Integrated Nanoscale Technologies, Los Alamos National Lab, July 10, 2013.
16. "Solution Conformation of Multicomponent Bottlebrush Polymers," National Institute for Standards and Technology, April 18, 2013.
15. "Synthesis and Film Properties of Multicomponent Bottlebrush Polymers," ExxonMobil Baytown Research Center, February 8, 2013.
14. "Sustainable Energy from Light-Harvesting Plastics," Rice Undergraduate Research Symposium, January 26, 2013

13. "Sustainable Energy from Light-Harvesting Plastics," Rice Engineering Alumni Annual Banquet, December 4, 2012
12. "Design of High Performance Block Copolymer Photovoltaics," Texas A&M University, Materials Engineering Seminar, November 30, 2012
11. "Characterization of All-Conjugated Block Copolymers and Bottlebrush Polymers," University of Houston, Advanced Polymer Characterization Workshop, November 9, 2012
10. "Synthesis and Crystallinity of All-Conjugated Block Copolymers," Annual Meeting of the American Institute of Chemical Engineers, Pittsburgh, PA, October 30, 2012
9. "Dynamic Stiffening in Liquid Crystal Elastomers," Chemical Engineering Department, Lamar University, April 11, 2012
8. "All-Conjugated Block Copolymers for Self-Assembled Photovoltaics," Center for Nanoscale Materials, Argonne National Laboratory, December 14, 2011
7. "All-Conjugated Block Copolymers for Self-Assembled Photovoltaics," Center for Nanoscale Materials Sciences, Oak Ridge National Laboratory, September 2011
6. "Synthesis and Self-Assembly of Rod-Rod Polythiophene-*block*-Polyfluorene Conjugated Copolymers," ACS National Meeting, Denver, Colorado, August 2011
5. "Block Copolymers for Nanostuctured Photovoltaics," Chemical Engineering Department, Tianjin University, January 20, 2011
4. "Neutron and X-Ray Scattering Studies of Structured Fluids: Bent-Core Liquid Crystals and PAMAM Dendrimers," Case Western Reserve University, April 2009
3. "Investigation of PAMAM in solution by Neutron Scattering" Tennessee Technological University, Department of Chemical Engineering, 2008
1. "Self-Assembled Liquid Crystal Gels," Kent State University, Liquid Crystal Institute, 2007
1. "Self-Assembled Liquid Crystal Gels," invited talk, University of Leeds, Polymers and Complex Fluids, 2007

Service

Conference Organization:

1. Session Organizer for Electronics and Photonics of Conjugated Polymers, 2023 APS March Meeting, Las Vegas, NV, March 2023.
2. Vice-Chair for **American Institute of Chemical Engineers (AIChE) Materials Engineering and Sciences Division (MSDE)**, 2022 - 2023
3. Member-at-large for the **American Chemical Society (ACS) Polymeric Materials Sciences and Engineerin (PMSE)**, 2022 – 2023

4. DPOLY Programming Committee 2023 – 2026 (to serve as Chair in 2026)
5. Chair (2021) and Co-Chair (2020) for the **AIChE Polymers 8a session**.
6. Chair for the Inaugural **2020 Rice University SIMS Workshop**, May 2021
7. Chair for the inaugural **Gordon Research Conference on Bioelectronics** June 2019.
8. Chair for the 2018 **DeLange Major Conference XI: Bioelectronics, Our Bioelectronic Future: Smarter, Smaller, Connected**. December 2018
9. Organizing committee member for the **2018, 2019, and 2020 Center for Nanophase Materials Sciences (CNMS) user meeting** at Oak Ridge National Laboratory (ORNL).
10. Co-Organizer for Spring **2019 American Chemical Society meeting on Synthesis & Properties of Densely Grafted Polymers** and Fall 2017 American Chemical Society meeting Session on Shape-Shifting Polymers
11. Co-Organizer for **Soft Matter** session of the **2018 American Conference on Neutron Scattering**. June 2018.
12. Co-Organizer for the **Shape-Shifting Polymeric Systems** session of the fall 2017 ACS Meeting.
13. Co-Organizer for the **Nanostructured Membranes for Water Purification** session of the 2016 APS March Meeting.
14. Organizer of the Chemical Engineering session for the **Gulf Coast Undergraduate Research Symposium (GCURS)** (2015 – 2020). <http://gcurs.rice.edu/>
15. Chair for the **2017 International Liquid Crystal Elastomers Conference**.
16. Organizer for the **Texas Soft Matter Meeting**, August 21, 2015, Rice University. <http://txsoftmatter.chee.uh.edu/>
17. Organizing committee member for the **28th International Symposium on Polymer Analysis and Characterization (ISPAC)**, <http://www.ispac-conferences.org/ispac-2015.aspx>.
18. Organizing committee member for the **2015 Center for Nanophase Materials Sciences (CNMS) user meeting** at Oak Ridge National Laboratory (ORNL).
19. Session Organizer for “Structure and Properties of Polymers I,” “Polymer Processing and Rheology II,” “Polymeric Materials for Energy Conversion,” “Nanoscale Structure in Polymers” at the annual meeting of the American Institute of Chemical Engineers (2009, 2010, 2011, 2013, 2014, 2015, 2016, respectively). Poster judge for both graduate and undergraduate student poster presentations.
20. Judge for graduate student poster competition at the AIChE annual meeting (2013 and 2014), APS March Meeting (San Antonio, 2015), NorTex Nano Meeting (Rice University, 2014).

Journal Editorial Advisory Board Positions:

1. ACS Applied Energy Materials Editorial Advisory Board (2019 – 2022)
2. ACS Macro Letters Editorial Advisory Board (2017 – 2020)

User Facility Management and External Review:

1. Chair for the User Executive Committee for the Center for Nanophase Materials Sciences at Oak Ridge National Laboratory (2019 – 2020)
2. NIST Center for Neutron Research Users Group (NUG) Executive Committee, 2015 – 2018.
3. User Executive Board Member for the Center for Nanophase Materials Sciences (CNMS), 2012 – present (elected in 2012, renewed in fall 2014, elected vice-chair 2017, chair 2019).
4. External Review Board Member for Puerto Rico-Wisconsin NSF-PREM
5. Invited speaker for Center for High Resolution Neutron Scattering (CHRNS) site visit and panelist for CHRNS workshop: "Neutron Measurements for Materials Design & Characterization"

Department Service

1. **Associate Department Chair (2022 – present)**
2. **Graduate Recruiting and Admissions (2010 – present):** RV has served as a member of the graduate committee since joining the department and is currently serving as the Chair of the CHBE Graduate Recruiting Committee. Responsibilities include reviewing and admitting applicants to the PhD, MS, and MCHE programs, planning the graduate student visitation weekend, and advertising the department through events such as the AIChE national meeting.
3. **Applied Physics Graduate Recruiting Committee (Spring 2013 – 2019):** Responsibilities include reviewing applicants to the program and participating in the annual visitation weekend.
4. **Undergraduate Studies (2009 – 2014):** RV served as a member of the undergraduate studies committee for five years. Responsibilities include reviewing and updating the department curriculum, advising students on department courses and requirements, and recognizing the achievements of undergraduate students through endowed awards and fellowship. RV is no longer a formal member of the committee but continues to advise CHBE students in his roles as faculty associate and as an undergraduate student mentor.
5. **Department Seminar Coordinator (2010 – 2015)**
6. **Faculty Search Committee (Fall 2016 – Spring 2017)**

School of Engineering Service

1. **Diversity, Equity, and Inclusion Committee for School of Engineering (2023)**
2. **Future Faculty Fellows Reviewer (2020 – 2021)**

3. **Search Committee Member for Dean of the School of Engineering (2020)**
4. **School of Engineering Awards Committee (2020)**
5. **Neuroengineering Initiative Hiring Committee (Fall 2018 – Spring 2019).** This search successfully filled three positions in the School of Engineering.
6. **Engineering Design Minor Faculty Advisory Board (2017 – present)**
7. **Doerr Institute for New Leaders Faculty Advisory Committee (2018 – 2021):** As a member of the faculty advisory committee for the Doerr Institute, RV met regularly with the Director of the Institute along with the other Doerr Institute staff to discuss and advise on their strategy for growth and success.
8. **Rice Center for Engineering Leadership Faculty Advisory Committee (2010 – 2017)**
9. **Steering Committee of Rice’s NeuroEngineering Initiative (summer 2018 - 2020)**

University Service

1. **Center for Teaching Excellence Award Committee (2023)**
2. **Provost Dittmar Strategic Planning Committee (2023)**
3. **Engineering Divisional Advisor for Sid Richardson College (2018 – present)**
4. **Faculty Review Committee for Research Awards (2020 – 2022)**
5. **Faculty Committee on Conflicts (Fall 2020 – present)**
6. **Faculty Senate Working Group on General Education (Summer 2020 – Spring 2021)**
7. **Engineering Divisional Advisor for Sid Richardson College (2019 – present)**
8. **University Committee for Faculty & Staff Benefits (July 2020 – June 2021)**
9. **Inequalities and Inequities Working Group (Summer 2018 - Spring 2019)**
10. **Faculty Advisory Board for Doerr Institute for New Leaders (Spring 2019 – present)**
11. **Committee on Research (July 2016 – June 2020):** The COR represents the faculty in research-related matters across the university.
12. **Shared Equipment Authority Faculty Board Member (2010 – present):** The board meets monthly and serves the university by acquiring and maintaining shared equipment facilities on campus. This includes setting instrument rates, coordinating instrument upgrades and repairs, acquiring new instrumentation, and managing finances related to shared instrument use.
13. **Security Marshal for Rice University Commencement (2016 – 2019)**

14. Sid Richardson Faculty Associate (Fall 2009 – present)

Community Service

1. **RET Site: Research Experience for Teachers in Nanoengineering with a Focus on Teacher Leadership:** RV is a PI on an NSF RET program focused on teacher leadership (2016 – present)
2. **REU Site: Nanotechnology REU with a Focus on Community Colleges:** RV serves as a Co-PI on an NSF REU site that brings Houston-area community college to Rice for summer research experiences (2014 – present).
3. **HCC REEMS REU Program:** RV served as a faculty mentor for the NSF HCC REEMS program. This program provided summer research experiences for Houston Community College students, coursework on nanotechnology, and academic mentoring (2016 – 2020).
4. **NRT: A Bioelectronics Incubator for Training Students (BITS) at the Cell/Material Interface:** RV is a Co-PI on the NSF NRT program focused on Bioelectronics. The program provides interdisciplinary training to PhD students from Engineering and Natural Sciences, including the formulation of collaborative thesis projects, courses on interdisciplinary interactions, communication, and leadership.
5. **Houston Lighthouse Science Explorations Event** (Monday, August 6, 2018).
6. **Energy Explorations Academy lab tour** (Friday June 15, 2018)
7. **Young Owls Leadership program** tour of the NEWDL (Wednesday June 5, 2018)
8. **Lecture to NEWT teachers on CDI** (evening of Feb 13, 2018)
9. **Lecture to NEWT teachers on solar MD** (evening of Feb 15, 2017)
10. **Lecture to REEMS students** (Feb 28, 2018)
11. **Descubra Event at the Houston Children’s Museum (December 10, 2016):** In an event co-sponsored by the Children’s Museum of Houston and the Smithsonian Latino Center – Descubra – visitors participated in hands-on STEM based activities and informal conversations between with Latino STEM professionals. This event also co-incided with a Star Wars Day at the Children’s museum, and activities involved a Star Wars theme. The Verduzco laboratory organized a table demonstrating various properties of polymers: viscoelasticity (Oobleck swamp made from corn starch and water) and a glass-transition (shrinking of polystyrene sheet cut into shapes, ‘shrinky-dinks’).
12. **Rice Institute of Biosciences and Bioengineering (IBB) STEM Engagement Program:** The IBB STEM Engagement program brings high school students from the Science Academy of South Texas to Rice to participate in field trips, demonstrations, and conduct laboratory research. Two graduate students in the Verduzco laboratory taught the high school visitors about energy storage and shape-responsive polymeric materials.
13. **National Science Foundation Research Experiences for Undergraduates:** RV is the co-PI on an NSF-sponsored REU program focused on community college applicants. Activities include recruiting 8 – 10 community college students for summer research each year, advertising the program on community college campuses, and mentoring two community college students per year. The program begins in the summer of 2015.
14. **NSF Research Experiences for Teachers (RET) Mentor:** RV served as a faculty mentor during the summer of 2014 for an NSF RET researcher. RV designed the project and coordinated training and laboratory activities. The summer researcher Ralph Cox was mentored by Verduzco group member Stacy Pesek.

15. **West Houston Center for Science and Engineering Alliance for Minority Participation at Houston Community College:** Since 2010, RV has served as a mentor and research advisor to students from Houston Community College. RV has mentored seven Houston community college undergraduate students in summer research projects. Two have been listed as authors or co-authors on publications, and all seven have transferred to four-year universities to complete degrees in science and engineering.
16. **NEWT Nano-Environmental Workshop:** The Verduzco laboratory participated in the NEWT Nano-Environmental workshop in March 2016, one of the first outreach activities as part of the new NSF Engineering Research Center established at Rice University. This activity focused on K-12 teachers and discussing challenges and technologies related to water purification.
17. **Rice's Community and Mentoring Program for Undergraduate Success:** RV has served as a mentor for underrepresented students at Rice through the Community and Mentoring Program led by Dr. Richard Tapia. RV has participated in outreach activities on campus, including as a one-on-one mentor for students, a plenary speaker during a student-organized science and engineering conference, and a speaker during regular meetings.
18. **Kashmere High School Research/Mentorship Program:** RV served as a faculty mentor for the pilot research experience and mentorship partnership between Rice Institute of Biosciences and Bioengineering and Kashmere High School (KHS). The program provided four rising seniors at KHS the opportunity to experience science, technology, engineering, and mathematics (STEM) research, learn valuable life skills, and develop a mentormentee relationship with scientists and engineers in the academic/professional workplace. Jorge Mok, a student in the Verduzco group, is participating in the program as a mentor.
19. **Children's Museum NanoDays:** The Verduzco group has volunteered at the Houston Children's Museum NanoDays event the past two years, in March 2014 and 2015. NanoDays brings scientists together with museums to create unique learning experiences and engages people of all ages by combining simple hands-on activities for young people with events exploring current research for adults.
20. **John Foster Dulles Science and Math Academy:** As a native of the Houston area and former John Foster Dulles High School student, RV has returned to his *alma mater* for presentations and science demonstrations. In August 2014, RV participated in orientation activities for new students entering the Science and Math Academy.
21. **Sally Ride Festival:** RV has participated in the Sally Ride Festival the past two years, in leading science demonstrations for small groups and in conjunction with the South Texas Section of the American Institute of Chemical Engineers (STS-AIChE). The Sally Ride Festival provides interactive science demos and experiments for kids.
22. **Rice University Continuing Studies Teacher Training:** RV has twice served as a guest lecturer for Continuing Studies' teacher training programs. RV participated in a teacher training program focused in science teachers from Humble ISD, and the goal of the lectures was to provide teachers with insights into university-level expectations for students in science, mathematics, and engineering.

Proposal Review:

1. **National Science Foundation:** CBET (Interfacial Processes and Thermodynamics, Energy for Sustainability), CMMI (Materials Processing and Manufacturing), and DMR (Polymers, Polymers CAREER panel, and DMREF).
2. **Department of Energy:** Basic Energy Sciences, Center for Nanoscale Materials Sciences at Oak Ridge National Laboratory, Center for Nanoscale Materials at Argonne

National Laboratory, Center for Functional Nanomaterials at Brookhaven National Laboratory.

3. **American Chemical Society:** Petroleum Research Fund
4. **European Research Council:** ERC Consolidator Grant 2014, Advanced Grant 2017
5. **National Laboratory Facilities:** Facility Proposal Review for the Center for Nanoscale Materials at Argonne National Laboratory, the Center for Functional Materials at Brookhaven National Laboratory, the Center for Nanophase Materials Sciences, the National Center for Neutron Research at the National Institute of Standards and Technology (NIST), and the Stanford Synchrotron Radiation Light Source (SSRL).
6. **Research Council KULeuven,** InterDisciplinaire Onderzoeksprogramma's - Interdisciplinary research project
7. **Royal Society e-GAP.** Leverhulme-Royal Society Africa Award.
8. **Advanced Research Projects Agency - Energy (ARPA-E).** SHIELD FOA.
9. **AAAS RDO International Collaboration Grant Program.**
10. **Army Research Office** Polymer Chemistry program

Journal Review: *ACS Macro Letters, ACS Nano, ACS Applied Materials and Interfaces, Advanced Materials, Advanced Energy Materials, Advanced Functional Materials, Angewandte Chemie International Edition, Applied Physics Letters, Chemical Communications, Chemistry of Materials, Colloid and Polymer Science, Colloid and Surfaces A, Colloids and Surfaces B: Biointerfaces, Energy and Environmental Science, Energy and Fuels, Fuel, IEEE Transactions on Nanotechnology, Industrial and Engineering Chemistry Research, International Journal of Molecular Sciences, Journal of Applied Polymer Science, Journal of the American Chemical Society, Journal of Chemical Physics, Journal of Physical Chemistry C, Journal of Materials Chemistry A, Journal of Materials Chemistry C, Journal of Physical Chemistry, Journal of Polymer Science Part A: Polymer Chemistry, Journal of Polymer Physics Part B: Polymer Physics, Polymers, Langmuir, Macromolecular Symposia, Macromolecules (top 150 reviewer), Materials Today, Nano Letters, Nanoscale, Nature, Nature Chemistry, Nature Communications, Nature Materials, Nature Nanotechnology, New Journal of Chemistry, Physical Chemistry Chemical Physics, Physical Review Applied, Physical Review E, Physical Review Letters, Polymer, Polymer Chemistry, RSC Advances, Science, Science Advances, Sensors and Actuators B: Chemical, Small, Soft Matter.*

Students Mentored

PhD students:

| <u>Name</u> | <u>Degree Program</u> | <u>Start Date and Status</u> |
|--------------------|--|------------------------------|
| Xianyu Li | Chemical & Biomolecular Engineering | Fall 2009 – May 2014 |
| Aditya Agrawal | Chemical & Biomolecular Engineering | Fall 2009 – Jul 2014 |
| Kendall Smith | Chemical & Biomolecular Engineering | Fall 2009 – Nov 2014 |
| Hadi ShamsiJazeyi† | Chemical & Biomolecular Engineering | Fall 2010 – Dec 2014 |
| Yen-Hao Lin | Chemical & Biomolecular Engineering | Fall 2009 – Apr 2015 |
| Stacy Pesek | Chemical & Biomolecular Engineering | Fall 2010 – Aug 2015 |
| Aarthi Muthuswami† | Chemical & Biomolecular Engineering | Fall 2010 – Oct 2015 |
| Luqing Qi | Chemical & Biomolecular Engineering | Fall 2012 – Nov 2017 |
| Jorge Mok | Chemical & Biomolecular Engineering | Fall 2012 – July 2018 |
| Andrea Miranda | Chemistry | Summer 2016 – Nov 2018 |
| Zhiqi Hu | Chemical & Biomolecular Engineering | Fall 2014 – Nov 2019 |
| Xiaoyi (Tracy) Li | Chemical & Biomolecular Engineering | Fall 2014 – May 2020 |
| Amit Jain | Chemical & Biomolecular Engineering | Fall 2015 – May 2020 |
| Hao Mei | Chemical & Biomolecular Engineering | Spring 2015 – Dec 2020 |
| Morgan Barnes | Materials Science and NanoEngineering | Summer 2016 – August 2021 |
| Dongyang Zhu | Chemical & Biomolecular Engineering | Spring 2018 – August 2021 |
| Tanya Rogers‡ | Chemical & Biomolecular Engineering | Spring 2018 – present |
| Chia-Ping Tseng | Chemical & Biomolecular Engineering | Summer 2018 – present |
| Syndi Nnorom | Chemical & Biomolecular Engineering | Spring 2019 – present |
| Kazuma Miyagi | University of Tokyo (visiting student) | Summer 2019 |
| Safiya Khalil | Chemical & Biomolecular Engineering | Spring 2020 – present |
| Dongjoo Lee | Chemical & Biomolecular Engineering | Spring 2020 – present |
| Alec Ajnsztajn§ | Materials Science and NanoEngineering | Summer 2020 – present |
| Erin Porter# | Chemical & Biomolecular Engineering | Spring 2021 – present |
| Abdullah Alazmi | Chemical & Biomolecular Engineering | Spring 2021 – present |
| Fionna Chen | Chemical & Biomolecular Engineering | May 2022 – present |
| Mansoor Shehzad | Applied Physics | Januar 2023 – present |

†Co-advised with Professor George Hirasaki
‡Co-advised with Professor Mike Wong
§Co-advised with Professor Ajayan
#Co-advised with Professor Lisa Biswal

M.S. and MCHE students:

| <u>Name</u> | <u>Degree Program</u> | <u>Start Date and Status</u> |
|----------------|--|------------------------------|
| Luis Hasbun | Chemical & Biomolecular Engineering | Fall 2015 – Spring 2016 |
| Bohan Zhu | Chemical & Biomolecular Engineering | Fall 2013 – Spring 2016 |
| Saurabh Sharma | Chemical & Biomolecular Engineering | Spring 2017 – Spring 2018 |
| Jiabei Li | Chemical & Biomolecular Engineering | Spring 2018 – present |
| Yu Wang | Chemical & Biomolecular Engineering | Spring 2019 – present |
| Casper Huang | Chemical & Biomolecular Engineering | Fall 2020 – present |
| Fangxin Liu | Chemical & Biomolecular Engineering | Fall 2020 – present |
| Xinbo Tong | Materials Sciences and NanoEngineering | Fall 2021 – present |

M.S and Ph.D.Thesis Committees:

| <u>Year</u> | <u>Name</u> | <u>Degree Program</u> | <u>Chairperson</u> |
|-------------|--------------------|--|--------------------|
| 2023 | Xinbo Tong | MS, Materials Science | Rafael Verduzco |
| 2023 | Syndi Nnorom | PhD, Chemical Engineering | Rafael Verduzco |
| 2023 | Xiaochuan Huang | PhD, Civil and Environmental Engineering | Qilin Li |
| 2022 | Luis Hector Victor | MS, Bioengineering | Jane Grande-Allen |

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|------|----------------------|--|------------------|
| 2022 | Peter Zheng | PhD, Civil and Environmental Engineering | Pedro Alvarez |
| 2022 | Andy Tseng | PhD, Chemical Engineering | Rafael Verduzco |
| 2022 | Tanya Rogers | PhD, Chemical Engineering | Rafael Verduzco |
| 2021 | Morgan Barnes | PhD, Materials Science | Rafael Verduzco |
| 2021 | Hao Mei | PhD, Chemical Engineering | Rafael Verduzco |
| 2020 | Nimrat Ohbi | PhD, Chemistry | Dwight Seferos |
| 2020 | Xiaoyi Li | PhD, Chemical Engineering | Rafael Verduzco |
| 2020 | Danning Zhang | PhD, Civil and Environmental Eng. | Pedro Alvarez |
| 2020 | Amit Jain | PhD, Chemical Engineering | Rafael Verduzco |
| 2020 | Ian Campbell | PhD, Biosciences | Joff Silberg |
| 2020 | Botao Farren Song | PhD, Chemical Engineering | Lisa Biswal |
| 2020 | Amir Arabzade | PhD, Chemical Engineering | Stephen Mack |
| 2019 | Yuchong Zhang | PhD, Chemical Engineering | Walter Chapman |
| 2019 | Josh Atkinson | PhD, Biosciences | Joff Silberg |
| 2018 | Bernard Kellogg | MS, Civil and Environmental Engineering | Qilin Li |
| 2018 | Jorge Mok | PhD, Chemical Engineering | Rafael Verduzco |
| 2018 | Saurabh Sharma | MS, Chemical Engineering | Rafael Verduzco |
| 2018 | Lauren Popp | PhD, Chemical Engineering | Laura Segatori |
| 2017 | Bengio Elie | PhD, Chemical Engineering | Matteo Pasquali |
| 2017 | Ethan Li | PhD, Chemistry | James Tour |
| 2017 | Fei Wang | PhD, Chemical Engineering | Francisco Vargas |
| 2017 | Xu Wang | PhD, Biochemistry | Yousif Shamoo |
| 2016 | Mohammed Adnan | PhD, Chemical Engineering | Matteo Pasquali |
| 2016 | Abdulrahman Alharbi | MS, Chemical Engineering | Lisa Biswal |
| 2016 | Yuchong Zhang | PhD, Chemical Engineering | Walter Chapman |
| 2016 | Chad Byers | PhD, Chemistry | Christy Landes |
| 2016 | Víctor García López | PhD, Chemistry | James Tour |
| 2016 | Pingfei Lu | PhD, Chemistry | James Tour |
| 2015 | Brittany Olivy | PhD, Chemistry | Andrew Barron |
| 2015 | Chad Byers | PhD, Applied Physics | Christy Landes |
| 2015 | Ariana Melendez | M.S., Chemical & Biomolecular Eng. | Francisco Vargas |
| 2015 | Stacy Pesek | PhD, Chemical & Biomolecular Eng. | Rafael Verduzco |
| 2015 | Aarthi Muthuswamy | PhD, Chemical & Biomolecular Eng. | George Hirasaki |
| 2015 | Jinjian Wu | PhD, Civil and Environmental Eng. | Qilin Li |
| 2015 | Dmitri Tsenttalovich | PhD, Chemical & Biomolecular Eng. | Matteo Pasquali |
| 2015 | Yen-Tien Lu | PhD, Chemical & Biomolecular Eng. | Andrew Barron |
| 2015 | Yen-Hao Lin | PhD, Chemical & Biomolecular Eng. | Rafael Verduzco |
| 2014 | Hadi ShamsiJazeyi | PhD, Chemical & Biomolecular Eng. | George Hirasaki |
| 2014 | Ramya Sambasivan | PhD, Chemistry | Zachary Ball |
| 2014 | Kendall Smith | PhD, Chemical & Biomolecular Eng. | Rafael Verduzco |
| 2014 | Kung-Po Chao | PhD, Chemical & Biomolecular Eng. | Lisa Biswal |
| 2014 | Aditya Agrawal | PhD, Chemical & Biomolecular Eng. | Rafael Verduzco |
| 2014 | Bennet Marshall | PhD, Chemical & Biomolecular Eng. | Walter Chapman |
| 2014 | Xianyu Li | PhD, Chemical & Biomolecular Eng. | Rafael Verduzco |
| 2013 | Pinn-Tsong Chiang | PhD, Chemistry | James Tour |
| 2011 | Nikolaos Soultanidis | PhD, Chemical & Biomolecular Eng. | Michael Wong |
| 2011 | Yu-Lun Fang | PhD, Chemical & Biomolecular Eng. | Michael Wong |
| 2011 | Jinjian Wu | MS, Civil and Environmental Eng. | Qilin Li |
| 2011 | Jonathan Lo | MS, Chemical & Biomolecular Eng. | Marc Robert |
| 2010 | Allison Contreras | PhD, Civil and Environmental Eng. | Qilin Li |

Post-Doctoral Research Associates:

| <u>Name</u> | <u>Degree Institution</u> | <u>Start Date</u> | <u>End Date</u> |
|-------------|---------------------------|-------------------|-----------------|
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|----------------------|----------------------------------|---------------|---------------|
| Shuyan Jiang | Shanghai IOC | Januay 2023 | Present |
| Sujitkumar Bontpalle | IIT – Madras | October 2022 | Present |
| Sarah Adaryan | University of Houston | May 2022 | Present |
| Dongyang Zhu | Rice University | Sept 2021 | April 2022 |
| Yilin Li | Washington State University | Sept 2018 | December 2021 |
| Taniya Kekunawela | UT Dallas | Sept 2018 | December 2019 |
| Pine Yang | Syracuse University | March 2015 | June 2015 |
| Qinjia Cai | National University of Singapore | November 2010 | November 2011 |

Undergraduate Researchers from Rice:

| <u>Name</u> | <u>Degree Program</u> | <u>Dates</u> |
|---------------------|---------------------------------------|---------------------------|
| Timauri Lee-Carby | Chemical & Biomolecular Engineering | Summer 2023 |
| Caroline Hyun | Materials Science and NanoEngineering | Spring 2023 – present |
| Kilian James | Chemical & Biomolecular Engineering | Spring 2023 – present |
| Isabella Chiodi | Chemical & Biomolecular Engineering | Spring 2022 – present |
| Hanqing Wang | Chemical & Biomolecular Engineering | Fall 2021 – present |
| Allen Lin | Chemical & Biomolecular Engineering | Fall 2021 – Spring 2022 |
| Danica Pietrzak | Chemical & Biomolecular Engineering | Fall 2020 – Spring 2023 |
| Leslie Arrazolo | Chemical & Biomolecular Engineering | Summer 2019 – Spring 2022 |
| Ruth Young | Chemical & Biomolecular Engineering | Summer 2020 |
| Elizabeth Groenwold | Chemical & Biomolecular Engineering | Fall 2019 – Spring 2021 |
| Sueda Cetinkaya | Chemical & Biomolecular Engineering | Summer 2019 – Spring 2020 |
| Allen Lin | Chemical & Biomolecular Engineering | Spring 2019 |
| Changxu Sun | Chemical & Biomolecular Engineering | Fall 2017 – Spring 2019 |
| Michael Xiao | Chemical & Biomolecular Engineering | Fall 2017 |
| Ruby Lu | Chemical & Biomolecular Engineering | Fall 2016 |
| Isaiah Barth | Chemical & Biomolecular Engineering | Fall 2016 – Spring 2018 |
| Tensae Assefa | Bioengineering | Summer 2016 |
| Grant Chan | Chemical & Biomolecular Engineering | Spring 2016 – Fall 2016 |
| Abdi Sarbessa | Chemical & Biomolecular Engineering | Spring 2016 – Fall 2016 |
| Justin Tenor | Chemical & Biomolecular Engineering | Spring 2016 – Fall 2016 |
| Yichen Zhang | Chemical & Biomolecular Engineering | Spring 2016 |
| Ray Wang | Chemical & Biomolecular Engineering | Summer 2015 |
| Qianhong Zhu | Chemical & Biomolecular Engineering | Fall 2014 – Spring 2016 |
| Ryan Roberts | Chemical & Biomolecular Engineering | Spring 2015 |
| Hojin Jeon | Chemical & Biomolecular Engineering | Fall 2014 |
| Chen Song | Chemical & Biomolecular Engineering | Summer 2014 |
| Javier Perez | Chemical & Biomolecular Engineering | Summer 2014 |
| Yichuan Ma | Chemical & Biomolecular Engineering | Summer 2014 |
| Snehav Gupta | Chemical & Biomolecular Engineering | Summer 2014 |
| Will Kasper | Chemical & Biomolecular Engineering | Spring 2014 |
| Hojin Kim | Chemical & Biomolecular Engineering | Fall 2013 |
| Leslie Nguyen | Chemical & Biomolecular Engineering | Fall 2013 |
| Connie Shen | Chemical & Biomolecular Engineering | Fall 2013 |
| Cathy Zhang | Chemical & Biomolecular Engineering | Spring 2013 |
| E-Fei Lu | Chemical & Biomolecular Engineering | Spring 2013 |
| Lisa Swank | Chemical & Biomolecular Engineering | Spring 2013 |
| Qiqi Xiang | Chemical & Biomolecular Engineering | Fall 2012 – Fall 2014 |
| Teju Keishore | Chemical & Biomolecular Engineering | Fall 2012 – Fall 2013 |
| Jim Howe | Chemical & Biomolecular Engineering | Fall 2011– Spring 2013 |
| Chloe Kempf | Chemical & Biomolecular Engineering | Fall 2011– Fall 2012 |
| Dana Dement | Chemical & Biomolecular Engineering | Spring 2012 |
| Sarah Southmayd | Chemical & Biomolecular Engineering | Fall 2012 – Fall 2013 |

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| David Tae-Hyun Yun | Chemical & Biomolecular Engineering | Fall 2012 |
| Li Xiong | Materials Science | Summer 2011 |
| Yichen Li | Chemical & Biomolecular Engineering | Summer 2009 |

Undergraduate Researchers from Other Schools:

| <u>Name</u> | <u>Degree Program</u> | <u>Start Date and Status</u> |
|------------------|--------------------------------|------------------------------|
| Luis Aguilar | HCC Engineering | Summer 2021 |
| Damilola Owolabi | HCC Engineering | Summer 2019 |
| Sohee Park | HCC Engineering | Summer 2019 |
| Mary Pinedo | HCC Engineering | Summer 2018 |
| Chiamaka Agu | HCC Engineering | Summer 2018 |
| Daniel Caña | Lone Star College | Summer 2017 |
| Rodrigo Munoz | HCC Engineering | Summer 2017 |
| Joshua Jackson | HCC Engineering | Summer 2017 |
| Jinzhao Zhang | Peking University, Physics | Fall 2016 – Spring 2017 |
| Niloufar Jafari | HCC Engineering | Summer 2016 |
| Shams Albayati | HCC Engineering | Summer 2016 |
| Abigail Gonzales | HCC Engineering | Summer 2016 |
| Daniel Gonzales | HCC Engineering Honors Student | Summer 2013 |
| Bridget Stewart | HCC Engineering Honors student | Summer 2012 and 2013 |
| Charlie Chirino | HCC Engineering Honors student | Summer 2011 |
| Ümmügülsüm Özel | Fatih University, Turkey | Summer 2011 |
| Amanda Schlafer | HCC Engineering Honors student | Summer 2010 |

High School Teacher Researchers:

| <u>Name</u> | <u>School</u> | <u>Start Date and Status</u> |
|------------------|-------------------------|------------------------------|
| Ralph Cox | Furr High School | Summer 2014 |
| Shawn Richard | Cinco Ranch High School | Summer 2015 |
| Chi Enemchukwu | YES Prep High School | Summer 2017 |
| Selene Reyes | Pasadena High School | Summer 2018 |
| Kaitlin Bartuska | Mayde Creek Junior High | Summer 2019 |

High School Student Researchers:

| <u>Name</u> | <u>Degree Program</u> | <u>Start Date and Status</u> |
|-----------------|-----------------------------|------------------------------|
| Shaan Parekh | Dulles High School | Summer 2019 |
| Cierra Weathers | Lamar High School | Summer 2017, 2018 |
| Howard Yong | Clements University | Fall 2016 |
| Melinda Ding | Clements University | Summer 2016 |
| Edward Cen | Bellaire Senior High School | Summer 2016 |
| Annum Sadana | Carnegie Vanguard HS | Summer 2015 |
| Brenda Gonzales | Furr High School | Summer 2015 |
| Michelle Chao | Debakey High School | Summer 2013 |
| Dominic Litong | TAMS | Summer 2013 |
| Brenda Gonzales | Furr High School | Summer 2015 |
| Annum Sadana | Carnegie Vanguard | Summer 2015 |

Student Awards

1. Hanqing Wang, Outstanding Poster Award, 2023 Rice University Research Symposium
2. Yilin Li, Best Oral Presentation Award, 2019 Smalley-Curl Institute Summer Symposium

3. Sueda Cetinkaya, Best Poster Presentation, 2019 Smalley-Curl Institute Summer Symposium
4. Sohee Park, Best Poster Presentation, 2019 Smalley-Curl Institute Summer Symposium
5. Xiaoyi Li, 2nd Place, Poster Competition, Electrochemical Society Meeting, March 2019
6. Hao Mei, IBB Travel Grant, Spring 2019
7. Amit Jain, Ed Archuleta Desal Award, September 2018
8. Morgan Barnes, Best Presentation Award, Smalley-Curl Institute Transdisciplinary Symposium, February 2018
9. Amit Jain, IBB travel grant, February 2018
10. Amit Jain, Excellence in Graduate Student Research, POLY Division, ACS 2018 Spring Meeting
11. Andrea Miranda, Awarded DOE SCGS Fellowship, Feb 2018 – August 2018
12. Jorge Mok, Neal Autrey fellowship, Fall 2017 – Spring 2018
13. Andrea Miranda, 2nd Place Poster Prize, ACS Macromex Conference, Los Cabos, México, May 2017
14. Andrea Miranda, Poster Prize, 2017 Rice Chevron Lecture
15. Morgan Barnes, Best Presentation Award, Smalley-Curl Institute Transdisciplinary Symposium, February 2017
16. Niloufar Jafari, Emerging National Researchers 2017
17. Luqing Qi, IBB Travel Award, Feb 2017
18. Morgan Barnes, SCI symposium speaking award, Feb 2017
19. Excellence in Graduate Student Research, Polymers Division, AIChE 2016 Annual Meeting, Jorge Mok
20. Excellent in Graduate Student Research, Electronics and Optics Division, AIChE 2015 Annual Meeting, Jorge Mok
21. 7th International Liquid Crystal Elastomers Conference (ILCEC) Best Poster Award, Shanghai, China, 2013, Aditya Agrawal.
22. 1st place, Outstanding Graduate Research Presentation Award, ACS POLY Symposium on the Bottom-up design of the next generation of biomaterials, May 2013, Stacy Pesek.
23. Kobayashi Fellowship 2012 – 2013, Xianyu Li.

24. Institute for Biosciences and Bioengineering travel grants awarded to Jorge Mok (2015, APS March Meeting), Stacy Pesek (2014 Spring ACS conference), and Aditya Agrawal (2013 Spring ACS conference)
2. Excellence in Graduate Polymer Research at the ACS National Meeting, Spring 2014 (Xianyu Li) and Spring 2013 (Yen-Hao Lin)
3. Excellent Poster Presentation for Chinese American Chemical Society Poster Competition, Xianyu Li, March 2013
4. NSF Graduate Student Research Fellowship Program, Stacy Pesek, 2012 – 2015.
5. ACS Summer School on Green Chemistry and Sustainable Energy, Yen-Hao Lin, 2012.
6. AIChE South Texas Section best fundamental paper award, 2012.

Patents

1. "Compression Induced Stiffening And Alignment Of Liquid Crystal Elastomers" US Non-Provisional Patent Application No. 13/860,392 now issued US Patent No. 9,260,570. Rice Tech ID No. 2012-069-02. Application Filed on 04/10/2013. Patent Issued on 02/16/2016
2. "Responsive Liquid Crystal Elastomers for Enhanced Cell Sheet Alignment" US Non-Provisional Patent Application No. 14/330,691 now issued US Patent No. 9,625,752. Rice Tech ID No. 2012-069-02. Application Filed on 07/14/2014. Patent Issued on 04/18/2017
3. "Network-stabilized bulk heterojunction organic photovoltaics" PCT Patent Application No. PCT/US2018/058489. Rice Tech ID No 2017-082-02. Application Filed on 10/31/2018. Rice Tech ID No 2017-082-02
4. "Electrodes For Selective Removal Of Multivalent Ions Through Capacitive Deionization" US Provisional Patent Application No. 62/715,116. Rice Tech ID No 2018-005-01. Application Filed on 08/06/2018