

## JESSICA D. SCHIFFMAN, PH.D.

Gary R. Lapidus Professor

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### PROFESSIONAL APPOINTMENTS

2022-present	<b>Professor</b> , Department of Chemical Engineering, University of Massachusetts Amherst, Amherst, MA
2021-2022	<b>Interim Department Head</b> , Department of Chemical Engineering, University of Massachusetts Amherst, Amherst, MA
2021-present	<b>Graduate Program Faculty</b> , Molecular and Cell Biology Graduate Program, University of Massachusetts Amherst, Amherst, MA
2020-2021	<b>Associate Department Head</b> , Department of Chemical Engineering, University of Massachusetts Amherst, Amherst, MA
2017-2022	<b>Associate Professor</b> , Department of Chemical Engineering, University of Massachusetts Amherst, Amherst, MA
2016-present	<b>Theme Leader</b> , Biomaterials for Devices and Regenerative Medicine (BDRM), Institute for Applied Life Sciences (IALS), University of Massachusetts Amherst
2011-2017	<b>Assistant Professor</b> , Department of Chemical Engineering, University of Massachusetts, Amherst, Amherst, MA
2009-2011	<b>Postdoctoral Associate</b> , Department of Chemical and Environmental Engineering, Yale University, New Haven, CT
2004-2005	<b>Engineer</b> , Division of Research and Development, Stryker Orthopedics, Mahwah, NJ

### EDUCATION

2005-2009	Ph.D., Materials Science and Engineering, Drexel University, Philadelphia, PA Dissertation: "Determination of the electrospinning parameters for biopolyelectrolytes and their modifications" Advisor: Prof. Caroline L. Schauer
2003-2004	M.Eng., Materials Science and Engineering, Cornell University, Ithaca, NY Thesis: "Biodegradation of chitosan films, electrospun polylactic acid mesh, and chitosan films reinforced with electrospun polylactic acid mesh" Advisor: Prof. Margaret W. Frey (Department of Fiber Science)
1999-2003	B.S., Ceramic and Materials Engineering, Rutgers University, New Brunswick, NJ Thesis: "Predictive process control, linear optimization, and particle packing of alumina" Advisor: Prof. Richard Haber

### AWARDS AND HONORS

2022-present	Gary R. Lapidus Faculty Fellow
2022-present	Deputy Editor, <i>ACS Applied Engineering Materials</i>
2022	Distinguished Graduate Mentor Award
2022	UMass ADVANCE Faculty Mentor Award
2022-present	Editorial Advisory Board, <i>ACS Applied Materials &amp; Interfaces</i>
2021	<i>Biomaterials Science</i> Emerging Investigator
2021	<i>Industrial &amp; Engineering Chemistry Research</i> Class of Influential Researchers
2020	UMass College of Engineering Outstanding Teaching Award
2019	<i>ACS Applied Materials &amp; Interfaces</i> Young Investigator Award
2019-2021	NSF ADVANCE Collaboration & Equity Faculty Fellow
2017	College of Engineering Barbara & Joseph Goldstein Outstanding Junior Faculty Award
2016	Women in Science You Should Be Following on Social Media, Sci Chic
2014-2019	Professor James M. Douglas Career Development Faculty Fellow
2013	NSF Early Career BRIGE Award
2013	Invited Member, NSF US-China Workshop on Solar Energy and Environment

- 2009 Doctoral Award, Drexel University  
2008-2009 Koerner Family Fellow  
2008 NSF/AAAS International Science & Engineering Visualization Challenge: Honorable Mention, published in *Science*, *Nature*, *Illustreret Videnskab*, *Focus Italy*, *National Geographic News*, *Weekly Reader*, *Forskning & Framsteg*  
2008 Finalist, Fall MRS Science as Art Competition  
2008 NSF Lindau Fellow, 58<sup>th</sup> meeting of Nobel Laureates (focus in physics), Lindau, Germany  
2007-2008 Best of the MatPac, Best graduate research in Materials Science in Pennsylvania  
2007 Outstanding Teaching Assistant Award (Drexel University)  
2006-2009 Graduate Assistantship in Areas of National Need (GAANN) Fellow  
2005-2009 Dean's Fellow  
2005-2006 NSF Integrative Graduate Education and Research Traineeship (IGERT) Fellow  
2002-2003 Malcolm G. McLaren Scholarship Recipient

## PEER REVIEWED PUBLICATIONS

[ORCID](#) 0000-0002-1265-5392 | [Google Scholar](#) | As of June 2022: Total citations = 7636 & h-index = 35  
Trainees are underlined, † are authors that contributed equally, and \* designates the corresponding author.

77. Ward, L.M.<sup>†</sup>, Shah, R.M.<sup>†</sup>, Han, X., **Schiffman, J.D.\***, Weinman, S.T.\* (2022) "Nanopatterning reduces bacteria fouling in ultrafiltration" *Under Revisions*
76. Cihanoğlu, A., **Schiffman, J.D.\***, Altinkaya, S.A.\* (2022) "Biofouling-resistant ultrafiltration membranes via co-deposition of dopamine and cetyltrimethylammonium bromide with retained size selectivity and water Flux" *Under Revisions*
75. Sanjayan, C.G., Jyothi, M.S., Balakrishna, R.G., **Schiffman, J.D.**, Sakar, M., Budagumpi, S. (2022) "Aqueous, non-polymer-based perovskite quantum dots for bioimaging; conserving fluorescence and long-term stability" *Under Revisions*
74. Sun, J., **Schiffman, J.D.\***, Perry, S.L.\* (2022) "Linear viscoelasticity and time-alcohol superposition of chitosan/hyaluronic acid complex coacervates" *ACS Applied Polymer Materials*. 4(3), 1617–1625. DOI: 10.1021/acsapm.1c01411
73. Shah, R.M., Cihanoğlu, A., Hardcastle, J., Howell, C., **Schiffman, J.D.\*** (2022) "Liquid-infused membranes exhibit stable flux and fouling resistance" *ACS Applied Materials & Interfaces*. 14(4), 6148–6156. DOI: 10.1021/acsami.1c20674
72. Cihanoğlu, A., **Schiffman, J.D.**, Altinkaya, S.A.\* (2021) "Ultrasound-assisted dopamine polymerization: Rapid and oxidizing agent-free PDA coatings on membrane surfaces" *Chemical Communications*. 57, 13740-13743. DOI: 10.1039/D1CC05960B
71. Hung, S-H., Bowden, J.W.<sup>UG</sup>, Peltier, R., **Schiffman, J.D.\*** (2021) "Optimizing the packing density and chemistry of cellulose nanofilters for high-efficiency particulate removal" *Industrial & Engineering Chemistry Research*. 60(43), 15720–15729. DOI: 10.1021/acs.iecr.1c03051
- **Invited to Special Forum Celebrating the 2021 I&EC Research Class of Influential Researchers**
70. Huang, M.<sup>†</sup>, Liu, Y.<sup>†</sup>, Khalkhali, Z., Kim, A., Hu, W., Rothstein, J.P., Lee, J-H., Klier, J., **Schiffman, J.D.\*** (2021) "Epoxy resin-encapsulated polymer microparticles for room-temperature cold sprayable coatings" *ACS Applied Materials & Interfaces*. 13(42), 50358–50367. DOI: 10.1021/acsami.1c15415
69. Dobosz, K.M., Kuo-Leblanc, C.A.<sup>UG</sup>, Bowden, J.W.<sup>UG</sup>, **Schiffman, J.D.\*** (2021) "Robust, small diameter hydrophilic nanofibers improve the flux of ultrafiltration membranes" *Industrial & Engineering Chemistry Research*. 60(25), 9179–9188. DOI: 10.1021/acs.iecr.1c01332
68. Meng, X., Du, Y., Liu, Y., Coughlin, E.B., Perry, S.L.\* , **Schiffman, J.D.\*** (2021) "Electrospinning fibers from oligomeric complex coacervates: No chain entanglements needed" *Macromolecules*. 54, 11, 5033–5042. DOI: 10.1021/acs.macromol.1c00397
67. Zhou, Z., Lopez-Dominguez, P., Abdullah, M., Barber, D., Meng, X., Park, J., Van Driessche, I., **Schiffman, J.D.**, Crosby, A., Kittilstved, K., Nonnenmann, S.S.\* (2021) "Memristive behavior of mixed oxide nanocrystal assemblies" *ACS Applied Materials & Interfaces*. 13, 18, 21635–21644. DOI: 10.1021/acsami.1c03722
66. Diep, E. & **Schiffman, J.D.\*** (2021) "Encapsulating bacteria into alginate-based nanofibers" *Biomaterials Science*. 9, 4364-4373. DOI: 10.1039/D0BM02205E

- **Invited to 2021 Biomaterials Science Emerging Investigators Issue**
  - **In Special Collection Biomaterials Science Most Popular 2021**
  - **One of the Top 25 Articles of 2021**
65. Rathore, P. & **Schiffman, J.D.\*** (2021) "Beyond the single nozzle: Coaxial electrospinning enables innovative nanofiber chemistries, geometries, and applications" *ACS Applied Materials & Interfaces*. 13, 1, 48–66. DOI: 10.1021/acsami.0c17706
- **Invited Spotlight on Application**
64. Mijailovica, A.S., Galarza, S., Raayai-Ardakanic, S., Birch, N.P., **Schiffman, J.D.**, Crosby, A.J., Cohen, T., Peyton, S.R., Van Vliet, J.J. (2021) "Localized characterization of brain tissue mechanical properties by needle induced cavitation rheology and volume controlled cavity expansion" *Journal Mechanical Behavior of Biomedical Materials*. 114, 104168. DOI: 10.1016/j.jmbbm.2020.104168
63. Holland, M., Eggensperger, C.G., Giagnorio, M., **Schiffman, J.D.**, Tiraferri, A., Zodrow, K.R.\* (2020) "Facile post-processing alters permeability and selectivity of microbial cellulose ultrafiltration" *Environmental Science & Technology*. 54, 20, 13249–13256. DOI: 10.1021/acs.est.0c00451
62. Huang, M., Liu, Y., Klier, J.\*, **Schiffman, J.D.\*** (2020) "High-performance, UV-curable crosslinked films via grafting of hydroxyethyl methacrylate methylene malonate" *Industrial & Engineering Chemistry Research*. 59(10), 4542-4548. DOI: 10.1021/acs.iecr.9b06618
61. Eggensperger, C.G., Giagnorio, M., Holland, M.D., Dobosz, K.M., **Schiffman, J.D.**, Tiraferri, A., Zodrow, K.R.\* (2020) "Sustainable living filtration membranes" *Environmental Science & Technology Letters*. 7(3), 213-218. DOI: 10.1021/acs.estlett.0c00019
- **Highlighted as ACS Editors' Choice**
  - **Featured in C&EN (2020) "Taking the Diet Coke-and-Mentos demo to new heights, and testing a kombucha-based water filter" 98(14).** [link](#)
60. Sharma, A., Kwak, J-G.<sup>UG</sup>, Kolewe, K.W., **Schiffman, J.D.**, Forbes, N.\*, Lee, J.\* (2020) "In vitro reconstitution of an intestinal mucus layer shows that cations and pH control the pore structure that regulates its permeability and barrier function" *ACS Applied Bio Materials*. 3(5), 2897–2909. DOI: 10.1021/acsabm.9b00851
59. Heckmann, T.S. & **Schiffman, J.D.\*** (2020) "Spatially organized nanopillar arrays dissimilarly affect the antifouling and antibacterial activities of *Escherichia coli* and *Staphylococcus aureus*" *ACS Applied Nano Materials*. 3(2), 977-984. DOI: 10.1021/acsanm.9b01942
- **Invited to Special Forum Celebrating the Contributions of Young Investigators for Winning the ACS Applied Materials & Interfaces Young Investigator Award**
58. Zhuang, J., Zhao, B., Meng, X., **Schiffman, J.D.**, Perry, S.L., Vachet, R.W., Thayumanavan, S.\* (2020) "Programmable chemical switch based on triggerable michael acceptors" *Chemical Science*. 11, 2103-2111. DOI: 10.1039/C9SC05841A
57. Sun, J., Perry, S.L.\* , **Schiffman, J.D.\*** (2019) "Electrospinning nanofibers from chitosan-hyaluronic acid complex coacervates" *Biomacromolecules*. 20(11), 4191-4198. DOI: 10.1021/acs.biomac.9b01072
56. Contreras, A., Raxworthy, M., Wood, S., **Schiffman, J.D.\***, Tronci, G.\* (2019) "Photodynamically active electrospun fibers for antibiotic-free infection control" *ACS Applied Bio Materials*. 2(10), 4258-4270. DOI: 10.1021/acsabm.9b00543
55. Kurtz, I.S.<sup>†</sup>, Shuo, S.<sup>†</sup>, Hao, X.<sup>†,UG</sup>, Huang, M., Perry, S.L.\* , **Schiffman, J.D.\*** (2019) "Bacteria-resistant, transparent, free-standing films prepared from complex coacervates" *ACS Applied Bio Materials*. 2 (9), 3926-3933. DOI: 10.1021/acsabm.9b00502
54. Li, B., Dobosz, K.M., Zhang, H., **Schiffman, J.D.**, Saranteas, K., Henson, M.A.\* (2019) "Predicting the performance of pressure filtration processes by coupling computational fluid dynamics and discrete element methods" *Chemical Engineering Science*. 208, 115162. DOI: 10.1016/j.ces.2019.115162
53. Huang, M., Yang, G., Liu, Y., Klier, J., **Schiffman, J.D.\*** (2019) "Anionic polymerization of methylene malonate yields high performance coatings." *ACS Applied Polymer Materials* 1(4), 657–663. DOI: 10.1021/acsapm.8b00135
52. Kolewe K.W., Kalesin S., Shave, M., **Schiffman J.D.\*** Santore M.M.\* (2019) "Mechanical properties and concentrations of poly(ethylene glycol) in hydrogels and brushes direct the surface transport of *Staphylococcus aureus*" *ACS Applied Materials & Interfaces* 11(1), 320–330. DOI: 10.1021/acsami.8b18302
- **Highlighted as ACS Editors' Choice**

51. Yang, G., Xie, W., Huang, M., Champagne, V.K., Lee, J-H., Klier, J.\*, **Schiffman, J.D.\*** (2019) "Polymer particles with a low glass transition temperature containing thermoset resin enable powder coatings at room temperature" *Industrial & Engineering Chemistry Research*. 58(2), 908–916. DOI: 10.1021/acs.iecr.8b04698
50. Dobosz, K.M., Kuo-LeBlac, C.A.<sup>UG</sup>, Emrick, T., **Schiffman, J.D.\*** (2019) "Antifouling ultrafiltration membranes with retained pore size by controlled deposition of zwitterionic polymers and poly(ethylene glycol)" *Langmuir*. 35(5), 1872–1881. DOI: 10.1021/acs.langmuir.8b02184
  - **Invited Full Article to Special Issue "Zwitterionic interfaces: Concepts and emerging applications"**
49. Meng, X., **Schiffman, J.D.\***, Perry, S.L.\* (2018) "Electrospinning cargo-containing polyelectrolyte complex fibers: Correlating molecular interactions to complex coacervate phase behavior and fiber formation" *Macromolecules*. 51(21), 8821–8832. DOI: 10.1021/acs.macromol.8b01709
48. Polio, S.R., Kundu, A.N., Dougan, C.E., Birch, N.P., Aurian-Blajeni, D.E., **Schiffman, J.D.**, Crosby, A.J., Peyton, S.R.\* (2018) "Cross-platform mechanical characterization of lung tissue" *PLoS ONE* 13(10), e0204765. DOI: 10.1371/journal.pone.0204765
47. Gonzalez Arellano, D.L.<sup>†</sup>, Kolewe, K.W.<sup>†</sup>, Champagne, V.K.<sup>UG†</sup>, Kurtz, I.S., Burnett, E.K., Zakashansky, J.A.<sup>UG</sup>, Dündar Arisoy, F., Briseño, A., **Schiffman, J.D.\*** (2018) "Gecko-inspired biocidal organic nanocrystals initiated from a pencil-drawn graphite template" *Scientific Reports* 8, 11618. DOI: 10.1038/s41598-018-29994-3
46. Kurtz, I.S. & **Schiffman, J.D.\*** (2018) "Current and emerging approaches to engineer antibacterial and antifouling electrospun nanofibers" *Materials* 11(7), 1059. DOI: 10.3390/ma11071059
  - **Invited Review Article to Special Issue "Electrospun Materials 2018"**
45. Kolewe, K.W., Dobosz, K.M., Emrick, T., Nonnenmann, S.S., **Schiffman, J.D.\*** (2018) "Fouling-resistant hydrogels prepared by the swelling-assisted infusion and polymerization of dopamine" *ACS Applied Bio Materials* 1(1), 33–41. DOI: 10.1021/acsabm.8b00001
44. Kolewe, K.W., Zhu, J., Mako N.<sup>UG</sup>, Nonnenmann, S.S., **Schiffman, J.D.\*** (2018) "Bacterial adhesion is affected by the thickness and stiffness of poly(ethylene glycol) hydrogels" *ACS Applied Materials & Interfaces* 10(3), 2275–2281. DOI: 10.1021/acsami.7b12145
43. Dündar, F., Kolewe, K.W., Homyak, B., Kurtz, I.S., **Schiffman, J.D.**, Watkins, J.J. (2018) "Bioinspired photocatalytic shark skin surfaces with antibacterial and antifouling activity via nanoimprint lithography" *ACS Applied Materials & Interfaces* 10(23), 20055–20063. DOI: 10.1021/acsami.8b05066
  - **Highlighted in ACS News Service Weekly PressPac, Health Medicine Network, IEEE Engineering 360, Science and Technology Research News, Forbes, etc**
42. Chandan, H.R., **Schiffman, J.D.**, Balakrishna, G. (2018) "Quantum dots as fluorescent probes: Synthesis, surface chemistry, energy transfer mechanisms, and applications" *Sensors & Actuators: B. Chemical* 258, 1191–1214. DOI: 10.1016/j.snb.2017.11.189
41. Sae-ung, P., Kolewe, K.W., Bai, Y., Rice, E.W.<sup>UG</sup>, **Schiffman, J.D.\***, Emrick, T., Hoven, V.P.\* (2017) "Antifouling stripes prepared from clickable zwitterionic copolymers" *Langmuir* 33(28), 7028–7035. DOI: 10.1021/acs.langmuir.7b01431
40. Meng, X., Perry, S.L.\*, **Schiffman, J.D.\*** (2017) "Complex coacervation: Chemically stable fibers electrospun from aqueous polyelectrolyte solutions" *ACS Macro Letters* 6, 505–511. DOI: 10.1021/acsmacrolett.7b00173
  - **Highlighted in Biotech Week 06/28/2017**
39. Dobosz, K.M., Kuo-LeBlac, C.A.<sup>UG</sup>, Martin, T.J.<sup>UG</sup>, **Schiffman, J.D.\*** (2017) "Ultrafiltration membranes enhanced with electrospun nanofibers exhibit improved flux and fouling resistance" *Industrial & Engineering Chemistry Research* 56(19), 5724–5733. DOI: 10.1021/acs.iecr.7b00631
38. Kolewe, K.W.<sup>†</sup>, Dobosz, K.M.<sup>†</sup>, Rieger, K.A., Chang, C-C., Emrick, T., **Schiffman, J.D.\*** (2016) "Antifouling electrospun nanofiber mats functionalized with polymer zwitterions" *ACS Applied Materials & Interfaces* 8(41) 27585–27593. DOI: 10.1021/acsami.6b09839
37. Rieger, K.A., Porter, M.<sup>REU</sup>, **Schiffman, J.D.\*** (2016) "Polyelectrolyte-functionalized nanofiber mats control the collection and inactivation of *Escherichia coli*" *Materials* 9, 297. DOI:10.3390/ma9040297
  - **Invited Full Article to Special Issue "Electrospun Materials"**

36. Sui, S., Wang, Y., Kolewe, K.W., Srajer, V., Henning, R., **Schiffman, J.D.**, Dimitrakopoulos, C., Perry, S.L.\* (2016) "Graphene-based microfluidics for serial crystallography" *Lab on a Chip* 16, 3082-3096. DOI: 10.1039/C6LC00451B
  - **Invited Full Article to Special Issue "2016 Lab on a Chip Emerging Investigators"**
  - **Highlighted in Chemistry World & the 2016 Annual Report for Advanced Photon Source**
35. Rieger, K.A., Thyagarajan, R., Hoen M.<sup>REU</sup>, Ford, D., **Schiffman, J.D.\*** (2016) "Transport of microorganisms into cellulose nanofiber mats" *RSC Advances* 6, 24438-24445. DOI: 10.1039/C6RA01394E
34. Rieger, K.A.<sup>†</sup>, Cho, H.J.<sup>†</sup>, Yeung, H.<sup>UG</sup>, Fan, W., **Schiffman, J.D.\*** (2016) "Antimicrobial activity of silver ion exchanged zeolites immobilized on cellulose nanofibers" *ACS Applied Materials & Interfaces* 8(5), 3032–3040. DOI: 10.1021/acsami.5b10130
33. Chang, C-C., Kolewe, K.W., Li, Y., Kosif, I., Freeman, B.D., Carter, K., **Schiffman, J.D.\***, Emrick, T.\* (2016) "Underwater superoleophobic surfaces prepared from polymer zwitterion/dopamine composite coatings." *Advanced Materials Interfaces* 1500521, 1-9. DOI: 10.1002/admi.201500521
32. Rieger, K.A., Birch, N.P., **Schiffman, J.D.\*** (2016) "Electrospinning chitosan/poly(ethylene oxide) solutions with immiscible oils: Correlating solution rheology to nanofiber formation" *Carbohydrate Polymers* 139, 131-138. DOI: 10.1016/j.carbpol.2015.11.073
31. Jafferji, H., Sakulich, A.R.\* , **Schiffman, J.D.\*** (2016) "Preliminary study on mitigating steel reinforcement corrosion with bioactive agent" *Cement and Concrete Composites* 69, 9–17. DOI: 10.1016/j.cemconcomp.2016.02.011
30. Li, Y., John, J., Kolewe, K.W., **Schiffman, J.D.**, Carter, J.D.\* (2015) "Scaling up nature — Large area flexible biomimetic surfaces" *ACS Applied Materials & Interfaces* 7(42), 23439–23444. DOI: 10.1021/acsami.5b04957
29. Kolewe, K.W., Peyton, S.R., **Schiffman, J.D.\*** (2015) "Fewer bacteria adhere to softer hydrogels" *ACS Applied Materials & Interfaces* 7(35), 19562-19569. DOI: 10.1021/acsami.5b04269
28. Jansen, L.E., Birch, N.P., **Schiffman, J.D.**, Crosby, A.J., Peyton, S.R.\* (2015) "Mechanics of intact bone marrow" *Journal of the Mechanical Behavior of Biomedical Materials* 50, 299–307. DOI: 10.1016/j.jmbbm.2015.06.023
27. Birch, N.P., Pandres, E.P.<sup>UG</sup>, Barney, L., Peyton, S.R., **Schiffman, J.D.\*** (2015) "Thermal-responsive behavior of a cell compatible chitosan:pectin hydrogel" *Biomacromolecules* 16(6), 1837–1843. DOI: 10.1021/acs.biomac.5b00425
26. Dobosz, K.M.<sup>†</sup>, Kolewe, K.W.<sup>†</sup>, **Schiffman, J.D.\*** (2015) "Green materials science and engineering reduces biofouling: Approaches for medical and membrane-based technologies" *Frontiers in Microbiology* 6:86. DOI: 10.3389/fmicb.2015.00086
  - **Invited Review Article to Special Issue on "Nanomaterial-Biofilm Interactions"**
25. Rieger, K.A., Eagan, N.M.<sup>UG</sup>, **Schiffman, J.D.\*** (2015) "Encapsulation of cinnamaldehyde into nanostructured chitosan films" *Journal of Applied Polymer Science* 132, 41739. DOI: 10.1002/APP.41739
24. Rieger, K.A. & **Schiffman, J.D.\*** (2014) "Electrospinning an essential oil: Cinnamaldehyde enhances the antimicrobial efficacy of chitosan/poly(ethylene oxide) nanofibers" *Carbohydrate Polymers* 113, 561–568. DOI: 10.1016/j.carbpol.2014.06.075
23. Birch, N.P. & **Schiffman, J.D.\*** (2014) "Characterization of self-assembled polyelectrolyte complex nanoparticles formed from chitosan and pectin" *Langmuir* 30(12) 3441-3447. DOI: 10.1021/la500491c
22. Rieger, K.A., Birch, N.P., **Schiffman, J.D.\*** (2013) "Designing electrospun nanofiber mats to accelerate wound healing— A review." *Journal of Materials Chemistry B* 1(36) 4531-4541. DOI: 10.1039/C3TB20795A
  - **Invited Applications Review Article**
21. **Schiffman, J.D.\***<sup>†</sup>, Engel, Y.<sup>†</sup>, Goddard, J.D., Rotello, V.M.\* (2012) "Nanomanufacturing of biomaterials" *Materials Today* 15(11) 80-87. DOI: 10.1016/S1369-7021(12)70217-1
  - **Invited Review Article**
20. Hoover, L.A., **Schiffman, J.D.**, Elimelech, M.\* (2013) "Nanofibers in thin-film composite membrane support layers: Enabling expanded application of forward and pressure retarded osmosis" *Desalination* 308, 73-81. DOI: 10.1016/j.desal.2012.07.019
  - **Highlighted in Special Issue "New Directions in Desalination"**

19. Zodrow, K.R., **Schiffman, J.D.\***, Elimelech, M. (2012) "Biodegradable polymer (PLGA) coatings featuring cinnamaldehyde and carvacrol mitigate biofilm formation" *Langmuir* 28(39) 13993-13999. DOI: 10.1021/la303286v
18. **Schiffman, J.D.\***, Wang, Y., Giannelis, E.P., Elimelech, M. (2011) "Biocidal activity of plasma modified electrospun polysulfone mats functionalized with polyethyleneimine-capped silver nanoparticles" *Langmuir* 27(21) 13159-13164. DOI: 10.1021/la202605z
17. **Schiffman, J.D.\*** & Elimelech, M. (2011) "Antibacterial activity of electrospun polymer mats with incorporated narrow diameter single-walled carbon nanotubes" *ACS Applied Materials & Interfaces* 3(2) 462-468. DOI: 10.1021/am101043y
  - **Highlighted in "Noteworthy Chemistry" by the American Chemical Society**
16. Vecitis, C.D.\*<sup>UG</sup>, Schnoor, M.<sup>UG</sup>, Rahaman, M.S., **Schiffman, J.D.**, Elimelech, M. (2011) "Electrochemical multiwalled carbon nanotube filter for viral and bacterial removal and inactivation" *Environmental Science & Technology* 45 (8) 3672-3679. DOI: 10.1021/es2000062
15. Yip, N.Y., Tiraferri, A., Phillip, W.A., **Schiffman, J.D.**, Hoover, L.A., Kim, Y.C., Elimelech, M.\* (2011) "Thin-film composite pressure retarded osmosis membranes for sustainable power generation from salinity gradients" *Environmental Science & Technology* 45(10) 4360-4369. DOI: 10.1021/es104325z
14. Tiraferri, A., Yip, N.Y., Phillip, W.A., **Schiffman, J.D.**, Elimelech, M.\* (2011) "Relating performance of thin-film composite forward osmosis membranes to support layer structure and formation" *Journal of Membrane Science* 367, 340-352. DOI: 10.1016/j.memsci.2010.11.014
  - **In Top 25 Most Cited Articles for 2010 and 2011**
13. Yip, N.Y., Tiraferri, A., Phillip, W.A., **Schiffman, J.D.**, Elimelech, M.\* (2010) "High performance thin-film composite membrane for forward osmosis desalination" *Environmental Science & Technology* 44(10) 3812-3818. DOI: 10.1021/es1002555
12. **Schiffman, J.D.<sup>†</sup>**, Kiechel, M.A.<sup>†</sup>, Donius, A.E., Wegst, U.G., Schauer, C.L.\* (2013) "Crosslinking poly(allylamine) fibers electrospun from basic and acidic solutions" *Journal of Materials Science* 48(22) 7856-7862. DOI: 10.1007/s10853-013-7426-2
11. Brenner, E.K.<sup>UG</sup>, **Schiffman, J.D.**, Toth, L.J.<sup>UG</sup>, Szewczyk, J.C., Schauer, C.L.\* (2013) "Phosphate salts facilitate the electrospinning of hyaluronic acid fiber mats" *Journal of Materials Science* 48(22) 7805-7811. DOI: 10.1007/s10853-013-7532-1
10. Brenner, E.K.<sup>UG</sup>, **Schiffman, J.D.**, Thomson, E.S.<sup>UG</sup>, Toth, L.J.<sup>UG</sup>, Schauer, C.L.\* (2012) "Electrospinning of hyaluronic acid nanofibers from aqueous ammonium solutions" *Carbohydrate Polymers* 87(1) 926-929. DOI: 10.1016/j.carbpol.2011.07.033
9. **Schiffman, J.D.**, Blackford, A.C.<sup>UG</sup>, Wegst, U.G.K., Schauer, C.L.\* (2011) "Carbon black immobilized in electrospun chitosan membranes" *Carbohydrate Polymers* 84(4) 1252-1257. DOI: 10.1016/j.carbpol.2011.01.013
8. **Schiffman, J.D.**, Stulga, L.A.<sup>UG</sup>, Schauer, C.L.\* (2009) "Chitin and chitosan: Transformations due to the electrospinning process" *Polymer Engineering and Science* 49(10) 1918-1928. DOI: 10.1002/pen.21434
7. Binetti, V.E., **Schiffman, J.D.**, Leafer, O.D., Spanier, J.E., Schauer, C.L.\* (2009) "The natural transparency and piezoelectric response of the *Greta oto* butterfly wing" *Integrative Biology* (3) 324-329. DOI: 10.1039/B820205B
6. **Schiffman, J.D.** & Schauer, C.L.\* (2009) "Solid state characterization of  $\alpha$ -chitin from *Vanessa cardui* Linnaeus wings" *Materials Science and Engineering, C* 29(4) 1370-1374. DOI: 10.1016/j.msec.2008.11.006
5. Laudenslager, M.L.<sup>UG</sup>, **Schiffman, J.D.**, Schauer, C.L.\* (2008) "Carboxymethyl chitosan as a matrix material for platinum, gold, and silver nanoparticles" *Biomacromolecules* 9(10) 2682-2685. DOI: 10.1021/bm800835e
4. Garipcan, B., Winters, J.<sup>UG</sup>, Atchison, J.S., Cathell, M., **Schiffman, J.D.**, Leafer, O.D., Nonnenmann, S.S., Schauer, C.L., Pikin, E., Nabet, B., Spanier, J.E.\* (2008) "Controllable formation of nano-scale patterns on TiO<sub>2</sub> by conductive-AFM nanolithography" *Langmuir* 24(16) 8944-8949. DOI: 10.1021/la800911x
3. **Schiffman, J.D.** & Schauer, C.L.\* (2008) "A review: Electrospinning of biopolymer nanofibers and their applications" *Polymer Reviews* 48(2) 317-352. DOI: 10.1080/15583720802022182
  - **3<sup>rd</sup> Most Cited Article in Journal (As of 7/21/2021)**



2. **Schiffman, J.D.** & Schauer, C.L.\* (2007) "One-step electrospinning of cross-linked chitosan nanofibers" *Biomacromolecules* 8(9) 2665-2667. DOI: 10.1021/bm7006983
1. **Schiffman, J.D.** & Schauer, C.L.\* (2007) "Cross-linking chitosan nanofibers" *Biomacromolecules* 8(2) 594-601. DOI: 10.1021/bm060804s
  - ***In Top 20 Most-Accessed Articles of 2007***

#### **SELECT PATENTS/PATENT APPLICATIONS (5 PROVIDED OF 11 TOTAL)**

1. "Polymerization of 1,1-dicarbonyl 1-alkenes" Internat Patent No. WO 2020/123579 A1. Issued 2020.
2. "Reactive particles for coating technologies" US Patent App. 16/497,880 Issued 2020.
3. "Emulsion polymers crosslinked with compounds containing two or more dicarbonyl-substituted 1 alkene units" International Patent No: WO 2019/140154 A1. Issued 2019.
4. "Ultra-stable printing and coatings using aqueous complex coacervates, and compositions and methods thereof" Application No: 15/985,855. Issued 2018.
5. "Essential oils or volatile organics thereof electrospun in chitosan nanofiber mats." Patent No.: US 2016/0243271 A1. Issued 2016.

#### **BOOK CHAPTERS (5 TOTAL)**

5. Diep, E., Kurtz, I.S., and **Schiffman, J.D.** (2022) Interfacing electrospun nanofibers with microorganisms: Applications from killing to repelling to delivering living microbes. In: Science, Technology, and Applications of Polymer Nanofibers, 1<sup>st</sup> Edition, A.L. Andrady and S.A. Khan, eds. John Wiley & Sons, Inc., U.S.A. ISBN 978-1119267683.
  - ***Invited Book Chapter***
4. **Schiffman, J.D.** & Schauer, C.L. (2015) Biopolymer nanofibers: Electrospinning. Pages (5201-5225) In: Encyclopedia of Biomedical Polymers and Polymeric Biomaterials, Munmaya Mishra, ed. CRC Press, U.S.A. ISBN 9781439898796.
  - ***Invited Book Chapter***
3. Dubin, P., **Schiffman, J.D.**, Zheng, B. (2013) Polycation-tethered micelles as immobilized detergents for NAPL remediation. Pages (97-109) In: Novel Solutions to Water Pollution, Ahuja, S. and Hristovski, K. eds. American Chemical Society, U.S.A. Chapter DOI: 10.1021/bk-2013-1123.ch007.
  - ***Invited Book Chapter***
2. **Schiffman, J.D.** & Schauer, C.L. (2009) Permeability studies of chitosan and chitin nanofibrous meshes. Pages (61-71) In: Nanofibers: Fabrication, Performance, and Applications, W.N. Chang, eds. Nova Science Publishers, Inc., U.S.A. ISBN: 978-1-61668-288-0. ***Invited Book Chapter***
1. Mcllwee, H.A.<sup>UG</sup>, **Schiffman, J.D.**, Cathell, M.D., Schauer, C.L. (2008) Deposition of chitosan: Electrospinning and thin films. Pages (81-122) In: Current Research and Developments on Chitin and Chitosan in Biomaterial Science, R. Jayakumar and M. Prabakaran, Eds. Research Signpost, India. ISBN: 978-81-308-0299-2.
  - ***Invited Book Chapter***

#### **EDITORIAL POSTIONS**

- Deputy Editor, *ACS Applied Engineering Materials* (2022-present)
- Editorial Advisory Board, *ACS Applied Materials & Interfaces* (2022-present)
- Editorial Board Member, *BMC Materials* (part of Springer Nature) (2019-present)
- Journal Guest Editor, *Nanotechnology*, Special focus: "[Life Cycle of Nanomaterials](#)" (2015-2018)

**INVITED & CONTRIBUTED CONFERENCE AND COLLOQUIA PRESENTATIONS.** Dr. Schiffman has given >80 invited keynotes, conference talks, and colloquia presentations in Austria, Australia, Canada, China, India, Ireland, Mexico, Singapore, and the United States. Along with her research team, ~200 contributed talks have been presented and many undergraduate and graduate students advised by Schiffman have received competitive awards for their presentations from AIChE, ACS, American Membrane Technology Association, Thermoset Resin Formulators Association, etc. Full details available upon request.

**RESEARCH SUPPORT.** Dr. Schiffman has received awards totaling **\$15.3M** (with **~\$5M** going directly to the Schiffman lab). These totals do not include graduate fellowships. She has served as the PI on:

- 8 Major Awards from the National Science Foundation (NSF)
- 11 Major Awards from the Army Research Lab/Army Research Office
- 10 Major Awards from Corporate Sponsors (BASF, Sirrus, etc)
- 4 Awards from other Federal Agencies (USDA, USGA, ACI)
- Additional support received from the Hamilton Company, Andrew Mellon Foundation, ACS Foundation, the Armstrong Fund for Science, UMass Faculty Research Grant, Private donors, NSF SEED funds (2x), NSF funds to support conference symposium (2x)

**CURRENT SUPPORT & COMPLETED AWARDS** – Full details available upon request.

### **MENTORING OF SCHIFFMAN LAB MEMBERS**

#### **SELECT AWARDS RECEIVED BY GRADUATE STUDENTS WHILE IN THE SCHIFFMAN LAB**

- **Hyerim Ban**
  - UMass Biotechnology Training Program (BTP) Fellowship (2021-2023)
- **Brandon Barajas**
  - David C. Tillwick Outstanding Teaching Assistant Award (2022)
  - NIH Chemistry-Biology Interface (CBI) Fellowship (2020-2022)
  - Spaulding-Smith STEM Fellowship (2019, 2024)
- **Nathan P. Birch**
  - J.W. Eldridge Graduate Fellowship UMass Amherst (2014)
  - ACS Ciba Travel Award in Green Chemistry (2012, 4 awarded nationally)
- **Aydın Cihanoğlu**
  - Postdoctoral Study, The Scientific & Technological Research Council of Turkey (TÜBİTAK) (2021)
  - Research Grant, The Scientific & Technological Research Council of Turkey (TÜBİTAK) (2019-2020)
- **Emily Diep**
  - 3M RISE (Raising Influence in Science & Engineering) (2022, very competitive)
  - PPG Fellowship (2022)
  - David C. Tillwick Outstanding Teaching Assistant Award (2020)
  - NSF-NRT Soft Materials for Life Sciences Fellowship (2020-2021)
  - Spaulding-Smith STEM Fellowship (2018, 2023)
- **Kerianne M. Dobosz**
  - UMass Chemical Engineering Outstanding Graduate Student Seminar Award (2018)
  - GE Global Research Fellowship (2017)
  - UMass Chemical Engineering Outstanding Graduate Student Research Award (2017)
  - UMass Biotechnology Training Program (BTP) Fellowship (2015-2017)
- **Mengfei Huang**
  - 3M RISE (Raising Influence in Science & Engineering) (2021, 10% of >430 applications selected)
  - UMass Chemical Engineering Maden Travel Award (2021)
  - 3M Internship (2021, Postponed from 2020 due to COVID)
  - TRFA Excellence in Thermoset Polymer Research Award, Honorable Mention (2020)
  - Pflaumer Honors for Innovation for Most Outstanding Paper, Eastern Coatings Conference (2019)
  - PPG Fellowship (2017-2018)
  - UMass Chemistry-Biology Interface (CBI) Fellowship (2017-2019)
  - Jean Brady & Nilesh Shah Award (UMass, 2016)
- **Shaohsiang “Joe” Hung**
  - American Membrane Technology Association (AMTA)/Reclamation Fellowships for Membrane Technology (2022-2023)
- **Kristopher W. Kolewe**
  - UMass Chemical Engineering Maden Travel Award (2017)
  - NIH Chemistry-Biology Interface (CBI) Fellowship (2016-2017)
  - UMass Chemistry-Biology Interface (CBI) Fellowship (2015-2016)
  - UMass Chemical Engineering Outstanding Graduate Student Research Award (2015)



- Founding President of the UMass Materials Research Society (MRS) Chapter (2014)
- Innovation Challenge Winner UMass Amherst (2015)
- **Deepa Konuganti**
  - Apple Research Fellowship (2022)
- **Irene S. Kurtz**
  - AAAS CASE (Catalyzing Advocacy in Science and Engineering) Travel Award (Cancelled COVID)
  - Invited Participant, BASF International Summer Course in Ludwigshafen, Germany (2019)
  - David C. Tillwick Outstanding Teaching Assistant Award (2018)
  - Invited participant to NSF-sponsored Biofilms Workshop (2018)
  - UMass Chemical Engineering Maden Travel Award (2018)
  - Eli Lilly/ACS Women Chemist Committee Travel Award (2018, 10 awarded nationally)
  - NSF-NRT Soft Materials for Life Sciences Fellowship (2017-2018, Awarded Certificate 2019)
- **Xiangxi “Zoey” Meng**
  - Finalist in AIChE Area 8A: Polymers Graduate Student Award Symposium (2019)
  - NSF-NRT Soft Materials for Life Sciences Certificate (2019) & NSF-NRT Travel Grant (2017)
  - UMass Chemical Engineering Maden Travel Award (2019)
- **Prerana Rathore**
  - Finalist in the Graduate School’s Three Minute Thesis (3MT) competition (2022)
  - UMass Chemical Engineering Outstanding Graduate Student Seminar Award (2022)
  - NSF Travel Funds (2022)
  - ACS CVS Travel Award (2022)
- **Katrina A. Rieger**
  - Steuben-Schurz-Gesellschaft Berliner Luftbrückenstipendium (German-American Friendship Society, Very Competitive, given to 1 Fulbrighter studying in Germany per year, 2015-2016)
  - Fulbright Fellowship U.S. Student Award to Germany (Competitive, 2015-2016)
  - Germanistic Society of America Fellow (2016 Competitive, Given to 1-2 of the Fulbright Fellows)
  - DAAD Fellowship Recipient (2015, Declined to Accept Fulbright Fellowship)
  - AAAS CASE (Catalyzing Advocacy in Science and Engineering) Travel Award, Wash, DC (2015)
  - David C. Tillwick Memorial Fellowship UMass Amherst (2015)
  - UMass Innovation Challenge Finalist, Overall 2<sup>nd</sup> Place (2014)
  - NSF-IGERT Fellowship from the Institute for Cellular Engineering (2013-2014)
  - NSF-GRFP Honorable Mention (2013)
  - Eli Lilly/ACS Women Chemist Committee Travel Award (2012, Competitive 9 awarded nationally)
- **Rushabh Shah**
  - UMass Chemical Engineering Maden Travel Award (2021-2022)
  - American Membrane Technology Association (AMTA)/Reclamation Fellowships for Membrane Technology (2021-2022)

#### **SELECT AWARDS RECEIVED BY UNDERGRAD RESEARCHERS WHILE IN THE SCHIFFMAN LAB**

- **Team MicrobeBlaster: Sarah Kaunfer, Phoebe Lasic-Ellis, Hayley McIsaac, & Simran Jeet (Awarded \$3,500):** 2<sup>nd</sup> place Minute Pitch and 1<sup>st</sup> place Viewer’s Choice in the Innovation Challenge (2020), Draper Competition Pitch Honorable Mention (2021), Honorable Mention Innovation Challenge Final (2021)
- **Emma Klinkhamer:** Dream Job of “Biomaterials Lab Boss” published in *C&EN News 2014*, 92(30) 42-44.
- **Natalie Mako:** 2016 Rising Researcher, 2<sup>nd</sup> Place in National AIChE MSED Poster Competition (2016), John and Abigail Adams Scholarship
- **Annuli Okoye:** ACS Scholar, SWE Scholar, DOE Mickey Leland Energy Fellow
- **Eric Rice:** William F. Field Alumni Scholar Award, Laplante Emergency Scholarship
- **Lina Wu:** Jack Welsh Scholar
- **Jared Bowden, Bryan Chua, Sara Koprek, Natalie Mako, Nat Eagan, Annuli Okoye, Elena Pandres, Avi Waldman:** Commonwealth Honors College Research Assistant Fellowships (to pay student salary)

## **TOTAL POSTDOCTORAL RESEARCHERS (5)**

### **Former Postdoctoral Researchers & Visiting Faculty**

<b>Name</b>	<b>Year(s)</b>	<b>Co-mentor</b>	<b>Current affiliation</b>
1. Dr. Priyanka Kaushik	2020-2022	Sarah Perry	Postdoc, UMass Amherst
2. Dr. Vanda Liadinskaia	2018-2020	Sarah Perry	Researcher, University of Twente
3. Dr. Yuan Liu	2017-2019	John Klier	Reckitt Benckiser in Shanghai, China
4. Dr. Guozhen Yang	2016-2018	John Klier	ITW Global Brands in Houston, TX
5. Prof. S. Srinu Naik	2013	N/A	Associate Professor, University College of Technology, Osmania

## **TOTAL GRADUATE STUDENT ADVISEES (24)**

### **Current PhD & MS Advisees (Chemical Engineering unless otherwise noted)**

<b>Name</b>	<b>Years</b>	<b>Co-advisor if applicable</b>
1. Hyerim Ban	2020-present, Molecular & Cellular Biology	Lauren Andrews
2. Brandon Barajas	2019-present	
3. Meng-Chen "Billy" Chiang	2021-present	
4. Emily Diep	2018-present,	
5. Shaohsiang "Joe" Hung	2021-present	
6. Deepa Konuganti	2021-present, MS Student	Peter Beltramo
7. Prerana Rathore	2018-present	
8. Rushabh Shah	2019-present	
9. Jichao Song	2021-present	

### **Former PhD Advisees & Visiting PhD Advisees**

<b>Name</b>	<b>Year</b>	<b>Dissertation title</b> <b>Current affiliation</b>
10. Kelsi M.S. Rehmann (Co-advised w/John Klier)	PhD 2022	Transport and anionic polymerization of methyldiene malonates on polymer substrates <i>NRC Postdoctoral Researcher, NIST</i>
11. Mengfei Huang (Co-advised w/John Klier)	PhD 2021	Novel Crosslinking Technologies for Waterborne & Powder Coatings <i>PhD Polymer Chemist, Eastman Chemical</i>
12. Irene S. Kurtz	ABD 2021	
13. Xiangxi "Zoey" Meng (Co-advised w/Sarah Perry)	PhD 2021	Electrospinning fibers via complex coacervation <i>Postdoctoral Researcher, Univ California, Santa Barbara</i>
14. Aydın Cihanoğlu	PhD 2021	Visiting Researcher, İzmir Institute of Technology, Turkey <i>Postdoctoral Researcher, İzmir Institute of Technology, Turkey</i>
15. Amy Contreras (formerly Smith)	PhD 2019	Visiting Researcher, University of Leeds <i>Research Commercialization, University of Leeds</i>
16. Kerianne M. Dobosz	PhD 2019	Tuning electrospun nanofibers and chemistry to enhance the flux and fouling resistance of ultrafiltration membranes <i>Science and Technology Research Chemist Lead, PPG</i>
17. Kristopher W. Kolewe	PhD 2018	Structure-property relationships of polymer films and hydrogels to control bacterial adhesion <i>Senior Technical Team Lead, Siemens Healthineers</i>
18. Nathan P. Birch	PhD 2017	Synthesis of biopolymer materials tailored for biological applications <i>Senior R&amp;D Engineer, Abbott</i>
19. Katrina A. Fitzpatrick (formerly Rieger)	PhD 2016	Electrospinning biopolymer nanofiber mats for bacterial removal and inactivation <i>Co-Founder, Optical Waters</i>

**Former MS Advisees, Including Visiting MS Advisees**

<b>Name</b>	<b>Year</b>	<b>Dissertation title</b> <b>Current Affiliation</b>
20. Shao-Hsiang "Joe" Hung	MS 2021	Surface functionalized electrospun cellulose nanofilters for high-efficiency particulate matter removal <i>PhD Student, UMass Amherst</i>
21. Jichao Song (Co-advised with John Klier)	MS 2021	Incorporating epoxy and amine into poly(methyl methacrylate) for a crosslinkable waterborne coating <i>PhD Student, UMass Amherst</i>
22. Thilo Heckmann	MS 2019	Nanotopographies to control bacterial adhesion and inactivation <i>PhD Student, Karlsruhe Institute of Technology, Germany</i>
23. Juangfeng Sun (Co-advised with Sarah Perry)	MS 2019	Electrospinning nanofibers from chitosan and hyaluronic acid coacervates <i>Complete Genomics Inc</i>
24. Thomas C. DiGiovanni	MS 2016	Antimicrobial activity of "green" nanoparticle-enabled paint <i>Independent Tutor, Princeton Review</i>

**TOTAL UNDERGRADUATE STUDENTS ADVISED IN RESEARCH (51)**

**UMass Undergraduate Researchers** (Chemical Engineering unless otherwise noted)

<b>1. Name</b>	<b>Year(s)</b>	<b>Current Affiliation</b>
2. Thomas Goodwin	2020-present	
3. Oshiokhai "Oshio" Oyageshio	2021-present	
4. Elana Peisner	2021-present	
5. Uzo Uwazuruonye- Anyanwu	2022-present	
6. Sara Koprek	2020-2021	Process Engineer
7. Sarah Kaunfer	2020-2021, Microbiology	Clinical Research, Brigham and Women's Hospital
8. Hayley Mclsaac	2020-2021, Biochemistry	Undergraduate student, UMass Amherst
9. Simran Jeet	2020-2021, Bio	
10. Phoebe Lasic-Ellis	2020-2021, Psychology	Undergraduate student, UMass Amherst
11. Abraham Waldman	2018-2021	PhD Student, University of Pennsylvania
12. Ali Ahmad Jallow	2019-2020	42 North Solutions Consulting Firm
13. Jared Bowden	2018-2020	
14. Gregory Donovan	2018-2020	PhD Student, University of Colorado Boulder
15. Jana Latayan	2018-2020	Scientist, Eurofins Scientific
16. Madison Stetz	2017-2019	Nuclear Test Engineer, Portsmouth Naval Shipyard
17. Lina Wu	2017-2018	Senior Associate, Eli Lilly and Company
18. Robin M. Levinson	2016-2018	Downstream Process Development Engineer, Celldex
19. Griffin Hurley	2015-2018	Rotational Engineer, TE Connectivity
20. Christopher Kuo-LeBlanc	2015-2018	PhD Student, University of California, Santa Barbara
21. Bryan Chua	2016-2018	Assistant Automation Engineer, Bristol-Myers Squibb
22. Tushar Bahl	2016-2018	Analyst, Eurofins PSS Insourcing Solutions
23. Caleb Boucher	2017-2018	Trail Crew Member, Southwest Conservation Corps
24. Rasmia Shamsi	2016-2017	Procurement Associate, Collins Aerospace
25. Natalie Mako	2014-2017	Manager, Test & Materials Eng, MTPV Power Co
26. Jacob Schladenhauffen	2017-2018	Associate Engineer, Biomaterials at Sigilon Therapeutics
27. Emma J. Klinkhamer	2013-2016	Process Engineer, Sensata Technologies
28. Eric Rice	2014-2016	System Engineer, NECI
29. Ruoting "Robert" Wang	2015-2016	Software Engineer, Jobcase Inc
30. Richard Jr. Hall	2015, Microbio	Senior Research Associate, Sensei Therapeutics

31. Hiu Fai "Marco" Yeung	2014-2015	Sr. Process Engineer, Lithography, GlobalFoundries
32. Tyler Martin	2014-2015	Product Development Consultant, C&T Innovations
33. Bryanna Dague	2014	Process Engineer, Bristol-Myers Squibb
34. Prof. Nathaniel M. Eagan	2012-2014	Assistant Professor, Tufts University
35. Annuli Daramola (formerly Okoye)	2012-2014	PhD student, Binghamton University
36. Dr. Elena P. Pandres	2012-2014	Postdoctoral Associate, University of Washington
37. Shelby D'Abbraccio	2013	Process and Packaging Engineer, Indivior
38. Gregory T. Keohane	2012	Sr. Manager, Strategic Sourcing, The RMR Group
39. Stephanie Arboleda Butler	2012	Hazardous Materials Engineer, Pratt & Whitney
40. Dr. David P. Gamliel	2011-2012	Principal Scientist, Physical Sciences Inc

### Visiting Undergraduate Researchers

Name	Year	Program	Home Institution
41. Nha "Norah" Nguyen	2022	Visiting Researcher	Mount Holyoke College
42. Madelyn Bennett	2022	ASCENDS REU	University of Kansas
43. Anthony Dee	2022	MURALS REU	Cornell University
44. Evan Hu	2021	Visiting Researcher	Tufts University
45. Claire King	2020	Virtual Researcher	Georgia Tech
46. Sara Koprek	2020	Virtual Researcher	UMass Amherst
47. Michael Porter	2015	ICE REU	Johns Hopkins University
48. Maureen E. Hoen	2014	ICE REU	Clarkson University
49. Jeffrey Marshall	2013	ICE REU	RIT, National Technical Institute for the Deaf
50. Gita Ramakrishnan	2013	National Student Exchange	Mississippi State University
51. Robert Darling	2012	ICE REU	Rice University

### TOTAL MEMBERSHIP ON GRADUATE DEGREE COMMITTEES (42)

#### EDUCATIONAL ACTIVITIES (While at UMass Amherst)

- **CHEM-ENG 320: Kinetics and Reactor Design**, Falls 2012-2021  
Junior-level undergraduate core Chemical Engineering course
- **CHEM-ENG 589: Nanostructured Biomaterials** (*formerly CHEM-ENG 597D*), Springs 2012-2022  
A new course designed for upper-level undergraduate and graduate students
- **CHEM-ENG 291H: Honors Colloquium** (*formerly CHEM-ENG H226*), Spring 2012-2017  
A new course designed for Sophomore Honors Chemical Engineering students
- **CHEM-ENG 491H: Honors Colloquium** (*formerly CHEM-ENG H401*), Fall 2012-2016  
A new course designed for Senior Honors Chemical Engineering students
- **CHEM-ENG H402: Honors Colloquium**, Spring 2013  
A new course designed for Senior Honors Chemical Engineering students

#### GUEST LECTURES (While at UMass Amherst)

- CHEM 797J ST: Ethical Conduct of Research
- CHEM-ENG 290B: Experimental Design and Methods
- NIH BTP Program: Biomaterials: Slippery or Sticky?
- PSE-797NR, Foundations of Soft Materials for Life Sciences II
- CHEM-ENG 590E, Microfluidics and Microscale Analysis in Materials and Biology
- MICROBIO 391H, The Secret Lifestyle of Microorganisms, Honors Colloquium for Microbiology
- CHEM-ENG 578, Nanomaterials Chemistry and Engineering
- CHEM-ENG/MIE 590L, Materials Science and Engineering Project
- MIE 201, Introduction to Materials Science and Engineering
- FFYS 197CEE1, The Janus Face of Nanotechnology: Promises, Products and Problems
- CHEM-ENG 110, Introduction to Chemical Engineering

### **Select Teaching Conferences/Training**

- Completed Multi-part AAAS Course: Building Gender Equity in the Academy: Institutional Strategies for Change (Spring 2021)
- Completed National Research Mentoring Network (NRMN) Mentor Training (2019)
- Participant in the American Society for Engineering Education (ASEE) Conference, Orono, ME (2012)

### **SELECT SERVICE ACTIVITIES**

#### **Service to the Chemical Engineering Department/College of Engineering at UMass Amherst**

- Department Head of Chemical Engineering (Acting: 9/2021-10/2021; Interim: 10/2021-5/2022)
  - Details available upon request.
- Associate Department Head of Chemical Engineering (2020-2021)
  - Details available upon request.
- Departmental Personal Committee (Chair: 2020-2021, Member: 2015-2016 & 2018-2020)
- Graduate Admissions Committee (Co-chair: 2020-2021 & Member: 2012-2020)
- Strategic Planning Committee for the College of Engineering (Member: 2019-2020)
- Department of Materials Science and Engineering Steering Committee (Member: 2016-2020)
- Faculty Search Committee Member: *10 searches within the College of Engineering*: (1) Chemical Engineering "Best Junior Candidate" (2021-2022); (2) Biomedical Engineering (2019-2020); (3) Chemical Engineering "Armstrong-Siadat Endowed Professor in Materials Science" (2017-2019); (4) Chemical Engineering "Best Junior Candidate" (2017-2018); (5) Chemical Engineering/IALS "Materials/Thin films/Rheology/Wearable devices" (2016-2017); (6) Chemical Engineering/IALS "Biomaterials/Polymers/Bioengineering" (2016-2017); (7) Electrical Engineering/IALS "Bioelectronic Devices and Systems" (2015-2016); (8) Chemical Engineering "Polymers/Biotechnology" (2015-2016); (9) Chemical Engineering "Materials Science" (2013-2014); (10) Mechanical and Industrial Engineering "Materials Engineering" (2012-2013)
- Program Director of the Chemical Engineering Departmental Honors Program (2011-2017)
- Chair of ChE Thesis Defenses at Massachusetts Statewide Undergrad Research Conference (2013-2019)
- Undergraduate Program Committee (Member: 2014-2017)
- Ph.D. Qualifying Exam Committee (Member: 2012-2019)
- New Student Orientation – Undergraduate Advising (2012-present)
- Undergraduate Academic Advising (2011-present)

#### **Service to UMass Amherst**

- UMass Electron Microscopy Advisory Committee (Member: 2021-present)
- IALS M2M Steering Committee (Member: 2016-present)
- Theme Leader of "Biomaterials for Devices and Regenerative Medicine (BDRM)" (2016-present)
- IALS Theme "Microbes in Human Health and Disease" (Member: 2016-2020)
- Faculty Senate's University Relations and Advancement Council (Member: 2015-2018)
- NSF NRT-Soft Materials for Life Sciences (SMLS) Graduate Student Training Grant Program
  - Executive Member of the Leadership Team (2015-2021)
  - Recruitment and Diversity Committee (Member: 2015-2021)
- Founded and Faculty Advisor, Materials Research Society (MRS) Student Chapter (2014-present)
- NIH Chemistry-Biology Interface (CBI) Graduate Student Training Grant Program
  - Chair, CBI Diversity Equity, and Inclusion Committee (2021-present)
  - Executive Committee Member (2015-present)
  - CBI Academic Committee Member (2014-2021)
  - CBI Faculty participant (2012-present)
- Faculty Participant, NIH Biotechnology Training Program (BTP) (2015-present)
- University Goldwater and Udall Scholarship Committee (Nominate & advise applicants, 2014-2018)

#### **Select Service that Supports Diversity, Equity, and Inclusion (After joining UMass Amherst)**

- Chair, Recruitment at Annual Biomedical Research Conference for Minority Students (2020-present)
- Departmental representative on College of Engineering DEI Committee (2020-present)
- Department of Chemical Engineering DEI Committee (Member: 2019-present; Chair 2019-2020)

- NSF ADVANCE Collaboration & Equity Faculty Fellow (2019-2021)
- Engineering Allies for Equity (Member: 2020-present)
- Official mentor for multiple junior engineering faculty (ongoing)
- Summer Engineering Institute for High School Students (SENGI, 2014-2020, Cancelled 2021)
- Invited Panelist, Round table discussion for junior faculty at the AIChE Annual Meeting, Women's Initiatives Committee (WIC) (San Francisco, CA, 2016)
- Invited Keynote/Developed Workshop, NEAGEP Seminar on "Cover Letters" (2015)
- Invited Panelist & Mentor, Graduate Women in STEM (GWIS) Luncheon (UMass, 2015-2018)
- Invited Discussion Leader & Poster Judge, 8<sup>th</sup> NEA Science Days (UPuerto Rico Mayaguez, 2015)
- Invited Panelist, for Society of Women Engineers (SWE) (UMass, 2014)
- Mentor for High School Female Students at Women in Engineering Career Day (UMass, 2013)
- Invited Panelist, Women in Engineering Discussion for Senior Graduate Students (Drexel, 2011)

### Select Major Professional Service

- Director, Executive Council of AIChE MESD Area 8 (2019-2021)
- Symposium Organizer (2018-2020): "Biomaterials and Biointerfaces" for the Division of Colloid and Surface Chemistry at the 2020 Spring National ACS Meeting, Philadelphia, PA, March 22-26, 2020, Moved Virtual

### Programming at National and International Conferences

- American Institute of Chemical Engineers (AIChE) Annual Meetings Chaired/Co-chaired (2012-present): MESD Poster Session & Competition (In Person & Virtual Session, 2021); MESD Poster Session & Competition (2020); Excellence in Graduate Polymer Research (All Invited Talks, 2019-2020); Biomacromolecular Gels (2018); Charged and Ion-Containing Polymers (2017); Polymer Thin Films and Interfaces (2016); Thin Film Block Copolymer Self-Assembly and Morphology (2016) Emerging Areas in Polymer Science & Engineering Plenary (All Invited Talks, 2015); Polymer Properties and Rheology (2014); Nanoscale Structure in Polymers (2013); Charged and Ion-Containing Polymers (2012); Division 8A Polymers - Poster Judge (2012-present)
- Microbes at Biomedical Interfaces Topical Conference: Topical Plenary (All Invited Talks, 2021); Topical Plenary (All Invited Talks, 2020); Session Organizer (2019-2020)
- American Chemical Society National Meeting (ACS): Polyelectrolytes (2017)
- ACS Colloid & Surface Science Symposium: Biological Interfaces (2016)
- International Conference of Young Researchers on Advanced Materials (IUMRS-ICYRAM): Session chair/discussion leader of the Global Materials Network (India, 2016); Session chair/discussion leader of the Global Materials Network (Australia, 2018); Session chair/discussion leader of the Global Materials Network (Singapore, 2012)
- The Fiber Society: Graduate Student Paper Competition (2015-2017); (Bio)active Fibers (2014)
- Advisory Committee, International Conference on Chemical and Bioprocess Engineering 2013 (India)

**Grant Refereeing:** Dr. Schiffman has served as a Proposal Panel Reviewer/Site Reviewer for the National Science Foundation (NSF, 14x), American Chemical Society (ACS, 5x), French National Research Agency, Israel Science Foundation, USDA, Water Research Foundation, New Zealand's Science Investment Round, and National Science Centre, Poland.

**Ad-Hoc Journal Reviewer:** As of January 2022, Dr. Schiffman has reviewed >115 articles for ACS Journals, as well as articles for other publishers (i.e., Elsevier, Wiley). More information can be provided upon request.

**Professional Societies:** Dr. Schiffman has continually been active in the American Institute of Chemical Engineers (AIChE) and the American Chemical Society (ACS). She has also been active in the Materials Research Society (MRS), The Fiber Society (FS), and the American Physical Society (APS).