

# Jeffrey R. McCutcheon, Ph.D.

*Al Geib Professor in Environmental Engineering Research and Education  
Department of Chemical & Biomolecular Engineering  
Center for Environmental Sciences and Engineering  
University of Connecticut*

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Biomolecular Engineering  
University of Connecticut  
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## CURRENT POSITION

Associate Professor August 2008-present  
University of Connecticut Storrs, CT

Department of Chemical and Biomolecular Engineering  
Center for Environmental Sciences and Engineering

- Forward osmosis, pressure retarded osmosis, osmotic concentration
- Water filtration, treatment and desalination
- Polymer electrospinning
- Nanofiber membranes
- Polymeric membrane design and fabrication
- Transport phenomenon in membranes and porous materials
- Characterization of porous media
- Electrode design for microbial fuel cells
- Carbon nanofiber fabrication and modification

### *Faculty Affiliations*

Institute of Materials Science  
Environmental Engineering Graduate Faculty  
Material Science and Engineering Graduate Faculty  
Connecticut Center for Clean Energy Engineering

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## EDUCATION

Doctor of Philosophy, Chemical Engineering September 2002-May 2008  
*Yale University* New Haven, CT

Department of Chemical Engineering, Environmental Engineering Program

*Doctoral advisor: Professor Menachem Elimelech*

Thesis title: Osmotically Driven Membrane Processes: Characterization of Water Transport Phenomena through Asymmetric Polymeric Membranes

Master of Science, Chemical Engineering Sept. 2002-Dec. 2003

Yale University  
Department of Chemical Engineering

New Haven, CT

Bachelor of Chemical Engineering  
University of Dayton – GPA: 3.89/4.00  
Department of Chemical Engineering

August 1998-May 2002  
Dayton, OH

**JOURNAL PUBLICATIONS (H-Index: 23, Citations > 3400, Google Scholar)**

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50. Huang, L., McCutcheon, J.R., “Tailored Multi-zoned Nylon 6,6 Supported Thin Film Composite Membranes for Pressure Retarded Osmosis”, *Desalination*, in press.
49. Bui, N.N., McCutcheon, J.R., “Nanoparticle-Embedded Nanofibers in High Permselectivity Thin-Film Composite Membranes for Forward Osmosis”, *Journal of Membrane Science*, in press.
48. Ren, J., O’Grady, B., McCutcheon, J.R., “Sulfonated polysulfone supported high performance thin film composite membranes for forward osmosis”, *Polymer*, in press.
47. Liu, Bingchuan, Williams, I., Li, Yan., Wang, L., Bagtzoglou, A., McCutcheon, J.R., Li, B. “Towards high power output of scaled-up benthic microbial fuel cells (BMFCs) using multiple electron collectors”, *Biosensors and Bioelectronics* 79, 2016, 435-441.
46. Reimund, K.K., Coscia, B.J., Arena, J.T., Wilson, A.D., McCutcheon, J.R., “Characterization and Membrane Stability Study for the Switchable Polarity Solvent N,N-Dimethylcyclohexylamine as a Draw Solute in Forward Osmosis”, *Journal of Membrane Science* 501, 2016, 93-99.
45. Huang, L., McCutcheon, J.R. “Surface Modified PVDF Nanofiber Supported Thin Film Composite Membrane”, *Journal of Membrane Science* 499, 2016, 352-60.
44. Dincer, K., Waisi, B., Ozdemir, M.O., Pasaogullari, U., McCutcheon, J.R., “Experimental Investigation of Proton Exchange Membrane Fuel Cells Operated with Nanofiber and Nanofiber/Nanoparticle”, *International Journal of Chemical, Molecular, Nuclear, Materials, and Metallurgical Engineering*, 9, 2015, 1376-1380.
43. Arena, J.T., Manickam, S.S., Reimund, K.K., Brodskiy, P., McCutcheon, J.R., “Characterization and Performance Relationships for a Commercial Thin Film Composite Membrane in Forward Osmosis Desalination and Pressure Retarded Osmosis”, *Industrial & Engineering Chemistry Research* 54, 2015, 11393-11403.
42. Xu, Z., Liu, B., Dong, Q., Lei, Y., Li, Y., Ren, J., McCutcheon, J.R., Li, B., “Flat microliter membrane-based microbial fuel cell as “on-line sticker sensor” for self-supported in situ monitoring of wastewater shocks”, *Bioresource Technology* 197, 2015, 244-251.
41. Arena, J.T., Chwatko, M., Robillard, H., McCutcheon, J.R. “pH Sensitivity of Ion Exchange through a Thin Film Composite Membrane in Forward Osmosis”, *Environmental Science & Technology Letters* 2, 2015, 177-182.
40. Bui, N.N., McCutcheon, J.R., “Proper Accounting of Mass Transfer Resistances in Forward Osmosis: Improving the Accuracy of Model Predictions of Structural Parameter”. *Journal of Membrane Science* 492, 2015, 289-302.
39. Ren, J., McCutcheon, J.R., “Polyacrylonitrile Supported Thin Film Composite Hollow Fiber Membranes for Forward Osmosis”, *Desalination* 372, 2015, 67-74.
38. Anastasio, D.D., Chwatko, M., McCutcheon, J.R., “A First-Year Project-Based Design Course with Management Simulation and Game-Based Learning Elements”, proceedings

- paper from the 122<sup>nd</sup> ASEE Annual Conference & Exposition (peer reviewed). Paper ID #12397.
37. Reimund, K., McCutcheon, J.R., Wilson, A., “Thermodynamic analysis of energy density in pressure retarded osmosis: The impact of solution volumes and costs”, *Journal of Membrane Science*, 487, 2015, 240-248.
  36. Huang, L., McCutcheon, J.R., “Impact of Support Layer Pore Size on Performance of Thin Film Composite Membranes for Forward Osmosis”, *Journal of Membrane Science* 483, 2015, 25-33.35.
  35. Manickam, SS., McCutcheon, J.R., “Model Thin Film Composite Membranes for Forward Osmosis: Demonstrating the Inaccuracy of Existing Structural Parameter Models Journal of Membrane Science”, *Journal of Membrane Science* 483, 2015, 70-74.
  34. Anastasio, D.D., Arena, J.T., Cole, E., McCutcheon, J.R., “Impact of Temperature on Power Density in Closed-Loop Pressure Retarded Osmosis for Grid Storage”, *Journal of Membrane Science*, 479, 2015, 240-245.
  33. Kanjilal, B., Noshadi, I., McCutcheon, J.R., Asandei, A.D., Parnas, R.S., “Allylcyclohexylamine functionalized siloxane polymer and its phase separated blend as pervaporation membranes for 1,3-propanediol enrichment from binary aqueous mixtures”, *Journal of Membrane Science* 486, 2015, 59-70.
  32. Huang, L. Arena, J.T., Manickam, SS., Jiang, X., Willis, B.G., McCutcheon, J.R. “Improved Mechanical Properties and Hydrophilicity of Electrospun Nanofiber Membranes for Filtration Applications by Dopamine Modification”, *Journal of Membrane Science* 460, 2014, 241-249. 59-70.
  31. Huang, L., McCutcheon, J.R., “Nylon 6,6 Nanofiber Supported Membranes for Engineered Osmosis”, *Journal of Membrane Science* 457, 2014, 162-169.
  30. Bui, N., McCutcheon, J.R. “Nanofiber Supported Thin-Film Composite Membranes for Pressure Retarded Osmosis”, *Environmental Science and Technology* 48, 2014, 4129-4136.
  29. Manickam, SS, McCutcheon, J.R., “Pore Structure Characterization of Asymmetric Membranes: Non-destructive Characterization of Porosity and Tortuosity”, *Journal of Membrane Science* 454, 2014, 549-554.
  28. Arena, J.T., Manickam, SS, Reimund, K., Freeman, B., McCutcheon, J.R., “Polydopamine modified thin film composite membranes for forward osmosis: Evaluation of water flux and desalination potential”, *Desalination*, 343, 2014, 8-16.
  27. Ren, J., McCutcheon, J.R. “New Commercial Thin Film Composite Forward Osmosis Membrane”, *Desalination* 343, 2014, 187-193.
  26. Huang, L., Bui, N., Meyering, M.T., Hamlin, T.J., McCutcheon, J.R., “Novel Hydrophilic Nylon 6,6 Microfiltration Membrane Supported Thin Film Composite Membranes for Engineered Osmosis”, *Journal of Membrane Science* 437, 2013, 141-149.
  25. Huang, L., Manickam, SS, McCutcheon, J.R., “Increasing Strength of Electrospun Nanofiber Membranes for Water Filtration using Solvent Vapor”, *Journal of Membrane Science* 436, 2013, 213-220.
  24. Bui, N.N., McCutcheon, J.R., “Hydrophilic Nanofibers as New Supports for Thin Film Composite Membranes for Engineered Osmosis”, *Environmental Science and Technology* 47, 2013, 1761-1769.
  23. McCutcheon, J.R., Wang, R., “Osmotic Processes for a sustainable 21<sup>st</sup> century – Guest editorial”, *Desalination* 312, 2013, 1.

22. Butler, E., Silva, A., Horton, K., Rom, Z., Chwatko, M., Havasov, A., McCutcheon, J.R. "Point of Use Water Treatment with Forward Osmosis for Emergency Relief", *Desalination* 312, 2013, 23-30.
21. Manickam, S.S., Udayarka, K., Huang, L., Bui, N.N., Li, B., McCutcheon, J.R., "Activated Carbon Nanofiber Anodes for Microbial Fuel Cells", *Carbon* 53, 2013, 19-28.
20. Anastasio, D., McCutcheon, J.R., "Using Forward Osmosis to Teach Mass Transfer Fundamentals to Undergraduate Chemical Engineering Students", *Desalination* 312, 2013, 10-18.
19. Cath, T.Y., Elimelech, M., McCutcheon, J.R., McGinnis, R.L., Achilli, A., Anastasio, D., Brady, A.R., Childress, A.E., Farr, I.V., Hancock, N.T., Lampi, J., Nghiem, L.D., Xie, M., Yip, N.Y. "Standard Methodology for Evaluation Membrane Performance in Osmotically Driven Membrane Processes", *Desalination* 312, 2013, 31-38.
18. Udayarka, K., Manickam S.S., McCutcheon J.R., Li, B. "Power Generation and Wastewater Treatment using Activated Carbon Nanofiber Anode Microbial Fuel Cells (MFCs)", *International Journal of Hydrogen Energy* 38, 2013, 1588-1597.
17. Manickam, S.S., McCutcheon, J.R., "Characterization of polymeric nonwovens using porosimetry, porometry and x-ray computed tomography", *Journal of Membrane Science*, 407-408, 2012, 108-115.
16. Anastasio, D., McCutcheon, J.R. "Teaching mass transfer and filtration using crossflow reverse osmosis and nanofiltration: An experiment for the undergraduate unit operations laboratory", *Chemical Engineering Education*, Winter 2012.
15. Huang, L., Bui, N.N., Manickam, S., McCutcheon, J.R., "Controlling nanofiber morphology and mechanical properties using humidity", *Journal of Polymer Science Part B: Polymer Physics* 49, 2011, 1734-1744.
14. Bui, N. Lind, M.L., Hoek, E.M.V., McCutcheon, J.R., "Electrospun supported thin film composite membranes for engineered osmosis", *Journal of Membrane Science* 385-386, 2011, 10-19.
13. Arena, J., McCutcheon, J.R., "Surface modification of anisotropic thin film composite membrane support layers with polydopamine to facilitate water transport in pressure retarded osmosis", *Journal of Membrane Science* 375, 2011, 55-62.
12. Garcia-Castello, E.M.; McCutcheon, J.R. "Dewatering press liquor derived from orange production by forward osmosis", *Journal of Membrane Science* 372, 2011, 97-101.
11. Tang, Z., Qiu, C., McCutcheon, J.R., Kyunghwan, Y., Ma, H., Fang, D., Lee, E., Kopp, C., Hsiao, B., Chu, B. "Design and fabrication of electrospun polyethersulfone nanofibrous scaffold for high-flux nanofiltration membranes", *Journal of Polymer Science Part B: Polymer Physics* 22, 2009, 2288-2300.
10. Garcia-Castello, E.M., McCutcheon, J.R., and Elimelech, M. "Performance Evaluation of Sucrose Concentration Using Forward Osmosis", *Journal of Membrane Science* 338, 2009, 61-66.
9. McCutcheon, J.R., Elimelech, M. "Influence of membrane support layer hydrophobicity on water flux in osmotically driven membrane processes", *Journal of Membrane Science* 318, 2008, 458-466.
8. McGinnis, R.L., McCutcheon, J.R., Elimelech, M. "A novel ammonia-carbon dioxide osmotic heat engine for power generation", *Journal of Membrane Science* 305, 2007, 13-19.

7. McCutcheon, J.R., Elimelech, M. "Modeling water flux in forward osmosis: Implications for improved membrane design", *AIChE Journal* 53, 2007, 1736-1744.
6. McCutcheon, J.R., McGinnis, R.L., Elimelech, M. "The ammonia-carbon dioxide forward osmosis desalination process", *Water Conditioning & Purification*, 2006.
5. McCutcheon, J.R., Elimelech, M. "Influence of concentrative and dilutive internal concentration polarization on flux behavior in forward osmosis", *Journal of Membrane Science* 284, 2006, 237-247.
4. McCutcheon, J.R., Elimelech, M. "Desalination by ammonia-carbon dioxide forward osmosis: Influence of draw and feed solution concentrations on process performance", *Journal of Membrane Science* 278, 2006, 114-123.
3. Gray, G., McCutcheon, J.R., Elimelech, M. "Internal concentration polarization in forward osmosis: role of membrane orientation", *Desalination* 197, 2006, 1-8.
2. McCutcheon, J.R., McGinnis, R.L., Elimelech, M. "A novel ammonia-carbon dioxide forward (direct) osmosis desalination process", *Desalination* 174, 2005, 1-11.
1. Nghiem, L.D., McCutcheon, J.R., Schäfer A.I., Elimelech, M. "The role of endocrine disruptors in water recycling: risk or mania?" *Water Science and Technology* 50, 2004, 215-220.

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## PATENTS AND DISCLOSURES

- McGinnis, R.L., McCutcheon, J.R., Elimelech, M. "Osmotic Heat Engine – Ammonia-Carbon Dioxide PRO", Feb. 4, 2010, US 2010/0024423 A1.
- McCutcheon, J.R., Bui, N., Lind, M.L., Hoek, E., "Nano-Structured Membranes for Engineered Osmosis", November 11, 2009, US20130105395 A1.
- McCutcheon, J.R., Hamlin, T.J., Meyering, M.T., Huang, L., "Thin film composite membrane structures", April 9, 2012, WO2013154755 A1

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## BOOK CHAPTERS

- McCutcheon, J.R., Bui, N., Chapter 7, Forward Osmosis, *Desalination: Water from Water*, Ed. Jane Kucera. 2014.
- McCutcheon, J.R., Huang, L., Forward Osmosis, *Encyclopedia of Membrane Technology*. 2014.

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## CONFERENCE PROCEEDINGS

- Deneff, J.I., McCutcheon, J.R., Shor, L.M., "Method for direct observation of biofilm formation during operation on forward osmosis membranes", 40<sup>th</sup> Annual Northeast Bioengineering Conference, 2014, Institute of Electrical and Electronics Engineers.
- Arellano-Jimenez, M.J., Suresh, A., McCutcheon, J.R., Kotula, P., Carter, C.B., "Effect of Atmosphere on Heat-Treated Electro-Spun TiO<sub>2</sub> Fibers", *Microscopy and Microanalysis* 20, 2014, 1974-1975.
- Manickam, SS, Gelb, J., McCutcheon, J.R., "Characterization of thin film composite membranes using porosimetry and X-ray microscopy", *Microscopy and Microanalysis* 19, 2013, 634-635.
- Suresh, A., Arellano-Jimenez, M.J., McCutcheon, J.R., Carter, C.B., "Polycrystalline TiO<sub>2</sub> Produced by Electrospinning", *Microscopy and Microanalysis* 18, 2012, 1392-1393.

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**MANUSCRIPTS UNDER REVIEW OR IN REVISION AS OF 6/28/2016**

- Manickam, S., McCutcheon, J.R., Ramon, G., “Modelling pore transport in forward osmosis membrane support layers”, *Journal of Membrane Science*, in revision.
- Ambrosi, A., Al-Faraiji, M., McCutcheon, J.R., Cardozo, N.S.M, Tessaro, I.C., “Transport of components in the separation of ethanol/water dilute solutions by forward osmosis”, *AIChE Journal*, in revision.
- Al-Furaiji, M., Benes, N., Nijmeijer, McCutcheon, J.R.” Application of direct contact membrane distillation for treating high salinity solutions: Impact of membrane structure and solution chemistry”, *Separation and Purification Technology*, under review.
- Gong, H., Anastasio, D.D., Wang, K., McCutcheon, J.R., “Finding Better Draw Solute for Osmotic Heat Engines: A Systematic Investigation of Inorganic Draw Solution Options”, *Journal of Membrane Science*, under review.
- Anastasio, D.D., Arena, J.T., Shor, L., McCutcheon, J., Suresh, A., Burkey, D., 3D Printed Microfluidic Reactors for the Undergraduate Laboratory” *Chemical Engineering Education*, under review.
- Chowdhury, M., Ren, J., Reimund, K., McCutcheon, J.R., A hybrid dead-end cross-flow forward osmosis system for evaluating osmotic flux performance at high recovery of produced water”, *Desalination*, under review.

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**APPOINTMENTS**

CBE Department, UConn, Associate Professor	August 2014-present
Al Geib Professor in Env. Eng. Research and Education	January 2016 - present
Center for Environmental Sciences and Engineering, UConn	August 2008 - present
Environmental Engineering Program, UConn, Graduate Faculty	November 2008 - present
Materials Science & Engineering Department, Graduate Faculty	January 2012 - present
Institute of Materials Science, UConn, Faculty Affiliate	December 2008 - present
Center for Clean Energy Engineering, UConn, Faculty Affiliate	February 2009 – present
FosmoMed, Inc., Scientific Advisory Board	May 2014 – present
Aquafortus, Scientific Advisory Board	November 2014 - present
Nagare Membranes, Scientific Advisory Board	July 2016 - present
REU Site, Chemical & Biomolecular Engineering, Director	March 2011- November 2015
CBE Department, UConn, Assistant Professor	August 2008 – August 2014
Stony Brook Purification, Technical Group Leader	September 2007 - July 2008
Stony Brook University, Research Assistant Professor	September 2007 – July 2008
Yale University, Graduate Research Assistant	August 2002 – May 2007

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**EXTRAMURAL FUNDING (\$2,908,565 total since 2008)**

- Timothy Vadas, **Jeffrey McCutcheon**, Allison MacKay, Christian Brueckner, Tuning Activated Carbon Nanofiber Nonwoven Membranes for Selective Sorption of Micropollutants, National Science Foundation, **\$368,780** (\$209,225 direct), 9/1/2014 – 8/31/2017.
- Jeffrey McCutcheon**, Switchable Polarity Solvents for Forward Osmosis, Idaho National Laboratories, **\$210,000**, 6/1/2014-5/31/2017.

**Jeffrey McCutcheon**, Robert McGinnis, Forward Osmosis Wastewater Reuse System, CDM-Smith, **\$5,400** (\$5,400 direct). 3/2014-12/2014.

**Jeffrey McCutcheon**, Forward Osmosis Wastewater Reuse System, Hydration Technology Innovations, **\$15,000** (\$15,000 direct), 2/2014 – 6/2015.

**Jeffrey McCutcheon**, Ammonia-Carbon Dioxide Forward Osmosis for Produced Water Treatment, **\$25,000** (\$25,000 direct), 3/1014 – 2/2014.

**Jeffrey McCutcheon**, DuPont Young Faculty Award, **\$75,000** (\$75,000 direct), 07/01/2013 – 06/30/2016.

**Jeffrey McCutcheon – PI** (UConn), New Thin Film Composite Nanofiltration Membranes using Nylon Membrane Supports, **\$45,000** (\$45,000 direct), 3M, 06/15/2013-06/14/2015.

**Jeffrey McCutcheon – PI** (UConn), Evaluation of Osmotic Dehumidification Technology, NanoCap Technologies, **\$19,884** (\$12,539 direct), 06/01/2013 – 10/01/2013.

**Jeffrey McCutcheon – PI** (UConn), Draw Solution Performance Evaluation, Trevi Systems, **\$8,439** (\$5,400 direct). 05/22/2013 – 10/01/2013.

Timothy Vadas – PI (UConn), **Jeffrey McCutcheon – co-PI** (UConn), Allison Mackay-co-PI (UConn), “Functionalized activated carbon nanofiber for calcium and dimethylsiloxane removal in recycled water systems”, Connecticut Space Grant, **\$20,000**, 1/2013 – 12/2013.

Jason T. Arena – PI (UCONN), **Jeffrey McCutcheon – co-PI** (UConn), “NWRI-AMTA Graduate Fellowship”, **\$20,000** (\$20,000 direct). 1/2013-12/2014.

**Jeffrey McCutcheon – PI** (UConn), “Osmotic Membrane Testing and Characterization”, Hydration Technology Innovations, **\$122,000** (\$82,326 direct), 1/2013-12/2014.

**Jeffrey McCutcheon – PI** (UConn), “Collaborative Research: Modified Reverse Osmosis Membranes for Forward and Pressure Retarded Osmosis”, National Science Foundation, **\$234,405**, (\$156,204 direct), 8/2012-8/2015.

**Jeffrey McCutcheon – PI** (UConn), Polymeric Membranes for Emerging Separations Processes, Solvay Specialty Polymers, **\$102,679** (\$68,851 direct), 6/2012-3/2013

**Jeffrey McCutcheon – PI** (UConn), “Evaluation of Viability of Osmotic Dehumidification”, Nanocap Technologies **\$20,000** (\$16,888 direct).

**Jeffrey McCutcheon – PI** (UConn), “Forward osmosis for produced water treatment”, Chevron Corporation, **\$45,000** (\$29,837 direct), 6/2012 – 2/2013.

**Jeffrey McCutcheon – PI** (UConn), Richard Dino – co-PI (UCONN), “Research Experience for Undergraduates Site: iREU: Promoting Innovation and Entrepreneurship through Industrial-Academic Partnership”, National Science Foundation, **\$338,819** (\$301,319 direct), 3/2012-3/3015.

**Jeffrey McCutcheon – PI** (UConn), Solvay Specialty Polymers Young Faculty Award, **\$25,000** (\$25,000 direct). 2011.

**Jeffrey McCutcheon**, 3M Nontenured Faculty Award, **\$45,000** (\$45,000 direct), 2011-2014

**Jeffrey McCutcheon – PI** (UConn), “Intern in Residence for Ethan Butler”, Fuss & O’Neill, **\$10,833** (\$7,113 direct), 5/9/2011-7/1/2011.

**Jeffrey McCutcheon – PI** (UConn), Robert McGinnis, co-PI (Oasys Water). "GOALI: Novel Thin Film Composite Membranes for Desalination by Forward Osmosis". National Science Foundation, CBET, Chemical and Biological Separations Program, **\$300,000** (\$203,073 direct). 6/2011-6/2014.

**Jeffrey McCutcheon – PI** (UConn), “Enabling potable reuse of wastewater using forward osmosis: A sustainable and affordable alternative to reverse osmosis”, Environmental

Protection Agency – STAR Program, Advancing Public Health Protection through Water Infrastructure Sustainability, **\$300,000** (\$205,374 direct), 6/2011-6/2015

**Jeffrey McCutcheon – PI** (UConn), “Waste Heat Recovery using the Osmotic Heat Engine”, Oasys Water, **\$106,000** (\$73,551 direct), 10/15/2010-10/14/2012.

Prabhakar Singh – PI (UConn), **Jeffrey McCutcheon – co-PI (UConn)**, Puxian Gao – co-PI (UConn), Georgios Bolas – co-PI (UConn), Bryan Huey – co-PI (UConn), Radenka Maric– co-PI (UConn), Ashish Mhadeshwar– co-PI (UConn), Steve Suib – co-PI (UConn), Wilson Chiu – co-PI (UConn), and Raji Kasi – co-PI (UConn), Department of Energy, Improving Reliability and Durability of Efficient and Clean Energy Systems – Department of Energy, **\$2,500,000. (\$100,000 co-PI share, \$69,629 direct)**, 8/10-7/12

**Jeffrey McCutcheon - PI** (UConn), Baikun Li - co-PI (UConn), “Novel Activated Carbon Nanofiber Biofilm Support for Enhanced Wastewater Treatment”, National Science Foundation, CBET – Environmental Engineering, **\$293,876** (\$193,583 direct), 9/4/2009-9/3/2012.

**Jeffrey McCutcheon – PI** (UConn), Prabhakar Singh – co-PI (UConn), David King – co-PI (Pacific Northwest National Laboratory), “Forward Osmosis (FO) Process: Benchmarking and Testing with Saline and Synthetic Coal Bed Methane Water (CBMW)”, DOE/Pacific Northwest National Laboratory/Battelle Memorial Institute **\$52,450** (\$17,943 direct), 4/1/09-10/31/09.

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## INTERNAL FUNDING

Jeffrey McCutcheon – Al Geib Chair Funds, **\$5000.**

McAvoy, Richard – PI (UConn), **Jeffrey McCutcheon – co-PI (UConn)**, Xiusheng, Yang – co-PI (UConn), “Smart Resource Grids”, **\$450,000.**

Dan Burkey- PI (UConn), **Jeffrey McCutcheon – co-PI (UConn).** “Development of a Pilot-Scale Osmotic Heat Engine for Education, Research and Industrial Collaboration”, **\$19,310.00.**

**Jeffrey McCutcheon – PI** (UConn), “Electrospun Nanofiber Thin Film Composite Membranes for Engineered Osmosis”, University of Connecticut Large Faculty Grant, **\$23,992.61**

**Jeffrey McCutcheon – PI** (UConn), Baikun Li co-PI (UConn), “Collaborative Research to Develop Microbial Fuel Cell Electrodes”, **\$5,000.**

**Jeffrey McCutcheon – PI** (UConn), Prabhakar Singh – co-PI (UConn), “Produced Water Treatment using Forward Osmosis”, **\$10,351.**

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## HONORS & AWARDS

Al Geib Professorship in Environmental Engineering Research and Education, 2016

FRI/John G. Kunesh Award, 2014

DuPont Young Professor, 2013

EPA Early Career Award, 2011

Solvay Specialty Polymer Young Faculty Award, 2011

3M Nontenured Faculty Award, 2011

Named the Northeast Utilities Assistant Professor in Environmental Engineering Education University of Connecticut, 2008

North American Membrane Society Travel Grant, 2008



ECI, Water Treatment and Reuse II, Poster award: honorable mention, 2007  
American Chemical Society, Graduate Student Award in Environmental Chemistry, 2007  
North American Membrane Society – Student Poster Award, 2005  
North American Membrane Society Travel Award, 2004  
National Science Foundation Graduate Fellowship Honorable Mention, 2003, 2004  
Yale University Graduate Fellowship, 2002-2007  
Tau Beta Pi Graduate Fellow, 2002  
Omicron Delta Kappa National Leadership Honor Society, 2002  
Golden Key National Honor Society, 2001  
Eagle Scout Award, 1998

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### **INVITED LECTURES, PANELS, AND SEMINARS**

68. “Nanofiber Materials For Water Treatment and Reuse”, University of Puerto Rico, May 4, 2016.
67. “New Membrane Designs for Forward Osmosis”, Georgia Institute of Technology School of Chemical Engineering Seminar Series, April 13, 2016.
66. “Water Challenges for the 21<sup>st</sup> Century”, Lecture given for the 2016 ACS Chemistry Olympiad at the University of Connecticut, March 17, 2016, Storrs, CT.
65. “Nanofiber Membranes for Water Treatment and Reuse”, Seminar Given at the University of Missouri Department of Chemical Engineering, March 15, 2016, Columbia Missouri.
64. “Forward Osmosis Fundamentals”, Course Lecture given in International Engineering Course on Water Technology, December 12, 2015, Tsinghua University School of Environment, Beijing China
63. “The Promise of Forward Osmosis: How New Membrane Designs are Enabling an Emergent Membrane Technology”, December 11, 2015, Tsinghua University, Beijing, China
62. “Ion Exchange in Forward Osmosis” International Forward Osmosis Association, September 24-25, 2015, Vancouver, Canada.
61. “Engineer your Sprints” Panel, Innovation Connection, UConn School of Engineering and Waypoint Spirits, Bloomfield Connecticut, July 16, 2015.
60. “Climate Change: Adaptation or Intervention” Panel, UConn School of Engineering and School of Business, UConn Avery Point Campus, New London, CT, June 18, 2015.
59. “Planting the Seeds of Success” Panel, Innovation Connection, UConn School of Engineering and College of Agriculture, Health, and Natural Resources, Oak Meadow Farm, East Windsor, CT, May 21, 2015.
58. Wastewater Reuse Panel, Connecticut Association of Water Pollution Control Authorities, May 8, 2015.
57. “Nanofiber Materials for Water Treatment” ACS Polymer Membrane Mediated Water Filtration Workshop, Pacific Grove, CA, February 15, 2015
56. “The Promise of Forward Osmosis”, Purdue University, Department of Chemical Engineering, January 13, 2015.
55. “Forward Osmosis: Academic Fad, Industrial Opportunity, or Both?” Dow Chemical, Tarragona, Spain, December 12, 2014.
54. “Polymeric Membranes for Forward Osmosis”, Macromex 2014, Puerta Vallarta, Mexico, December 7, 2014.

53. "Nanofiber Thin Film Composite Membranes for Engineered Osmosis", Kunesh Award Lecture in the Gerhold and Kunesh Plenary Session at the AIChE 2014 Annual Meeting, November 16-21, 2014.
52. "New Membranes for Forward Osmosis", University of Massachusetts Amherst, Department of Civil and Environmental Engineering, October 24, 2014
51. "Commercially Relevant Membranes for Forward Osmosis", International Forward Osmosis Association, 1<sup>st</sup> Annual Meeting, Lisbon, Portugal., September 19, 2014
50. "Engineered Osmosis for Sustainable Water and Power", University of New Haven, April 2, 2014.
49. "Laboratory methods for forward osmosis measurement", Sterlitech, Seattle, WA., March 21, 2014.
48. "New Membranes for Engineered Osmosis", University of California Riverside, Riverside, CA, March 20, 2014
47. "New Membranes for Engineered Osmosis", Arizona State University Chemical Engineering Program. Tempe, AR, March 19, 2014.
46. "Nanofiber Thin Film Composite Membranes for Forward Osmosis", DuPont, Wilmington, DE, February 28, 2014.
45. "Nanofibers for Water Treatment" Marmon Water Group, West Haven, CT, February 21, 2014.
44. "Nanofiber Supported TFC Membranes for Forward and Pressure Retarded Osmosis", Honorary Session for Benny Freeman, American Institute of Chemical Engineers Gerhold Award Session, AIChE Annual Meeting, November 3-8, 2013.
43. "New Membranes for Forward and Pressure Retarded Osmosis", National University of Singapore, September 30, 2013.
42. "Engineered Osmosis for Sustainable Water and Power", Drexel University, Department of Chemical Engineering Seminar Series, September 27, 2013.
41. "Engineered Osmosis for Sustainable Water and Power", Pennsylvania State University, Department of Chemical Engineering Seminar Series, September 26, 2013.
40. "Engineered Osmosis for Sustainable Water and Power", Colorado School of Mines, Department of Chemical Engineering Seminar Series, September 20, 2013.
39. "Electrospun Materials for Water and Power", Keynote lecture in "Materials-Based Technologies for Water and Energy Sustainability: Research Frontiers and Practical Challenges to Adoption" session at the American Chemical Society Annual Meeting, Indianapolis, IN, September 11, 2013.
38. "Nanofiber Technology at the University of Connecticut", Hollingsworth & Vose, Groton, MA, June 18, 2013.
37. "Engineering Osmosis for Water, Separations and Power Generation", Dow Water Solutions, Minneapolis, MN, June 14, 2013.
36. "Nylon 6,6 Supported Membranes for Forward Osmosis", 3M Science and Engineering Faculty Day., Minneapolis, MN, June 12, 2013.
35. "Next Generation Membranes for Forward and Pressure Retarded Osmosis", IBM Almaden Research Center, San Jose, CA, March 1, 2013.
34. "Forward and Pressure Retarded Osmosis Membrane Platforms at UConn", Porifera, San Francisco, CA., February 28, 2013.

33. "New Polymeric Membranes for Forward Osmosis", American Chemical Society Advances in Materials and Processes for Polymeric Membrane Mediated Water Purification. Pacific Grove, CA, February 24, 2013.
32. "Engineered Osmosis for Sustainable Water and Power", University of Arkansas, Chemical Engineering Seminar Series, February 14, 2013.
31. "Engineered Osmosis for Sustainable Water and Power", Yale University, Chemical and Environmental Engineering Seminar Series, February 6, 2013.
30. "New Membrane Platforms for Pressure Retarded Osmosis", Statkraft, Oslo, Norway, December 12, 2012.
29. "Engineered Osmosis for Sustainable Water and Power", University of Kansas Department of Chemical and Petroleum Engineering Seminar Series, December 4, 2012.
28. "Next Generation Membranes for Engineered Osmosis", Gordon Research Conference: Membranes and Membrane Processes, July 29-August 3, 2012.
27. "Next Generation Membranes for Forward and Pressure Retarded Osmosis", International Union of Pure and Applied Chemistry. Blacksburg, VA, July 24-27, 2012.
26. "New Membrane Technologies for Forward Osmosis", W.R. Gore, Wilmington, DE, May 17, 2012.
25. "Next Generation Membranes for Forward and Pressure Retarded Osmosis", 3<sup>rd</sup> Annual Water Industry Exhibition & Conference, May 2-4, 2012.
24. "Engineered Osmosis: A Rapidly Emerging Separations Platform", American Institute of Chemical Engineering Spring Meeting, Young Professional Tutorial Session, April 2, 2012.
23. "New Membrane Designs for Engineered Osmosis", University of Rhode Island, Chemical Engineering Department, February 2, 2012.
22. "Engineering Osmosis at the Water-Energy Nexus", Engineering Conference International, Water Treatment and Reuse III and the Water-Energy Nexus, Cancun, Mexico, January 10, 2011.
21. "New Membrane Designs for Engineered Osmosis", Clemson University, December 8, 2011.
20. "New Membranes for Forward and Pressure Retarded Osmosis", 3M<sup>®</sup> Tech Forum, Minneapolis MN, October 21, 2011
19. "Forward Osmosis and Pressure Retarded Osmosis: Fundamentals and Applications", American Institute of Chemical Engineers Annual Meeting, Invited talk in the Membrane Tutorial Technical Sessions (sponsored by section 2d), Minneapolis, MN, October 16-21 2011.
18. "Electrospun Materials for Sustainable Water Treatment", EMD Millipore, Bedford, MA, August 17, 2011.
17. "Engineering Osmosis for Sustainable Water and Power", King Abdulla University of Science and Technology, Jeddah, Saudi Arabia, July 30, 2011.
16. "Forward Osmosis: An Emerging Desalination Alternative" King Abdulaziz University, Jeddah, Saudi Arabia. July 31, 2011.
15. "Enabling Engineered Osmosis with New Membrane Designs", Fudan University, Shanghai, China, July 18, 2011.
14. "Engineering Osmosis for Sustainable Water and Power", Battelle Memorial Institute, June 29, 2011.
13. "Electrospun Materials for Water Treatment", 3M<sup>®</sup>, Minneapolis, MN. June 9, 2011.

12. “Enabling Forward and Pressure Retarded Osmosis with New Membrane Designs”, Solvay Advanced Polymers, May 11, 2011.
11. “Engineered Osmosis: Technological Solutions at the Water-Energy Nexus”, Idaho National Laboratories, Idaho Falls, ID, March 8, 2011.
10. “Engineered Osmosis: Technological Solutions at the Water-Energy Nexus”, Chevron Corporation®, Richmond, CA, March 3, 2011.
9. “The Promise of Forward Osmosis: The State of the Art and the Search for a Better Membrane”, ACS Advances in Materials and Processes for Polymeric Membrane Mediated Water Purification, Pacific Grove, CA, March 1, 2011.
8. “Engineering Solutions for the Sustainable Production of Water and Power”, 3M Purification®, Meriden, CT, January 25, 2010.
7. “Engineering Osmosis for Sustainable Water (and Power): An Emerging Desalination Alternative”, General Electric Global Research. Niskayuna, NY, October 11, 2010.
6. “Measuring Membranes for Emerging Membrane Processes: The Importance of Determining Support Layer Structural Properties”, National Institutes of Standards and Technology Workshop entitled “Measuring up to Sustainable Water”. Arlington, VA. September 8, 2010.
5. “Desalination Using Forward Osmosis: A High Recovery, Low Energy, Low Cost, and Sustainable Desalination Alternative”, Barcelona Technology Seminar Sessions on Energy, Water, and Mobility, Barcelona, Spain, July 2009.
4. “The development of new membrane technology for forward osmosis and pressure retarded osmosis”, The Osmosis Membrane Summit, Amsterdam, The Netherlands, October 2008.
3. “Engineering osmosis for sustainable water and power production: Current successes and the search for a better membrane”, University of Connecticut Environmental Engineering Seminar Series, Storrs, CT, September 2008.
2. “Engineering osmosis for sustainable water and power production: Current successes and the search for a better membrane” University of Connecticut Department of Chemical Engineering, Storrs, CT, April 2008.
1. “Engineering osmosis for sustainable water and power production: Current successes and the search for a better membrane”, University of Pittsburgh Department of Civil Engineering, Pittsburgh, PA, March 2008.

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## **WEBINARS AND WEB FORUMS**

- “Forward Osmosis for Wastewater Reuse”, Stanley Black & Decker, March 24, 2014.
- “Emerging Membrane Technologies for Water Treatment”, Emerging Technologies in Water Treatment: An American Institute of Chemical Engineering Web Forum. Presented on June 14, 2011.
- Presented “An Introduction to Forward Osmosis”, Forward Osmosis – Current Status, Prospects, and Opportunities, Infocast, April 7, 2011.

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## **SELECTED CONFERENCE PRESENTATIONS**

- McGinnis, R., Reimund, K., Stevens, K.A., Moon, J., Freeman, B.D., Ren, J., Xia, L., McCutcheon, J.R., “CNT Membranes with Sub-Nm Pores Showing Salt Rejection and Sharp Size Selectivity at High Ionic Strengths”, Oral presentation at North American Membrane Society Annual Meeting, May 21-25, 2016, Bellevue, WA.

- McCutcheon, J.R., Bui, N.N., Huang, L., Al-Furaiji, M., Waisi, B.I., Chowdhury, M.R., “Electrospun Nanofiber Membranes for Water Treatment and Reuse”, Oral presentation at North American Membrane Society Annual Meeting, May 21-25, 2016, Bellevue, WA.
- Xia, L., McCutcheon, J.R., “Conditioning Membranes for Improved PRO Performance”, Poster presentation at North American Membrane Society Annual Meeting, May 21-25, 2016, Bellevue, WA.
- Ren, J., McCutcheon, J.R., “Optimizing Hollow Fiber Membranes and Modules for Osmotic Processes: From Models to Membranes to Modules”, Poster presentation at North American Membrane Society Annual Meeting, May 21-25, 2016, Bellevue, WA.
- Xia, L. Arena, J.T., Ren, J., McCutcheon, J.R., “Application of Trimethylamine–Carbon Dioxide in Osmotic Heat Engine for Power Generation”, Oral presentation at North American Membrane Society Annual Meeting, May 21-25, 2016, Bellevue, WA.
- Chowdhury, M.R., Huang, L., McCutcheon, J.R., “Commercial Nanofiber Nonwoven As a Support for Thin Film Composite Membrane for Forward Osmosis”, Poster presentation at North American Membrane Society Annual Meeting, May 21-25, 2016, Bellevue, WA.
- Ren, J., McCutcheon, J.R., “Optimizing Hollow Fiber Membranes and Modules for Osmotic Processes: From Models to Membranes to Modules”, Oral presentation at North American Membrane Society Annual Meeting, May 21-25, 2016, Bellevue, WA. Presentation as part of the NAMS Awards Session.
- Al-Furaiji, M., Benes, N.E., Nijmeijer, A., McCutcheon, J.R., “Use of Forward Osmosis-Membrane Distillation Process in Treatment of Hyper-Saline Produced Water” Poster presentation at *AIChE* Annual Meeting, November 8-13, 2015, San Francisco, CA.
- Chowdhury, M.R., Ren, J. Reimund, K., McCutcheon, J.R., “A Hybrid Dead-End Cross-Flow Forward Osmosis System for Evaluation of High Recovery Osmotic Flux Performance with Produced Water”, Poster presentation at *AIChE* Annual Meeting, November 8-13, 2015, San Francisco, CA.
- Arena, J.T., Chwatko, M., Huang, L., Robillard, H.A., McCutcheon, J.A., “Cation Exchange in Forward Osmosis: Elucidating Impacts of Membrane and Solution Chemistry”, oral presentation at *AIChE* Annual Meeting, November 8-13, 2015, San Francisco, CA.
- Al-Furaiji, M., Benes, N.E., Nijmeijer, A., McCutcheon, J.R., “Application of Direct Contact Membrane Distillation for Treating High Salinity Solutions: Impact of Membrane Structure and Chemistry”, oral presentation at *AIChE* Annual Meeting, November 8-13, 2015, San Francisco, CA.
- Al-Furaiji, M., Benes, N.E., Nijmeijer, A., McCutcheon, J.R., “Use of Forward Osmosis-Membrane Distillation Process in Treatment of Hyper-Saline Produced Water” oral presented at *AIChE* Annual Meeting, November 8-13, 2015, San Francisco, CA.
- Waisi, B.I., Manickam, SS, Benes, N.E., Nijmeijer, A., McCutcheon, J.R., “Carbon Nanofiber Adsorbent Membranes: Applications in Treatment of Oily Wastewater”, oral presentation at *AIChE* Annual Meeting, November 8-13, 2015, San Francisco, CA.
- Bui, N.N., Arena, J.T., McCutcheon, J.R., “Proper Accounting of Mass Transfer Resistances in Forward Osmosis: Improving the Accuracy of Model Predictions of Structural Parameter”, oral presentation at *AIChE* Annual Meeting, November 8-13, 2015, San Francisco, CA.
- Chowdhury, M.R., McCutcheon, J.R., “Elucidating the Impact of Temperature Gradients Across Membranes during Osmosis”, Oral presentation at *AIChE* Annual Meeting, November 8-13, 2015, San Francisco, CA.

- Chowdhury, M.R., Huang, L., McCutcheon, J.R., “Commercial Nanofiber Nonwoven As a Support for Thin Film Composite Membrane for Forward Osmosis”, Oral presentation at *AIChE* Annual Meeting, November 8-13, 2015, San Francisco, CA.
- Bui, N.N., McCutcheon, J.R., “Nanofibers in Osmotic Membranes for Sustainable Water and Energy”, oral presentation at *AIChE* Annual Meeting, November 8-13, 2015, San Francisco, CA.
- McCutcheon, J.R., Bui, N.N., Huang, L., Ren, J., Arena, J.T., “Forward osmosis Membrane design: Innovative Approaches to Rethinking Thin Film Composite Membranes”, Desaltec, August, 28-29, 2015, San Diego, CA
- McCutcheon, J.R., Bui, N.N., Huang, L., Waisi, B., Al Faraji, M., “Nanofiber Materials for Water Treatment”, oral presentation at AEESP 2015, New Haven, CT, June 14-17.
- Chwatko, M., Arena, J.T., McCutcheon, J.R., “Norepinephrine Modified PVDF-Psu Supported Thin Film Composite Membranes for Forward Osmosis”, poster presented at the North American Membrane Society 2015 Annual Meeting, Boston, MA. (won third place poster award in the Membrane Modification area)
- Arena, J.T., Chwatko, M., Huang, L., Robillard, H.A., McCutcheon, J.R., “Cation Exchange in Forward Osmosis: Study of pH Effects and Alternative Selective Layers to Mitigate It”, oral presentation at the North American Membrane Society 2015 Annual Meeting, Boston, MA.
- Ren, J., O’Grady, B., McCutcheon, J.R., “Sulfonated Polysulfone Based High Performance Thin Film Composite Membranes for Forward Osmosis”, poster presented at the North American Membrane Society 2015 Annual Meeting, Boston, MA
- Chowdhury, M., McCutcheon, J.R., “Thermal Energy Assisted Forward Osmosis (TEAFO): Principles, Modeling and Performance”, poster presentation at the North American Membrane Society 2015 Annual Meeting, Boston, MA. (won second place poster award in Membrane Processes area)
- Ren, J., McCutcheon, J.R., “Making Thin Film Composite Hollow Fiber Membranes: Understanding How Support Structure Impacts Transport and Selective Layer Properties”, oral presentation at the North American Membrane Society 2015 Annual Meeting, Boston, MA
- Waisi, B.I., Benes, N.E., Nijmijer, A., McCutcheon, J.R., “ACNFN Fabrication As an Adsorbent for Emulsified Oil Removal from Brine Waste Water”, poster presentation at the North American Membrane Society 2015 Annual Meeting, Boston, MA
- Ambrosi, A., McCutcheon, J.R., Cardozo, N.S.M., Tessaro, I.C., “Evaluation of the Effect of Osmotic Pressure Difference on the Ethanol Removal from Dilute Solutions Using Forward Osmosis”, oral presentation given at the North American Membrane Society 2015 Annual Meeting, Boston, MA
- Al-Furaiji, Arena, J.T., Chowdhury, M., Benes, N.E., McCutcheon, J.R., “Treatment of Hyper-Saline Produced Water By Forward Osmosis”, poster presented at the North American Membrane Society 2015 Annual Meeting, Boston, MA
- Waisi, B.I., Manickam, S.S., Benes, N.E., Nijmijer, A., McCutcheon, J.R., “Activated Carbon Nanofiber Adsorbent Membranes: Applications in Treatment of Oily Wastewater”, oral presentation at the North American Membrane Society 2015 Annual Meeting, Boston, MA

- Xia, L., Anastasio, D.D., Arena, J.T., McCutcheon, J.R., "Thin film composite membranes in closed-loop pressure retarded osmosis for power generation", poster presented at the North American Membrane Society 2015 Annual Meeting, Boston, MA.
- McCutcheon, J.R., "The I-REU: Integrating Innovation, Entrepreneurship, and Industrially Relevant Research into an REU Site", oral presentation at the AIChE 2014 Annual Meeting, November 16-21, 2014.
- Arena, J.T., McCutcheon, J.R. "Ion Exchange in Forward Osmosis: A New Membrane and Draw Solution Design Problem", oral presentation at the AIChE 2014 Annual Meeting, November 16-21, 2014.
- Frey, G., Anastasio, D., Arena, J.T., McCutcheon, J.R., "Formulating Novel Draw Solutions for Forward Osmosis", poster presentation at the AIChE 2014 Annual Student Meeting, November 16-21, 2014. (won 1<sup>st</sup> place poster award in the Separations Division)
- Anastasio, D., Chwatko, M., McCutcheon, J.R., "Transforming a Basic Engineering Skills Course into a Freshman Design Course with Business Simulation Elements" oral presentation at the AIChE 2014 Annual Meeting, November 16-21, 2014.
- Chwatko, M., Arena, J.T., Huang, L., McCutcheon, J.R., "Polydopamine modified PVDF nanofibers supported thin film composite membranes for osmotically driven membrane processes" poster presentation at the AIChE 2014 Annual Meeting, November 16-21, 2014.
- Anastasio, D., Arena, J.T., McGinnis, R., McCutcheon, J.R., "Design & Construction of a Pilot-Scale Osmotic Heat Engine", oral presentation at the AIChE 2014 Annual Meeting, November 16-21, 2014.
- Manickam, S.S., Gelb, J. and McCutcheon, J.R., "Pore Structure Characterization of Desalination Membranes – Use of X-ray Microscopy", Microscopy and Microanalysis 2014 Annual Meeting. August 3-7, 2014.
- Huang, L., McCutcheon, J.R., "Nylon 6,6 supported thin film composite membranes for engineered osmosis", oral presentation at the International Congress on Membrane and Membrane Processes, Suzhou, China, July 21-25, 2014.
- Ren, J., McCutcheon, J.R., "PAN supported TFC hollow fiber membranes for forward osmosis", Poster presentation at the International Congress on Membrane and Membrane Processes, Suzhou, China, July 21-25, 2014.
- Arena, J. T., Robillard, H.A., McCutcheon, J.R., "pH Sensitivity of Cation Transport through a Commercial Thin Film Composite Membranes in Forward Osmosis," North American Membrane Society Annual Meeting, May 31-June 4, 2014.
- Chowdhury, M., Ren, J., McCutcheon, J.R., "A hybrid dead end system for evaluation of osmotic flux performance in recovery of produced water", North American Membrane Society Annual Meeting, May 31-June 4, 2014.
- Manickam, S.S., Ramon, G.Z. and McCutcheon, J.R., "Numerical Simulation Of Transport In Forward Osmosis", North American Membrane Society Annual Meeting, May 31-June 4, 2014.
- Arena, J.T., Manickam, SS, Reimund, K.K., McCutcheon, J.R., "Performance of Commercial Asymmetric Cellulose Acetate Membrane Compared to Polydopamine Modified Thin Film Composite Membranes for Forward Osmosis," AWWA/AMTA 2014 Membrane Technology Conference & Exposition, March 10-14 , 2014.

- Coscia, B.J., Reimund, K.K., Wilson, A.D., McCutcheon, J.R., "Membrane Compatibility With Switchable Polarity Draw Solutions For Use In Forward Osmosis Applications", AIChE 2013 Annual Meeting, November 3-8, 2013.
- Kesten, A.S., McCutcheon, J.R., Girelli, A., Blechner, J.N., "The Potential of Osmotic Membrane Dehumidification", AIChE 2013 Annual Meeting, November 3-8, 2013.
- Anastasio, D., Arena, J.T., McCutcheon, J.R., "The Osmotic Heat Engine: The Promise of High Power Density Closed Loop Pressure Retarded Osmosis", Poster Presentation, AIChE 2013 Annual Meeting, November 3-8, 2013.
- Arena, J.T., Manickam, S.S., Reimund, K.K., Freeman, B.D., McCutcheon, J.R., "Polydopamine Modified Commercial Thin Film Composite Membranes for Forward Osmosis: Flux and Desalination Performance", AIChE 2013 Annual Meeting, November 3-8, 2013.
- Anastasio, D., Arena, J.T., McCutcheon, J.R., "The Promise of High Power Density Closed Loop Pressure Retarded Osmosis Via the Osmotic Heat Engine" AIChE 2013 Annual Meeting, November 3-8, 2013.
- Huang, L., Bui, N., Meyering, M.T., Hamlin, T.J., McCutcheon, J.R., "Novel Hydrophilic Nylon 6,6, Supported Thin-Film Composite Membranes for Engineered Osmosis", Oral presentation North American Membrane Society, Boise, ID, June 8-12, 2013.
- Arena, J.T., Manickam, S.S., Reimund, K.K., Freeman, B.D., McCutcheon, J.R., "Assessment of Commercial Thin Film Composite Membranes in Forward Osmosis: Osmotic Flux and Ammonia-Carbon Dioxide Desalination Performance", Oral presentation North American Membrane Society, Boise, ID, June 8-12, 2013.
- Arena, J.T., Reimund, K.K., McCutcheon, J.R., "Evaluation of Surface Modified Thin Film Composite Membranes of Varying Permselectivities for Pressure Retarded Osmosis, Poster presentation North American Membrane Society, Boise, ID, June 8-12, 2013.
- Reimund, K.K., Coscia, B.J., Wilson, A.D., McCutcheon, J.R., "Evaluating Switchable Polarity Solvent Compatibility With Commercial TFC FO and RO Membranes", Poster presentation North American Membrane Society, Boise, ID, June 8-12, 2013.
- Manickam, S.S., McCutcheon, J.R., "Deconvoluting the Forward Osmosis Structural Parameter Using a "Model" Thin Film Composite Membrane", Oral presentation North American Membrane Society, Boise, ID, June 8-12, 2013.
- Bui, N., McCutcheon, J.R., "High Power Density Nanofiber Supported Thin Film Composite Membrane for Pressure Retarded Osmosis", Oral presentation North American Membrane Society, Boise, ID, June 8-12, 2013.
- Huang, L., Bui, N., Meyering, M.T., Hamlin, T.J., McCutcheon, J.R., "Nylon 6,6, Microfiltration Membranes Supports for Thin-Film Composite Membranes", Oral presentation at the American Institute of Chemical Engineering Annual Meeting, Pittsburgh, PA, October 28 - November 2, 2012.
- Bui, N., McCutcheon, J.R., "Nanofiber Supported Thin Film Composite Membranes for Engineered Osmosis", Oral presentation at the American Institute of Chemical Engineering Annual Meeting, Pittsburgh, PA, October 28 - November 2, 2012.
- Bui, N.N., McCutcheon, J.R., "Nanofiber Supported Thin Film Composite Membranes for Engineered Osmosis", poster presentation at the Gordon Research Conference: Membranes and Membrane Processes, July 29-August 3, 2012.
- Bui, N., McCutcheon, J.R., "Nanofiber Supported Thin Film Composite Membranes for Engineered Osmosis", NAMS Oral Presentation at the North American Membrane Society Annual Meeting, New Orleans, LA, June 9-13, 2012.



- Huang, L., Bui, N., Meyering, M.T., Hamlin, T.J., McCutcheon, J.R., "Nylon 6,6, Microfiltration Membranes Supports for Thin-Film Composite Membranes", Oral Presentation at the North American Membrane Society Annual Meeting, New Orleans, LA, June 9-13, 2012.
- Arena, J., Manickam SS, Reimund, K.K., McCoskey, B.D., Freeman, B.D., McCutcheon, J.R., "Surface Modification of Thin Film Composite Membranes with Polydopamine for Engineered Osmosis", Oral Presentation at the North American Membrane Society Annual Meeting, New Orleans, LA, June 9-13, 2012.
- Manickam, SS., McCutcheon, J.R., "Characterization of polymeric nonwovens using porosimetry, porometry and x-ray computed tomography", Oral Presentation at the North American Membrane Society Annual Meeting, New Orleans, LA, June 9-13, 2012.
- Butler, E., Silva, A., Horton, K., McCutcheon, J.R., Point of Use Water Treatment with Forward Osmosis for Emergency and Population Migration Relief. Poster Presentation at the North American Membrane Society Annual Meeting, New Orleans, LA, June 9-13, 2012.
- McCutcheon, J.R., Bui, N., Arena, J., Next Generation Membranes for Engineered Osmosis, Poster presented at the 3<sup>rd</sup> Osmosis Membrane Summit, Barcelona, Spain. April 26-27, 2012.
- Muratori, B., Manickam, S.S., Karra, U., Li, B., McCutcheon, J.R., "Activated Carbon Nanofiber Nonwovens for Microbial Fuel Cells, American Institute of Chemical Engineering Annual Meeting, Minneapolis, MN, October 16-21, 2011.
- Butler, E., Silva, A., Shah, N., Horton, K., Anderson, E., McCutcheon, J.R., "A Response to the Water Crisis: Forward Osmosis for Refugee Camps and Disaster Relief Scenarios", American Institute of Chemical Engineering Annual Meeting, Minneapolis, MN, October 16-21, 2011.
- Bui, N., Arena, J., McCutcheon, J.R., "New Approaches to Forward Osmosis Membrane Design", Oral Presentation, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 16-21, 2011.
- Anastasio, D., McCutcheon, J.R. "Integrating Membrane Separations Into the Chemical Engineering Laboratory", Oral Presentation, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 16-21, 2011
- Huang, L., Arena, J., Manickam, S., McCutcheon, J., "Improved Mechanical Properties of Electrospun Nanofibrous Membranes for Water Filtration", Oral presentation, American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October 16-21, 2011.
- Bui, N., Lind, M.L., Hoek, E., McCutcheon, J.R. "Electrospun Nanofibers Support for High Flux Thin-film-composite Engineered Osmosis membrane", Poster, Raleigh, NC, August 29-31, 2011.
- Bui, N., Lind, M.L., Hoek, E., McCutcheon, J.R. "Fabrication and characterization of novel nonwoven nano-structured thin film composite membrane for engineered osmosis applications", Oral Presentation, International Congress on Membranes and Membrane Processes, Amsterdam, The Netherlands, July 23-29, 2011.
- Huang, L., Bui, N., Manickam, S.S., McCutcheon, J.R. "Controlling Nanofiber Morphology and Mechanical Properties using Humidity", oral presentation, North American Membrane Society, Las Vegas, NV, June 4-8, 2011.
- Bui, N., Lind, M.L., Hoek, E., McCutcheon, J.R. "Nanostructured Support for High Flux Thin-film-composite Engineered Osmosis Membrane", Oral and Poster Presentations, North American Membrane Society, Las Vegas, NV, June 4-8, 2011.

- Arena, J., McCloskey, B., McCutcheon, J.R., Freeman, B. "Hydrophilization of Thin Film Composite Membrane Support Layers for Engineered Osmosis", Oral and Poster Presentations, North American Membrane Society, Las Vegas, NV, June 4-8, 2011.
- Anastasio, D., McCutcheon, J.R. "Design and Implementation of Mobile Crossflow Reverse and Forward Osmosis Systems for Undergraduate Education", Poster Presentation at the North American Membrane Society Annual Meeting, Las Vegas, NV, June 4-8, 2011.
- Arena, J., McCloskey, B., McCutcheon, J.R., Freeman, B. "Hydrophilization of Thin Film Composite Membrane Support Layers for Engineered Osmosis Applications", Oral Presentation at the American Institute of Chemical Engineering Annual Meeting, Salt Lake City, UT, November 7-12, 2010.
- Shaw, M., Shor, L., McCutcheon, J.R., Subramanian, C., Anastasio, D. "Rheological Examination of Sodium Alginate Gelation", Poster Presentation at the Society of Rheology Annual Meeting, Santa Fe, NM, October 24-28, 2010.
- Arena, J., McCloskey, B., McCutcheon, J.R., Freeman, B. "Hydrophilization of Thin Film Composite Membrane Support Layers for Engineered Osmosis Applications", Oral Presentation at the American Chemical Society National Meeting, Boston, MA, August 22-26 2010.
- Bui, N., Lind, M.L., Hoek, E., McCutcheon, J.R. "Electrospun nanofiber-supported thin film composite membrane for engineered osmosis applications", Poster, North American Membrane Society, Washington, D.C., July 17-22, 2010.
- Arena, J., McCloskey, B., McCutcheon, J.R., Freeman, B. "Hydrophilization of Thin Film Composite Membrane Support Layers for Engineered Osmosis Applications", poster presentation at the North American Membrane Society Annual Meeting, Washington, D.C., July 17-22, 2010.
- Arena, J., McCloskey, B., McCutcheon, J.R., Freeman, B. "Hydrophilization of Thin Film Composite Membrane Support Layers for Engineered Osmosis Applications", poster presentation at the Gordon Research Conference: Membranes and Membrane Processes, New London, NH, July 25-30, 2010.
- Bui, N., Lind, M.L., McCutcheon, J.R., Hoek, E.M.V., "Electrospun nanofiber-supported thin film composite membranes for engineered osmosis applications", poster presentation at the North American Membrane Society Annual Meeting, Washington, D.C., July 17-22, 2010.
- Bui, N., Lind, M.L., Hoek, E., McCutcheon, J.R. "Electrospun nanofiber-supported thin film composite membrane for engineered osmosis applications", Poster, Gordon Research Seminar – Gordon Research Conference, New London, NH, July 24-30, 2010.
- McCutcheon, J.R. "Engineering Osmosis for Sustainable Desalination: A High Recovery and Affordable Alternative to Reverse Osmosis", American Chemical Society National Meeting, San Francisco, CA, Polymer Division, March 2010.
- McCutcheon, J.R.; McGinnis, R.L. Arena, McGinnis, R.L. "Waste Heat Recovery using the Ammonia-Carbon Dioxide Osmotic Heat Engine", American Chemical Society National Meeting, San Francisco, CA, Environmental Chemistry Division, March 2010.
- McCutcheon, J.R.; McGinnis, R.L.; Elimelech, M. "Influence of membrane support layer hydrophilicity on water flux in pressure retarded osmosis applications", oral presentation at the International Congress on Membranes and Membrane Processes, Honolulu, HI, June 12-18, 2008.

- McCutcheon, J.R.; Elimelech, M. "Wetting phenomenon and internal concentration polarization in pressure retarded osmosis", oral presentation at the 18<sup>th</sup> annual meeting of the North American Membrane Society, Orlando, FL, May 12-16, 2007.
- McCutcheon, J.R.; McGinnis, R.L., Elimelech, M. "The ammonia-carbon dioxide forward osmosis desalination process: A high recovery, sustainable desalination alternative" oral presentation at the American Water Works Association: Membrane Technology Conference & Exposition, March 18-21, 2007.
- McCutcheon, J.R.; Elimelech, M. "Wetting phenomenon in engineered osmosis", poster presented at the Engineering Conference International Water Treatment and Reuse II, Tomar, Portugal, February 11-17, 2007. "Honorable Mention" in poster competition.
- McCutcheon, J.R.; Elimelech, M. "Modeling of membrane performance in forward osmosis desalination: Implications for improved membrane design", oral presentation at the Engineering Conference International Water Treatment and Reuse II, Tomar, Portugal, February 11-17, 2007.
- McCutcheon, J.R.; Elimelech, M. "Influence of concentrative and dilutive internal concentration polarization on flux behavior in forward osmosis", oral presentation at the American Institute of Chemical Engineers national meeting, San Francisco, CA. November 12-17, 2006.
- McCutcheon, J.R.; Elimelech, M. "The ammonia-carbon dioxide forward osmosis desalination process: A high recovery alternative to reverse osmosis", oral presentation at the American Institute of Chemical Engineers national meeting, San Francisco, CA. November 12-17, 2006.
- McCutcheon, J.R.; Elimelech, M. "The ammonia-carbon dioxide forward osmosis desalination process: Performance and modeling", poster presented at the American Institute of Chemical Engineers national meeting, San Francisco, CA. November 12-17, 2006.
- McCutcheon, J.R.; Elimelech, M. "Modeling flux in forward osmosis: Influence of feed and draw solution concentration and membrane structural properties on performance.", poster presented at the Gordon Research Conference, Colby Sawyer College, New London, NH, August 6 - 10, 2006.
- McCutcheon, J.R.; Elimelech, M. "Modeling flux in forward osmosis: Influence of feed and draw solution concentration and membrane structural properties on performance.", poster presented at the 17<sup>th</sup> annual meeting of the North American Membrane Society, Chicago, IL, May 12-17, 2006.
- McCutcheon, J.R.; Elimelech, M. "Influence of concentrative and dilutive internal concentration polarization on flux behavior in forward osmosis", Keynote lecture at the 17<sup>th</sup> annual meeting of the North American Membrane Society, Chicago, IL, May 12-17, 2006.
- McCutcheon, J.R.; McGinnis, R.; Elimelech, M. "Desalination by a novel ammonia-carbon dioxide forward osmosis process: Influence of draw and feed solution concentrations on process performance", oral presentation at the American Institute of Chemical Engineers national meeting, Cincinnati, OH, October 30 – November 4, 2005.
- McCutcheon, J.R.; McGinnis, R.; Elimelech, M. "Desalination by a novel ammonia-carbon dioxide forward osmosis process: Influence of draw and feed solution concentrations on process performance", oral and poster presentation at the 16<sup>th</sup> annual meeting of the North American Membrane Society, Providence, RI, June 11-15, 2005.



- Tested and characterized composite lubricious thin films for use within moving parts for spacecraft

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## TEACHING EXPERIENCE

<u>Professor</u> - University of Connecticut	<i>Storrs, CT</i>
ENGR 1166 – Fundamentals of Engineering	Spring 2014-2016
CHEG 3128 – Heat/Mass/Kinetics Laboratory	Spring 2013
CHEG 4143 – Process Design & Economics – Project advisor	2010-2015
CHEG 3224 – Transfer Operation II (mass transfer and unit operations)	Spring 2010-2012
CHEG 4995/5395 – Membrane Separations	Fall 2009-2015
CHEG 5321 – Graduate Chemical Reaction Engineering	Fall 2008
Guest Lecture, - CHEG 4995, Energy and Fuels	Spring 2010
<u>Guest Lecturer</u> - Stony Brook University	<i>Stony Brook, NY</i>
2 <sup>nd</sup> semester freshman science students	Winter 2008
<u>Substitute Lecturer</u> – Yale University	<i>New Haven, CT</i>
CME 642a – Physical and Chemical Processes in Environmental Engineering	Spring 2005, Spring 2006
<u>Teaching Assistant</u> - Yale University	<i>New Haven, CT</i>
CHM 332, Physical Chemistry – Yale University	Fall 2005
CHM 103, Chemistry, Energy, and the Environment	Spring 2005
<u>Teaching Assistant</u> – University of Dayton	<i>Dayton, OH</i>
CME 203, Mass and Energy Balances	2001
CME 324, Transport Phenomena	2001-2002

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## PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science	2015-present
International Forward Osmosis Association	2014-present
American Institute of Chemical Engineers	1998-2002, 2005-present
American Chemical Society	2004-present
North American Membrane Society	2003-present
Association of Environmental Engineering and Science Professors	2010-2011
American Water Works Association	2010-2012
Tau Beta Pi National Engineering Honor Society - Ohio Theta Chapter	2000-2002
American Institute of Chemical Engineers – University of Dayton Chapter	1998-2002
Society for the Advancement of Materials and Process Engineering, University of Dayton	1998-2002

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## PROFESSIONAL SERVICE AND LEADERSHIP

### *North American Membrane Society (NAMS)*

- Elected, Board of Directors, Term 2011-2014, reelected for a 2014-2017 term.
- Co-chair of the 2015 meeting in Boston, MA.
- Chair of the Student Program at the 2013 meeting in Boise, ID

- Chair of the Student Program at the 2014 meeting in Houston, TX.
- Co-chair of the “Osmotically Driven Membrane Processes” session at the 2014 meeting in Houston, TX
- Chair of the Student Program at the 2013 meeting in Boise, ID.
- Chair of the Poster Session and undergraduate poster awards at the 2012 meeting in New Orleans, LA.
- Chair of the “Osmotically Driven Membrane Processes” session at the 2011 meeting in Las Vegas, NV.
- Chair of the “Osmotically Driven Membrane Processes” session at the 2010 meeting in Washington, D.C.
- Chair of the “Osmotically Driven Membrane Processes” session at the 2009 meeting in Charleston, SC.
- Co-chair of “Water Purification” session at the 2007 annual meeting in Orlando, FL.

*American Institute of Chemical Engineers*

- FRI/John G. Kunesh Award, 2014
- Area 2D (“Membrane-based Separations”) Chair, 2016-2018
- Elected, Director, Separations Division, Term 2011-2012, 2012-2017.
- Elected Area 2D (“Membrane-based Separations”) vice chair, 2013-2015
- AIChE Water Initiative Advisory Board, Term 2010-2012
- Co-Chair of “Emerging Processes in Water Purification” at the 2013 meeting in San Francisco, CA.
- Co-Chair of Topical K: Sustaining Water for Future Generations at the 2012 meeting in Pittsburgh, PA.
- Chair of “Emerging Water Treatment Technologies” technical session at the 2012 meeting in Pittsburgh, PA.
- Chair of “Forward Osmosis” technical session at the 2011 meeting in Minneapolis, MN.
- Chair of “Reverse Osmosis” technical session at the 2011 meeting in Minneapolis, MN.

*Gordon Research Conference*

- Elected vice-Chair of the 2014 meeting on Membranes and Membrane Processes
- Chair of the 2016 meeting on Membranes and Membrane Processes

*American Chemical Society (ACS)*

- Co-organizer of the Advances in Materials and Processes for Polymeric Membrane Mediated Water Purification, February 15-18, 2015, Pacific Grove, CA. Division of Polymer Chemistry.
- Co-organizer of the Advances in Materials and Processes for Polymeric Membrane Mediated Water Purification, February 24-27, 2013, Pacific Grove, CA. Division of Polymer Chemistry.
- Co-chair of the “Sustainable Water Production and Waste Treatment: Emerging Technologies for the Treatment and Utilization of Impaired Water Sources” symposium at the 2010 ACS Meeting, Division of Environmental Chemistry.

*International Congress on Membranes and Membrane Processes (ICOM)*

- Chair of the “Membranes for Energy Generation” session at the 2011 ICOM in Amsterdam, Netherlands.

- Chair of the “Osmotically Driven Membrane Processes” session at 2008 ICOM in Honolulu, HI, USA.

*Desalination*

- Guest Editor: Special Issue on “Recent Advances in Forward Osmosis”
- Guest Editor: Special Issue on “The Latest Advances and Opportunities in Forward Osmosis”

*International Forward Osmosis Association*

- Chair of the Technical Standards Committee

*1st International Conference on Desalination using Membrane Technology*

- Chair of “Membrane Systems” technical session.

*Engineering Conferences International (ECI)*

- Scientific Committee, Water Treatment and Reuse II and the Water –Energy Nexus, January 2012, Cancun, Mexico.

*Peer reviewer*

- *Science*
- *Langmuir*
- *Journal of Membrane Science*
- *Desalination*
- *Environmental Science and Technology*
- *Separation and Purification Reviews*
- *Water Research*
- *Industrial & Engineering Chemistry Research*
- *American Chemical Society Macro Letters*
- *Polymer*
- *Polymers*

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**ACADEMIC SERVICE AND LEADERSHIP**

Director, UConn CBE Design Lab	2014-present
Promotion, Tenure and Reappointment Committee University of Connecticut Department of Chemical Engineering	2014
American Association of University Professors (AAUP) University of Connecticut Representative Assembly	2014
Thesis Opponent Committee, Candidate Inger Lisa Alsvik Norwegian Institute of Science and Technology	2012
Engineers without Borders USA-UConn Faculty Advisor	2011-present
Research Experience for Undergraduates Site, Chair Department of Chemical, Materials, and Biomolecular Engineering	2010-present

University of Connecticut	
Advisory Committee Center for Environmental Sciences and Engineering University of Connecticut	2009-present
Faculty Search Committee Department of Chemical and Biomolecular Engineering	2012, 2013
American Institute of Chemical Engineering Student Chapter Faculty Advisor	2009-2014
Undergraduate Committee Chemical Engineering Program Department of Chemical, Materials, and Biomolecular Engineering University of Connecticut	2008-2012
Universitas 21 Faculty Representative	2011
Promotion, Tenure, and Reappointment ad-hoc committee Department Chemical, Materials, and Biomolecular Engineering University of Connecticut	2010-2011
Faculty Search Committee Chemical Engineering Program	2011-2012
Graduate Committee Chemical Engineering Program Department of Chemical, Materials, and Biomolecular Engineering University of Connecticut	2008-2010
Faculty Search Committee Center for Environmental Sciences and Engineering Department of Chemical, Materials, and Biomolecular Engineering University of Connecticut	2008-2009
Graduate Student Assembly, Yale University	2002-2007
<ul style="list-style-type: none"> <li>• Vice chairman (2005)</li> <li>• Steering Committee (2003-2005)</li> <li>• Housing and Transit Committee (2003-2007), Chairman (2003-2005)</li> <li>• Security Committee (2007)</li> <li>• Publicity Committee (2004-2007)</li> </ul>	
The Robert M. Langer Graduate Student Symposium Planning Committee	2002, 2003
<ul style="list-style-type: none"> <li>• Fundraising chair (2003)</li> <li>• Advertising chair (2002)</li> </ul>	
The Ivy Graduate Summit – Yale University delegation/planning committee	2004/2005
<ul style="list-style-type: none"> <li>• Member of Yale delegation (2004)</li> <li>• Host committee (2005)</li> </ul>	
Graduate Housing Resident Coordinator – Yale University Graduate Housing	2006-2007



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## OUTREACH ACTIVITIES

- Explore Engineering (E<sup>2</sup>) 2011-2016
- High school students visit UConn In the summer to learn about engineering
  - Ran a demonstration of filtration and reverse osmosis
- Young Engineering Scholar Program 2013-2015
- Ran concurrently with E<sup>2</sup>
  - Ran a water filtration design competition and business simulation
- Radio Show Host, *Science Friction* 2013-2015
- WHUS Storrs, 91.7 FM
  - Weekly radio show on controversial science topics
  - Interview students, teachers, professors and government officials about STEM issues
- The Da Vinci Project 2010-2013
- Research Experience for Teachers Program
  - Ran week long workshop on water treatment
- Joule Fellows Program 2010
- Research Experience for Teachers Program
  - Ran six-week program for an individual teacher in my lab

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## OTHER PUBLICATIONS AND CREATIVE ENDEAVORS

McCutcheon, J.R., Silva, A., “UConn's Thirsty, But State Needs Plan Before Water Transfer”, Op-ed feature article, Hartford Courant, April 17, 2013. Reprinted in the Mansfield Independent News, May 2013.

- McCutcheon, J.R., Host of “Science Friction” April 2013-January 2015
- A science themed talk-radio program on WHUS, 91.7 FM, University of Connecticut college radio station.
  - Produced over 50 1-hour shows
  - Selected shows:
    - May 13, 2013, 1-3 PM, Launch of “Science Friction” radio program, “Women in Engineering with Kelsey Bock”, “The Role of the Academy in Entrepreneurship with Robert McGinnis”
    - May 20, 2013, 1-3 PM, “Music and Science: A special interview with Jim McCutcheon, Physicist and Classical Guitarist”
    - May 27, 2013, 1-3 PM, “A Salute to the Troops – Science Friction honors our veterans”
    - June 3, 2013, 1-3 PM, June 17, 2013, 1-3 PM, “Tissues that aren’t Kleenex: An interview with Professor Mei Wei, Associate Dean of Research at UConn and biomaterials expert”
    - June 17, 2013, 1-3 PM, “The Next Generation: Interview with recent graduate Breanne Muratori and current REU students”
    - June 24, 2013, 1-3 PM, “The Next Generation Part 2: Interview with REU Students”
    - July 8, 2013, 1-3 PM, “Where they don’t belong: Contaminants in our waterways with Professor Allison Mackay (UConn)”
    - July 22, 2013, 1-3 PM, “Methods of University-Industry Collaboration with Entrepreneur-in-Residence Robin Bienemann”

July 29, 2013, 1-5 PM, “A chat with the Dean – From jellyfish to Next Generation Connecticut with Dean Kazem Kazerounian”  
August 5, 2013, 1-5 PM, “He put the bio in bioscience – An interview with Professor Ranjan Srivastava (UConn)”  
August 12, 2013, 1-5 PM, “The Softer Side of Science – An interview with Political Science Professor Julia Azari (Marquette University) and Social Science Professor Jonathan Varhola (Wright State University)”

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## **STUDENT AWARDS**

AICHe Separations Division Graduate Student Research Award, Jian Ren, 2016  
North American Membrane Society Graduate Student Fellowship, Jian Ren, 2016  
General Electric Fellowship, Maqsd Chowdhury, 2016  
FEI Graduate Student Fellowship, Jian Ren, 2015  
NAMS Student Poster Award, 2<sup>nd</sup> place, Membrane Processes, Maqsd Chowdhury, 2015  
NAMS Student Poster Award, 3<sup>rd</sup> place, Membrane Materials, Malgorzata Chwatko, 2015  
AICHe Undergraduate Student Poster Award, 1<sup>st</sup> Place, Separations Division, Gabriella Frey, 2014  
AICHe Undergraduate Student Poster Award, 2<sup>nd</sup> Place, Separations Division, Gianna Credaroli, 2014  
ICOM Student Poster Award, Jian Ren, 2014  
NAMS Travel Award, ICOM 2014, Liwei Huang, 2014  
NAMS Graduate Student Poster Award, 1<sup>st</sup> place, Jason Arena, 2014  
General Electric Fellowship, Jian Ren, 2014  
Elias Klein Travel Award, Maqsd Chowdhury, 2014  
AMTA Graduate Student Poster Award, Jason Arena, 2014  
NAMS Graduate Student Poster Award, 2<sup>nd</sup> place, Ngoc Bui, 2013  
Elias Klein Travel Award, Liwei Huang, 2013  
Marshall Scholarship, Ethan Butler, 2013  
Udall Scholarship, Ethan Butler, 2013  
NAMS Travel Award, Ngoc Bui, 2012  
NWRI-AMTA Fellowship, Jason Arena, 2012  
GK-12 Fellowship, Jason Arena, 2011

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## **DOCTORAL STUDENTS ADVISED (PRIMARY ADVISOR)**

Ngoc Bui, Graduated 2013, Post Doctoral Researchers at Lawrence Livermore National Laboratory  
Seetha Manickam (Phillips 66), Graduated 2014, Associate Engineer at Phillips 66  
Liwei Huang, Graduated 2015, Chemist at Park Advanced Polymer Development Corporation  
Jason Arena, Graduated 2015, Postdoctoral Researcher at National Energy Technology Laboratory  
Daniel Anastasio, Graduated 2015, Assistant Professor at Rose-Hulman Institute of Technology  
Jian Ren (Current Student)  
Maqsd Chowdhury (Current Student)

Lingling Xia (Current Student)

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**MASTERS STUDENTS ADVISED (PRIMARY ADVISOR)**

Justin Durelli, Chemical Engineering, graduated 2011, Associate at McCormick, Paulding & Huber

Brendan O'Grady, Chemical Engineering, graduated 2012, Senior Associate at Delos

Mike Podany, Environmental Engineering, graduated 2012, Environmental Services, New Fairfield, CT

Kevin Reimund (Current Student)

Alan Zhao (Current Student)

Yichen Wang (Current Student)

Nicole Beauregard (Current Student)

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**POST-DOCTORAL RESEARCHERS ADVISED (PRIMARY ADVISOR)**

Wenming Hao, 2016

Cong Ma, 2016

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**DOCTORAL STUDENT COMMITTEES**

(primary advisor in parenthesis)

Si-Yu Li, Chemical Engineering (Richard Parnas), graduated 2012

Ying Liu, Chemical Engineering (William Mustain), graduated 2013

Jinzi Deng, Chemical Engineering (Leslie Shor), graduated 2014

Udayarka Karra, Environmental Engineering (Baikun Li), graduated 2014

Becca Rubenstein, Environmental Engineering (Ranjan Srivastava)

Han Li (Timothy Vadas)

Jennifer Bento (Douglas Adamson)

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**UNDERGRADUATE RESEARCH ADVISEES**

Kaitlin Fitzpatrick (2010), Unilever

Jennifer Reynolds (2010), MPR Associates, Inc.

Emily Cole (2011), Calera Corporation

Ethan Butler (2012), Doctoral Student at Imperial College

Michael Icart (2012), Smith & Wesson

Breanne Muratori (2012), Doctoral Student at Purdue University

Benjamin Coscia (2013), Doctoral Student at the University of Colorado

Alexandra Rogers (2013), Zeeco, Inc.

Aleah Edwards (2014), UTC Aersopace Systems

Nikhil Shah (2015), Cigna

Andrew Silva (2014), Eastman Chemical Company (Solutia Inc.)

James Moen (2013), Entegris

Ari Girelli (2015), Nanocap Technologies

Malgorzata Chwatko (2015), Doctoral Student at The University of Texas at Austin

Gabriella Frey (2015), Unilever  
Gianna Credaroli (2015), Doctoral Student at Columbia University  
Lior Trestman (2015), ActualFood, Inc.  
Holly Robillard (2016), Unilever  
Brielle Cash (2018) (Current Student)  
Caitlyn Cyr (2018) (Current Student)

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## **VISITING DOCTORAL STUDENTS**

Basma Waisi (University of Twente), January 2014-current  
Mustafa Al Fariji (University of Twente), January 2014 - current  
Alan Ambrosio (Universidade Federal do Rio Grande do Sul), March 2014 – November 2014  
Hui Gong (Tsinghua University), May 2014 – November 2014