

MATTHEW R. LANDSMAN

Lawrence Berkeley National Laboratory
Advanced Light Source
6 Cyclotron Road, 80-0114A
Berkeley, CA 94720

mrlandsman@lbl.gov
+1 (240) 357-8414
Twitter: @mrlandsman

EDUCATION

- Ph.D. University of Texas at Austin, Civil Engineering, May 2022
Dissertation: “Overcoming Major Challenges for Water Reuse via Membranes: Boron Removal and Membrane Fouling” Advisors: Lynn E. Katz and Desmond F. Lawler
- M.S. University of Maryland, College Park, Civil Engineering, May 2017
Thesis: “Evaluation of Nutrients and Suspended Solids Removal in Stormwater Control Measures Using High Flow Media” Advisor: Allen P. Davis
- B.S. University of Maryland, College Park, Civil Engineering, May 2016, *cum laude*

PROFESSIONAL EXPERIENCE

- Postdoctoral Fellow, Advanced Light Source, Berkeley Lab.....2022 to present
Graduate Research Assistant, University of Texas at Austin 2017 to 2022
Graduate Research Assistant, University of Maryland, College Park 2016 to 2017
Undergraduate Research Assistant, University of Maryland, College Park..... 2014 to 2016
Engineering Intern/Land Surveyor, CAS Engineering, Washington, DC 2010 to 2017

AWARDS AND HONORS

- EAG Endowed Presidential Scholarship in Environmental Engineering, UT..... 2020
Chevron Health, Environment, and Safety Scholarship, UT 2020
Professional Development Award, UT 2019
Women in Engineering Graduate Mentor Award, UT..... 2018
Thrust 2000 Graduate Fellowship in Engineering, UT..... 2017
Robert L. Morris Award for Environmental Leadership, UMD 2016

PUBLICATIONS

1. S Kum, **MR Landsman**, GM Su, G Freychet, DF Lawler, LE Katz. “Performance of a hybrid ED–NF membrane system for water recovery improvement via NOM fouling control.” *ACS ES&T Engineering*, 2021, 1, 10, 1420-1431.
2. **MR Landsman**, F Rivers (co-first author), BJ Pedretti, BD Freeman, DF Lawler, NA Lynd, LE Katz. “Boric acid removal with polyol-functionalized polyether membranes.” *Journal of Membrane Science*, 2021, 119690.
3. ME Barry, **MR Landsman**, SM Nomaan, PA Gokturk, CM Cooper, BA Kienzle, CM McKay, LE Katz. “Expanding the use of synchrotron techniques for water treatment: From minerals to membranes.” *Synchrotron Radiation News*, 2020, 33(4), 3-12.
4. R Sujanani, **MR Landsman**, S Jiao, JD Moon, MS Shell, DF Lawler, LE Katz, BD Freeman. “Designing solute-tailored selectivity in membranes: Perspectives for water

reuse and resource recovery.” *ACS Macro Letters*, 2020, 9, 1709-1717. (ACS Editor’s Choice, Invited journal cover)

5. **MR Landsman**, R Sujanani (co-first author), SH Brodfuehrer, CM Cooper, AG Darr, RJ Davis, K Kim, S Kum, LK Nalley, SM Nomaan, CP Oden, A Paspureddi, KK Reimund, LS Rowles III, S Yeo, DF Lawler, BD Freeman, LE Katz. “Water treatment: Are membranes the panacea?” *Annual Reviews of Chemical and Biomolecular Engineering*, 2020, 11, 559-585.
6. **MR Landsman**, DF Lawler, LE Katz. “Application of electrodialysis pretreatment to increase boron removal and reduce fouling during desalination by nanofiltration/reverse osmosis.” *Desalination*, 2020, 491, 114563.
7. **MR Landsman**, LS Rowles III, SH Brodfuehrer, JP Maestre, KA Kinney, MJ Kirisits, DF Lawler, LE Katz. “Impacts of Hurricane Harvey on drinking water quality in two Texas cities.” *Environmental Research Letters*, 2019, 14, 124046.
8. **MR Landsman**, AP Davis. “Evaluation of nutrients and suspended solids removal in stormwater control measures using high flow media.” *Journal of Environmental Engineering*, 2018, 144(10), 04018106.

TEACHING

Teaching Assistant, Fundamentals of Env. Eng., UTSpring 2018, 2019, 2020
 Guest Lecturer, Freshmen Env. Eng. Seminar, UT Fall 2018, 2019, 2021
 Grader, Elements of Hydraulic Engineering, UT Fall 2018
 Visiting Instructor, Univ. of La Salle Summer Academy, Bogotá, Colombia June 2018

MENTORING

Graduate Research Mentor, Humanitarian Engineering, UTFall 2019, Spring 2020
 Graduate Research Mentor, Mechanical Engineering Capstone, UTSpring 2019
 Graduate Research Mentor, Women in Engineering, UT Fall 2018, 2019
 Virtual Mentor, Clean Water Science NetworkFall 2018 to present
 Graduate Research Mentor, Environmental Engineering Science, UMDSpring 2017

ACADEMIC ACTIVITIES

Communications Group, Inclusion, Diversity, Equity, and Accountability (IDEA) Committee, ALS2022 to present
 ICP-OES Instrument Superuser, EWRE Service Center, UT 2019 to 2022
 Laboratory Safety Manager, Katz group, UT 2018 to 2022
 Graduate Student Panel, American Academy of Environmental Engineers and Scientists, UTSpring 2020, Fall 2020
 Student Leadership Council, Center for Materials for Water and Energy Systems (M-WET) 2019 to 2020
 Guest Teacher, University of Texas Elementary School 2018, 2019
 Graduate Seminar Organization Committee, EWRE, UT 2018 to 2019
 Peer Reviewer, *Polymer* 2019
 Peer Reviewer, *Industrial and Engineering Chemistry Research* 2018
 EWRE Department Representative, Graduate Engineering Council, UT 2017 to 2018
 Vice President, Graduate Student Council, Civil and Env. Eng., UMD 2016 to 2017

Member, Association of Env. Engineering Scientists and Professionals2022 to present
 Member, North American Membrane Society.....2021 to present
 Member, American Chemical Society2018 to present

PRESENTATIONS

1. **MR Landsman**, DF Lawler, GM Su, LE Katz. “Probing mechanisms of organic fouling on reverse osmosis membranes through a multimodal approach.” Oral presentation at AEESP Research and Education Conference, June 29, 2022, St. Louis, MO.
2. M Tariq, **MR Landsman**, L Spearing, DF Lawler, K Faust, LE Katz. “System of systems approach for evaluating water treatment technologies: Brackish water desalination and boron removal.” Oral presentation at ACS National Meeting, March 21, 2022, San Diego, CA.
3. **MR Landsman**, F Rivers, BJ Pedretti, GM Su, BD Freeman, DF Lawler, NA Lynd, LE Katz, GM Su. “Linking boron-polyol complexation mechanisms to selective transport in ligand-functionalized polyether membranes.” Oral presentation at American Physical Society (APS) March Meeting, March 15, 2022, virtual.
4. **MR Landsman**, F Rivers, BJ Pedretti, GM Su, BD Freeman, DF Lawler, NA Lynd, LE Katz. “Polyol-functionalized polyether membranes for selective removal of boric acid.” Oral and poster presentations at North American Membrane Society (NAMS) National Meeting, August 30, 2021, Estes Park, CO.
5. LE Katz, **MR Landsman**, K Kim, G Freychet, GM Su, S Kum, DF Lawler, CJ Werth. “Applications of tender X-ray spectroscopy to understand reactions at environmental interfaces.” Oral presentation at ACS National Meeting, August 25, 2021, virtual.
6. LE Katz, **MR Landsman**, K Kim. “Probing reactions at environmental interfaces using tender X-rays: Opportunities and challenges.” Oral presentation at Advanced Light Source Tender Scattering Workshop, August 17, 2021, virtual.
7. LE Katz, **MR Landsman**, DF Lawler. “Integrated processes and selective materials for enhanced boron removal.” Oral presentation at Energy and Power Institute Boron Workshop, August 17, 2021, virtual.
8. L Spearing, H Tiedmann, **MR Landsman**, EJ Palmer, D Jarma, E Kong, L Sela, J Kaminsky, MJ Kirisits, KA Kinney, LE Katz, K Faust. “Implications of social distancing policies on municipal water quality.” Poster presentation at the UT COVID-19 symposium, November 11, 2020, Austin, TX.
9. **MR Landsman**, M Chwatko, RA Segalman, NA Lynd, DF Lawler, LE Katz. “Novel approach to boron removal in produced water by an integrated electrodialysis-nanofiltration system using selective membranes.” Oral presentation at ACS National Meeting, August 27, 2019, San Diego, CA
10. **MR Landsman**, MP Rasmus, BA Chambers, LE Katz, MJ Kirisits. “Surrogate parameters to describe sources and extent of fecal contamination in Waller Creek.” Poster presentation at the Waller Creek Symposium, May 13, 2019, Austin, TX.

11. **MR Landsman**, LS Rowles III, SH Brodfuehrer, JP Maestre, KA Kinney, MJ Kirisits, DF Lawler, LE Katz. "Impacts of Hurricane Harvey on drinking water quality in two Texas towns." Oral presentation at Texas Water 2019, April 3, 2019, Houston, TX.
12. LE Katz, SH Brodfuehrer, JD Davis, JS Grundy, **MR Landsman**. "Connecting environmental engineering to introductory chemistry in the freshmen year." Oral presentation at ACS National Meeting, March 31, 2019, Orlando, FL.
13. **MR Landsman**, S Kum, DF Lawler, LE Katz. "Electrodialysis pretreatment to reduce fouling of nanofiltration membranes for treatment of produced water." Poster presentation at ACS National Meeting, March 31, 2019, Orlando, FL.
14. **MR Landsman**, LS Rowles III, SH Brodfuehrer, JP Maestre, KA Kinney, MJ Kirisits, DF Lawler, LE Katz. "Linking disinfectant residuals, metagenomics, and water quality during the recovery of two Texas drinking water systems following Hurricane Harvey." Oral presentation at ACS National Meeting, March 31, 2019, Orlando, FL.
15. **MR Landsman**, AP Davis. "Evaluation of nutrients and suspended solids removal in stormwater control measures using high flow media." Oral presentation at ASCE Environmental and Water Resources World Congress, May 23, 2017, Sacramento, CA.