

JOB SUMMARY

The Jack Lab ([U-M faculty profile](#)) in the Civil and Environmental Engineering Department (CEE) at the University of Michigan, Ann Arbor ([UM-CEE](#), graduate program ranked #3 U.S. News and World Reports) invites applications for multiple funded Ph.D. student and post-doctoral research fellow positions to study fundamental kinetic and thermodynamic processes at the electrochemical-biological interface towards the development of scalable CO₂ capture and conversion technologies.

This interdisciplinary work will span topics such as electrochemical water and CO₂ electrolysis as well as several emerging microbial electrochemical technologies (e.g. microbial electrosynthesis, electro-enzymatic synthesis, electro-fermentation, microbial electrolytic carbon capture). Overall, this work will focus on tailoring CO₂ conversion processes towards high reaction rates, selectivity, yields, and energy efficiencies.

In addition to pursuing independent research projects, researchers will also obtain valuable grant writing experience, exposure to professional networking events with national labs and private companies, and opportunities to communicate research findings via peer-reviewed journal publications, podcasts, and presentations at national and international conferences.

For postdocs: The anticipated start date for this position is Spring 2023 or later. Appointments are anticipated for two years, with renewal after the first year, contingent on satisfactory performance and availability of funds. Successful candidates will hold the rank of postdoctoral research fellow and be provided a competitive salary, benefits, and support for conference travel and/or career development.

WHO WE ARE

Michigan Engineers are world-class educators, researchers, students and staff who strive to build a people-first future. As part of the nation's number one public research institution, Michigan Engineering's mission is to provide scientific and technological leadership to the people of the world, develop intellectually curious and socially conscious minds, create collaborative solutions to societal problems, and promote an inclusive and innovative community of service for the common good.

Our vision, mission and values are supported by a people-first engineering framework that guides our work. As Michigan Engineers, we strive to apply excellent engineering fundamentals, integrated expertise and equity-centered values to reimagine what engineering can be, close critical gaps, and elevate all people. Information about our vision, mission and values can be found at: <http://strategicvision.engin.umich.edu/>.

The University of Michigan has a storied legacy of commitment to Diversity, Equity and Inclusion (DEI). Michigan Engineering models that commitment in our research, culture and collaborations. We seek to recruit and retain a diverse workforce as a reflection of

that commitment. Learn more about DEI at Michigan Engineering:
<https://www.engin.umich.edu/culture/diversity-equity-inclusion/>

DESIRED QUALIFICATIONS

Ideal candidates should possess a recently earned master's or bachelor's degree (for Ph.D. positions) or Ph.D. (for postdoc positions) in environmental engineering, chemical engineering, biological engineering, material science, natural sciences (i.e. chemistry, physics, biology) or related STEM field.

A strong academic background with relevant lab experience in electrochemistry, process design and modeling, biological wastewater treatment, material science, and/or membrane technologies is highly preferred.

Researchers with exceptional work ethic, hands-on experimental ability, willingness to learn across fields, excellent writing and communication skills, collaborative team-work attitude, and a passion for developing innovative and transformative technologies, that serve the common good, are particularly encouraged to apply.

HOW TO APPLY

Please submit a cover letter addressed to Prof. Joshua Jack describing research experience and future research interests (1-2 pages), a curriculum vitae (including any publications), and the names and contact information of up to three references.

For Ph.D. students: In addition to submitting materials to Prof. Jack as a single pdf. file, students are encouraged to apply to the CEE graduate program (Fall 2023) via the [University of Michigan graduate school online portal](#).

For postdocs: All applications materials should be submitted as a single pdf file to the UM Careers site: <https://careers.umich.edu/search-jobs>. Search for job code: 223204. Only one pdf file can be uploaded in the UM Careers system.

Please visit the following website for more information about the Department of Civil and Environmental Engineering at U-M (<https://cee.engin.umich.edu/>).

ADDITIONAL INFORMATION

The University of Michigan is one of the most distinguished universities in the world (#3 national public university, U.S. News and World Reports) and a leader in higher education. It's three campuses are home to over 51,000 students and 5,600 faculty. The University of Michigan boasts one of the largest health care complexes in the world, one of the most extensive university library systems in the USA, and provides among the best computer access for students and faculty of any campus in the world. The

University of Michigan is #1 in research volume among USA universities and had around \$1.6 billion in research expenditures in 2021. The University of Michigan Tech Transfer office reported more than 500 new inventions in 2021 and 23 new businesses were started in 2021. Recently, 110 of U-M's graduate programs were ranked in the top 10 (U.S. News and World Reports), making it an exceptional environment to pursue interdisciplinary (or multi-disciplinary) research.

Ann Arbor (nicknamed "Tree-town") is routinely ranked one of the most desirable places to live in the USA and was ranked #1 best places to live for quality of life (U.S. News and World Reports, 2022-2023) due to its excellent health-care, education, affordability, and low-crime rate. Ann Arbor offers both big city attractions and beautiful natural areas with expansive scenic trails and waterways to explore.

Throughout the year, there are countless incredible art, music, and food festivals for locals to enjoy in one of the best college towns in America. In addition, its proximity to re-energized Detroit offers an awesome startup scene and international community. With tons of amazing shops, restaurants, bars, sports teams, and outdoorsy activities, Ann Arbor has something for everyone to enjoy.

EEO/AA STATEMENT

The University of Michigan is a Non-Discriminatory/Affirmative Action Employer.

U-M COVID-19 Vaccination Policy

COVID-19 vaccinations are now required for all University of Michigan students, faculty and staff across all three campuses, including Michigan Medicine. This includes those working or learning remotely. More information on this policy is available on the [Campus Blueprint](#) website or the U-M Dearborn and U-M Flint websites.