



**POST-DOCTORAL RESEARCH ASSOCIATE:  
Redox-Based Synthetic Biology, Electrogenetics  
University of Maryland College Park**

Synthetic biology, often visualized as an innovative means for “green” product synthesis through the genetic rearrangement of cells, can also provide a means to connect biological systems with microelectronic devices. Cells can be “programmed” to electronically report on their environment (generate electronic output) as well as be electronically wired (accept electronic input) to execute specific functions – to make products, synthesize and deliver drugs, etc. We have suggested the purposeful electronically actuated elicitation of gene expression is “electrogenetics” (<https://doi.org/10.1038/ncomms14030>; <https://doi.org/10.1038/s41565-021-00878-4>). We have linked these actions with smart materials and devices (<https://doi.org/10.1002/adma.202007758>). We further link electrogenetics with native cell-cell signaling by rewiring bacterial quorum sensing systems to enable tuned function, including directing bacterial consortia (<https://doi.org/10.1016/j.tim.2020.03.009>; <https://doi.org/10.1038/s41467-019-12027-6>).

We are actively building the electrogenetic toolbox and are seeking outstanding contributors. Applications are invited for two Postdoctoral Associate positions in the group of Dr. William E. Bentley in the Fischell Department of Bioengineering, the Institute of Bioscience and Biotechnology Research and Fischell Biomedical Device Institute at University of Maryland College Park. The successful candidates will work in an interdisciplinary group to develop novel experimental and theoretical approaches to exploit redox processes for electronically controlling gene expression, bacterial consortia, and as well as innovative bioelectronic devices.

**Minimum Qualifications:** Ph.D. in Molecular and Cell Biology, Chemical Engineering, Bioengineering, or related field with expertise in cell and protein engineering. Candidates should have strong experimental experience, a quantitative thought process, excellent communication skills (oral and written), and a track record indicating successful and productive research.

**Preferences:** Experience with biomanufacturing settings and/or data analytics would be desired but not required.

**Applications:** Applicants should send their cover letter, curriculum vitae and names/contact information of three references to: William E. Bentley ([bentley@umd.edu](mailto:bentley@umd.edu)).

**Closing Date:** Review of candidates will begin immediately and continue until position is filled. The University of Maryland, College Park, an equal opportunity/affirmative action employer, complies with all applicable federal and state laws and regulations regarding nondiscrimination and affirmative action; all qualified applicants will receive consideration for employment. The University is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race, color, religion, sex, national origin, physical or mental disability, protected veteran status, age, gender identity or expression, sexual orientation, creed, marital status, political affiliation, personal appearance, or on the basis of rights secured by the First Amendment, in all aspects of employment, educational programs and activities, and admissions.

**Additional information about employment at the University of Maryland:**

The University of Maryland has made the safety of our students, faculty and staff, and our surrounding communities a top priority. As part of that commitment, the University System of Maryland (USM) recently announced that students, faculty, and staff on USM campuses this fall, including UMD, are required to be vaccinated against COVID. As a prospective and/or a new employee at UMD, you will be required to comply



with the University's vaccination protocol. Proof of full vaccination will be required before the start of employment in order to work at any University of Maryland location. Prospective or new employees may seek a medical or religious exemption to the vaccination requirement at [return.umd.edu](http://return.umd.edu) and must have an approved exemption prior to the start of their employment. Failure to provide proof of vaccination or to obtain approval for a medical or religious exemption will result in the offer of employment being rescinded.

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