



Nanopore-based physiological monitoring of yeast for bioprocess optimisation

This 1-year Postdoctoral Research Associate (PDRA) position will combine a mixture of protein design, nanopore sequencing, and genome engineering to build a new generation of yeast strains for supporting the rational optimisation of bioprocesses. The project will build on advances in multiplexed CRISPR-based genome editing [1] and employ Nanopore-addressable protein Tags Engineered as Reporters (NTERs) [2] to monitor gene expression levels using nanopore sequencing. The PDRA will focus on the application of these technologies to guide metabolic engineering efforts and should be interested in exploring future routes to commercialisation.

An ideal candidate will have extensive experience working with yeast, a real passion for synthetic biology, a demonstrated ability to pick up new skills and work well in a diverse, multidisciplinary team, and an interest in taking their research towards real-world impact. Hands-on experience carrying out genomic modification using CRISPR-Cas or using the MinION nanopore sequencer would be beneficial but is not essential.

The PDRA will be based in the School of Biological Sciences at the University of Bristol and will work as part of the [Biocompute Lab](#) in close collaboration with the [Nivala Lab](#) at the Molecular Engineering & Science Institute at the University of Washington, USA. They will join a vibrant and growing biodesign community at the University of Bristol through affiliation with the [Bristol BioDesign Institute](#) and become part of [BrisEngBio](#), the newly established Bristol Centre for Engineering Biology. BrisEngBio's early-career researchers will become honorary members of [Science Creates](#), and through this they will benefit from a bespoke training and mentoring programme in innovation and commercialisation.

This position offers a rare chance to carry out cutting-edge basic science while also exploring possible commercial avenues of this research beyond the initial term. Start date is flexible but must be before 1st January 2023.

For more information contact: Dr. Thomas Gorochowski (thomas.gorochowski@bristol.ac.uk)

Deadline for applications: **15th August 2022**

Application link: <https://www.bristol.ac.uk/jobs/find/details/?jobId=280995>

[1] Ciurkot, K., Vonk, B., Gorochowski, T. E., Roubos, J. A., Verwaal, R. CRISPR/Cas12a Multiplex Genome Editing of *Saccharomyces cerevisiae* and the Creation of Yeast Pixel Art. *Journal of Visualized Experiments* 147, e59350 (2019).

<https://doi.org/10.3791/59350>

[2] Cardozo, N., Zhang, K., Doroschak, K. et al. Multiplexed direct detection of barcoded protein reporters on a nanopore array. *Nature Biotechnology* 40, 42–46 (2022).

<https://doi.org/10.1038/s41587-021-01002-6>