



BIOSCAN: Transforming Biodiversity Science

An Exceptional Opportunity for Early Career Researchers

The **International Barcode of Life Consortium (iBOL)** is coordinating a series of research programs that will register all multicellular species and activate a global biosurveillance system within 25 years. **BIOSCAN**, its current program, is an 8-year, \$180 million effort involving organizations in 40 nations. Its scientific work focuses on three major themes – species discovery, interactions, and dynamics. This work will be advanced by exploiting the latest developments in DNA sequencing, AI, data science, and machine learning. This scientific work will support important applications designed to improve the sustainability of agriculture, forestry, and mining. Furthermore, BIOSCAN aims to ensure its science influences society through policy change. Further details are available at <https://bioscan.life/>

Because BIOSCAN's activities are rapidly expanding in Canada and internationally, this is the perfect time to join an enterprise that will transform our understanding of biodiversity and our capacity to manage it. We seek early career researchers (ECRs) to join us in leading Canada's contribution to BIOSCAN.

If selected, you will work with leading Canadian researchers in biodiversity science, genomics, and computer science to achieve BIOSCAN's mission. There will be strong opportunities for cross-disciplinary training, for national and international travel, and for carrying out impactful science.

See following page for a detailed description of each position.

To apply: Candidates should submit a 2-page letter of interest (outlining key skills and background), a full CV, and contact information for two references as one PDF to: BIOSCANCanada@ibol.org. Applicants should clearly indicate the position(s) that are of most interest.

BIOSCAN supports a culture of inclusion as an organizational imperative. As a result, we encourage applications from all qualified individuals, especially those from groups traditionally underrepresented in science.

Closing date: Review of applications will commence on March 21, 2022.



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international
BARCODE
OF LIFE



Postdoctoral fellow

Principal Investigator: Dr. Angel X. Chang

Summary: We seek a postdoctoral fellow to help design machine learning algorithms for barcoding DNA sequences for BIOSCAN. This involves using current methods and developing novel algorithms for sequence alignment and clustering to match DNA sequences to known species and the discovery of new species, as well as taxonomic categorization. We are looking for candidates with experience working with self-supervised learning, contrastive learning, and current sequence modeling architectures. Candidates should also have a strong publication record, preferably in international conferences such as NeurIPS, ICML, ICLR, CVPR, ACL, and EMNLP. Strong candidates would be keen to raise awareness of biodiversity research in those communities and have mastery of Python-based frameworks such as PyTorch/TensorFlow/JAX. Strong candidates also have experience managing experimental workflows on GPU-enabled clusters and are open to and ideally experienced in cross-disciplinary collaboration. Familiarity with DNA sequencing and computational biology is a plus.