



Bohdan Bohdanovich Khomtchouk

Postdoctoral Research Fellow, Biology

 NIH Biosketch available Online

 Curriculum Vitae available Online

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BIO

Bohdan Khomtchouk, Ph.D. is an American Heart Association (AHA) Postdoctoral Fellow working in the field of computational epigenetics in the Gozani Lab at Stanford University in Stanford, CA USA. Dr. Khomtchouk's research concerns the emerging field of cardioinformatics, working at the nexus of bioinformatics and cardiology. His primary faculty advisor is Or Gozani MD, PhD (Department of Biology, Stanford University), and he is jointly co-mentored by Themistocles Assimes MD, PhD, FRCPC, FAHA (Department of Medicine, Cardiovascular Division, Stanford University School of Medicine) and Olivier Gevaert PhD (Department of Biomedical Informatics, Stanford University School of Medicine). Dr. Khomtchouk's principle research focus is on the genomic effects of aging on cardiovascular disease etiology. He is also interested in creating artificial intelligence and machine learning software to organize the world's aging-related disease information at a massive scale -- working at the interdisciplinary interface of big data, integrative bioinformatics, multi-omics, natural language processing, and statistical learning. Dr. Khomtchouk serves as the chief bioinformatician and computational biologist for the Gozani Lab, working across a broad array of next-generation sequencing data, including RNA-seq, small RNA-seq, ChIP-seq, ATAC-seq, bisulfite sequencing, and mass spectrometry. He is also the co-founder of Bioquilt (<http://bioquilt.com/>) and president of the Stanford R Group (<http://www.stanfordr.com/>).

HONORS AND AWARDS

- AHA Postdoctoral Fellowship, American Heart Association (2018-2020)
- NIH/NIA Stanford Training Program in Aging Research (T32 AG0047126), National Institute on Aging of the National Institutes of Health (2017-2018)
- National Defense Science & Engineering (NDSEG) Graduate Fellowship (32 CFR 168a), Department of Defense, Army Research Office (Biosciences Division) (2014-2017)
- UM Graduate Fellowship, University of Miami (2013-2014)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Council member, American Heart Association -- Council on Genomic and Precision Medicine (2017 - present)
- Professional member, International Society for Computational Biology (ISCB) (2017 - present)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, University of Miami Miller School of Medicine , Computational Human Genetics & Genomics (2017)
- Bachelor of Science, Benedictine University , Molecular Biology & Biochemistry (summa cum laude) (2013)
- Bachelor of Science, Benedictine University , Physics (summa cum laude) (2013)
- Bachelor of Science, Benedictine University , Mathematics (summa cum laude) (2013)

Publications

PUBLICATIONS

- **shinyheatmap: Ultra fast low memory heatmap web interface for big data genomics.** *PloS one*
Khomtchouk, B. B., Hennessy, J. R., Wahlestedt, C.
2017; 12 (5)
- **How the strengths of Lisp-family languages facilitate building complex and flexible bioinformatics applications.** *Briefings in bioinformatics*
Khomtchouk, B. B., Weitz, E., Karp, P. D., Wahlestedt, C.
2016
- **Ischemic Preconditioning Confers Epigenetic Repression of Mtor and Induction of Autophagy Through G9a-Dependent H3K9 Dimethylation** *JOURNAL OF THE AMERICAN HEART ASSOCIATION*
Gidlof, O., Johnstone, A. L., Bader, K., Khomtchouk, B. B., O'Reilly, J. J., Celik, S., Van Booven, D. J., Wahlestedt, C., Metzler, B., Erlinge, D.
2016; 5 (12)
- **MicroScope: ChIP-seq and RNA-seq software analysis suite for gene expression heatmaps** *BMC BIOINFORMATICS*
Khomtchouk, B. B., Hennessy, J. R., Wahlestedt, C.
2016; 17
- **Dependence-induced increase of alcohol self-administration and compulsive drinking mediated by the histone methyltransferase PRDM2.** *Molecular psychiatry*
Barbier, E., Johnstone, A. L., Khomtchouk, B. B., Tapocik, J. D., Pitcairn, C., Rehman, F., AUGIER, E., Borich, A., Schank, J. R., Rienas, C. A., van Booven, D. J., Sun, H., Nätt, et al
2016
- **Survival Guide to Organic Chemistry: Bridging the Gap from General Chemistry**
McMahon, P. E., Khomtchouk, B. B., Wahlestedt, C.
CRC Press (Taylor & Francis).2016
- **HeatmapGenerator: high performance RNAseq and microarray visualization software suite to examine differential gene expression levels using an R and C++ hybrid computational pipeline.** *Source code for biology and medicine*
Khomtchouk, B. B., Van Booven, D. J., Wahlestedt, C.
2014; 9 (1): 30-?