David F. McKean

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Education

2020   **Bioinformatics MS**, Marquette University

2011   **Bioinformatics BS**, Computer Science minor, Brigham Young University

Research Positions

2016 – curr.   **Bioinformatics Analyst** – Lab of Dr. Alison Klein, Johns Hopkins University.
Developing pipelines for germline variant analysis in pancreatic cancer using short read and genotyping array data.

2015 – 2016   **Graduate Assistant** – Lab of Dr. Serdar Bozdag, Marquette University.
Developed methods to reduce mapping bias for short reads from paralogous loci.

2015   **Bioinformatician** – Lab of Dr. Chiang-Ching Huang, University of Wisconsin – Milwaukee. Briefly assisted in the development of an exome analysis pipeline for a trio-based study of craniosynostosis.

2011 – 2014   **Data Analyst** – Joint lab of Dr. David Schwartz and Dr. Ivana Yang, Univ. of Colorado – Denver. Provided database and informatics support for human genetic studies. Developed a new research database and associated web application.

2010 – 2011   **Undergraduate Research Assistant** – Lab of Dr. John "Keoni" Kauwe, Brigham Young University. Developed pipelines for several genome-wide association analyses and meta-analyses.

2009 – 2010   **Undergraduate Research Assistant** – Lab of Dr. Keith Crandall, Brigham Young University. Mitochondrial DNA sequencing and sequence analysis for phylogenetic research in crustaceans.

Other Experience

2011   **Teaching Assistant**, Biology Department, Brigham Young University
Aided professor and tutored students in Bio 463: Genetics of Human Disease.

2010 – 2011   **Internet Programmer**, J. Reuben Clark Law School, Brigham Young University
Built and maintained components of the International Center for Law and Religion Studies' legal document database and web portal.

2010 – 2011   **Bioinformatics Club President**, Brigham Young University
Coordinated information meetings and presentations regarding bioinformatics research. Encouraged scientific literacy among Bioinformatics undergraduates.

2009   **Teaching Assistant**, Brigham Young University.
Tutored students and assisted professor teaching Bio 120: Science of Biology.

Publications

8.   Cristiano S*, **McKean D***, Carey J*, … Scharpf RB. "Bayesian copy number detection and association in large-scale studies". BMC Cancer. 2020 Sept 7.

7.   Fingerlin TE, Zhang W, Yang IV, … **McKean D** (44/53) … Schwartz DA. "Genome-wide imputation study identifies novel HLA locus for pulmonary fibrosis and potential

* Authors contributed equally to this work

role for auto-immunity in fibrotic idiopathic interstitial pneumonia." BMC Genetics. 2016 June 7.

6.   Chung, JH, Peljto AL, Chawla A, … **McKean DF** (5/10) … Lynch DA. "CT Imaging Phenotypes of Pulmonary Fibrosis in the *MUC5B* Promoter Site Polymorphism". Chest. 2016 May.

5.   Chung JH, Chawla A, Peljto AL… **McKean DF** (7/12) … Schwartz DA. "CT Scan Findings of Probable Usual Interstitial Pneumonitis Have a High Predictive Value for Histologic Usual Interstitial Pneumonitis." Chest. 2015 Feb 1.

4.   Cogan JD, Kropski JA, Zhao M… **McKean DF** (10/28) … Blackwell TS. "Rare Variants in RTEL1 are Associated with Familial Interstitial Pneumonia" Am J Respir Crit Care Med. 2015 Jan 21.

3.   Yang IV, Coldren CD, Leach SM… **McKean DF** (9/17) … Schwartz DA. "Expression of cilium-associated genes defines novel molecular subtypes of idiopathic pulmonary fibrosis." Thorax. 2013 Jun 19.

2.   Fingerlin TE, Murphy E, Zhang W … **McKean D** (41/49) … Schwartz DA. "Genome-wide association study identifies multiple susceptibility loci for pulmonary fibrosis." Nat Genet. 2013 Jun;45(6):613-20.

1.   Cruchaga C, Kauwe JS, Harari O … **McKean D** (13/40) … Goate AM. "GWAS of cerebrospinal fluid tau levels identifies risk variants for Alzheimer's disease." Neuron. 2013 Apr 24;78(2):256-68. doi: 10.1016/j.neuron.2013.02.026.

Posters Presented

4.   **McKean D**, Cristiano S, Carey J, Ruczinski I, Klein AP*, Scharpf R* for the Pancreatic Cancer Case-Control Consortium. "Identifying Germline Copy Number Variation in Pancreatic Cancer from a SNP Array." MD-GEM Genetics Research Day, February 2018.

3.   **McKean D**, Bozdag S. "An alignment method to reduce mapping bias for ambiguous short reads." Forward Thinking Poster Session, Marquette University, Dec. 2015.

2.   **McKean D**, Patty D, Kauwe JSK. "Genome-wide Association Study Identifies Variants Associated with Alzheimer's Disease." LDS Life Science Research Symposium, July 2010.

1.   **McKean D**, Kauwe JSK. "Detecting genetic variants associated with Alzheimer's disease." BYU Life Science Undergraduate Practice Poster Session, March 2011.

Funding and Awards Received

2015 – 2016   Graduate Assistantship sponsored by The Clinical & Translational Science Institute of Southeast Wisconsin

2014 – 2015   Tuition Scholarship awarded by Marquette University

2009   Tuition Scholarship awarded by Brigham Young University

2005 – 2006   Tuition Scholarship awarded by the Pikes Peak Spouse's Club
2004   Eagle Scout Award – Boy Scouts of America

Additional Training

2012   Biostatistics 6611: Biostatistics Methods I, University of Colorado – Denver

Related Skills

Programming Languages	Primary Experience with Python, C, Java, R. Familiar with C++, PHP, Perl
Databases	SQL (Oracle, MySQL, MSSQL, SQLite, PostgreSQL), MongoDB, SAS
Analysis Software	Statistical Genetics: MetaOmics, Plink, Haploview, Metal, EPACTS
	Sequence Analysis: BWA, Bowtie2, ClustalW, BEDTools, SAMTools, GATK, Picard, SHAPEIT2, IMPUTE2, Manta, Lumpy, Delly, FastQC, QC3
	Phylogenetics: Phylip, PAUP, Mesquite
Web	Django, NodeJS, ExpressJS, Drupal, ReST (incl. JAX-RS), JAX-WS, jQuery
Languages	English (Fluent, native speaker), Spanish (Conversant, written & spoken)