

Christopher J. Benway

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Summary

I am currently a post-doctoral researcher at Brigham and Women's Hospital and Harvard Medical School Channing Division of Network Medicine working on genetics and functional genomics of chronic obstructive pulmonary disease (COPD). My current research involves genome-wide association studies, statistical genetics and fine-mapping, transcriptomics, and chromatin accessibility assays. During my Ph.D. in the lab of John Iacomini at Tufts University Sackler School of Biomedical Sciences I worked on *in vivo* and cell-based models of calcineurin inhibitor nephrotoxicity, using transcriptomics and sequencing methods to detect *in vivo* miRNA:mRNA targeting. In prior work as a research technician I have largely worked on molecular and cell biology projects related to immune function, ER stress, gene therapy, and high throughput chemical biology screens.

Education

2011–2017	Ph.D. in Genetics, Tufts University, Boston, MA. PhD thesis : Defining a microRNA-mRNA targetome for calcineurin inhibitor induced nephrotoxicity.
2004–2008	A.B. in Biology, Harvard University, Cambridge, MA.

Past Scientific Positions

2017–2019	Post-doctoral fellow Brigham and Women's Hospital and Harvard Medical School, Channing Division of Network Medicine, Boston, MA. Advisers: Edwin K. Silverman, M.D., Ph.D. and Xiaobo Zhou, Ph.D.
2011–2017	Graduate Research Assistant Tufts University Sackler School of Biomedical Sciences, Department of Developmental, Molecular and Chemical Biology, Boston, MA. Adviser: John Iacomini, Ph.D.
2009–2011	Research Assistant Harvard Medical School, Department of Genetics, Boston, MA. Richard C. Mulligan, Ph.D. Laboratory
2008–2009	Research Assistant Harvard School of Public Health, Department of Immunology and Infectious Diseases, Boston, MA. Laurie H. Glimcher, MD Laboratory
2007	Research Assistant Harvard University, Department of Organismic and Evolutionary Biology, Cambridge, MA. Noel Michele Holbrook, Ph.D. Laboratory
2006	Research Assistant Harvard University, Department of Molecular and Cellular Biology, Cambridge, MA.

2005–2006	Sam Kunes, Ph.D. Laboratory
	Research Assistant
	Brigham and Women's Hospital and Harvard Medical School, Division of Genetics, Department of Medicine, Cambridge, MA. Alan M. Michelson, M.D., Ph.D. Laboratory

Scientific Meetings

2018	COPDGene Investigators Meeting Denver, CO Attendee
2018	Discover Brigham Boston, MA Poster presentation: <i>Chromatin accessibility landscapes of large and small airway cells annotate multiple COPD susceptibility GWAS regions.</i> C. J. Benway, F. Du, M. H. Cho, E. K. Silverman, X. Zhou. (e-poster) Research Open Mic: <i>From GWAS to Function: Uncovering the causal genetic variants in COPD</i>
2018	American Society of Human Genetics (ASHG) Annual Meeting San Diego, CA Poster Presentation: <i>Chromatin accessibility landscapes of large and small airway cells annotate multiple COPD susceptibility GWAS regions.</i> C. J. Benway, F. Du, M. H. Cho, E. K. Silverman, X. Zhou. Reviewer's Choice Abstract (abstract , poster)
2017	American Society of Human Genetics (ASHG) Annual Meeting Orlando, FL Attendee
2017	COPDGene Investigators Meeting Boston, MA Attendee
2016	Tufts Charlton Poster Competition Boston, MA Poster Presentation: <i>Ago-PAR-CLIP Defines Targetome and Role of MicroRNAs in Cyclosporine-induced Nephrotoxicity.</i> C. J. Benway, J. Iacomini (poster)
2015	EMBO/EMBL Symposium: The Non-Coding Genome Heidelberg, Germany Poster Presentation: <i>Ago-PAR-CLIP Defines MicroRNA Targets in Human Proximal Tubule Epithelial Kidney Cells.</i> C.J. Benway, J. Iacomini (poster)
2015	24th Short Course on Experimental Models of Human Cancer The Jackson Laboratory, Bar Harbor, Maine Attendee
2015	Non-Coding RNA: New Mechanisms and Approaches Boston, MA Attendee

Bioinformatic Skills

- Data analysis of high-throughput sequencing data including DNA-seq, RNA-seq, CAGE-seq, sRNA-seq, ChIP-seq, and scRNA-seq.
- Knowledge and the ability to use various bioinformatic databases, APIs, repositories, and tools.
- Ability to implement bioinformatic pipelines using pipelining tools such as Bpipe and Snakemake.

Computer Skills

Academic References

Publications

- [1] M. Ragland*, C.J. Benway*, S.H. Lutz, Bowler R.P., J. Hecker, J.E. Hokanson, J.D. Crapo, P.J. Castaldi, D.L. DeMeo, Hersch C.P., B.D. Hobbs, C. Lange, T.H. Beaty, Cho M.H., and Silverman E.K. Genetic Advances in COPD: Insights from COPDGene. *Manuscript submitted and in review*.
- [2] C. J. Benway and J. Iacomini. Defining a microRNA-mRNA interaction map for calcineurin inhibitor induced nephrotoxicity. *Am. J. Transplant.*, 18(4):796–809, Apr 2018.
- [3] J. Yuan, C. J. Benway, J. Bagley, and J. Iacomini. MicroRNA-494 promotes cyclosporine-induced nephrotoxicity and epithelial to mesenchymal transition by inhibiting PTEN. *Am. J. Transplant.*, 15(6):1682–1691, Jun 2015.
- [4] A. Górski, J. W. Lazor, A. K. Zwieniecka, C. J. Benway, and M. A. Zwieniecki. The capacity for nitrate regulation of root hydraulic properties correlates with species’ nitrate uptake rates. *Plant and Soil*, 337(1-2):447–455, Dec 2010.