

# JENNIFER SCHYMICK

## *Genetics of Neurological Disease*

*Ph.D Training: NIH-Oxford Scholars Program*

*M.D. Training: University of California, Irvine*



*Jennifer in Exam Outfit*



*Keble College, Oxford*



*Jennifer and Classmates on Program visit to Capitol Hill*

Jennifer Schymick grew up in Tustin, California and in 1998 moved to Boston, Massachusetts to pursue her interests in science and technology at the Massachusetts Institute of Technology. She graduated from MIT in 2002 with a Bachelor of Science in Biology. As an undergraduate, Jennifer was inspired to pursue a career in both medicine and the field of genetics. From 1999-2002, she spent three summers at the Los Alamos National Laboratories working on the Human Genome Project as a member of the bioinformatics finishing team. During the school year, she conducted genetics research on Inflammatory Bowel Disease at the MIT Whitehead Institute for Biomedical Research under the supervision of Dr. John D. Rioux. Specifically, she investigated the IBD6 genetic locus on chromosome 19p13 using single nucleotide polymorphism association analysis. Upon graduating, Jennifer joined the research and development team at Ambry Genetics in Aliso Viejo, CA. At Ambry, she developed genetic screening assays to identify mutations causing diseases such as cystic fibrosis, chronic pancreatitis, and hereditary nonpolyposis colon cancer.

In 2005, Jennifer was accepted into the NIH-Oxford-Cambridge Scholars program and became a student of Clinical Medicine at Keble College at the University of Oxford where she studied under Dr. Kevin Talbot and Dame Kay Davies at the Oxford Centre for Gene Function. At the NIH, Jennifer was mentored by Drs. Bryan Traynor, Andrew Singleton and John Hardy at the National Institute on Aging. Her D.Phil. thesis focused on identifying genetic causes of sporadic amyotrophic lateral sclerosis (ALS), also known as Lou Gehrig's disease. ALS is a rapidly progressing fatal neurodegenerative disease that affects 10,000 Americans each year. Jennifer applied genome-wide technologies to better define the complex

genetics underlying this disease and published the first genome-wide association study of sporadic ALS in *Lancet Neurology* in 2007. Data from this study is now publically available, thereby, serving as a valuable resource for other ALS researchers. In addition, Jennifer has contributed to numerous publications investigating candidate ALS genes and the genetic overlap between ALS and frontotemporal dementia.

Upon graduating from Oxford in 2009, Jennifer began her medical studies at the University of California Irvine School of Medicine as an NIH-supported M.D./Ph.D. student.



*Oxford Centre for Gene Function,  
Oxford University*



*The John Porter Neuroscience Building  
NIH Campus in Bethesda  
Home of the Laboratory of Neurogenetics*



*University of California Medical Center  
Irvine, CA*

#### *Publications from Ph.D. Research*

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4. Lai SL, Abramzon Y, **Schymick JC**, Stephan DA, Dunckley T, et al. FUS mutations in sporadic amyotrophic lateral sclerosis. *Neurobiol Aging*. 2010 Feb 4.
5. Sha Q, Zhang Z, **Schymick JC**, Traynor BJ, Zhang S. Genome-wide association reveals three SNPs associated with sporadic amyotrophic lateral sclerosis through a two-locus analysis. *BMC Med Genet*. 2009 Sep 9;10:86.
6. Del Bo R, Corti S, Santoro D, Ghione I, Fenoglio C, Ghezzi S, Ranieri M, Galimberti D, Mancuso M, Siciliano G, Briani C, Murri L, Scarpini E, **Schymick JC**, Traynor BJ, Bresolin N, Comi GP. No major progranulin genetic variability contribution to disease etiopathogenesis in an ALS Italian cohort. *Neurobiol Aging*. 2009 Jul 24.
7. Chiò A, Restagno G, Brunetti M, Ossola I, Calvo A, Mora G, Sabatelli M, Monsurrò MR, Battistini S, Mandrioli J, Salvi F, Spataro R, **Schymick J**, et al. Two Italian kindreds with familial amyotrophic lateral sclerosis due to FUS mutation. *Neurobiol Aging*. 2009 Aug;30(8):1272-5.
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10. Cronin S, Berger S, Ding J, **Schymick J**, Washecka N, et al. A genome-wide association study of sporadic ALS in a homogenous Irish population. *Hum Mol Genet*. 2008 Mar 1;17(5):768-74.
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13. Momeni P, **Schymick J**, Jain S, Cookson MR, Cairns NJ, et al. Analysis of IFT74 as a candidate gene for chromosome 9p-linked ALS-FTD. *BMC Neurol*. 2006 Dec 13;6:44.
14. Fung HC, Scholz S, Matarin M, Simón-Sánchez J, Hernandez D, **Schymick J** et al. Genome-wide genotyping in Parkinson's disease and neurologically normal controls: first stage analysis and public release of data. *Lancet Neurol*. 2006 Nov;5(11):911-6.