
FENNA M. KRIENEN, Ph.D. (she/her)

Harvard Medical School, Department of Genetics
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FUTURE POSITION

July 2022- **Assistant Professor**
Princeton Neuroscience Institute
Princeton University, Princeton NJ

EDUCATION & RESEARCH EXPERIENCE

Since 2015 **Postdoctoral fellow** – Dr. Steve McCarroll
Department of Genetics
Harvard Medical School, Boston, MA
Stanley Center for Psychiatric Research, Broad Institute of Harvard and MIT

2014–2015 **Mind/Brain Initiative fellow** – Dr. Chet Sherwood
Center for the Advanced Study of Human Paleobiology,
The George Washington University

2007–2013 **Ph.D.** – Dr. Randy Buckner
Department of Psychology and Center for Brain Science,
Harvard University

2005–2007 **Research assistant** – Dr. Mark D’Esposito
Helen Wills Neuroscience Institute,
University of California, Berkeley

2002–2006 **B.A. – Cognitive Science, concentration Neuroscience (Highest Honors)**
University of California, Berkeley

GRANTS & FELLOWSHIPS

2019 **SFARI Bridge to Independence Award**
Three-year grant (\$495k) (upon acceptance of faculty position)

2015 **NIH F32 Individual Postdoctoral Fellowship (NRSA)**
Percentile score: 2 (declined due to relocation for postdoc in Steve McCarroll’s lab)

2014–2015 **Mind-Brain Institute Postdoctoral Scholar**
The George Washington University

2013 **Harvard Mind, Brain & Behavior Graduate Student Award**
Awarded for research proposal

2010–2011 **Sackler Scholarship in Psychobiology**
Awarded for doctoral research proposal

2007–2013 **Ashford Fellowship, Harvard University**
Tuition and stipend for graduate study

2007–2010 **Department of Defense Science and Engineering Fellowship (NDSEG)**
Tuition and stipend for graduate study

HONORS & AWARDS

2020 **Allen Institute Next Generation Leaders Council**
Three year appointment

2016 **Human Brain Mapping Merit Award**

- Trainee Abstract Merit Award, OHBM Meeting, Geneva, Switzerland
- 2014 **Richard J. Herrnstein Prize**
Dissertation Prize from Harvard Graduate School of Arts and Sciences
- 2013 **Harvard Horizons Scholar**
Graduate School program: <http://www.gsas.harvard.edu/harvardhorizons>
- 2013 **Human Brain Mapping Travel Award**
Trainee Abstract Travel Award, OHBM Meeting, Seattle, WA
- 2011 **Harvard University Certificate of Distinction in Teaching**
Molecular and Cellular Biology 80, Neurobiology of Behavior (Fall term)
- 2009 **Human Brain Mapping Travel Award**
Trainee Abstract Travel Award, OHBM Meeting, San Francisco, CA
- 2006 **Departmental Citation in Cognitive Science**
University of California, Berkeley, CA
- 2006 **Robert E. Glushko Prize for Distinguished Undergraduate Research in Cognitive Science**
University of California, Berkeley, CA

PUBLICATIONS

Research Articles

- 2021 BRAIN Initiative Cell Census Network (BICCN). A multimodal cell census and atlas of the mammalian primary motor cortex. *Nature, in press*
- 2021 Bakken T, Jorstad N, Lake B, Tian W, Kalmbach B, Crow M, Hodge R, **Krienen FM**, Sorensen S, Eggermont J, Yao Z, Aevermann B, Hu Q, Aldridge A, Bartlett A, Bertagnolli D, Casper T, Castanon R, Crichton K, Daigle T, Dalley R, Dee N, Dembrow N, Diep D, Ding S-L, Dong W, Fang R, Fischer S, Goldman M, Goldy J, Graybuck L, Herb BR, Hou X, JKancherla J, Kroll M, Lathia K, van Lew B, Li Y, Liu C, Liu H, McMillen D, Miller J, Moussa M, Nery J, Orvis J, Owen S, Palmer P, Pham T, Plongthongkum N, Poirion O, Reed N, Rimorin C, Rivkin AC, Romanow W, Sedeño-Cortés A, Siletti K, Somasundaram S, Sulc J, Tieu M, Torkelson A, Tung H, Wang X, Xie F, Yanny A, Zhang R, Ament S, Bravo H, Chun J, Dobin A, Gillis J, Hertzano R, Hof P, Höllt T, Horwitz G, Keene C, Kharchenko P, Ko A, Lelieveldt B, Luo C, Mukamel E, Preissl S, Regev A, Ren B, Scheuermann R, Smith K, Spain W, White O, Koch C, Hawrylycz M, Tasic B, Macosko E, McCarroll S, Ting J, Zeng H, Zhang K, Feng G, Ecker J, Linnarsson S, Mahurkar A, Behrens MM, Osteen JK, Lucero JD, Nicovich P, Niu S-Y, Lein ES. Comparative cellular analysis of motor cortex in human, marmoset, and mouse. *Nature, in press*.
- 2020 **Krienen FM***, Goldman M, Zhang Q, del Rosario R, Florio M, Machold R, Saunders A, Levandowski K, Zaniewski H, Schuman B, Wu C, Lutservitz A, Mullally CD, Reed N, Bien E, Bortolin L, Fernandez-Otero M, Lin J, Wysoker A, Nemes J, Kulp D, Burns M, Tkachev V, Smith R, Walsh CA, Dimidschstein J, Rudy B, Kean L, Berretta S, Fishell G, Feng G, McCarroll SA*. Innovations present in the primate interneuron repertoire. *Nature* **586**:262-269. [*corresponding author]
- 2018 Saunders A, Macosko E, Wysoker A, Goldman M, **Krienen FM**, de Rivera H, et al. Molecular diversity and specializations among the cells of the adult mouse brain *Cell*. 174, e16
- 2018 Anderson KM, **Krienen FM**, Choi EY, Reinen JM, Yeo BTT, Holmes AJ. Gene expression links functionally coupled aspects of cortex and striatum. *Nature Communications* 9(1), 1428
- 2017 Charvet CJ, Stimpson CD, Kim YD, Raghanti MA, Lewandowski AH, Hof PR, Gómez-Robles A, **Krienen FM**, Sherwood CC. Gradients in cytoarchitectural landscapes of the isocortex: diprotodont marsupials in comparison to eutherian mammals. *The Journal of Comparative Neurology* 525(8), 1811-1826
- 2016 **Krienen FM***, Yeo BTT, Ge T, Buckner RL, Sherwood CC. Transcriptional profiles of supragranular-enriched genes associate with corticocortical network architecture in the human brain. *Proceedings of the National Academy of Sciences USA* 113(4), E469–E478 [*corresponding author]

- 2015 Yeo BTT, **Krienen FM**, Eickhoff SB, Yaakub SN, Fox PT, Buckner RL, Asplund CL, Chee MWL. Functional specialization and flexibility in human association cortex. *Cerebral Cortex* 25(10), 3654-3672
- 2014 **Krienen FM**, Yeo BTT, Buckner RL. Reconfigurable state-dependent functional coupling modes cluster around a core functional architecture. *Philosophical Transactions of the Royal Society B*. 369(1653), 20130526
- 2014 Yeo BTT, **Krienen FM**, Chee MWI, Buckner RL. Estimates of segregation and overlap of functional connectivity networks in the human cerebral cortex. *Neuroimage* 88, 212-227
- 2013 Baker JT, Holmes AJ, Masters GA, Yeo BTT, **Krienen FM**, Buckner RL, Ongur D. Disruption of cortical association networks in schizophrenia and psychotic bipolar disorder. *JAMA Psychiatry* (2), 109-118
- 2011 Buckner RL, **Krienen FM**, Castellanos A, Diaz J, Yeo BTT. (2011) The organization of the human cerebellum estimated by intrinsic functional connectivity. *Journal of Neurophysiology* 106(5), 2322-45
- 2011 Yeo BTT[§], **Krienen FM**[§], Sepulcre J, Sabuncu MR, Lashkari D, Hollinshead M, Roffman JL, Smoller JW, Zöllei L, Polimeni JR, Fischl B, Liu H, Buckner RL. The organization of the human cerebral cortex estimated by intrinsic functional connectivity. *Journal of Neurophysiology* 106(3), 1125-1165 [§Joint first authors] Article recommended by *Faculty of 1000*: <http://f1000.com/13521958>
- 2010 **Krienen FM**, Tu P, Buckner RL. Clan mentality: evidence that medial prefrontal cortex responds to close others. *Journal of Neuroscience* 30(41), 13906-13915
- 2009 **Krienen FM**, Buckner RL. Segregated prefrontal-cerebellar loops revealed by intrinsic functional connectivity. *Cerebral Cortex* 19(10), 2485-2497
- 2009 Buckner RL, Sepulcre J, Talukdar T, **Krienen FM**, Liu H, Hedden T, Andrews-Hanna JR, Sperling RA, Johnson KA. Cortical hubs revealed by intrinsic functional connectivity: mapping, assessment of stability, and relation to Alzheimer's disease. *Journal of Neuroscience* 29(6), 1860-1873

Reviews

- 2017 **Krienen FM**, Sherwood CC. Gradients of connectivity in the cerebral cortex. *Trends in Cognitive Sciences* 21(2), 61-63
- 2013 Buckner RL, **Krienen FM**. The evolution of distributed networks in the human brain. *Trends in Cognitive Sciences* 17(12), 648-665
- 2013 Buckner RL, **Krienen FM**, Yeo BTT. Opportunities and limitations of intrinsic functional connectivity MRI. *Nature Neuroscience* 16(7), 832-837

Book chapters

- 2017 **Krienen FM**, Buckner RL. Human association cortex: expanded, untethered, neotenuous, and plastic. In *Evolution of Nervous Systems*, Second Edition, Volume 4, 169-183, Elsevier, Oxford, Eds: Jon Kaas and Todd Preuss.
- 2017 Charvet CJ, **Krienen FM**. Developmental programs and gene expression patterns yield insights into the evolution of primate cortical circuitry. In *Evolution of Nervous Systems*, Second Edition, Volume 2, 91-97, Elsevier, Oxford, Eds: Jon Kaas and Leah Krubitzer.

INVITED TALKS (Selected)

- 2021 *NIMH Joint BICCN-PEC-CN-NCRCRG Meeting* (Workshop), virtual
- 2021 *NASEM Forum on Neuroscience and Nervous System Disorders* (Workshop), virtual
- 2021 *Open for (neuro)science* (Symposium), virtual, hosted by Allen Institute
- 2021 *Expanding Minds: The Allen Institute Conference on Human Brain Evolution* (Symposium), virtual

- 2020 *Interneuron Dysfunction in Autism* (Symposium), virtual
- 2020 *NIH Brain Initiative Investigators Meeting: Molecular Taxonomies of Brain Cells* (Symposium), virtual
- 2019 *Delaware State Neuroscience Seminar* (Seminar) Delaware State University, Dover, DE
- 2019 *Stanley Center Joint Executive-Scientific Advisory Committee Meeting* (Symposium), Broad Institute, Cambridge MA
- 2019 *Yale Current Work in Behavior, Genetics and Neuroscience* (Seminar) Yale University, New Haven, CT
- 2019 *Cerebral Cortex: from Progenitors to Functional Circuits* (Symposium) The Cajal Club Symposium, Puerto Varas, Chile
- 2019 *From Polygenicity to Biology: Symposium on Severe Mental Illness* (Symposium), Broad Institute, Cambridge, MA
- 2019 *Brainstorming on Concerted Efforts on Genetic Models and Brain Mapping* (Symposium), 2nd Annual Primate Neuroscience Research Symposium, Shenzhen, China
- 2019 *Defining an Ontological Framework for a Brain Cell Type Taxonomy: Single-Cell -omics and Data-Driven Nomenclature* (Workshop), The Allen Institute, Seattle, WA
- 2018 *Developmental Origins of Brain Circuit Architecture and Psychiatric Disorders* (Symposium), National Institute of Mental Health, Bethesda, MD
- 2017 *Large-Scale Trends in Cortical Organization* (Workshop), Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany
- 2017 *Novel Insights into Human Brain Evolution from Advanced Genomics* (Symposium), American Society of Human Genetics, Orlando, FL
- 2017 *Integrating Neuroimaging and Transcriptomic Data to Study the Brain in Health and Disease* (Symposium), Organization for Human Brain Mapping, Vancouver, Canada
- 2012 *Neural Computation Workshop: Computational approaches to brain connectivity*, Dartmouth College, NH
- 2010 *New Studies of Neurobehavioral Evolution* (Symposium), Washington, DC

CONFERENCE ABSTRACTS (Selected)

- 2021 *European Brain and Behaviour Society*, Lausanne, FR (talk, virtual)
- 2019 *Society for Neuroscience*, Chicago, IL (talk)
Innovations in primate interneuron repertoire
- 2016 *Organization for Human Brain Mapping*, Geneva, Switzerland (talk)
Transcriptional profiles of supragranular-enriched genes predict corticocortical network architecture in the human brain
- 2015 *Society for Neuroscience*, Chicago, IL (dynamic poster)
Transcriptional profiles of supragranular-enriched genes predict corticocortical network architecture in the human brain
- 2013 *Organization for Human Brain Mapping*, Seattle, WA (talk)
Boundaries on functional connectivity boundaries
- 2011 *Society for Neuroscience*, Washington, DC (poster)
Cognitive and affective responses to unexpected events

- 2010 *Society for Neuroscience*, San Diego, CA (poster)
Contributions of hippocampal and frontal systems to planning in virtual environments
- 2009 *Howard Hughes Medical Institute Conference on Neurobiology*, Janelia Farm, VA (poster)
Segregated prefrontal-cerebellar loops revealed by functional connectivity
- 2009 *Organization for Human Brain Mapping*, San Francisco, CA (talk)
Segregated prefrontal-cerebellar loops revealed by functional connectivity
- 2007 *Cognitive Neuroscience Society*, New York, NY (poster)
Hold your horses! Testing the race model of motor response inhibition
- 2006 *Bay Area Memory Meeting*, Stanford University, CA (talk)
Cross-modal differences in response inhibition

EDITORIAL SERVICE

Associate Editor *Network Neuroscience*, (Journal) MIT Press

Ad-Hoc Referee *The Journal of Neuroscience, Cerebral Cortex, Neuroimage, Frontiers in Neuroanatomy, Archives of General Psychiatry, The Cerebellum, Human Brain Mapping, PNAS, Nature Neuroscience, Nature Communications, Nature Medicine, Current Biology, eLife, Nature*

TEACHING & MENTORING

- 2017, 2018 **Mentor to Northeastern University Co-op students**
Supervised projects for Northeastern University undergraduate interns
- Spring 2013 **Teaching Assistant**
The Human Brain Then and Now (PSY 1303; R.L. Buckner, Harvard University)
- Fall 2011 **Teaching Assistant**
Neurobiology of Behavior (MCB 80; J. Sanes & J. Lichtman, Harvard University)
- Spring 2011 **Reader**
Brain Genomics (PSY 1307; R.L. Buckner, Harvard University)
- 2009-2013 **Mentor to Harvard Honors Thesis students**
Mentor to Harvard Psychology and Neurobiology undergraduates for Honors Thesis projects
- 2008, 2010 **Mentor to HHMI EXROP students**
Supervised projects for interns in Howard Hughes Medical Institute's summer program for women and underrepresented minority undergraduate students
- 2009–2010 **Dunster House Resident Tutor**
Pre-concentration sophomore advising, Harvard University
- 2007–2009 **Suffolk County Prison Seminar**
Developed the curriculum and taught weekly on topics in brain science to residents of medium-security prison

MEDIA COVERAGE (Selected)

- 2017 Ann Gibbons for *Science* [Lab-Grown 'Minibrains' are Revealing What Makes Humans Special](#)
- 2016 Stuart Dambrot for *Medical Xpress* [Express This: Gene-Specific Transcription Linked to Long-Range Connectivity](#)
- 2014 Courtney Humphries for *Harvard Magazine* [Was the Human Brain Unleashed?](#)

2013 Carl Zimmer for *New York Times* [In the Human Brain, Size Really Isn't Everything](#)
2010 Elizabeth Landau for *CNN Health* [How friends matter to your brain](#)