

CURRICULUM VITAE**Elizabeth A. Stubblefield (Beth), Ph.D.**

Teaching Assistant Professor
 University of Colorado Boulder
 Department of Psychology & Neuroscience
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Education

- 2009 Ph.D. Pharmacology, laboratory of Dr. Timothy Benke, CU Anschutz Medical Campus.
Characterization of functional AMPA-type glutamatergic synapses in the developing hippocampus: potential mechanisms of synaptic plasticity underlying learning & memory
- 2000 B.S. Biophysics, Centenary College of Louisiana

Teaching Experience

- 2026 Spring Teaching Assistant Professor, Dept. of Psychology & Neuroscience, CU Boulder
Introduction to Neuroscience II: Systems (NRSC 2150)
 section 100: 132 students
Lab Techniques in Neuroscience (NRSC 2200)
 section 003: 18 students
Biological Psychology (PSYC 2012)
 section 003: 146 students
- 2025 Fall Teaching Assistant Professor, Dept. of Psychology & Neuroscience, CU Boulder
Introduction to Neuroscience II: Systems (NRSC 2150)
 section 100: 100 students; mean instructor score: 5.26/6
The Neurobiology of Learning & Memory (NRSC 4032) sections 001 and 002
 section 001: 46 students; mean instructor score: 5.64/6
 section 002: 47 students; mean instructor score: 5.71/6
- 2025 Spring Teaching Assistant Professor, Dept. of Psychology & Neuroscience, CU Boulder
Introduction to Neuroscience II: Systems (NRSC 2150)
 section 100: 134 students; mean instructor score: 5.5/6
Biological Psychology (PSYC 2012) sections 002 and 003
 section 002: 142 students; mean instructor score: 5.52/6
 section 003: 86 students; mean instructor score: 5.48/6
- 2024 Fall Teaching Assistant Professor, Dept. of Psychology & Neuroscience, CU Boulder
Introduction to Neuroscience II: Systems (NRSC 2150)
 section 100: 81 students; mean instructor score: 5.42/6
The Neurobiology of Learning & Memory (NRSC 4032) sections 001 and 002
 section 001: 46 students; mean instructor score: 5.46/6
 section 002: 47 students; mean instructor score: 5.15/6
- 2024 Spring Teaching Assistant Professor, Dept. of Psychology & Neuroscience, CU Boulder
Introduction to Neuroscience II: Systems (NRSC 2150)
 section 100: 104 students; mean instructor score: 5.13/6
Biological Psychology (PSYC 2012) sections 002 and 003
 section 002: 134 students; mean instructor score: 5.19/6
 section 003: 100 students; mean instructor score: 5.48/6
- 2023 Fall Lecturer, Dept. of Psychology & Neuroscience, CU Boulder
Introduction to Neuroscience II: Systems (NRSC 2150)

2010 Spring Adjunct Professor of Neuroscience, Dept. of Psychology, Regis University, Denver, CO
Neuroscience Topics: Mechanisms of synaptic plasticity underlying learning & memory

Professional Service, CU Boulder

Departmental Committee Service

2024-present Faculty advisor to Neuroscience Club
 2024-present Faculty advisor to Nu Rho Psi Honors Society
 2024-present Graduation committee

Undergraduate Honors Theses Committee Member

2025 Fall Annie Earthman: Dept. of Molecular & Cellular Developmental Biology
 2025 Spring Ethan James: Dept. of Molecular & Cellular Developmental Biology
 2025 Spring Evan Leach: Dept. of Integrative Physiology

Miscellaneous Service

2025 Wrote letters of recommendation for 15 undergraduate students
 2024 Wrote letters of recommendation for 21 undergraduate students, 1 graduate student, and 1 faculty mentor promotion letter of support
 2025 Outreach, CU Anschutz Neuroscience Program invited speaker

Research Experience

2019-2022 Research Associate with Dr. Daniel Denman, Dept. of Physiology/Biophysics at CU Anschutz Medical Campus. *Decoding active & passive cortical activity within populations of visual system neurons to decipher how neural networks utilize visual information for motor plans utilizing neuropixels recording probes*

2014-2019 Visiting Scientist with Dr. Joshua Dudman, HHMI Janelia Research Campus, in collaboration with Dr. Gidon Felsen, Dept. of Physiology/Biophysics at CU Anschutz Medical Campus. *Reinforcement learning & stimulus-guided strategies underlying decisions & motor control in the basal ganglia: a virtual reality task in mice utilizing optogenetics during high-density electrophysiological recordings with neuropixels probes*

2011-2014 Postdoctoral Fellow with Dr. Gidon Felsen, Dept. of Physiology/Biophysics CU Anschutz Medical Campus. *Optogenetic modulation of the mouse superior colliculus in vivo & electrophysiological characterization of its role in decision-making, biases, & motor control*

2010 Postdoctoral Fellow with Dr. Nancy Zahniser, Dept. of Pharmacology in collaboration with Dr. Chuan-Yuan Li, Depts. of Radiation Oncology & Pharmacology CU Anschutz Medical Campus. *Direct reprogramming of human fibroblasts into dopaminergic neurons*

Academic Awards and Honors

2013-2015 NIH (NINDS)-funded F32: 1F32NS080402-01A1 [PA11-113]
 RUTH L. KIRSCHSTEIN NATIONAL RESEARCH AWARD

2011-2012 Basic Neuroscience Advanced Training Fellowship Award, Neuroscience Program, CU Anschutz Medical Campus

2006 Travel Award, Biophysical Society Conference, Dept. of Pharmacology, CU Anschutz Medical Campus

2000 Physics Research Award, Centenary College

1999-2000 Physics Club President, Centenary College

1998-1999 Study-abroad travel award for 1yr at the Humboldt Universität, Berlin

1997-1998 Howard Hughes Student Award, Biophysics research at Centenary College with Dr. Juan Rodriguez in collaboration with Dr. Harold Batterbee, Dept. of Physiology at LSU Medical Center, Shreveport, LA

1995-2000 Full athletic NCAA college tennis scholarship, Centenary College

1995-2000 Dean's List & Alpha Chi honors fraternity member, Centenary College

Research Publications

- 1) Doykos TK, Yamauchi T, Buteau A, Hanson S, Dudman JT, **Felsen G, ****Stubblefield EA** (2025) Correlates of head-fixed orienting movements in mouse superior colliculus and substantia nigra pars reticulata. *bioRxiv preprint*: <https://www.biorxiv.org/content/10.1101/2025.05.02.651955v1>
- 2) **Stubblefield EA**, Thompson JA, Felsen G (2015) Optogenetic cholinergic modulation of the mouse superior colliculus *in vivo*. *J Neurophysiology* 114(2):978-988.
<http://jn.physiology.org/content/114/2/978.long>
- 3) Wolf AB, Linz ML, Costabile JD, Thompson JA, **Stubblefield EA**, Felsen G (2015) An integrative role for the superior colliculus in selecting targets for movements. *J Neurophysiology* 114(4):2118-2131.
<http://jn.physiology.org/content/114/4/2118.long>
- 4) **Stubblefield EA**, Costabile JD, Felsen G (2013) Optogenetic investigation of the role of the superior colliculus in orienting movements. *Behav Brain Res*. 255:55-63.
<http://www.sciencedirect.com/science/article/pii/S0166432813002489>
- 5) Al-Juboori S, Dondzillo SA, **Stubblefield EA**, Felsen G, Klug A, and Lei T (2013) Light scattering properties vary across different regions of the adult mouse brain. *PLoS ONE* 8(7):e67626.
<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0067626>
- 6) *Liu X, *Li F, ***Stubblefield EA**, Blanchard B, Richards TL, Larson GA, He Y, Huang Q, Tan AC, Zhang D, Benke TA, Sladek JR, Zahniser NR, Li CY (2012) Direct reprogramming of fibroblasts into dopamine neuron-like cells. *Cell Research* 22(2):321-32.
<http://www.nature.com/cr/journal/v22/n2/pdf/cr2011181a.pdf>
- 7) **Stubblefield EA**, Benke TA (2010) Distinct AMPA-type glutamatergic synapses in developing CA1 hippocampus. *J. Neurophysiology* 104(4):1899-1912
<http://jn.physiology.org/content/104/4/1899>
- 8) Jones J, **Stubblefield EA**, Benke TA, Staley KJ (2007) Desynchronization of glutamate release prolongs synchronous CA3 network activity. *J. Neurophysiology* 97(5):3812-18.
<http://jn.physiology.org/content/97/5/3812>

*these authors made equal contributions; **co-corresponding senior authors

Invited Research Seminars

- 2016 Janelia/HHMI Neuroscience Seminar
How the drift-diffusion model of cortical activity for decision-making falls short: an introduction to the urgency-gating model
- 2014 Janelia Association of Research Scientists Seminar
Neural activity of the substantia nigra pars reticulata during decision-making & motor control
- 2012 University of Texas El Paso, Border Biomedical Research Center
Optogenetic modulation & neural activity of decision-making in the mouse superior colliculus
- 2012 University of Colorado Anschutz Medical Campus, A.R. Martin Seminar Series
Optogenetic cholinergic modulation of the mouse superior colliculus in vivo

Abstracts at Research Conferences

- 2018 Basal Ganglia Gordon Conference (**Stubblefield EA**, Felsen G, Dudman JT)
- 2017 Society for Neuroscience (**Stubblefield EA**, Felsen G, Dudman JT)
- 2013 Society for Neuroscience (**Stubblefield EA**, Felsen G)
- 2012 Society for Neuroscience (Dondzillo A, Al Juboori S, **Stubblefield EA**, Lei T, Felsen G, Klug, A)
- 2012 American Chemical Society (Gire DH, Al Juboori S, **Stubblefield EA**, Dang Q, Lei T,

Felsen G, Restrepo D)
2011 Colorado Front Range Neuroscience Group (**Stubblefield EA**, Felsen G)
2009 Winter Conference on Brain Research (**Stubblefield EA**, Benke TA)
2006 Biophysical Society (**Stubblefield EA**, Benke TA)
2005 Society for Neuroscience: LTP pre-meeting (Benke TA, **Stubblefield EA**)
2005 Society for Neuroscience (**Stubblefield EA**, Benke TA)

Additional Research Skills/Techniques

- Full development & implementation of sensorimotor, decision-making behavioral tasks in mice (3 distinct projects, to date)
- Implementation (set-up, original beta-testing, recording, & analyses) of high density 384-channel *in vivo* electrophysiological recordings during mouse behavior (*Neuropixels project* – HHMI Janelia Research Campus/Allen Institute/WellcomeTrust)
- Proficiency in software generation for full data acquisition & analyses (behavioral/optogenetic/electrophysiological):
 - Python
 - Matlab
 - Arduino

References

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