

ALEXANDER K. REED
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EDUCATION

Harvard Medical School Boston, MA
MD Degree Candidate 2018-Present

Harvard College Cambridge, MA
AB, *magna cum laude*, Human Developmental and Regenerative Biology. 2014-2018
Minor: Mind, Brain, and Behavior.
Honors Thesis: Characterizing somatostatin interneuron activation in the adult dorsolateral septum.

AWARDS

Outstanding Senior Thesis Award 2018
Department of Stem Cell and Regenerative Biology, Harvard University

Medical Humanities Fellowship 2017-2018
Abigail Adams Institute

Harvard Stem Cell Institute Internship Program Summer Research Fellowship 2017
Harvard Stem Cell Institute

Crimson Care Collaborative - Beth Israel Shining Star Award 2017
John D. Stoeckle Center for Primary Care Innovation and the Crimson Care Collaborative

Harvard College Scholar 2015
Dean of Harvard College

RESEARCH EXPERIENCE

Computational Neuroscience Outcomes Center Boston, MA
Medical Student Researcher 2019-Present

- Research neurosurgical outcomes through systematic review of existing literature and chart review of current and past patients to evaluate indications for neurosurgical procedures.
- Analyze findings and conduct meta-analyses of existing studies to determine procedural intervention that will lower patient morbidity and mortality most significantly.

Harvard Stem Cell Institute, Center for Regenerative Medicine Boston, MA
Undergraduate Researcher, Advisor: Amar Sahay 2016-2018

- Performed murine neurosurgical manipulations to study neuronal activation in real-time in behaving mice.

- Collected murine cranial slices, performed immunofluorescent stains for target proteins, acquired confocal and light microscopy images, and analyzed the statistical impact of the results, supporting research on adult neurogenesis, context discrimination, and pattern recognition.

University of Pittsburgh

Research Assistant, Advisor: Zachary Wills

Pittsburgh, PA

2015-2016

- Acquired light and confocal microscopy images of hippocampal mouse neurons.
- Evaluated dendritic architecture, spine size, and neuronal complexity, contributing to research focused on a novel pathology of synapse loss in Alzheimer's Disease phenotypes.

PEER-REVIEWED PUBLICATIONS

Besnard, A., Gao, Y.*, Kim, M.T.*, Twarkowski, H., **Reed, A.K.**, Langberg, T., Feng, W., Xu, X., Saur, D., Davison, I., and Sahay, A. (2019). Dorsolateral septum somatostatin interneurons gate mobility to calibrate context specific behavioral fear responses. *Nature Neuroscience* 22, 436–446. *equal contribution.

Zhao, Y., Sivaji, S., Chiang, M., Ali, H., Zukowski, M., Ali, S., Kennedy, B., Sklyar, A., Guo, Z., **Reed, A.K.**, Kodali, R., Borowski, J., Frost, G., Beukema, P., and Wills, Z.P. (2017). Amyloid Beta Peptides Block New Synapse Assembly by Nogo Receptor-Mediated Inhibition of T-Type Calcium Channels. *Neuron* 96, 355-372.e356.

POSTER PRESENTATIONS

Reed, A.K., Besnard, A., and Sahay, A. Characterizing somatostatin interneuron activation in the adult dorsolateral septum. Poster presentation at Harvard Stem Cell Institute Internship Program Research Symposium, Cambridge, MA, August, 2017.

ORAL PRESENTATIONS

Reed, A.K., Besnard, A., and Sahay, A. Characterizing somatostatin interneuron activation in the adult dorsolateral septum. Oral address delivered at Leverett House Honors Murdock Thesis Dinner, Cambridge, MA, April, 2018.

Reed, A.K., Besnard, A., and Sahay, A. Characterizing somatostatin interneuron activation in the adult dorsolateral septum. Oral address delivered at Harvard Stem Cell Institute Internship Program Research Symposium, Cambridge, MA, August, 2017.

PROFESSIONAL ASSOCIATIONS

American Association of Neurological Surgeons
Congress of Neurological Surgeons
American Medical Association
Massachusetts Medical Society

RELEVANT EXPERIENCE

Cushing Neurosurgical Society, Harvard Medical School Boston, MA
Event Planning Chair and Faculty Outreach Chair September 2018-Present

- Plan events, ranging from skills workshops to annual banquets, designed to foster medical student interest and promote education in neurosurgery.
- Identify and organize shadowing and mentorship opportunities for medical students with neurosurgical faculty.
- Prepare annual materials to submit to the American Association of Neurological Surgeons to maintain official national status.
- Collaborate closely with the rest of the Executive Board and faculty advisors to ensure events are successful and meeting student interest.

Anatomy Student Prosection Team, Harvard Medical School Boston, MA
Coordinator August 2018-December 2018

- Organize additional anatomical dissection opportunities for first-year medical students outside of the anatomy curriculum, liaising between anatomy faculty and interested students.
- Prepare prosected specimens accompanied by student-written practical review questions to present to the entire first-year class.

Crimson Care Collaborative, Beth Israel Deaconess Medical Center Site Boston, MA
Clinic Operations Director, Clinician, Administrative Manager 2015-Present

- Assist the clinical team in providing high quality, patient-centered, primary care services to each patient by measuring vital signs, taking the history, performing physical examination, and presenting the case to preceptor.
- Determined staffing needs for each clinic cycle, review applications, and onboard appropriate volunteers.
- Collaborated closely with attending physicians to schedule and staff clinics and liaise with BIDMC Medical Education and Volunteer offices to credential students.
- Served as and train Administrative Managers on how to monitor and direct patient flow through clinic.