Joshua Satya Cetron | *Curriculum Vitae*
jcetron@fas.harvard.edu • (404) 775-9793 • 1410 William James Hall, 33 Kirkland St, Cambridge, MA 02138

Education

Harvard University — Cambridge, MA
Doctoral Student, Department of Psychology — September 2018 - Present
Advisor: Mina Cikara, Ph.D.
Research interests: computational and multivariate analysis of cognitive neuroimaging data (e.g., RSA, MVPA), neural basis of cognition and learning, applying neuroscience and psychology research to improve social, educational, and public health outcomes.

Dartmouth College — Hanover, NH
B.A., Neuroscience, High Honors, *summa cum laude* — June 2016
GPA: 3.92, Phi Beta Kappa
Minors in Education and Spanish

Selected Honors, Awards, & Research Funding

Presidential Scholar, Graduate School of Arts and Sciences, Harvard University — Cambridge, MA, September 2018 - Present
- Selected by the Harvard Graduate School of Arts and Sciences to receive the Presidential Scholarship Award in special recognition of a commitment to public service and intellectual excellence. Nominated by the Harvard Department of Psychology.

High Honors Award, Neuroscience Honors Thesis, Dartmouth College — Hanover, NH, June 2016
- Senior Neuroscience Honors Thesis awarded High Honors by the Department of Psychological and Brain Sciences.

Department Nominee, Gazzaniga Family Science Award, Dartmouth College — Hanover, NH, June 2016
- Department of Psychological and Brain Sciences exclusive nominee for the college-wide Gazzaniga Family Science Award for the most outstanding senior honors thesis student in the sciences.

Citations for Meritorious Performance, Dartmouth College — Hanover, NH, 2014, 2015, 2016
- On four unique occasions, received formal personal commendations from faculty for exceptional contributions to an academic course, each in a distinct department. Faculty remarks are recorded on students' official undergraduate transcripts.

James O. Freeman Presidential Scholar, Dartmouth College — Hanover, NH, January 2015 - June 2015
- Funded undergraduate research assistantship for two academic terms of research with a faculty mentor. Awarded to third-year student applicants in the top 40% of their class.

Kaminsky Family Fund Award Grant Researcher, Dartmouth College — Hanover, NH, Fall 2014, Summer 2015
- Dartmouth College Dean of the Faculty Undergraduate Research Grant recipient, sponsored for two separate academic terms.

Rufus Choate Scholar, Dartmouth College — Hanover, NH, 2012-2013, 2013-2014
- Annual award recognizing students in the top 5% of their class each academic year.

Sophomore Science Scholar, Dartmouth College — Hanover, NH, September 2013 - March 2014,
- Undergraduate research assistantship for two academic terms with a faculty mentor. Awarded to second-year student applicants conducting research in the sciences.

Papers & Current Projects

Cetron, J. S., Connolly, A. C., Diamond, S. G., May, V. V., Haxby, J. V., Kraemer, D. J. M. (2018). Using the force: prior knowledge and experience shape neural representations of engineering concepts. *Submitted. Preprint available at psyarxiv.com/ue5fa. DOI: 10.17605/OSF.IO/UE5FA*

Cetron, J. S., Connolly, A. C., Diamond, S. G., May, V. V., Haxby, J. V., Kraemer, D. J. M. (2018). A neural score for engineering concepts: predicting STEM learning with multivariate pattern analysis of functional neuroimaging data. *Under review.*

Alfred, K. L., Connolly, A. C., **Cetron, J. S.**, Kraemer, D. J. M. (2018). Does the brain have a domain-general mechanism for representing mental models? *Manuscript in preparation.*

Hayes, J. C., Alfred, K. L., **Cetron, J. S.**, Pizzie, R. G., Kraemer, D. J. M. (2018). Individual differences in information processing predict distinct structural connectivity patterns. *Manuscript in preparation*.

Alfred, K. L., Hayes, J. H., **Cetron, J. S.**, Pizzie, R. G., Kraemer, D. J. M. (2018). Individual differences in visual and verbal habits of thought. *Manuscript in preparation.*

Nastase, S. A., Hayes, J. H., **Cetron, J. S.**, Green, A. E., Cross, E. S., Haxby, J. V., Kraemer, D. J. M. (2017). Decoding perceptual retrieval: the influence of retrieval modality and task difficulty. *Manuscript in preparation.*

Cetron, J. S. & Cikara, M. (2019). Quantum cognition: understanding how opinions become represented as facts (and how to intervene). *In progress*.

Cetron, J. S., Hayes, J.C., Connolly, A. C., Diamond, S. G., May, V. V., Haxby, J. V., Kraemer, D. J. M. (2019). Comparing neural and behavioral representations of engineering concept learning for lab-based and computer-based instructional methods. *In progress.*

Peterson, E. M., Kolvoord, R. A., Kraemer, D. J. M., Weinberger, A. B., Uttal, D. H., Goldman, D., **Cetron, J. S.**, Green, A. E. (2019). A neural test of concept mastery in geoscience through evaluation of neural representations. *In progress.*

Cetron, J. S., & Dartmouth College. (2016). *The role of motor regions in representing engineering concepts*. (Senior Honors Thesis). Retrieved from Dartmouth College Library. (Control No. ocn953695823).

Kean, L., Sen, S., Felder, M. A., Tangpricha, V., Adisa, O., JAMES-Herry, A., Buchanan, I., Ziegler, T., Alvarez, J., Beus, J., Worthington-White, D., Robertson, J., George, J., **Cetron, J.**, Ofori-Acquah, S. F., & Osunkwo, I. (2011). Evidence for Quantitative and Functional Immune Deviation in Pediatric Patients with Sickle Cell Disease. *Blood,* 118(21), 1054. Retrieved from http://www.bloodjournal.org/content/118/21/1054.

Conference Presentations

Cetron, J. S., Hayes, J.C., Connolly, A. C., Diamond, S. G., May, V. V., Haxby, J. V., Kraemer, D. J. M. (2019, March). Comparing neural and behavioral representations of engineering concept learning for lab-based and computer-based instructional methods. Poster accepted to the 2019 annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.

Cetron, J. S., Connolly, A. C., Diamond, S. G., May, V. V., Haxby, J. V., Kraemer, D. J. M. (2018, March). *A neural score for engineering concepts: predicting STEM learning with multivariate pattern analysis of functional neuroimaging data*. Poster presented at the 2018 annual meeting of the Cognitive Neuroscience Society, Boston, MA.

Hayes, J. C., Alfred, K. L., **Cetron, J. S.**, Pizzie, R. G., Kraemer, D. J. M. (2018, March). *Individual differences in information processing predict distinct structural connectivity patterns*. Poster presented at the 2018 annual meeting of the Cognitive Neuroscience Society, Boston, MA.

Alfred, K. L., Connolly, A. C., **Cetron, J. S.**, Kraemer, D. J. M. (2017, March). *Does the brain have a domain-general mechanism for representing mental models?* Poster presented at the annual meeting of the Cognitive Neuroscience Society, San Francisco, CA.

Cetron, J. S., Connolly, A. C., Diamond, S. G., May, V. V., Kraemer, D. J. M. (2016, May). *The role of motor regions in representing engineering concepts.* Poster presented at the inaugural meeting of the Psychonomics Society International, Granada, Spain. Abstract retrieved from http://www.ps2016.org/downloads/abstracts-ps2016.pdf (p. 134, poster 31).

Cetron, J. S., Connolly, A. C., Diamond, S. G., May, V. V., Kraemer, D. J. M. (2016, April). *The role of motor regions in representing engineering concepts.* Poster presented at the annual meeting of the Cognitive Neuroscience Society, New York, NY. Abstract retrieved from https://www.cogneurosociety.org/documents/CNS_2016_Program.pdf (p. 186, poster D176).

Research Positions

Doctoral Student, Harvard University — Cambridge, MA
Harvard Intergroup Neuroscience Lab — September 2018 - present
Advisor: Mina Cikara, Ph.D.

- Doctoral student in the Department of Psychology conducting original behavioral and neuroimaging research in cognitive neuroscience with applications in social, educational, and public health domains.

Lab Manager and Research Assistant, Dartmouth College — Hanover, NH
Cognitive Neuroscience of Learning Lab — September 2016 - September 2018
Advisor: David J. M. Kraemer, Ph.D.

- Full-time research assistant. Conducted original research, oversaw and executed multiple task-based and fMRI research projects, and presented research at national and international conferences.
- Lab manager responsibilities included coordinating and managing lab logistics (e.g., participant scheduling, equipment reservations, website maintenance) and activities (e.g., writing workshops).

Undergraduate Research Assistant, Dartmouth College — Hanover, NH
Cognitive Neuroscience of Learning Lab — July 2013 - June 2016
Advisor: David J. M. Kraemer, Ph.D.

- Conceived, created, conducted, and analyzed behavioral and fMRI studies over three years of part- and full-time research, as a recipient of Dartmouth-sponsored research grants and as a Neuroscience Honors Thesis student.
- Neuroscience Senior Honors Thesis Student (2015-2016)
  - Investigated the neural representations of physics concepts and the role of prior knowledge and experience in those representations.
  - *Awarded High Honors*.
  - Research presented at the 2016 Cognitive Neuroscience Society Annual Meeting in New York City and at the 2016 International Meeting of the Psychonomics Society in Granada, Spain.

Laboratory and Research Assistant, Emory University — Atlanta, GA
Emory University Transplant Centers — Summers 2010, 2011, 2012
Advisor: Leslie Kean, M.D./Ph.D.

- Assisted with laboratory logistics for an immunology research lab studying Graft Versus Host Disease in bone marrow transplant patients.
- Maintained serum sample databases, computed basic statistical analyses, managed the safe transportation of sensitive biomaterials to and from the Yerkes International Primate Research Center.

Skills & Abilities

Computational Skills

- Programming Languages: Analysis and scripting experience with R, Python (including the SciPy and NumPy tools), and Unix/Bash.
- Computational Tools & Software: GitHub, iPython, Jupyter Notebook, PsychoPy, RStudio.

Neuroimaging Skills

- Functional MRI Scanning: Scanner operation and safety training (Philips 3.0 T Achieva Intera, Siemens PRISMA 3T).
- Neuroimaging Analysis Tools: AFNI (AFNI bootcamp certified), SUMA, FSL, FreeSurfer, PyMVPA.
- Neuroimaging Analysis Procedures: General linear modeling (subject- and group-level), MVPA searchlight analysis, support vector machine classification analysis, dimensionality reduction (multidimensional scaling, principal components analysis), mixed-effects modeling.

Other Skills

- Media Processing: Audio editing, recording, and mastering (Logic Pro X, GarageBand), image manipulation (GIMP), video editing (DaVinci Resolve, Final Cut Express, iMovie).
- Engineering: Electronics soldering, basic circuit wiring, basic woodworking, amateur luthier.
- Language Skills: Fluent in Spanish.
- Musical Training: 15+ years of musical instrument, independent songwriting, and performance experience.

Additional Work & Leadership Experience

Director, Dartmouth Outing Club (DOC) First-Year Trips Program — Hanover, NH
November 2015 - November 2016

- Directed the 2016 First-Year Trips program for the Dartmouth Outing Club, the largest College outdoor orientation program in the country. The DOC First-Year Trips program is an annual, entirely student-run program that takes approximately 1000 incoming students each year on five-day outdoor trips as an introduction to college.
- As Director, I was responsible for building, implementing, and overseeing every aspect of the 2016 program over a one-year period.
- Interviewed and hired a 20-person Directorate staff, selected a volunteer staff of 350+ students from an applicant pool of 600+, and assigned appx. 1000 first-year students to 139 different 5-day trips across 10 sections.
- Managed 56 support crew members across 6 separate teams as well as 278 trip leaders (all student volunteers) over the 3-week duration of the program while trips took place across central and northern New Hampshire, including in the White Mountains and along sections of the Appalachian Trail.
- *Reference: Dan Nelson, Former Director of Outdoor Programs, Dartmouth College (603) 646-2428, daniel.m.nelson@dartmouth.edu*

Program Facilitator, Pearson Seminar on Youth Leadership Victoria, B.C., Canada
Summers 2010, 2011

- Collaborated with a team of 16 facilitators and 8 program coordinators to design and implement a month-long summer leadership program at the Lester B. Pearson United World College.
- Critically engaged 100 high school student participants from 20+ different countries on topics in social justice, global citizenship, environmental sustainability, and community-building.

References

Mina Cikara, Ph.D.
Assistant Professor, Department of Psychology
Harvard University, Cambridge, MA
(617) 495-3819, mcikara@fas.harvard.edu

David J. M. Kraemer, Ph.D.
Assistant Professor, Department of Education
Advisor, Department of Psychological and Brain Sciences, Graduate Program
Dartmouth College, Hanover, NH
(603) 667-0472, david.j.m.kraemer@dartmouth.edu

James V. Haxby, Ph.D.
Evans Family Distinguished Professor, Department of Psychological and Brain Sciences
Director, Center for Cognitive Neuroscience
Director, Dartmouth Brain Imaging Center
Dartmouth College, Hanover, NH
(603) 646-0038, james.v.haxby@dartmouth.edu