

Sharif Ismail Kronemer, PhD, MSc

e: sharif.kronemer@nih.gov | *w:* sharifkronemer.com

Education & Research Experience

- 2021-Present **National Institute of Mental Health**
Laboratory of Brain and Cognition
Section on Functional Imaging Methods
Postdoctoral Fellow
Mentor: Peter Bandettini, PhD
- 2015 – 2021 **Yale University**
Interdepartmental Neuroscience Program
PhD in *Neuroscience*
Master of Philosophy in *Neuroscience*
Mentor: Hal Blumenfeld, MD, PhD
- 2013 – 2015 **Johns Hopkins University**
Division of Cognitive Neuroscience
Department of Neurology
Research Assistant
Mentor: Cherie Marvel, PhD
- 2012 – 2013 **University College London (UCL)**
Division of Psychology and Language Sciences
Master of Science in *Cognitive Neuroscience*
Mark: Distinction (highest mark)
Mentors: Paul Snowdon, PhD & Geraint Rees, PhD
- 2008 – 2012 **Ohio Wesleyan University (OWU)**
Bachelor of Arts
Major: *Neuroscience* Minor: *Philosophy*
Mentor: Jennifer Yates, PhD
GPA: 3.82

Funding & Scholarships

- 2018 – 2019 **NINDS T32 – Yale *Neurobiology of Cortical Systems* Training Grant (NS007224):** Stipend, tuition, and research funding competitively awarded to neuroscience PhD candidates (\$36,826).
- 2015 – 2017 **Yale Gruber Foundation Graduate Fellowship:** 3-year stipend and research funding awarded to top ranked neuroscience PhD applicants.
- 2012 **NCAA Postgraduate Scholarship:** Graduate school funding competitively awarded to student-athletes across all National Collegiate Athletics Association (NCAA) sports (\$7,500).
- 2010 **OWU Theory-to-Practice Grant:** Grant funding research and travel costs to study water management in nine Chinese cities (\$7,346).
- 2008 – 2012 **OWU Trustee Honors Scholarship:** Merit-based tuition scholarship (\$99,000).

Honors & Awards

- 2024 **NIMH Trainee Travel Award:** Competitively awarded for research excellence to fund scientific meeting travel expenses (\$1000).
- 2021 – 2025 **NIH Intramural Research Training Award:** Postdoctoral traineeship award.
- 2020 **Yale Annie Le Fellowship:** Awarded to 2 PhD candidates across all biological sciences for leadership in research and community service; stipend and research equipment funding (\$5000).
- 2019 **Yale 3-Minute Thesis Competition Finalist:** 3rd place (\$200).
- 2018, 2019 **Yale Conference Travel Fund Award:** Competitively awarded to graduate students to pay conference travel expenses (\$750).
- 2012 **NCAA Academic All-American:** Awarded to top student-athletes nationwide (NCAA Division III) for athletic and academic achievement.
- 2012 **NCAC Don Hunsinger Award:** Competitively awarded to the top male senior student-athlete in the North Coast Athletic Conference (NCAC) based on athletic ability, academic record, and leadership potential.
- 2012 **OWU Meek Leader Award:** Awarded to top senior undergraduate students who demonstrate exceptional leadership ability and service.
- 2012 **OWU Daniel E. Anderson Award:** Awarded to 1 senior undergraduate philosophy student who exemplifies strong philosophic research.
- 2011, 2012 **OWU Dale J. Bruce Presidential Scholar Athlete of the Year:** Awarded to the top undergraduate student-athlete based on athletic achievement, academic excellence, character, and leadership.
- 2009 **OWU Clinton R. Stevenson Leadership Award:** First year room and board scholarship awarded to 1 undergraduate student for leadership (\$8,000).

Teaching Experience

- 2023, 2024 **Howard University – *A Primer in the Study of Consciousness*:** Designed and taught a seminar course on the philosophy, science, and medicine of consciousness to Howard University undergraduate and graduate students.
- 2022 – 2024 **NIH FAES – *The Neural Mechanisms of Consciousness: Implications in Medicine, Technology, and Society (NEUR 505)*:** Designed and taught an asynchronous 7-week course on the philosophy, science, and medicine of consciousness to students enrolled with the Foundation for Advanced Education in the Sciences (FAES).
- 2023, 2024 **NIH Journal Club – *The consciousness network: What structural and functional connections in the brain reveal about the source of conscious perception*:** Designed and co-instructed a journal club to NIH summer interns.
- 2022 **NIH FAES – *Human Neuroscience (BIOL 525)*:** Taught an asynchronous 7-week course on the introduction to neuroscience to students enrolled with FAES.
- 2022 **NIH Journal Club – *Mystery, mirage, and mind: How illusions and neuroimaging reveal the working brain*:** Designed and co-instructed a journal club to NIH summer interns.

- 2020 **Yale Teaching Fellow – *Neurobiology*** (Professor: Haig Keshishian, PhD): Led a teaching section of Yale undergraduate students.
- 2016 – 2020 **Yale Pathways to Science – *Consciousness: Science, Self, and Society***: Designed and taught a 12-hour course on the philosophy and science of consciousness to High School students enrolled in the Yale Summer Scholars Program.
- 2018 **Yale Teaching Fellow – *Neuroanatomy*** (Professor: Michael Schwartz, PhD): Led a lab section of Yale neuroscience graduate and medical students.
- 2016 – 2017 **Yale Teaching Fellow – *Bioethics*** (Professor: Charlie Greer, PhD): Organized and co-supervised a 15-week course of Yale neuroscience graduate students.
- 2011 **OWU – *Consciousness and Mind (PSYCH 499)***: Designed and taught a 15-week course on the philosophy and science of consciousness to undergraduates. Supervised by Jennifer Yates, PhD.

Teaching Training

- 2022 **NIH Course – *Scientists Teaching Science***: Completed a 9-week training course on teaching skills and strategies for collegiate teaching in the sciences.
- 2022 **NIH Course – *Best Teaching Practices in Higher Education: Building a Learner-Centered Course from Principles to Practice***: Completed a 7-week training course on teaching skills and strategies for collegiate teaching in the sciences.
- 2021 **Yale Poorvu Public Communication Certificate**: Completed certificate requirements demonstrating skills in professional oral and written communication.
- 2020 **Yale Certificate of College Teaching Preparation**: Completed comprehensive training program in collegiate education.

Mentorship Experience

- 2021 – 2022 **OWU Real Life 101 Mentor Program**: Mentored 2 undergraduate students.
- 2021 **Yale Biological & Biomedical Sciences Diversity & Inclusion Collective Mentor Program**: Mentored 1 undergraduate student.
- 2017 – 2021 **Yale Graduate Affiliate Program – Pierson College**: Co-organized undergraduate professional and networking events; research mentoring.
- 2018 – 2020 **Yale Undergraduate Senior Thesis Mentor**: Mentor for 2 senior undergraduate thesis projects (Kaylie Chen & Claire Hu).
- 2016 – 2021 **Yale Postbaccalaureate Research Assistant Mentor**: Mentor for 3 research assistants (Jun Hwan Ryu, Mark Aksen, & Julia Z. Ding).

Mentees

- Present **Cassie Levesque**, NIH Postbaccalaureate Research Fellow (PRF)
- 2023 – 2024 **Victoria Gobo**, PRF (*Current*: PhD student at Baylor College of Medicine)
- 2022 – 2023 **Micah Holness**, PRF (*Current*: PhD student at Georgia State University)

Leadership

- 2023-Present **NIH Consciousness Research Interest Group – Co-Chair:** Organize NIH symposia and lectures on the scientific study of consciousness.
- 2016 – 2018 **Association for the Scientific Study of Consciousness (ASSC) – Committee Member, Chair:** Competitively selected for a 3-year position on ASSC student committee (Chair 2018-2019).
- 2017 – 2018 **Yale Graduate Student Assembly Representative:** Elected to represent graduate students in the Yale Interdepartmental Neuroscience Program.
- 2015 – 2018 **Open Labs at Yale – Director:** Elected co-director of Open Labs, a graduate student-led, science outreach organization.
- 2013 **UCL Student Academic Representative:** Elected to represent the Master of Science in Cognitive Neuroscience graduate students.
- 2011 – 2012 **OWU Student Body President:** Elected to represent the student body and led the Wesleyan Council on Student Affairs. (Vice President 2010-2011; Class Representative 2009-2010)

Invited Lectures

- Sep 16, 2024 **NIMH Training Day Lightning Talk:** *“Sleuthing subjectivity”*
- Apr 22, 2024 **UCL Metacognitive Neuroscience Lab:** *“The neural mechanisms of visual sensory and sensory-independent conscious perception”*
- Dec 14, 2024 **University of Münster Institute of Medical Psychology and Systems Neuroscience:** *“Human visual consciousness involves large scale cortical and subcortical networks”*
- Dec 7, 2023 **Yale Magnetic Resonance Research Center Seminar Series:** *“Examining afterimage conscious perception with whole brain and VI layer-resolution fMRI”*
- Apr 14, 2023 **OWU “The Neurds” Research Talk:** *“The space and time of visual consciousness in the human brain”*
- Feb 20, 2018 **Yale Clinical Neuroimaging Symposium:** *“Transient increases in subcortical arousal and salience networks associated with conscious visual perception”*
- May 14, 2018 **Johns Hopkins University - Neurology HEAD Seminar Series:** *“Uncovering the neural mechanisms of consciousness: Outstanding questions and obstacles”*

Conference Workshops

NIH-NSF Next Frontiers in Consciousness Research Workshop (*Workshop outreach ambassador*): Organized outreach classes for underrepresented undergraduate and graduate students in the science of consciousness in preparation of the Workshop. (2023)
<https://new.nsf.gov/funding/opportunities/cognitive-neuroscience-cogneuro/announcements/95736>

ASSC, Conference 26 (*Workshop speaker*) – *Shared subcortical arousal mechanisms across diverse perceptual and volitional modalities.* (2023)

ASSC, Conference 22 (*Workshop organizer and speaker*) – *Investigating cortical and subcortical mechanisms of conscious perception.* (2018)

Community Engagement

2013-Present Science Outreach

University programming – Keynote speaker

Yale Science Diplomats - Science in the News, Yale Science Diplomats - Flipped Science Fair, Yale EXPLO, Yale Young Global Scholars, Yale Synapse, Yale Pathways to Science, Yale Open Labs - Science Café, Yale Science at BAR, UCL Year 10 Debating Summer School, UCL Transition Program - Uni-Link

Public seminar series – Keynote speaker

Institute for Learning in Retirement (New Haven, CT), North Haven Public Library (New Haven, CT), Guilford Public Library (New Haven, CT), Branford Public Library (New Haven, CT), Barbican Centre - Brain Waves (London, UK)

Classroom visits

MBA High School (New Haven, CT), Co-op High School (New Haven, CT), Springbrook High School (Silver Spring, MD), Discovery High School (Lake Alfred, FL)

Peer Review & Editing

Cognitive, Affective, and Behavioral Neuroscience

Consciousness and Cognition

eLife

Current Opinion in Behavioral Sciences

Frontiers in Behavioral Neuroscience

Frontiers in Neuroscience

Nature Communications

Peer Community In Registered Reports

Perception

Progress in Neurobiology

Yale Undergraduate Research Journal

Professional Membership

2017-Present American Association for the Advancement of Science

2016-Present Association for the Scientific Study of Consciousness (*full-voting member*)

2012 Phi Beta Kappa

2011-Present Society for Neuroscience

Preprint Publications & Works in Progress

1. ***Kronemer, SI***, Bandettini, PA, & Gonzalez-Castillo, J (in preparation). Sleuthing subjectivity: A review of covert measures of consciousness.
2. Gobo, VE, Liu, TT, Japee, S, Osborne, B, Merriam, E, Bandettini, PA, & ***Kronemer, SI*** (in preparation). Eye metrics for perceived and not perceived images in cortical blindness.
3. ***Kronemer, SI***, Akin, B, Holness, M, Huber, R, Gonzalez-Castillo, J, Taylor, PA, Morgan, AT, Gobo, VE, Handwerker, DA, & Bandettini, PA (in preparation). Whole brain and V1 cortical layer neural mechanisms of afterimage conscious perception: A 7T MRI study.
4. ***Kronemer SI***, Gobo, VE, Benitez, A, Gonzalez-Castillo, J, & Bandettini, PA (in preparation). Spontaneous fluctuations of perceptual sensitivity for auditory and visual conscious perception: A human real-time pupillometry and MEG study.
5. Levesque, CM, Dijkstra, N, Bandettini, PA, & ***Kronemer, SI*** (in preparation). The neural mechanisms of reality monitoring: Distinguishing image and afterimage conscious perception.

Peer-Reviewed Publications

1. ***Kronemer, SI***, Gobo, VE, Walsh, CR, Teves, JB, Burk, DC, Shahsavarani, S, Gonzalez-Castillo, J, & Bandettini, PA (2024). Cross-species real time detection of trends in pupil size fluctuation. *Behavior Research Methods*.
2. ***Kronemer, SI***, Holness, M, Morgan, AT, Teves, JB, Gonzalez-Castillo, J, Handwerker, DA, & Bandettini, PA (2024). Visual imagery vividness correlates with afterimage conscious perception. *Neuroscience of Consciousness*. <https://doi.org/10.1093/nc/niae032>
3. ***Kronemer, SI***, Aksen, M, Ding, J, Ryu, JH, Xin, Q, Ding, Z, ... Blumenfeld, H (2022). Human visual consciousness involves large scale cortical and subcortical networks independent of task report and eye movement activity. *Nature Communications*, 13:7342. <https://doi.org/10.1038/s41467-022-35117-4>
4. Khalaf, A, ***Kronemer, SI***, Christison-Lagay, KL, Kwon, H, Li, J, Wu, K, & Blumenfeld, H (2023). Early neural activity changes associated with stimulus detection during visual conscious perception. *Cerebral Cortex*, 22:bhac140. 10.1093/cercor/bhac140
5. Gusso, MM, Christison-Lagay, KL, Zuckerman, D, Chandrasekaran, G, ***Kronemer, SI***, ... Blumenfeld, H (2022). More than a feeling: scalp EEG and eye correlates of conscious tactile perception. *Conscious Cogn.*, 105:103411. 10.1016/j.concog.2022.103411
6. Joyce, RM, Nadkarni, PA, ***Kronemer, SI***, Margron, MJ, Slapik, MB, Morgan, ... Marvel, CL (2022). Quality of life changes following the onset of cerebellar ataxia: Symptoms and concerns self-reported by ataxia patients and informants. *The Cerebellum*, 21. <https://doi.org/10.1007/s12311-022-01393-5>
7. ***Kronemer, SI***, Slapik, MB, Pietrowski, JR, Margron, MJ, Morgan, OP, Bakker, C, ... Marvel, CL (2021). Neuropsychiatric symptoms as a reliable phenomenology of cerebellar ataxia. *The Cerebellum*, 20. doi:10.1007/s12311-020-01195-7
8. Kwon, H, ***Kronemer, SI***, Christison-Lagay, KL, Khalaf, A, Li, J, Ding, JZ, Freedman, NC, Blumenfeld, H (2021). Early cortical signals in visual stimulus detection. *NeuroImage*, 244. <https://doi.org/10.1016/j.neuroimage.2021.118608>
9. Morgan, OP, Slapik, MB, Iannuzzelli, KG, LaConte, SM, Lisinski, JM, Nopoulos, PC, ... Marvel, CL (2021). The cerebellum and implicit sequencing: Evidence from cerebellar ataxia. *The Cerebellum*, 20, 222-245. doi: 10.1007/s12311-020-01206-7
10. Li, J, ***Kronemer, SI***, Herman, WX, Kwon, H, Ryu, JR, Micek, C, ... Blumenfeld, H, (2019). Default mode and visual network activity in an attention task: Direct measurement with intracranial EEG. *NeuroImage*, 201. doi: 10.1016/j.neuroimage.2019.07.016
11. Marvel, CL, Morgan, OP, & ***Kronemer, SI*** (2019). How the motor system integrates with working memory. *Neuro Biobeh Rev*, 102, 184-194. doi: 10.1016/j.neubiorev.2019.04.017
12. Herman, WX, Smith, RE, ***Kronemer, SI***, Watsky, RE, Chen, WC, Gober, LM, ... Blumenfeld, H (2019). A switch and wave of neuronal activity in the cerebral cortex during the first second of conscious perception. *Cerebral Cortex*, 29(2), 461-474. doi: 10.1093/cercor/bhx327
13. Slapik, M, ***Kronemer, SI***, Morgan, O, Bloes, R, Lieberman, S, Mandel, J, ... Marvel, C (2019). Visuospatial organization and recall in cerebellar ataxia. *Cerebellum*, 18(1), 33-46. doi: 10.1007/s12311-018-0948-z

14. ***Kronemer, SI***, Mandel, JA, Sacktor, NC, & Marvel, CL (2017). Impairments of motor function while multitasking in HIV. *Front Hum Neurosci*, 11, 212. doi:10.3389/fnhum.2017.00212
15. Anderson, BA, ***Kronemer, SI***, Rilee, JJ, Sacktor, N, & Marvel, CL (2015). Reward, attention, and HIV-related risk in HIV+ individuals. *Neurobiology of Dis*. doi: 10.1016/j.nbd.2015.10.018
16. Liao, D, ***Kronemer, SI***, Yau, J, Desmond, J, & Marvel, CL (2014). Motor system contributions to verbal and non-verbal working memory. *Frontiers in Human Neuroscience*, 8(753). doi: 10.3389/fnhum.2014.00753
17. ***Kronemer, SI*** & Yates, J (2012). An undergraduate taught course on consciousness and mind. *The Journal of Undergraduate Neuroscience Education*, 11(1), A17-A21
18. ***Kronemer, SI*** (2012). The death of expressed personhood: A neuroscientific model to solve our greatest bioethical dilemmas. *Dialogue: Journal of International Honor Society for Philosophy*, 55(1), 1-9
19. ***Kronemer, SI*** (2012). The death of personhood and the rise of the expressed-self: What neuroscience tells us about self and death. *Sapere Aude: The Wooster Journal of Philosophical Inquiry*, Volume V, 1-9

Conference Abstracts (*first or senior authorship abstracts only*)

1. Levesque, CM, Dijkstra, N, Bandettini, PA, & ***Kronemer, SI*** (November 2024). *A novel reality monitoring paradigm: Distinguishing image and afterimage conscious perception*. Poster presentation at *Society for Neuroscience*, Chicago, USA
2. Gobo, VE, Liu, TT, Japee, S, Merriam, E, Osborne, B, Bandettini, PA, & ***Kronemer, SI*** (November 2024). *Visual evoked pupil, blink, and eye movements in cortical blindness*. Poster presentation at *Society for Neuroscience*, Chicago, USA
3. Gobo, VE, Gonzalez-Castillo, J, Benitez, A, Bandettini, PA, & ***Kronemer, SI*** (July 2024). *Light-ind. pupillary fluctuations predict sensory perceptual sensitivity, MEG, and whole brain fMRI signals*. Oral presentation at *Association for the Scientific Study of Consciousness*, Tokyo, JP
4. ***Kronemer, SI***, Akin, B, Huber, R, Holness, M, Gonzalez-Castillo, J, *et al.*, Bandettini, PA (July 2024). *The central neural mechanisms of afterimage perception: A whole brain and cortical layer fMRI study*. Oral presentation at *Association for the Scientific Study of Consciousness*, Tokyo, JP
5. Gobo, VE, Gonzalez-Castillo, J, Teves, J, Holness, M, Bandettini, PA, & ***Kronemer, SI*** (June 2024). *Phase of pupillary unrest corresponds with perceptual sensitivity, MEG, and whole brain fMRI signals*. Poster presented at *Organization for Human Brain Mapping*, Seoul, KR
6. ***Kronemer, SI***, Holness, M, Akin, B, Gonzalez-Castillo, J, Huber, R, *et al.*, Bandettini, PA (June 2024). *Whole brain and primary visual cortex layer fMRI signatures of afterimage perception*. Poster presented at *Organization for Human Brain Mapping*, Seoul, KR
7. ***Kronemer, SI***, Holness, M, Morgan, TA, Gonzalez-Castillo, J, Akin, B, Huber... Bandettini, PA (October 2023). *Perceptually-matched images and afterimages share whole brain fMRI dynamics*. Poster presented at *Society for Neuroscience*, Washington, DC, USA

8. Gobo, VE, Gonzalez-Castillo, J, Teves, J, Holness, M, Bandettini, PA, & **Kronemer, SI** (October 2023). *Pupil size and phase as a real-time marker of perceptual sensitivity and whole brain activity*. Poster presented at *Society for Neuroscience*, Washington, DC, USA
9. **Kronemer, SI**, Holness, M, Morgan, TA, Gonzalez-Castillo, J, Teves, J, Handwerker, D, & Bandettini, PA (July 2023). *The neural mechanisms of interoceptive conscious perception: A 7T fMRI study of afterimages*. Poster presented at *Organization for Human Brain Mapping*, Montreal, CA
10. Gobo, VE, Gonzalez-Castillo, J, Teves, J, Handwerker, D, Bandettini, PA, & **Kronemer, SI** (July 2023) *Real time pupil size detection as a marker of arousal state and perceptual sensitivity*. Poster presented at *Organization for Human Brain Mapping*, Montreal, CA
11. Gobo, VE, Gonzalez-Castillo, J, Teves, J, Handwerker, D, Bandettini, PA, & **Kronemer, SI** (June 2023) *Pupil size as a real-time marker of arousal and perception state*. Poster presentation at *Association for the Scientific Study of Consciousness*, New York City, USA
12. **Kronemer, SI**, Holness, M, Morgan, TA, Gonzalez-Castillo, J, Teves, J, ... Bandettini, PA (June 2023) *Exteroceptive versus interoceptive conscious perception: A 7T fMRI study of afterimages*. Oral presentation at *Association for the Scientific Study of Consciousness*, New York City, USA
13. Holness, M, Morgan, TA, Teves, J, Handwerker, D, Bandettini, PA, & **Kronemer, SI** (October 2022) *The neural mechanisms of afterimages: A model of illusory conscious perception*. Poster presentation at *Society for Neuroscience*, San Diego, USA
14. **Kronemer, SI**, Aksen, M, Ryu, JH, Kwon, H, Forman, S ... Blumenfeld, H (June 2019) *Subcortical and cortical electrophysiology and fMRI in visual conscious perception: Detect, pulse, switch, and wave model*. Poster presentation at *Association for the Scientific Study of Consciousness*, London, CA
15. **Kronemer, SI**, Aksen, M, Hunke, K, Christison-Lagay, KL, Forman, S ... Blumenfeld, H (June 2018) *The temporal sequence of physiological changes for visual conscious perception*. Poster presentation at *Association for the Scientific Study of Consciousness*, Krakow, PL
16. **Kronemer, SI**, Forman, S, Ryu, JH, Khosla, M, Saberski, E ... Blumenfeld, H (June 2017) *The subcortical neural mechanisms of network switching for visual conscious perception*. Poster presentation at *Association for the Scientific Study of Consciousness*, Beijing, CN
17. **Kronemer, SI**, Xiao, WR, Gober, L, Smith, RE, Wafa, SA ... Blumenfeld, H (June 2016) *The cortical event-related potential and alpha wave signatures for visual consciousness*. Poster presentation at *Association for the Scientific Study of Consciousness*, Buenos Aires, AR