



KEYNOTE //

KETEMA PAUL, PH.D.

Professor
Integrative Biology & Physiology
UCLA



“*Bmall* in skeletal muscle provides protection against sleep loss”

Dr. Paul studies the genetic, molecular, and neural underpinnings of sleep. His primary interests are comprised of uncovering the mechanisms responsible for the negative effects of sleep deprivation. He also probes the origins of gender/sex differences in the ability to recover from sleep loss in order to develop therapeutic targets for sleep disorders that disproportionately affect women. Dr. Paul was born and raised in Washington, D.C. After receiving his Bachelor of Science from Howard University, he went on to study neurobiology and circadian biology at Georgia State University in Atlanta, Georgia where he received his doctorate. He completed a postdoctoral fellowship at Northwestern University in Evanston Illinois in 2006 at the Center for Sleep and Circadian Biology, after which he spent 10 years as a faculty member of the Neuroscience Institute at Morehouse school of Medicine. He joined the faculty at UCLA in the Division of Life Sciences in 2016.

Dr. Paul's current research involves applying a forward genetics approach to uncover the core genes responsible for sleep-wake regulation and the impairing effects of sleep loss. Effective treatments for common sleep-wake disorders are elusive. Dr. Paul conducts a forward genetics approach to facilitate gene identification that takes advantage of natural variation occurring in sleep-replete and sleep-deprived mice. These studies are expected to identify novel sleep regulatory genes and lead to the development of new therapeutic targets and improved treatments for sleep disorders.

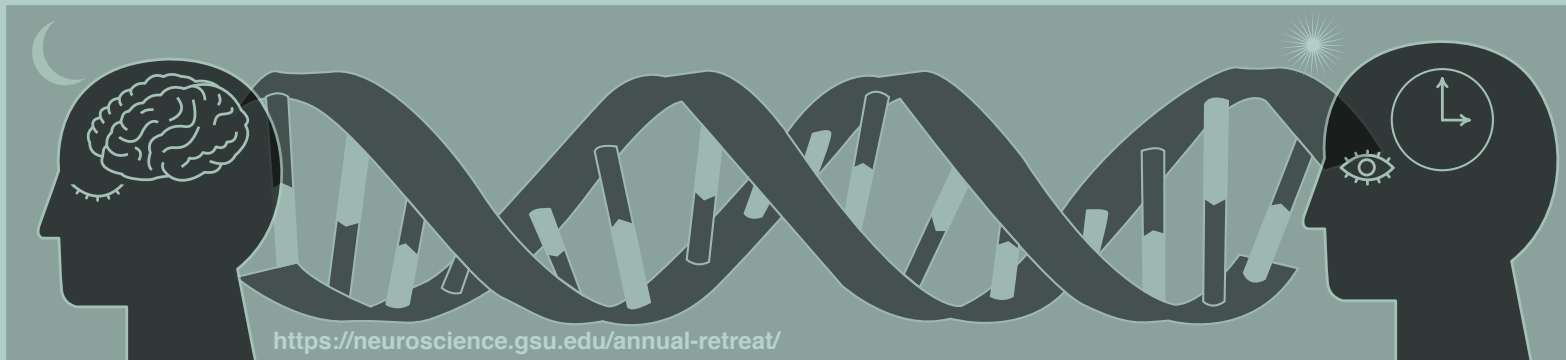
2022 Brains&Behavior RETREAT

With Keynote Speaker Ketema Paul Ph.D.

May 12, 2022

11:45a - 6:30p

Centennial Hall



<https://neuroscience.gsu.edu/annual-retreat/>

Retreat Schedule

Leadership & Interdisciplinary Committee

11:45 p.m. - 12:15 p.m.

Registration & Introductory Remarks

Dan Cox, Ph.D. - Neuroscience

12:15 p.m. - 1:15 p.m.

Lunch (provided)

1:20 p.m. - 1:40 p.m.

Atit Patel- Neuroscience

Advisor: Dan Cox, Ph.D.

“Modality specific roles for metabotropic GABAergic and CICR signaling mechanisms in regulating cold nociception.”

1:40 p.m. - 2:00 p.m.

Meg Sosnowski - Psychology

Advisor: Sarah Brosnan, Ph.D.

“Stress, hormones, and “choking” under pressure, individual differences in cognitive performance in tufted Capuchin monkeys.”

2:00 p.m. - 2:20 p.m.

Spencer Kinsey - Philosophy

Advisor: Dan Weiskopf, Ph.D.

“The explanatory scope of computational modeling in cognitive neuroscience.”

Director

Dan Cox, Ph.D.

Neuroscience

Associate Director & Retreat Organizer

Elizabeth Weaver, M.S.

Neuroscience

Elliott Albers, Ph.D. IDC

Neuroscience

Kim Huhman, Ph.D. IDC

Neuroscience

Robyn Miller, Ph.D. IDC

TReNDS

Martin Norgaard, Ph.D. IDC

Music

Chair:

Sarah Brosnan, Ph.D. IDC

Psychology

Master of Ceremonies

Marise Parent, Ph.D.

Neuroscience

Special Thanks:

Chloe West / Jennifer Gray / Georgia Bastos

B&B Fellows

Noah Aitel
Holly Aleksonis
Amanda Arnold
Nicola Bauer
Jassem Bourahmah
Kyle Cahill
Kevin Donaldson
Katrina Farris
Lori Forster
Connor Gallimore
Amin Ghane
Morgan Gomez
Anastasiia Grivoreva
Olivia Haller
Hannah Harder
Amritha Harikumar
Pengbo (Ben) Hu
Leslie-Anne Jansen
Anna Johnsen
Chelsea Keown Lee
Emer Killian
Spencer Kinsey
Hannah Lail
Hai Le

Erin Lottes
Hedi Ma
Jaya Mandivarapu
Erin McDonald
Dusty Moon
Miranda Movahed
Alina Nemira
Jordan Pincus
Rachel Potter
Niko Rigney
Andrew Schmidt
James Scully
Felipe Silva
Caroline Simpkins
Kelley Smith
Shannon Stone
Noelle Stroud
Li Tian
Katie Tobin
Alice Van Derveer
Chris Ware
Anne Werkheiser
Erica Williams
Honghui Xu

2:20 p.m. - 2:40 p.m.

Eric Semmel - Psychology

Advisor: Tricia King, Ph.D.

“Graph analysis of resting-state functional brain networks and associations with cognitive outcomes in survivors of pediatric brain tumor.”

2:40 p.m. - 3:00 p.m.

Nicole Rigney- Neuroscience

Advisor: Aras Petrusis, Ph.D.

“Sex differences in Vasopressin regulation of social behavior”

3:00 p.m. - 3:15 p.m.

Break

3:15 p.m. - 3:30 p.m.

Sarah Brosnan, Ph.D.

Chair, Interdisciplinary Committee

Update on the Brains & Behavior Program

3:30 p.m. - 4:45 p.m.

Ketema Paul, Ph.D. - Keynote

“*Bmal1* in skeletal muscle provides protection against sleep loss”

5 p.m. - 6:30 p.m.

Poster Session

Wine & Cheese Reception

Research Posters

1. Recovery from an unexpected standing-slip in professional ballet dancers

C. Simpkins, J. Ahn, S. Shin, F. Yang

2. Prevalence and risk factors for cervicogenic headaches in health profession students

N. Aitel, C. Brimeyer, B. Earnest, E. Killian, E. Scranton, A. Walker, B. Farrell, J. Garcia

3. The effect of motivational interviewing on physical therapy outcomes after stroke: a meta-analysis

R. Potter, B. Parsons, S. Galen

4. The effects of texting and music on walking

C. K. Lee, M. R. Mathew, T. J. Holliday, C. A. MacLeod, S. S. Galen

5. Examining the effect of a school-based creativity program on divergent thinking and academic achievement in middle school students

L. E. Garber Rowe, M. Norgaard

6. Drawing back the curtain on music performance anxiety education: a content analysis of the NAFME practitioner journals

K. O'Brien

7. Comparing outcome probability bias between people with and without social anxiety disorder using a novel computer-based task

M. Brown, A. Draheim, P. Anderson

8. Social anxiety in young adults moderates attentional modulation of neurocognitive responses to ambiguous emotional faces

A. E. Werkheiser, M. A. Fernandes, E. B. Tone

41. Through the looking glass: deep interpretable dynamic effective connectivity in resting fmri

U. Mahmood, Z. Fu, S. S. Ghosh, V. D. Calhoun, S. M. Plis

42. Intricacies of slow dynamics in dendronotus iris locomotion

J. Scully, J. Bosonetto, A. Sakurai, P. Katz, A. Shilnikov

43. Ablation study of *Melibe leonina* swim central pattern generator model

D. Bloom, J. Scully, D. Alacam, A. Shilnikov

44. Optimizing parameters of a blended biological and mathematical CPG

J. Bourahmah, A. Sakurai, A. Shilnikov

45. A compartmentalized mathematical model of the beta1- and beta2-adrenergic signaling systems in ventricular myocytes from mouse in heart failure

T. N. Asfaw, V. E. Bondarenko

46. miRNA regulation of neurotropic Powassan virus infection in mice

S. Stone, H. Pathak, J. P. Natekar, M. Kumar

47. Kinetics-based Ratiometric ECL Analysis

H. Ma, M. Yi, M. Messinger, G. Wang

48. Investigation of the role of vapa-associated protein a (VAPA) on the calcium sensing receptor (CaSR)

L. Tian, B. Dong, R. Gorkhali, X. Deng, J. Yang

49. Enabling efficient benzodiazepine precursor synthesis: photo-activated CO surrogate for safer and expedited Pd-catalyzed carbonylation

N. Bauer, L. K. C. De La Cruz, B. Wang

Research Posters

33. Neuronal ensembles for multisensory predictive coding in posterior parietal cortex

A. B. Van Derveer, A. D. Ferrell, J. P. Hamm

34. Neuronal circuit for mismatch negativity in mice

G. Bastos, J. T. Holmes, J. M. Ross, A. M. Rader, C. G. Gallimore, A. D. Ferrel, J. P. Hamm

35. Kalrn mutation identified in individuals with schizophrenia recapitulates disease-relevant neuro-oscillatory aberrations in the mouse visual and prefrontal cortices

A. M. Rader, A. D. Ferrell, R. A. Sweet, M. J. Grubisha, J. P. Hamm

36. Hallucination severity in first-episode psychosis and STG-Thalamic functional connectivity in fMRI

A. Harikumar, K. Jensen, Z. Fu, B. Coffman, J. Longenecker, V. Calhoun, J. Turner, D. Salisbury.

37. Model reinitialization and perturbation: towards confident schizophrenia classification

D. Bloom, R. Miller

38. Epigenetic regulation of longitudinal grey matter development in the adolescent brain.

D. M. Jensen, J. Chen, J. A. Turner, J. M. Stephen, Y. Wang, T. W. Wilson, V. D. Calhoun, J. Liu

39. Adaptive steering behavior in modeling and simulation

L. Hai, H. Xiaolin

40. Prediction of brain age, gender, and working memory using deep learning with structural MRI

P. Suresh, B. Ray, A. Arbol, J. Liu

9. Parental acceptance moderates the association between caregivers' and children's internalizing psychopathology in boys but not girls

K. E. Tobin, E. McDonald, E. Tully

10. Neural correlates of causing other children's happiness and sadness

E. M. McDonald, E. T. Tully

11. Children's attentional biases toward emotional faces are related to reparative behavior only when physiological regulation is strong

K. Farris, S. E. Garcia, E. C. Tully

12. Processing speed mediates the relationship between white matter hyperintensity volumes and adaptive functioning in survivors of childhood cerebellar tumor

H. A. Aleksonis, L. C. Krishnamurthy, T. Z. King

13. A systematic review of host genomic variation and neuropsychological outcomes for pediatric cancer survivors

R. Kautiainen, H. Aleksonis, T. Z. King

14. Informant and self-reported ratings of the Frontal Systems Behavior Scale in brain tumor survivors and healthy controls

Olivia C. Haller, B.A., Holly A. Aleksonis, M.A., Tricia Z. King, Ph.D.

15. Within-individual neural variability during the n-back task: relation to neuropsychological measures of processing speed

J. E. Pincus, S. N. Steinberg, J. G. Malins, J. Liu, T. Z. King

16. Neurodevelopmental implications of maternal and fetal inflammation at birth

J. M. Gray, K. M. Major, A. Castillo-Ruiz, N. G. Forger

Research Posters

17. Effects of Cx3Cr1-Cre expression on microglial morphology and density in developing paraventricular nucleus of the hypothalamus

B.K. Desai, J.L. Bolton

18. The impact of early-life adversity on microglial interactions with excitatory synapses in the Central Nucleus of the Amygdala

S. Correa, J. Bolton

19. Perigestational opioid exposure leads to long-term immune alterations in male and female adult rats

H. J. Harder, L.A. Hanus, C.T. Searles, M. G. Gomez, M. E. Vogt, A. Z. Murphy

20. Impact of perigestational opioid exposure on juvenile play and oxytocin expression in male and female rats

M. E. Vogt, H. J. Harder, C. T. Searles, M. G. Gomez, A. J. Austin, A. Z. Murphy

21. Early life pain alters fever response to immune challenge in adult male and female rats

M.G. Gomez, M.H. Pandit, C.T. Searles, H.J. Harder, A.Z. Murphy

22. Social context modulates steroid hormone production in a species of electric fish (*Apteronotus albifrons*)

M.K. Freiler, G.T. Smith

23. Losing reduces the rewarding properties of future social interactions in males but not females

E.A. Cross, K. L. Huhman, H. E. Albers

24. Consumption of dietary emulsifiers increases sensitivity to social stress in mice: a potential role for the COX molecular pathway

A. R. Arnold, K. Lakhani, K. L. Huhman

25. Pharmacological inhibition of dorsal hippocampal astrocytic glycogenolysis impacts consumption in a sex-dependent manner.

C.B. Ware, I. Sharma, M.B. Parent

26. The role of FGF21 in diet-induced changes in cognition and hippocampal function

H. Lail, A. George, A. Mabb, D. Wanders

27. Following the scent: the role of olfactory receptors in cold nociception

D.E.A. Moon, C. Williams, A.A. Patel, D. N. Cox

28. Chronic activation of primary cold nociceptors causes increased sensitivity to subsequent cold challenge

K.J. Donaldson, J.T. Papania, S. Singh, D.N. Cox

29. CCT is part of a proteostatic network that regulates postmitotic development of dendritic arbors

E.N. Lottes, S. Bhattacharjee, B. Tete, D.N. Cox

30. Intracellular signaling changes as a result of disrupted Arc turnover

M.A. Ghane, Z. D. Allen, A. M. Mabb

31. Identification of Neuronal E3 ubiquitin ligase substrates for Triad3A using Orthogonal Ubiquitin Transfer (OUT)

W. Wei, R.C. Liu, J. Yin, A.M. Mabb

32. A sensory oddball paradigm evokes rhythmic signatures across neocortical layers consistent with predictive coding

C. G. Gallimore, J. P. Hamm