KEYNOTE:

Matia Solomon, Ph.D.

Associate Professor
Department of Psychiatry &
Behavioral Neuroscience
University of Cincinnati

Sex, stress and disease: Why understanding the male and female brain matters.

Matia B. Solomon, PhD is an Associate Professor of Psychology and Psychiatry and Behavioral Neuroscience at the University of Cincinnati. She received her B.A., M.A., and Ph.D. in Psychology (Behavioral Neuroscience) from Georgia State University. She completed a postdoctoral training at the University of Cincinnati in 2011. In 2012, Dr. Solomon became a jointly appointed faculty member in the Departments of Psychology and Psychiatry and Behavioral Neuroscience at the University of Cincinnati. Her research is dedicated towards understanding sex differences in the neurobiology of depression, and more recently, Alzheimer's disease. Dr. Solomon's research team is particularly interested in determining whether various factors including chronic stress renders the female brain especially vulnerable to these conditions. Her research has determined that females and males engage different neural circuits in response to chronic stress. Her laboratory is currently supported by a LIFE Foundation Grant and has been previously supported by NIH (K12-BIRCWH) and Corcept Therapeutics. Dr. Solomon's research awards include the Elizabeth Young New Investigator Award (Organization for Study of Sex Differences). Apart from her research endeavors, Dr. Solomon enjoys mentoring, blogging, cooking, and spending time with her family and friends, especially her beloved dog, Buddy.

Georgia State University | BRAINS & BEHAVIOR

B&B RETREAT

May 18th, 2018

12:00 p.m. - 6:30 p.m.

Centennial Hall
100 Auburn Avenue

Retreat Schedule

12:00 p.m. - 12:30 p.m.
Registration & Introductory Remarks
Nancy Forger, Ph.D. - Neuroscience

12:30 p.m. - 1:30 p.m.
Lunch (provided)

1:40 p.m. - 2:00 p.m.
Johnathan Borland - Neuroscience
Advisor: Elliott Albers, Ph.D.
"Sex dependent regulation of social reward by oxytocin."

2:00 p.m. - 2:20 p.m.
Sabrina Na - Psychology
Advisor: Tricia King, Ph.D.
"White matter network topology relates to cognitive flexibility and cumulative neurological risk in adult survivors of pediatric brain tumor."

2:20 p.m. - 2:40 p.m.
Yang Wu - Biology
Advisor: Chun Jiang, Ph.D.
"Hyperexcitability of medullary respiratory neurons irresponsible for breathing abnormalities caused by Mecp2 disruption."

2:40 p.m. - 2:55 p.m.
Break

Interdisciplinary Committee

Elliott Albers, Ph.D.
Neuroscience

Sarah Brosnan, Ph.D.
Psychology

Outgoing Chair:
Jacqueline Laures Gore, Ph.D.
Educational Psychology

Incoming Member
Martin Norgaard, Ph.D.
Music

Andrey Shilnikov, Ph.D.
Neuroscience

Incoming Chair:
Dan Weiskopf, Ph.D.
Neuroscience

Retreat Organizers:
Liz Weaver, M.S.

Master of Ceremonies:
Dan Cox, Ph.D., Neuroscience

Special Thanks:
Erin Davison

B&B Fellows

Nicholas Alonso
Amanda Benbow
Johnathan Borland
Barrett Brister
Dilip Chauhan
Yarely Davila-Vazquez
Heta Desai
Kiran Dhakal
Anna Dunigan
Sayed Esfahani
Mary Fernandes
Lori (Jan) Forster
Michelle Fox
Jessica Green
Sushma Ghimire
Andrew Gradone
Thakshila Herath
Nate Himmel
Xinje Hu
Jyoti Islam
William Johnson
Huiwen Ju
Spencer Knafelc
Lindsay Mahovetz
John (Mac) McNeil
Cassie Miller
David Mudd
Jonathon Padelford
Katie Partick
Adrian Pecocic
Sahithi Podila
Krishna Pusuluri
Katelyn Rivers
Anna Rosenhauer
Eric Semmel
Deep Shukla
Felipe Silva
Meg Sosnowski
Katherine Stuhrman
Shanshan Tan
Jack Whylings
Yang (Dawn) Wu
Meghyn Welch
Hao Xing
Bingcheng Yu

2:55 p.m. - 3:10 p.m.
Jacqueline Sue Laures Gore, Ph.D.
Chair, Interdisciplinary Committee
Update on the Brains & Behavior Program

3:10 p.m. - 3:30 p.m.
Cassie Miller - Biology
Advisor: Jenny Yang, Ph.D.
"Modulating calcium dynamics by protein design."

3:30 p.m. - 3:50 p.m.
Katelyn Rivers - Philosophy
Advisor: Dan Weiskopf, Ph.D.
"Can global workspace theory solve the frame problem?"

3:50 p.m. - 4:00 p.m.
Break

4:00 p.m. - 5:00 p.m.
Matia Solomon, Ph.D. - Keynote
"Sex, stress and disease:
Why understanding the male and female brain matters"

5 p.m. - 6:30 p.m.
Poster Session - Wine & Cheese Reception

Posters

1. Title: Predictive processing, modularity, & auditory omission.
Authors: S. J. Knafelc

2. Title: Associations among verbal language knowledge, social anxiety , and nonverbal processing in children.
Authors: M. A. Fernandes, E. B. Tone

3. Title: Interrelationships between depressive symptoms, memory, & prefrontal surface area in middle-aged to older adults.
Authors: A. M. Gradone, S. M. Szymkowicz, M. E. McLaren, A. J. Woods. A. O'Shea, & V. M. Dotson

4. Title: The Neurological Predictor Scale as a predictive measure of motor outcomes in long-term survivors of childhood brain tumors.
Authors: M. E. Fox, A. Kalidindi, T. Z. King

5. Title: Neurological predictor scale predicts academic achievement outcomes in long-term survivors of childhood brain tumors.
Authors: R.J. Kautiainen, S.D. Na, T.Z. King

6. Title: Cerebellar volumes and executive function in congenital heart disease.
Authors: E. S. Semmel, V. M. Dotson, T. G. Burns, W. T. Mahle, T. Z. King

7. Title: Tool use in chimpanzees and bonobos.
Authors: L.M. Mahovetz & W.D. Hopkins

8. Title: Oxytocin changes with affiliative social behavior in tufted capuchin monkeys (Cebus [Sapajus] apella.
Authors: M.J. Sosnowski, M.E. Benítez, O.B. Tomeo, & S.F. Brosnan

40. Title: Mecp2-disruption in rats causes breathing disorders by reshaping medullary respiratory neuronal firing patterns.
Authors: Y. Wu, N. Cui, H. Xing, W. Zhong, C. Arrowood, C. M. Johnson, C. Jiang

41. Title: Cellular effects of mutations of the gene Mecp2 on GABAergic neurons.
Authors: C. M. Johnson, N. Cui, H. Xing, Y. Wu, C. Jiang

42. Title: SUMOylation of the mouse voltage-gated potassium channel Kv4.2.
Authors: M.A. Welch, L.A. Forster, D.J. Baro

43. Title: Detecting hydrogens and deuteriums in high resolution x-ray crystal structures of hiv-1 protease.
Authors: D. W. Kneller, A. Y. Kovalevsky, Y. F. Wang, R. W. Harrison, I. T. Weber

44. Title: Toward direct protein S-Sulfhydration: A prodrug approach that directly delivers hydrogen persulfide.
Authors: B. Yu, Y. Zheng, Z, Yuan, S. Li, B. Wang

45. Title: Optical and electrochemical properties of phase transferred gold nanoclusters.
Authors: J. Padelford, M. T. H. Tran, G. Wang

46. Title: Early detection of liver metastasis enabled by a CXCR4 targeted protein MRI contrast agent.
Authors: S. Tan, H. Yang, S. Xue, M. Salarian, J. Qiao, F. Pu, O.Y. Odubade, D. Lawson, H. Grossniklaus and J. J. Yang

47. Title: Brain MRI analysis for Alzheimer's Disease diagnosis using an ensemble system of deep convolutional neural networks.
Authors: J. Islam, Y. Zhang

32. Title: Ferret visual system development.
Authors: E. Carpenter-Hyland, S.L. Pallas

33. Title: Bottom-up approach to amplitude modulation in neuron models.
Authors: H Ju, A Shilnikov, A Neiman

34. Title: Computational approaches for multistability in 4-cell central pattern generators.
Authors: K. Pusuluri, S. Basodi, A. Shilnikov

35. Title: Traveling waves in simplified neural networks of periodic oscillatory neurons.
Author: R. Erazo, G. Cymbalyuk, R. Osan

36. Title: Complex calcium oscillations and intestinal motility patterns.
Authors: PJ Ellingson, TM Kahl, C Jiang, GC Cymbalyuk

37. Title: Mechanisms underlying a model of a multifunctional central pattern generator that produces slow and fast rhythms.
Authors: J. Parker, B. Prilutsky, G. Cymbalyuk

38. Title: Multistability of synchronized clusters in networks of phase oscillators.
Authors: B. N. Brister, V. Belykh, and I. Belykh

39. Title: Local glutamatergic transmission in the RTN/pFRG is critical for active expiration and sympathetic overactivity during hypercapnia.
Authors: W. H. Barnett, Y. I. Molkov, E. Lemes, B. Falqueto, E. Colombari, A. T. Takakura, T. S. Moreira, D. B. Zoccal

9. Title: Gut microbiota influence on cocaine self-administration in adolescent and adult male rats.
Authors: G.J. Suess, J. Kasiah, B.F. Williams, B. Chassaing, K.J. Frantz

10. Title: The role of probiotic and antibiotic treatment on the behavioral response to social defeat stress in Syrian Hamsters.
Authors: K. A. Partrick, L. Q. Beach, D. C. Choi, B. Chassaing, and K. L. Huhman

11. Title: Dominant vs subordinate status in the regulation of vasopressin, serotonin and oxytocin receptors.
Authors: A.P. Ross, K.E. McCann, A. Norvelle, and H.E. Albers

12. Title: Specific vasopressin cell populations in the regulation of social communication.
Authors: N. Rigney, J. Whylings, G. J. De Vries, A. Petrulis

13. Title: Chronic inflammation alters forebrain vasopressin expression.
Authors: J. Whylings, S. Patel, G.J. de Vries

14. Title: Vaginal delivery activates hypothalamic vasopressin neurons in the perinatal mouse brain.
Authors: Y. C. Hoffiz, A. Castillo-Ruiz, N. G. Forger

15. Title: The effect of uterine position on developmental cell death in the perinatal mouse brain.
Authors: A Castillo-Ruiz, Nancy G. Forger, O Q. C.Davidson

16. Title: Programmed neuronal cell death occurs independently of interleukin-10.
Authors: R. A. Burch, A. Castillo-Ruiz, M. Mosley, A. T. Gewirtz, B. Chassaing, N. G. Forger

17. Title: Effects of birth mode on microglial colonization in the perinatal mouse brain.
Authors: A. Vasquez, A. Castillo-Ruiz, N. Forger

18. Title: Ablation of microglia has region-specific effects on cell death in the neonatal mouse brain.
Authors: A.J. Jacobs, N. Forger

19. Title: Impact of early life injury on microglial activation in periaqueductal grey and sickness behavior after later life immune challenge.
Authors: L. Hanus, A. Murphy

20. Title: Early life pain differentially activates microglia in the ventrolateral PAG.
Authors: J. Zamor, L. Hanus, E. Fullerton, M. Rubaharan, W. Bell, A. Murphy

21. Title: Role of active demethylation in sexual differentiation of the mouse brain.
Authors: C.D. Cisternas, L.R. Cortes, E. Bruggeman, B. Yao, N.G. Forger

22. Title: Effects of neonatal testosterone and a DNA methyltransferase inhibitor on the sexual differentiation of cell phenotype in the mouse brain.
Authors: L.R. Cortes, C.D. Cisternas, I. Golynker, N.G. Forger

23. Title: Post-meal optogenetic inhibition of dorsal or ventral hippocampal glutamatergic neurons promotes meal initiation and increases energy intake.
Authors: R.C Hannapel, J.Ramesh, R.T LaLumiere, M.B Parent

24. Title: α-MSH-mediated regulation of VTA MC3R neuron activity.
Authors: K.S. West, A.G. Roseberry

25. Title: Functional interaction between NMDA receptors and SK channels in hypothalamic magnocellular neurons: role in heart failure.
Authors: H. C. Ferreira-Neto, J. E. Stern

26. Title: Defining the role of RNF216/TRIAD3 in the hypothalamic-pituitary-gonadal axis.
Authors: A. J. George, A. M. Mabb

27. Title: Defects in Arc turnover impair cognitive flexibility.
Authors: M. A. Ghane, M. J. Wall, D. R. Collins, S. L. Chery, Z. D. Allen, E. D. Pastuzyn, A. J. George, V. D. Nikolova, S. S. Moy, B. D. Philpot, J. D. Shepherd, J. Muller, M. D. Ehlers, A. M. Mabb, S. A. L. Correa

28. Title: Expression of chemoreceptor proteins in decapod crustaceans.
Authors: M. T. Kozma, M. Schmidt, C. D. Derby

29. Title: The evolution of cold nociception in drosophilid larvae.
Authors: N. J. Himmel, J. M. Letcher, T. R. Gray, D. N. Cox

30. Title: Cellular and circuit dissection of cold nociception in Drosophila .
Authors: Dustin Moon, Atit A. Patel, Daniel N. Cox

31. Title: Early trkb signaling maintains visual receptive field refinement in adult superior colliculus by preventing a loss of inhibition.
Authors: D.B. Mudd, S.Y. Kim, S.L. Pallas