

CURRICULUM VITAE

JONATHAN CACHAT

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Education Ph.D., Neuroscience - Tulane University New Orleans, LA (2012)

M.S., Neuroscience - Tulane University New Orleans, LA (2011)

B.S., Social Neuroscience (IDM) - Denison University Granville, OH (2008)

Dissertation Developing Zebrafish Models of Complex Phenotypes Relevant to Human Brain Disorders

Allan V. Kalueff, Ph.D., Committee Chair

David Corey, Ph.D., Jill Daniel, Ph.D., Benjamin Hall, Ph.D.

Experience CLIR Postdoctoral Research Fellow - Neuroscience Data Scientist - University of California, Davis (Oct 2013 - Present)

Developing strategies and programs for the collection, description, organization, normalization, storage, preservation, integration, visualization and mining of data across the spectrum of neuroscience programs on campus. Work with Data Services Team to advise University Librarian on data curation services.

Neuroscience Information Framework (NIF) - University of California, San Diego (Jan 2011 - Oct 2013)

The NIF project (www.neuinfo.org) is a resource description framework and semantic search strategy for indexing, retrieving, and analyzing data, resources and tools available for neuroscience research. My responsibilities for NIF include: database curation, UI/UX development, outreach and social network management. *Principal Investigators - Maryann Martone, Ph.D., Anita Bandrowski, Ph.D., Jeff Grethe, Ph.D., Amarnath Gupta, Ph.D.*

A.V. Kalueff Lab - Department of Pharmacology, Tulane University Medical Center (Jan 2009 - Jan 2012)

Performed basic research developing adult zebrafish neurobehavioral models to study affective disorders and psychopharmacology. I directly supervised approx. 30 students, weekly journal clubs and lab events. Aided with submission of nine NIH grants, contributed to national and international ISBS conferences and served as a peer-reviewer for several journals including Behavioral Brain Research, Physiology and Behavior, PLoS One and Pharmacology, Biochemistry and Behavior.

Honors & Awards

Oct 2013 UC Davis Idea Fair - 2nd Place - Weltgeist (www.intralex.org)

Oct 2012 Dynamic Poster Session - Society for Neuroscience 2012

Nov 2010 Graduate Student Travel Award - Society for Neuroscience 2010
Greater New Orleans Society for Neuroscience Chapter (GNOSN)

April 2010 NSF Graduate Research Fellowship Program (GRFP) - Honorable Mention

June 2008 Dialectical Model of Human Nature - U.S. Copyright

May 2008 Dialectical Model of Human Nature - Philosophy Art Award of Distinction
Denison University

Research Interests

Behavioral Neuroscience, Social Neuroscience, Psychopharmacology, Complex, Multi-faceted Problems, Heterogenous Data Integration, Visual Analytics, UX/UI Development, Design, Multimedia Production, Executing, Testing, Measuring, Reiterating

Articles

1. Stewart A, **Cachat J**, *et. al.* Constructing the habituome for phenotype-driven zebrafish research. Behav Brain Res, 2013; 236: 110–117. PMID: 22944516
2. Roth A, Kyzar E, **Cachat J**, *et. al.* Potential translational targets revealed by linking mouse grooming behavioral phenotypes to gene expression using public databases. Progress Neuropsychopharmacol Biol Psychiatry, 2013; 40: 312–325. PMID: 23123364
3. Kyzar E, Pham M, Roth A, **Cachat J**, *et. al.* Alterations in grooming activity and syntax in heterozygous SERT and BDNF knockout mice: The utility of behavior-recognition tools to characterize mutant mouse phenotypes. Brain Res Bull, 2012; 89: 168–176. PMID: 22951260
4. Green J, Collins C, Kyzar E, Pham M, Roth A, Gaikwad S, **Cachat J**, *et. al.* Automated high-throughput neurophenotyping of zebrafish social behavior. J of Neuro Methods, 2012; 210: 266–271. PMID: 22884772
5. **Cachat J**, *et. al.* Unique and potent effects of acute ibogaine on zebrafish: The developing utility of novel aquatic models for hallucinogenic drug research. Behav Brain Res, 2012; 236C: 258–269. PMID: 22974549
6. **Cachat J**, *et. al.* A survey of the neuroscience resource landscape: perspectives from the neuroscience information framework. Int Rev Neurobiol, 2012; 103: 39–68. PMID: 231951201
7. Kalueff A, Stewart A, Kyzar E, **Cachat J**, *et. al.* Time to recognize zebrafish ‘affective’ behavior. Behaviour, 2012; 149: 1019–1036.
8. Bandrowski A, **Cachat J**, *et. al.* A hybrid human and machine resource curation pipeline for the Neuroscience Information Framework. Database, 2012; bas005. PMID: 22434839
9. Williams L, Wong K, Stewart A, Suci C, Gaikwad S, Wu N, DiLeo J, Grossman L, **Cachat J**, *et. al.* Behavioral and physiological effects of RDX on adult zebrafish. Comp Biochem Phys 2012; 155: 33-38. PMID: 21382508
10. Gaikwad S, Stewart A, Hart P, Wong K, Piet V, **Cachat J**, Kalueff AV. Acute stress disrupts performance of zebrafish in the cued and spatial memory tests: the utility of fish models to study stress-memory interplay. Behav Processes, 2011; 87: 224–230. PMID: 21545830
11. Stewart A, Riehl R, Wong K, Green J, Cosgrove J, Vollmer K, **Kyzar E**, Hart P, Allain A, **Cachat J**, *et. al.* Behavioral effects of MDMA (“Ecstasy”) on adult zebrafish. Behav Pharmacol 2011; 22: 275–280. PMID: 21522057
12. Stewart A, Wu N, **Cachat J**, *et. al.* Pharmacological modulation of anxiety-like phenotypes in adult zebrafish behavioral models. Progress Neuropsychopharmacol Biol Psychiatry 2011; 35: 1421-1431. PMID: 21122812
13. **Cachat J**, *et. al.* Three-dimensional neurophenotyping of adult zebrafish behavior. PLoS One 2011; 6: e17597. PMID: 21408171
14. Stewart A, Wong K, **Cachat J**, *et. al.* Zebrafish models to study drug abuse-related phenotypes. Rev in Neuro 2011; 22(1): 95-105. PMID: 21615264
15. **Cachat J**, *et. al.* Measuring behavioral and endocrine responses to novelty stress in adult zebrafish. Nature Protocols 2010; 5(11): 1786-1799. PMID: 21030954
16. Stewart A, **Cachat J**, *et. al.* Homebase behavior of zebrafish in novelty-based paradigms. Behav Processes 2010; 85: 198-203. PMID: 21030954
17. Wong K, *et. al.* Modeling seizure-related behavioral and endocrine phenotypes in adult zebrafish. Brain Res 2010; 1348: 209-215. PMID: 20035794
18. Grossman L, *et. al.* Characterization of behavioral and endocrine effects of LSD on zebrafish. Behav Brain Res 2010; 214(2): 277-284. PMID: 20561961

Articles (Con't)

1. Stewart A, Wong K, **Cachat J**, et. al. Neurosteroid vitamin D system as a non-traditional drug target in neuropsychopharmacology. Behav Pharmacol 2010; 21: 420-426. PMID: 20571365
2. Stewart A, Kadri F, DiLeo J, Chung K, **Cachat J**, et. al. The developing utility of zebrafish in modeling neurobehavioral disorders. Int J Compar Psychol 2010; 23: 104-121.
3. Denmark A, Tien D, Wong K, Chung A, **Cachat J**, et. al. The effects of chronic social defeat stress on mouse self-grooming behavior and its patterning. Behav Brain Res 2010; 208(2): 553-559. PMID: 20060021
4. Wong K, et. al. Analyzing habituation responses to novelty in zebrafish (*Danio rerio*). Behav Brain Res 2010; 208: 450-457. PMID: 20035794
5. **Cachat J**, et. al. Modeling withdrawal syndrome in zebrafish. Behav Brain Res 2010; 208 (2): 371-376. PMID: 20006651
6. LaPorte J, Egan R, Hart P, Bergner C, **Cachat J**, Canavello P, Kalueff AV. Qui non proficit, deficit: Experimental models for 'integrative' research of affective disorders. J Affect Disorders 2010; 121: 1-9. PMID: 19428115
7. Tuohimaa P, Keisala T, **Cachat J**, Kalueff A. Vitamin D, nervous system and aging. Psychoneuroendocrinology 2009; 34S: S278-S286. PMID: 19660871
8. Egan R, Bergner C, Hart R, **Cachat J**, et. al. Understanding behavioral and physiological phenotypes of stress and anxiety in zebrafish. Behav Brain Res 2009; 205: 38-44. PMID: 19540270

Books

1. *Zebrafish Models in Neurobehavioral Research*. A.V. Kalueff and **J. Cachat** (editors), Humana Press, NY 2010.
2. *Zebrafish Neurobehavioral Protocols*. A.V. Kalueff and **J. Cachat** (editors), Humana Press, NY 2010.

Chapters

1. Canavello P, **Cachat J**, et. al. Behavioral phenotyping of mouse grooming and barbering. In: *Behavioral Genetics of the Mouse*. Ed: W. Crusio, F. Sluyter, R. Gerlai, S. Pietropaolo, Cambridge University Press. 2013, in press.
2. Maximino C, Lima M, Aruajo J, Oliveira K, Herculano A, Stewart A, Kyzar E, **Cachat J**, Kalueff A. The Serotonergic System of Zebrafish: Genomics, Neuroanatomy and Neuropharmacology. In: *Serotonin: Biosynthesis, Regulation and Health Implications*, Ed: S. Hall, Nova Science, NY. 2013, in press.
3. Dow E, Piet V, Stewart A, Gaikwad S, **Cachat J**, et. al. Modeling mouse anxiety and sensorimotor integration: phenotypes in the Suok Test. In: *Mood and Anxiety Related Phenotypes in Mice: Characterization Using Behavioral Tests*, Ed: T. Gould, Humana Press, NY. 2011; 2: 61-81.
4. **Cachat J**, et. al. Modeling Stress and Anxiety in Zebrafish. In: *Zebrafish Models in Neurobehavioral Research*. Ed: A.V. Kalueff, and J. Cachat, Humana Press, NY. 2010; 72-88.
5. **Cachat J**, et. al. Video-aided analysis of zebrafish locomotion and anxiety-related behavioral responses. In: *Zebrafish Neurobehavioral Protocols*. Ed: A.V. Kalueff, and J. Cachat, Humana Press, NY. 2010; 1-14.
6. **Cachat J**, et. al. Deconstructing Adult Zebrafish Behavior with Swim Trace Visualizations. In: *Zebrafish Neurobehavioral Protocols*. Ed: A.V. Kalueff, and J. Cachat, Humana Press, NY. 2010; 191- 201.
7. Canavello P, **Cachat J**, et. al. Measuring endocrine (cortisol) responses of zebrafish to stress. In: *Zebrafish Neurobehavioral Protocols*. Ed: A.V. Kalueff, and J. Cachat, Humana Press, NY. 2010; 135-142.

Chapters

1. Stewart A, **Cachat J, et. al.** Phenotyping of Zebrafish Homebase Behaviors in Novelty-Based Tests. In: *Zebrafish Neurobehavioral Protocols*. Ed: A.V. Kalueff, and J. Cachat, Humana Press, NY. 2010; 143-156.
2. Stewart A, Maximino C, Marques de Brio T, Herculano A, Gouveia A, Morato S, **Cachat J, et. al.** Neurophenotyping of Adult Zebrafish Using the Light/Dark Box Paradigm. In: *Zebrafish Neurobehavioral Protocols*. Ed: A.V. Kalueff, and J. Cachat, Humana Press, NY. 2010; 157-168.
3. Stewart A, **Cachat J, et. al.** Intraperitoneal Injection as a Method of Psychotropic Drug Delivery. In: *Zebrafish Neurobehavioral Protocols*. Ed: A.V. Kalueff, and J. Cachat, Humana Press, NY. 2010; 169-180.
4. Linker A, Stewart A, Gaikwad S, **Cachat J, et. al.** Assessing the Maximum Predictive Validity for Neuropharmacological Anxiety Screening Assays Using Zebrafish. In: *Zebrafish Neurobehavioral Protocols*. Ed: A.V. Kalueff, and J. Cachat, Humana Press, NY. 2010; 181-190.
5. Bergner C, Egan R, Hart P, **Cachat J, et. al.** Mutant and Transgenic Zebrafish in Modeling Neurobehavioral Disorders. In: *Transgenic and Mutant Models of Brain Disorders*. Ed: A.V. Kalueff and C. Bergner, Humana Press, NY, 2009; 3-12.
6. Canavello P, Egan R, Bergner C, Hart P, **Cachat J, Kalueff A.** Genetic Animal Models of Depression. In: *Transgenic and Mutant Models of Brain Disorders*. Ed: A.V. Kalueff and C. Bergner, Humana Press, NY, 2009; 191-200.

Conferences & Abstracts

Selected Abstracts (7 of 30)

1. **Cachat J, et. al.** Three-dimensional neurophenotyping of adult zebrafish behavior: updates, achievements and future directions. Society for Neuroscience (SfN) 2012; (New Orleans, LA).
2. **Cachat J, et. al.** The Zebrafish Neurophenome Project (ZNP) database: Developing Use Cases and Terminology Standardization. Society for Neuroscience (SfN) 2012; (New Orleans, LA).
3. **Cachat J, et. al.** Effects of the hallucinogenic drug psilocybin on zebrafish behavior and physiology. Behavioral, Biology, and Chemistry (BBC): Translational Research In Addiction 2012; (Austin, TX).
4. **Cachat J, et. al.** Visualizing Adult Zebrafish 3D Behavior and its Utility for Neuroscience Research. National Academies Keck Futures Initiative Conf (NAKFI): Imaging Conf. 2010; (San Diego, CA)
5. **Cachat J, et. al.** Understanding Behavioral Phenotypes of LSD and MDMA in Adult Zebrafish. Society for Neuroscience (SfN) 2010; (San Diego, CA).
6. **Cachat J, et. al.** Developing Adult Zebrafish-based Models of Neuropsychiatric and Neurological Disorders: Anxiety, Epilepsy, Withdrawal and Drug Abuse. Aquatic System Models of Human Diseases Conf. 2010; (Corvallis, OR).
7. **Cachat J, et. al.** Three-Dimensional Reconstructions of Zebrafish Emotional Behavior. ISBS Stress and Behavior Conf. 2010; (St. Petersburg, Russia).

Industry & Associations

The Society for Neuroscience (SfN)

The American Society for Pharmacology and Experimental Therapeutics (ASPET)

Noldus Information Technologies - Zebrafish Behavior & EthoVision XT collaborator

References

References Available Upon Request