Jacqueline N. Crawley, Ph.D.

Clinical Interests

Jacqueline N. Crawley, Ph.D., is an internationally recognized leader in behavioral neuroscience, mouse behavioral genetics, and translational neuropharmacology. Dr. Crawley joined the University of California Davis in July 2012 as the Robert E. Chason Endowed Chair in Translational Research at the MIND Institute and Professor in Residence in the Department of Psychiatry and Behavioral Sciences at the UC Davis School of Medicine. Her research program focuses on rodent models of neuropsychiatric disorders. Current emphasis is on understanding the genetic causes of autism spectrum disorders, and discovering effective medical therapeutics for the core diagnostic symptoms of autism. Mouse models are used as preclinical research tools to test hypotheses about the etiology of autism and to evaluate the therapeutic benefit of proposed treatment interventions.

Dr. Crawley received her B.A. in biology from the University of Pennsylvania, Ph.D. in zoology from the University of Maryland, and conducted postdoctoral research in neuropsychopharmacology at Yale University School of Medicine. As an intramural investigator in the National Institute of Mental Health Intramural Research Program in Bethesda, Maryland from 1983 to 2012, she served as Chief of the Laboratory of Behavioral Neuroscience. Her laboratory has published over 260 papers and 100 reviews. She serves on 16 journal editorial boards and numerous scientific advisory committees. Honors include the Distinguished Scientist Award from the International Behavioral and Neural Genetics Society, Myers Lifetime Achievement Award from the International Behavioral Neuroscience Society, Society for Neuroscience Service Award, Fleur Strand Lecture Award from the Summer Neuropeptide Conference, Gladstone Institute of Neurological Disease Distinguished Scholar Award, MIND Institute Distinguished Lecturer, Mathilde Solowey Lecture Award in Neuroscience, NIMH Director's Award, and Howard Hughes Medical Research Institute Preceptor Award. She serves on numerous review boards and councils, and is a Fellow of the American Association for the Advancement of Science.

The Crawley lab developed a multi-tiered strategy for behavioral phenotyping of mutant mice which has been widely adapted by the international biomedical research community. Her sole authored book, What's Wrong With My Mouse? Behavioral Phenotyping of Transgenic and Knockout Mice, has become the primer for the field. Beginning in 2000, Dr. Crawley's team pioneered mouse behavioral tasks with conceptual relevance to the diagnostic symptoms of autism, which are employed by many research groups investigating lines of mice with mutations associated with autism spectrum disorders. Her expertise in mouse behavioral phenotyping offers a unique collaborative resource to the UC Davis research community.

UC DAVIS HEALTH

Jacqueline N. Crawley, Ph.D.

Research/Academic Interests

Dr. Crawley's behavioral neuroscience laboratory has employed mouse and rat models of anxiety, depression, schizophrenia, obesity, Alzheimer's, autism and other neurodevelopmental disorders to understand biological causes and to discover medical treatments. Recent work by her laboratory with genetic mouse models of autism spectrum disorder identified GABA receptor agonists, and mGluR5 and AMPA receptor modulators, that improved aspects of social interaction and reduced repetitive behaviors. Her behavioral neuroscience methods book, "What's Wrong With My Mouse? Behavioral Phenotyping of Transgenic and Knockout Mice," is widely used by the biomedical research community.

Title

Distinguished Professor Emeritus, MIND Institute and Department of Psychiatry and Behavioral Sciences

Specialty

Neuroscience

Department

Psychiatry and Behavioral Sciences

Division

Neuroscience Researchers
Psychiatry

Center/Program Affiliation

UC Davis MIND Institute

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Research II, 4625 2nd Ave. Suite 1001 Sacramento, CA 95817

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Education

Ph.D., University of Maryland, College Park MD 1976
B.A., University of Pennsylvania, Philadelphia PA 1971

Fellowships

Neuropsychopharmacology, Yale University School of Medicine, New Haven CT 1976-1979

Professional Memberships

American Association for the Advancement of Science (Fellow, 2011)
American College of Neuropsychopharmacology
Brain and Behavior Research Foundation, formerly NARSAD (Council)
International Behavioral and Neural Genetics Society
International Behavioral Neuroscience Society (Fellow)
International Neuropeptide Society (Founding Member)
International Society for Autism Research (Fellow)
Society for Neuroscience

Honors and Awards

Dean's Award for Excellence in Research, University of California Davis School of Medicine, 2019
Chair, Neuroscience Section, American Association for the Advancement of Science, 2018

UCDAVIS HEALTH

Jacqueline N. Crawley, Ph.D.

Plenary Lecture, Gatlinburg Conference on Research and Theory in Intellectual and Developmental Disabilities, 2017
Elsevier Distinguished Lecture Award, Developmental Neurotoxicology Society, 2016
Co-Chair Award, International Society for Autism Research Scientific Program, 2015
Distinguished Scientist Award, International Behavioural and Neural Genetics Society, 2011
Special Achievement Award, National Institute of Mental Health, 2011
Keynote Lecture, International Meeting for Autism Research, 2010
National Institute of Mental Health Director's Merit Award, 2010
President, International Behavioral and Neural Genetics Society, 2010
Autism Awareness Day Keynote Award, University of Albany, 2009
Howard Hughes Medical Research Institute Preceptor Award, Student Internship Program, 2007
Fleur Strand Lecture Award, Summer Neuropeptide Conference, 2005
Marjorie A. Myers Lifetime Achievement Award, International Behavioral Neuroscience Society, 2005
Howard Hughes Medical Research Institute Preceptor Award, Student Internship Program, 2000, 2005
Society for Neuroscience Service Award, Membership Committee Co-Chairperson, 2001, 2002, 2003, 2004
Gladstone Institute of Neurological Disease Distinguished Scholar Award, 2003
NIMH Director's Merit Award, 2002
Special Act or Service Award in Recognition and Appreciation of Special Achievement, U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, 2001
President, International Behavioral Neuroscience Society, 2001
ISI Citation Classic: Crawley and Corwin, Biological actions of cholecystokinin, Peptides (14:731-755, 1994), 2000
National Institute of Mental Health Special Service Award, 1993, 1999
Summer Neuropeptide Conference Organizers Award, 1999
Howard Hughes Medical Research Institute Student and Teacher Internship Award, 1998
Mathilde Solowey Lecture Award in Neuroscience, 1993
Pharmacology Research Associate Training award, National Institute of General Medical Sciences, 1979
Biological Sciences Training Program Research award, Yale University School of Medicine, 1976
Graduate Research Fellowship, University of Maryland, 1971, 1975
Mayor's Scholarship, University of Pennsylvania, 1967

Jacqueline N. Crawley, Ph.D.

Select Recent Publications

Lauterborn JC, Schultz MN, Le AA, Amani M, Friedman AE, Leach PT, Gall CM, Lynch GS, Crawley JN. Spaced training improves learning in Ts65Dn and Ube3a mouse models of intellectual disabilities. Translational Psychiatry. 2019 Jun;9(166). doi:10.1038/s41398-019-0495-5.

Rhine MA, Parrott JM, Schultz MN, Kazdoba TM, Crawley JN. Hypothesis-driven investigations of diverse pharmacological targets in two mouse models of autism. Autism Res. 2019 Mar;12(3):401-421. doi:10.1002/aur.2066. Epub 2019 Jan 17. PMID:30653853.

Leach PT, Crawley JN. Touchscreen learning deficits in Ube3a, Ts65Dn and Mecp2 mouse models of neurodevelopmental disorders with intellectual disabilities. Genes Brain Behav. 2018 Jul;17(6): e12452. doi:10.1111/gbb.12452. Epub 2018 Feb 15. PMID:29266714.

Stoppel LJ, Kazdoba TM, Schaffler MD, Preza AR, Heynen A, Crawley JN, Bear MF. R-Baclofen Reverses Cognitive Deficits and Improves Social Interactions in Two Lines of 16p11.2 Deletion Mice. Neuropsychopharmacology. 2018 Feb;43(3):513-524. doi:10.1038/npp.2017.236. Epub 2017 Oct 6. PMID:28984295.

Dahmne SC+, Silverman JL, Super CE, Lammers SHT, Hameed MQ, Modi ME, Copping NA, Pride MC, Smith DG, Rotenberg A, Crawley JN, Sahin M: Replicable in vivo physiological and behavioral phenotypes of the Shank3B null mutant mouse model of autism. Molecular Autism. 2017;8(26):1-19. doi:10.1186/s13229-017-0142-z.

Kazdoba TM, Leach PT, Yang M, Silverman JL, Solomon M, Crawley JN. Translational Mouse Models of Autism: Advancing Toward Pharmacological Therapeutics. Curr Top Behav Neurosci. 2016;28:1-52. doi:10.1007/7854_2015_5003. PMID:27305922.

Leach PT, Hayes J, Pride M, Silverman JL, Crawley JN. Normal Performance of Fmr1 Mice on a Touchscreen Delayed Nonmatching to Position Working Memory Task. eNeuro. 2016 Mar 15;3 (1):ENEURO.0143-15.2016. doi:10.1523/ENEURO.0143-15.2016. PMID:27022628.

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Crawley JN, Heyer WD, LaSalle JM. Autism and Cancer Share Risk Genes, Pathways, and Drug Targets. Trends Genet. 2016 Mar;32(3):139-146. doi:10.1016/j.tig.2016.01.001. Epub 2016 Jan 29. PMID:26830258.

Kazdoba TM, Leach PT, Crawley JN. Behavioral phenotypes of genetic mouse models of autism. Genes Brain Behav. 2016 Jan;15(1):7-26. doi:10.1111/gbb.12256. Epub 2015 Oct 22. PMID: 26403076.

Yang M, Lewis FC, Sarvi MS, Foley GM, Crawley JN. 16p11.2 Deletion mice display cognitive deficits in touchscreen learning and novelty recognition tasks. Learn Mem. 2015 Nov 16;22(12): 622-32. doi:10.1101/lm.039602.115. PMID:26572653.

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