Securing NIH Intramural Fellowships to Enhance Your Pharmacology Training

NIMH Opportunities for the Investigation and Treatment of Mental Illnesses Through Basic and Clinical Research

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Director, NIMH IRP Office of Fellowship Training

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National Institute of Mental Health

NIMH Vision & Mission

NIMH Vision

NIMH envisions a world in which mental illnesses are prevented and cured.

NIMH Mission

The mission of NIMH is to transform the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery, and cure.

For the Institute to continue fulfilling this vital public health mission, it must foster innovative thinking and ensure that a full array of novel scientific perspectives are used to further discovery in the evolving science of brain, behavior, and experience. In this way, breakthroughs in science can become breakthroughs for all people with mental illnesses.

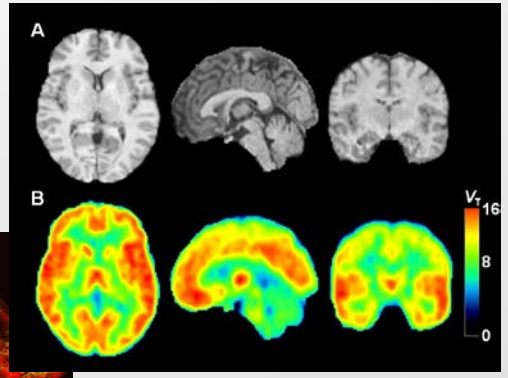
Goals for the intramural program

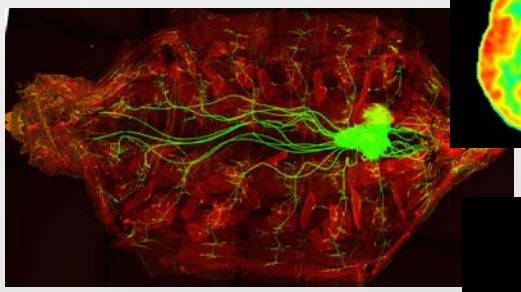
- ***To nurture the most creative science*** that uses cutting-edge, cross-disciplinary approaches to explore how genes, cells, circuits & systems operate in the healthy brain & how they are altered in mental illness
- **To address critical areas & gaps in basic and clinical research** that would be hard to address without stable long-term funding
- ***To evolve common themes & coordinating mechanisms*** between clinical & basic research efforts
- ***To ensure that an outstanding & diverse group of young scientists and clinicians are inspired*** to continue to undertake high risk, innovative research
- ***To encourage collaborative science & the exchange of ideas*** by facilitating partnerships with researchers everywhere

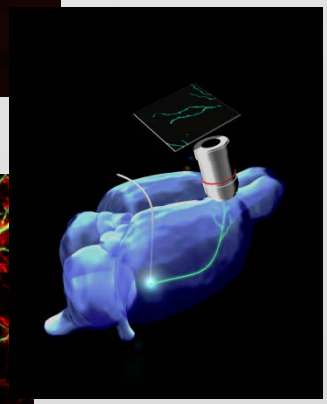
NIMH IRP Research Interests

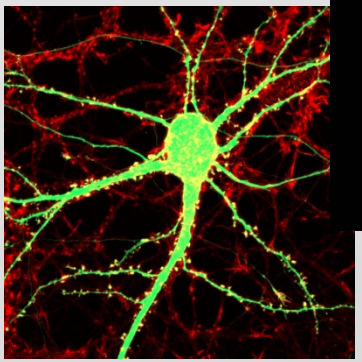
NIMH researchers conduct research ranging from studies into mechanisms of normal brain function, conducted at the behavioral, systems, cellular, and molecular levels, to clinical investigations into the diagnosis, treatment and prevention of mental illness. Major disease entities studied throughout the lifespan include:

- Anxiety Disorders
- Attention Deficit Hyperactivity Disorder (ADHD)
- Autism Spectrum Disorders
- Behavioral Neuroscience
- Bipolar Disorder
- Child and Adolescent Psychiatry
- Cognitive Neuroscience
- Conduct Disorder
- Depression
- Epidemiology
- Experimental Therapeutics
- Functional Imaging
- Molecular and Cellular Neuroscience
- Molecular Imaging
- Neural Development and Plasticity
- Neuroendocrinology
- Neurogenetics
- Neuroimmunology and Virology (HIV)
- Schizophrenia









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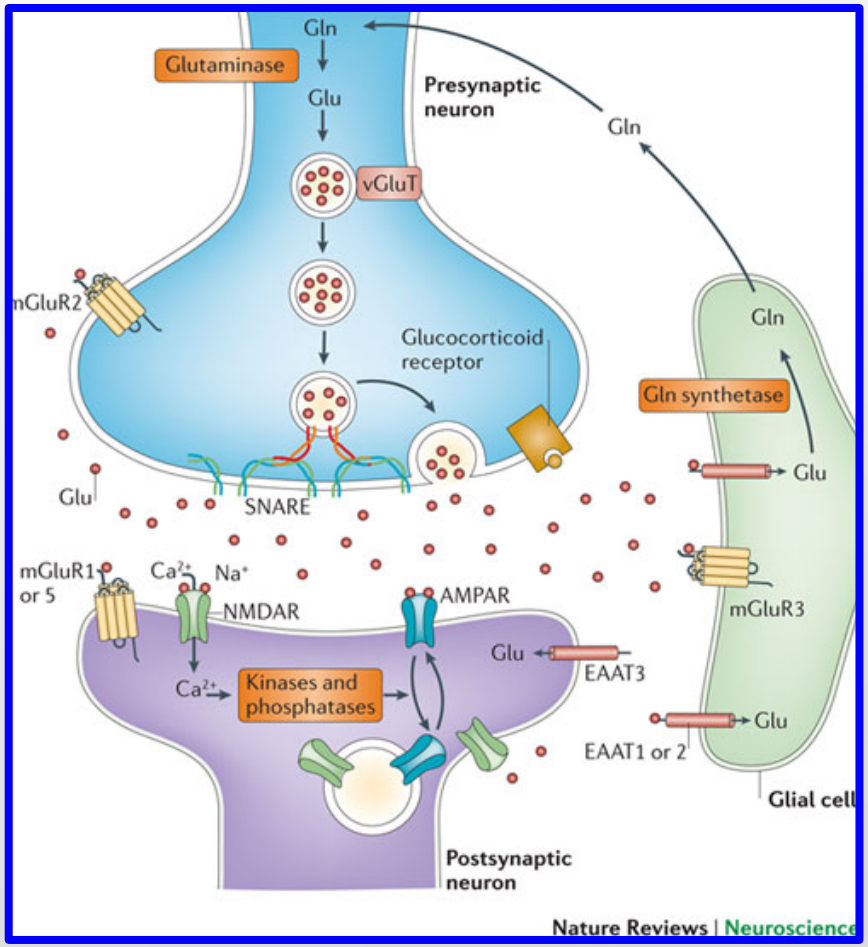
Development of New, Faster-Acting Treatments for Treatment-Resistant Depression

Carlos Zarate, Jr., M.D.

Chief, Experimental Therapeutics & Pathophysiology Branch, Section on the Neurobiology and Treatment of Mood Disorders

Study of glutamate modulators for treatment of depression

- Therapeutic relevance of agents
- Pretreatment biomarkers of response
- Biologically enriched subgroups
- Neurobiology of response



National Institute of Mental Health

Development of New, Faster-Acting Treatments for Treatment-Resistant Depression

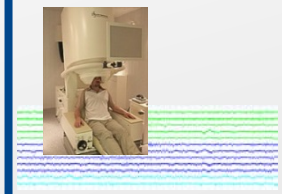
Study of rapid acting antidepressant and antisuicidal ideation agents using many tools and a multimodal approach

Polysomnography

MRS

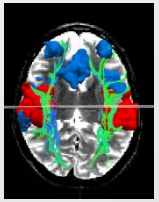
PET

MEG

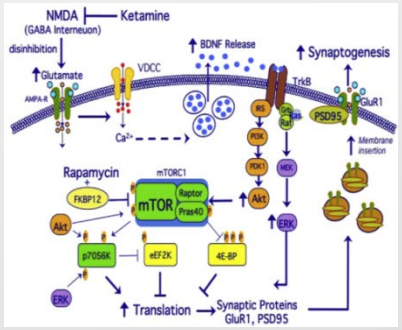


fMRI

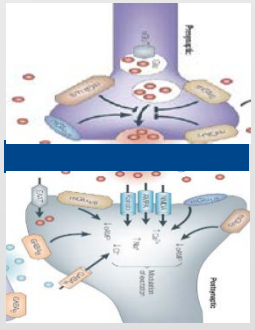
Structural MRI



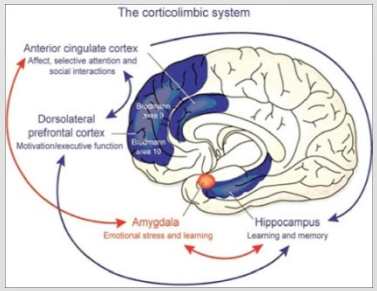
Synaptic Plasticity (mTOR, eEF2, GSK-3B inh)



Neurochemicals (Glx,Glx/Glu ratio)



Circuits (corticolimbic)



Genetic (genotype, expression)

Glutamate & Dopamine Transporters: A New Take on Uptake

Susan G. Amara, Ph.D.

Scientific Director

Structural studies of glutamate transporters

- substrate transport
- gating mechanism for anion permeation
- neurotransmitter efflux pathways

Regulation of transporter trafficking & efflux

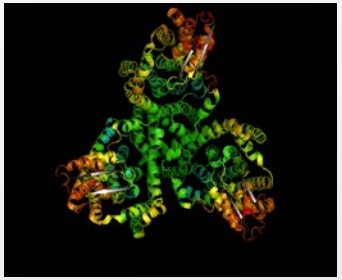
- by activation of cell surface receptors
- endocytic mechanisms
- protein-protein interactions
- Gβγ-modulation of efflux
- effect on neuronal firing & excitability

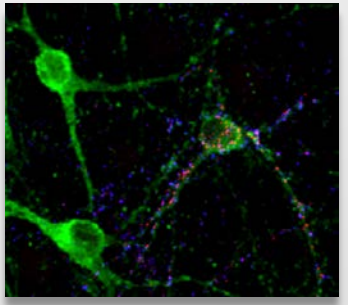
Neurotransmitter carriers as drug targets

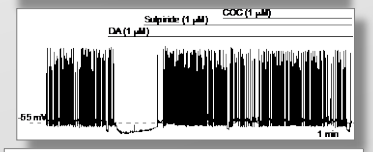
- psychostimulant & antidepressant drugs
- intracellular targets and signaling
- trace amine receptors
- allosteric modulators, EAAT enhancers
- subtype-selective blockers
- targeting novel regulatory pathways

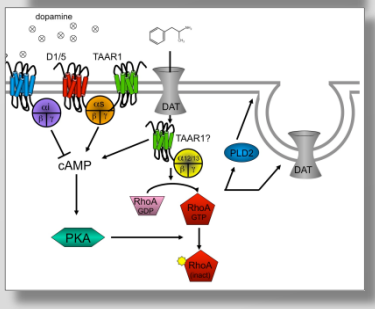
Behavioral consequences

- of regulated surface expression
- of novel drug classes









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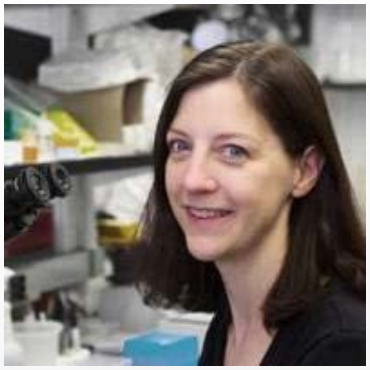
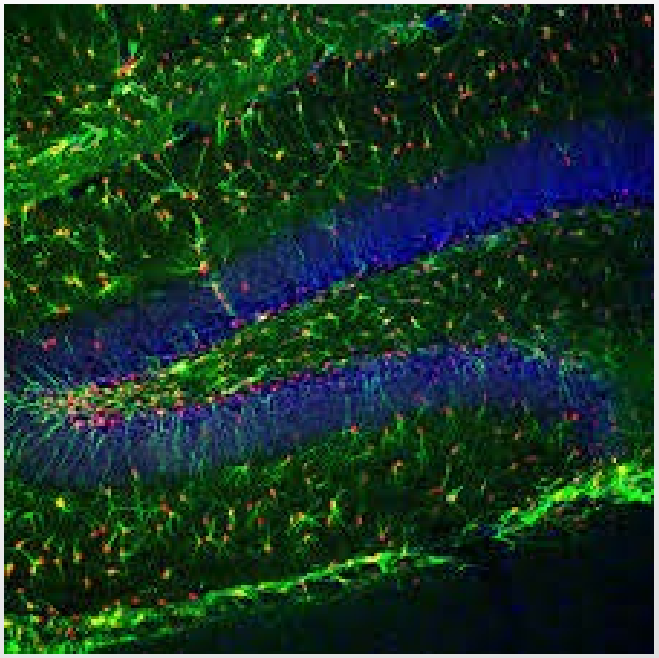
Neurogenesis in adults: a role in buffering stress responses

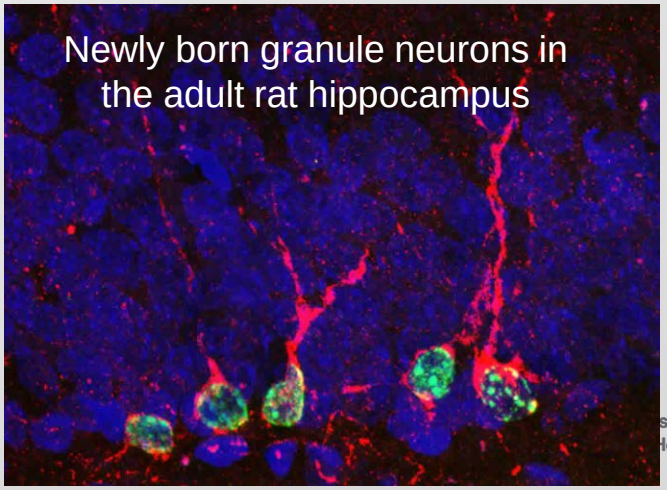


Heather A Cameron, Ph.D.
Chief, Unit on Neuroplasticity



The goal of our research is to understand the function of adult neurogenesis by studying the regulation of granule cell development, the activation of the new neurons, and the behavioral consequences of inhibiting neurogenesis.

- What is the fate and physiological relevance of adult-generated granule cells in hippocampus?
- Elimination of neurogenesis in adult mice leads to elevated stress responses and “depressive-like behavior”. How do adult –generated granule cells buffer against “depressive-like behavior”.

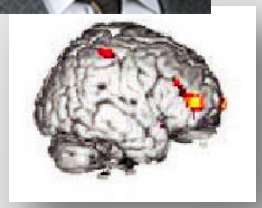


stitute
Health

New NIMH IRP Faculty

Yogita Chudasama, Ph.D., Chief, Section on Behavioral Neuroscience and Director, Rodent Behavioral Core

- Formerly a tenured faculty member in psychology at McGill
- Studies how fronto-temporal circuitry affects cognitive and emotional behavior
- Expertise in rodent and marmoset behavior



Armin Raznahan, M.D., Ph.D.,

Chief, Developmental Neurogenomics Unit

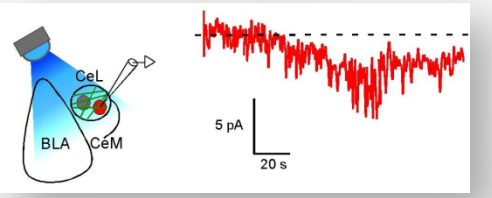
- Uses neuroimaging and genomic approaches to model brain development
- Selected as a Lasker Clinical Research Scholar to develop a genetics-driven approach to biomarker discovery in neurodevelopmental psychiatry

New NIMH IRP Faculty

Mario Penzo, Ph.D.

Chief, Unit on the Neurobiology of Affective Memory

- Studies neuronal mechanisms underlying the formation and regulation of affective memories.
- Combines behavioral assays, electrophysiology, neuroanatomy, and optogenetics in mice



Mark Histed, Ph.D.

Chief, Unit on Neural Computation and Behavior

- Studies cortical circuits and activity patterns linked to behavioral decision making
- Uses new optical technology supported by the BRAIN initiative, combining holography with two-photon optogenetics in behaving mice

Office of Fellowship Training (OFT)

OFT Mission

The mission of the Office of Fellowship Training is:

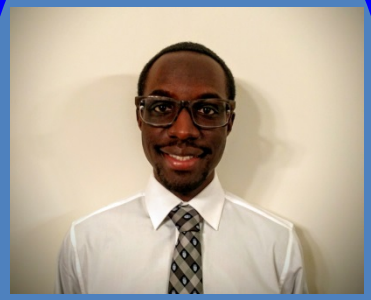
- To support and promote a productive and fulfilling research training experience in the NIMH Intramural Research Program
- To encourage career planning and guide career management through trainee use of Individual Development Plans (IDPs)
- To provide programs and services to assist trainees in discovering and clarifying career choices
- To provide opportunities and to encourage trainees to build a professional skill set which enables them to become world leaders in academic and non-academic careers

Office of Fellowship Training Team

Julie Davison

Sandy Gomez

Aneka Reid



Kipchumba Kitur

NIMH FELLOWSHIP TRAINING IN NEUROSCIENCE RESEARCH

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NIMH IRP Trainee Population

- **Clinical Fellows** (Title 42) - 9
- **Research Fellows/VP** (Title 42) - 19
- **Post-Doctoral IRTAs/Visiting Fellows** - 65
- **Pre-Doctoral IRTAs/Visiting Fellows** – 17
- **Post-Bac/Tech/Student IRTAs** – 130
- **Summer IRTAs** (2015) – 60

Career & Professional Development
Grantsmanship Seminars & Workshops

Grantsmanship - David Morrison, Grantwriters, LLC
Phase I : An overview of the grant proposal preparation and submission process with workbook
Phase II: Preparation and critique of Specific Aims and Significance Paragraph
Phase III: Tutorial to draft a Grant Proposal for submission

National Science Foundation Funding – Joerg Schlatterer
A representative from the NSF discusses funding opportunities for fellows including those for PhD students and Postdoc Fellows

National Science Foundation – Graduate Research Fellowship Program Application Preparation Workshop for Postbac IRTAs – David Coppola
A former representative of the NSF provides guidance on completing applications for the GRFP
With follow-up review of the proposals

Career Development Award Mechanisms (K-Awards) – Nancy Desmond
Seminar dedicated to the discussion of the logistics of submitting a K-Award including the K-99 and K-22 mechanisms.

NIMH Research Portfolio: A discussion with Program Officers
NIMH Program Officers discuss the NIMH Strategic Plan focusing on the extramural research priorities: necessary information for preparing grants for submission

Grant Proposal Review Overview – Megan Kinnane
Seminar dedicated to the discussion of the grant proposal review process

Mock Grant Proposal Review Session – Megan Kinnane & Marcy Burstein
A mock study section run by NIMH Scientific Review Officers

Career & Professional Development
Workshops & Seminars

NIMH Post-Bac IRTA Career Discussion Series

Preparing and Submitting a Biomedical Manuscript

Biomedical Survival Skills Workshops & Seminars

- Optimizing LinkedIn for Career Success
- Managing a Laboratory
- Time Management
- Communicating Your Science
- Drafting an Individual Development Plan
- Scientific Communication & the Three-Minute-Talk (TmT)

Responsible Conduct of Research (RCR) Annual Training – Ethics for Lunch
RCR Training for Summer Interns

NIMH OFT Sponsored Fellows' Tax Seminars

NIMH DIRP Investigator's Seminar Series

OFT Website: http://www.nimh.nih.gov/labs-at-nimh/scientific-director/office-of-fellowship-and-training/index.shtml

NIMH IRP Fellows' Committee

Composed of Postdoc, Visiting , Clinical, Predoc and Postbac Fellows with representation from across the NIMH IRP Labs and Branches

Fellows' Committee Sponsored Events

Fellows' Afternoon Neuroscience Seminars (FANS)

- Monthly informal meetings on every third Thursday of the month.
- Two fellows present their own work, during short, 20-minute talks (plus 10 minutes for questions).
- Attendees have the opportunity to give written feedback on the presentation directly to the speaker.
- Allows for Postdoc, Visiting , Clinical & Research Fellows to practice speaking in public in preparation for domestic and international meetings and job talks.
- Attended by Fellows and Faculty.
- Informal setting off campus in FAES House with refreshments.

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NIMH IRP Fellows' Committee

Fellows' Committee Sponsored Events

NIMH Summer Intern Program Journal Club

5 sessions organized by the OFT but taught by Fellows' Committee Members
To provide SIP fellows with:

- Guidance and training on how to critically read the scientific literature
- Overview of some of the key areas of research in the NIMH IRP today

NIMH DIRP Fellows' Scientific Training Day

The Fellows' Committee provides input and support throughout development of the NIMH IRP Fellows' Scientific Training Day. They assist with disseminating information to the fellow community as well as organization and planning in all aspects of the event.

National Institute of Mental Health

Graduate Partnership Programs

University College London – National Institute of Mental Health
Joint Graduate Program in Neuroscience

http://www.icn.ucl.ac.uk/nih-gpp/Welcome.html

Graduate Partnership Programs

Karolinska Institutet – National Institutes of Health
Joint Graduate Program in Neuroscience

http://www.nimh.nih.gov/labs-at-nimh/scientific-director/office-of-fellowship-and-training/nih-karolinska-institute-graduate-program/index.shtml

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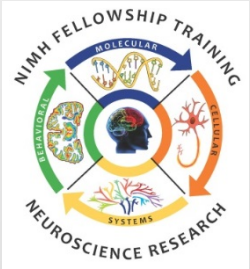
Thank you!!



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