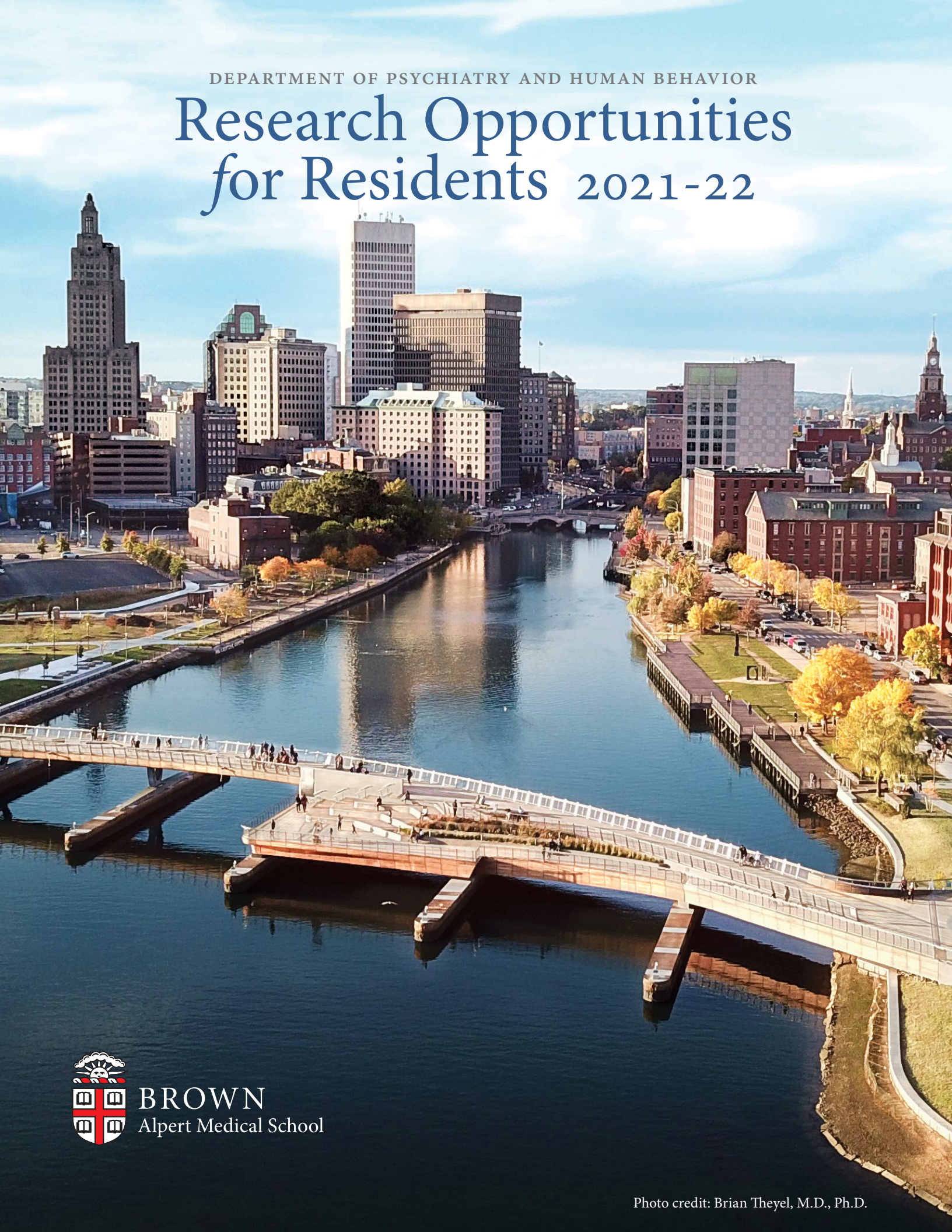
DEPARTMENT OF PSYCHIATRY AND HUMAN BEHAVIOR

Research Opportunities *for* Residents 2021-22



BROWN
Alpert Medical School

Photo credit: Brian Theyel, M.D., Ph.D.

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Welcome from the Chair

Steven A. Rasmussen, M.D.
Professor and Chair
Department of Psychiatry and Human Behavior
Alpert Medical School of Brown University

Over the next four years, you will begin to define your professional identity as a psychiatrist. You will have the privilege of listening to others' innermost thoughts and the responsibility of helping your patients transform those thoughts into hope and recovery. You will realize that what you have come to understand is only the beginning. You will learn that your patients have much to teach you about yourselves. You will struggle with how to balance the complexity of your lives with that of your patients, and you will learn how to put your thoughts and feelings aside in order to better understand the thoughts and feelings of others. You will come to know how much we have learned as a field and yet how little we know. You will be challenged by having to learn a bewildering array of therapeutic modalities and by having to integrate them into a therapeutic plan that is unique for every individual you treat. You will learn from the faculty, your supervisors, your peers and, most of all, from your patients. You will be witness to inspiring recoveries and sobering tragedies. In sum, the next four years will leave an indelible stamp on who you are and who you will become, as a professional and as an individual. It is our hope that you will decide to share these defining years with us.

Why Brown? We are committed to collaboratively crafting a unique educational plan with every incoming resident. There has never been a more exciting time to begin a psychiatric residency. The Department of Psychiatry and Human Behavior at Brown is a leader in advancing our basic understanding of brain function. These advances are leading to the development of new, more effective treatments for the major neuropsychiatric disorders. Fundamental progress in our understanding of the neural underpinnings of cognition and emotion will lead to a synthesis of how psychological and pharmacologic treatments work.

As the second largest department in the Warren Alpert Medical School, with over 130 full-time academic faculty and 310 clinical faculty, as well as a department with $60 million in external funding in 2020, the DPHB is well-positioned for the future. Our R25 training grant, funded by the National Institute of Mental Health, allows residents who are interested in pursuing research careers to work alongside some of the best basic and clinical research scientists in the country during their residency. Six additional T32 training grants and four center grants offer additional training and junior faculty position opportunities for those completing the residency.

The Carney Institute for Brain Science promotes an interdisciplinary environment that engages our faculty and residents at the cutting edge of new research developments in neuroengineering, cognitive/computational neuroscience and molecular cell biology. With a wide diversity of patients and training sites, the Brown residency will provide you with a training experience that also allows you to determine what you are truly passionate about in this field. It is the drive to integrate scientific discovery with compassionate care that defines our purpose. In keeping with that mission, we are looking for applicants who are striving to leave the world a better place than they found it.

Welcome from the Director of Research Training for the Residency

Audrey Tyrka, M.D.
Professor of Psychiatry and Human Behavior

Research is exciting — it involves exploring unanswered questions and generating new knowledge to improve the care and well-being of our patients. Intellectually, research is rewarding, as it engages our curiosity about patients and science, develops critical thinking and analytic and writing skills, and involves working with talented and skilled mentors and colleagues on important and challenging problems. Brown provides outstanding research training opportunities for our psychiatry residents.

Brown's world-renowned faculty conduct important work on the causes, mechanisms and novel treatments for psychiatric conditions. Our faculty are known for their collaborative spirit, accessibility and dedication to mentoring. Residents who are interested in pursuing basic science or translational research may also work with outstanding faculty in other departments at Brown, such as the Department of Neuroscience, the Department of Cognitive, Linguistic and Psychological Sciences, and the Department of Molecular Biology, Cell Biology and Biochemistry.

Our Research Training Program, funded in part through a National Institute of Mental Health R25 grant, offers a rich mentored training experience with substantial protected time for research, career development support and research seminars and didactics. The goal of this program is to lay the foundation for a successful independent research career through mentored research opportunities and training while ensuring that research is a valuable and rewarding part of your experience. Residents who are not in the program have the opportunity to engage in research experiences that are tailored to fit their individual needs and training goals.

Consistent with our goal to provide outstanding research and clinical opportunities for all residents, there is no separate application or match number for the program; we strongly encourage applicants to describe their interest in pursuing research as a resident in their application package. All applicants use the same application, and residents formally apply to the Research Training Program during the first postgraduate year (PGY1). We offer two research-focused interview days as part of our interview schedule for those who are interested in this program.

If you have any questions about research opportunities at Brown, please email me at audrey_tyrka@brown.edu. I look forward to meeting with you to discuss research opportunities in our department and to develop an exciting, rewarding and individually tailored research experience for you.

About Brown University

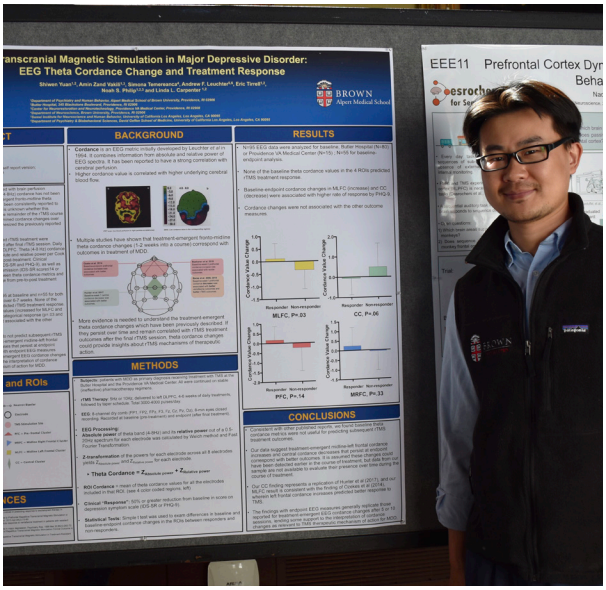
Brown University was established in 1764 as the seventh college in the U.S., and today it is an independent, coeducational, Ivy League institution of higher learning devoted to the liberal arts and professional training. The University consists of undergraduate and graduate programs plus the Warren Alpert Medical School, School of Public Health, School of Engineering and School of Professional Studies. The medical school has affiliation agreements with local hospitals. Brown's vibrant community consists of 6,792 undergraduates, 2,561 graduate students, 595 medical students and 791 full-time faculty members. The undergraduates pursue bachelor's degrees in more than 80 concentrations, and Brown has 51 doctoral programs and 31 master's programs. The University is committed to developing and supporting major, cutting-edge research programs, providing effective infrastructure for research and development, supporting administration of research projects and encouraging dissemination of research results.

Department of Psychiatry and Human Behavior (DPHB)

The Brown Department of Psychiatry and Human Behavior (DPHB) has a long record of outstanding research training and excellence. With more than 130 full-time academic faculty members and $60 million in externally sponsored research, the department offers a wealth of opportunities through cutting-edge programs in clinical, basic and translational research. The development and testing of novel treatments (psychosocial, pharmacotherapy and device-based, including neuromodulation approaches) is a particular strength, as is research on the biological bases of behavior and psychopathology. Adult psychopathology research includes investigation of mood disorders, suicide, post-traumatic stress disorder (PTSD) and anxiety disorders, personality disorders, substance use disorders, women's mental health, and other domains and disorders. Behavioral medicine research ranges from biological investigations to public health studies and includes such areas as the psychological effects of physical activity, addictions, cancer prevention and cardiovascular risk. Our department also conducts laboratory studies in basic neuroscience in such areas as Alzheimer's disease and the genetic and molecular mechanisms underlying autism, PTSD and depression. Ongoing developmental studies include basic behavioral studies and research on risk and vulnerability, including biological predispositions and environmental risk and protective factors. Studies on the psychosocial aspects of physical illness, such as asthma and obesity, are other areas of strength. Examples of active translational research collaborations include novel structural and functional neuroimaging methods and innovative cognitive neuroscience techniques, including computational neurocircuit modeling of reward expectancy, magnetic resonance imaging (MRI) myelin pathway imaging, and autism genetics.

Numerous faculty members are nationally and internationally recognized leaders in their field. Indices of our department's success include more than 230 current externally funded grants and more than $60 million in annual grant support awarded to more than 100 faculty members. Grants are funded by external sources such as the National Institute of Mental Health, the National Institute of Child Health and Human Development, the National Institute on Drug Abuse, the National Institute of Alcohol Abuse and Alcoholism, the National Cancer Institute and the Brain and Behavior Research Foundation.

The commitment to research training in the department is longstanding and well-developed. Senior research faculty are deeply committed to teaching, encouraging and supporting junior faculty members, research fellows and residents so that the important scientific work conducted by these departments continues to flourish. The residency, psychology training programs and postdoctoral fellowships are highly sought after nationwide, receiving many more applications than there are slots available. Our department has approximately 50 postdoctoral psychology fellows who are involved in research. Mentorship is a very significant component of the department's academic mission.



Faculty and trainees at Brown are highly collaborative with one another and with members of other departments and centers. The department participates in joint research and clinical training programs with other medical school departments, including neurology, neurosurgery, family medicine, medicine, pediatrics and community health, as well as the campus-based departments of neuroscience; cognitive, linguistic and psychological sciences; molecular biology, cell biology and biochemistry; engineering; pharmacology; and biotechnology. One of the great strengths of our department is that collaborative work is fostered not only across disciplines but also among clinicians and researchers.

The DPHB Residency Training Program

The department's General Psychiatry Training Program oversees and administers our research-focused residency track. The program trains 38 residents over four postgraduate years. The faculty creates a challenging but supportive academic environment in which residents identify their individual interests and skills. This individualized approach is coupled with a wide range of clinical and intellectual opportunities. The rich training at Brown prepares residents to be skilled clinicians, experienced educators and successful researchers. Graduates provide compassionate, high-quality and scientifically informed psychiatric care to their patients and serve as role models for other professionals.

Our residency program is highly competitive and sought after nationwide and has a national reputation for excellence. More than one-half of U.S. medical school applicants to psychiatry training programs apply to our program. Residents from our outstanding triple board residency (general psychiatry, child psychiatry and pediatrics) join the general psychiatry residents for substantial portions of their training. This collaboration and cross-fertilization enriches the learning environment for our research-focused residents.

The Division of Child and Adolescent Psychiatry

Our child and adolescent psychiatry division is nationally recognized as one of the top programs in the country in terms of breadth and depth of clinical training and research activities. More than 120 faculty have full-time positions in the clinical, teaching and research academic tracks. Funded research projects totaling more than $12 million annually focus on psychiatric disorders in youth (such as bipolar disorder, obsessive-compulsive disorder, autism, post-traumatic stress disorder and substance use), genetics, sleep, brain mechanisms of psychopathology, psychological reactions to illness, health disparities, and illness/risk prevention programs for children, adolescents and families. Our training programs focus on the development of clinical scientists. They offer a unique integration of unparalleled clinical settings, a deep commitment to the integrated treatment of the psychological, behavioral and somatic manifestations of mental illness, an enormously productive research program and a culture of warmth and collegiality.

The division has a Child and Adolescent Psychiatry (CAP) Fellowship with 12 fellows that includes two research pathways using our National Institute of Mental Health mentored research training (R25 and T32) programs. The Integrated Research Track occurs within the two-year CAP Fellowship and allows 20% protected research time during the first year of training and up to 60% in the second year of training. In the Intensive Research Track, formal research training is extended by an additional year, to three years. Protected research time increases each year: 20% in the first year, 60% in the second year and 80% in the third year. Our graduates are highly sought-after and go on to leadership positions in education and research.

Our Commitment to Anti-Racism, Diversity, Equity and Inclusion

DPHB is committed to addressing structural racism and increasing diversity in our department as well as the equity and inclusion of individuals from underrepresented and marginalized groups. Recent events, including the disproportionate impact of COVID-19 on minority communities and the ongoing racial violence toward Black people in the U.S., remind us of the persistent, longstanding and painful injustices in our country. This is an important tipping point at which we can challenge ourselves and our systems to change. Key aspects of our commitment include a focus on confronting racism and privilege within our department, incorporating a social justice lens in our educational offerings for trainees and faculty, renewing our commitment to recruitment of trainees and faculty of color, and ensuring a welcoming and encouraging training environment for a wide spectrum of residents, including those with disabilities.

Brown Medical School Diversity Recruitment and Retention

Brown University has committed to transforming its diversity policies, structures and practices. This commitment is highlighted in the University's strategic plan *Building on Distinction*, and a detailed action plan was articulated in *Pathways to Diversity and Inclusion* in 2016 and reaffirmed in DIAP Phase II in spring 2021. This plan outlined a set of concrete, achievable actions to make Brown a more fully diverse and inclusive community, and we have made some progress on these goals. In 2020, University leaders recognized this commitment as urgent and concluded that, indeed, an active anti-racist approach is needed to achieve inclusion and equity for members of underrepresented, marginalized and oppressed groups. Below we describe both our longstanding commitment to diversity, equity and inclusion and activities that enhance these goals, as well as our recent approach to confronting racial injustice.

DPHB Diversity Committee

The DPHB Diversity Committee was established 20 years ago and provides several valuable activities and initiatives for our community. The committee assists in recruiting and supporting trainees and faculty from diverse backgrounds or with diversity-related research interests and in promoting cultural competence in training and research. The committee sponsors training to integrate diversity-related topics in seminars throughout the department and provides training opportunities in the areas of diversity and inclusion.

The committee also has developed two specific initiatives focused on mentoring trainees and providing continuing education opportunities for faculty. The committee launched a diversity mentoring program in 2010 to facilitate networking and career development among trainees and faculty in our department and to offer trainees and faculty members opportunities to discuss clinical, research and professional issues relevant to diversity in a supportive collegial environment. Dr. Audrey Tyrka and Dr. Tracey Guthrie are mentors in this program. A competitive departmental research award of $10,000 is awarded to a trainee or junior faculty person from an underrepresented or disadvantaged background.

The Diversity Committee has a formal initiative to match talented minority investigators with funded researchers to facilitate the submission of diversity supplements to the National Institutes of Health. The Diversity Committee also launched a Faculty Cultural Competence Initiative to ensure that our faculty receive additional opportunities to enhance their cultural competence with respect to teaching, supervision and research responsibilities. Presentations are given to highlight discussions of race, ethnicity and differences in cultural identities in teaching, supervision, clinical work and research.

DPHB Anti-Racism Steering Committee

To confront racial injustice and structural racism, DPHB leadership has partnered with the department's Diversity Committee to develop an Anti-Racism Steering Committee, which comprises faculty and trainees and is responsible for developing a coordinated and effective anti-racism action plan. New activities include:

- Encouraging the creation of open spaces for discussion and action, including an anti-racism curriculum with a focus on how racism has framed historical practices in psychology and psychiatry;
- Undertaking a review of all educational offerings to more effectively incorporate issues related to diversity and social justice; and
- Developing trainings to increase competence in addressing issues relating to diversity, race and race-based trauma in supervision and clinical work.

In addition, all members of search committees and faculty involved in trainee admissions will participate in training on implicit bias, tailored to considering systems of privilege that may impact training environments and accomplishments. All trainees will provide feedback on faculty seminars with regard to diversity and inclusion.

Further initiatives and investments in diversity and social justice are currently in development by the Anti-Racism Steering Committee and will be implemented over the next academic year.

DPHB Women in Psychology and Psychiatry Steering Committee

In 2010, the Women in Psychology and Psychiatry Committee was launched as a vehicle for the discussion of issues relating to gender and careers in academic medicine. Leadership consists of a committee of 16 faculty members and six trainees. This steering committee and the Diversity Committee are in regular communication and co-sponsor and coordinate joint events that are open to faculty, residents and other trainees in our department. Recent events include "Speak Up, Simmer Down: Gender, Language and Mentorship" and "Planning for Parental Leave: What You Didn't Know You Needed to Know."

Research Training and Resources

DPHB has partnered for many years with other departments, institutes and centers at Brown and our affiliated hospitals: Butler Hospital, Rhode Island Hospital, Emma Pendleton Bradley Hospital, Miriam Hospital, Providence Veterans Administration Medical Center and Women and Infants Hospital. Support from numerous research cores and programs is available to residents. More information can be found below, and in the list of online links at the end of this brochure.

DPHB Research Training Grants

DPHB is a national leader in predoctoral and postdoctoral research training. The department administers six federally funded postdoctoral T32 research training grants — an unusually large number — which attests to the excellence of our research training environment. Our psychiatry research track residents benefit from the wealth of research opportunities and excellent didactics supported by our T32 programs. Current research training grants include: T32 Research Training in Child Mental Health (National Institute of Mental Health (NIMH)), T32 Training in Child/Adolescent Biobehavioral HIV Research (NIMH), T32 Substance Abuse Intervention Outcome Research Training (National Institute on Drug Abuse), T32 Alcohol Abuse Treatment Research (National Institute on Alcohol Abuse and Alcoholism), T32 Training in Behavioral and Preventive Medicine (National Heart, Lung, and Blood Institute) and T32 Research Training in Stress, Trauma and Resilience (National Institute of Child Health and Human Development).

Interdisciplinary Collaborations

Much of the research done at Brown is interdisciplinary, involving strong collaborations between psychiatrists and psychologists within our department, as well as collaborations with neuroscientists, molecular biologists, immunologists, neurologists, neurosurgeons, engineers, pediatricians, primary care physicians, educators, epidemiologists and economists outside our department. This research effort is highly disease-focused and translational, so that basic science research efforts are closely tied to clinical issues and patient care. The department has prioritized the development of multidisciplinary translational projects that include collaborations between brain science faculty on the Brown University campus and hospital-based clinical faculty as well as public health program faculty involved in health policy and dissemination of evidence-based treatments.

Major Centers for Neuroscience and Translational Research

Robert J. and Nancy D. Carney Institute for Brain Sciences

The Carney Institute is a multidisciplinary institute including more than 100 faculty from 13 departments to advance research, technology development and training in the brain sciences. The Carney Institute unites faculty who study the fundamental mechanisms of nervous system function and those who seek to create devices with brain-like functions that can assist humankind. The faculty is also committed to translating fundamental knowledge for the diagnosis and treatment of the devastating effects of disease and trauma of the nervous system. Many DPHB faculty have an active role in the institute, including Dr. Steven Rasmussen, DPHB chair, and Dr. Linda Carpenter, a mentor for our Research Training Program, who are active members of the Carney Institute Executive Committee. Under the leadership of Diane Lipscombe, president of the international Society for Neuroscience, the Carney Institute received a $100 million gift, making it one of the best-endowed university brain science institutes in the country. This gift has allowed the institute to hire leading faculty and other scholars, provide research seed funding and further develop infrastructure in technology-intensive research domains.

The chairs of psychiatry, neuroscience, neurology, cognitive neuroscience and neurosurgery and the dean of engineering have fostered the rich, interdisciplinary interaction between campus and hospital departments. This group meets monthly with the Carney Institute director to foster collaboration and joint hiring. We are well on our way to attaining our $400 million funding goal for brain science at Brown by 2022. Over a 10-year period, 24 new endowed faculty members, half of whom have already been hired, will transform the brain science landscape. New tenured positions in systems neuroscience, molecular approaches to modulating neural circuitry, computational psychiatry, cognitive neuroscience and neuroengineering will lead to innovative approaches to further our understanding and treatment of psychiatric illness. With internationally recognized, externally funded programs and outstanding investigators in neuromodulation, technology-based interventions, suicide, the neurobiology of stress and trauma, and autism, among others, there will be many exciting training opportunities for incoming residents. Our research residents are positioned to take full advantage of advanced innovative neurotechnologies and computational approaches to integrating complex data sets that will advance our understanding of the pathophysiology and treatment of severe mental disorders.

In addition to its more than 100 faculty members, the Carney Institute includes hundreds of students at the undergraduate, graduate and postdoctoral level. Involved are the departments of Cognitive, Linguistic and Psychological Sciences; Neuroscience; Psychiatry and

Human Behavior; Computer Science; Philosophy; and Physics; the Division of Applied Mathematics; and the School of Engineering. Among its many accomplishments, the institute has been instrumental in the successful recruitment of internationally recognized brain scientists to Brown, the development of a Brown neuroengineering initiative, the acquisition of a two-photon microscope and the establishment of a state-of-the-art primate multi-electrode recording facility. The Carney Institute offers a regular schedule of events that are open to all members of the Brown University research community. These include weekly neurosurgery and neurology case conferences, the weekly neuroscience graduate program seminar series, brain science-oriented talks from the Center for Statistical Sciences, a seminar series from the Brown Center for the Study of Children at Risk and the Bench to Bedside seminar series, which the DPHB co-sponsors.

The Carney Institute provides infrastructure to advance interdisciplinary research efforts among this broad group, including essential support to obtain and administer multi-investigator grants for research, infrastructure and training. The institute actively seeks new training funds to support interdisciplinary education that transcends the opportunities available in individual academic departments. As one of its core missions, the institute is developing and supporting a series of interdisciplinary research centers that focus on established or emerging areas of excellence in brain research at Brown. Each center bridges the physical and life sciences and encompasses basic and translational research, including clinical application.

The *Center for Computational Brain Science* is focused on computational approaches to solving the big questions of our time and translating new insights into real-world progress. It provides an infrastructure to harness Brown University's world-class expertise in computation, cognition and systems neuroscience. The center catalyzes new collaborations across campus, engaging mathematicians, computer scientists, biologists, behavioral economists and cognitive neuroscientists. It allows for integration across levels of computational analysis, which is critical for understanding the brain. Building on Brown's Open Curriculum, the center provides cross-training in computational methods for students, basic scientists and physician-scientists. The center also enhances community engagement in computational brain science through hackathons, modeling challenges and scientific symposiums.

The *Center for the Neurobiology of Cells and Circuits* advances the understanding of the function of neural circuits, building on a foundation of genetic, molecular and cellular approaches. Center faculty members produce vital knowledge to advance understanding and treatment of autism, neurodegeneration including Alzheimer's and ALS, chronic pain, psychiatric illness, migraine, addiction and epilepsy.

The Brown *Center for Translational Neuroscience* synergizes the missions of the Carney Institute and the Brown Institute for Translational Science. The center's mission is to advance knowledge of the pathogenesis of brain disease and to translate this knowledge to improved clinical outcomes for families affected by brain disease. The center focuses on research and training related to deciphering disease pathogenesis, identifying new targets for molecular interventions and developing improved diagnostics and biomarkers.

The Brown University *MRI Research Facility* provides infrastructure and support to facilitate research and educational activities using magnetic resonance imaging (MRI) technology. The centerpiece of the facility is a state-of-the-art Siemens Prisma 3 Tesla (3T) MRI scanner, equipped with 64 receiver channels for significant gains in signal-to-noise ratio and acquisition speed.

COBRE Center for Central Nervous System Function

The Center of Biomedical Research and Excellence (COBRE) Center for Central Nervous System Function focuses on the genetic and neural basis of attention, decision making and action. The center was established in 2013 with the goal of creating core resources and developing the careers of a group of promising young investigators interested in how the brain controls decision making and attention in children and adults. The center's projects are fundamental studies using advanced human brain imaging, electrophysiological techniques and molecular genetics in humans and animals. The center does not specifically target neuropsychiatric disorders or study clinical samples, but its faculty has expertise that provides opportunities for close collaborations with faculty at Butler Hospital. The center's principal investigator, Jerome Sanes, is also director of the Brown MRI Research Facility. The center is a subunit of the Carney Institute.

Norman Prince Neurosciences Institute

The Norman Prince Neurosciences Institute is composed of leadership from psychiatry, neuroscience, neurology, neurosurgery, pathology, neuroradiology and emergency medicine who are dedicated to advancing the neurosciences and reducing human suffering from

disorders of the nervous system through research, clinical care and advanced education. The goal of the institute is to conduct rigorous, innovative research that unites and leverages the strengths of its partnerships with the academic medical centers. Researchers have access to cutting-edge equipment, including an IBM supercomputer, core facilities for genomics and proteomics, a 3,500-sample brain bank, a medical simulation center, two 3T MRI facilities and a portable multi-slice CT scanner. Clinicians affiliated with the institute have long-standing collaborations not only with Brown neuroscientists and cognitive researchers but also with Brown researchers in applied mathematics, biostatistics, public health, molecular biology, electrical engineering, computer science and computational biology.

Advance Clinical Translational Research (Advance-CTR)

Advance-CTR, funded through an Institutional Development Award for Clinical and Translational Research from the National Institute of General Medical Sciences, serves to support and educate clinical and translational researchers in Rhode Island, with the goal of accelerating cross-disciplinary discoveries that improve health. Advance-CTR aims to:

- Foster coordination between translational researchers at our partner institutions
- Bring together the diverse clinical research resources to provide a home that facilitates new collaborations
- Eliminate obstacles that may prevent researchers from pursuing clinical research initiatives;
- Educate, mentor and encourage young investigators in clinical research professional development
- Facilitate research to gather preliminary data necessary for developing competitive research proposals
- Sustain a clinical translational research environment by providing the necessary management and coordination of resources

The Advance-CTR Pilot Projects Program awards four investigators per year with one-year grants of $75,000 each in direct costs for clinical and translational research. Awarded proposals must be interdisciplinary with a focus on clinical, translational, or community research. Awardees gain the opportunity to experience planning and preparing research applications in a NIH format, respond to reviews, and learn grant management skills in a collaborative environment. Finally, awardees may take advantage of Advance-CTR's research services in both the pre-proposal and post-award stages of their projects.

Advance-CTR's professional development core provides educational and mentoring opportunities to both junior and senior investigators. This includes the Mentored Research Awards program, which is geared toward early career-stage investigators, especially those who identify as underrepresented in the STEM fields of science, technology, engineering, and mathematics. The Mentored Research Awards are given annually to three investigators from Brown University and the University of Rhode Island. They are two-year awards that cover 75% of salary up to $90,000 in direct costs. An additional $25,000 is also provided to cover research-related expenses or tuition (a master's degree in clinical and translational research from the Brown University School of Public Health is encouraged). Finally, the awards provide a structured mentoring program and training in clinical and translational research. A number of postdoctoral trainees in the DPHB have received mentored research junior faculty K awards funded by Advance-CTR, including a recent graduate of our research training program in psychiatry.

A key component of Advance-CTR is the Brown Center for Biomedical Informatics, which was founded in July 2015, to lead the development and application of informatics approaches in biomedicine and health care. Its mission is to: (1) innovate how electronic biomedical and health data are used, and (2) implement solutions for improving biomedical research and health care delivery. The center is developing translational bioinformatics approaches for incorporating biomedical knowledge into clinical practice. In addition, concomitant with the widespread adoption of electronic health record systems within the health care data ecosystem, the Clinical Informatics Research and Discovery Laboratory of the center is studying and using EHR data from clinical partners. The center also works to develop computational approaches for studying health care delivery and quantifying the impact of health care reform initiatives. Advance-CTR also has a clinical research design, epidemiology, and biostatistics core that provides a central location for Rhode Island investigators seeking support for quantitative and qualitative research design and analysis.

Alzheimer's Disease

The Center for Alzheimer's Disease Research was recently established at the Carney Institute with two generous gifts totaling $30M. The center will catalyze collaborations across basic and clinical research groups to advance the pace toward early detection, prevention, and personalized treatment. Research projects will integrate knowledge across biological systems in humans, including behavioral, neural, vascular, and immune systems.

Disease/Domain-Based Centers and Consortia

Initiative on Stress, Trauma, and Resilience (STAR Initiative)

The mission of the STAR Initiative is to catalyze transdisciplinary collaboration at Brown and around Rhode Island to foster transformative, translational research on early stress, trauma, adversity and resilience. STAR has a focus on novel biomarkers that may be harnessed to identify early markers of risk, resilience and disease. The STAR Initiative provides training opportunities for researchers and clinicians who want to address stress and trauma; aims to enhance partnerships with local and community stakeholders; and works to affect policy at the local, national and international levels . A T32 research postdoctoral training grant from the National Institute of Child Health and Human Development and a Centers of Biomedical Research Excellence (COBRE) grant support research training and career development in stress, trauma, and resilience.

Consortium for Research Innovation in Suicide Prevention

The Consortium for Research Innovation in Suicide Prevention (CRISP) was formed in 2019 with support from the DPHB to bring together researchers, clinicians, policymakers and advocacy groups to synergize efforts to address suicide , a major public health crisis. Its mission is to advance knowledge about and reduce the incidence of suicidal and other self-injurious behaviors by supporting research, education and policy advances. CRISP was recently awarded an NIH T32 research postdoctoral training grant.

Rhode Island Consortium for Autism Research and Treatment

The Rhode Island Consortium for Autism Research and Treatment (RI-CART) is a collaborative research community designed to support projects related to autism and developmental disabilities. Since April 2013, RI-CART has enrolled 1,800 individuals with autism spectrum disorder into a patient registry. Assuming a 1% prevalence rate for autism, more than 40% of Rhode Island children with autism spectrum disorder have participated. The RI-CART registry is supported by a grant from the Simons Foundation Autism Research Initiative. Participants have provided consent to be contacted for future research, and RI-CART has successfully supported research being conducted by trainees, including T32 fellows.

Center for Alcohol and Addiction Studies

The Center for Alcohol and Addiction Studies, in the School of Public Health, is an internationally renowned research center in alcohol research. The mission is twofold: 1) to conduct collaborative research that will lead to more effective treatment for alcohol and drug abuse; and 2) to create a nationwide program in substance abuse, education and training for psychologists, physicians, medical students and health care professionals. Center faculty conduct empirical research in a variety of areas of alcohol abuse/dependence, drug abuse/dependence and tobacco use, ranging from laboratory investigations of mechanisms through treatment or early intervention to policy. Comprehensive training in how to conduct excellent research is provided to predoctoral and postdoctoral research fellows. Faculty members conduct clinical training seminars for practitioners at national and regional conferences. Faculty members are involved in Physicians and Lawyers for National Drug Policy to align policy, practice and public understanding with the scientific evidence that addiction is a preventable and treatable disease; to support the use of evidence-based, cost-effective approaches toward prevention and treatment; and to enable lawyers and physicians to provide effective and sustained leadership in this effort.

Bradley Hasbro Children's Research Center

The Bradley Hasbro Children's Research Center was established in 2002, integrating researchers from the Bradley Research Center and investigators conducting child mental health research at Rhode Island Hospital/ Hasbro Children's Hospital. Most of the research groups are located within a 20,000-square-foot space on the Rhode Island Hospital campus, but the Bradley Sleep Lab and the Bradley Campus Research Unit in East Providence also house our investigators. Centralized infrastructure, physical proximity of disparate research groups and regular research meetings promote collaboration and cross-fertilization of research ideas.

Center for the Study of Children at Risk

The Center for the Study of Children at Risk is dedicated to: 1) investigating theories of the developmental pathways from the fetal and infancy period in at-risk children; 2) enhancing synergy between research and clinical practice that advances child development research, intervention programs and social policy; and 3) training scientists and practitioners in interdisciplinary methods from the field of

child development. Research at the center includes study populations that reflect important public health programs in children such as prenatal exposure to illegal and legal drugs, psychotropic medication during pregnancy, prematurity, autism and maternal depression.

Center for Behavioral and Preventive Medicine

The Center for Behavioral and Preventive Medicine supports faculty in developing advanced programmatic research by fostering a stimulating intellectual environment that encourages interaction and collaboration. The center hosts scientific talks, seminars and training workshops. The center holds periodic faculty retreats that provide opportunities to discuss synergy across research areas and potential for interdisciplinary collaboration across topics and methodologies, to enhance the quality and rigor of the research portfolio.

Data Collection and Analysis Cores and Centers

Quantitative Science Program

The Quantitative Science Program provides formal workshops, seminars and individual mentoring in the areas of quantitative methodology. Topic areas include research and experimental design; survey and sampling methods; and basic and advanced multivariate data analysis. The program actively collaborates with ongoing and proposed research at Brown and across the nation and conducts independent and methodologically focused research projects.

Center for Statistical Sciences

The Center for Statistical Sciences, in the School of Public Health, was founded in 1995 to foster research and statistical education at the Warren Alpert Medical School and Brown University. Center faculty and staff conduct methodologic research in a number of areas of biostatistics, including statistical methods for the assessment of diagnostic technology, design and analysis of clinical trials, statistical methods for health services and outcomes research, longitudinal data analysis, methodology for the analysis of observational studies, meta-analysis, and statistical methods for psychiatry and the behavioral sciences. The center also serves as the Biostatistics Core for both national and local biomedical research projects. A graduate curriculum in biostatistics is offered by center faculty as a track of the graduate program of the Department of Health Services, Policy and Practice. The center organizes the Brown Statistics Seminar, which is held on Monday afternoons, features talks on current developments in statistical methodology and is open to the entire Brown community. In addition, center faculty are holding regular brown bag seminars in which topics of current research are discussed. Presenters in these informal seminars include Brown graduate students and faculty as well as other campus- and hospital-based researchers.

Data Science Initiative

The Data Science Initiative was established as a collaboration between the departments of biostatistics, computer science, and mathematics and the division of applied mathematics to develop research and training around methodologies in data science and applications to domains. The initiative represents a strong commitment on the part of Brown's administration for infrastructure and faculty development in these areas. Researchers at Brown already are actively involved in exploring a broad range of topics, including database systems, machine learning, pattern theory, and topological data — areas that will be complemented and further developed by new faculty and postdocs as the initiative grows.

Implementation Science Core

The Implementation Science Core, launched in 2018, fosters the translation, spread and scale-up of evidence-based practices into routine clinical care. Director A. Rani Elwy hosts regular office hours each week to work with faculty across the six Brown-affiliated hospitals (including Providence VA Medical Center), along with psychiatry residents and clinical psychology interns and fellows, to:

- Provide consultation, mentorship and collaboration on dissemination and implementation (D&I) science models, theories and frameworks to guide studies;
- Develop qualitative and quantitative methods specific to D&I science research questions (such as formative evaluations, stakeholder engagement methods, implementation strategies and hybrid designs); and

- Provide educational activities for DPHB faculty, residents, fellows and interns. These include a six-week fundamentals of D&I science series, held each semester, and intermediate-level workshops on D&I science, held twice per semester. The Implementation Science Core also hosts an annual D&I forum, where individual faculty projects are highlighted, and which culminates in a Grand Rounds lecture given by an invited, internationally known researcher in D&I science.

Molecular Cores and Centers

Providence VA Molecular Medicine Laboratory

This Molecular Medicine Laboratory is located at the Providence VA Medical Center and has over $5 million in instrumentation designed to meet the needs of investigators interested in including genetics, epigenetics, gene expression or ELISA-based protein assays in their research. The lab also provides support for grant preparation, data integration and manuscript writing for trainees who are interested in adding molecular measures to their research.

Genomics Core Facility

The Genomics Core Facility provides state-of-the-art genomics and proteomics equipment to researchers at Brown University and the entire Rhode Island research community. The facility offers DNA/RNA shearing, sample QC, Affymetrix microarray analysis, and qPCR services and provides assistance with experimental design, troubleshooting and data analysis. The core is available to students, staff and faculty at Brown.

COBRE Center for Computational Biology of Human Disease

This COBRE Center for Computational Biology of Human Disease embraces the age of genomics medicine from an explicitly data-driven, computational perspective. As a collaborative space for empirical and computational scientists, the center advances new discoveries, algorithms and genomic screening approaches with direct relevance to several human diseases. This is consistent with the National Institutes of Health mission of supporting bioinformatics and computational biology to advance all areas of biomedicine. This center assists researchers in computational, bioinformatic and data management with the challenges of analyzing large data sets made available by modern "-omics" technologies. In addition, the center supports the research activities of junior investigators to ensure their transition to stand-alone, extramurally funded research scientists. The center uses an innovative joint mentoring process, in which each junior faculty member is advised by both computational and biological or clinical senior faculty members. In addition, staff data scientists in the Computational Biology Core serve as active members of each of these laboratory groups to better integrate all phases of the research activities.

Center for Computational Molecular Biology

The Center for Computational Molecular Biology at Brown was founded in September 2003 with the aim of establishing a world-class center for research and scholarship in this new discipline. Its central mission is to make breakthrough discoveries in the life sciences at the molecular and cellular level through the creative application of existing data analytic methods, and to support the development of novel computational, mathematical and statistical technologies required to exploit the opportunities emerging from advances in genomics and proteomics.

Neuromodulation Cores and Centers

COBRE Center for Neuromodulation

The COBRE Center for Neuromodulation was established in 2019 with a $10 million, five-year award from the National Institute of General Medical Sciences at the National Institutes of Health. This center focuses on enhancing research to shed light on neuropsychiatric illnesses including post-traumatic stress disorder and obsessive-compulsive disorder (among others), and to address the pressing need for novel treatments for people struggling with these conditions. The stimulation methods to be tested are noninvasive, meaning they affect the brain when applied on the scalp (transcranial magnetic and transcranial electrical stimulation); stimulation effects will be assessed with neuroimaging

(MRI) and other methods. The center includes key infrastructure, supports a core group of interdisciplinary investigators and provides a pilot grant program, all in service of building a self-sustaining center of excellence in clinical-translational brain research.

The center includes: a design and analysis core to support rigorous and innovative experimental design and data analytic strategies; a neuromodulation and neuroimaging core to facilitate the acquisition and processing of high-quality data using noninvasive neurostimulation and neuroimaging methods; and an administrative core to oversee and coordinate activities to propel development of investigators toward independence.

Center for Neurorestoration and Neurotechnology

Located at the Providence VA Medical Center, the Center for Neurorestoration and Neurotechnology brings together leading researchers who are developing highly innovative treatments to reduce symptoms and restore function. Illnesses under study include neuropsychiatric illnesses such as post-traumatic stress disorder, chronic pain and depression. Other parts of the center address brain-computer interfaces, paralysis and amputation. The center incorporates research tools and core infrastructure to support clinical trials, including a neuroimaging core, neuromodulation core and a clinical trial support core. Current studies include various approaches to non-invasive brain stimulation, such as transcranial magnetic stimulation, theta burst stimulation, transcranial direct current stimulation and focused ultrasound, as well as multimodal neuroimaging methods (functional and structural MRI, motor physiology, EEG). The center also provides funding for Veterans Affairs research projects, equipment and staff support.

The neuroimaging core brings together researchers from across the DPHB to consult on neuropsychiatric studies that acquire and interpret brain functional and structural imaging data, including but not limited to high-definition quantification of white matter fiber tracts and measurement of functional networks based on functional imaging. A primary goal of the core is to provide DPHB investigators with a collaborative forum for advancing their neuroimaging research. The neuroimaging core also facilitates interdisciplinary collaborations among investigators who may or may not have neuroimaging expertise by inviting a broad array of researchers from the DPHB to attend and present research ideas at core monthly meetings. The primary goals of the neuroimaging core are: 1) ongoing support, training, assistance and advice to DPHB faculty in the practical aspects of data collection, data management and data processing across a wide variety of methodologies; 2) consultation on imaging paradigms and methodologies, experimental design, protocol development and selection of appropriate tasks for functional magnetic resonance imaging (fMRI) and identification of the optimal modalities of MRI or tracking acquisition parameters; and 3) consultation on statistical analysis techniques, such as data mining and power analysis.

Research Seminars and Symposia

Brown's institutes, centers, departments and core resources sponsor many research-focused symposia, seminars and talks that are relevant to mental health and accessible to residents. For example, the DPHB hosts the annual Mind Brain Research Day. The symposium provides a venue for national leaders, the Rhode Island and regional community and DPHB faculty, residents and other trainees to present, view and discuss the groundbreaking research being conducted at Brown. Attendees include hundreds of faculty, residents, graduate students and other trainees from the DPHB and Brown's departments of Neurology, Neurosurgery, Neuroscience and Cognitive, Linguistic and Psychological Sciences.

Past Mind Brain Research Day keynote speakers include such distinguished scientists as:

- Trevor Robbins, head of the Department of Psychology and professor of cognitive neuroscience and experimental psychology at the University of Cambridge
- The late Paul Greengard, 2000 Nobel Laureate and former Vincent Astor Professor at the Laboratory of Molecular and Cellular Neuroscience at The Rockefeller University
- Dr. Alan Schatzberg, Kenneth T. Norris Jr. Professor and former chairman of the Department of Psychiatry and Behavioral Sciences at the Stanford University School of Medicine

- Dr. Husseini K. Manji, past chief of the Laboratory of Molecular Pathophysiology and director of the National Institute of Mental Health Mood and Anxiety Disorders Program
- Dr. Floyd E. Bloom, past chairman of the Department of Neuropharmacology at Scripps Research
- Dr. Helen Mayberg, professor of psychiatry, neurology and radiology and Dorothy C. Fuqua Chair of Psychiatric Neuroimaging and Therapeutics at Emory University
- Dr. Thomas Insel, past National Institute of Mental Health director
- Dr. Joshua Gordon, current National Institute of Mental Health director

Research Opportunities for Residents

Brown has a long record of offering outstanding research programs and training experiences for residents. Our Research Training Program, funded in part through a National Institute of Mental Health R25 grant, provides substantial time and support for residents geared toward careers as physician-scientists. Residents who wish to participate in research on a more modest scale are also encouraged to participate in opportunities for mentored research experiences, attend research seminars and present their work at local and national conferences.

Research Training Program

The Research Training Program gives selected residents substantial protected research time and support for developing a research career during their training. The program's leadership team works in collaboration with the residents and faculty mentors to provide an individualized research training experience for each resident, while ensuring outstanding clinical training. Residents increase their involvement in research with each successive year. Main components of the program include the individualized longitudinal mentored research training experience, a research-focused didactic curriculum and career development.

Individualized longitudinal mentored research training experience

This central experience pairs research residents with an experienced and successful scientist in a translational, clinical or basic science domain and provides protected time across the four years of residency for training and research. This experience progresses from closely supervised introductory work to greater independence and responsibility. Residents typically begin with supervised participation in the mentor's ongoing research program. They delve into the literature in their area of interest, mastering prior findings and generating questions and hypotheses. Data analysis and manuscript preparation from the mentor's existing databases or ongoing projects may also be undertaken. The literature review may be submitted for publication as a review paper or used as the introduction to a data paper.

Over time, residents develop a supervised research project on which they take a leading role. They formulate the research question and hypotheses, design the study or analysis plan for existing data, collect data and conduct analyses, and take the lead on manuscript preparation and presentations. The rate of progression and the complexity of the project depend on the level of prior research experience and progress during residency. Residents with limited research experience, and those who have decided to substantially change their research domain, require more foundational experiences and trainings prior to leading a project. Residents with substantial prior training and experience who continue in the domain of their prior research generally progress more quickly to advanced training and greater independence. Residents are encouraged to build upon prior research training to develop their research plans.

Specific productivity goals are established for each trainee in the Research Training Program using individualized metrics. Products and outcomes include (but are not limited to) publications, poster presentations at local and national meetings, oral presentations, generation of pilot data for grant applications and applying for research-related awards, especially those that enable residents to present and receive feedback on their research plans and ongoing projects. There are several ways that resident projects are funded, including mentor support and internal or external pilot grant awards. A departmental pilot funding mechanism provides up to two awards per year of up to $20,000 for eligible Research Training Program resident projects. Research track residents are encouraged to apply for National Institutes of Health career development awards by the end of their PG-4 year.

Research-focused didactic curriculum

All residents in the Research Training Program also have dedicated time to participate in an individualized research-focused didactic curriculum consisting of courses and seminars. A core monthly seminar includes discussion and presentation of resident projects as well as career development topics. Other required didactics include a research ethics course and a grant-writing seminar that prepares trainees to submit career development and other awards. Additional elective didactics can be selected to cover key content areas that facilitate the research project, fill knowledge gaps and provide a strong foundation for a future research career. Topics include research methodology, design and statistics, translational neuroscience, treatment research, ethics, grant writing, professional development skills and other areas. Senior researchers lead most courses and seminars. Many seminars and courses are sponsored by various departments and institutes at Brown; thus, research-focused residents are exposed to trainees from other disciplines (e.g., psychology postdoctoral fellows, neuroscience graduate students), which enriches their training experience and offers opportunities for innovative cross-disciplinary research collaboration.

Career development

The program emphasizes career development skills and progress, through:

- Didactics that focus on career development skills;
- Attendance at a career-planning seminar led by Dr. Steven Rasmussen, DPHB chair;
- Mentoring by individual mentors and the Research Training Program leadership team; and
- Sponsorship to participate in research-related activities and meetings at the national level, with the goal of fostering networking and the acquisition of knowledge and skills that will enhance residents' future careers.

The following areas are emphasized for residents to promote the development of productive and satisfying careers as physician-scientists: developing and planning a research career; managing personal and professional commitments; making career decisions; participating in professional activities, including scientific meetings; networking; and transitioning to the next career stage.

The Research Training Program in Each Postgraduate Year

Residents and their mentors develop and update an individualized research education plan each year addressing the components listed above. Research productivity and independence increase over the course of the program. Research education programs are individualized to the resident's prior training and current research domain and goals, the type of research (e.g., translational, basic or clinical science), and the resident's progress in the program. Skills and needs are assessed annually in the domains of research design and statistics, manuscript writing, content area knowledge, and data collection skills for their planned area of study to assist residents and mentors with developing didactic and hands-on training experiences and preemptively addressing topics that could impede progress.

PG1: Residents have half a day of protected research time per week during psychiatry rotations; at the end of the year, they have a full-time research month. PG1 residents first meet with the program director for orientation to discuss selecting a mentor and research domain as well as program expectations and resources. They attend research seminars and have additional meetings with the program director to identify a mentor and research domain. Residents then learn about the mentor's work and develop a specific area of focus; they familiarize themselves with the literature and methods in this area and develop, with their mentor, their individualized research plan. More advanced residents can also begin planning their independent research project with their mentor in PG1. When appropriate, some residents also complete manuscript submissions from prior research during the PG1 year.

PG2: Residents continue with half a day per week (excluding two night-float months) of protected research time and also have one or two months of research elective. The research block is timed to maximize productivity based on the project and mentor schedule. Residents continue with research seminars and may take elective didactics. They continue advancing the knowledge and skills they began working on in PG1; they plan their independent project and may initiate data collection. PG2 residents present and/or publish their work, and they work on career development skills in seminars and at local and national conferences.

PG3: Residents have 33% protected research time, or 1.5 days per week during their outpatient year. We encourage residents in the Research Training Program to develop clinical expertise in an area relevant to their research focus, while having a broad enough caseload to meet all Accreditation Council for Graduate Medical Education requirements. This approach fosters an integrated identity as a physician-scientist and promotes translational thinking about approaches to studying mental illness. Building upon groundwork laid in the PG1 and PG2 years, residents work on all elements of the research education program, including their research project. They continue with seminars and may have additional time to complete elective didactics. Residents participate in a grant-writing seminar in either the PG3 or PG4 years based on their research progress. Products of their work include publications and presentations at national meetings, and they are encouraged to submit a proposal for pilot research funding in PG3 or PG4. Residents begin to focus more on career development and consider options for the next stage of their career. They participate in the Career Development Seminars, discussing career development with their mentor, program directors, and the chair, as well as in career-development sessions at national meetings.

PG4: Residents have 80% protected time for research training in the PG4 year and are encouraged to choose clinical experiences that fit with their research interests. They work more independently, hone research skills, and learn to manage various aspects of data collection and study management. PG4 residents are expected to have greater research productivity than in prior years. PG4 residents also work more intensively on plans to transition to the next career stage in the Career Development Seminar and individual meetings with mentors, program directors, and the chair. Grant writing and knowledge of the career development award mechanism are learned through the grant-writing didactics taken in the PG3 or PG4 years. Residents who need additional research training are strongly encouraged to apply for a research training fellowship (e.g., a T32 at Brown or another institution); others are ready to apply for career development awards or apply for an academic faculty position.

Transitioning to the Next Career Stage

Brown is committed to supporting research-focused graduates in developing excellent research opportunities following residency. Graduates who choose to relocate have been well-positioned to attain fellowship or faculty positions at first-rate institutions and have the support of the chair, program directors, and faculty mentors in connecting with other research programs and positions. For residents who choose to stay at Brown, our department's six T32 research training fellowships, plus the Department of Neuroscience's two T32s, offer an excellent opportunity for additional training. Graduating residents with more experience (e.g., some M.D.s, Ph.D.s) may not need a formal didactic program contained in a T32 but would still benefit from protected, mentored research time.

Recognized Areas of DPHB Research Excellence*

Psychopathology Treatment

- Addictions
- Anxiety Disorders
- Autism
- Chronobiology
- Early Life Stress and Depression
- Mindfulness
- Mood Disorders
- Neurodegenerative Disorders
- NeuromodulationTMS-Gamma-tDCS -DBS
- OCD
- PTSD
- Suicide
- Technology-Assisted Assessment
- Women's Medicine

- Adult
- Child
- Adult and Child

Behavioral Medicine and Prevention

- Behavioral Health/ Primary Care
- Childhood Asthma
- Early Life Stress
- Exercise
- HIV
- Obesity
- Smoking
- Technology-Assisted Treatments

Psychiatric Genetics and Biomarkers

- Autism
- Addictions
- Alzheimer's
- Chronobiology
- Depression
- Early Stress and Trauma
- OCD
- PTSD

Neuroimaging

- Addiction
- Alzheimer's
- Depression
- Infant Development
- Neuromodulation
- Obesity
- OCD
- PTSD
- Stress
- Suicide

** There are many other areas of research focus in the DPHB; those listed here are federally funded research areas.*

Sampling of Research Funding

This research grant listing is a small sample of currently funded projects by our faculty and is based on reports collected regarding direct and indirect costs for active research conducted by faculty in the Department of Psychiatry and Human Behavior centered at Brown University and the Brown-affiliated hospitals and centers. This list is comprised of grants active during the 2020-21 fiscal year and does not reflect grants that may have been funded after that time. Grants on this list may have been completed and principal investigators may have left during the course of the 2020-21 year. Grant listings may be repeated for co-investigators or subcontracts residing at different hospitals.

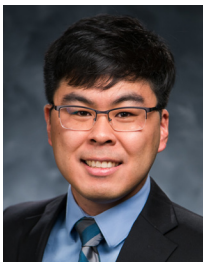
Principal Investigator	Principal I Investigator Affiliation	Funding Agency	Title of Project
Abrantes, Ana	Butler	National Cancer Institute	Aerobic Exercise for Smokers with Depressive Symptomatology
Armey, Michael	Butler	NIMH	Functional imaging of cortico-limbic predictors of emotion regulation, emotion reactivity and risk for suicidal ideation and behavior
Armey Michael	Butler	NIMH	Behavioral and Ecological Suicide Tracking: Attention, Interpretation, and Memory
Barredo, Jennifer	VA	Department of Veteran Affairs - CSRD	Neuroimaging of Suicidal Thoughts and Behaviors
Battle, Cynthia	Butler	National Institute of Nursing Research	RCT of a tailored walking program to reduce stress among pregnant women
Battle, Cynthia	Butler	NICHD	Efficacy of a Prenatal Yoga Intervention for Antenatal Depression
Bock, Beth	CBPM	NCCIH	Establishing Multi-Site Feasibility and Fidelity of Yoga to Improve Management of Type-2 Diabetes
Brown, Larry	Bradley	NIMH	Child/ Adolescent/ Young Adult HIV Research Training
Carey, Michael	CBPM	NCCIH	Psychosocial, Immunological, and Biobehavioral Benefits of Stress Management Interventions for Chronic Diseases: Comprehensive Systematic Review and Meta-Analyses
Carpenter, Linda	Butler	National Institute of General Medical Sciences	COBRE Center for Neuromodulation (CCN)
Carskadon, Mary	Bradley	National Institute of General Medical Sciences	COBRE Center for Sleep and Circadian Rhythms in Child and Adolescent Mental Health
Duarte-Velez, Yovanska	Bradley	National Institute on Minority Health and Disparities	A culturally centered CBT protocol for suicidal ideation and suicide attempts among Latinx youth
Freeman, Jennifer	Bradley	Patient Centered Outcomes Research Institute	Comparison of Provider-Centered versus Patient-Centered CBT for Pediatric Anxiety and OCD
Grabill-Benito, Kristen	Bradley	NIMH	Quality Assessment in Exposure Therapy
Gaudiano, Brandon	Butler	NIMH	Mobile After-Care Support Intervention For Patients With Schizophrenia Following Hospitalization

Goldstein, Stephanie	WCDRC	NHLBI	Optimization and Evaluation of a Tailored Behavioral eHealth/mHealth Weight Loss Intervention for Cardiac Rehabilitation Patients Using the Multiphase Optimization Strategy
Greenberg, Benjamin	Butler	National Institute of General Medical Sciences	COBRE Center for Neuromodulation (CCN)
Houck, Christopher	RIH	NICHD	Dating Violence Prevention for Juvenile Justice Girls
Jelalian, Elissa	WCDRC	NIDDK	Enhancing Emotion Regulation to Support Weight Control Efforts in Adolescents with Overweight and Obesity
Jelalian, Elissa	WCDRC	CDC	Packaging and Disseminating the JOIN for ME Program in Low-Income Settings
Jones, Richard	BROWN	National Institute on Aging	Psychometric Integrative Technology for Cognitive Health Research
Koinis-Mitchell, Daphne		RIH	NICHD Peer-Administered Asthma Self-Management Intervention in Urban Middle Schools
LaFrance, Curt	VA	DoD	Neuroimaging Biomarker for Seizures
Lester, Barry	Women & Infants	NIH	Neonatal Neurobehavior and Outcomesin Very Preterm Infants
Lester, Barry	Women & Infants	NIH	Environmental Influences On Neurodevelopmental Outcome In Infants Born Very Preterm
Lester, Barry	Women & Infants	NIMH	Fetal and Neonatal Neuro Behavior and Prenatal Antidepressant Exposure: The Child
Lillis, Jason	WCDRC	NIDDK	Teaching Novel Values-Based Skills to Improve Long-Term Weight Loss: A Randomized Trial Examining the Efficacy of a Weight Loss Maintenance Intervention Based on Acceptance and Commitment Therapy
Low, Christine	RIDOH	SAMHSA	Rhode Island Project LAUNCH Expansion
Low, Christine	RIDOH	HRSA	Family Home Visiting Program (RIFHVP) Evaluation Services
McGeary, John & Primack, Jennifer		VA	Department of Veteran Affairs - HSRD Longitudinal Assessment of the Sleep-Suicide Link in Veterans Discharged from Inpatient Psychiatric Care
McQuaid, Elizabeth	Bradley	BROWN	Childhood Asthma Research Innovation Program
McQuaid, Elizabeth	Bradley	RIDOH	Rhode Island Asthma Integrated Response Program (RI-AIR)
Metrick, Jane & Gaudiano, Brandon		VA	Department of Veterans Affairs - HSRD Post-Hospital Intervention for Veterans with Comorbid Bipolar and Substance Use Disorders
Miller, Ivan	Butler	NIMH	Evaluation of the "Coping Long Term with Active Suicide Program"
Miller, Ivan	Butler	NIMH	Predicting Suicide: A Longitudinal Analysis of Speech Patterns in a High Risk Sample
Nugent, Nicole	BROWN	NIMH	Understanding the Interplay of Social Context and Physiology on Psychological Outcomes in Trauma-Exposed Adolescents
Orchowski, Lindsay	RIH	DoD	Sexual Assault Prevention for Men in the Military

Philip, Noah	VA	Department of Veteran Affairs - RRD	Combined Transcranial Direct Current Stimulation and Virtual Reality for PTSD
Philip, Noah	VA	NIMH	Low Intensity Focused Ultrasound: A New Paradigm for Depression and Anxiety
Primack, Jennifer & Philip, Noah		VA	Department of Veteran Affairs - HSRD Combined Transcranial Magnetic Stimulation and Brief Cognitive Therapy to Reduce Veteran Suicide
Rasmussen, Steven	BROWN	NIMH	Harm Avoidance and Incompleteness as Dimensional Endophenotypes in Anxiety and OC Spectrum Disorders
Salisbury, Amy	Women & Infants	NIMH	Fetal and Neonatal Neurobehavior and Prenatal Antidepressant Exposure: The Child
Salloway, Stephen	Butler	University of Southern California	Anti-Amyloid Treatment in Asymptomatic Alzheimer's Disease (A4)
Salloway, Stephen	Butler	BIOGEN	Placebo-Controlled, Parallel-Group Study to Evaluate the Efficacy and Safety of Aducanumab (BIIB037) in Subjects with Early Alzheimer's Disease
Salloway, Stephen	Butler	BIOGEN IDEC	A Randomized, Double-Blinded Placebo-Controlled Multiple in Subjects with Prodromal or Mild Alzheimer's Disease
Salloway, Stephen	Butler	Eli Lilly & Co	Effect Of Passive Immunization On The Progression Of Mild Alzheimer's Disease: Solanezumab (LY2062430) Vs Placebo With Protocol Addendum H8A-MC-LZAX(6) (TAU IMAGING)
Salloway, Stephen	Butler	Norvatis Pharm Corp	A Randomized, Double-Blind, Placebo-Controlled, Parallel Group Study to Evaluate the Efficacy and Safety of CNP520 in Participants at Risk for the Onset of Clinical Symptoms of Alzheimer's Disease (AD)
Salmoirago-Blotcher, Elena	CBPM	NHLBI	Heterogeneity and Predictors of Stress Reactivity in Takotsubo Syndrome
Shea, Tracie	VA	Department of Veteran Affairs -RRD	Interpersonal Therapy for Veterans with PTSD
Shea, Tracie	VA	Department of Veteran Affairs -RRD	Treatment of Trauma-Related Anger in OEF/OIF/OND Veterans
Sheinkopf, Stephen	Women & Infants	Simons Foundation	The Rhode Island Consortium For Autism Research and Treatment (RICART) PHASE II
Sheinkopf, Stephen	Women & Infants	NIMH	Neonatal Cry Acoustics and Neurobehavioral Characteristics as Early Markers of Risk For Autism Spectrum Disorder
Spirito, Anthony	BROWN	NIDA	Brief Individual and Parent Interventions for Marijuana Misuse in Truant Adolescents
Spirito, Anthony	RIH	National Research Service Awards	Research Training in Child Mental Health
Stein, Michael	Butler	NIAAA	Comparing Brief Alcohol Interventions for HIV-HCV Co-infected Persons
Stein, Michael	Butler	NIDA	Linking Opioid Dependent Patients From Inpatient Detoxication to Primary Care
Stein, Michael	Butler	NIAAA	AA Linkage for Alcohol Abusing Women Leaving Jail

Stein, Michael	Butler	National Institute of Nursing Research	Improving Functioning in HIV Patients with Chronic Pain and Comorbid Depressive Symptoms
Stroud, Laura	CBPM	NIDA	Prenatal Marijuana: Impact on Infant Neurobehavior, Stress, & Epigenetic Mechanisms
Stroud, Laura	CBPM	NICHD	Research Training in Childhood Stress, Trauma, and Resilience
Stroud, Laura	CBPM	NIDA	Fetal Behavior, Brain & Stress Response: Ultrasound Markers of Maternal Smoking
Stroud, Laura	CBPM	NIDA	Electronic Cigarettes During Pregnancy: Impact on Fetal Development
Surti, Ghulam	Butler	IQVIA	DIAN-TU-001: A Phase II/III Randomized, Double-Blind, Placebo-Controlled, Multicenter Study Of 3 Potential Disease Modifying Therapies In Individuals At Risk For Dominantly Inherited Alzheimer's Disease
Swift, Robert	VA	Department of Veteran Affairs -CSP	CSP #2016 - Adaptive Clinical Trial for Insomnia in Veterans with PTSD
Thomas, J. Graham	WCDRC	NIDDK	Rapid Evaluation of Innovative Intervention Components to Maximize the Health Benefits of Behavioral Obesity Treatment Delivered Online: An Application of Multiphase Optimization Strategy
Tyrka, Audrey	Butler	NIMH	Early Life Stress: Epigenetic Regulation of Endocrine and Immune Pathways
Tyrka, Audrey	Butler	NICHD	Risk Profiles and Mechanisms of Disease in Maltreated Children
Uebelacker, Lisa	Butler	National Heart, Lung, and Blood Institute	Initiating and Maintaining Physical Activity in Depressed Individuals
Unick, Jessica	WCDRC	NIDDK	Phone Coaching as a Rescue Strategy for Early Non-Responders Enrolled in an Internet-Delivered Weight Loss Program
Weinstock, Lauren	BROWN	NIMH	Suicide Risk Reduction in the Year following Jail Release
Weinstock, Lauren	BROWN	Warren Alpert Foundation	Targeted intensive case management for Veterans at risk of suicide post inpatient hospitalization
Wing, Rena	WCDRC	NHLBI	Training in Cardiovascular Behavioral & Preventative Medicine
Wing, Rena	WCDRC	NIDDK	12/16 Action for Health in Diabetes Extension Study Research Project
Wing, Rena & Thomas, J. Graham	WCDRC	NIDDK	Pragmatic Trial of Technology-Supported Behavioral Obesity Treatment in the Primary Care Setting: A Multiphase Effectiveness and Implementation Hybrid Design
Zand Vakili, Amin	VA	Department of Veteran Affairs - CSRD	Developing Computational Nosologies of Posttraumatic Stress Disorder
Zlotnick, Caron	Women & Infants	USAMRDC	Addressing the Health Concerns of VA Women With Sexual Trauma

Resident Bios



Andrew Fukuda, M.D., Ph.D., PGY4, Chief Resident (2021-22); RTP mentor: Linda Carpenter, M.D.

Dr. Andrew Fukuda earned his combined M.D. / Ph.D. degrees in the Medical Scientist Training Program at Loma Linda University. The major focus of his doctorate, under the mentorship of Jerome Badaut, was investigating the neuro-glial-vascular network proteins on pathophysiological processes such as neuroinflammation and blood brain barrier integrity via protein modulation techniques such as small interference RNA, and linking the findings to neuroimaging and neurobehavioral functional outcomes.

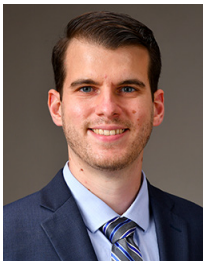
During residency, his continued pursuit of the pathophysiological implications of non-neuronal cell abnormalities led to the design and completion of a pilot study investigating gliovascular proteins as serum biomarkers of response to TMS in pharmacoresistant major depression. Under the mentorship of Dr. Linda Carpenter, he is applying for a NIMH career development award to integrate gliovascular biomarker data with data from neuroimaging and cognitive assessments. Dr. Fukuda is also spearheading work on projects that examine mechanisms of risk for depression, including trauma and substance use, as well as phenotypic markers and biomarkers of treatment response to TMS.

From Dr. Fukuda: "I appreciate the opportunities that the R25-funded Research Training Program has provided. All of the research attendings, staff and team members have been immensely helpful and fun to be around, making the research activities here tremendously enriching. I feel that the clinical aspect of my residency training has also been enhanced by my research, and in turn the clinical experience and knowledge have helped augment my research, providing a positive synergistic cycle. Overall, I believe that the RTP and the mentorship I am receiving, coupled with the excellent clinical training, are helping me build the groundwork to achieve my career goal of becoming an academic psychiatrist."

Camila Souza Alves Cosmo, M.D., M.Sc., Ph.D., PGY3 (2021-22); RTP mentor: Noah Philip, M.D.

Dr. Camila Souza Alves Cosmo earned her M.D. from Faculdade de Medicina da Bahia, her M.Sc. and her Ph.D. in Neurophysiology/ Neuropsychiatry from Universidade Federal da Bahia, with a doctoral fellowship period at Harvard Medical School. During her training, Cosmo conducted clinical trials investigating the application of neuromodulation techniques in various neuropsychiatric disorders. In her doctoral work, Cosmo investigated the efficacy of transcranial direct current stimulation (tDCS) in modulating inhibitory control and functional brain networks in patients with ADHD, using a mathematical-computational model based on EEG activity. Cosmo continues to investigate the applicability and physiological basis of neuromodulation techniques, particularly tDCS and TMS, in the modulation of executive functions, as well as the use of new and emerging technologies such as low-intensity focused ultrasound.

From Dr. Cosmo: "It has been an honor to join the Research Training Program in psychiatry at Brown University. Its unique combination of clinical and research training in a supportive environment with an outstanding curriculum and cutting-edge research programs was exactly what I was looking for in a residency. The program will allow me to obtain a strong mental health expertise, develop a successful psychiatric and scientific career, and fulfill my ultimate goal to contribute to the advancement of knowledge in interventional psychiatry and neuropsychiatry."



Matthew Howe, M.D., Ph.D., PGY2 (2021-22); RTP mentor: Stephen Salloway, M.D.

Dr. Matthew Howe earned his M.D. and Ph.D. at the University of Texas McGovern Medical School. There, he worked in Dr. Louise McCullough's laboratory in the Department of Neurology where he developed a mouse model of vascular dementia and discovered a new mechanism by which aging and injury-induced changes to the vasculature produce reversible impairments in brain function, with translational implications for the diagnosis and treatment of dementia in humans. During this time, he received several local awards, the Physician/Scientist Fellowship from The Cullen Trust for Higher Education and external research funding from the American Heart Association Predoctoral Fellowship. As a research resident at Brown, he is working with Dr. Stephen Salloway in the Memory and Aging Program to develop novel plasma biomarkers for Alzheimer's disease to improve the early detection of neuroinflammatory processes in the brains of individuals who are at risk of progressing to dementia. Ultimately, this research could help to identify personalized interventions that can be deployed prior to the development of significant neurodegenerative disease.

From Dr. Howe: "I first became interested in neuroscience as an undergraduate at the University of Connecticut. There, I joined the laboratory of Etan Markus, and began assisting with electrophysiological studies aimed at understanding how hippocampal activity changes with aging and cholinergic activation, and how these changes relate to the encoding of new memories. I was inspired by this experience to pursue a dual career in research and medicine, with the goal of using neuroscience to help people suffering from neuropsychiatric illnesses. I am honored to be joining the Research Training Program at Brown in furtherance of these goals. The culture of the program at Brown provides a unique degree of flexibility and support that empowers me to truly customize my training, take full advantage of the unique resources at Brown, and lay the foundation for a successful career as a translational research scientist."

Nicholas Petrosino, M.D., PGY2 (2021-22); RTP mentor: Noah Philip, M.D.

Dr. Nicholas Petrosino earned his M.D. at The Warren Alpert Medical School of Brown University in 2020. His research throughout medical school was conducted under the mentorship of Dr. Philip at the Providence VA Medical Center and focused on the use of neurostimulation interventions in mood and anxiety disorders. Specifically, Petrosino investigated clinical outcomes as well as EEG and fMRI biomarkers of response in veterans with depression and PTSD undergoing treatment with rTMS. The aim of this work was to determine clinical efficacy of second-generation TMS, such as theta-burst stimulation, in these patient populations and elucidate biomarkers that can inform a personalized stimulation approach. This research led to two first-author publications in Frontiers in Psychiatry and Neuropsychopharmacology. Petrosino joined the Research Training Program at Brown to continue his work in neurostimulation with Philip. Current research interests include the application of data-driven computational methods to functional imaging in psychiatric disease as well as combination TMS and psychotherapy for depression and PTSD.

From Dr. Petrosino: "I couldn't be happier to have stayed at Brown for my residency and to have joined the RTP here. I feel very fortunate to have found such supportive and engaging research mentorship who I will continue to learn and grow with throughout my training. Both the academic and clinical environments here are passionate, humanistic, and thoughtful – it is exactly the place I want to be in these formative years."

Meghan Kulak, M.D., PGY1 (2021-22)

Dr. Kulak earned her M.D. at the University of Connecticut School of Medicine. There, she conducted research under the mentorship of Dr. Robert Clark in the Department of Immunology studying the relationship between the innate immune system, the microbiome, and the pathogenesis of MS. She completed a capstone project on the in vitro effects of TLR2 tolerance on the cytokine production of mouse-derived microglial cells, as well as correlating plasma and fecal levels of bacterially-derived lipids with TLR2 responses in mice. This work represents a novel mechanism through which the microbiome communicates with and alters the function of the immune system. Prior to medical school, she also had worked in Dr. David Deitcher's lab at Cornell University studying the genetic mechanisms of epilepsy using Drosophila as a model organism, and worked as a research assistant in Dr. Derya Unutmaz's lab in the Department of Immunology at the Jackson Laboratory for Genomic Medicine studying human T cell differentiation, activation, and regulation in the context of the normal immune response and in Chronic Fatigue Syndrome. As a research resident at Brown, she looks forward to combining her interests in immunology and psychiatry by conducting research within psychoneuroimmunology.

From Dr. Kulak: "I first became interested in research during my undergraduate studies in Neurobiology and Behavior at Cornell University. I completed an honors thesis on the gene responsible for a specific bang-sensitive mutant called slaM.D.ance and was able to produce my first academic journal article. I was inspired by this experience and decided that I wanted to pursue a career as a physician scientist with the hope that I would not only be able to provide evidence-based and compassionate care for my current patients, but also impact future patients through the pursuit of my research interests. I am truly honored to be a part of the RTP here at Brown. I feel that the program provides the support and flexibility necessary to receive excellent clinical training while preparing me for a successful research career."

Fabiana Lopes, M.D., Ph.D., PGY 1 (2021-22)

Dr. Lopes earned her M.D. from Universidade Federal do Rio de Janeiro (UFRJ), her MSc from the Institute of Psychiatry at the Federal University of Rio de Janeiro (IPUB-UFRJ), and her Ph.D. from a collaboration between the Universita' Vita-Salute, San Raffaele-Turro, in Milan, and the IPUB-UFRJ. During her trainings, she studied the phenomenology and the neurobiology of Anxiety Disorders, including the connection between Panic and Respiration, neuroimaging findings as well as psychophysiological parameters such as stabilometry. In 2014, she joined the National Institutes of Health (NIH) as Visiting Post-Doctoral Fellow and she started working on the genetics of Mood and Anxiety Disorders in isolated populations. She was a research fellow at the National Institute of Mental Health from 2016-2021, where she led a cross-disorder international project involving Next Generation Sequencing to examine the genetic bases of mood and anxiety disorders in isolated population settled in the south of Brazil. As a resident at Brown University, Dr. Lopes plans to investigate the mechanisms and treatment of mood and anxiety disorders, using fMRI and neuromodulation tools.

From Dr. Lopes: "I feel privileged to be part of the Brown's RTP program. Being in a supportive environment, with highly qualified staff and cutting-edge research is all that I could aspire for the next level on my career. I firmly believe that the clinical and research integrated program will ultimately refine my skills to better treat the patients and contribute to advancement of the scientific field."

Biographical Sketches of Selected Research Faculty

This section includes a sampling of biographical sketches of some Department of Psychiatry and Human Behavior research faculty. We have also included some biosketches of faculty from other departments at Brown (the departments of Neuroscience, Neurosurgery, Neurology, Molecular and Cell Biology, Engineering and Cognitive, Linguistic, Public Health and Psychological Sciences) who do research that is relevant to mental health.

As these biosketches convey, our faculty are distinguished in many ways — by their outstanding research contributions, grant funding, publications, honors and awards, contributions to professional organizations and other scholarly activities. Most are nationally and internationally recognized for their significant contributions to the field of psychiatry.

Biosketches of additional research faculty could have been included here, but we have tried to keep this publication a manageable size. A listing of additional DPHB research faculty and their grants are included in this booklet (in the section "Sampling of Research Funding"). You can access CVs, biosketches and other information about research faculty on the Brown University Research website, brown.edu/research.

While our faculty's research and other scholarly accomplishments are impressive, our faculty is also known for their collaborative spirit, accessibility to trainees and dedication to mentoring. These characteristics make Brown an outstanding environment for residents and other trainees to obtain a research experience.

Sampling of Faculty Researchers:

Ana Abrantes, Ph.D.
Professor (Research), Department of Psychiatry and Human Behavior

Michael Armey, Ph.D.
Associate Professor (Research), Department of Psychiatry and Human Behavior

Wael Asaad, M.D., Ph.D.
Associate Professor, Departments of Neurosurgery and Neuroscience
Director of Functional and Epilepsy Neurosurgery

David Badre, Ph.D.
Professor, Department of Cognitive, Linguistic and Psychological Sciences

Gilad Barnea, Ph.D.
Professor of Ophthalmology, Visual Sciences, and Neuroscience, Department of Neuroscience

Jennifer Barredo, Ph.D.
Assistant Professor (Research), Department of Psychiatry and Human Behavior

Cynthia Battle, Ph.D.
Professor, Department of Psychiatry and Human Behavior

Yosef Berlow, M.D., Ph.D.
Assistant Professor, Department of Psychiatry and Human Behavior

Beth Bock, Ph.D.
Professor, Departments of Psychiatry and Human Behavior and Behavioral and Social Sciences

David Borton, Ph.D.
Assistant Professor, School of Engineering

Leslie Ann Brick, Ph.D.
Assistant Professor, Department of Psychiatry and Human Behavior

Willoughby Britton, Ph.D.
Associate Professor, Departments of Psychiatry and Human Behavior and Behavioral and Social Sciences

Joshua Brown, M.D., Ph.D.
Assistant Professor, Department of Psychiatry and Human Behavior

Larry Brown, M.D.
Professor and Vice Chair, Department of Psychiatry and Human Behavior

Linda Carpenter, M.D.
Professor, Department of Psychiatry and Human Behavior

Mary Carskadon, Ph.D.
Professor, Department of Psychiatry and Human Behavior

Barry Connors, Ph.D.
Professor, Department of Neuroscience

Daniel Moreno De Luca, M.D.
Assistant Professor, Department of Psychiatry and Human Behavior

Theresa Desrochers, Ph.D.
Assistant Professor, Departments of Neuroscience and Psychiatry and Human Behavior

John Donoghue, Ph.D.
Professor, Departments of Engineering and Neuroscience

A. Rani Elwy, Ph.D.
Associate Professor, Department of Psychiatry and Human Behavior

Justin Fallon, Ph.D.
Professor, Department of Neuroscience

Michael Frank, Ph.D.
Edgar L Marston Professor of Department of Cognitive, Linguistic & Psychological Sciences

Benjamin Greenberg, M.D., Ph.D.
Professor, Department of Psychiatry and Human Behavior

Anne Hart, Ph.D.
Professor and Chair, Department of Neuroscience

Leigh Hochberg, M.D., Ph.D.
Professor, School of Engineering

Elissa Jelalian, Ph.D.
Professor, Departments of Psychiatry and Human Behavior and Pediatrics

Richard Jones, Sc.D.
Professor, Departments of Psychiatry and Human Behavior and Neurology

Stephanie Jones, Ph.D.
Associate Professor, Department of Neuroscience

Christopher Kahler, Ph.D.
Professor and Chair, Department of Behavioral and Social Sciences, School of Public Health

Karla Kaun, Ph.D.
Associate Professor, Department of Neuroscience

Gabor Keitner, M.D.
Professor, Department of Psychiatry and Human Behavior

Daphne Koinis Mitchell, Ph.D.
Professor (Research), Departments of Psychiatry and Human Behavior and Pediatrics

W. Curt LaFrance Jr., M.D.
Professor, Departments of Psychiatry and Human Behavior and Neurology

Barry Lester, Ph.D.
Professor, Department of Psychiatry and Human Behavior

Diane Lipscombe, Ph.D.
Thomas J. Watson, Sr. Professor of Science
Reliance Dhirubhai Ambani Director
Robert J. and Nancy D. Carney Institute for Brain Science
Department of Neuroscience

Judy Liu, M.D., Ph.D.
Associate Professor, Departments of Neurology and Molecular Biology, Cell Biology and Biochemistry

John McGeary, Ph.D.
Associate Professor, Department of Psychiatry and Human Behavior

Elizabeth McQuaid, Ph.D.
Vice Chair, Department of Psychiatry Human Behavior
Professor, Departments of Psychiatry and Human Behavior and Pediatrics

Ivan Miller, Ph.D.
Professor, Department of Psychiatry and Human Behavior

Peter Monti, Ph.D.
Professor, Department of Behavioral and Social Sciences, School of Public Health

Christopher Moore, Ph.D.
Professor, Department of Neuroscience

Eric Morrow, M.D., Ph.D.
Mencoff Family Professor of Biology, Professor of Neuroscience
Associate Professor, Department of Psychiatry a nd Human Behavior

Matthew Nassar, Ph.D.
Assistant Professor, Department of Neuroscience

Nicole Nugent, Ph.D.
Associate Professor, Departments of Psychiatry and Human Behavior, Pediatrics, and Emergency Medicine

Arto Nurmikko, Ph.D.
Professor, Departments of Engineering and Physics

Hwamee Oh, Ph.D.
Assistant Professor, Department of Psychiatry and Human Behavior

Stephanie Parade, Ph.D.
Associate Professor, Department of Psychiatry and Human Behavior

Noah Philip, M.D.
Associate Professor, Department of Psychiatry and Human Behavior

Lawrence Price, M.D.
Professor, Department of Psychiatry and Human Behavior

Steven Rasmussen, M.D.
Professor and Chair, Department of Psychiatry and Human Behavior

Stephen Salloway, M.D.
Professor, Departments of Psychiatry and Human Behavior and Neurology

Jerome Sanes, Ph.D.
Professor, Department of Neuroscience

Thomas Serre, Ph.D.
Associate Professor, Department of Cognitive, Linguistic and Psychological Sciences

M. Tracie Shea, Ph.D.
Professor, Department of Psychiatry and Human Behavior

David Sheinberg, Ph.D.
Professor, Department of Neuroscience

Amitai Shenhav, Ph.D.
Assistant Professor, Department of Cognitive, Linguistic, and Psychological Sciences

Mohamed Sherif, M.D., Ph.D.
Assistant Professor, Department of Psychiatry and Human Behavior

Anthony Spirito, Ph.D.
Professor, Department of Psychiatry and Human Behavior

Michael Stein, M.D.
Adjunct Professor, Department of Medicine

Laura Stroud, Ph.D.
Professor, Departments of Psychiatry and Human Behavior and Behavioral and Social Sciences

Robert Swift, M.D., Ph.D.
Professor, Department of Psychiatry and Human Behavior

Brian Theyel, M.D., Ph.D.
Assistant Professor, Department of Psychiatry and Human Behavior

J. Graham Thomas, Ph.D.
Professor (Research), Department of Psychiatry and Human Behavior

Geoffrey Tremont, Ph.D.
Associate Professor, Department of Psychiatry and Human Behavior

Wilson Truccolo, Ph.D.
Associate Professor, Department of Neuroscience

Audrey Tyrka, M.D., Ph.D.
Professor, Department of Psychiatry and Human Behavior

Lisa Uebelacker, Ph.D.
Professor, Department of Psychiatry and Human Behavior

Takeo Watanabe, Ph.D.
Professor, Department of Cognitive, Linguistic and Psychological Sciences

Lauren Weinstock, Ph.D.
Professor, Department of Psychiatry and Human Behavior

Laura Whiteley, M.D.
Associate Professor, Department of Psychiatry and Human Behavior

Rena Wing, Ph.D.
Professor, Department of Psychiatry and Human Behavior

Shirley Yen, Ph.D.
Adjunct Associate Professor, Department of Psychiatry and Human Behavior

Amin Zand Vakili, M.D., Ph.D.
Assistant Professor, Department of Psychiatry and Human Behavior

Mark Zimmerman, M.D.
Professor, Department of Psychiatry and Human Behavior

Caron Zlotnick, Ph.D.
Professor, Departments of Psychiatry and Human Behavior, Medicine, and Obstetrics and Gynecology

Ana Abrantes, Ph.D.

Professor, Department of Psychiatry and Human Behavior

Dr. Abrantes received her BA in Psychology from Harvard University in 1995 and her Ph.D. from the San Diego State University/University of California, San Diego Joint Doctoral Program in Clinical Psychology in 2002. She completed her clinical psychology internship at Brown in 2001 and stayed on for a NIAAA T32 postdoctoral fellowship in Addiction Treatment at Brown's Center for Alcohol and Addiction Studies (CAAS). Dr. Abrantes joined the faculty of the Department of Psychiatry and Human Behavior in 2004 and began a position as Research Psychologist at Butler Hospital, where she is currently the Co-Director of Behavioral Medicine and Addictions Research. Dr. Abrantes' research interests have focused on two general areas: 1) improving treatment outcomes of individuals with addictive behaviors and 2) increasing physical activity among individuals with mental health problems. Her current studies involve developing technology-supported approaches to decreasing relapse risk among patients in early recovery from alcohol and opioid use disorder as well as examining exercise interventions for smoking cessation, depression, alcohol dependence, and in the context methadone maintenance treatment. This work has included testing behavioral approaches with the use of wearable monitors, text messaging, smartphone app development, and non-invasive neurostimulation. Dr. Abrantes has published over 130 peer-reviewed papers and has been Principal Investigator or Co-Investigator on over 25 NIH-funded grants. She regularly serves on NIH scientific review panels and is on the editorial board of several academic journals, including serving as Associate Editor of *Mental Health and Physical Activity.*

Michael Armey, Ph.D.

Associate Professor (Research), Department of Psychiatry and Human Behavior

Michael Armey received his Ph.D. in Clinical Psychology from Kent State University, where he trained with Drs. Crowther and David Fresco. He went on to complete his clinical internship at Brown followed by a postdoctoral fellowship with Ivan Miller in the Psychosocial Research Program at Butler Hospital, where he trained in treatment development research and suicidology. Armey joined the DPHB faculty in 2012. His research, supported by numerous grants from the NIMH, seeks to develop multimethod models of suicide risk, with the goal of identifying treatment modifiable processes and mechanisms. This research involves the integration of biomarkers, behavioral measures and ecologically valid assessments of affect, behavior and cognition with traditional self-report methods to prospectively predict episodes of elevated suicide risk. His research has been published in high-impact scientific journals such as The Journal of Consulting and Clinical Psychology, Assessment, and Behavior Therapy. He is also the associate director of Brown's Consortium for Research Innovation in Suicide Prevention and work group lead for wearables and digital phenotypes in the Center for Digital Health, part of the University's Division of Biology and Medicine.

Wael Asaad, M.D., Ph.D.

Associate Professor of Neurosurgery & Neuroscience
Director of Functional and Epilepsy Neurosurgery

Our laboratory undertakes a broad array of neurophysiological and behavioral research in humans and nonhuman primates. In particular, we focus on the cognitive neuroscience of the prefrontal cortex and basal ganglia in nonhuman primates, and neurophysiology/neuromodulation for movement disorders, psychiatric disease and epilepsy in humans. In patients undergoing neurosurgical procedures for intractable psychiatric disease, we apply a variety of anatomical and psychophysical techniques to understand predictors of therapeutic success as well as cognitive sequelae related to the modulation of prefrontal cortical regions, such as the effects on model-based vs. model-free reinforcement learning. Patients who undergo deep brain stimulation also provide an opportunity for awake, behaving neurophysiological experiments. Parallel work in movement disorders has applied machine learning techniques to understand neurophysiological biomarkers of symptom fluctuations. Meanwhile, patients undergoing invasive epilepsy monitoring provide an opportunity for us to study memory, visual attention, and affect recognition in prefrontal and temporal lobe circuits. In nonhuman primates, the role of the prefrontal cortex and basal ganglia in adaptive behaviors is investigated using large electrode arrays and closed-loop deep brain stimulation. The goal is to understand how different divisions of the prefrontal cortex and basal ganglia contribute to learning, especially when the behavioral contingencies are complex or abstract, and to understand how stimulation at the appropriate times in the appropriate targets might improve or delay learning.

Projects can be tailored to the interests of the individual to take best advantage of the opportunities for human and/or nonhuman primate neuroscience.

David Badre, Ph.D.

Professor, Department of Cognitive, Linguistic & Psychological Sciences

Dr. Badre studies neural mechanisms of cognitive control and memory, with a focus on frontal lobe function and organization and with relevance to assessing psychopathology and treatment effects. His mentoring includes work with a DPHB fellow on neural substrates of psychiatric symptoms as well as CLPS postdoctoral fellows and graduate students in the Cognitive Science, Psychology, and Neuroscience graduate programs. He is also PI of a T32 training grant in computational cognitive neuroscience funded by NIMH. Dr. Badre's research is supported by NINDS and NIMH at the NIH, and through the Office of Naval Research. Dr. Badre serves on the editorial boards of *Psychological Science*, *Cognitive Science*, and *Behavioral Neuroscience*. He served as Section Editor covering "Executive Function and Cognitive Control" for *Neuropsychologia* until 2017. Presently, he serves on the Board of Reviewing Editors for the journal *eLife*, and he is a standing member of the Cognition and Perception study section of NIH. His work has been recognized by several honors, including an Alfred P. Sloan Foundation Fellowship in Neuroscience, a James S. McDonnell Scholar Award in Understanding Human Cognition, and the Cognitive Neuroscience Society Young Investigator Award. His book entitled, *On Task: How Our Brain Gets Things Done*, was published by Princeton University Press in 2020.

Gilad Barnea, Ph.D.

Professor of Ophthalmology, Visual Sciences, and Neuroscience, Department of Neuroscience

Dr. Gilad Barnea has multidisciplinary training. He received his Ph.D. in Pharmacology from New-York University, where he trained with Dr. Joseph Schlessinger, a leader in the signal transduction field. For his postdoctoral fellowship, Dr. Barnea moved to Columbia University, where he worked with the Nobel laureate Richard Axel on the molecular underpinnings of the olfactory system. Dr. Barnea joined the faculty of the Department of Neuroscience at Brown University in 2007 and was promoted to Associate Professor with tenure in 2015 and Professor in 2021. The Barnea laboratory uses mouse and fly models to study the chemical senses, olfaction and gustation. The main objective of the laboratory is to understand how the brain forms an internal representation of the environment and how this representation is used to generate innate versus learned behaviors. To address these questions, the Barnea laboratory developed *trans*-Tango, a technique for tracing neural circuits and manipulating their function. The Barnea laboratory uses *trans*-Tango to study circuits beyond the chemosensory systems. Dr. Barnea has published numerous papers in leading scientific journals such as *Science*, *Cell*, *Neuron*, *eLife* and *PNAS*. Dr. Barnea's research is supported by several research grants from the NIH. Dr. Barnea received the Pew Scholar award in the Biomedical Sciences and the designation of Kavli Fellow from the National Academy of Science. He also received twice the EUREKA award from the NIH. Dr. Barnea was awarded twice the Innovation award from Brown's Carney Institute for Brain Science. Dr. Barnea believes that at this stage of his career, training others is a major way to contribute to society and to pay back for the investments of the great mentors that he has been fortunate to have.

Jennifer Barredo, Ph.D.

Assistant Professor (Research), Department of Psychiatry and Human Behavior

Dr. Barredo received her Ph.D. in Neuroscience from Brown University where she trained with Dr. David Badre. She completed additional postdoctoral training at Brown with Dr. Michael Worden, working closely with Brown's Magnetic Resonance Facility (MRF) team. Dr. Barredo then joined the Center for Neurorestoration and Neurotechnology (CfNN) at the Providence VA Medical Center, transitioning from basic science to clinical neuroimaging research focused on suicidality and disorders of mood and cognition. She joined the faculty in the Department of Psychiatry and Human Behavior in 2017 and currently leads the newly created Clinical Neuroimaging Research Core. Her research, supported by grants from the Veteran's Health Association and the Brain Behavior Research Foundation (NARSAD), integrates structural and functional MRI, machine learning, and cognitive psychology approaches to optimize predictive models of suicide risk and treatments for suicidality. Some of her recent scholarly work has been published in *Biological Psychiatry* and *Neuromodulation*. Dr. Barredo also leads the Neuroimaging Core at CfNN and co-directs the Suicide Prevention Innovation Group (SPRING) at the Providence VAMC and the Design and Analysis Core at the COBRE Center for Neuromodulation at Butler Hospital.

Cynthia Battle, Ph.D.

Professor, Department of Psychiatry and Human Behavior

Cynthia Battle is a licensed clinical psychologist and professor of psychiatry and human behavior at The Warren Alpert Medical School. She received her M.S. and Ph.D. from the University of Massachusetts, Amherst, and completed her clinical psychology internship and research fellowship at Brown. Battle is a member of the faculty both at Butler Hospital, within the Psychosocial Research Program, and at Women and Infants Hospital, within the Division of Women's Behavioral Health. Much of Battle's research focuses on women's mental health during pregnancy and the postpartum period, including development and evaluation of non-pharmacologic interventions for women with perinatal mood disorders and other mental health conditions. She is interested in developing approaches to mental health care that are more accessible and acceptable to perinatal women, including women from diverse racial, ethnic and socioeconomic backgrounds. Battle's research has been funded by grants from the National Institute of Mental Health, the National Institute of Nursing Research, the National Institute of Child Health and Human Development, the Brown/Women and Infants Hospital and the Radcliffe Institute of Harvard University. Battle is currently leading National Institutes of Health-funded research focused on women's perinatal mental health and serves as a collaborator on other projects relating to development and testing of novel behavioral interventions. In recent years she has received awards from the North American Society for Psychosocial Obstetrics and Gynecology and the North American Society for Obstetric Medicine. She is an active member of national and international organizations focused on women's mental health, participates regularly on NIH grant review panels and serves on the editorial board for the Archives of Women's Mental Health.

Yosef Berlow, M.D., Ph.D.

Assistant Professor, Department of Psychiatry and Human Behavior

Dr. Yosef Berlow's research has focused on utilizing neuroimaging and statistical modeling techniques to investigate psychiatric disorders and identify biomarkers of treatment response. He received his B.A. in Psychology and B.S. in Behavioral Neuroscience from Lehigh University, where he was a Presidential Scholar. He then worked at McLean Hospital in the Geriatric Psychiatry Research Program, where he investigated late-life mood disorders, aging and neurodegenerative dementias using a variety of MRI techniques. Berlow then received his M.D. and Ph.D. at Oregon Health & Science University in the Department of Behavioral Neuroscience, where he was named an ARCS Scholar and received a National Research Service Award. He continued neuroimaging research at the Advanced Imaging Research Center, investigating changes in brain tissue composition associated with aging, neurodegenerative diseases, mood disorders and substance abuse. He completed his psychiatry residency in the NIMH-sponsored R25 Research Training Program at Brown's Warren Alpert Medical School, where he received several awards and recognitions, including the Chair's Choice Award from the Society of Biological Psychiatry, and the Laughlin Fellowship from the American College of Psychiatrists. Since Berlow arrived at Brown, his research has focused on identifying predictors of response to noninvasive neuromodulation treatments, including transcranial magnetic stimulation and transcranial direct current stimulation in collaboration with investigators at the Providence Veterans Affairs Rehabilitation Research and Development Service Center for Neurorestoration and Neurotechnology.

Beth Bock, Ph.D.

Professor, Departments of Psychiatry and Human Behavior and Behavioral and Social Sciences

Beth Bock is a professor in the DPHB at The Warren Alpert Medical School and professor of behavioral and social sciences at the Brown School of Public Health. She is a senior research scientist at The Miriam Hospital Center for Behavioral and Preventive Medicine. Her research focuses on the development and testing of interventions for substance use, including tobacco and alcohol; the promotion of physical activity; and the use of technology, including smartphone apps, text messaging and videogames, for promoting health behavior change. She has been principal investigator on 19, and co-investigator on over 40, NIH- and foundation-funded research studies that have produced more than 150 peer-reviewed publications. Her recent work has tested the efficacy of yoga as a complementary therapy for smokers trying to quit, examined the contribution of exercise videogames for improving physical activity participation in healthy adults and those at risk for diabetes, and developed a smartphone app to reduce risks from alcohol among community college students. Bock was the lead developer of the Mobile Phone Affinity Scale that measures the quality of an individual's relationship with their mobile phone. She was also principal investigator

(with Shira Dunsiger, multiple principal investigator) of a study funded by Brown's Advance-CTR, "Exploring Second-to-Second Exercise Intensity and Disease Risk Outcomes," that examined differences in heart rate variability between individuals while exercising using active videogames versus standard aerobic exercise.

David Borton, Ph.D.

Assistant Professor, School of Engineering

David Borton received his B.S. in Biomedical Engineering from Washington University in St. Louis in 2006, and his Ph.D. in Bioengineering from Brown University in 2012. Borton is an assistant professor of biomedical engineering at Brown's School of Engineering and the Carney Institute, and a biomedical engineer at the Providence VA Center for Neurorestoration and Neurotechnology. Borton leads an interdisciplinary team of researchers focused on the design, development and implementation of novel neural recording and stimulation systems. His research enables basic science innovation through technological integration and implementation of novel devices. Borton currently focuses on engineering new tools for wireless interrogation of the nervous system with a goal of untangling the underpinnings of neuromotor and neuropsychiatric disease and injury. Borton was recently awarded the Defense Advanced Research Projects Agency Young Faculty Award in 2015 and the DARPA Director's Award in 2017. His laboratory is currently supported by the U.S. Department of Defense, the National Institute of Neurological Disorders and Stroke, the National Institute of Mental Health, the International Foundation for Research in Paraplegia and several industry contracts. His work demonstrating that, through wireless neurotechnology, brain recordings can be used to help spinal cord injury subjects walk again was featured in the journal Nature. He performed his postdoctoral research at the École Polytechnique in Lausanne, Switzerland, under a Marie Curie International Fellowship.

Leslie Ann Brick, Ph.D.

Assistant Professor, Department of Psychiatry and Human Behavior

Leslie Brick received a Ph.D. in Behavioral Science at the University of Rhode Island in 2015, and subsequently completed a T32 postdoctoral fellowship in Brown's Department of Psychiatry and Human Behavior. She is currently an assistant professor in the department and the associate director of the Quantitative Sciences Program at Brown. Her research examines underlying genetic, environmental and proximal risk contributing to the development of substance use behaviors and related phenomenology (PTSD, depression, suicide). She also has expertise in longitudinal data analysis, including intensive longitudinal data (e.g., ecological momentary assessment) and structural equation modeling. With over 40 peer-reviewed publications, she provides consultation of research design and analysis, as well as training and expertise to faculty and trainees within the Department of Psychiatry and Human Behavior.

Willoughby Britton, Ph.D.

Associate Professor, Departments of Psychiatry and Human Behavior and Behavioral and Social Sciences

Willoughby Britton earned a B.A. in Neuroscience from Colgate University in 1996, and a Ph.D. in Clinical Psychology from the University of Arizona in 2007. She is the recipient of two National Research Service Awards and a National Institutes of Health Career Development Award. She is currently the director of Brown's Clinical and Affective Neuroscience Laboratory (brown.edu/research/labs/britton), which investigates the psychophysiological (EEG, EMG, EKG) and neurocognitive effects of cognitive training and mindfulness-based interventions for mood and anxiety disorders. Research questions investigate which cognitive training practices are best or worst suited for which types of conditions and why, moderators of treatment outcome, practice-specific effects, and adverse effects. Current NIH-funded studies include a three-armed randomized controlled trial titled "Dismantling Mindfulness" that compares the effects of three different types of meditation training programs on pre-frontal cortex functioning in depression; and a collaborative infrastructure grant (UH2) with Harvard and University of Massachusetts titled "Mindfulness Influences on Self-Regulation: Mental and Physical Health Implications." An interdisciplinary qualitative study titled "The Varieties of Contemplative Experience" is investigating under-reported and potentially challenging, distressing or impairing meditation-related effects.

Joshua Brown, M.D., Ph.D.

Assistant Professor (Research Scholar Track), Departments of Neurology, and Psychiatry and Human Behavior

Dr. Joshua Brown is an assistant professor (Research Scholar Track) in the Department of Psychiatry and Human Behavior with a secondary appointment in neurology at The Warren Alpert Medical School. He is the director of the Brown Brain Stimulation Laboratory

and associate director of TMS at Butler Hospital. He graduated from the University of Utah in psychology (B.S.), and obtained his M.D. and Ph.D. from the Medical Scientist Training Program at the Medical College of Wisconsin, studying mechanisms of synaptic plasticity. He completed a combined residency in both neurology and psychiatry, aka "brain medicine," at the Medical University of South Carolina in 2020. He was concurrently trained in TMS, ECT and deep brain stimulation (DBS) as a part of the Medical University's Interventional Psychiatry Track, and completed a research fellowship (R25) investigating the effect of NM.D.A receptor activation with 10 Hz rTMS under the mentorship of Dr. Mark George. His ambition is to understand how the brain works from a behavioral to a molecular level. The lab's current focus is to understand the mechanisms by which TMS changes the brain in a lasting and therapeutic way using pharmacology, neurophysiology and TMS in humans. This work is funded by the National Institute of General Medical Sciences COBRE Center for Neuromodulation at Butler Hospital.

Larry K. Brown, M.D.

Professor and Vice Chair, Department of Psychiatry and Human Behavior

Larry K. Brown, M.D. is the Director of the Division of Child and Adolescent Psychiatry. His research focuses on HIV risk and the efficacy of HIV prevention treatments among adolescents and young adults and improving medical adherence and the mental health of those living with HIV. He is the Principal Investigator of several major projects funded by National Institute of Mental Health (NIMH). He is also the Program Director of a NIMH training program in adolescent and young adult biobehavioral HIV research and another research training program for child and adolescent psychiatry fellows.

One of Dr. Brown's NIMH-funded adolescent HIV prevention projects developed and evaluated the impact of a family-based intervention to improve family communication and parental monitoring. It was designated an Evidence-based Intervention by the CDC in 2016. His further NIMH projects have transformed it into a computer-based intervention, and an ongoing project is adapting if for non-heterosexual adolescent males and their parents. His HIV prevention program in therapeutic schools received the Reiger Award from the American Academy of Child and Adolescent Psychiatry in 2011. Several projects are focused on adolescents and young adults living with HIV. His studies in AIDS Trials Networks are testing interventions to reduce depression and substance use. Also, NIH-funded projects are developing and testing mobile game apps to improve medical adherence for youth living with HIV and for pre-exposure prophylaxis for those at high-risk. The laboratory provides training in HIV clinical research for medical students, psychiatry residents, clinical psychology interns and post-doctoral fellows.

Linda Carpenter, M.D.

Professor, Department of Psychiatry and Human Behavior

Dr. Linda Carpenter is a professor of psychiatry in The Warren Alpert Medical School and chief of the Mood Disorders Program at Butler Hospital. Carpenter completed her undergraduate degree in honors psychology at the University of Michigan, and subsequently worked as a research assistant in the Mood Disorders Research Program at the Western Psychiatric Institute in Pittsburgh, concurrently completing post-baccalaureate premedical coursework at the University of Pittsburgh. She obtained her M.D. from the University of Pennsylvania in 1992 and went on to complete an internship in internal medicine, a residency program in psychiatry and a clinical neuroscience research fellowship at Yale University in 1997. She joined the faculty at Brown in 1997. She has been recognized for her work investigating the neurobiology of, and new treatments for, major depression and other mood and anxiety disorders. She led a 10-year, federally funded translational research program focusing on the development of laboratory biomarkers signaling risk for mood/anxiety disorders, and understanding the impact of early life stress on adult biology. She has conducted a number of randomized clinical trials sponsored by industry and NIH, investigating novel drugs and devices for treating depression. Carpenter has also been principal investigator on trials examining the efficacy and safety of novel neuromodulation treatments, including vagus nerve stimulation (VNS), DBS, TMS and tDCS for patients with major depression and/or anxiety disorders. She is director of the TMS Clinic and Butler Neuromodulation Research Facility, and works with a variety of Brown-based faculty who incorporate noninvasive brain stimulation techniques into their clinical research. Carpenter is deputy director of the COBRE Center for Neuromodulation at Butler Hospital and leads the center's neuromodulation and neuroimaging core. As mentor to a number of junior research faculty, her lab conducts clinical trials using "second-generation"

noninvasive brain stimulation devices and evaluates potential therapeutic mechanisms of action with EEG and fMRI methods.

Mary A. Carskadon, Ph.D.

Professor, Department of Psychiatry and Human Behavior

Mary A. Carskadon, Ph.D., is an authority on sleep and circadian rhythms. She is director of the Chronobiology and Sleep Research Laboratory at Bradley Hospital. Carskadon's early research developed the standard clinical and research measure of sleepiness, the multiple sleep latency test. Her work is known for raising public health concerns about early school starting times, affecting education policy, and prompting the AAP and others to promote later school timing for adolescents. Carskadon is director of the new Bradley Hospital COBRE Center for Sleep and Circadian Rhythms in Child and Adolescent Mental Health. Her other current research with Dr. Daphne Koinis-Mitchell looks at sleep/health disparities in children with asthma and assesses the impact of experimentally induced sleep disruption on immune function of children with asthma. Carskadon is also working with two groups to examine sleep patterns and suicide risk, one project in adolescents and the other in adults. Effects on sleep and cognitive performance of three consecutive nights of alcohol are also under investigation. Recent publications have (1) shown accelerated epigenetic aging with short and irregular sleep (Carskadon et al., 2020); (2) provided reliability and validation versus Tanner staging for pubertal development scales (Koopman-Verhoeff et al., 2020); (3) examined sleep duration's effect on mood ins an experimental study (Booth et al., 2021); (4) provided evidence that naps are not as effective as a night of sleep in dissipating sleep pressure (Tarokh et al., 2021). Dr. Carskadon is a distinguished alumna and honorary degree-holder of Gettysburg College and holds an earned doctorate in neuro- and bio-behavioral sciences from Stanford University, with a specialty in sleep research.

Barry Connors, Ph.D.

Professor, Department of Neuroscience

Barry Connors studies the cerebral cortex, the thalamus and their interactions, with an emphasis on the physiological properties of their neurons, synapses and local circuits, especially as they relate to forebrain functions and the neural mechanisms of seizures and neurodevelopmental disorders. Among his former pre- and postdoctoral trainees, 25 have successfully gone on to faculty positions in neuroscience and nearly all remain in scientific careers. He was a mentor of one of the Pilot Program residents. Connors is principal investigator or co-investigator of research grants from NIH and the National Science Foundation.

Daniel Moreno De Luca, M.D.

Assistant Professor, Department of Psychiatry and Human Behavior

Intrigued by the genetic basis of neuropsychiatric disorders with high heritability, Dr. Daniel Moreno De Luca combines his expertise in clinical psychiatry and neurogenetics to focus on the genetic underpinnings and translational implications behind autism and other neurodevelopmental disorders. He received his M.D. from the Universidad Industrial de Santander, followed by his master's in neuroscience at the Université Pierre et Marie Curie (Sorbonne Universités) and postdoctoral fellowship in neurogenetics at Emory University. He then completed his psychiatry training at Yale and joined the Child and Adolescent Psychiatry Fellowship at Brown. He specifically studies the role of highly penetrant rare genetic variants (copy number variants and single nucleotide variants) as risk factors for neuropsychiatric disorders and how they shape and may ultimately impact the neurobehavioral profile and clinical management of people who bear them. Together with his collaborators, he identified the 17q12 deletion as a risk factor for autism and schizophrenia by pulling together genetic data from over 70,000 people worldwide, and has expanded his work on this and other copy number variants within the context of the Simons Foundation and the Psychiatric Genetics Consortium. He continues to pursue his interest for precision medicine in psychiatry at Brown: he established the Genetic Psychiatry Consultation Service as part of the Verrecchia Clinic for Children with Autism and Developmental Disabilities, and recently launched his Precision Medicine in Autism research program at Bradley Hospital.

Theresa Desrochers, Ph.D.

Assistant Professor, Departments of Neuroscience and Psychiatry and Human Behavior

Theresa Desrochers has cross-discipline and cross-species training. She received her Ph.D. in Neuroscience from the Massachusetts Institute of Technology in 2011. There she trained with Ann Graybiel, Institute Professor, who is a recipient of the National Medal of Science and an expert in the field of basal ganglia research. During Desrochers' dissertation work, she co-developed a new method of

performing high-density, reconfigurable recordings on awake-behaving nonhuman primates. This system, published in the Journal of Neurophysiology, overcame many existing technical challenges in the field and is capable of recording from the same small brain area across days and of simultaneously recording from multiple brain areas. Further, this recording system enabled Desrochers to perform experiments that were unique in the nonhuman primate literature and examined neural activity in the basal ganglia during naturalistic habit formation, published in Neuron and PNAS. For her postdoctoral fellowship, Desrochers worked with David Badre, a leader in the field studying human executive function, at Brown. There she discovered a novel brain dynamic that was necessary for the sequential executive functions, published in Neuron and the Journal of Neuroscience. Desrochers joined the faculty of the Department of Neuroscience in fall 2016. The Desrochers lab uses human and nonhuman primate models to investigate the neural underpinnings of sequential control. Work in the lab focuses on explicitly addressing these questions using a cross-species approach, which is rare in both human and nonhuman primate research. Current experiments are focused on using nonhuman primate fMRI, a technique that only a few labs are able to use, to explicitly bridge between human fMRI and nonhuman primate neural recordings and directly examine functional homology between the species. Desrochers' work has been supported by grants from the NIH and the NSF. She has twice been awarded the Innovation Award from the Carney Institute for Brain Science. Dr. Desrochers is focused on training others to bring creative paradigms and combine methodologies to tackle research questions on human cognition.

John Donoghue, Ph.D.

Professor, Departments of Engineering, and Neuroscience

John Donoghue is a professor of neuroscience and engineering known for translational research in human brain computer interfaces to restore movement for people with paralysis, as well as for fundamental science investigating how cortical networks compute voluntary actions from thoughts and percepts. He was the founding chair of the Brown Department of Neuroscience and founding director of the Brown Institute for Brain Science (now the Carney Institute). Donoghue was a member of the first National Institutes of Health working group of the U.S. Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative and is a fellow of the National Academy of Medicine, as well as several other academies.

A. Rani Elwy, Ph.D.

Associate Professor, Department of Psychiatry and Human Behavior

A. Rani Elwy is a health psychologist, health services researcher and an implementation scientist who examines: patients' access to and uptake of mental health care and complementary and integrative health services; and communication between patients, families and providers. Specific projects on which she has served as principal investigator or site principal investigator include: predicting patients' treatment-seeking for a new episode of depression from their illness perceptions; establishing an evidence-base for mantram repetition and yoga as first-line treatments for depression, PTSD and chronic low back pain; developing a translational tool, the Essential Properties of Yoga Questionnaire to measure yoga therapy; using social network analysis to develop and operationalize an implementation strategy; and investigating and improving large-scale adverse event disclosures in a large, integrated health care system. Elwy is currently the co-director of the Veterans Affairs' Complementary and Integrative Health Evaluation Center, funded by the Veteran Affairs' Office of Patient Centered Care and the Veterans Affairs Quality Enhancement Research Initiative. Her research has also been funded by the Department of Veterans Affairs, Health Services Research and Development (HSR&D) service and the Clinical Sciences Research and Development service; and the National Institutes of Health National Center for Complementary and Integrative Health. Elwy received the Veterans Affairs HSR&D Best Research Paper Award in 2017, for her work examining surgeons' communication with patients and families about unanticipated surgical events and the impact of this communication on surgeons' well-being, published in JAMA Surgery.

Justin Fallon, Ph.D.

Professor, Department of Neuroscience

Justin Fallon studies mechanisms underlying neurological disease. His current work is focused on a new pathway that regulates adult hippocampal neurogenesis, a potential target for the treatment of Alzheimer's and treatment-resistant depression. He is working to develop therapeutics aimed at this pathway. Fallon has been an active mentor for many years with several of his trainees now in faculty positions.

Michael Frank, Ph.D.

Edgar L Marston Professor of Department of Cognitive, Linguistic & Psychological Sciences

Michael J. Frank, Ph.D. is Edgar L Marston Professor of Cognitive, Linguistic & Psychological Sciences and Psychiatry and Human Behavior and is affiliated with the Carney Institute for Brain Science. He directs the Center for Computational Brain Science https://www.brown.edu/carney/ccbs and his own Laboratory for Neural Computation http://lnccbrown.com. He received his Ph.D. in Neuroscience and Psychology in 2004 at the University of Colorado, following undergraduate and master's degrees in electrical engineering and biomedicine (Queen's University (Canada) and University of Colorado).

Dr. Frank's work focuses primarily on theoretical models of frontostriatal circuits and their modulation by dopamine, especially in terms of their cognitive functions and implications for neurological and psychiatric disorders. The models are tested and refined with experiments involving pharmacological manipulation, deep brain stimulation, EEG, fMRI and genetics. Honors include the Troland Research Award from the National Academy of Sciences (2021); Kavli Fellow (2016), the Cognitive Neuroscience Society Young Investigator Award (2011), the Janet T Spence Award for early career transformative contributions (Association for Psychological Science, 2010) and the DG Marquis award for best paper published in Behavioral Neuroscience (2006). Dr Frank is a member of the NIDA Board of Scientific Counselors, and is a senior editor for *eLife*.

Benjamin Greenberg, M.D., Ph.D.

Professor, Department of Psychiatry and Human Behavior

Dr. Benjamin Greenberg's background includes a B.A. in Psychology from Amherst College; a Ph.D. in Neurosciences from the University of California, San Diego; an M.D. from the University of Miami; training in neurology at Columbia University; and a psychiatry residency at Johns Hopkins Hospital. After residency, he became chief of adult OCD research in the Laboratory of Clinical Science at the National Institute of Mental Health. Working with NIH colleagues in neurology and psychiatry, he initiated studies in OCD and related conditions using TMS in the 1990s.

In 2000, Greenberg joined the OCD Research Group at Butler Hospital and Brown Medical School (now Warren Alpert Medical School), where his main research has been developing surgical or noninvasive treatments in neuropsychiatry. He has led a multicenter trial of deep brain stimulation for intractable OCD, and related mechanistic studies as co-director of two NIMH-funded Translational Research Centers on the brain circuitry of OCD. His work in surgical therapies also includes studies of gamma knife ventral capsulotomy for OCD. He became the director of the NIH-funded COBRE Center for Neuromodulation at Butler Hospital when it was funded for a five-year term in 2019. The center supports early-career Rhode Island scientists in mechanistically focused research on neuromodulation targeting neuropsychiatric populations. The Center for Neuromodulation currently has collaborations involving Butler, Brown and the Providence VA Medical Center.

Greenberg previously joined the then-new Center for Neurorestoration and Neurotechnology at the VA Medical Center, which has a broad array of technology-focused neurorehabilitation projects for veterans. In neuropsychiatry research at the center, device-based treatment methods include TMS and transcranial electrical stimulation. Populations of interest include PTSD and depression, as well as chronic pain. The Center for Neurorestoration and Neurotechnology, together with resources at Brown and its affiliated hospitals (most notably Butler and Rhode Island hospitals), supports collaborative translational research using brain stimulation, neuroimaging, neuroanatomy, neurophysiology and cognitive neuroscience to better understand the neurocircuitry of these and other illnesses with the ultimate goals of enhancing rehabilitation and relieving suffering in individuals affected by these serious conditions. Greenberg co-directs the Center for Neurorestoration and Neurotechnology, which was renewed in 2018 for a second five-year term. The center continues to host DPHB research residents at all postgraduate levels.

Anne Hart, Ph.D.

Professor and Chair, Department of Neuroscience

Dr. Hart is an innovative researcher who uses *C. elegans* to understand neurodegenerative disease and sleep. She received her Ph.D. in Neuroscience from UCLA, where she trained with Dr. Larry Zipursky. For her postdoctoral fellowship, Dr. Hart moved to Harvard Medical School and Massachusetts General Hospital, where she worked for 3 years with Dr. Joshua Kaplan using the nematode *C. elegans* to study mechanosensation and sensory encoding. Dr. Hart joined the faculty of Harvard Medical School and established her own laboratory at Massachusetts General Hospital in 1996. She was promoted to Associate Professor in 2005. In 2009, she moved her research

group to Brown University and joined the Department of Neuroscience, where she was promoted to Professor in 2001 and became Chair in 2021.

Dr. Hart's research group was the first to develop an explicit *C. elegans* model of human neurodegenerative disease in 1999 and to establish that genetic tools available in this small invertebrate organism could be to identify pathways critical for human pathology. Dr. Hart also played a pivotal role establishing the new field of *C. elegans* sleep research. The two main objectives of the Hart lab are 1) to understand how why motor neurons die in 1) Amyotrophic Lateral Sclerosis/ Frontotemporal Dementia and 2) to understand the mechanisms underlying sleep, including the response to inadequate sleep. To address these questions, the Hart lab uses cutting genome editing techniques, classical genetic strategies, and a deeply collaborative approach. Dr. Hart's group publishes papers in leading scientific journals, including *Neuron*, *PLOS Biology*, *eLife*, *Current Biology*, and *PNAS*. Her research group has been supported the National Institutes of Health, the ALS Association, the Whitehall Foundation, and the Ellison Medical Foundation. She has received several awards and honors, including designation as a Searle Scholar and mentoring awards at both Harvard Medical School and Brown University. Dr. Hart is committed to both research and education. The number of students and fellows in her group is intentionally limited to facilitate mentoring and training.

Leigh Hochberg, M.D., Ph.D.

Professor, School of Engineering

Dr. Leigh Hochberg's neurotechnology research focuses on restoring communication, mobility and independence to people with paralysis or limb loss and on understanding cortical neuronal ensemble activities in neurologic disease. The technology he and his colleagues are developing for restoring movement will also be used for the next generation of devices to treat psychiatric disorders. Hochberg's research is funded by a variety of federal and foundation sources, including a U01 grant from the National Institute on Deafness and Other Communication Disorders, a UH2/UH3 grant from the National Institute of Neurological Disorders and Stroke and a Merit Review Award from the U.S. Department of Veterans Affairs. Hochberg has additional appointments as neurologist at Massachusetts General Hospital and senior lecturer on neurology at Harvard Medical School. He is the sponsor-investigator for the BrainGate2 clinical trial and also directs the VA Office of Rehabilitation Research and Development's Center for Neurorestoration and Neurotechnology at Providence VA Medical Center, and the Center for Neurotechnology and Neurorecovery at Massachusetts General Hospital.

Elissa Jelalian, Ph.D.

Professor, Departments of Psychiatry and Human Behavior and Pediatrics

Elissa Jelalian's research focuses on understanding and supporting weight regulation from early childhood through adolescence. Her funded research program has focused on developing and testing interventions for children and adolescents with overweight and obesity, with emphasis on understanding the contribution of peers and caregivers to pediatric weight control efforts. She has also conducted studies to examine the role of physical activity in youth at risk by virtue of health condition or psychiatric diagnosis. Jelalian's current research focuses on two distinct areas: better understanding the behavioral mechanisms of weight regulation; and dissemination of evidence-based pediatric weight control interventions to community settings. In collaboration with colleagues within the DPHB, she recently launched a study to identify maternal and infant characteristics associated with self-regulation and excess weight gain during the first three years of life. She is also funded by the Centers for Disease Control and Prevention to conduct a demonstration project that involves adapting and implementing a weight control intervention for children from low-income backgrounds, with the goal of creating an intervention package that is available for wide-scale dissemination. A long-term goal of her programmatic research is to design more effective and accessible weight control prevention and intervention strategies for children, adolescents and their families. Jelalian is also actively involved with training, currently serving as the director of the postdoctoral fellowship training program for the Clinical Psychology Training Program at Brown.

Richard Jones, Sc.D.

Professor, Departments of Psychiatry and Human Behavior and Neurology

Richard Jones is an epidemiologist with a substantive research interest in cognitive aging, dementia, delirium and aging and mental health. He conducts research in cognitive aging and cognitive or brain reserve. He has special interest in the effect of environmental and experiential influences on adult cognitive development. His main methodologic research is directed at the application of psychometric and latent variable models such as item response theory and structural equation

models in the area of mental and cognitive health and aging. Jones is also the director of Quantitative Science Program, within the departments of Psychiatry and Human Behavior, and Neurology. He serves as senior associate editor for Alzheimer's & Dementia: Diagnosis, Assessment and Disease Monitoring, biostatistics editor for Alzheimer's & Dementia, and an assistant editor for biostatistics at the Journal of the American Geriatrics Society.

Stephanie R. Jones, Ph.D.

Associate Professor, Department of Neuroscience

Stephanie R. Jones, Ph.D. is Associate Professor in Department of Neuroscience at Brown University. She received her doctorate in mathematics from Boston University, followed by training in neuroscience and human magneto- and electro-encephalography (MEG/EEG) at Massachusetts General Hospital. Her research program integrates these disciplines to develop biophysically principled computational neural models that bridge the critical gap between human MEG/EEG brain imaging signals and their underlying cellular and network level generators. She collaborates extensively with animal neurophysiologists, cognitive neuroscientists, and clinicians to develop data constrained models that are translationally relevant. Her group has recently developed their unique neural modeling into a user-friendly software tool for researchers and clinicians to interpret the circuit origin of their human MEG/EEG data: Human Neocortical Neurosolver (https://hnn.brown.edu). Dr. Jones was awarded the 2020 BIOMAG Mid-Career Award from the International Society for Biomagnetism for her pioneering research and development of this transformational open-source software tool. Dr. Jones's group has recently expanded their interdisciplinary program to the field of non-invasive brain stimulation, including simultaneous EEG and Transcranial Magnetic Stimulation (TMS). A primary goal is to translate an understanding of the network mechanism underlying non-invasively measured brain signals into brain stimulation strategies to improve disrupt brain function.

Christopher Kahler, Ph.D.

Professor and Chair, Department of Behavioral and Social Sciences, School of Public Health

Dr. Kahler's work focuses on (a) the development of novel smoking cessation treatments, (b) the treatment of combined heavy drinking and smoking, and (c) interventions for heavy alcohol use in the treatment and prevention of HIV infection. He is the Principal Investigator of Brown's P01-funded Alcohol Research Center on HIV (ARCH) from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and PI of an ARCH research component evaluating videoconferencing and text messaging to deliver behavioral interventions to reduce heavy drinking in people with HIV. He also is PI of an NIAAA-funded behavioral science resource core that supports implementation and evaluation of behavioral interventions to reduce drinking in people with HIV. He is MPI, along with Kristi Gamarel, of an NIAAA-funded project that is developing a couples-based alcohol intervention for gay and bisexual men with HIV. In addition, he is PI of an NCI-funded randomized controlled trial evaluating the efficacy of positive psychotherapy for smoking cessation enhanced with text messaging and recently completed an NIAAA-funded study that tested a digital smoking cessation program that incorporates brief alcohol intervention for heavy drinking smokers. He has published over 290 peer-review publications and is a Fellow of the American Psychological Association. He has been a mentor to numerous trainees at Brown University's Center for Alcohol & Addiction Studies.

Karla Kaun, Ph.D.

Associate Professor, Department of Neuroscience

Karla Kaun received a B.Sc. in Psychology from the University of British Columbia, and a Ph.D. in Zoology from the University of Toronto. She completed her postdoctoral work at the University of California, San Francisco, and the Howard Hughes Medical Institute's Janelia Research Campus. Her research examines the genetic, molecular and neural mechanisms underlying drug and alcohol cravings. Using the powerful molecular genetic tools available in the fruit fly, she is currently developing new methods to study reward memory, mapping circuits for memories of the aversive and appetitive properties of drugs of abuse, and investigating the molecular mechanisms within these circuits that affect neuronal plasticity and function. Her research integrates approaches from behavioral neuroscience, pharmacology, genetics, molecular biology, biochemistry, computer science and bioinformatics. Due to the interdisciplinary nature of her work, Kaun currently collaborates with faculty in the Department of Neuroscience, including Dr. Kate O'Connor-Giles and Gilad Barnea; the Department of Molecular Biology, Cell Biology and Biochemistry, including Erica Larschan; the Department of Psychiatry and Human Behavior, including John McGeary and Carolina Haass-Koffler; and the Department of Behavioral and Social Sciences, including Tara White. She is currently looking for people

interested in using a collaborative and interdisciplinary approach to highlight the clinical relevance of the foundational research performed in her lab (kaunlab.com).

Gabor Keitner, M.D.

Professor, Department of Psychiatry and Human Behavior

Dr. Keitner is the Director of the Family Therapy/ Research Program at Rhode Island Hospital. He is Professor of Psychiatry in the Department of Psychiatry, Brown University School of Medicine Providence, Rhode Island. He worked at Butler Hospital in Providence, Rhode Island from 1980 to 1996 as Director of the Mood Disorders Program and Medical Director for Inpatient Services and was Associate Psychiatrist-in-Chief at Rhode Island Hospital from 1996-2017. Dr. Keitner's current research interest is 1. the development of the Brief Multidimensional Outcome Scale (BMAS) that can be used with any person with varied problems in a wide range of clinical settings to quickly assess global distress, functioning, perceived social support, perceived quality of life, and purpose in life to assess current status and change over time, 2.The McMaster Treatment Outcome Study designed to gather data about the effectiveness of family therapy using the McMaster approach to evaluate and treat families It will collect effectiveness data on a variety of clinical outcomes from an outpatient clinic in which families present with a wide variety of psychiatric diagnoses and presenting problems, 3) evaluating the usefulness of meeting with the families of patients participating in a Partial Hospital Program. Dr. Keitner has published over 120 articles in peer reviewed journals. He is co-author of three books and 40 book chapters on mood disorders, family functioning and family therapy. His clinical work is with severely ill inpatients. He treats patients on inpatient units and in the Partial Hospital. He is a clinical supervisor for inpatient and outpatient treatment and also supervises residents in psychopharmacology, psychotherapy and family therapy.

Daphne Koinis Mitchell, Ph.D.

Professor (Research), Departments of Pediatrics, and Psychiatry and Human Behavior

Daphne Koinis Mitchell is a clinical psychologist at Rhode Island Hospital and has been a principal investigator and co-investigator on National Institutes of Health-funded studies focusing on pediatric health disparities for 20 years. She has particular expertise in multilevel factors contributing to asthma and sleep outcomes in urban children, and in implementing home- and school-based interventions to improve children's asthma control. She is also the director of the Community Asthma Program at Rhode Island Hospital, which provides asthma education and clinical services to families at Hasbro Children's Hospital and throughout Rhode Island schools. She is the principal investigator on two recently completed R01 applications that involve a longitudinal examination of asthma, sleep and academic performance (HD057220) and asthma, sleep, physical activity and cultural/ contextual factors (HL116254) in urban children. Her recently funded research expands this work to focus on biological processes (e.g., immune-based biomarkers) that may predict poorer asthma and disrupted sleep in urban children using experimental approaches. Her recent study results have been translated to culturally tailored, school-based interventions that are addressing asthma and sleep outcomes in the greater Providence area and in San Juan, Puerto Rico — two urban areas with high asthma prevalence. Koinis Mitchell is also extremely invested in mentoring trainees and faculty at all levels who are interested in research in pediatric health disparities. This is best exemplified in her recently funded K24 application focused on mentoring junior scientists, particularly those from underrepresented backgrounds, who are interested in patient-oriented research. She was recently appointed the director of faculty development and mentoring in the Department of Pediatrics at Hasbro. In this position, she will continue to advance the research programs and scholarship of junior faculty in the department, as well as bridge interdisciplinary, collaborative research between pediatrics, psychiatry and departments throughout the hospital and the main campus. She served as the co-chair of the DPHB Diversity Committee and continues to serve as a senior member on this committee. She consults on the development of faculty cultural competence programs for clinical departments at Rhode Island Hospital and at The Warren Alpert Medical School. She continues to serve as a reviewer on NIH study sections throughout each year and is involved in several editorial boards of high-impact journals focusing on pediatric health issues.

W. Curt LaFrance Jr., M.D.

Professor, Departments of Psychiatry and Human Behavior and Neurology

W. Curt LaFrance Jr. is director of neuropsychiatry and behavioral neurology at Rhode Island Hospital and professor of psychiatry and neurology at Warren Alpert Medical School. He is staff physician at the Providence Veterans Affairs Medical Center and clinical lead for the National TeleMental Health Center tele-seizures clinic. He studied at Wake Forest University (B.A. in Psychology), Medical College of Georgia (M.D.) and Brown University (MPH). He trained in Brown's combined neurology/psychiatry residency and is double

boarded. He has served on the Epilepsy Foundation Professional Advisory Board and has chaired task forces with the American Epilepsy Society and International League Against Epilepsy. He has grants from EF, AES, the Matthew Siravo Memorial Foundation, Veterans Affairs and the Department of Defense, and a National Institute of Neurological Disorders and Stroke K23 Award. He directed the combined residency at Brown from 2012-19 and has served as research advisor or mentor to Brown undergraduates in neurobiology and psychology; residents in psychiatry, neurology and neuropsychiatry; and faculty. He trains clinicians around the country using distance supervision in treatment delivery for seizures and somatoform disorders. His research focuses on developing new biomarkers and treatments for neuropsychiatric aspects of epilepsy, conversion disorders and traumatic brain injury. His studies are published in neurology and psychiatry journals. He serves on journal editorial boards and is co-editor of the fourth edition of "Nonepileptic Seizures" and co-author of "Taking Control of Your Seizures: Workbook" and "Taking Control of Your Seizures: Therapist Guide." A goal of his work at Brown, nationally and internationally, has been to bridge neurology and psychiatry clinical practice and scientific research and to dissolve arbitrary boundaries between the two fields.

Barry Lester, Ph.D.

Professor, Department of Psychiatry and Human Behavior

Barry Lester is professor of psychiatry and human behavior, professor of pediatrics and founding director of the Brown Center for the Study of Children at Risk, at Warren Alpert Medical School and Women and Infants Hospital. The center has two arms: the research arm, the Center for the Study of Children at Risk; and the Center for Children and Families, which provides clinical services. Research has shown that biological insults can lead to poor developmental outcome in children at risk but that many of these effects can be attenuated or exacerbated by social and environmental factors. Current research at the center includes: developmental outcomes of children with prenatal drug (e.g., cocaine, methamphetamine) exposure; maternal depression during pregnancy; the effects of psychotropic medications on fetus and newborn; fetal behavioral assessment; early detection of infants at risk for autism and development in children with autism; neurobehavioral assessment of preterm and other infants at risk and prediction of later impairment; efficacy of the single-family room model of care in the neonatal intensive care unit (NICU); and treatment of withdrawal in infants of mothers in methadone maintenance care during pregnancy. The study of the interplay between biological and social factors provides an understanding of the mechanisms that determine developmental outcome. One way in which the environment (prenatal or postnatal) alters behavior is through epigenetic mechanisms and this (including translational research) has become a major focus of the center's current research. Epigenetic work includes behavioral development of typically and atypically (e.g., autism, preterm infants, children with prenatal drug exposure) developing populations, prenatal (e.g., maternal depression) and postnatal (e.g., parenting, environmental adversity) factors that could result in epigenetic alterations in the child that affect later development. The study of children at risk enables researchers to understand the unfolding of developmental processes that can lead to the development of preventive interventions to minimize or eradicate the forces that drive adverse outcome in children.

Clinical services at the center include perinatal, postpartum and infancy, early childhood and autism spectrum disorders. Inpatient services at Women and Infants Hospital include neurobehavioral assessment of preterm infants in the NICU as part of standard care, occupational therapy and family consultation. Lester's research has been continuously funded by the National Institutes of Health in the 30 years he has been at Brown. He has been heavily involved in the NIH peer review process, having served on numerous NIH study sections, the NIH National Advisory Council on Drug Abuse, the council's Steering Committee, the NIH Director's Pioneer Award Program and the Center for Scientific Review. He is past president of the World Association for Infant Mental Health and the author of more than 250 peer-reviewed publications and 18 edited volumes.

Diane Lipscombe, Ph.D.

Thomas J. Watson, Sr. Professor of Science
Reliance Dhirubhai Ambani Director
Robert J. and Nancy D. Carney Institute for Brain Science
Department of Neuroscience

Dr. Lipscombe studies ion channels, these proteins underlie all electrical signaling in cells. The lab is particularly focused on voltage-gated calcium ion channels, in neuronal function in normal and disease states, including psychiatric disease and chronic pain.

They combine genetic, molecular, electrophysiological, and behavioral approaches in their studies and have elucidated cell-specific mechanisms that determine ion channel composition, function and pharmacology. Through several collaborative projects, the Lipscombe lab also seeks to define defects in early stage animal models of ALS and they are developing new molecular tools to regulate neuronal activity. Dr. Lipscombe has a number of mentoring and teaching awards and several predoctoral and postdoctoral associates have received individual external funding for their projects. She is a past president of the Society for Neuroscience and a member of the American Academy of Arts and Sciences. Dr. Lipscombe's research is supported by funds from the NIH and NSF.

Judy Liu, M.D., Ph.D.

Associate Professor, Departments of Neurology, and Molecular Biology, Cell Biology and Biochemistry

Dr. Judy Liu is a scientist studying neurological disorders as well as a practicing neurologist. Her research is funded by a variety of sources, including an R56/R01 grant from the National Institute of Neurological Disorders/ National Institutes of Health and the private foundation Citizens United for Research in Epilepsy (CURE). The work in the Liu lab focuses on mechanisms governing the development of the cerebral cortex and the consequences when normal development goes awry. This work has clinical relevance to a group of structural disorders of the cortex called cortical malformations, a term encompassing rare monogenic, inherited disorders, as well as more common disorders without a clear etiology. Malformations result from disruptions in cortical development. The Liu lab works on the animal model of one of the common causes of human lissencephaly, a mouse with a mutation in the gene, doublecortin. Liu identified a novel role of doublecortin, in the regulation of microtubule-based molecular motor, and has continued this work using live-imaging techniques to study motor-related biology in developing neurons. Her lab has used expertise gained by working on single-gene disorders to study common diseases. Her group works on epilepsy that arises from common non-inherited cortical malformations. These malformations, called focal cortical dysplasias, affect a discreet part of the brain; however, they give rise to severe, medically refractory epilepsy. Patients with these dysplasias often have them removed surgically to treat the seizures. By studying the resected brain tissue, the Liu lab identified the circadian molecular clock as an important factor in epilepsy. By using an animal model, they determined that the abnormal function of the circadian molecular clock in the seizure focus leads to a decreased seizure threshold during sleep. This phenomenon may cause the sleep-associated epilepsy commonly found in these patients.

John McGeary, Ph.D.

Associate Professor, Department of Psychiatry and Human Behavior

John McGeary is an associate professor of psychiatry and human behavior. His research focuses on the intersection of neuroscience, genetics and clinical psychology to inform questions of etiology and treatment. He directs a molecular lab located at the Providence Veterans Affairs Medical Center, where he is also a staff psychologist treating veterans with substance use disorders. He actively collaborates on more than 65 research projects with investigators at Brown, affiliated hospitals and collaborating institutions and consortia (e.g., the Million Veteran Program) around the country. McGeary's research interests include: genetic and epigenetic variation associated with psychiatric and behavioral phenotypes (and recently with phenotypes of interest to researchers in dermatology, surgery, infectious disease, neuroscience, computer science, gerontology and public health); 2) the role of sleep in suicide, addiction and other psychopathology; and the use of neurostimulation for treatment of addiction. Particular strengths in his research portfolio include studies of addiction phenotypes, anxiety phenotypes, mood phenotypes, nonpsychiatric behavioral phenotypes (e.g., sleep, exercise and obesity) and pharmacogenetics (the use of genetic profiles to predict medication efficacy and side effects). With a focus on team science, McGeary is an active member on 18 currently funded grants (and ongoing analyses from 68 completed grants) and is an author on 147 published papers. He is grateful for the opportunity to work with such a wide variety of experts and seeks to leverage existing datasets with new data collection and new collaborators to address emerging scientific questions.

Elizabeth McQuaid, Ph.D.

Professor and Vice Chair, Departments of Psychiatry and Human Behavior and Pediatrics

Elizabeth McQuaid graduated summa cum laude from Yale University with honors in psychology and completed her graduate work in clinical psychology at the University of Denver. She completed her clinical psychology internship at the Children's National Hospital in Washington, D.C., before coming to Brown for a postdoctoral fellowship in pediatric psychology. She has been a member of the DPHB faculty since

1997. McQuaid's current research interests focus on psychosocial aspects of pediatric asthma and food allergies. Prior grants assessed involved designing and implementing interventions to promote adherence to long-term controller medications in pediatric asthma, through funding from the National Institute of Child Health and Human Development, the National Institute of Nursing Research and the National Heart, Lung, and Blood Institute and a Career Investigator Award from the American Lung Association. McQuaid completed a Mid-Career Investigator Award (K24) from NICHD to promote her mentorship of junior faculty in patient-oriented research. Currently, she directs several projects that assess psychological and family characteristics that influence asthma management and outcomes in pediatric asthma, and novel computer-based interventions to promote effective food allergy management among children. She is a key member of multiple research teams investigating innovative approaches to enhancing disease management in families of children with chronic illness, and is one of the principal investigators of the Hassenfeld Child Health Innovation Institute asthma initiative. Most recently, she was awarded funding for the Rhode Island Asthma Integrated Response Program (RI-AIR, U01 HL138677), along with multiple principal investigator Daphne Koinis Mitchell. RI-AIR implements a coordinated system of screening, referral and evidence-based self-management interventions for children with asthma in areas of greater Providence with high health care utilization.

McQuaid has an ongoing interest in investigating health disparities, including cultural issues in disease management. She served on the Brown Committee for Minority Faculty Recruitment and Retention. McQuaid has served as associate editor of the Journal of Pediatric Psychology and is currently associate editor for Clinical Practice in Pediatric Psychology. McQuaid is active in both national and international research forums, has been appointed a fellow in Division 54 (pediatric psychology) of the American Psychological Association, and recently received the Michael C. Roberts Award for Outstanding Mentorship from Division 54. She is board-certified in clinical child and adolescent psychology. McQuaid is director of the Clinical Psychology Internship Training Program at Brown, director of child psychology at Hasbro Children's Hospital, director of the Division of Clinical Psychology at Brown and DPHB vice chair.

Ivan W. Miller, Ph.D.

Professor, Department of Psychiatry and Human Behavior

Dr. Miller is a clinical psychologist and researcher. He is a Professor in the Department of Psychiatry and Human Behavior at The Warren Alpert Medical School of Brown University where he directs the Brown Consortium for Research Innovation in Suicide Prevention (CRISP). Dr. Miller is also the Director of the Psychosocial Research Program at Butler Hospital and a Research Psychologist at the Providence VA Medical Center. Dr. Miller has been funded continuously by the National Institutes of Health for over 40 years for his work on developing and evaluating treatments for individuals with severe mood disorders and suicide risk during care transitions. Dr. Miller has published over 300 articles, chapters and books focused on suicide risk and prevention, clinical trials for severe mood disorders and the role of the family in psychiatric disorders. Dr. Miller was one of the Principal Investigators of the multi-site ED-SAFE study investigating the efficacy of screening and brief interventions in reducing suicide among emergency department patients – one of the largest studies of suicide prevention conducted in the US. For this work, he was recently awarded the Minerva award for "Best Clinically Useful Original Research Paper in Mental Health." Dr. Miller is a member of the Scientific Review Board of the American Foundation for Suicide Prevention, and has consulted regularly with National Institute of Mental Health, Substance Abuse and Mental Health Administration and The Joint Commission on issues of screening and prevention of suicidal behavior.

Peter Monti, Ph.D.

Professor, Department of Behavioral and Social Sciences, School of Public Health

Peter Monti is the Donald G. Millar Distinguished Professor of Alcohol and Addiction Studies and director of the Center for Alcohol and Addiction Studies at Brown. He is also a senior career research scientist funded through a K05 from the National Institutes of Health. A recognized leader in understanding the bio-behavioral mechanisms that underlie addictive behavior as well as its prevention and treatment, Monti has published approximately 350 papers, monographs and chapters. These are primarily focused in the areas of assessment, mechanisms, early intervention and treatment. During this past year he has lectured both nationally and internationally. He recently completed the second edition of "Adolescents, Alcohol, and Substance Abuse: Reaching

Teens Through Brief Interventions." Monti's research interests include adolescent substance abuse prevention and treatment; coping skills and relapse prevention; combined cognitive behavioral and pharmacological interventions; and alcohol and HIV/sexual risk. His contributions to the addictions field have been both theoretical and applied. Monti has trained hundreds of students, primarily psychology interns and postdoctoral fellows. He is presently principal investigator on two major research grants: a trauma unit assessment and brief intervention project that is focused on both alcohol and sex risk behaviors and a P01 that is focused on alcohol and HIV.

Monti regularly serves on numerous scientific review committees, including those for the National Institute on Alcohol Abuse and Alcoholism and the National Institute on Drug Abuse and the Veterans Affairs Merit Review Board for Alcohol and Drug Dependence. He was appointed chair of NIAAA's Portfolio Review Committee — a committee charged with helping to chart the course for the NIAAA for the next five- to 10-year period — and of the NIAAA's Extramural Advisory Board, and he recently served on the NIH National Advisory Council on Alcohol Abuse and Alcoholism. He has sat on numerous editorial boards of scientific journals and was recently appointed to the boards of the Journal of Child and Adolescent Substance Abuse and of Psychology of Addictive Behaviors. Monti currently holds fellowship status in Divisions 12, 18 and 50 of the American Psychological Association and is a fellow of the American Psychological Society. Monti has served on the board of trustees of Stonehill College and the board of directors of the Research Society on Alcoholism and currently sits on the board of directors of S.M.A.R.T. Recovery International, the advisory board of the Louisiana State University Alcohol Research Center, and the advisory board of the University of Florida Alcohol Research Center. He has received the Distinguished Researcher Award from Section VIII of APA's Division 12. He has also been presented with the Musiker-Merenda Award by the Rhode Island Psychological Association for his "outstanding contributions to mental health and psychology" and the Association of Medical School Psychologists Distinguished Researcher Award. In 2018 he was the recipient of NIH's Mendelson Award, for his longstanding contributions to the understanding and treatment of substance use disorders. Monti was the recipient of the Distinguished Researcher Award from the Research Society on Alcoholism (RSA) in 2006. In 2018 he was the recipient of NIH's Jack Mendelson Award, for his longstanding contributions to the understanding and treatment of substance use disorders. He is a past president of the RSA.

Christopher Moore, Ph.D.

Professor, Department of Neuroscience

Christopher Moore studies mechanisms underlying brain dynamics and their meaning for behavior. His lab takes a systems-level approach, seeking to understand how multiple cell types and brain areas interact. A key focus is on understanding how neocortical transformations can optimize sensory perception (Moore et al., 1999 Trends in Neurosciences). Recent work includes the finding that gamma oscillations can increase perceptual success (Siegle et al., 2014 Nature Neuroscience; Shin and Moore, 2019 Neuron), and identification of discrete ensembles whose rate and correlations predict perceptual success (Deister et al., in revision) and novelty (Voigts et al., in revision). His study of interactions that create behavior includes non-neural systems. Most notably, he has proposed a framework for vascular contributions to information processing ("The hemo-neural hypothesis"; Moore and Cao, 2008) and developed tools for selectively regulating vascular motion and the blood-brain barrier. He has more recently begun to investigate a similar potential role of the choroid plexus (U01 Collaborative Award with Beth Israel Deaconess Medical Center). To pursue these questions, the Moore lab has developed several novel techniques for studying dynamics in behaving mice. Developments include a light (< 2g) microdrive for high channel count recordings in mice (Voigts et al., 2013), and a low-cost, high-quality open source electrophysiology system (by J. Voigts and J. Siegle; open-ephys.org). A further innovation was the co-development of opto-fMRI (Desai et al., 2011; Kahn et al., 2011; Kahn et al., 2013). They are now developing tools for controlling circuits using bioluminescent light (BL) to drive optogenetics and using BL to track calcium activity (Gomez-Ramirez et al., in press). As part of this effort, he serves as principal investigator of a NeuroNex collaborative agreement with the National Science Foundation to invent and openly disseminate these methods (bioluminescencehub.org). Moore is also deeply committed to improving graduate education. One example is co-creating and running the Brown NeuroPracticum, an eight-day intensive experience at the Marine Biological Laboratory. Another initiative is a new program in Interactionist Neuroscience (Badre, Frank and Moore, 2015), emphasizing connection across levels, between human and animal studies, and the key role of computation in bridging these gaps.

Eric Morrow, M.D., Ph.D.

Mencoff Family Professor of Biology,
Professor of Neuroscience
Associate Professor, Department of Psychiatry and Human Behavior

Eric Morrow is a molecular neuroscientist and psychiatrist with extensive experience in neurogenetic disorders. He received his Ph.D. in Genetics and Neurodevelopment at Harvard University, and his M.D. from the Health Science Training Program at MIT and Harvard Medical School. He is currently the Mencoff Family Associate Professor of Biology at Brown. Morrow's research focus is on normal mechanisms that regulate postnatal human brain development and on functional study of genetic mutations that lead to neuropsychiatric disorders, including autism, intellectual disabilities and neurodegenerative disorders. Research from the Morrow laboratory has been published in broadly read clinical and basic science journals, including Neuron, PNAS, Nature Medicine and JAMA Psychiatry. Morrow is a recipient of the Psychiatry Research Mentor Award at Brown, as well as other awards, including the Presidential Early Career Award for Scientist and Engineers, and the A.E. Bennett Research Award from the Society of Biological Psychiatry. He is director of the Center for Translational Neuroscience, which bridges between the Carney Institute and the Brown Institute for Translational Science. Reflective of the multidisciplinary approach in the center, the Morrow laboratory is highly collaborative with other allied basic and clinical departments, particularly with molecular cell biology and neurology. Research opportunities for trainees might center on patient-oriented genetic research, including longitudinal studies of neurogenetic disorders. Alternatively, projects might involve more basic research focusing on cell biology and brain development in rodent or human stem cell models of neurogenetic disease.

Matthew Nassar, Ph.D.

Assistant Professor, Department of Neuroscience

Matthew Nassar has a B.A. in Neuroscience from Colgate University, received a Ph.D. in Neuroscience from the University of Pennsylvania, and completed postdoctoral training at Brown University before becoming an assistant professor in the Department of Neuroscience in January 2019. His research leverages computational modeling along with noninvasive measurements of neural function to examine how the brain processes information to afford complex and adaptive behaviors. For example, how does the brain generate sensible behaviors even in a completely novel environment? Conversely, how does it rapidly adjust to an abrupt change in a familiar one? Within his research program a primary focus is on understanding the mechanisms that give rise to behavioral variability across individuals and across populations. Nassar is the recipient of a Pathway to Independence Award from the National Institute on Aging, which funds ongoing research into the neural and computational mechanisms of cognitive aging.

Nicole Nugent, Ph.D.

Associate Professor, Departments of Psychiatry and Human Behavior, Pediatrics, and Emergency Medicine

Nicole Nugent is an associate professor in the departments of Pediatrics, and Psychiatry and Human Behavior at The Warren Alpert Medical School and is a child clinical psychologist at Bradley Hospital and Hasbro Children's Hospital Research Center. Nugent's lab conducts programmatic research aimed at characterization of neurobiological and psychosocial influences during high-risk periods of stress and transition, toward the goal of developing informed and novel secondary and tertiary interventions. Nugent's early work focused on the interplay of biomarkers and social context in the acute aftermath of trauma as related to development of stress-sensitive disorders such as PTSD and depression. This early work was expanded to incorporate training and research in psychiatric genomics and advanced analytic models, which has permitted Nugent to continue to develop an integrated program of research aimed at rich characterization of clinically significant and dynamical processes that unfold as at-risk adolescents navigate periods of significant stress. Nugent's lab is currently implementing National Institutes of Health-funded investigations that examine adolescent in vivo emotion reactivity as related to social context in the real world during times of high-risk transition. Specifically, adolescents who have experienced a trauma and are transitioning from the emergency department or hospital and, in a separate study, from inpatient psychiatric hospitalization for suicidal thoughts and behaviors to their home environments. Research methods implemented within the lab include genomics, psychophysiology, attention bias and numerous approaches to ecological assessments, including the examination of data from ecological momentary assessment, electronically activated recorder, online social networking, and health tracker sensor data. Nugent directs Psychological Services for the Pediatric

Refugee Clinic at Hasbro Children's Hospital. Nugent is active in mentorship across a range of training levels and disciplines and serves as advisor to the Brown Refugee Youth Tutoring and Enrichment Program as well as provides mentorship to postdoctoral fellows through the Child Mental Health T32 and investigator-funded fellowships.

Arto Nurmikko, Ph.D.

Professor, Departments of Engineering and Physics

Arto Nurmikko, a native of Finland, is the L. Herbert Ballou University Professor of Engineering and a professor of physics at Brown. He received his degrees from University of California, Berkeley, with postdoctoral stays at MIT and Hebrew University. Nurmikko conducts research in neuroengineering, brain sciences, nanophotonics and microelectronics, especially for the translation of device research to new technologies in biomedical, life science and photonics applications. His current interests include development of implantable brain communication interfaces, microscale neural circuit sensors, compact semiconductor lasers and high-resolution acoustic microscopy. Nurmikko has published in several fields (about 400 articles), led many multi-institutional research teams, advised federal funding agencies and lectured worldwide. Nurmikko is a fellow of the American Physical Society, the Institute of Electrical and Electronics Engineers and The Optical Society. He has been the recipient of a Guggenheim Fellowship and was elected to the American Academy of Arts and Sciences. He is a member of the Finnish Academy of Science and Letters. He was the co-recipient of the Moshe Mirilashvili Memorial Fund B.R.A.I.N. Prize in 2013.

Hwamee Oh, Ph.D.

Assistant Professor, Department of Psychiatry and Human Behavior

Dr. Oh received her Ph.D. in Biopsychology (with concentration in Human Cognitive Neuroscience) at the State University of New York at Stony Brook. During her postdoctoral training at the Helen Wills Neuroscience Institute at UC-Berkeley, she studied cognitive, structural, and functional alterations in preclinical older adults with β-amyloid deposition, a pathological hallmark of Alzheimer's disease, using amyloid PET, structural MRI, fMRI, and neuropsychological tests. Dr. Oh joined the faculty in the Department of Psychiatry and Human Behavior in 2019. Her research, under the support of numerous grants from the National Institute on Aging, focuses on cognitive and neural changes associated with normal aging and Alzheimer's disease pathology as well as individual difference factors contributing to the risk and resilience to brain aging and Alzheimer's disease. Dr. Oh and her team integrate multimodality neuroimaging methods, including PET and structural/functional MRI, and experimental/neuropsychological assessments, with an overarching goal to develop early behavioral and neural markers of Alzheimer's disease while elucidating the pathophysiological pathways of Alzheimer's disease. Dr. Oh's research was published in prestigious journals such as *Nature Neuroscience*, *The Journal of Neuroscience*, *Brain*, *Neurology*, and *Cerebral Cortex*, and was recognized by many awards including the de Leon Prize in Neuroimaging: New Investigator Award from the Alzheimer's Association. She is also Director of Imaging Research in the Memory and Aging Program at Butler Hospital and holds a secondary appointment as Assistant Professor of Cognitive, Linguistic, and Psychological Sciences, and faculty affiliate at the Carney Institute for Brain Science.

Stephanie Parade, Ph.D.

Associate Professor, Department of Psychiatry and Human Behavior

Dr. Parade is **Associate Professor of Psychiatry and Human Behavior, Associate Director of the Initiative on Stress, Trauma, and Resilience, and Director of Early Childhood Research at E. P. Bradley Hospital**. Dr. Parade received her Ph.D. in Human Development and Family Studies from the University of North Carolina at Greensboro and completed a T32 postdoctoral fellowship in child mental health at the Bradley/Hasbro Children's Research Center. Her research is focused on child development in contexts of significant risk with emphasis on childhood maltreatment and family violence. Nearly all her research involves community partners and state agencies, and several of her projects are focused on community-based approaches to prevent child maltreatment and promote maternal and child health. Dr. Parade's research is supported by numerous grants from the *Eunice Kennedy Shriver* National Institute of Child Health and Human Development, Centers for Disease Control and Prevention, and Health Resources and Services Administration. In addition to grant funding, Dr. Parade has published in top tier journals in her field, is an editorial board member of *Family Relations*, and is a chartered member of the NIH Psychosocial Development, Risk, and Prevention Study Section. Dr. Parade has served

as a research mentor for numerous trainees through the Brown DPHB Clinical Psychology Internship program and the Postdoctoral Fellowship program, including the T32 Postdoctoral Research Training Programs in Childhood Stress, Trauma, and Resilience, and Child Mental Health.

Noah Philip, M.D.

Associate Professor, Department of Psychiatry and Human Behavior

Dr. Philip graduated from the Brown General Psychiatry Residency in 2009. His research interests lie in the understanding and development of novel treatments for trauma and mood disorders. To this end, during residency he authored several papers to start his research career, including prospective study of novel augmentation agents for treatment-resistant depression. After residency he completed a NIMH T32 and Neuromodulation Fellowships at Butler Hospital. In 2012, he received a VA-Career Development Award (CDA2) that used multimodal neuroimaging methods to understand neural network dysfunction in PTSD. After his mentored award, he has been awarded independent grants from the VA, NIH and DoD with a programmatic focus on mechanistic studies of non-invasive brain stimulation. His most recent efforts include a NIMH first-in-human study to develop low intensity focused ultrasound for depression and anxiety; other active research includes understanding neural mechanisms underlying transcranial magnetic stimulation, use of transcranial direct current stimulation plus virtual reality for PTSD, and theta burst TMS plus brief cognitive therapy for suicide reduction. Administratively, he directs Mental Health Research at the Center for Neurorestoration and Neurotechnology at the Providence VA, and is a Neuroimaging and Neuromodulation core co-director at the Butler COBRE Center for Neuromodulation. He Is active in many national organizations, including Society of Biological Psychiatry, American College of Neuropsychopharmacology, Career Development Institute for Psychiatry, and Psychiatric Research Society. Clinically, Dr. Philip directs the Providence VA neuromodulation clinic, where residents rotate to learn how to deliver TMS therapy and can learn about ongoing research protocols. He has been involved in the resident research training program since its inception. He is dedicated to diversity, equity and inclusion in psychiatry, and helping research residents launch successful and sustainable academic careers, either by working with him or through efforts more broadly.

Lawrence Price, M.D.

Professor, Department of Psychiatry and Human Behavior

Dr. Price attended the University of Michigan, where he received a B.S. with highest honors in psychology and high distinction in 1974, followed by an M.D. in 1978. After an internship in internal medicine at Norwalk Hospital in Norwalk, Connecticut, he completed residency and fellowship training in psychiatry at Yale University. From 1982 until 1996, he was on the faculty in the Department of Psychiatry at Yale University, serving as Associate Professor and Director of the Clinical Neuroscience Research Unit at the Connecticut Mental Health Center in New Haven, Connecticut. Since 1996, he has been Professor of Psychiatry and Human Behavior at Brown University. From 1996 until 2012, he was Clinical Director, Director of Research, and Chair of the Institutional Review Board at Butler Hospital in Providence, Rhode Island, subsequently serving as Chief Medical Officer from 2012 until 2014. From 2014 until 2017, he was Butler's President and Chief Operating Officer. In 2017, he was appointed Adjunct Ryan Research Professor of Neuroscience in the George & Ann Ryan Institute for Neuroscience of the University of Rhode Island. Dr. Price's primary research interests have involved the phenomenology, clinical psychopharmacology, neuropharmacology, and neurobiology of mood, anxiety, and addictive disorders. He has received funding on numerous NIH and industry grants, and has served continuously on an NIH study section since 2008. He has published nearly 500 scientific papers, chapters, and letters, and was identified by the Institute for Scientific Information as one of the top ten authors of high-impact papers in psychiatry from 1990 to 1999. A Distinguished Fellow of the American Psychiatric Association and a Life Fellow of the American College of Neuropsychopharmacology, he is one of the principal developers of the Yale-Brown Obsessive-Compulsive Scale (Y-BOCS), the standard assessment tool for OCD. In addition to his research activities, Dr. Price has received numerous awards for his teaching, mentoring, and clinical work. He is Editor of *The Brown University Psychopharmacology Update* and Editor (with I. Stolerman) of the *Encyclopedia of Psychopharmacology, Second Edition*. Dr. Price's detailed bibliography is available at:

https://www.ncbi.nlm.nih.gov/myncbi/1pQTpifE-3zks/bibliography/public/

Steven A. Rasmussen, M.D.

Professor and Chair, Department of Psychiatry and Human Behavior

Steven A. Rasmussen, M.D. is the Chair and Mary Zucker Professor in the Department of Psychiatry & Human Behavior at the Alpert Medical School. Since 1983 his research has focused on increasing our understanding of the biologic basis and treatment of obsessive-compulsive disorder (OCD). Currently, funded projects include a study of harm avoidance and incompleteness in OC spectrum and anxiety disorders, developing neurosurgical and noninvasive neuromodulatory treatments for OCD, and using anterior capsular DBS and lesions to understand the role of frontostriatal circuity in the pathogenesis of OCD. Dr. Rasmussen has received the Lifetime Achievement Award from the International OCD Foundation for his work as well as the Pioneer in Radiosurgery Award from the Leksell Society. The author of over 180 peer reviewed publications, he has been continuously funded by the NIMH for the past twenty years for his work in the treatment of obsessive-compulsive disorder and neuromodulatory treatment for psychiatric disorders.

Stephen Salloway, M.D.

Professor, Departments of Psychiatry and Human Behavior and Neurology

Dr. Stephen Salloway is chief of neurology and director of the Memory and Aging Program at Butler Hospital and the Martin M. Zucker Professor of Psychiatry and Human Behavior, and Professor of Neurology at The Warren Alpert Medical School of Brown University. He received his M.D. from Stanford Medical School and completed residencies in neurology and psychiatry at Yale University. Salloway is an internationally recognized leader in clinical trials for the prevention and treatment of Alzheimer's disease. He has served as lead or contributing author for several important publications in the treatment of Alzheimer's disease, including the report of the phase 3 trial of bapineuzumab in the New England Journal of Medicine, the trial of aducanumab in Nature, and the pivotal trial of flutemetemol, leading to U.S. Food and Drug Administration approval. Under his direction, the Butler Hospital Memory and Aging Program has conducted more than 100 clinical trials developing new diagnostic tests and treatments for memory loss and his program is currently conducting five prevention trials for individuals at high risk for Alzheimer's disease. He has published more than 300 scientific articles and abstracts and edited three books. He lectures widely about early diagnosis and treatment of Alzheimer's disease. The Butler Memory and Aging Program offers a rich multidisciplinary training environment. Residents and other trainees play an integral role in clinical research and many trainees have won young investigator awards and grants, have presented their work at national and international meetings and published their results in peer-reviewed journals.

Jerome Sanes, Ph.D.

Professor, Department of Neuroscience

Jerome Sanes investigates brain processes underlying mechanisms of volition and motor learning. He has expertise in MRI analysis and functional connectivity, which is relevant to numerous psychiatric disorders. Sanes directs the COBRE Center for Central Nervous System Function and the Brown MRI Research Facility. In addition to mentoring as principal investigator for the COBRE and neuroscience students, Sanes mentors many others in his role as MRI Research Facility director, to which R25 residents will have access.

Thomas Serre, Ph.D.

Associate Professor, Department of Cognitive, Linguistic and Psychological Sciences

Thomas Serre's research focuses on both the development of large-scale computational models of the visual cortex and the application of computer vision and machine learning methods toward the analysis of neuroscience data. His work focusing on the role of feedforward vs. feedback mechanisms in vision is relevant to psychiatric disorders such as autism, schizophrenia or Alzheimer's. In addition, he is also principal investigator or co-investigator on several grants aimed at the development of novel artificial intelligence methods for the analysis of image and video data that are of high significance for behavioral phenotyping and the study of psychiatric disorders more broadly. At Brown, in collaboration with Kevin Bath, he has designed the first of its kind fully automated high-throughput rodent behavioral testing facility to generate and characterize preclinical models of disorders, test novel pharmacological and genetic rescue strategies in rodent models, and conduct basic research. In collaboration with Dima Amso, he has developed the Smart Playroom, which uses a suite of computer vision algorithms to fully automate children's behavioral analysis collected through an array of sensors (depth and video cameras, portable eye tracking, skin and heart rate sensors, etc.). In collaboration with Dr. Sydney Cash at Massachusetts General Hospital, he

has developed a system for automatically assessing the behavior of epileptic patients implanted with intracranial electrodes toward understanding the neural basis of volition. Serre has also developed a variety of deep-learning based computer vision algorithms with wide-ranging applications from paleobotany to pathology. In collaboration with David Borton in the Department of Engineering and a team of Rhode Island Hospital clinicians, he is laying the groundwork for the development of machine-learning methods toward the development of neural prosthetics. Serre is faculty director of the Center for Computation and Visualization and associate director of the Center for Computational Brain Science. He holds an International Chair in AI at the Artificial and Natural Intelligence Toulouse Institute (ANITI) in France. He has mentored researchers at the undergraduate, graduate, and postdoctoral level. He is a recipient of a National Science Foundation Early Career Award and Defense Advanced Research Projects Agency Young Faculty Award. His research has been funded by the National Institutes of Health, the National Science Foundation, the Office of Naval Research, DARPA and the Human Frontier Science Program.

M. Tracie Shea, Ph.D.

Professor, Department of Psychiatry and Human Behavior

Tracie Shea, Ph.D. has conducted research on post-traumatic stress disorder, personality disorders, and depression. Her recent research on PTSD and other trauma related psychopathology includes a randomized clinical trial testing the efficacy of a cognitive behavioral treatment for anger problems in Veterans who have deployed to Iraq or Afghanistan, and another RCT examining the comparative effectiveness of Interpersonal Therapy and Prolonged Exposure for the treatment of PTSD in Veterans of all eras. She is a co-investigator on two current multi-site RCTs, overseeing training and consultation for present-centered and supportive care therapy active control conditions. Prior research on psychosocial treatments included being a training site principal investigator for two large multi-site clinical trials funded by the VA Cooperative Studies Program to examine the effectiveness of exposure-based treatments compared to present-centered therapy for the treatment of PTSD in Veterans, a NIMH study of the efficacy of Interpersonal Therapy and Cognitive Behavioral Therapy for treatment of depression, and several treatment development studies. Her prior research has also included a Department of Defense funded study examining the early longitudinal course of PTSD symptoms and predictors of chronic PTSD in Veterans of the Iraq war, and a NIMH funded multi-site study investigating the naturalistic longitudinal course of personality disorders over 10 years of follow-up.

David Sheinberg, Ph.D.

Professor, Department of Neuroscience

David Sheinberg received his A.B. in Computer Science and Psychology from Yale College and his Ph.D. in Cognitive Science at Brown. Following postdoctoral fellowships at Baylor College of Medicine in Houston, Texas, and the Max Planck Institute in Tubingen, Germany, Sheinberg returned to Brown as a faculty member in the Department of Neuroscience in 2000. Sheinberg's research lab explores how humans identify objects and events in the real world, where both the observer and the environment change over time. The brain must process a dynamic stream of sensory information and efficiently parse this information to reach conclusions about the presence or absence of noteworthy objects to which actions should be directed. Using a combination of behavioral and physiological methods, including the use of optogenetics, his lab aims to better understand mechanisms underlying perception and cognition.

Amitai Shenhav, Ph.D.

Assistant Professor, Department of Cognitive, Linguistic and Psychological Sciences

Amitai Shenhav is a cognitive and affective neuroscientist who received his B.A. in Cognitive Science from University of California, Berkeley, and his Ph.D. in Psychology from Harvard University. He completed his postdoctoral training at Princeton University in 2016, where he was funded by a fellowship from the Starr Foundation, before starting his lab at Brown as an assistant professor in cognitive, linguistic and psychological sciences (shenhavlab.org). Shenhav studies the neural mechanisms at the intersection of value-based decision-making, affect and cognitive control, with a particular focus on interactions within and among corticostriatal circuits. His findings have been published in leading journals (e.g., Neuron, PNAS, and Nature Neuroscience). A major aim of his research is to understand what the motivational barriers are to exerting cognitive effort (including barriers to decision-making itself), and how individuals choose to overcome those barriers (i.e., what makes something "worth" the effort required). His lab seeks to further understand the mechanisms by which control/choice costs and cognitive effort allocation vary across individuals, and the degree

to which these circuits are dysregulated in certain clinical populations (e.g., depression, anxiety, OCD, ADHD, Alzheimer's). These questions are addressed using a combination of behavioral and neural measures (EEG, fMRI), combined with computational modeling.

Mohamed Sherif, M.D., Ph.D.

Assistant Professor, Department of Psychiatry and Human Behavior

Dr. Mohamed Sherif's research integrates computational neuroscience, clinical psychiatry and brain electrophysiology. He is originally from Egypt, where he was a practicing psychiatrist and neurologist at Ain Shams University, Cairo. He then did his psychiatry residency (again!) at SUNY Downstate Medical Center, Brooklyn, N.Y. The first to join the dual residency/Ph.D. program at SUNY Downstate Medical Center/New York University Tandon School of Engineering, Sherif trained with Dr. William Lytton, one of the leaders in the field of computational neuroscience and multiscale computer modeling of the brain. In his Ph.D., Sherif used mechanistic computer models of the hippocampus to examine how new molecular therapeutic targets for cognitive symptoms in schizophrenia change the way gamma oscillations modulate information flow. After his residency, Sherif was awarded the Veteran Affairs Special Psychopharmacology Research fellowship at Yale University. He then got the VA Career Development Award (CDA-1) and the Robert E. Leet and Clara Guthrie Patterson Trust grant to investigate EEG biomarkers of ketamine's antidepressant effects. Sherif's lab integrates EEG/MEG with computational techniques to investigate microcircuit mechanisms underlying psychiatric disorders and their treatment, focusing on schizophrenia, M.D.D and OCD. Using computer models of the cortical microcircuits, Sherif's lab quantifies the treatment-mediated molecular and cellular changes, making it possible to explore novel therapeutic targets and optimize current treatments in a personalized manner. The lab collaborates with several investigators to study mechanisms of TMS, DBS, ketamine and psilocybin. Sherif appreciates the richness brought by enthusiastic individuals coming from different backgrounds to computational research.

Anthony Spirito, Ph.D.

Professor, Department of Psychiatry and Human Behavior

Anthony Spirito has focused the majority of his most recent research efforts on treatment efficacy and effectiveness studies. He conducted some of the first studies on brief interventions in the pediatric emergency department, two for adolescents with an alcohol-related admission and another for adolescents who made a suicide attempt. He is currently collaborating with other Brown faculty on the use of brief in-person and computer-based interventions for adolescents in the juvenile justice system who abuse substances. He is also conducting a safety planning intervention in juvenile justice. Along with colleagues in the department, he completed three treatment development studies to determine if combined approaches (e.g., exercise and cognitive behavioral therapy for overweight adolescents), can increase the efficacy of treatment for adolescent depression. He helped develop and then transported an integrated CBT protocol for adolescents with substance use disorders, nonsuicidal self-injury, depression and suicidality to the community and instructed licensed mental health counselors in its use. He and his colleagues recently completed a study testing the comparative efficacy of this protocol versus standard care in a community mental health clinic as well as a larger efficacy trial with a sample of adolescents discharged from inpatient psychiatric care. He is also collaborating on a Rhode Island Department of Health Substance Abuse and Mental Health Services Administration grant designed to divert youth in schools with mental health emergencies from the emergency department to less expensive, and more appropriate, levels of care whenever possible.

Michael Stein, M.D.

Adjunct Professor, Department of Medicine

Dr. Michael Stein is an internist and co-director of the Addictions and General Medicine Research Unit at Butler Hospital and an internationally known HIV and substance use treatment researcher, having served as principal investigator of more than 20 National Institutes of Health-funded clinical trials. Stein's interests span populations, substances (opioids, marijuana, alcohol, cigarettes) and treatments (relapse, retention, medication adherence, medical complications, sleep, HIV risk). He has mentored investigators across departments, including the Department of Psychiatry and Human Behavior. He has served on training grants from the National Institute on Drug Abuse, the National Institute on Alcohol Abuse

and Alcoholism, and the National Institute of Mental Health, and co-directed a K12 and was a K24 recipient from NIDA. His mentees have received over a dozen K grants, and many are now faculty with R-awards. He is chair and professor of health law, policy and management at Boston University School of Public Health.

Laura Stroud, Ph.D.

Professor, Departments of Psychiatry and Human Behavior and Behavioral and Social Sciences

Laura Stroud has an A.B. in Human Biology from Stanford University and received a Ph.D. in Psychology from Yale University in 1999. She completed her postdoctoral fellowship at Brown in 2001, then joined the faculty in the Department of Psychiatry and Human Behavior. She also serves as senior research scientist and founding director of the Maternal-Infant Studies Laboratory and the Child and Adolescent Stress Laboratory at the Center for Behavioral and Preventive Medicine, The Miriam Hospital. Since 2013, Stroud has also held a secondary appointment in the Department of Behavioral and Social Sciences in the School of Public Health at Brown. Stroud's research focuses on biobehavioral mechanisms of mood and addictive disorders. Her work involves a transdisciplinary, developmental framework incorporating both neurobiological and behavioral markers of risk and a focus on novel neurobehavioral and stress response paradigms. Her work includes a focus on two sensitive periods of development: fetal-infant transition and the adolescent/pubertal transition. Within the fetal-infant period, her work has focused on novel ultrasound measures of fetal development and biological (neuroendocrine and epigenetic) pathways through which effects of maternal smoking and depression are transmitted to the fetus. She has also developed a new line of research focused on the impact of marijuana use and novel tobacco products (hookah, electronic cigarettes) on pregnant mothers and infants. Within the adolescent period, Stroud's work has focused on novel neural and neuroendocrine biomarkers of risk for adolescent depression. Stroud has been continuously funded by the National Institutes of Health since 2001. She has also been the recipient of three Young Investigator grants from the Brain and Behavior Research Foundation, funding from the National Science Foundation, the U.S. Food and Drug Administration and the Robert Wood Johnson Foundation. Stroud served as a contributing author on the 2016 U.S. Surgeon General report, "E-Cigarette Use Among Youth and Young Adults." She also served as associate editor for Nicotine and Tobacco Research and has been the recipient of the Bruce M. Selya Award for Excellence in Research from Lifespan Hospitals and the Outstanding Early Career Investigator Award from the National Institute on Drug Abuse.

Robert Swift, M.D., Ph.D.

Professor, Department of Psychiatry and Human Behavior

Robert Swift received his B.A., Ph.D. and M.D. (with honors) from the University of Chicago. He completed a residency in psychiatry at Yale University and is board-certified in psychiatry and in addiction psychiatry. He conducts clinical and laboratory research on the pharmacological treatment of alcohol and drug abuse and dependence. He is a recipient of research grants from the National Institute on Alcohol Abuse and Alcoholism and the National Institute on Drug Abuse and from foundations and pharmaceutical companies. He is the site principal investigator for the NIAAA COMBINE Study, a cooperative clinical trial investigating combined pharmacotherapy and psychotherapy in the treatment of alcohol dependence, and he has a national role as the head of the Pharmacotherapy Subcommittee. He serves frequently as a member of advisory committees to government agencies and industry. He is a distinguished fellow of the American Psychiatric Association, a member of the American College of Neuropsychopharmacology and the American Society of Addiction Medicine. He is a member of the board of directors and the education committee of the Research Society on Alcoholism.

Swift's area of academic interest is the neuropsychopharmacology of alcohol and drug dependence. Since 1984, he has managed an externally funded alcohol research program that has conducted research funded by grants and contracts from institutes at the National Institutes of Health, foundations, pharmaceutical companies and Brown University. Currently, he has active funding for several grants and contracts, for which he is the principal investigator. These include a federally funded contract to develop an alcohol biosensor to provide real-time monitoring of blood alcohol levels and a federally funded grant, the multisite NIAAA cooperative COMBINE Study on combined pharmacotherapy and psychotherapy of alcohol dependence. He is a site principal investigator for a Veterans Affairs Cooperative Study exploring the

safety and efficacy of the alpha-2 agonist lofexidine in opiate withdrawal and site principal investigator for three industry-sponsored clinical trials (Pfizer, Bristol Myers Squibb, and Ortho-McNeil). He is a funded co-investigator on five other NIH grants at Brown and other institutions around the country. Swift is currently conducting human laboratory research using an alcohol self-administration paradigm to explore the effects of medications such as topiramate and aripiprazole in reducing alcohol consumption and the genetic factors that may influence risk-taking during alcohol intoxication.

Brian Theyel, M.D., Ph.D.

Assistant Professor, Department of Psychiatry and Human Behavior

Dr. Brian Theyel is an academic clinician with a research interest in basic neuroscience. His work concentrates on circuit abnormalities in autism, schizophrenia and PTSD. He has special interest in the role that abnormalities in the pathway that connects the thalamus to the cortex has in these diseases. His main methodologic research involves the whole-cell patch clamp technique, local field potential recordings, in vitro neuroimaging, a cell-specific gene knockout strategy and advanced neuroanatomical techniques. Theyel is also a clinician in the psychiatric emergency room at Butler Hospital, teaches a course for psychiatry residents titled "Evidence-Based Medicine," and is an attending in the Residency Continuity Clinic at Butler Hospital. His work is supported by the laboratory of Barry Connors, the Department of Psychiatry and Human Behavior, the Norman Prince Neurosciences Institute, the Carney Institute and the Simons Foundation.

J. Graham Thomas, Ph.D.

Professor (Research), Department of Psychiatry and Human Behavior

Dr. Thomas received his Ph.D. in Clinical Psychology from Drexel University where he trained with Dr. Michael Lowe in obesity behavioral medicine. He completed his internship year and postdoctoral fellowship at Brown under the mentorship of Dr. Rena Wing at the Weight Control and Diabetes Research Center within the Department of Psychiatry and Human Behavior. Dr. Thomas joined the faculty within that group in 2010 and most recently attained the rank of Professor in 2021. His research is focused on the use of technology for assessment and intervention on health behaviors, with an emphasis on obesity and related conditions. Dr. Thomas has been awarded grants from the NIH and other organizations to use a variety of mobile and online technologies for these purposes, including virtual reality and mobile sensors. Dr. Thomas conducts research with patients losing weight via behavioral lifestyle intervention and those undergoing bariatric surgery. Dr. Thomas is former Chair of The Obesity Society eHealth/mHealth Section. He is also a research mentor within the Brown University Clinical Psychology Training Consortium and Associate Director of the T32 in Cardiovascular Behavioral Medicine research training at The Miriam Hospital.

Geoffrey Tremont, Ph.D.

Associate Professor, Department of Psychiatry and Human Behavior

Geoffrey Tremont, Ph.D. completed his Ph.D. in clinical psychology from Nova Southeastern University, clinical neuropsychology internship at the University of Oklahoma Health Sciences Center, and clinical and research fellowship at Brown University. Dr. Tremont is an Associate Professor in the Department of Psychiatry and Human Behavior and Director of Neuropsychology at Rhode Island and The Miriam Hospitals. His primary research interest is psychosocial treatment for caregivers of individuals with dementia. He has received funding from the National Institutes of Health for his work. He is currently funded by NIA to adapt an existing caregiver intervention into a mobile application. Dr. Tremont is the author of over 100 peer-reviewed manuscripts and many presentations at national/international conferences. He serves on the editorial board for the *Archives of Clinical Neuropsychology*. In addition to caregiving research, he studies the use of telephone and mobile technology assessment to detect cognitive impairment, awareness of deficit in dementia and mild cognitive impairment, and professional issues in clinical neuropsychology. He is also involved in projects related to the emotional and cognitive benefits of yoga in psychiatric disorders and aging. He teaches clinical psychology trainees and provides clinical and research supervision to neuropsychology interns and postdoctoral fellows.

Wilson Truccolo, Ph.D.

Assistant Professor, Department of Neuroscience

Wilson Truccolo is the Pablo J. Salame '88 Goldman Sachs Associate Professor of Computational Neuroscience in the Department of Neuroscience at Brown. As a computational neuroscientist, his research focuses on understanding how brain function emerges from the concerted activity (collective dynamics) in neuronal

populations distributed across different brain areas, and on how neurological disorders (e.g., epileptic seizures) result when these dynamics become pathological. Truccolo has received various awards including, among others, a K01 Career Development Award from the National Institutes of Health, a Merit Review Award from the U.S. Department of Veterans Affairs, and R01 research grants from NIH and the National Institute of Neurological Disorders and Stroke. He has authored more than 60 scientific articles, including publications in top journals such as Nature Neuroscience, Nature Communications and Journal of Neuroscience. Truccolo's recent research has focused on the development of neural encoding and decoding approaches for brain-computer interfaces (BCIs) to assist people with motor and sensory disorders. In addition, Truccolo has been developing personalized medicine approaches, i.e., BCIs that incorporate patient-specific brain network dynamics and connectivity, for seizure prediction and control in people with pharmacologically resistant epilepsy. His long-term goal is to develop both the theoretical foundations and neurotechnology for improving the lives of people with neurological disorders.

Audrey Tyrka, M.D., Ph.D.

Professor, Department of Psychiatry and Human Behavior

Dr. Tyrka received her M.D. and Ph.D. in medicine and psychology through a combined program at the University of Pennsylvania. She completed a psychiatry residency at Brown and further research training in clinical neuroscience at the Mood Disorders Research Program and Laboratory for Clinical Neuroscience at Butler Hospital and Brown University. Dr. Tyrka is Professor of Psychiatry & Human Behavior at Brown, Chief Research Officer at Care New England, and Director of the Laboratory for Clinical and Translational Neuroscience at Butler Hospital. She has been involved in residency training for more than 15 years, and has served as research mentor to numerous residents and other trainees. Dr. Tyrka is Director of Research Training for the residency and PI of our NIMH-funded R25 research training program. Co-director of the Initiative on Stress, Trauma and Resilience (STAR Initiative), and the STAR T32 postdoctoral research training program at Brown, Dr. Tyrka's research is focused on elucidating the environmental, biological, and behavioral mechanisms of risk following early adversity. She studies adults and children to understand the metabolic, immune, (epi) genetic, and cellular aging effects of early trauma as mechanisms of risk for mood and anxiety disorders as well as medical conditions including diabetes and cardiovascular disease.

Lisa Uebelacker, Ph.D.

Professor, Department of Psychiatry and Human Behavior

Dr. Uebelacker's interests center around developing and testing innovative psychosocial methods for treating depression and chronic pain, including collaborative treatment for depression and comorbid health conditions in primary care settings, and the use of yoga, exercise, and health education as adjunctive treatments for depression or chronic pain. Ongoing NIH-funded projects include: *Optimization and multi-site feasibility of yoga for chronic pain in people in treatment for opioid use disorder; Adaptation and Pilot Study of Yoga to Reduce Depression in Adolescents; and Development of an adjunctive video-based suicide prevention intervention immediately following psychiatric hospitalization*.

Takeo Watanabe, Ph.D.

Professor, Department of Cognitive, Linguistic & Psychological Sciences

Dr. Watanabe has the reputation of a world-leading researcher of perceptual learning and visual plasticity. He has used various methods including psychophysics, fMRI, MRS, DTI, MEG and EEG. He has published more than 140 papers, among which around 45 papers were published in high-impact journals including Nature and Science. Dr. Watanabe has been awarded more than 10 grants from NIH. He served the Sensory, Perception and Cognition Study Section in NIH as a regular member. Recently he and his lab members have developed an online-fMRI neurofeedback method (2001, Science) by which brain functions can be changed without subject's awareness. This method has been applied to people with psychiatric disorders and diseases.

Lauren Weinstock, Ph.D.

Professor, Department of Psychiatry and Human Behavior

Dr. Lauren Weinstock has an AB in psychology and French from Duke University and an MA and Ph.D. in clinical psychology from the University of Colorado at Boulder. She completed her predoctoral internship in clinical psychology at Brown University in 2005 and continued in the DPHB as a postdoctoral fellow until

joining the faculty in 2008. Her early research training was supported by numerous awards, including an NIMH predoctoral Intramural Research Training Award, individual predoctoral and postdoctoral NIMH National Research Service Awards, an NIMH Mentored Career Development Award, and a Young Investigator Award from the American Foundation for Suicide Prevention. Dr. Weinstock's current NIH- and foundation-supported research program focuses on development and evaluation of adjunctive behavioral interventions for severe mood disorders and suicide prevention, especially during vulnerable care transitions. In addition to her appointment in the DPHB, Dr. Weinstock is Director of Training for the Brown Predoctoral Clinical Psychology Internship Program, the Associate Director of the DPHB Consortium for Research Innovation in Suicide Prevention, and faculty affiliate of the Center for Prisoner Health and Human Rights. She has authored over 80 scientific publications, serves as an AFSP Scientific Advisor, and is a standing member of the NIMH Mental Health Services review committee. Dr. Weinstock has also served on numerous federal workgroups focused on best practices in bipolar disorder and suicide prevention research and treatment.

Laura Whiteley, M.D.

Associate Professor, Department of Psychiatry and Human Behavior

Dr. Laura Whiteley received her B.A. from the University of Pennsylvania, graduating with honors in her major and magna cum laude. She completed her M.D. from Temple University School of Medicine. Whiteley completed her adult psychiatry residency, child and adolescent psychiatry fellowship, and a T32 research fellowship in the Department of Psychiatry and Human Behavior at Brown University. She founded the Young Adult Behavioral Health Program at Rhode Island Hospital and received a Rhode Island Foundation Grant for her work with colleges and young adults in 2014. Whiteley's federally funded research focuses on the biobehavioral aspects of HIV for young adults. She has received funding from the National Institute of Mental Health, National Institute of Child Health and Human Development, and the Lifespan/Tufts/Brown Center for AIDS Research. She is currently the principal investigator on a R01 examining the efficacy of an iPhone game in promoting adherence to antiretroviral therapy for adolescents and young adults living with HIV. She is also the principal investigator on two NIMH R34s that examine the use of PrEP (Pre-exposure Prophylaxis) to prevent HIV. She is the co-investigator on federally funded studies examining the use of telemedicine to provide HIV prevention services in the southern U.S. and family interventions for gay and bisexual adolescents living in Jackson, Miss. She has also received Aloha Foundation funding to develop and examine an electronic intervention to reduce cannabis use for young adults in psychiatric care. She is a dedicated mentor to residents and medical students and has received both the DPHB Research Mentorship Award and the American Academy of Child and Adolescent Psychiatry Research Mentorship Award.

Rena Wing, Ph.D.

Professor, Department of Psychiatry and Human Behavior

Rena Wing is a professor of psychiatry and human behavior at The Warren Alpert Medical School and The Miriam Hospital. She is the director of the Weight Control and Diabetes Research Center. Wing is well-known for her research on behavioral treatment of obesity and particularly its application to Type 2 diabetes. She has published over 350 peer-reviewed articles on these topics. Currently, she is principal investigator at The Miriam Hospital site for a 15-center National Institutes of Health-funded trial titled "Look AHEAD" and serves as chairperson of this multisite study. Wing has served as a member of the council for the National Institute of Diabetes and Digestive and Kidney Diseases and on the NIDDK Task Force on the Prevention and Treatment of Obesity. Wing's research focuses on behavioral treatment of obesity and addresses the following questions: What are the health benefits of modest weight loss? How can we improve behavioral treatment of obesity? Is it possible to prevent weight gain and subsequent obesity? What are the characteristics of successful weight loss maintainers?

Shirley Yen, Ph.D.

Adjunct Associate Professor, Department of Psychiatry and Human Behavior

Shirley Yen is a graduate of the University of Chicago (B.A.) and received her doctorate in clinical psychology from Duke University (Ph.D.). Yen's research focuses on identifying risk factors and developing interventions for suicidal behaviors in adolescents and adults. Yen has been a National Institute of Mental Health-funded investigator for the past 20 years. As an investigator on prospective, longitudinal studies of youth with bipolar disorder, adults with personality disorders, and suicidal adolescents, Yen has examined prospective predictors of suicidal behavior. She has also been the principal investigator of three adjunctive transdiagnostic interventions for suicidal adolescents. She is currently piloting an acceptance-

based intervention for youth with psychosis, a positive affect intervention for young adult outpatients which utilizes test messaging to enhance skills practice, and a yoga intervention for depressed adolescents. She is also conducting research to examine mechanisms of suicide risk in sexual minority adolescents.

Amin Zand Vakili, M.D., Ph.D.

Assistant Professor, Department of Psychiatry and Human Behavior

Dr. Amin Zand Vakili's work focuses on adopting machine learning and data science techniques to better understand the neurobiology of mental illness (depression and PTSD) and to predict treatment outcomes (through studying brain networks with EEG, fMRI, etc.). Zand Vakili's research is funded by a variety of sources, including a mentored research award from the National Institutes of Health and Brown University's Advance-CTR, as well as a pilot project award from Department of Veterans Affairs' Center for Neurorestoration and Neurotechnology. Zand Vakili also holds a clinical appointment as a psychiatrist at the Providence VA Medical Center.

Mark Zimmerman, M.D.

Professor, Department of Psychiatry and Human Behavior

Mark Zimmerman, M.D. is the Director of Outpatient Psychiatry at Rhode Island Hospital and the Miriam Hospital, and Director of the Partial Hospital Program at Rhode Island Hospital. Dr. Zimmerman is also the principal investigator of the Rhode Island Methods to Improve Diagnostic Assessment and Services (MIDAS) project (www.MIDASproject.org) The overarching goal of the MIDAS project has been to integrate research methodology into routine clinical practice in order to improve clinical practice and examine a number of clinically important issues related to assessment, diagnosis and treatment outcome. Some of the clinically relevant issues examined in the MIDAS project include the under detection of diagnostic comorbidity in clinical practice, depressed patients' opinions regarding the most important factors to consider in determining remission, the overdiagnosis of bipolar disorder, and the under recognition of medication side effects. In a paper published in the *American Journal of Psychiatry* we found that only a minority of patients evaluated in the MIDAS project would have qualified for an antidepressant efficacy trial. Other papers from the MIDAS project elaborated on the issue of the generalizability of efficacy studies of depression. One of the goals of the MIDAS project has been to develop measures for use in clinical practice. The Psychiatric Diagnostic Screening Questionnaire (PDSQ) is a broad-based self-report measure screening for the most common psychiatric disorders presenting in outpatient practice. The Clinically Useful Depression Outcome Scale (CUDOS), Clinically Useful Anxiety Outcome Scale (CUXOS), and the Clinically Useful Anger Outcome Scale (CUANGOS) were developed for use in routine clinical practice.

Seven years ago, Dr. Zimmerman became director of the partial hospital program. Outcome assessments were integrated into the PHP, and our data base has exceeded 5,000 patients. We have begun examining the outcome of treatment in a partial hospital program and recently published papers comparing the effectiveness, acceptability and safety of in-person and virtual approaches. To date more than 250 articles have been published based on the MIDAS project dataset. In total, Dr. Zimmerman is the author of more than 450 articles published in peer-reviewed journals, and serves on the editorial board of 10 journals (including Associate Editor of the *Journal of Personality Disorders*). He also is the author of the *Interview Guide to Diagnose DSM-5 Psychiatric Disorders and the Mental Status Examination*.

Caron Zlotnick, Ph.D.

Professor, Department of Psychiatry and Human Behavior

Caron Zlotnick's research interests focus on interventions for vulnerable financially disadvantaged women. Currently, she is principal investigator on several National Institutes of Health-funded studies that includes computer-based interventions for perinatal women with mental illness and intimate partner violence, pregnant women with HIV risk and substance use, women residents of a battered women shelter with substance use and veteran women with histories of sexual trauma, and implementation of postpartum depression prevention intervention. She has also co-authored published articles on postpartum depression, intimate partner violence and incarcerated women.

Websites for Additional Information

Department of Psychiatry and Human Behavior Sites

Warren Alpert Medical School of Brown University
med.brown.edu

Brown University Directory
directory.brown.edu/search

Department of Psychiatry and Human Behavior (DPHB)
brown.edu/academics/medical/psychiatry-and-human-behavior/home

DPHB Faculty Information
brown.edu/academics/medical/about/departments/psychiatry-and-human-behavior/faculty

DPHB General Psychiatry Residency Program
brown.edu/academics/medical/general-psychiatry-residency-program/home

Other Schools and Departments

Brown School of Engineering
brown.edu/academics/engineering

Brown School of Public Health
brown.edu/academics/public-health

Department of Cognitive, Linguistic and Psychological Sciences
brown.edu/academics/cognitive-linguistic-psychological-sciences

Department of Molecular Biology, Cell Biology and Biochemistry
brown.edu/academics/biomed/molecular-cell-biochemistry

Department of Neuroscience
brown.edu/academics/neuroscience

Centers, Institutes and Core Resources

Advance Clinical Translational Research
brown.edu/initiatives/translational-research

Bradley Hasbro Children's Research Center
lifespan.org/centers-services/Bradley-hasbro-childrens-research-center

Brown Center for Biomedical Informatics
brown.edu/academics/medical/about-us/research/centers-institutes-and-programs/biomedical-informatics

Brown University AIDS Program
brown.edu/academics/public-health/brunap

Carney Institute for Brain Science
brown.edu/carney

Center for Alcohol and Addiction Studies
brown.edu/public-health/caas

Center for Behavioral and Preventive Medicine
lifespan.org/centers-services/center-behavioral-and-preventive-medicine

Center for Computational Brain Science
brown.edu/carney/ccbs

Center for Computational Molecular Biology
brown.edu/academics/computational-molecular-biology

Center for Children's Environmental Health
https://www.brown.edu/academics/public-health/cceh/

Center for Epidemiologic Research
brown.edu/academics/public-health/cer

Center for Health Promotion and Health Equity
brown.edu/academics/public-health/chphe

Center for the Neurobiology of Cells and Circuits
brown.edu/carney/research/centers-initiatives-core-facilities/center-neurobiology-cells-and-circuits

Center for Neurorestoration and Neurotechnology
providence.va.gov/research/CfNN/index.asp

Center for Primary Care and Prevention
med.brown.edu/CPCP

Center for Statistical Sciences
brown.edu/academics/public-health/content/center-statistical-sciences

Center for the Study of Children at Risk
brown.edu/research/projects/children-at-risk

Center for Translational Neuroscience
brown.edu/carney/ctn

COBRE Center for Central Nervous System Function
brown.edu/carney/centers-initiatives/cobre-center-central-nervous-system-function

COBRE Center for Computational Biology of Human Disease
brown.edu/research/projects/computational-biology-of-human-disease/home

COBRE Center for Neuromodulation
butler.org/services/cobre/index.cfm

Core Research Facilities in Rhode Island
coresri.org/centers

Data Science Initiative
brown.edu/initiatives/data-science

Genomics Core Facility
brown.edu/research/facilities/genomics

Initiative on Stress, Trauma and Resilience (STAR Initiative)
brown.edu/initiatives/star

Institute for Translational Science
medical.brown.edu/research/brown-institute-translational-science

International Health Institute
brown.edu/academics/public-health/ihi

MRI Research Facility
brown.edu/carney/mri/

Norman Prince Neurosciences Institute
lifespan.org/centers-services/norman-prince-neurosciences-institute-npni

Quantitative Science Program
sites.google.com/a/brown.edu/quantsci

Rhode Island Consortium for Autism Research and Treatment (RI-CART)
autismri.org

Rodent Neurodevelopmental Behavioral Testing Facility
rndb.clps.brown.edu

Affiliated Hospitals

Bradley Hospital
bradleyhospital.org

Butler Hospital
butler.org

Providence Veterans Affairs Medical Center
providence.va.gov

Rhode Island Hospital
rhodeislandhospital.org

The Miriam Hospital
miriamhospital.org

Women and Infants Hospital
womenandinfants.org

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