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Thank you for your interest in our Department of Psychiatry and Psychology and learning more about our recent research accomplishments. Our department plays an essential role in Mayo Clinic’s goal of inspiring hope and contributing to health and well-being by providing the best care to every patient through integrated clinical practice, education, and research. At Mayo Clinic’s three main campuses -- Rochester, Minnesota; Jacksonville, Florida; and Scottsdale, Arizona -- there are over 150 psychiatrists and psychologists, joined by over 200 allied health staff to meet the needs of the patient. Our flagship clinical programs include our Psychiatric Hospital, Mayo Clinic Depression Center, Pain Rehabilitation Program, Addiction Treatment Center, Child and Adolescent Programs, Neurocognitive Assessment and Treatment Programs, Behavioral Medicine Program, and Integrated Care Programs. Our department provides numerous educational programs including Graduate Medical Education residencies in Adult and Child and Adolescent Psychiatry, fellowships in Medical Psychology (Clinical Child Psychology, Clinical Health Psychology, and Clinical Neuropsychology), Geriatric Psychiatry, Psychosomatic Medicine, Sleep Medicine, and Addiction Psychiatry. Due to the expertise and range of these clinical and educational programs, our Department of Psychiatry and Psychology was ranked as one of the Top Ten Psychiatry Departments in the country by the U.S. News and World Report in 2014. Many of our research projects focus on clinical interventions and our clinical programs guide and shape our research efforts, which in combination seek to provide the best care to every patient every day.

The Department of Psychiatry and Psychology continues to highlight research teams in our annual 2014-15 departmental research report. We want to highlight the value, importance, and productivity of research teams within our department. These research teams can also be found across the Mayo Clinic sites which include Minnesota, Florida, and Arizona, and also involve the many hospitals that comprise the Mayo Clinic Health System. For example, the Neuropsychology, Aging, and Cognition Research Team has scientific investigators across all three campuses. Research teams within our department include an array of health care professionals and focus on the evaluation and treatment of a range of mental health problems and their impact on patients and their families. The Mayo Clinic Depression Center Research Team, which includes psychiatrists, psychologists, nurses, and social workers, conducting clinically relevant research in treatment-resistant depression and bipolar disorder, is an example of a highly productive multidisciplinary clinical research team. Additionally, many investigators in our department are engaged in research projects with other departments or centers of excellence across our academic medical center. Our department has investigators in The Mayo Clinic Comprehensive Cancer Center, The Bariatric Surgery Center of Excellence, and The Alzheimer’s Disease Research Center. Finally, we encourage the participation of research with other academic centers, collaborations, and multisite studies. The University of Minnesota, the Karolinska Institute in Sweden, and the National Network of Depression Centers are outstanding examples of collaborative multicenter research projects.

If you are interested in contacting any of the investigators highlighted in this report, please contact our department at 507-266-5100.
In 2014, our Department had 27 funded grants where the Principal Investigator was a faculty member in our department. We also contributed to a significant number of funded studies as co-investigators across numerous departments at Mayo Clinic. The wide portfolio and funding sources in our Department include:

- Agency for Healthcare Research and Quality
- Center of Medicare and Medicaid Services
- National Cancer Institute
- National Institute on Aging
- National Institute of Alcohol Abuse and Alcoholism
- National Institute on Drug Abuse
- National Institute of General Medical Science
- National Institute of Mental Health

Meeting the needs of underserved populations and addressing health disparities is a priority of our department’s clinical, educational, and research programs. To address the problem, our department has numerous academic and research projects focused on meeting the needs of underserved populations, developing creative mental health treatment delivery systems, and tailoring interventions for specific underserved populations. Many people with mental health issues struggle to get needed medical, psychiatric and psychological care. Specific examples include:

**Expanding access to cognitive behavioral therapy (CBT) for childhood anxiety disorders via smartphones. Funded by the National Institute of Mental Health. Principal investigator: Dr. Stephen Whiteside.**

**Family cancer literacy to promote mammography screening among Navajo women. Funded by the National Cancer Institute. Principal Investigator: Dr. Christi Patten.**

**Healthy immigrant families: Working together to move more and eat well. Funded by the National Heart, Lung and Blood Institute. Coinvestigators: Drs. Bridget Biggs, Matthew Clark, and Christi Patten.**

**Community intervention to reduce tobacco use among pregnant Alaska Native women. Funded by the National Cancer Institute. Principal Investigator: Dr. Christi Patten.**

**National Network of Depression Centers. Principal Investigator: Dr. Mark Frye.**

**Primary Care Initiatives: Coordinated Anxiety Learning and Management (CALM), Diabetes, Cardiovascular Disease, Depression, Comprehensive Pediatric and Adolescent Support Services Care Team (ComPASS), Early Management and Evidence-Based Recognition of Adolescents Living With Depression (EMERALD), and Depression Improvement Across Minnesota, Offering A New Direction (DIAMOND) Drs. David Katzelnick and Mark Williams.**
Mayo Clinic Depression Center

ADULT INVESTIGATORS

PEDIATRIC INVESTIGATORS
Paul E. Croarkin, D.O., John E. Huxsahl, M.D., Jarrod M. Leffler, PhD, Jennifer L. Vande Voort, M.D.

Depression is a significant public health problem, in this country and across the globe. Effective treatment can be challenging to identify for the individual and relapse is common after depression treatment. Therefore effective, individualized, long lasting treatments are needed for depression. The main focus of the Mayo Clinic Depression Center is to conduct clinically relevant research in treatment-resistant depression and bipolar disorder, in adults, adolescents and children. Our current research projects aim to build on our comprehensive and multidisciplinary depression treatment programs. Mayo Clinic Depression Center is a Center of Excellence for the National Network of Depression Centers, a network of 21 leading clinical and academic Centers of Excellence in the U.S. working to transform the field of depressive illness and related mood disorders.

GRANTS

National Institute of Mental Health RO1MH079261

To identify baseline MR glutamate / glutamine abnormalities in bipolar depression and evaluate whether these predict treatment response to lamotrigine.

Myriad/Rules-Based Medicine
A Feasibility Study to Develop a Biomarker Signature in Mood Disorders. Frye/Biernacka (PI) 09/2010 – 12/2014

This feasibility study will be looking at discovering proteomic platforms to identify serum samples from patients with mood disorders and controls.

AssureRX
A pharmacokinetic/Pharmacodynamic Genetic Variation Treatment Algorithm versus Treatment as Usual for Management of Depression. Frye (PI) 07/2014 – 06/2016.

Evaluate clinical value of genotyping.

Microbiome CIM Florida

Evaluate feasibility of testing microbiome in depression before and after treatment.

Janssen Research and Development, LLC
A Double-Blind Randomized Placebo-Controlled Study to Evaluate the Efficacy and Safety of Intranasal Esketamine for the Rapid Reduction of Symptoms of Major Depressive Disorder Including Suicidal Ideation in Subjects at Imminent Risk for Suicide, Frye (PI) 05/2014 – 06/2015.
KEY PUBLICATIONS


AWARDS AND LEADERSHIP ROLES

Renato D. Alarcón, MD, MPH. Co-Editor, Archivos de Psiquiatría, Madrid, Spain; Associate Editor, Asia-Pacific Psychiatry; Associate Editor, Transcultural Psychiatry.

Renato D. Alarcón, MD, MPH. Member, Board of Directors, World Association of Cultural Psychiatry.

Renato D. Alarcón, MD, MPH. Workgroup member, DSM-V Committee, American Psychiatric Association.

Mark A. Frye, MD. Scientific Reviewer. Member, NIMH Interventions Committee for Adult Disorders (ITVA), 2013 – Present.

Susannah J. Tye, Ph.D., Co-Chair. Treatment Resistant Depression Task Force, National Network of Depression Centers.

Mark A. Frye, MD. Member, Scientific Advisory Board, Depression and Bipolar Support Alliance.


PROFESSIONAL INTERNATIONAL PRESENTATIONS

World Psychiatric Association’s XVI World Congress of Psychiatry, September 14-18, 2014, Madrid, Spain. Symposium Chair: Cardiovascular Disease and Obesity in Bipolar Disorder: Translational Research Focused on Epidemiology and Genetics “Mayo Clinic Bipolar: Focus on Metabolic Disorders”.
The Neuromodulation Research Group at Mayo Clinic in Rochester, Minnesota, has been active in performing research regarding Electroconvulsive Therapy (ECT), Transcranial Magnetic Stimulation (TMS), and Deep Brain Stimulation (DBS). Dr. Rasmussen is leading a study investigating the use of daily right unilateral ultrabrief pulse ECT to potentially shorten the treatment duration of ECT for depression, without sacrificing effectiveness or cognitive impairments. Drs. Johnson and Kung are tracking real-world clinical outcomes of ECT for depression, with special attention to perceived memory impairments. Dr. Croarkin is leading a multi-site randomized double-blinded study of TMS versus sham for the treatment of adolescent depression, which will be the largest study of TMS in the adolescent population. Dr. Sampson has conducted open-label TMS studies in patients with depression and comorbid conditions such as Post-traumatic Stress Disorder (PTSD), Borderline Personality Disorder, and chronic pain/fibromyalgia. Dr. Frye is leading a groundbreaking randomized study of DBS for treatment-resistant obsessive-compulsive disorder, in collaboration with Neurology and Neurosurgery. These examples of our neuromodulation research highlight the underlying goal: to expand our knowledge and treatment options for depression and other psychiatric illnesses, beyond conventional medications and psychotherapies.
GRANTS

Brain and Behavior Research Foundation, NARSAD Young Investigator Award. GABAergic Neurotransmission in Youth at Risk for Bipolar Disorder (PI: Croarkin, Mentor: Frye) 07/2013-07/2015.


Paul and Betty Woolf’s Foundation (formerly The O’Shaughnessy Foundation): A Double-Blinded, Sham-Controlled Study Utilizing rTMS in Adolescents with Major Depressive Disorder. Funding period: 07/2012 – 06/2015; PI: Croarkin.

KEY PUBLICATIONS


Dare FY, Rasmussen KG. Court-approved electroconvulsive therapy in patients unable to provide their own consent: A case series. J ECT 2014 (epub ahead of print).


LEADERSHIP ROLES


Shirlene M. Sampson, M.D., Executive Committee Member, International Society for ECT and Neurostimulation, 2010 – present.
The goal of this multidisciplinary research team is to improve the care of children and adolescents with anxiety disorders and obsessive compulsive disorder (OCD). During the past year, we completed a dismantling study evaluating the relative effectiveness of different components of CBT and an examination of anxiety treatment throughout the Mayo Clinic Health System. We are currently investigating the potential for using technology to increase access to high quality treatment for childhood anxiety disorders. This work proceeds under a grant to develop a web-based application for clinicians to interact with patients using our iPhone application, Mayo Clinic Anxiety Coach, and a grant to develop an immersive video game for children with social phobia. Our team is also in the process of extending our research on intensive treatments for pediatric OCD to all pediatric anxiety disorders. Finally, we are continuing work to develop an electronic assessment system for evaluating pediatric psychiatric symptoms. In 2014 - 2015 presentations and workshops were given at the annual meetings of the World Congress of Cognitive and Behavioral Therapy, the Anxiety and Depression Association of America, and the Association of Behavioral and Cognitive Therapy.

**GRANT**

National Institute of Mental Health Clinic: Expanding access to CBT for childhood anxiety disorders via smart phones (R34 MH 100468). Funding period: 2013-2016; PI: Whiteside.


**KEY PUBLICATIONS**


The suicide research group focuses on improving suicide risk assessment and management through identifying risk factors and warning signs in high-risk clinical groups. Dr. Bostwick continues to supervise numerous residents and medical students, mentoring promising trainees as they undertake suicidology research projects. Using an Olmsted County cohort of more than 1,500 suicide attempters who received medical care after their attempts, Dr. Bostwick is investigating what proportion eventually died by suicide and what characterizes the long-term survivors compared to the dead. He leads a case-control study looking at health care visits and suicidal ideation in the year prior to completed suicide (86 cases) with the goals of identifying whether decedents had more visits than controls and whether they said or did anything during those visits that implicated future risk. He is participating in a naturalistic study looking at outcomes in more than 200 patients who have overdosed on acetaminophen, a readily available but potentially lethal over-the-counter medication. Dr. Bostwick is also involved in ongoing projects on physician suicide, transjurisdictional suicide, suicide in patients hospitalized on medical or surgical units, and the role of the Dexamethasone Suppression Test as a suicide risk indicator, using historical and current cohorts.

**KEY PUBLICATIONS**


The Samuel C. Johnson Genomics of Addiction Program was designed to bring a multidisciplinary, integrated group of clinicians and scientists together to work synergistically to better understand how genetic vulnerability is related to the onset and treatment of alcohol use disorders. In addition, this multidisciplinary research team has concentrated on developing individualized molecular strategies for alcoholism treatment, with the primary focus on studying the pharmacogenomics of anti-craving medications.

The S.C. Johnson research team was awarded a P20 developmental center grant from the National Institute on Alcohol Abuse and Alcoholism to establish the Center for Individualized Treatment of Alcohol Dependence (CITA). The primary goal of the funded research was to develop infrastructure for an expanding research team dedicated to designing and launching systematic pharmacogenomic and imaging studies of pharmacological treatments for alcoholism, initially focused on the medication acamprosate, an FDA-approved medication for treating alcoholism. The grant has funded the creation of an expanded multidisciplinary team of investigators who work together to design and conduct preclinical and clinical studies to identify which alcohol-dependent patients are most likely to benefit from acamprosate.

With the successful implementation of the National Institutes of Health-supported P20 Center, Mayo S.C. Johnson investigators have published more than 110 peer-reviewed articles in major journals during the last three years in the field of addiction, neuroscience, genetics, and psychiatry. With future support from the NIH and benefactors this multidisciplinary research team plans to expand its studies to better understand the best individualized treatments for alcoholism.
GRANTS


Department of Psychiatry and Psychology Research Grant: Orexin Signaling Mediates Ethanol Drinking Behavior in the Lateral Hypothalamic Kindled Female Rat Mania Model, the Impact of Pregnancy. Funding period: 04/2014 – 04/2016; PI: Choi.

Mayo-KI Collaborative Grant: Glutamate NMDA Receptor Signaling in Schizophrenia Disorders. Funding period: 03/2014 – 12/2014; PI: Choi.


Mayo Clinic Center for Individualized Medicine Award: Epigenetic DNA Methylation in Bipolar Disorders. Funding period: 08/2012 – 07/2015; PI: Veldic.

Department of Psychiatry and Psychology Research Grant: Epigenetic Regulation of the Expression of Metabotropic Glutamate Receptors (mGluR2 and mGluR3) in Patients with Bipolar Disorder and without Comorbid Alcohol Use Disorder. Funding period: 01/2014 – 12/2014; PI: Veldic, Co-PI: Blacker

Marriott Foundation: Bipolar Biobank Biomarker Development (JBD) Program. Funding period: 01/13 – 12/17; PI: Frye, Co-PI: Biernacka, Co-I: Choi

National Institute of Mental Health (K23): Glutamate Probes in Adolescent Depression. Funding period: 02/14 – 01/18; PI: Croarkin

Brain and Behavior Research Foundation: Glutamate Neurotransmission in Depressed Adolescents at Risk for Bipolar Disorder. Funding period: 07/14 – 06/16; PI: Croarkin

Mayo Clinic Center for Individualized Medicine Award: Genetic variation in the glycine signaling and metabolic pathways as a pharmacogenetic predictor of treatment response to acamprosate. 04/2012-04/2013; PI: Karpyak

KEY PUBLICATIONS


Researchers in this team are establishing a large-scale biobank for bipolar type I disorder, collecting both biological samples and clinical data from 2,000 individuals. This is a multisite endeavor, with Mayo Clinic in Rochester, Minnesota, serving as the primary project site. Other sites that will assist in the recruitment of participants include Mayo Clinic in Jacksonville, Florida, Mayo Clinic in Scottsdale, Arizona, Austin Medical Center–Mayo Health System (Austin, Minnesota), the Lindner Center of HOPE (Mason, Ohio), and the University of Minnesota. By establishing the infrastructure of this data-rich biobank, researchers hope to facilitate studies on disease risk and pharmacogenomic probes using state-of-the-art research technology. The identification of genetic risk factors associated with disease onset can potentially lead to early interventional treatment in at-risk patients. This early intervention is particularly important in bipolar disorder because the initiation of any treatment for bipolar disorder is often delayed by more than a decade from the time of onset. Additionally, identification of pharmacogenomic predictors of treatment response could provide increased selectivity to treatment recommendations, as well as help prevent such serious adverse events as antidepressant-induced mania.
GRANT
Mayo Clinic with a Generous Gift from the Marriott Family
Mayo Clinic Individualized Medicine Biobank for Bipolar Disorder
Frye/Biernacka (Co-PIs) 12/2008 – 12/2012

KEY PUBLICATIONS

ACADEMIC CAREER DEVELOPMENT
Mark A. Frye, M.D. Scientific Reviewer. Member, NIMH Interventions Committee for Adult Disorders (ITVA) 2013 – Present.

PROFESSIONAL INTERNATIONAL PRESENTATIONS
World Psychiatric Association’s XVI World Congress of Psychiatry
September 14-18, 2014, Madrid Spain
Symposium Chair: Cardiovascular Disease and Obesity in Bipolar Disorder: Translational Research Focused on Epidemiology and Genetics, “Mayo Clinic Bipolar Biobank: Focus on Metabolic Disorders”.

International Society of Bipolar Disorder
August 22, 2014, Medellin, Colombia
Plenary Session. “Bipolar Disorder: Think Global – Treat Local”
The primary objective of this research program is to better understand genetic variability as it relates to antidepressant response. This program has been supported since 2005 by a grant from the National Institute of General Medical Sciences (NIGMS) as part of the NIH Pharmacogenomics Research Network (PGRN), and over 800 Mayo patients with major depressive disorder (MDD) treated with citalopram or escitalopram have been studied. A second arm of this study involved the use of a serotonin-norepinephrine reuptake inhibitor, duloxetine, in patients who did not respond when treated with escitalopram or citalopram. In addition, this program also organized an International SSRI Pharmacogenomics Consortium (ISPC) that included samples from approximately 1000 SSRI-treated MDD patients. In 2010, the RIKEN Institute in Japan conducted a genome-wide association study (GWAS) of an initial PGRN patient cohort of 521 patients, and during the past year, RIKEN also performed a GWAS for the ISPC samples.

A new area of research that our team has recently undertaken involves the use of induced pluripotent stem (iPS) cells. Under the leadership of Dr. Yuan Ji, the PGRN team received funding from the University of Minnesota–Mayo Clinic partnership to study iPS cell-derived neurons from MDD patients treated with SSRIs. Our team partnered with Timothy J. Nelson, MD, PhD, at Mayo Clinic, with colleagues at the University of Minnesota and with the Salk Institute for Biological Studies in California to study iPS cell-derived neurons from a subset of patients who had participated in the PGRN SSRI study.

Finally, a pharmacometabolomic study of escitalopram and citalopram response in the PGRN MDD patients has been completed that has identified novel biomarkers that provide insight into both variation in antidepressant therapy response and the pathophysiology of MDD.
GRANTS


National Institute of General Medical Sciences (R01): Inherited Variations in Drug Metabolizing Enzymes. Funding period: 06/01/12 – 03/31/16; PI: Weinshilboum.

Minnesota Partnership for Biotechnology and Medical Genomics. Funding Period 1/01/2011- 1/31/2015; PIs: Ji and Weinshilboum.

KEY PUBLICATIONS


Translational Neuroscience Laboratory

INVESTIGATORS
Susannah J. Tye, Ph.D., Doo-Sup Choi, Ph.D., Joanna M. Biernacka Ph.D., Victor M. Karpyak, M.D., Ph.D., Marin Veldic, M.D., Paul E. Croarkin, D.O., Shari L. Sutor MA, and Mark A. Frye, M.D.

Our Translational Neuroscience Laboratory provides the space and expertise for members of the Department of Psychiatry & Psychology to conduct cutting-edge research in translational neuroscience, genomic psychiatry, and biomarker discovery using the latest cellular, molecular, and genetic technologies. Biomarker discovery has already had an immense impact upon the prevention and treatment of many diseases, but remains in its relative infancy in psychiatry. Our research combines multiple scientific approaches to bring new insight into the causes of psychiatric illness and factors mediating individual treatment outcomes. Our ‘bench to bedside’ and ‘back to bench’ framework is helping us to better understand the interplay between genetic and environmental risk factors so that we can provide more targeted treatments for patients. Recent research projects have focused on defining the role of genetic and environmental factors in depression, bipolar disorder, and alcoholism. In combination with our focused search for biomarkers of treatment response, the outcomes of this research will enable us to individualize patient care and tailor treatments in ways not previously possible. In addition to this, our facility functions as a classroom for trainees and faculty in psychiatry and psychology who are interested in learning how to do preclinical and bench-top research. Several of these individuals have gone on to develop their own research careers in psychiatric genetics, epigenetics, biomarker development and preclinical modeling.

GRANTS
Brain and Behavior Research Foundation, NARSAD Young Investigator Award. Glutamatergic Neurotransmission in Youth at Risk for Bipolar Disorder. (PI: Croarkin, Mentor: Frye) 07/2013 – 07/2015.

KEY PUBLICATIONS


The brain rehabilitation research group is composed of a multidisciplinary team with members from the departments of nursing, physical medicine, rehabilitation, neurology, social services, and psychiatry and psychology. Our Center has been continuously funded by the National Institute on Disability and Rehabilitation Research (NIDRR) as a Traumatic Brain Injury Model System (TBIMS) Center, contributing subjects to the TBIMS national database (the largest non-proprietary longitudinal dataset of outcomes for individuals who receive inpatient rehabilitation after TBI, now with greater than 13,000 subjects) and involved in collaborative analyses of this dataset. Current site-specific research includes a community-based randomized pragmatic clinical trial in four upper Midwest states, testing whether a remotely provided coordinated care model improves outcome after TBI compared to a matched group receiving usual care in their communities. Internal collaborators for this study include the Center for Innovation and Center for Social Media. External collaborators include the Departments of Health in Minnesota and Iowa and Trinity and Regional Health systems in the Dakotas. Additional collaborative biotechnology research includes the development of a smartphone-based system to improve transportation access for the cognitively impaired (NIH, with Koronis Biomedical Technologies Corp.) and testing of a low-cost neurocognitive rehabilitation system (NIDRR, with Advanced Medical Electronics Corp.). Internal collaborative work includes the use of shear wave ultrasound elastography to study muscle stiffens after stroke. Current collaborative research projects between Mayo Clinic’s TBIMS Center and other funded centers (a total of 16 nationally) include study of internet use among individuals with TBI and an investigation of their resilience. Mayo’s Brain Rehabilitation Research group networks with academic institutions and agencies that do similar research including regional Departments of Health, Human Services, and Vocational Rehabilitation; the Brain Injury Alliances of Iowa, Minnesota and Wisconsin and surrounding states, and regional VA medical centers.
GRANTS


KEY PUBLICATIONS


The Pain Rehabilitation Center Research Group

INVESTIGATORS

Mayo Clinic Florida and Mayo Clinic Rochester

We are excited to report that during the past year the Pain Rehabilitation Center Program (PRC) has experienced several major transitions that have resulted in our research team expanding. While our primary research efforts continue to focus on measurement of adult clinical outcomes, we have also been collaborating with faculty outside of PRC and increasing our research efforts in our pediatric program. Specifically, Dr. Jeannie Sperry is interested in physician education regarding evidenced-based chronic pain assessment and treatment, Dr. Cynthia Harbeck-Weber will be examining effects of biofeedback on pain management, and our pediatric research team is examining the nature of anxiety in adolescents with chronic pain and POTS. Dr. Larissa Loukianova is examining factors that relate to outcomes in PRC for patients who have had a hysterectomy and Dr. Tracy Harrison will be examining medication tapers within the pediatric PRC. We have been working with Dr. Leslie Sim on the prevalence of eating disorders in youth with pain and POTS (Postural Orthostatic Tachycardia Syndrome). Dr. Marin Veldic is conducting a pilot study to examine changes in biomarkers for patients who complete PRC. Finally, Dr. Karen Weiss is collaborating with Dr. Emily Law at Seattle Children’s Hospital on a pilot study examining effects of a parent intervention focused on problem-solving skills. Research team members are from all disciplines of our team including anesthesiology, psychology, psychiatry, physical therapy, occupational therapy, nursing, and recreational therapy have been presenting PRC data at regional, national and international conferences.

GRANTS
Mayo Medical School and Mayo Clinic Department of Psychiatry and Psychology. Grant from Mayo’s OASES Endowment for Educational Research Award (EERA) for “Assessment of Integrated Knowledge, Skill, and Attitudes Regarding Assessing and Treating Antidepressant-Induced Sexual Side Effects”. Co-Principal Investigator: Jeannie A. Sperry, Ph.D. (2014)

Consultant for West Virginia Family Medicine Foundation grant from Claude Worthington Benedum Foundation to develop a replicable model for treating chronic pain while reducing prescription drug abuse. Study will include assessment of changes in prescribing practices, referral rates for behavioral problems and substance use, implementation of evidence-based practices for chronic pain, and morbidity and mortality associated with medication misuse. Jeannie A. Sperry, Ph.D. (2014-2017)

KEY PUBLICATIONS


The Psychosomatic Research Group investigates problems at the interface between medical and psychiatric illnesses. Many of the investigators on this team work in the multidisciplinary Behavioral Medicine Program. Research areas of investigation include functional disorders in multiple medical specialties (e.g., behavioral spells, chronic dizziness, functional movement disorders, functional gastrointestinal tract disorders); somatic symptom disorders and illness anxiety; psycho-oncology; psychiatric morbidity in medically ill patients; and predictors of disability and health care utilization. Our research collaborations, funding, and publications have an international reach.
GRANTS

Co-Principal Investigator: Staab
7/2014-6/2019
A Phase II Trial on Rizatriptan for Vestibular Migraine
Funding: National Institute on Deafness and Other Communicative Disorders, U01 DC013256-01 A1

Co-Investigator: Ehlers
1/2014 – 12/2016
Testing a Computerized Interactive Stress Management Intervention in Early Stage Cancer: A Randomized Controlled Trial
Funding: The Norwegian Cancer Society (Kreftforeningen) # 4602492

Principal Investigator: Staab
4/2012-12/2014
Pharmacologic Dissection of Vestibular Migraine and Chronic Subjective Dizziness Funding: Mayo Clinic Scholarly Opportunity Award and Department of Psychiatry and Psychology

Co-Investigator: Staab
9/2012-8/2014
The Role of Acceptance in Adjustment to Meniere’s Disease Funding: Meniere’s Society of the United Kingdom

Principal Investigator: Staab
9/2013-8/2014
A Multidimensional Psychological Construct of Somatic Symptom Disorders Funding: Mayo Clinic Small Grant Program, Department of Psychiatry and Psychology

Co-Investigator: Staab
9/2013-8/2014
A Pilot Project to Investigate the Use of an External Vestibular Prosthesis: Potential to Improve Clinical Management of Chronic Subjective Dizziness (CSD) Funding: Mayo Clinic Small Grant Program, Department of Otorhinolaryngology

KEY PUBLICATIONS


AWARDS AND LEADERSHIP ROLES

Richard J. Seime, PhD, Acting President and President Elect, American Board of Clinical Health Psychology.

Shawna L. Ehlers, PhD, Program Chair Elect (2015), Program Chair (2016), American Psychological Association Health Psychology

Jeffrey P. Staab, MD, MS, Chair, Behavioral Subcommittee of the Classification Committee of the Barany Society
The primary goal of the cancer research team is to improve the quality of life for cancer patients and their caregivers by first assessing and treating psychiatric difficulties and then teaching skills for coping with cancer. This multidisciplinary research team spans the Jacksonville, Florida, and Rochester, Minnesota, Mayo Clinic campuses. The team is involved in several externally funded research projects that seek to identify the predictors of quality of life for cancer survivors or that evaluate tailored multidisciplinary interventions designed to improve the quality of life of cancer survivors and their caregivers.

INVESTIGATORS
Matthew M. Clark, Ph.D., Simon Kung, M.D., Maria I. Lapid, M.D., and Jarrett W. Richardson, M.D., (Rochester, MN)

Teresa A. Rummans, M.D., Steven C. Ames, Ph.D., and Shehzad K. Niazi, M.D. (Jacksonville, FL)

GRANTS
Linse Bock Foundation: Improving Quality of Life of Cancer Caregivers: An Internet Based Intervention. Funding period: 01/2012 – 12/2016; Co-PIs: Lapid, Clark, Rummans.

Linse Bock Foundation: A Structured Multidisciplinary Intervention to Improve Quality of Life of Patients Receiving Active Oncological Treatment: A Randomized Trial. Funding period: 03/2004 – 02/2015; Co-PIs: Clark, Rummans.


ACOSOG Community Clinical Oncology Program (CCOP) Research Base. Funded by the National Cancer Center. Funding period: 08/2011– 08/2016; Co-investigators: Clark, Lapid, Rummans.


A computerized interactive stress management intervention in early stage cancer: A randomized controlled trial. The Norwegian Cancer Society; co-investigator: Clark
KEY PUBLICATIONS


NATIONAL MEMBERSHIPS

National Comprehensive Cancer Network; Distress Management Panel. Dr. Clark
Neuropsychology, Aging, and Cognition

Adult Investigators:
Back row: Ivnik, Bergquist
Front row, left to right: Machulda, Trenerry, Cerhan, Smith, Fields

Child Investigators:
From left to right: Huebner, Brown, Zaccariello

Florida group:
From left to right: Rush, Ferman, Lucas, Pedraza

Arizona group:
From left to right: Krell-Roesch, Locke, Stonnington, Geda, Pink
ADULT INVESTIGATORS


Melanie C. Chandler, Ph.D., Tanis J. Ferman, Ph.D., John A. Lucas, Ph.D., Otto Pedraza, Ph.D., Beth K. Rush, Ph.D. (Jacksonville, Florida)

Yonas E. Geda, M.D., Kristin A. Kirlin, Ph.D., Dona E. Locke, Ph.D., David Osborne, Ph.D., Cynthia M. Stonnington, M.D., Jennifer V. Wethe, Ph.D. (Scottsdale, Arizona)

PEDIATRIC INVESTIGATORS

Tanya M. Brown, Ph.D., L.P., Andrea R. S. Huebner, Ph.D., L.P., Michael J. Zaccariello, Ph.D., L.P.

The aging and cognition research group focuses on factors associated with normal and pathological aging. They strongly embrace a multidisciplinary team approach within and among all three Mayo sites, which has afforded them the opportunity to participate in cutting-edge research examining risk factors, progression, and treatment outcomes in neurodegenerative and acquired neurologic disorders. This group collaborates with colleagues in behavioral neurology, neuropsychiatry, neuroimaging, neuropathology, molecular biology, and pharmacology as well as with other investigators at Mayo Clinic and other institutions. The Mayo Clinic Study of Aging, the Alzheimer’s disease Research Center, the TBI Model Systems, and the Centers of Excellence for Parkinson’s Disease are among Mayo’s most multidisciplinary and translational research programs. Group members have identified imaging and cognitive biomarkers for a wide range of dementing illnesses, such as Alzheimer’s disease, Lewy body dementia, frontotemporal dementia, speech and language-based dementias, and amyotrophic lateral sclerosis. They have developed clinical tools, neuropsychological norms (including African American norms), and functional neuroimaging strategies that in combination have helped increase the diagnostic and prognostic accuracy of assessments. Additionally, investigators on these teams are showing that behavioral interventions and brain rehabilitation techniques can mitigate cognitive deficits and improve functional outcomes in mild cognitive impairment and traumatic brain injury. They are also examining outcomes of treatments such as deep brain stimulation for movement and psychiatric disorders, and aerobic exercise in Alzheimer’s disease, and pursuing novel assessment strategies such as computer and mobile-assisted evaluations.

The pediatric investigators are focused on developing 1) evidenced-based approaches to neuropsychological assessment, 2) algorithms that reliably assess change across time and 3) effective interventions for children and adolescents who have had a traumatic brain injury. They are also exploring cognition in Niemann-Pick Disease, multiple sclerosis, and the neurodevelopment of children exposed to anesthesia.
GRANTS


Alzheimer’s Association: Amyloid-related imaging abnormalities (microbleeds) in atypical AD. Funding period: 11/2012 – 04/2015; Co-Investigator: Machulda.


Center for Individualized Medicine, Mayo Clinic: The Cognitive Effects of Lorazepam in Healthy Older Individuals with TOMM40 Variable-Length Polymorphisms. Funding period: 01/2013 – 01/2015; Principal Investigator: Stonnington.

Center for Innovation, Mayo Clinic: Development of a Mobile, Computerized, Cognitive Screening Exam. Funding period: 01/2014 – 12/2014; Principal Investigator: Pedraza, Co-Investigator: Lucas.

Department of Defense: Cortical Lesions as Determinants of White Matter Lesion Formation and Cognitive Abnormalities in MS. Funding period: 05/2103 – 04/2015; Co-Investigator: Rohe.

Mangurian Foundation for Lewy Body Research. Funding period: 02/2011 – 01/2015; Co-Investigators: Ferman, Pedraza.


National Institute on Aging: Education and Information Transfer Core, Mayo Alzheimer’s Disease Research Center. Funding period: 05/2014 – 04/2019; Principal Investigator: Lucas.


National Institute on Deafness and Other Communication Disorders: PIB PET Scanning in Speech and Language-Based Dementias. Funding period: 02/2010 - 01/2015; Co-Investigator: Machulda.


National Institutes of Health: Phase III Intergroup Study of Radiotherapy versus Temozolomide Alone versus Radiotherapy with Concomitant and Adjuvant Temozolomide for Patients with 1p/19q Codeleted Anaplastic Glioma. Funding period: 06/2010 – 06/2014; Co-Investigator: Cerhan.

National Institutes of Health: Neurodevelopment of Children Exposed to Anesthesia: A Population-Based Assessment. Funding period: 10/2014 – 12/2014; Principal Investigator: Pedraza.


St. Anne’s University Hospital: Neuroepidemiology – Aging, Pre-Clinical Alzheimer’s Disease and Dementia. Funding period: 01/2011 – 12/2015; Principal Investigator: Geda; Co-Investigator: Locke.

KEY PUBLICATIONS


Wershba R, Locke DEC, Lanyon R (in press). Analysis of Minnesota Multiphasic Personality Inventory-2-Restructured Form response bias indicators as suppressors or moderators in a medical setting. Psychological Assessment.

The HABIT (Healthy Actions to Benefit Independence and Thinking™) Clinical Research Program

INVESTIGATORS


Melanie J. Chandler, Ph.D., Miranda Morris, M.A., Francine C. Parfitt, M.A. (Jacksonville, Florida)

Dona E. Locke Ph.D., Andrea V. Cuc, L.C.S.W., Jeanne C. Young (Scottsdale, Arizona)

The HABIT Healthy Actions to Benefit Independence and Thinking™ clinical program provides the basis for a robust program of clinical research. This research is aimed at improving patient-centered services for patients and families confronting mild cognitive impairment and risk of developing dementia. This is a true ‘One Mayo’ multi-disciplinary program operating cooperatively and nearly identically across all three Mayo sites. HABIT’s clinical, research, and education activities involve a team of four neuropsychologists, three certified yoga specialists, two dementia education specialists, two masters therapists, psychometrists, and
GRANTS


CER-1306 01897-1 Comparative Effectiveness of Behavioral Interventions to Prevent or Delay Dementia, PI Smith, GE. 07/01/2014 – 06/30/2017 Patient Centered Outcomes Research Institute.

K12 HD065987-01 (Building Interdisciplinary Research Careers in Women’s Health K Scholar, J Fields, PI: Rebecca S. Bahn, MD) 01/03/2011 – 01/18/2013 NIH/NICHD Philanthropic Funding from the Ralph C. Wilson Foundation.

INVITED PRESENTATIONS


a licensed clinical social worker that serve as cognitive interventionists. Across the nation, individuals and families confronting mild cognitive impairment can access an innovative 10-day wellness and memory training program that has been shown in preliminary studies to improve overall quality of life and reduce caregiver burden. In 2014 the HABIT team concluded an NIH-funded project entitled “A Multicenter Rehabilitation Intervention for Amnestic Mild Cognitive Impairment”. By demonstrating that individuals with MCI and their care partners can be enrolled into a behavioral intervention program, stay in the program, and adhere to the rehabilitation methods taught, this pilot study helps to show the feasibility of this intervention. Additionally, this study allowed our team to refine delivery of a memory compensation intervention strategy as a formal compensatory program for memory loss in amnestic MCI. These preliminary findings helped our team successfully compete for Patient Centered Outcomes Research Institute (PCORI) funding of a large study entitled “Comparative Effectiveness of Behavioral Interventions to Prevent or Delay Dementia: A Study of HABIT”. This 3-year grant will enable a 3-site Mayo Clinic study examining which outcomes of the HABIT program are most important to which patients, and which of the five components of the HABIT program most impact those outcomes. This will enable Mayo to ensure future versions of the program most efficiently meet individual patient goals.

KEY PUBLICATIONS


The HABIT (Healthy Actions to Benefit Independence and Thinking™) Clinical Research Program continued


Obesity, Bariatric Surgery, and Eating Disorders Programs

INVESTIGATORS
Matthew M. Clark, Ph.D., ABPP, L.P., Karen B. Grothe, Ph.D., ABPP, L.P., Bridget K. Biggs, Ph.D., L.P., ABPP, Leslie A. Sim, Ph.D., L.P., ABPP, Karen M. Graszer, MA, LP, Sarah A. Kalsy, MA, LP, (Rochester, Minnesota), and Gretchen E. Ames, Ph.D., ABPP (Jacksonville, Florida)

This multidisciplinary research team is involved in several clinical projects and National Institutes of Health–funded clinical trials that examine the influence of psychological functioning and neurobiology on obesity and eating disorders and their treatment, conducted at the Rochester, Minnesota, and Jacksonville, Florida, sites of Mayo Clinic. Current adult investigations focus on primary care–based obesity treatment, and the impact of behavioral interventions, prevalence of food addiction, and response to treatment of chronic pain in bariatric surgery patients. Pediatric studies focus on understanding adolescents’ preferences for social support for development of a healthy lifestyle and the effect of training children and their parents in stress management and mindful eating based on body mass index and cardiovascular risk markers. Eating disorders research focuses on the use of functional magnetic resonance imaging to understand the neurobiological aspects of anorexia and bulimia nervosa. Additional studies examine the role of family functioning in adolescent eating disorders and explore whether athletes with eating disorders differ from non-athletes. The application of nonexercise activity thermogenesis to anorexia nervosa represents a novel method to understand and monitor weight regulation. Through our investigations, we hope to improve long-term treatment outcomes for persons with eating disorders and obesity.
GRANTS


National Institute of Diabetes and Digestive and Kidney Diseases (R01): Pharmacogenomics of Gastric Function and Weight in Obesity. Funding period: 09/2004 – 09/2015; PI: Camilleri (Division of Gastroenterology and Hepatology).


Enteromedics: ReCharge: A Prospective, Randomized, Blinded, Parallel-Group, Multicenter Trial to Evaluate the Safety and Efficacy of the Maestro RC2 System in Treating Obesity. Funding period: 05/2011 – 10/2016; PI: Que (Department of Surgery).

Orexigen: A Multicenter, Randomized, Double-Blind, Placebo-Controlled Study Assessing the Occurrence of Major Adverse Cardiovascular Events (MACE) in Overweight and Obese Subjects With Cardiovascular Risk Factors Receiving Naltrexone SR/ Bupropion SR. Funding period: 08/2012 – 08/2016; PI: Ebbert (Department of Medicine).


Mayo Clinic Department of Psychiatry & Psychology Small Grants Program: An evaluation of an online, family-based indicated prevention program for adolescent eating disorders. Funding period: 05/2012 – 05/2014; PI: Sim.

KEY PUBLICATIONS


PRESENTATIONS


NATIONAL LEADERSHIP ROLES

Grothe KB, Editorial Board Member, Bariatric Times.

Grothe KB, Director, The Obesity Society Bariatric Section Education Committee.

Clark MM, Editorial Board Member, Eating Behaviors.

Ames GE, Member, The Obesity Society Membership Committee.

Ames GE, Practice Samples Reviewer, American Board of Professional Psychology.
Sleep Medicine

INVESTIGATORS

R. Robert Auger, M.D. (Rochester, Minnesota), Lois E. Krahn, M.D. (Scottsdale, Arizona), and Paul A. Fredrickson, M.D., Siong-Chi Lin, M.D. (Jacksonville, Florida)

Mayo Clinic Department of Psychiatry & Psychology has historically been featured prominently in the field of sleep medicine. The late Peter J. Hauri, PhD, LP (professor emeritus, Mayo Clinic in Rochester) founded the American Sleep Disorders Association, authored the internationally renowned self-care book “No More Sleepless Nights”, and was widely considered to be the world’s authority on insomnia. Dr. Fredrickson is past president of the American Academy of Sleep Medicine (AASM). Drs. Auger, Lin, and Krahn continue this trend of national visibility and scholarship. Dr. Krahn served as joint editor of an influential sleep medicine textbook, Sleep Medicine in Clinical Practice, the second edition of which was recently published. Her research interests include narcolepsy, sleep disorders in women, and the interplay of psychiatric disorders and sleep. She previously has received funding from the Narcolepsy Network. Dr. Lin is investigating genetic research involving patients with restless legs syndrome, which has resulted in many important publications. Dr. Auger has served and/or chaired various AASM task forces, which have resulted in prominent publications and associated practice parameters. He was previously a member of the AASM Research Committee and of the American Sleep Medicine Foundation Executive Board. He chaired the AASM Circadian Rhythms Membership Section and has directed and participated in numerous sleep medicine sessions at national meetings. His primary research interests reside in the realm of circadian-based interventions for the treatment of sleep disorders.
**GRANT**


**KEY PUBLICATIONS**


Transplant Center Psychiatry and Psychology research efforts have focused on both pre-transplant assessment and post-transplant outcomes for solid organ and BMT patients. Members of our research team continue a multi-center study of outcomes in alcoholic liver transplant candidates and have published findings on liver transplantation in alcoholic patients with ≤ 6 months abstinence, an area of increasing investigation and discussion in liver transplantation. Mayo’s leadership role in the assessment of hand transplant patients and the development of a multi-center database for hand transplant candidates was supported by the Tarek E. Obaid Grant. Dr. Jowsey-Gregoire, in collaboration with Martin Kumlig, Ph.D., Medical University of Innsbruck, was invited to present at the first ever Transplant Psychiatry Symposium on Hand Transplantation at the American Society of Reconstructive Transplantation. Dr. Jowsey is also collaborating with researchers at the University of Alabama, Washington University, and the University of Minnesota on the NIDDK funded RELIVE study of long-term outcomes in kidney donors. Dr. Ehlers continues her investigation of modifiable unhealthy lifestyle behaviors and behavioral intervention development for hematopoietic stem cell transplant patients. Drs. Schneekloth, Jowsey, Rummans, Niazi and Vasquez are pursuing a series of studies to assess the predictive role of the Psychosocial Assessment of Candidates for Transplantation scale in determination of transplantation outcomes for lung, heart, and liver transplantation patients. Other research initiatives include outcomes in pancreas and lung transplant for patients with psychiatric conditions, the role of health coaching and health literacy in transplantation, the impact of post-transplant smoking on alcohol relapse in liver transplantation, and liver transplant outcomes in patients with Bipolar Disorder.
GRANTS


Tarek E. Obaid Award for Research in Vascularized Composite Transplantation: Development of a Psychosocial Assessment Tool for Reconstructive Hand Transplantation. Funding period: 2011-2012; PI: Sheila Jowsey, MD; Co-Investigators: Martin Kumnig, PhD, Medical University of Innsbruck, Schneekloth, Rummans, Kremers, Hatem.

KEY PUBLICATIONS


Integrated Behavioral Health Research

The primary care and behavioral health interface is a rich environment for research. This multidisciplinary team of investigators is from a variety of disciplines and specialities. They have been investigating the implementation of evidence based quality improvement projects for several prevalent mental health conditions presenting in the primary care setting. There are ongoing investigations examining a multidisciplinary treatment team approach for adult depression care (DIAMOND) with several projects led by Drs. Kurt Angstman and Ramona DeJesus on outcomes and qualitative research on care management led by Dr. Kristin Vickers Douglas. A project examining Emergency Department utilization is led by Dr. Gabrielle Melin and research on patients presenting with unexplained medical symptoms is led by Dr. Kristin Somers.

The Coordinated Anxiety Learning and Management (CALM) is an innovative model for the provision of evidence-based psychotherapy in primary care for adults with anxiety disorders. Initial outcomes show results for patients with generalized anxiety disorder are robust and clinically significant. This research team has also created an adolescent depression treatment program called Early Management and Evidence-Based Recognition of Adolescents Living With Depression (EMERALD). Both of these patient care models are very well received by patients and primary care providers.

These efforts received additional support with a substantial 3-year grant with the Center for Medicare and Medicaid studies as a part of a multisite implementation of a model of care coordination for patients co-morbid for Diabetes, Cardiovascular Disease, and Depression (COMPASS). Our research team is busy starting up implementation of this project in the Mayo Clinic Health System at six primary care sites around our state.

INVESTIGATORS
Kurt B. Angstman, M.D., Ramona S. DeJesus, M.D., Cesar A. Gonzalez, Ph.D., David J. Katzelnick, M.D., Gabrielle J. Melin, M.D., Victor M. Montori, M.D., Thomas G. Salter, M.D., Craig N. Sawchuk, Ph.D., Mary A. Severson, Ph.D., Nilay D. Shah, Ph.D., Nathan D. Shippee, Ph.D., Kristin J. Somers, M.D., Kristin S. Vickers Douglas, Ph.D., Mark D. Williams, M.D.
GRANTS


KEY PUBLICATIONS


Christi A. Patten, Ph.D.

Dr. Patten, Professor of Psychology and a Career Scientist, directs the Behavioral Health Research Program located in the Mayo Clinic Cancer Center. Her research team focuses on developing novel, theory-based behavioral interventions for tobacco cessation targeting Alaska Natives, pregnant women, adolescents, smokers with psychiatric comorbidity and the social network of smokers. The research team recently completed a large effectiveness trial funded by ClearWay Minnesota and enrolling 704 nonsmokers (i.e., support persons).

The research team also has a commitment to reducing cancer health disparities among Native Americans. During the past 13 years, the team has established a successful partnership with the Alaska Native community. Community research priorities are focused on reducing tobacco use among pregnant women and youth. This work currently is funded through several NIH grants. Dr. Patten is also nearing completion of a study that developed and is now evaluating a family-based intervention to promote mammography screening among Navajo women.

GRANTS

National Cancer Institute: Family Cancer Literacy to Promote Mammography Screening Among Navajo Women. Funding period: 09/2010 – 09/2014; PI: Patten.


KEY PUBLICATIONS


AWARDS AND LEADERSHIP ROLES

Christi A. Patten, Ph.D., Chair, National Institutes of Health; Risk, Prevention and Intervention in the Addictions (RPIA) Study Section, 07/01/2014–present.

Christi A. Patten, Ph.D., Assistant Editor, Addiction.
GRANTS


Mayo Clinic Department of Psychiatry and Psychology Small Grants Program: Epigenetic Regulation of the Expression of Metabotropic Glutamate Receptors (mGluR2 and mGluR3) in Patients with Bipolar Disorder with and without Comorbid Alcohol Use Disorder. Funding period: 07/2014-07/2015. Co-PI: Veldic; Co-PI: Blacker.

KEY PUBLICATIONS


PUBLISHED ABSTRACTS


HONORS

American College of Neuropsychopharmacology Travel Award, 2013.

Weinshilboum Prize for Pharmacogenomics, 2012.


Dr. Veldic is a Senior Associate Consultant who has a research interest in the molecular pathophysiology of mood disorders. His career research objective is to integrate clinical phenotyping, genetic/epigenetic screening, and neuroimaging for individualized diagnosis and treatment of people living with mental illness. Dr. Veldic’s current clinical research focus is on the translational progression from his bench research on epigenetic regulation of the neuronal gene expression in mood disorders and psychosis.

The main project that Dr. Veldic is currently working on is an epigenetic study aimed at identifying potential clinical and molecular differences between bipolar disorder patients with and without comorbid binge eating disorder, nicotine dependence, and alcohol use disorder. Specifically, his study will evaluate how the expression of glutamate system genes is regulated in different phenotypical subtypes of bipolar disorder. Results of that study can potentially open new avenues for individualized treatment algorithms and enhance treatment outcomes for patients diagnosed with bipolar disorders. Dr. Veldic conducts his research under the mentorships of Drs. Mark Frye and Doo-Sup Choi.
Stacey J. Winham, Ph.D.

Dr. Winham is an Assistant Professor of Biostatistics and a Collaborative Scientist in the Department of Health Sciences Research. She collaborates with numerous investigators in our Department and is a statistical geneticist with specialization in the development of novel statistical tools for high-dimensional genetic data analysis. As an NIH ‘Building Interdisciplinary Research Careers in Women’s Health’ (BIRCWH) scholar. Dr. Winham has a specific interest in integrating the X chromosome into genetic data analysis and studying sex-specific genetic effects in psychiatric diseases.

Dr. Winham investigates genetic factors underlying alcohol dependence and related traits (such as craving, depression, and relapse), as well as sex-specific differences. Dr. Winham also examines genetic risk factors for bipolar disorder and related subtypes (such as patients with comorbid obesity), focusing on genetic risk factors that may differ in men and women.

GRANTS


KEY PUBLICATIONS


Dr. Croarkin is a child and adolescent psychiatrist whose research efforts focus on understanding the physiology, treatment, and classification of mood disorders in children and adolescents. This work includes clinical trials in child and adolescent mood disorders; long-term studies of the safety of selective serotonin reuptake inhibitors in youth; studies of novel therapeutics, such as repetitive transcranial magnetic stimulation (rTMS); and neurophysiological studies of the GABA and glutamate neurotransmitter systems. Dr. Croarkin has served as a co-investigator for collaborative trials in child and adolescent depression and as primary investigator for a study funded by Brain and Behavior Research Foundation that involved novel single and paired-pulse transcranial magnetic stimulation (TMS) measures of GABA and glutamate functioning in children and adolescents with major depressive disorder. His ongoing research will examine glutamate neurotransmission in adolescent psychiatric disorders with concurrent TMS paradigms and magnetic resonance spectroscopy.

GRANTS
Mayo Clinic: Glutamate Probes in Adolescent Depression. Funding period: 05/21/2012 – 05/20/2014. PI: Croarkin.


Brain and Behavior Research Foundation, NARSAD Young Investigator Award. Glutamatergic Neurotransmission in Youth at Risk for Bipolar Disorder (PI: Croarkin, Mentor: Frye) 07/2013-07/2015.

KEY PUBLICATIONS


Maria I. Lapid, M.D.

Dr. Lapid is a geriatric psychiatrist with the American Board of Psychiatry and Neurology (ABPN) board certifications in Geriatric Psychiatry and Hospice and Palliative medicine. Her clinical practice includes leading multidisciplinary treatment teams in taking care of geriatric patients with medical and psychiatric comorbidities in the inpatient, outpatient, and longterm care settings; as an attending physician and faculty on the inpatient and outpatient palliative consultation services; and she is also one of the associate medical directors of the Mayo Clinic Geriatric Psychiatry Fellowship. Her clinical research involves quality-of-life (QOL) issues of patients in geriatric, oncologic, or palliative care and their caregivers. She is leading a Psycho-Oncology research study on internet-based interventions for cancer caregivers to improve their quality of life and prevent burnout.

MENTORS

Teresa A. Rummans, M.D. and Matthew M. Clark, Ph.D.

GRANTS

Linse Bock Foundation: Improving Quality of Life of Cancer Caregivers. Funding period: 01/2012 – 12/2016; PI; Lapid; Co-PIs: Rummans, Clark.

KEY PUBLICATIONS


Research Fellows and Residents

Carrie A. Bronars, Ph.D.

Christi A. Patten, Ph.D., Mentor

Dr. Carrie Bronars’ research interests include health disparities, with an emphasis in tobacco control, smoking cessation among psychiatric populations, behavioral medicine and chronic disease management, and mental health treatment in Primary Care settings. She has published 22 peer-reviewed journal articles and presented 33 abstracts at national conferences. Currently, Dr. Bronars is working on several projects exploring potential physiological mechanisms related to mood, smoking cessation, and immunity among depressed women smokers.

Mario J. Hitschfeld, M.D.

Terry D. Schneekloth, M.D., Mentor

Dr. Hitschfeld completed his psychiatry residency at the University of Valparaiso in Chile in 2012. His two year research fellowship at the Mayo Clinic is focused on addiction and transplant psychiatry. In addiction psychiatry, he is completing a study about the impact of gender and smoking status on alcohol craving and alcohol abstinence and another on the screening of substance misuse among adolescent psychiatric inpatients. He is the recipient of a Travel Award to attend the 2014 American Academy of Addiction Psychiatry Annual Meeting. In transplant psychiatry, he received a Department Small Grant to complete three studies about the pre-transplant psychosocial predictors of post-transplant outcomes among lung, heart and liver transplant recipients.

Malik M. Nassan, MBBS

Mark A. Frye, M.D., Mentor

Dr. Nassan, a recent medical graduate, has been always interested in translating genetic research from the bench to the bedside. While in medical school, he did research training in genetics at Harvard, Brigham, and Women’s Hospital, as well as at King Faisal Specialist Hospital and Research Centre, Riyadh, Saudi Arabia. His work as a fellow focuses on discovering the underpinning mechanism of bipolar disorder. He is currently investigating the association between brain-derived neurotrophic factor (BDNF) gene and early onset bipolar disorder. His project’s findings have been presented in national meetings and an original manuscript is currently under review.
Resident Researchers

C. Jacquetta Blacker, B.M.B.Ch., PGY-3 Resident

Marin Veldic, M.D., Mentor

Dr. Blacker has a background in surgery and prior research experience with in vitro studies of nitric oxide production in models of sepsis. As a psychiatry resident, she has an interest in epigenetic modifications causing long term alterations in genetic transcription. She is currently working with the Molecular Pharmacology laboratory on a study of epigenetic regulation of glutamate receptor expression in bipolar patients with and without comorbid alcohol use disorder.

Folabo Y. Dare, DO, PGY-3 Resident

Kathryn M. Schak, M.D. and Keith G. Rasmussen, M.D., Co-Mentors

Dr. Dare’s primary research interests include topics related to forensic psychiatry, including court-approved ECT and chemical dependency treatment, as well as court-ordered medication administration. She has presented her work on the tolerability and efficacy of court-approved ECT at the American Academy of Psychiatry and the Law Annual Meeting. Her paper on court-approved ECT has recently been accepted for publication in the Journal of ECT. Dr. Dare’s current project focuses on the long-term postdischarge outcomes of patients for whom a court order for the administration of neuroleptic medication was required.

Jung In (Kristin) Lee, M.D., PGY-4 Resident

Simon Kung, M.D., Mentor

Dr. Lee has an interest in geriatric psychiatry and her primary research focus is on dementia and neurodegenerative disorders. She is currently studying trends in the treatment of behavioral and psychiatric symptoms of dementia. She has presented her data regarding antipsychotic use in dementia patients in an inpatient setting at the American Association of Geriatric Psychiatry annual meeting. Recent research interests include deep brain stimulation for psychiatric applications.

Charles P. Lewis, MD., Child & Adolescent Psychiatry Fellow

Paul E. Croarkin, DO., Mentor

Dr. Lewis has previous research experience in the study of child and adolescent mood disorders and adult substance use disorders utilizing neuroimaging techniques. His primary current research interests are the neurobiological correlates of mood disorders and suicidal behavior in child and adolescent populations and the development of biological markers for these conditions. His current projects focus on investigating potential biomarkers of depression severity and suicidal risk in adolescents utilizing transcranial magnetic stimulation (TMS) neurophysiologic techniques and proton magnetic resonance spectroscopy (MRS) to examine potential dysfunction of excitatory and inhibitory neurotransmitter systems.
Asfia Qaadir, D.O., Child & Adolescent Psychiatry Fellow

Paul E. Croarkin, D.O., Mentor

Dr. Qaadir has a prior research background in the study of childhood ADHD and candidate genes utilizing pharmacogenomics. She has presented a poster on the neuropsychiatric manifestations of SREAT (Steroid responsive encephalopathy associated with autoimmune thyroiditis) at the American Association of Geriatric Psychiatry meeting. Dr. Qaadir also participated in a symposium at the American Academy of Child and Adolescent Psychiatry annual meeting focusing on the anatomy and physiology of GABA (gamma-aminobutyric acid) as it pertains to dysregulation in adolescent depression. She has explored models of inpatient adolescent female group psychotherapy. Currently evolving research interest is in exploring patterns of mental health-seeking behaviors among Rochester’s Muslim community.

Maria M. Reyes, M.D. PGY-4 Resident

Terry D. Schneekloth, M.D., Mentor

Dr. Reyes has a broad research background that includes grand rounds presentations on sleep disturbances in substance dependent populations and parental attitudes regarding school-based immunizations. She has participated in several presentations at national meetings including the Pediatric Academic Society, American Medical Association, American Association for Geriatric Psychiatry and the American Psychiatric Association. Dr. Reyes has co-authored two prior scientific publications, “Parental Attitudes about Influenza Immunization and School-Based Immunization for School-Aged Children,” and “Identifying the Human Research Subject in Cluster Randomized Controlled Trials”. She is currently studying the clinical utility of ADHD testing instruments in adults with alcoholism. She is also conducting research on gender differences in the psychiatric comorbidity among adults with both alcoholism and ADHD. Both studies are being reviewed for publication in peer reviewed journals.

Christopher R. Takala, D.O., Child & Adolescent Psychiatry Fellow

Brian A. Palmer, MD and Leslie A. Sim, Ph.D., L.P., Co-Mentors

Dr. Takala’s primary research interests have been broad during his tenure. He is involved in a project that aims to provide greater exposure to child-adolescent psychiatry and complement existing curricula at various medical schools throughout the nation by using video-teleconferencing technology. The goal is to ultimately help address the chronic child psychiatry workforce shortage. A separate project focuses on parental perceptions of mental illness in adolescents admitted to inpatient psychiatry. Findings to date have led to a presentation at a national meeting, as well as a manuscript currently submitted for publication. In addition, a separate project assesses concurrent use of ECT with bupropion. Findings will be presented at a national conference and a manuscript will be submitted for publication. He has publications in several journals including: General Hospital Psychiatry, Academic Psychiatry, and the Annals of Pharmacotherapy. He has reviewed articles for the Journal of Psychiatry: Open Access and Journal of Pharmacy Technology.
Alissa M. Butts, Ph.D. – Clinical Neuropsychology Fellow

Mary M. Machulda, Ph.D., L.P. and Jane H. Cerhan, Ph.D., L.P., Co-Mentors

Dr. Butts is broadly interested in the neurocognitive correlates of neurodegenerative and neurologic diseases. As part of the Speech/Language Neurodegenerative Disorders research group, she has been investigating the utility of neuropsychological testing and potential biomarkers associated with advanced neuroimaging techniques (e.g., structural MRI, DTI, and FDG PET) in differentiating between various neurodegenerative disorders that present with primary language disturbance. She is also involved in exploring the neurocognitive correlates of various brain tumors. Under the direction of Dr. Jane Cerhan and her collaborators, Dr. Butts is examining the neurocognitive function of individuals with incidental meningioma, which they have found during the workup as a healthy control through the Mayo Clinic Study of Aging.

Julia R. Craner, Ph.D. – Clinical Health Psychology Fellow

Kristin Vickers Douglas, Ph.D. and Craig N. Sawchuk, Ph.D., Co-Mentors

Dr. Craner is a first year Clinical Psychology Fellow and has a research background in the study of psychological responses to physiological changes, particularly with regard to women’s health issues. Her current interests are developing and evaluating programs to integrate psychological services in medical settings in order to better address these mind-body relationships, and she is involved in several projects within Integrated Behavioral Health (IBH).

Martha C. Early, Ph.D. – Clinical Child Psychology Fellow

Karen E. Weiss, Ph.D., L.P., Bridget K. Biggs, Ph.D., L.P., Stephen P. Whiteside, Ph.D., L.P., and Leslie A. Sim, Ph.D., L.P., Mentors

Dr. Early’s primary research interest is in emotion regulation in children as it relates to psychopathology and chronic medical conditions. As a part of her doctoral dissertation Dr. Early focused on regulation of positive emotion and developed a self-report measure of positive emotion regulation for children and adolescents. She has presented data collected from this project in a symposium for the Association for Behavioral Cognitive Therapy annual meeting as well as numerous posters at national and international conferences. She presented a poster at the National Conference on Child Clinical and Adolescent Psychology examining emotion regulation and family functioning in psychiatrically hospitalized adolescents. Her current research includes examining emotion regulation in adolescents with chronic pain as well as peer competence in youth with Anxiety Disorders.
Cassie M. Green, Psy.D. – Clinical Pediatric Neuropsychology Fellow

Tanya M. Brown, Ph.D., L.P., Mentor

Dr. Green is researching neuropsychological outcomes in a pediatric brain tumor population. She is specifically interested in identifying demographic and treatment variables that may place children with brain tumors at higher risk for poor cognitive, behavioral, and psychosocial outcomes. Dr. Green is also conducting research based out of the outpatient Brain Rehabilitation Clinic with Dr. Thomas Bergquist. They are interested in describing patient and injury characteristics of a traumatic brain injury sample upon admission to the clinic, as well as identifying relationships among injury severity, demographics, psychosocial functioning, and overall outcome.

Ashley N. Junghans-Rutelonis, Ph.D. – Clinical Child Psychology Fellow

Karen E. Weiss, Ph.D., Mentor

Dr. Junghans-Rutelonis has a research background in the study of child, young adult, and family adjustment to chronic illness. Her interests include the transactional nature of child and parental adjustment and the manner in which cognitions shape understanding of and functioning with illness. She has previously assessed psychological well-being and cognitive affective variables in individuals with allergies, asthma, juvenile rheumatic disease, Turner’s syndrome and Huntington’s Disease. She is currently involved in projects focused on child outcome variables, including functional disability, in pediatric chronic pain and Postural Orthostatic Tachycardia Syndrome.

Afton M. Koball, Ph.D., L.P. – Clinical Health Psychology Fellow

Karen B. Grothe, Ph.D., L.P., Mentor

Dr. Koball’s primary research interests are focused broadly in obesity. Particularly, she has been involved in several published investigations of novel behavioral weight management interventions, psychological correlates of weight loss, and the impact of weight bias and stigma on weight and psychological distress. Currently, she is working on a study examining food addiction in bariatric-surgery seeking patients. She has presented this work at Obesity Week, the joint annual meeting of the American Society for Metabolic and Bariatric Surgery and The Obesity Society, in November 2014. Dr. Koball also has been involved in multidisciplinary research projects, including with the Mayo Clinic Healthy Weight Initiative and the Neuropsychiatric Research Institute in Fargo, ND.

Kamini Krishnan, Ph.D. – Clinical Neuropsychology Fellow

Mary M. Machulda, Ph.D., L.P., Mentor

Dr. Krishnan’s research interests include investigating the relationship between neuroimaging findings and neurocognitive function. Currently, she is involved in a preliminary project categorizing patients diagnosed with logopenic aphasia based on hypometabolism patterns observed on their PET scans. Future investigations will examine whether identified regions with hypometabolism correlate with cognitive deficits.
Emily A. McTate, Ph.D., L.P. – Clinical Child Psychology Fellow

Karen E. Weiss, Ph.D., L.P., and Jarrod M. Leffler, Ph.D., L.P., Co-Mentors

Dr. McTate’s primary research interests include projects that bridge the world of research and clinical practice. She is involved in several research projects, which include a multi-site study evaluating a problem-solving intervention for use with parents of adolescents with chronic pain and a study evaluating psychological symptoms as they relate to functional impairment in adolescents with postural orthostatic tachycardia syndrome. Additionally, she has presented posters at the International Symposium on the Autonomic Nervous System, the National Conference in Clinical Child and Adolescent Psychology, the International Conference on Child and Adolescent Psychopathology, and has abstracts submitted to Society of Pediatric Psychology Annual Conference and accepted at the Association of Psychologists in Academic Health Centers 7th National Conference.

Eleshia J. Morrison, Ph.D., L.P. – Clinical Health Psychology Fellow

Shawna L. Ehlers, Ph.D., L.P.; Matthew M. Clark, Ph.D., L.P., Co-Mentors

Dr. Morrison’s research examines the biopsychosocial aspects of oncology. Her interests cover the spectrum of the cancer experience across different phases of cancer survivorship, treatment modalities, disease types, and psychosocial correlates. Current projects include the examination of employment status as a marker of adjustment post-stem cell transplantation for hematologic cancers; and psychological distress, physical symptom burden, and quality of life in lung and breast cancer survivors.
The Research Psychometrics Resource (RPR) provides psychological and cognitive testing for researchers throughout the institution. The RPR matches investigators across Mayo Clinic seeking validated psychometric questionnaires and testing in collaboration with a psychologist investigator who can assist in proper test selection, study design, and data interpretation. RPR psychometrists have expertise in the administration of psychological testing, have research training and backgrounds, and they provide test procurement, scheduling, test-administration, quality control and certain data management services under the auspices of the Psychological Assessment Laboratory in the Department of Psychiatry and Psychology. Established in 2000, the RPR has facilitated collaborations between the Department of Psychiatry and Psychology and numerous other departments including Cardiology, Neurology, Anesthesiology, Radiation Oncology, Gynecology, Physical Medicine and Rehabilitation, Internal Medicine, and Surgery. Example protocols have included:

- Characterization of Silent Cerebral Lesions in Patients Undergoing Left Heart Ablation for Ventricular Arrhythmia and Atrial Fibrillation. PI – Asirvatham
- A Longitudinal Study of Alterations in Cognitive Function and Brain Metabolites among Women Receiving Chemotherapy for Primary Breast Cancer. PI -- Kholi
- Effects of Estrogen Replacement on Atherosclerosis Progression in Recently Menopausal Women: The Kronos Early Estrogen Prevention Study.
- Neurodevelopment of Children Exposed to Anesthesia: A Population Based Assessment. PI – Warner
The primary role of the departmental research team is to serve as facilitators and offer support services that encourage research activities for any staff member who has an interest in engaging in research. The scope of expertise includes administration of pre/post grant submission related activities, clinical trials research as well as basic science research.

In 2014, the research structure in our department underwent reorganization. As a result, Jilian Foxen has joined the department to lead the research team as Senior Program Coordinator- Research Operations.

A core group of talented allied health professionals support the administrative function of the department’s research and include Lisa Seymour, Program Coordinator; Barb Hall, Protocol Specialist III; and Lori Solmonson, Research Secretary. Over the past decade these individuals have supported research related activities for the department and their expertise in research finance, protocol development, grant submission, manuscript submission, and preparations for national and international scientific educational sessions serve as a key resource for any provider pursuing research activities.

To support the department’s growth of research activities related to clinical trials, Michelle Skime, Senior Clinical Research Coordinator, leads a team of well-trained associate and clinical research coordinators. On average ten dedicated clinical coordinators support over 80 active clinical research protocols throughout the department including, but not limited to the Pain Rehabilitation Program, Addiction Center, and Mood Clinic.

A second group dedicated to Community Health Education Outreach is the Behavioral Health Research Program led by Dr. Christi Patten. Christine Hughes is the Program Coordinator. Their research focuses on developing behavioral interventions for tobacco cessation and reducing cancer health disparities. Their current research targets Alaska Natives, Native Americans, pregnant women, smokers with psychiatric comorbidity and the social network of smokers.
In addition to clinical studies, a basic science laboratory led by Dr. Tye and Shari Sutor, Principle Research Technologist, focuses on supporting the molecular and small animal research protocols of neurologic translational research. Two research technicians and a wealth of research facilities are located on the second floor of the Generose Building alongside the inpatient and outpatient Psychiatry and Psychology Department. The laboratory is equipped for protein work (western blotting and ELISA), molecular biology (PCR, RT-PCR, SNP analysis, and gene expression), immunohistochemistry of tissues, cell culture and immortalization of cells, and also the processing of clinical samples. The animal research area is located at the downtown campus in the Stabile Building. In the animal facilities we are looking at pharmacotherapies, deep brain stimulation and the combinations of the two, as well as analyzing multiple behavioral tests for efficacy of the treatments. These facilities are available to support clinicians engaged in translational neuro science.