

UMass Psychiatry Research Day

April 27, 2023

Keynote Presentation - Addiction Science: Update for Psychiatry

Presented by Wilson Compton, MD, MPE, Deputy Director of the National Institute on Drug Abuse (NIDA) of the National Institutes of Health



Dear Colleagues,

Welcome to UMass Psychiatry Research Day 2023! Our program this year focuses on addictions and substance use disorders. As I'm sure you are aware, increases in overdose deaths, particularly over the last 20-years across the United States, highlight the importance of this topic.

We are fortunate at UMass Chan Medical School and UMass Memorial Healthcare to have some of the areas' best resources for people with addictions and substance misuse disorders. As you will see in today's Symposia, our department has particular expertise in reducing alcohol and drug use in marginalized populations and veterans.

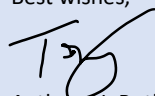
We are pleased to welcome keynote speaker, Wilson Compton, M.D., M.P.E., Deputy Director of the National Institute of Drug Abuse (NIDA) of the National Institutes of Health, who will start the program off with a presentation entitled, "Addiction Science: Update for Psychiatry". This will be followed by the "iSPARC Symposium – Innovations to Reduce Alcohol and Drug Use in Marginalized Populations: Research from the Implementation Science and Practice Advances Research Center (iSPARC) featuring Drs. Maryann Davis, Gina Vincent, Spencer Lawson, Melissa Anderson, Alexander Wilkins, Kathryn Sabella, and Marth Zimmermann. This will be followed by the "Addictions Symposium – VISN 1 MIRECC: Centering Veteran Priorities in Recovery from Substance Use and Co-Occurring Disorders" featuring Drs. Megan Kelly, Victoria Ameal, Brian Stevenson, and Erin Reilly.

After the Symposia, there will be four brief, 10-minute, presentations in a session entitled, "Trainee and Junior Faculty 'Ideas in Progress' Presentations" featuring Drs. Bennett Wechsler, Marfo, Palmer, and Peckham. We encourage the audience to provide feedback to the presenters.

Then, as the afternoon draws to a close, we invite you to sample some hors d'oeuvres and peruse posters highlighting the research of some of our department members.

We would like to thank the hard work of the Research Day Planning Committee whose names can be found on page 3 of the Program Book. Join us in thanking them for their hard work, with a special thanks for the skilled support of Mariah Evans and Diane George! Finally, take a moment to read the descriptions, on pages 68-94, of the breadth and depth of the Research Projects and Programs currently ongoing in the Department of Psychiatry!

Best wishes,



Anthony J. Rothschild, M.D.
Irving S. and Betty Brudnick Endowed Chair in Psychiatry
Vice-Chair for Research Department of Psychiatry



Kimberly A. Yonkers, M.D.
Katz Family Chair, Department of Psychiatry

Psychiatry Research Day

Thursday, April 27, 2023

Faculty Conference Room

UMass Chan Medical School, University Campus

10:00am: Posters to be displayed by 10am in Medical School Lobby

11:00 – 11:30am: Registration and Lunch

11:30 – 11:45am: Welcoming Remarks

Anthony J. Rothschild, M.D.

Irving S. and Betty Brudnick Endowed Chair and Professor of Psychiatry
Vice-Chair for Research, Department of Psychiatry
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UMass Chan Medical School

Michael Gustafson, MD, MBA

President, UMass Memorial Medical Center

11:45 – 12:45pm: Keynote Presentation - Addiction Science: Update for Psychiatry
Presented by **Wilson Compton, MD, MPE**. Deputy Director of the
National Institute on Drug Abuse (NIDA) of the National Institutes of
Health.

12:45 – 1:00pm: Presentation of Awards:

Banks Research Mentoring Award:
In Recognition of Outstanding Research Mentoring

Excellence in Quality Improvement Award:
In Recognition of Outstanding Provision of Quality Care

- 1:00 – 2:45pm: iSPARC Symposium – Innovations to Reduce Alcohol and Drug Use in Marginalized Populations: Research from the Implementation Science and Practice Advances Research Center (iSPARC)
- Opening Remarks
Maryann Davis, PhD
- Addiction & Racial Disparities Research in Criminal-Legal Settings
Gina Vincent, PhD and **Spencer Lawson, PhD**
- Leveraging Community Engagement to Address Alcohol Use Disorder Disparities in the Deaf Community
Melissa Anderson, PhD and **Alexander Wilkins, PhD**
- Prioritizing the lived experience of young adults with mental health conditions in mental health services research
Kathryn Sabella, PhD
- Questions for the Panel
Martha Zimmermann, PhD
- 2:45 – 3:00pm: Break
- 3:00 – 4:15pm: Addictions Symposium - VISN 1 MIRECC: Centering Veteran Priorities in Recovery from Substance Use and Co-Occurring Disorders
- Opening Remarks
Megan Kelly, PhD
- Personal recovery goals in early addiction treatment
Victoria Ameral, PhD
- Meaningful employment to support addiction recovery
Brian Stevenson, PhD
- Challenges and opportunities for managing chronic pain and substance use
Erin Reilly, PhD
- 4:15 – 5:00pm: Trainee and Junior Faculty “Ideas in Progress” Presentations
- 4:15 – 4:25: Safety and Efficacy of Spravato to Auvelity Cross-Titration in MDD: A Pilot Study, **Bennett Weschler, MD**
- 4:25 – 4:35: Racial, Ethnic, and Area-Based Differences in Protective Factor Prevalence Among Predisposition Youth, **Nana Yaa Marfo, PhD**
- 4:35 – 4:45: Access to Abortion Care in the United States and Child Mental Health Outcomes **Sarah Palmer, MD**
- 4:45 – 4:55: Assessing Impulsivity to Develop Novel Interventions for Veterans in Transitional Work Programs **Andrew Peckham, PhD**
- 5:00 – 6:00pm: Poster Session and Reception

Thank You to our Research Day Planning Committee

Research Day Planning Committee:

Anthony Rothschild (Chair)

Auralyd Padilla-Candelario

Dara Drawbridge

Mariah Evans

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Wilson M. Compton, M.D., M.P.E. is Deputy Director of the National Institute on Drug Abuse (NIDA) of the National Institutes of Health, where he has worked since 2002. Dr. Compton received his undergraduate education at Amherst College and medical education, including psychiatry training, at Washington University in St. Louis. Over his career, Dr. Compton has authored over 250 publications and often speaks at high-impact venues. He was a member of DSM-5's Revision Task Force and has led, for NIDA, development of the Population Assessment of Tobacco and Health Study, jointly sponsored by NIDA and the U.S. Food and Drug Administration (FDA), with 45,971 participants. Dr. Compton has received multiple awards, including FDA awards for collaboration in 2012, 2013 and 2017, and the Health and Human Services Secretary's Awards for Meritorious Service in 2013 and Distinguished Service in 2015, 2018 and 2019.

Disclosures of Interests

Stock Equity (long-term):

- 3M Company (under \$10,000)
- Pfizer, Inc. (under \$10,000)

Speaker's Bureau(s): None

Sources of Research Support: NIH

Consulting Relationships: None

Keynote Presentation

Addiction Science: Update for Psychiatry

Presented by Wilson Compton, MD, MPE. Deputy Director of the National Institute on Drug Abuse (NIDA) of the National Institutes of Health.

Abstract:

Addiction science is a dynamic field that grows and evolves. Patterns of substance use and addictive behaviors emerge and shift, requiring new modes of clinical practice. Research priorities must be responsive to these changes. Increases in overdose deaths, particularly over the last 20-years in all parts of the U.S., highlight the importance of robust prevention, harm reduction, and treatment interventions. This presentation will begin with a brief review of the neuroscience of addiction, will review the evolution of the U.S. overdose crisis, and will highlight some recent public health substance use concerns. The impact of COVID-19 will also be reviewed and discussed, with a focus on overdoses both before and during the pandemic. Clinical practice changes emerging as a result of the pandemic responses will be highlighted along with various treatment options and the role psychiatrists play in opioid use disorders and substance use disorders.

iSPARC Symposium

**Psychiatry Research Day
iSPARC Symposium**

A. Overview of iSPARC Symposium

iSPARC Panel 1-2:45pm, April 27th, 2023	
Opening Remarks By Dr. Maryann Davis	5 min
Addiction & Racial Disparities Research in Criminal-Legal Settings Dr. Gina Vincent & Dr. Spencer Lawson	25 min
Leveraging Community Engagement to Address Alcohol Use Disorder Disparities in the Deaf Community Dr. Melissa Anderson & Dr. Alex Wilkins	25 min
Prioritizing the lived experience of young adults with mental health conditions in mental health services research Dr. Kathryn Sabella	25 min
Questions for the Panel Facilitated by Dr. Martha Zimmerman	25 min

Please note, abstracts for each presentation are on subsequent pages.

Title: Addiction & Racial Disparities Research in Criminal-Legal Settings

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Abstract

The Law & Psychiatry Program's Research Arm within iSPARC works with the systems that impact criminal-legal involved youth and adults to a) implement and study the outcomes of evidence-based practices, and b) improve the lives of these individuals while protecting public safety. Two critical issues in these systems are treatment of addiction and reduction of the extreme racial disparities in incarceration. This presentation will highlight our work in these two areas, both of which are focal points of our Center of Excellence for Specialty Courts. First, we report findings on the effectiveness of drug treatment courts that emphasize opiate use disorders and incorporate culturally proficient strategies to eradicate racial, ethnic, and gender disparities in their programs. Second, we describe ongoing research and practice efforts to use risk assessment procedures as a means for reducing racial disparities in the U.S. incarcerated population.

Title: Leveraging Community Engagement to Address Alcohol Use Disorder Disparities in the Deaf Community

Authors, Affiliations, and Email Addresses:

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Alexander M. Wilkins, PhD; Assistant Professor of Psychiatry¹

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Abstract:

The U.S. Deaf community – more than 500,000 Americans who communicate using American Sign Language (ASL) – experiences triple the rate of lifetime problem drinking compared to the general population. Hearing individuals have access to dozens of validated treatments for alcohol use disorder, yet there are no evidence-based treatments to treat *any* behavioral health condition with Deaf clients. Available behavioral health treatments fail to meet Deaf clients' unique language access needs. Leveraging extensive community engagement to address these barriers, Dr. Anderson and Dr. Wilkins have led teams of Deaf and hearing researchers, clinicians, filmmakers, actors, artists, and Deaf people in recovery to develop and evaluate innovative treatment adaptations that are uniquely and expertly tailored for Deaf signing people. This presentation will outline our process of community-engaged intervention development, as well as showcase examples of completed interventions and interventions currently in the works.

Title: Prioritizing the lived experience of young adults with mental health conditions in mental health services research

Authors, Affiliations, and Email Addresses:

Kathryn Sabella, PhD; Assistant Professor¹

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¹iSPARC and the Transitions to Adulthood Center for Research

Abstract:

Compared to older adults, young adults in the United States, ages 18-25, have the highest rates of mental illness yet the lowest rates of engagement in mental health services. Nationally and internationally recognized, the Transitions to Adulthood Center for Research (TACR) conducts rigorous research, training, and dissemination activities to improve supports and services for young adults with mental health conditions. Dr. Sabella will provide an overview of her research that prioritizes the lived experiences of young adults with mental health conditions. Pulling from qualitative and quantitative research, this presentation will summarize young adults' experiences managing their mental health conditions while pursuing normative school and work activities, how many young adults explore gender identities over time, and how young adults prefer to be asked about their gender identity. It will also offer a preview of emerging lines of research on alcohol consumption among young adult women and young mothers. Participatory research that prioritizes the lived experience of young adults with serious mental health conditions can inform the development of more appealing and potentially effective mental health, education, and employment services for this population.

Addictions Symposium

Centering Veteran priorities in recovery from substance use and co-occurring disorders

Authors: Victoria Ameral, PhD^{a,b}, Brian Stevenson, PhD^{a,b}, Erin D Reilly, PhD^{a,b}, & Megan M Kelly, PhD^{a,b}

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With growing recognition of the importance of addiction treatment outcomes beyond abstinence alone, research that centers patient priorities for recovery is gaining momentum. Dr. Megan Kelly, Co-Director and Bedford Site Director of the VISN 1 MIRECC and Professor of Psychiatry at UMass Chan Medical School, will introduce this symposium with an overview of the MIRECC's recovery-oriented research on addiction and co-occurring disorders.

Personal recovery goals in early addiction treatment (Victoria Ameral, PhD): Psychotherapy interventions for addiction typically introduce broader life goals late in treatment, reflecting the challenges of prioritizing such goals when relationship disruptions, financial insecurity, and other psychosocial consequences of substance use are high. This presentation will highlight research that uses values from Acceptance and Commitment Therapy (ACT) to "bridge" this critical gap. By identifying the qualities individuals want to represent in their daily lives, values work incorporates personally meaningful behaviors and goals early in the recovery process. Ongoing projects and recent findings will include data from a national survey demonstrating higher satisfaction among Veterans whose providers incorporated values into addiction care and early interview themes from an ongoing treatment development study for Veterans in medication treatment for opioid use disorder. The presentation will conclude with an overview of future directions for this work.

Meaningful employment to support addiction recovery (Brian Stevenson, PhD): There is a reciprocal relationship between substance use and employment. Employment provides the resources to meet basic survival needs, in addition to fulfilling psychological needs like social connectedness, self-determination, meaning, self-esteem, recovery, and coping with mental health symptoms, which are all key ingredients for sustaining reduced substance use. However, growing evidence suggests that suboptimal employment can also exacerbate substance use and not all job situations lead to better functioning. Consistent with these findings, Veterans in recovery from substance use disorders have asked for integrative mental health approaches that support their pursuit of meaningful employment, rather than any job that is available. This presentation will highlight data from pilot work with these Veterans, offering important insight into how providers can support the pursuit of meaningful employment. Implications for future research will also be discussed.

Challenges and opportunities for managing chronic pain and substance use (Erin Reilly, PhD): Chronic pain and substance use are two frequently co-occurring and significant health problems in the United States. When chronic pain prompts self-medication with substances, this contributes to escalating substance use problems and poorer pain treatment outcomes. The result is often a feedback loop maintaining both issues and leading to poorer mental health, physical functioning, and legal or social concerns. At the same time, managing both conditions can create an opportunity for clients to learn and apply transdiagnostic and resiliency-based skills that can increase functioning and quality of life. This presentation will discuss data on how one such process, psychological flexibility, can be particularly beneficial in addressing the interaction between these physical and mental health co-morbidities. We will also discuss how tailored behavioral programs can create client-centered, flexible treatments for addressing these co-occurring issues.

Ideas in Progress

Safety and Efficacy of Spravato to Auvelity Cross-Titration in MDD: A Pilot Study

Bennett Wechsler, MD¹, Chengwu Yang, MD-PhD², Anthony Rothschild, MD¹

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Background and Significance:

Spravato, a selective N-methyl-D-aspartate (NMDA) receptor antagonist, was approved in 2019 for treatment resistant depression, and enabled some patients with depression to find improvement in symptoms within hours of administration¹. For some patients the dissociative side effects are intolerable. For others, being driven to and from the office for treatment is a barrier to care. Auvelity was approved by the FDA in 2022 and is an orally acting agent that works in part due to NMDA receptor antagonism². This oral formulation obviates the need for supervised administration. This study aims to obtain pilot data regarding efficacy and safety of cross tapering subjects from Spravato to Auvelity. The proposed study would set the stage for further research with real world implications for the millions of people who suffer from depression.

Methods:

The pilot study proposed is a small, single site, proof of concept, open label, two-arm study of 30 patients who have responded to esketamine (Montgomery-Asberg Depression Rating Scale (MADRS) decrease by at least 50%). Prior to entering the study, subjects will be maintained on esketamine together with augmenting medications, and / or psychotherapy.

After enrollment and screening, subjects will be randomized to receive Auvelity") or continue Spravato in a 1:1 ratio. Those randomized to the experimental arm will be started on Auvelity (45 mg of dextromethorphan, 105mg bupropion) once per day in the morning, and after three days of treatment, the dose is increased (as tolerated) to 45mg dextromethorphan and 105mg bupropion twice a day. Follow-ups with patients will be performed weekly, and include MADRS scale administration, and a psychiatric medication visit. If subjects relapse into a depressive episode (defined in this study as a score of 5 or 6 on item 10 on the MADRS indicating active suicidality, or a total MADRS score of 24), they will be transitioned out of the study if appropriate and reinitiated on Spravato. The primary endpoint will be the change from baseline (CFB) on the MADRS six weeks post randomization.

Data Analytic Plan:

In this small proof of concept pilot study with sample size of 30, we will focus on exploratory, descriptive, inferential analysis or hypothesis testing. The estimates we obtain from this pilot study will offer key parameters to design formal large studies. Although we will compare the safety and efficacy outcomes between the two arms, we will not run hypothesis testing using the ordinary statistical significance level (i.e., $\alpha = 0.05$)⁴. For safety, we will compare the proportion (%) of AE between the two arms, using Chi-square test, or Fisher's exact test, pending the real number of AE we observed at the end. For efficacy, we will compare the CFB on the MADRS score between the two arms, using multiple regression, adjusting for the predictor variables of interest listed above (age, sex, etc.) For missing data, we will apply multiple imputation through the MICE R^{5,6} package.

Hypothesis and Conclusion:

We hypothesize that the experimental group will not have significantly different MADRS scores from baseline, or from the MADRS scores of those in the control group; those with treatment resistant depression, who have responded to the NMDA receptor antagonist, Spravato, will continue to have a response with an oral medication with NMDA receptor antagonist activity. These fast-acting antidepressants are being used with increasing frequency in the community, and this study proposed seeks to find out more regarding how these therapies fit into the treatment landscape.

References:

- 1) Mohamed, S., Johnson, G. R., Chen, P., et al (2017). Effect of Antidepressant Switching vs Augmentation on Remission Among Patients With Major Depressive Disorder Unresponsive to Antidepressant Treatment: The VAST-D Randomized Clinical Trial. *JAMA*, 318(2), 132–145.
- 2) Popova V, Daly EJ, Trivedi M, et al (2019). Efficacy and Safety of Flexibly Dosed Esketamine Nasal Spray Combined With a Newly Initiated Oral Antidepressant in Treatment-Resistant Depression: A Randomized Double-Blind Active-Controlled Study. *Am J Psychiatry*, 176(6):428-438.
- 3) Keam SJ (2022). Dextromethorphan/Bupropion: First Approval. *CNS Drugs*, 36(11):1229-1238.
- 4) Julious, S.A. (2005). Sample size of 12 per group rule of thumb for a pilot study. *Pharmaceutical Statistics: The Journal of Applied Statistics in the Pharmaceutical Industry*, 4(4), pp.287-291.
- 5) Rubin, D.B. (1996). Multiple imputation after 18+ years. *Journal of the American statistical Association*, 91(434), pp.473-489.
- 6) Zhang, Z. (2016). Multiple imputation with multivariate imputation by chained equation (MICE) package. *Annals of translational medicine*, 4(2).

Title: Racial, Ethnic, and Area-Based Differences in Protective Factor Prevalence Among Predisposition Youth

Authors: Nana Yaa A. Marfo, Ph.D. & Gina M. Vincent, Ph.D.

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Abstract: Research investigating racial and ethnic differences in risk for reoffending among justice-involved youth has historically focused on the prevalence of risk factors and their differential prediction of reoffending. To date, few studies have explored potential racial and ethnic differences in the presence or value of protective factors—positive characteristics of youth that may decrease their likelihood of reoffending. Understanding racial/ethnic differences in the prevalence of protective factors constitutes a crucial first step in understanding 1) the relevance of specific protective factors to youth with different sociocultural experiences, and 2) how best to leverage and bolster youth to improve long-term outcomes. This presentation will discuss research in progress from the multi-state Youth Protective Factors Study. This research will examine whether there are significant differences between Black (n = 708), White (n = 600), and Latinx (n = 207) justice-involved youth from three states (N = 1879) with respect to the presence, composition and predictive value for recidivism of protective factors. Plans to explore how individual race may interact with area-based measures of social deprivation in the presence and value of youth protective factors will also be discussed.

Title: Access to Abortion Care in the United States and Child Mental Health Outcomes

Authors: Sarah J. Palmer, MD¹; Sarah McKetta, MD, PhD²

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Abstract: The June 2022 *Dobbs v Jackson Women's Health Organization* Supreme Court case, which culminated in the repeal of *Roe v Wade*, has had reverberating impact for the health of women and families. While the effects on child mental health are still being understood, previous research regarding the mental health burden caused by restricted abortion access have been well-established and provide a framework for the downstream effects we may anticipate post-Roe. As the policy landscape changes in regards to abortion access, so too does its impact on our patients and our practice.

Methods: We will utilize data from the Nurses' Health Study 2 (NHS2), a longitudinal cohort of 116,429 cisgender female nurses born in 1947-1964 spanning all 50 states in the United States. During reproductive years this sample of women was exposed to dramatically different reproductive environments depending on their state of residence and detailed pregnancy histories were taken from NHS2 participants at several points in data collection.

We will analyze these data along with the linked cohort Growing Up Today Study (GUTS) whose participants are the offspring of NHS2 participants with a total enrollment of 27,704 participants, aged 9-16 years at baseline. Detailed health and psychosocial information were collected from this cohort every two years as well as questionnaires about parent-assessed measures of parent-child dynamics and parenting styles were sent to NHS2 parents and children in GUTS.

Our exposure of interest will be the abortion policy climate at the time of pregnancy. We will examine the effects of these policies on child and family psychosocial outcomes.

We will control for common causes of abortion legislation and child health outcomes including state fixed effects, state-level religiosity and political climate. We will examine moderation by maternal features which may ameliorate or exacerbate the impact of the policy climate at the time of pregnancy, including socio-economic status, insurance status, and marriage status.

Current status of research: We have a research plan in place and are beginning our initial review of the data and preliminary analyses. This abstract is currently an idea in progress with no preliminary results available.

Assessing Impulsivity to Develop Novel Interventions for Veterans in Transitional Work Programs

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This “Idea in Progress” presentation will highlight the aims and methods of a future project designed to assess impulsivity in a transdiagnostic cohort of veterans with psychiatric and/or substance use disorders engaged in a vocational program at a VA Medical Center.

The ability to access paid employment is a crucial element of recovery for Veterans with psychological disorders. Supporting this goal, Transitional Work Experience (TWE) programs provide access to noncompetitive paid work assignments for Veterans in recovery from mental illness and addiction. Yet, despite clear evidence of the benefits of such programs for many Veterans (Penk et al., 2010), there is significant variability in the degree to which TWE leads to positive outcomes for Veterans, with many failing to achieve competitive employment despite participation in TWE (Davis et al., 2019). Previous studies have explored certain disorder-specific predictors of successful engagement with TWE, but have not explored transdiagnostic factors that may better explain variability in effectiveness. One such transdiagnostic factor is impulsivity. Impulsivity is multifaceted, and the impulsivity trait known as urgency (reactive responses to emotions) may be particularly relevant for predicting success in TWE programs. Urgency is robustly elevated in people with psychological disorders, and this trait is linked to a range of symptoms that can directly hamper successful engagement in work, including anger and aggression, cognitive difficulties, and difficulties tolerating distress (Berg et al., 2015; Carver & Johnson, 2018; Johnson, Elliott, & Carver, 2020). Targeted psychosocial interventions are effective in reducing these symptoms among people with elevated impulsivity (Johnson, Zisser, et al., 2020; Peckham et al., 2021), suggesting that Veterans in TWE programs may also benefit from such approaches. However, understanding how specific facets of impulsivity may affect TW outcomes is a critical first step to developing these interventions. The goal of this study is to take this step by testing the following aims:

1. Characterize the profile of impulsivity and impulsivity-related symptoms in a cross-sectional, transdiagnostic sample of Veterans initiating participation in TWE. In a transdiagnostic sample, we will assess impulsivity traits using a battery of evidence-based measures. We will also assess a targeted set of symptoms known to correlate with impulsivity (anger, cognitive deficits in planning and memory, distress intolerance).
2. Identify pathways between specific impulsive traits (and associated symptoms) with TW outcomes. We will follow up with program staff to assess crucial outcomes of: attendance (% of workdays attended) and successful completion of TW program (defined as either completing entire duration of TW placement, or securing competitive employment during TW placement). Analyses will be tested using linear regression with impulsivity and symptoms entered as predictors of TW outcomes; most analyses are exploratory given the design of this study; however, we predict that urgency will significantly predict worse TW outcomes (fewer workdays attended and lower likelihood of successful TW program completion).
3. Create a blueprint for future interventions based on the analyses above. Using these results combined with a literature review of evidence-based interventions for impulsivity, we will develop a research strategy for testing interventions for impulsivity in the context of TWE programs, to be submitted for consideration for external funding.

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Title: *Alcohol use disorder recovery in deaf and hard of hearing individuals: Personal and professional perspectives*

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Poster Abstract:

This study explored the treatment experiences of deaf and hard of hearing (DHH) individuals in recovery from AUD. This study is the first step of a larger community-engaged research protocol to adapt Motivational Enhancement Therapy for the DHH population.

We conducted semi-structured interviews with 14 DHH adults who have experience with attempting recovery and 10 professionals who work in the field of recovery/alcohol education with DHH individuals. Questions for DHH adults in recovery included history of alcohol use and treatment, barriers and facilitators to treatment and effects on recovery, and the role of other DHH people in their recovery. Questions for professionals included training, education, and job experience, types of interventions provided, barriers to effectiveness of providing interventions, ways of adapting treatments, and supporting client motivation and resilience.

Qualitative coding and identification of major themes is ongoing; half of the interviews have been analyzed as of this submission. Video interview data is being coded directly in the source language (American Sign Language). We are using an inductive approach with two major techniques: (1) content analysis, in which the number of similar responses are tallied and described; and, (2) a summary of the answers to the following questions: *What is really important? Are there any comments said only once but deserve to be noted? What ideas will be useful for intervention?* The research team is coding data collaboratively and simultaneously, with conflicting points of view discussed and resolved among members.

Emergent themes thus far include lack of accessibility for treatment (e.g., failure to provide appropriate accommodations, lack of treatments available in ASL), negative effects of this lack of access, additional burden of clients needing to advocate for accommodations, mixed feelings about online AA/NA groups, desire for more connections with other DHH people in recovery, and difficulty understanding English-based materials presented in treatment.

Preliminary findings indicate that to be effective, DHH-friendly AUD treatment adaptations need to include, at a minimum: (1) linguistic and culturally appropriate client materials; (2) information in the manual regarding accessibility considerations and additional barriers that DHH face during recovery; and (3) easily accessible recovery stories told by other DHH persons. DHH people in recovery often fight for reasonable accommodations, and simple provision of ASL interpreters is not enough to ensure adequate receipt of services.

Title: *Sign Here: How to Effectively Communicate with Deaf Patients in Healthcare Settings*

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Poster Abstract:

The U.S. Deaf community – a minority group of more than 500,000 people who use American Sign Language (ASL) – is one of the most understudied and underserved populations within our nation’s healthcare system. Reasons for this underrepresentation include lack of language access in healthcare and research settings, as well as communal feelings of mistrust toward the medical community. For example, healthcare providers and clinical researchers follow a medical model to “cure” or “fix” deafness, whereas most Deaf people do not want to be fixed, but rather to be respected as a cultural and linguistic minority group.

To begin to rectify this mistrust and underrepresentation, the informed consent process has been suggested as a key area of intervention. From 2016 – 2018, our team produced a film to train research personnel to effectively interact with Deaf research participants during the informed consent process. The intervention was designed through a two-year collaboration with the local Deaf community – community forums, focus groups, and an intervention development team inclusive of Deaf researchers, filmmakers, and laypeople.

In 2022, our team conducted a second series of focus groups with key stakeholders to refine, expand, and tailor a new version of the *Sign Here* training film for healthcare providers. Filmmaking is currently underway. In April 2023, we will launch a randomized controlled trial to test the feasibility, acceptability, and preliminary efficacy of the new training intervention. Eighty healthcare providers, medical students, and nursing students will be randomized to receive (1) the *Sign Here* training film or (2) an “intervention as usual” condition (i.e., standard written guidance on how to communicate with Deaf patients in healthcare settings). Primary outcomes are provider cultural competence, communication skill, and ability to build trust, which will be tested via virtual simulation with a Deaf standardized patient.

Results will potentially validate a product of immediate value – a highly-accessible, easy-to-disseminate training film to promote the inclusion of Deaf people in our nation’s healthcare system. Results will also inform the design of a large, multi-institution study to explore the real-world scalability of the *Sign Here* training film in medical schools across the U.S.

Title: *Signs of Safety: A Deaf-Accessible Therapy Toolkit for Trauma and Addiction*

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Poster Abstract:

The U.S. Deaf community – more than 500,000 Americans who communicate using American Sign Language (ASL) – experiences nearly triple the rate of lifetime problem drinking compared to the general population and twice the rate of trauma exposure. Hearing individuals have access to several validated treatments for comorbid alcohol use disorder (AUD) and trauma; yet there are no evidence-based treatments to treat *any* behavioral health condition with Deaf clients.

Available behavioral health treatments fail to meet Deaf clients' unique language access needs. Deaf people's median English literacy level falls at the fourth grade and health-related vocabulary parallels non-English-speaking U.S. immigrants. Leveraging extensive community engagement to address these barriers, the Dr. Anderson's team of Deaf and hearing researchers, clinicians, filmmakers, actors, artists, and Deaf people with AUD/PTSD developed and pilot tested *Signs of Safety*, a Deaf-accessible toolkit to be used with the *Seeking Safety* treatment protocol. The *Signs of Safety* toolkit provides a supplemental therapist guide and population-specific client materials (e.g., visual handouts, filmed ASL teaching stories) to meet Deaf clients' language needs.

This poster will showcase preliminary data from the *Signs of Safety* single-arm pilot and randomized feasibility pilot, which showed reductions in alcohol use frequency and PTSD severity from baseline to follow-up. Additionally, the delivery of the experimental intervention was deemed feasible by study therapists and was well-received by participants, especially when moved to a virtual platform in response to the COVID-19 pandemic – an acceleration of the inevitable development needed to scale *Signs of Safety* to a national level.

The poster will describe proposed next steps to lead the first-ever full-scale psychotherapy trial conducted in the Deaf community, conducted in partnership with Deaf-owned agency National Deaf Therapy (NDT). Leveraging the existing infrastructure and robust referral network of NDT, we will enroll 144 Deaf adults with past-month PTSD and problem drinking into a national, full-scale, virtual clinical trial comparing (1) *Signs of Safety* with (2) treatment as usual and (3) a no treatment control. Primary clinical outcomes at immediate post-treatment and post-treatment follow-up are past 30-day alcohol use frequency/quantity (*Alcohol Timeline Followback*) and past 30-day PTSD severity (*PTSD Checklist for DSM-5*).

Our proposed aims build on eight years of KL2 and R34 empirical work, moving the *Signs of Safety* program of research from Stage IB (two-arm feasibility and pilot testing) to Stage II/III (real world efficacy). The proposed full-scale clinical trial will potentially validate the first-ever evidence-based therapy for Deaf people, and provide future behavioral health researchers with a vital roadmap for conducting community-engaged clinical trials with Deaf people.

Antecedent symptoms associated with onset of major depressive episode in pregnancy

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Background: About 20% of women may develop depression during pregnancy.¹ Due to this elevated incidence and the increased morbidity and mortality associated with the disorder², early detection and treatment of major depression in pregnant women is critical. Our analysis examined a pregnant population and retrospectively assessed the symptoms of depression associated with subsequent major depressive episode (MDE).

Methods: This is a secondary analysis from a prospective cohort study on the relationship between an MDE, antidepressant treatment and birth outcomes. Pregnant individuals were eligible to participate if they were at least 18 years of age, less than 17 weeks gestation, and were willing to provide informed consent. The original cohort included 2,654 participants; the current analysis included 2,594 participants who were at risk of an MDE because they did not have an MDE in the first month of pregnancy. We used The World Mental Health Composite International Diagnostic Interview v2.1³ to determine a likely diagnosis of, and symptoms of depression for each month of pregnancy. We applied generalized linear mixed models with a random intercept to examine the association of MDE at each month of pregnancy with individual symptoms from the previous month, adjusted for month of pregnancy, age, race/ethnicity, education, history of MDE prior to pregnancy, and prior MDE at any previous month during pregnancy. Symptoms that were statically significantly associated ($p < 0.05$) with MDE were then entered into a single, multivariable model concurrently.

Results: Roughly 6% (N=162) of participants likely had an onset of an MDE during pregnancy after the first month of pregnancy. In bivariate models, MDE was not associated with confused thoughts, increased energy, and increased appetite in the previous month, independent of demographic variables and history of MDE. Results from the multivariable model that included the remaining ten symptoms showed that the odds of MDE were greater among participants who endorsed trouble concentrating [OR (95% CI) = 2.6 (1.5-4.6)], feeling guilty [OR (95% CI) = 3.4 (1.7-7.1)], feeling jittery [OR (95% CI) = 4.8 (2.1-10.7)], low appetite [OR (95% CI) = 2.3 (1.5-3.5)], and low energy [OR (95% CI) = 2.9 (1.8-4.7)] (all $p < 0.002$) compared to those without these symptoms in the previous month, independent of other symptoms and other adjusting variables. Inability to decide, racing thoughts, trouble sleeping, sleeping more than usual, and moving/talking slowly were not associated with subsequent MDE in the multivariable model.

Conclusions: Our results indicate that the likelihood of developing MDE was increased in pregnant individuals reporting difficulties concentrating, guilt, feeling jittery, low appetite, or low energy, during the prior month. These findings may lead to the development of tools to identify individuals at risk for subsequent MDE, and targeted interventions that strengthen resilience against depression.

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Cost Analysis of Intranasal vs Intravenous Ketamine in Treatment-Resistant Depression in the Outpatient Setting

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Background: Intranasal ketamine was approved by the Food and Drug Administration (FDA) for treatment-resistant depression (TRD) in 2018, however this treatment may be difficult to implement in the clinical setting due to financial constraints if insurance coverage isn't available. Current literature indicates that off-label intravenous (IV) ketamine may be superior to esketamine in terms of depression response rates and associated with fewer adverse events¹. IV ketamine is available in generic form and may be a more cost-effective alternative to intranasal ketamine, which is only available under brand-name formulation (Spravato). It is generally recommended that patients undergo weekly treatments with ketamine (56-84mg intranasally or 0.5-1.0mg/kg IV) twice weekly for 4 weeks, followed by treatment every 1-2 weeks thereafter. Patients are monitored for safety for 2 hours after treatment is administered, which factors into required staffing costs².

Methods: Cost analysis estimates at one major Northeastern United States hospital of Spravato and IV ketamine administration was completed in collaboration with the institutional financial department. Medication cost, supply cost, and facility fees were

Cost Analysis - Spravato/ Ketamine	Cost per Patient (2 hour Session)	
	<i>Spravato</i>	<i>Ketamine</i>
Total Psychiatrist Cost	\$ 254	\$ 254
Total MA and Nurse Cost	69	69
Supply - Spravato / Ketamine	856	1
Supplies - IV supply Kit - Saline, Gauze	-	10
Rent - 1 room for 2 hours in one day	11	11
Total Supply	867	22
Indirect Expense	236	68
Total Expense	\$ 1,426	\$ 412

estimated and compared.

Results: The cost per patient for Spravato in the outpatient setting is estimated to be \$1,426. For IV ketamine, the estimated cost is \$412. Assuming a 4 week index treatment period, in line with treatment period in the ASPIRE study³, the difference in cost separates further with total expense of Spravato being \$11,408, and Ketamine being \$3,296. The costs further decrease for racemic ketamine relative to Spravato when multiple patients are treated at the same time; while the total cost of IV ketamine versus Spravato is 1:3.46, if four patients are run concurrently, the total cost of IV ketamine is 1/16th that of Spravato.

Conclusions: There is a lower overall cost to the healthcare system of using IV ketamine rather than Spravato (1:3.46) in the treatment of TRD. This difference in cost increases when multiple patients are treated concurrently (1:16 when four patients are treated at once), and is magnified when considering a full index period of four weeks. Note that these costs reflect the total cost to the healthcare system and may not represent the final amount billed to the patient after any applicable insurance reimbursement.

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Navigating Ethical Dilemmas in Forensic Psychiatry Cases Involving Trauma, Immigration, and Legal Charges

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Abstract: Forensic psychiatrists encounter specific ethical dilemmas by virtue of their work in clinical settings where they face a high volume of high-risk patients, such as in forensic state hospitals. Treatment and discharge considerations, documentation, and otherwise therapeutic encounters become highly centered around the nature of a patient's charges and their risk level, adding to their mental health and legal concerns. This is more so relevant due to the limited confidentiality of court ordered hospitalizations and evaluations where information obtained from patients, records, and collaterals are not privileged.

Cases that involve immigration are especially challenging because the legal ramifications not only have profound psychological and social effects for the patient but can also impact their immigration status.

Notes documented by the treatment team are accessible to forensic evaluators who use information in determining competency to stand trial and criminal responsibility. If a patient is determined incompetent to stand trial (IST) and/or not guilty by reason of insanity (NGRI), how does this impact their immigration status? To what extent does the U.S. Immigration and Customs Enforcement have access to court records? What are protections afforded to individuals who are found NGRI compared to those found guilty?

We present the case of a middle-aged highly educated immigrant male with a significant trauma history involving kidnapping and torture in his home country by a militia-affiliated political group a few years prior to his immigration to the U.S. He had no psychiatric or substance use history predating the trauma. However, following the traumatic events, he developed complex PTSD with psychotic features and started a journey of treatment with periods of non-compliance after his immigration to the U.S. seeking education and asylum. Soon after discontinuing his treatment, our patient was charged with arson, after he lit fire to personal documents because he thought the military group was tracking him through his files. He was sent by court to our hospital forensic unit for a competence to stand trial and criminal responsibility evaluation. After resuming treatment with Zyprexa and engaging him in group activities, his psychosis improved substantially. Following a 50-day hospitalization, the treatment team and the forensic evaluator agreed to not pursue further commitment to the hospital and discharged him back to court. Our patient was highly concerned about the impact of his legal charges on his immigration status and the risk for deportation he was facing as his asylum case had not yet been adjudicated.

This poster will address the different ethical dilemmas that arise in managing cases that involve trauma, immigration, legal charges, and the role of the forensic psychiatrist in navigating these challenges and advocating for our patients.

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Efficacy of a Wellness Coaching Program to Reduce Burnout

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Background Coaching has promise to prevent or mitigate burnout among health care providers. Wellness coaching is a specific kind of coaching that focuses on engaging people in behaviors that promote well-being. We implemented a free wellness coaching program available to all residents, fellows, advanced practice providers, and faculty in early 2021. The purpose of this study was to assess the efficacy of wellness coaching on burnout measures.

Methods Six faculty physicians were trained as coaches using the Wellcoaches.com platform. Ninety-three study subjects requested the wellness coaching. Subjects received a total of four hours of coaching over the course of 3 months. Four cohorts were enrolled in the first year. Subjects completed a Well-Being Index (WBI #1) before coaching, then again 9 months later (WBI #2 - 9 months after completing WBI #1). Cohort 4 served as a control and received wellness coaching after completing WBI #2. The WBI reports results along a 4-point scale of Distressed/Struggling/Okay/Thriving. Descriptive statistics and paired T-test were used to compare Cohorts 1-3 with Cohort 4.

Results Of the 93 subjects who received coaching, 81 (87.1%) identified as female and 12 (12.9%) as male. 38 participants in cohorts 1-3 (out of 72) completed WBI#1 and 23 completed the WBI #2. 58.3% of control cohort completed WBI #1 and #2. Fewer female providers scored as Distressed or Struggling after the coaching intervention (70.2% versus 64.7%, p=NS), and there was no change in the percentage of male providers (50% before and after, p=NS). Before coaching 6.38% of female providers scored in the "Thriving" category and after coaching the number was 14.7% (p=NS). There was no change in scores for male participants. 100% of participants agreed or strongly agreed with the statement, "The Wellness Coaching Program helped me develop skills to improve my professional and/or personal life."

Conclusion Female healthcare providers were far more likely to request free wellness coaching than males. While no statistically significant difference in burnout as measured by the Well-Being Index was detected after receiving wellness coaching, 100% of participants felt that the coaching program was beneficial. The discrepancy between burnout measure and subjective responses could be due to low response rate, insensitivity of the Well-Being Index to detect change, or (more likely) the complex nature of burnout.

Veterans' experiences of addiction care

Title: A national survey examining Veterans' experiences of addiction and mental health treatment during the COVID-19 pandemic

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Lessons learned during the first year of the COVID-19 pandemic are valuable for ensuring healthcare system preparedness for future pandemics, the lifetime odds of which are expected to increase two- to three-fold (from current estimates of 38%) in the coming decades. To this end, the current study examined Veterans' experiences of mental health and addiction treatment during the first year of the pandemic. This nationwide, cross-sectional online survey was administered between April 2021 and June 2021. Participants were n=401 Veterans who endorsed substance use-related problems and had attended one or more mental health or addiction treatment appointments in the last year. Most met risk criteria for one or more substance use disorders (91% alcohol use disorder). Survey questions assessed access to and satisfaction with addiction and mental health treatment over the preceding year, with additional questions assessing the specific types of treatment accessed and the proportion of care received via telehealth. Most participants rated treatment access as better (51%) or the same (30%) and satisfaction as better (65%) or the same (26%) relative to before the pandemic. Satisfaction did not differ as a function of the proportion of past-year care received via telehealth. Further, satisfaction and access did not differ as a function of the specific treatments accessed (e.g., medications, inpatient). Overall, Veterans with substance-related problems who received addiction or mental health treatment during the first year of the pandemic reported experiences that were largely better or the same relative to pre-pandemic care. Results indicate that efforts to continue care during the first year of the coronavirus pandemic, including flexibility with respect to telehealth and in person options, were well received. Findings also align with broader evidence that Veterans presenting for addiction treatment are especially open to telehealth options.

Autism Spectrum Disorder and Extended Reality Technology

Title: Enhancing Social Skills for Transition Age Teens/Young Adults with Autism Spectrum Disorder via an Extended Reality (XR) Platform

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Autism Spectrum Disorder (ASD) is characterized by social impairments that begin in early childhood and may persist or worsen into adulthood. These include challenges with speech and nonverbal communication, trouble sharing interests and emotions, and difficulty making and maintaining friends. Social skills training groups, such as the Program for the Education and Enrichment of Relational Skills (PEERS®), have been widely used to help individuals with ASD learn and practice social skills. This pilot study expands upon the existing PEERS® program by adapting one of its lessons, "Entering Group Conversations", into a virtual format through an extended reality (XR) platform with 3-dimensional (3D) gaming techniques. The pilot program was offered to ten adolescents and young adults aged 15-22 with ASD, and feedback was gathered via surveys. The results indicated that all participants found the program easy to use, and that a majority of participants reported they would use a similar program to learn or practice social skills by themselves and with others. This pilot served as a feasibility study to understand how to best incorporate emerging XR technology into the field of social skills education, in addition to showcasing its potential benefits, including higher accessibility, enhanced level of immersion and engagement, and ability to experience social skill practice in a safe and controlled environment.

Assessing Psychiatry Comorbidities and Quality of Life in Transition-Age Youth with Autism Spectrum Disorder

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Background: Autism spectrum disorder (ASD) is a psychiatric disorder characterized by social communication deficits and other specific cognitive or behavioral patterns such as repetitive behaviors and restricted interests. The transition from childhood to young adulthood (generally considered to occur during ages 13-24 years) is an especially challenging time for individuals with ASD. Reasons for this challenge may include associated psychiatric comorbidities, poorer quality of life for patients with ASD relative to neurotypical peers, and unmet social or psychological needs. Despite known associations between these risk factors, the specific needs of transition-age youth with ASD are not fully understood.

Objectives: The goal of this project was to assess the psychiatric comorbidities, quality of life, and self-perceived needs of transition-age youth with ASD through both a literature review and a case series of semi-structured interviews. The secondary aim of this project was to create a resource list for transition-age youth with ASD, to be disseminated at a specialty clinic for these individuals.

Methods: We first conducted a literature review on the topics of quality of life and psychiatric comorbidities in transition-age youth patients with ASD. Next, we conducted interviews with patients aged 13-24 with ASD. Interviews consisted of standardized, self-rated psychological measures to assess psychiatric symptom severity and quality of life, as well as a semi-structured interview assessing patients' perceptions of their diagnoses and needs as they transition to adulthood. Together, these data were used to generate a resource list for transition-age youth with ASD.

Results: Current literature demonstrates that both self-reported and parent proxy-reported quality of life is significantly lower for patients with ASD when compared to age-matched controls. Furthermore, psychiatric comorbidities are more prevalent in youth with ASD, the most common of which are ADHD, anxiety, and depression. Interviews with transition-age youth with ASD (n=3) were consistent with these findings. Patients reported clinically significant symptoms of several psychiatric conditions (ADHD, anxiety, and depression) and low life satisfaction on PROMIS scales. Patients identified various needs for support as they transition to adulthood, including therapy, emotional support, educational support (e.g., tutoring), financial support, and job training.

Conclusion: Initial results from this study are consistent with prior literature that transition-age youth with ASD experience significant psychiatric comorbidities and reduced quality of life, and report unique social and psychological needs as they transition into adulthood. Further research is needed to better clarify and address the needs for this patient population.

Title: Effect of gabapentin on cortical glutamate/glutamine and gamma-aminobutyric acid levels, a potential biomarker of social cognition in autism spectrum disorder

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Background: Magnetic resonance spectroscopy (MRS) suggests decreased gamma-aminobutyric acid (GABA) levels as a possible biomarker for social cognition deficits in autism. Gabapentin has been shown to increase GABA acutely in neurotypical individuals. Abnormalities in the anterior cingulate cortex (ACC) and anterior insula (AI) (components of the salience network) are associated with social cognition in autism.

Objectives: We sought to determine which clinical characteristics of autism were associated with glutamate/glutamine and GABA levels in the ACC and right AI, and whether an acute dose of gabapentin alters these levels.

Methods: We recruited 19 autistic adolescents ages 13-17 (17 M, 2 F). We used a Meshner-Garwood Point Resolved Spectroscopy Sequence (MEGA-PRESS) to measure Glx (combination of glutamate and glutamine) and GABA levels in two voxels: one covering the bilateral pregenual ACC and one centered on the right AI. We assessed correlation of Glx and GABA levels with multiple measures of social cognition: the Social Responsiveness Scale (SRS) total score, Reading the Mind in the Eyes Test (RMET) score, SRS subscale scores, and Autism Diagnostic Observation Scale (ADOS-2) scores. Finally, we administered a single dose of gabapentin to 18 of the 19 participants. We repeated the Glx and GABA MRS measurements 2 hours, 4 hours, and 6 hours after gabapentin dosing, and calculated the change in GABA and Glx from pre-dose to each of the individual time points. We used a generalized linear model to assess the relationship of change in GABA in the ACC and right AI to the weight-normalized dose of gabapentin (mg/kg), controlling for age, IQ, and baseline GABA/Glx level.

Results: GABA and Glx were correlated with different social cognition assessment scores in the two regions of the cortex. Greater impairment in social cognition was associated with lower levels of GABA and lower levels of Glx in the observed correlations. After gabapentin administration, GABA levels in the right AI rose sharply followed by a fall in levels over time; ACC GABA levels and ACC/right AI Glx levels did not have a robust response. At individual time points, a significant dose response of an increase in GABA in the ACC developed at 4 hours and became nonsignificant at 6 hours; GABA in the right AI demonstrated a statistically nonsignificant dose response of an increase in GABA at early time points that disappeared at 6 hours after the dose; Glx levels demonstrated much smaller (ACC) or absent (RAI) dose responses to gabapentin

Conclusions: Glx and GABA levels are associated with social cognition measures, but in a region- and neurotransmitter-specific manner. A decrease in GABA levels with social cognition impairment remains the most consistent finding, and we demonstrate evidence that gabapentin may alter GABA/glutamate imbalance. Implications on the potential clinical utility of gabapentin in autism will be discussed.

The Cost of Restraints at Worcester Recovery Center and Hospital

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The use of restraints (i.e., “action or procedure that prevents a person’s free body movement”; de Brujin, 2019) in inpatient settings is used to manage patients during episodes of acute, unsafe behavior. Although considered important to maintain safety in inpatient settings, restraints are associated with a number of negative sequelae, to include negative mental health outcomes (e.g., post-traumatic stress; Chieze et al., 2019), negative physical health outcomes (e.g., thrombosis and pneumonia; Funayama, & Takata, 2020), and staff burnout (Ekaterina et al., 2021).

In this project, we used the publicly available Centers for Medicare & Medicaid Services' Inpatient Psychiatric Facility Quality Measure 2023 Data to compare the rates of restraints per 1,000 hours of patient care between the country overall, state of Massachusetts, and by facility type (“forensic” settings and “state hospitals”). Using available Worcester Recovery Center and Hospital (WRCH) mechanical restraint data from 2022, we further compared the rates in restraints at the hospital overall, on WRCH Court Evaluation Units, and on WRCH adult Continuing Care Units.¹ WRCH overall had higher rates of restraint (67 minutes) than other inpatient facilities nationally (23 mins) and across M.A. (7 mins), and forensic hospitals (17 mins) across the country. WRCH had lower rates of restraints compared to other state hospitals in the country (44 mins). WRCH Court Evaluation Units (73 mins) had more than double rates of restraints than Continuing Care Units (25 mins). Therefore, the rate of restraints at WRCH overall is inflated by the use of restraints on the Court Evaluation Units.

Given the differences between the rates of restraint on longer-term Continuing Care Units compared to Court Evaluation Units, post-hoc analyses were conducted to better understand the use of restraints at WRCH across these two types of units. Per *t*-tests, there was a significant difference in length of restraints, with Continuing Care Units having longer duration of restraints ($M = 1.62$ hours, $SD = .18$) than Court Evaluation Units ($M = 1.43$ hours, $SD = .06$; $t(258) = 7.286$, $p < .001$). Although Continuing Care Units use restraints for longer than the Court Evaluation Units, the latter use restraints more frequently. Of the 1,316 mechanical restraints at WRCH in the last year, 42% were conducted on the Court Evaluation Units, despite these units housing only 20% of the patients in the hospital. Finally, when quantifying only the cost of staff time for documenting one single episode restraint, the least estimated cost is \$110.63—totaling \$145,589 for mechanical strengths last year alone.

Conclusions: Compared to other psychiatric state hospitals across the U.S., WRCH has a lower rate of restraint use overall, but higher than the national or state rates; this is largely driven by the rate of restraints on the Court Evaluation Units. One way to further reduce the use of restraints to manage challenging behaviors is through the use of Positive Behavioral Intervention Support (PBIS). A previous study conducted at WRCH found a 75% reduction in restraints for patients from pre- to post-PBIS intervention (Ronan et al., 2023). The current findings highlight the potential benefit of brief, behavioral-based interventions across the hospital, which could reduce restraints and save thousands of dollars per year in time staff spend with documenting alone (not counting associated injuries incurred as a result of restraints, injury time off/lost work, and the impact on patients). Additional implications and recommendations on how to reduce the length and frequency of restraints at WRCH overall, and on Court Evaluation Units specifically, will also be presented.

¹The ten adult Continuing Care Units are for patients with longer-term stays for purposes of treatment. The two Court Evaluation Units house patients on a forensic status awaiting an assessment for no more than 50 days. The average length of stay at WRCH is 200 days.

Facilitating ADHD Diagnosis and Treatment in Primary Care

Facilitating ADHD Diagnosis and Treatment in Primary Care

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Introduction: There are access issues with outpatient psychiatric providers that result in primary care providers needing to manage psychiatric medications for their patients. Attention Deficit-Hyperactivity Disorder (ADHD) is a potential diagnosis frequently referenced in referrals placed by primary care providers to the outpatient psychiatry clinic. There are a variety of potential interventions to improve access to care, including e-consults, medication consults and neuropsychological testing, that may support primary care providers in managing their patients' needs for ADHD diagnosis and treatment.

Method: To better meet the needs of primary care providers in the treatment of their patients, we sought to identify ways to triage referral requests so that the most appropriate resource could be assigned in each case. In order to accomplish this, we distributed a survey to primary care providers to better understand the questions they have regarding diagnosis and management of ADHD. Using results from this survey, we created a standardized workflow with specific criteria for when an e-consult would be a sufficient choice, when a medication consult is appropriate and when full neuropsychological testing is indicated.

Results: Pre-intervention survey data indicated that over 68% of the primary care providers surveyed do not feel comfortable making the diagnosis of ADHD in their adult patients. While only 38% of primary care providers reported feeling comfortable prescribing stimulants to their patients, 76% of them would feel comfortable prescribing stimulants with the support of a consulting psychiatrist. Only 15% reported that they did not want the responsibility of or that they did not have enough support to monitor controlled substances. During the month of February, six e-consult requests were placed to psychiatry and none were related to the question of ADHD management.

Conclusion: Our preliminary results support the hypothesis that primary care providers do not feel comfortable diagnosing adult patients with ADHD, or with prescribing stimulants, despite feeling that managing controlled substances is not a burden and they have adequate support. A striking majority, however, would feel comfortable with managing stimulant prescriptions with the diagnostic confirmation and consult support from psychiatry, which would alleviate the burden on both practices, and streamline access to care for patients. Next steps will be to distribute the workflow to the primary care clinics in which baseline survey was gathered, provide education through lunchtime CME events at these clinics, and then collect post-intervention survey data on the impact of this workflow on primary care provider satisfaction and utilization of e-consults.

Title: Lost in Translation: Expressed Emotion and Social Functioning in Youth with Autism

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Objectives: Existing studies substantiate a relationship between high familial expressed emotion (EE) and externalizing behaviors in children with autism spectrum disorder (ASD); however, little is known about the relationship between EE and the severity of core symptoms of ASD, specifically social communication and adaptive functioning. This study assesses the hypothesis that EE demonstrates significant relationships with measures of social cognition, perception of the quality of peer relationships, and adaptive functioning.

Methods: Analysis includes 19 adolescents with ASD ages 13-17 years old, 11% female. The Social Responsiveness Scale, Second Edition (SRS-2) was administered to measure social interaction and communication deficits. The Child and Adult versions of the Reading the Mind in the Eyes Tests (RMET-C and RMET-A, respectively) were administered as measures of theory of mind. The Adaptive Behavior Composite score from the Vineland-3 (VABS-3) assessed adaptive functioning. The NIH PROMIS measure was used to evaluate perception of quality of peer relationships. EE was determined using the Five-Minute Speech Sample.

Results: There was a non-significant difference in the hypothesized direction in SRS-2 total score ($p = 0.23$) between the high and low EE groups. On the RMET-A (and RMET-C, not included on poster), subjects with high caregiver EE had similar error rates as those with low EE ($p = 0.23$ for RMET-A). There was no significant difference between the high and low EE groups on the VABS-3 ($p = 0.13$). High EE youth rated the quality of their peer relationships lower by 4 points on the PROMIS Peer Relationship scale than individuals with low EE, however this difference was not significant ($p = 0.14$).

Conclusions: Although these results do not support our hypotheses, the nonsignificant differences were in the hypothesized direction. Our sample size was small ($N = 19$) and likely lacking the power needed to identify significant differences in the social communication of autistic youth living with low vs. high degrees of caregiver EE. Directions for future study include re-examining these hypotheses with a larger sample size and identifying directionality in the association between EE and core deficits.

Learning Objectives

- Recognize the correlation between EE and ASD symptom severity
- Determine which aspects of ASD symptomatology most closely relate to EE
- Identify EE as a possible target of clinical interventions to maximize social functioning in children and adolescents with ASD

Keywords: Expressed emotion, autism spectrum disorder, social communication

Practice Gap:

Given the centrality of the family in maximizing the quality of life of youth with autism, there is a need to better identify how characteristics of the family environment are associated with autism symptoms. Parental attitudes and the quality of the parent-child relationship play key roles in the development of children. To our knowledge, no studies have investigated the relationship between EE and symptom severity in ASD. The present study heeds the call of Romero-Gonzalez and Chandler (2018) to explore the association between parental EE and social skills in adolescents with ASD, and it suggests that EE may be a useful target for further investigation and future intervention, with the goal of bolstering the social skills of children and adolescents with ASD.

Healthcare Utilization in Youth with Mental Health Conditions

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Background: Youth and young adults represent a critical time for early detection and intervention of mental health conditions; however, of all age groups, health care use is lowest in young adults. Continued access to health services such as outpatient primary care and specialized mental health care, especially during the transition from pediatric to adult care, is important to improving outcomes in those with mental health conditions.

Methods: Stakeholder engagement and a mixed-method design were used. Quantitative Aims 1 and 2 used the IBM® MarketScan® Commercial Database. Qualitative Aim 3 used semi-structured interviews with a purposive sample of pediatricians and child/adolescent psychiatrists. Stakeholders were engaged throughout all Aims to ensure relevance of goals, real-world interpretation of results, and dissemination of key findings. Aim 1 described patterns of outpatient (e.g., primary, reproductive, mental health care) and acute (e.g., emergency room use, inpatient hospitalization) health care use by age and by mental health condition. Aim 2 used logistic models with generalized estimating equations to identify factors associated with mental health follow-up after hospitalization and emergency room use for a mental health condition. Aim 3 explored pediatrician and child/adolescent psychiatrist perspectives on coordinated care for youth and young adults with serious mental health conditions, particularly as they transition to adult care.

Main Results: The prevalence of outpatient mental health care and primary care decreased with age, with a larger drop in primary care utilization. While 74.0-78.4% of those aged 12-17 years used both outpatient mental health care and primary care, 53.1-59.7% of those aged 18-27 years did. Differences were observed by mental health condition; those with schizophrenia and other psychotic disorders had the lowest rates of outpatient primary care use and the highest rates of acute care use. Of those hospitalized for a mental health condition, 42.7% received follow-up within 7 days and 64.7% within 30 days. Of those with emergency room use not resulting in a hospitalization, 28.6% received follow-up within 7 days and 46.4% within 30 days. Having established mental health care strongly predicted follow-up, and more so than having established primary care. Providers described poor communication systems, no organized process for the transition from pediatric to adult care, a lack of time and reimbursement, and inadequate connection to community supports as key barriers to continuous, coordinated care for youth with serious mental health conditions.

Conclusion: Findings provide foundational knowledge to inform efforts to provide a comprehensive continuum of care for people with serious mental health conditions, potentially through increased access to primary care and specialized mental health care via enhanced care coordination of providers.

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Short Title: Addressing Health Inequities through Access Programs

Poster Title: ‘We Can’t Wait!’: National Perspectives on Challenges and Opportunities for Addressing Health Inequities through Perinatal Access Programs

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ABSTRACT

Background/Content: Inequities in perinatal mental health care disproportionately impact medically underserved communities, exacerbating adverse maternal and infant outcomes. Perinatal Psychiatry Access Programs (henceforth ‘Access Programs’) seek to improve access to perinatal mental health services by increasing the capacity of clinicians caring for pregnant, postpartum, and lactating individuals to manage their patients’ mental health needs. Access programs effectively implement this aim across three main components: 1. Training/education, 2. Resource and referral, and 3. Clinical consultations. Despite broad dissemination, this population-level model was not initially developed to address health inequities. Therefore, this qualitative study examined the perspectives of Access Program team members regarding the role of Access Programs in addressing health inequities, focusing on the challenges and opportunities to promote equity.

Description/Methods: Four 30-minute focus groups were conducted with Access Program team members (n=33) via Zoom. Focus groups were facilitated using a semi-structured interview guide and transcribed verbatim. Thematic analysis techniques were utilized to organize and aggregate focus group responses.

Lessons Learned/Findings: Challenges reported by Access Program team members include: 1) lack of clarity regarding the role of Access Programs in health equity initiatives, as many programs do not directly interface with patients and have limited access to equity-specific expertise; 2) resource and referral service delays due to system-wide perinatal mental health provider shortages; 3) burnout among perinatal care professionals; and 4) a lack of culturally congruent resource and referrals for patients. Strategies for addressing these inequities encompassed: 1) broadening Access Programs reach beyond perinatal care professionals; 2) training perinatal mental care professionals on perinatal health equity; 3) increasing community engagement efforts; and 4) diversifying and tailoring the resources and referrals provided for perinatal individuals that have been marginalized.

Recommendations/Implications: Findings point to a need to expand and culturally adapt Access Program services to specifically advance perinatal mental health equity. Implications of findings include the need for increased perinatal mental health care professional education and support. Furthermore, community engagement efforts can be leveraged to increase capacity of systems to implement population-wide targeted efforts to deliver equitable perinatal mental health services.

Word Count: 340

Development of an Avatar-Guided Mobile Health Intervention for Emerging Adults with Alcohol Misuse and Suicidality for Delivery in the Emergency Department

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Background/objectives: Emerging adults have higher rates of alcohol use disorders, suicidal ideation, and suicide attempts than any other age group. Alcohol use and suicidality (e.g., ideation, attempts) are highly comorbid, with intoxication serving as a proximal risk factor for suicidality. However, utilization of outpatient treatment services for alcohol or mental health is extremely low in this age group, even following emergency department (ED) visits for either problem. Emerging adults are likely to be responsive to mobile health (mHealth) interventions, and mHealth is well-suited to delivery in, or immediately after, an ED visit. Further, mHealth can address this urgent public health need by bridging the gap between ED discharge and outpatient care and by supporting emerging adults who do not access outpatient care. The purpose of this study is to design an evidence-informed, interactive, avatar-guided mHealth intervention to provide ongoing education, skills practice, mood and behavior monitoring, and personalized feedback to reduce alcohol misuse and suicidality. This project is adapting an existing mHealth platform based on a review of commercial suicidality apps and adaptations to in-person interventions for alcohol misuse and suicidality. Feedback from multiple key community groups is being used to design an alpha version of the mHealth intervention.

Methods: A draft of the intervention was developed by Kelly after review of in-person interventions and a content analysis of suicide prevention apps. The content analysis included systematic ratings of characteristics, content, and features of apps associated with user-rated quality and popularity. Next, feedback on the avatar, content, and features of the drafted intervention were gathered from three key communities. Recommendations on the content and features of the intervention were gathered from clinical outpatient experts ($n=10$). Emergency department experts ($n=10$) provided feedback on the features and content (e.g., continuing care resources after an ED visit) and incorporating mHealth into the flow of ED care. Focus groups and surveys with consumers (e.g., emerging adults with history of an ED visit for either alcohol- or suicidality-related reasons) on the avatar and features of the app ($n=25$) are ongoing. Members of a national youth and young adult advisory board gave input on the avatar, selected content recommended by clinical experts, and on focus group protocols with consumers.

Results: Analysis of commercial suicidality apps suggest more personalized and dynamic safety plans are *inversely* related to user-rated quality, suggesting users may prefer more simple features or may experience coding “glitches” in more dynamic apps. Feedback from clinical experts resulted in 15 possible modules for the intervention focused on suicide safety planning and alcohol harm reduction skills. Clinical and ED experts emphasized using developmentally appropriate examples when teaching skills and addressing trauma. Feedback from the young adult advisory board included recommendations for additional avatar customizations (e.g., non-binary gender; clothing and accessory options), as well as potential features that could resonate with this age group. Data collection with emerging adults is ongoing and will be followed by a second consultation with the youth and young adult advisory board to ensure intervention design is aligned with consumer feedback.

Conclusions: The design of an alpha version of the avatar-guided alcohol and suicidality intervention is underway, using feedback from multiple key communities. The intervention will be tested in a usability and pilot feasibility trial during the R00 phase of this project, planned for Fall 2024. This intervention has the potential to reduce drinking and suicidal thoughts among emerging adults following an ED visit using a developmentally responsive and evidence-informed intervention.

Title: Emerging Social Capacities in the Infant's Developing Brain

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Objectives: The fundamental architecture of the social brain is developed in infancy, and early deficits in social development are difficult to compensate for later in life. However, no techniques currently exist that can assess early differences in the infant's social brain. This has limited our fundamental knowledge of the developing social brain in human infants and has delayed the development of new diagnostics and therapeutics targeting these crucial earliest years. The goal of the present study was to demonstrate the feasibility of using a novel fMRI paradigm to measure infants' developing social responsiveness to the first social partner (mother) at 6 months of age.

Methods: Twenty-four (15 males) typically developing 6-month-old infants underwent scanning during natural sleep, listening to maternal voice, unfamiliar female voice, and speech-shaped noise. All stimuli were matched on frequency and loudness. We measured maternal cue responsiveness, defined as the infant's fMRI response to maternal voice, compared to unfamiliar voice and speech-shaped noise. A total of 54 runs from 18 infants (11 males) passed quality assurance, showing distinct auditory activation and no excessive movement, and were included in the analysis. Z-statistic images were thresholded using clusters determined by $Z > 3.1$ and a corrected cluster threshold of $p = 0.05$.

Results: Compared to unfamiliar voice, maternal voice elicited increased activations in the infant's brain regions implicated in social cognition (precentral, postcentral, superior frontal gyri) and visual processing (lingual gyrus). Compared to maternal voice, unfamiliar voice did not elicit any additional activations. Compared to speech-shaped noise, maternal and unfamiliar voices elicited increased activations in the superior temporal gyrus.

Conclusions: Our findings provide support for the feasibility of using fMRI to measure the developing brain's responsiveness to socially salient cues (maternal voice) at 6 months of age. When extended to at-risk infants, this work has the potential to yield breakthroughs in identifying a novel neural marker that can detect early differences and deficits in an infant's developing brain.

Title: Augmented Reality-Based, Digital Helpers for Teens and Young Adults with Autism

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Background: Applied eXtended Reality (XR) in the field of Autism Spectrum Disorder (ASD) research to date has been mainly focused on training/learning, soothing or observing. These studies have used 3D gaming and/or Virtual Reality (VR) and been delivered by computers, tablets, or VR headsets. Augmented Reality (AR), which overlays digital data onto the real world around its users is a newer, more mobile technology has had limited research focus in ASD and Neurodiversity beyond its use for teaching or training.

Objectives: This study sought to establish new knowledge about critical characteristics of and **with** which assistive activities AR Digital Helpers could and should offer assistance to Teens (14-17) and Young Adults (18-22) (TAYs) with ASD.

Methods: This study used mixed methods and two data collection protocols. The study had 79 participants, used multiple online questionnaires, conducted 20 study visits, created 20 AR digital helpers and 20 inclusively designed AR Digital Helper application prototypes. The study was ethically designed and grounded in inclusive design and participatory co-design methods. The inclusive design principles drove the research to include a co-design intervention with the Teens (N=10) and Young Adults (N=10) with ASD in the study. Members of the care ecosystem for each TYA and independent experts from the broader ecosystem of experts working in ASD were also included as participants. In the area of identifying which assistive activities such helpers should provide, the study identified well established challenges and life goals for TYA with ASD and gathered feedback on these as potential assistive areas for the novel assistive capability. The study's TYAs co-designed their own AR Digital Helpers. In order to create a clear concept of this capability for each participant, the study's inclusively designed AR software application prototypes was filmed, in action, offering assistance to a teen and these films were viewed by the participants prior to collecting final input for the study.

Results: The study created over 4,000 new data assets and these data were analyzed to highlight the findings of (1) which AR Digital Helpers characteristic were important, and (2) with which activities AR Digital Helpers should offer assistance. Other findings included whether or not such Digital Helpers would be "good" for their users and if co-designing matters. The study also established a new research methodology, Partnership Design, to help future researchers grounded in Inclusive Design go beyond general principles when they use technologically based interventions.

Conclusions: This study created a novel assistive concept and early-stage data to support it. It opened a new area of use case for applied XR in research, that of use to assist, rather than teach or study, those with neurodiversity and challenge research. The study's TAY highly valued their co-design role and 95% would use AR Digital Helpers to assist them with life challenges and goals. The agency afforded by the study's co-design was highly valuable by all participants. The study identified top concerns in areas such as over reliance and focus management on the use of AR Digital Helpers and areas for expanded research. These and other findings will be graphically shared, and the implications of the findings will be discussed.

A Phase 2 Safety and Efficacy Study of Intramuscular (IM) Brexanolone in Treatment of Severe Postpartum Depression

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Background & Significance:

All women are vulnerable to postpartum depression (PPD), a condition that is diagnosed in one in 8 women globally. PPD is associated with poor infant health, abnormal development, cognitive impairment, psychopathology in children, and interference with breastfeeding, childcare, and relationships^{6,7}. Despite its prevalence, no medications were specifically indicated for treating PPD until Zulresso™, a formulation of brexanolone, a synthetic allopregnanolone (ALLO), administered by intravenous (IV) injection. Pregnancy is associated with elevated levels of female sex hormones, including progesterone and ALLO, a neurosteroid produced naturally from progesterone^{1,4,6}. During parturition, these hormone levels drop precipitously³ and are hypothesized to trigger PPD in vulnerable women^{5,8}. While Zulresso™ offers a treatment option for PPD, it is not without limitations and risks, including the potential for excessive sedation and loss of consciousness, and administration protocols that require over 60 hours in an inpatient clinical setting away from home, newborn, and family. A fast-acting, convenient and less sedating treatment alternative for PPD may overcome treatment risk and barriers. Brexanolone IM, an extended-release injectable aqueous suspension formulation of brexanolone, may fill this unmet treatment need. This study aims to determine the efficacy and safety of Brexanolone IM in reducing depressive symptoms in women with severe PPD.

Methods

UMass would be one site in a multicenter, randomized, parallel-group, placebo-controlled, double-blind study of the efficacy and safety of Brexanolone IM. Eligible participants will be screened by site staff, then randomized on a 1:1 basis. The safety, tolerability, pharmacokinetics, and efficacy of Brexanolone IM have been evaluated in a Phase 1 single-ascending dose study to determine therapeutic doses for this phase 2 study in women with PPD. This study will be conducted in compliance with the Good Clinical Practice (GCP) and applicable regulatory requirements. If participants experience a treatment-emergent adverse event (AE), increased suicide risk, decreased alertness, or clinical decline, the UMass site Investigator will evaluate to determine study safety.

The initial Brexanolone IM was to be administered at participant's home, but the protocol was revised to be inpatient for closer safety monitoring. Post-randomization (Day 1/baseline), participants stay in the UMass inpatient site approximately 4 hours to complete a 17-item Hamilton Rating Scale for Depression² (HAM-D) followed by administration of either Brexanolone IM or placebo. A 45-day follow-up period includes 9 UMass outpatient clinic visits to determine if Brexanolone IM reduces depressive symptoms of PPD compared to placebo at Day 8 by HAM-D response ($\geq 50\%$ reduction from baseline HAM-D score) and HAM-D remission (≤ 7.0 HAM-D total score). Safety of Brexanolone IM will be evaluated by a summary of AEs by frequency, severity, and seriousness, changes from baseline in vital signs, clinical laboratory evaluations, and 12-lead ECG. Suicidality will be monitored by the Columbia Suicide Severity Rating Scale⁷ (CSSRS). Mental status will be assessed by the Glasgow Coma Scale⁹ (GCS). Safety data will be listed by participants and summarized by treatment group.

Hypothesis and Conclusion:

The Brexanolone IM has the potential to lower concomitant patient PPD treatments and offer immediate, safe and effective benefits to mothers affected by PPD globally. The industry continues to engage with the Federal Drug Administration (FDA) on moving the Brexanolone IM program forward with keeping participant safety monitoring as the top priority. Currently, the protocol is being amended to further define and improve the safety plan.

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The Efficacy and Safety of a Digital Therapeutic as an Adjunct to Treatment as Usual Among Women with Mild to Moderate Postpartum Depression

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Background & Significance:

Postpartum depression (PPD) presents an early risk to the infant, mother-infant bond, and family unit⁶. It is associated with suboptimal nutrition and poor health in the infant, abnormal development, cognitive impairment, and psychopathology in children; it can interfere with breastfeeding, childcare, and interpersonal relationships^{6,7}. Despite evidence-based, first-line treatment with psychotherapies for mild to moderate PPD, nearly 1 in 8 women suffer from PPD³. Several barriers to treatment access are specific to those with mild to moderate PPD, particularly those in underserved populations. These barriers include a lack of clinician treatment time, limited resources, stigma associated with mental health disorders, fear of losing parental rights, lack of available psychotherapy, and a desire to avoid pharmacological interventions⁴. A digital therapeutic (DT) may fill unmet needs in patients with PPD, increase access to care, and enhance psychotherapy outcomes. This study aims to use an industry-sponsored digital therapeutic (DT) through a mobile application (app) to deliver cognitive behavioral therapy (CBT) and elements of interpersonal therapy (IPT) to women diagnosed with mild to moderate PPD and reduce symptoms of PPD.

Methods:

This study is a randomized, double-blind, controlled trial to assess the efficacy and safety of an 8-week treatment of mild to moderate PPD by comparing a digital educational control (EC) mobile app with usual clinical treatment (TAU; EC-TAU) for PPD, which may include outpatient clinical visits, patient education, medication, or a combination of these approaches, to DT as an adjunct to usual clinical treatment [DT-TAU]. The study will utilize referrals by qualified healthcare providers within the UMass clinical system to direct participants to the study site (UMass Center for Psychopharmacologic Research and Treatment) for screening, informed consent, Structured Clinical Interview for DSM-5-Clinical Trials Version¹(SCID-5-CT), and the Central Independent Rater's (CIR) virtually-administered Hamilton Rating Scale for Depression² (HAM-D). Eligible participants must experience mild to moderate symptoms of PPD, as evidenced by a score between 8-12 on the HAM-D⁶, a subset of the HAM-D that assesses 6 core items associated with major depression. Participants are randomized in a 1:1 manner to either [DT-TAU] or [EC-TAU] and prompted to install the mobile app on their smartphones. Both treatment arms will be presented as possibly helping to improve PPD and described as the study app, so no distinction is made to participants about DT or EC. At 4 weeks and end of treatment (EOT; 8 weeks), the CIR administers the HAM-D, and site staff evaluates medications, therapy, pregnancy status, adverse events (AEs), and suicidality (Columbia Suicide Severity Rating Scale; C-SSRS)⁵. The primary endpoint of interest is the difference in HAM-D6 scores between groups at EOT. The safety endpoint will be determined by C-SSRS responses and investigator-graded severity of all AEs using the Common Terminology Criteria for Adverse Events⁸ (CTCAE).

Conclusions:

As we continue to explore treatment options for PPD, this study seeks to determine the efficacy of digital therapeutic options as adjuncts to clinical care that may increase access to and improve the safety and efficacy of psychiatric treatments. Whether due to race, ethnicity, socioeconomic status, disability, residential location, or newfound challenges of motherhood, access to care remains a consistent issue for women diagnosed with PPD. An evidence-based DT app can be easily shared at clinic visits, help reduce depression, improve safety, and offer earlier access screening to diagnose and help treat these individuals.

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Poster Abstract

1) **title:** Massachusetts Child Psychiatry Access Program (MCPAP) for Early Childhood (EC)

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Background: The existing MCPAP model which offers phone consultation by psychiatry and in certain circumstances a one-time evaluation, does not adequately address the treatment gap in early childhood mental health (ECMH). This is caused by lack of knowledge and comfort in identifying and treating behavioral health (BH) issues in very young children in the BH workforce and primary care clinicians (PCC) alike. Additionally, there is a donut hole in services between when early interventions services are no longer available and kindergarten enrollment, resulting in frequent requests to MCPAP from PCCs for support for young children with challenging behavior, especially in Western and Central MA. The initial phase of MCPAP for EC expansion focuses on communities and pediatric practices in Central/Western MA that serve low-income, Black, Latinx or immigrant children.

Objectives: To describe the implementation and future plans for MCPAP for EC.

Methods: This poster presentation will describe the process of: 1) establishing and training EC team, including a part time psychiatrist and full time ECMH clinician, to provide consultation to PCC; 2) providing training and case consultation using the ECHO model to PCCs, and 3) providing enhanced ECMH tools and resources and linkages to EC and family support system. Additionally, the poster presentation will include preliminary data about usage and acceptance of the model.

Results: Since the launch of MCPAP EC the number of MCPAP encounters for children 0-5 in the Central/Western region increased compared to equivalent periods in prior year: 75 encounters in April-June 2022 compared to 46 in April-June 2021; 66 in July-September 2022 compared to 53 in July-September 2021; and 88 in October-December 2022 compared to 57 encounters in October-December 2021. By comparison, MCPAP teams in other parts of the state did not see an equivalent increase. Additionally, the program trained 20 clinicians in 12 sessions focused on EC mental health concerns.

Conclusions: Given the increased need for ECMH due to increased rates of BH positive screens and diagnoses 1,2 MA decided to use HRSA funds to enhance its existing CPAP to focus on children under the age of six. This poster presentation will describe principals of ECMH consultation to PCC and describe this consultation models.

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Title: A Prismatic, Participatory Approach to Policy Research - Stakeholder Driven Policy Recommendations to Improve the Delivery of Pre-Employment Transition Services to Students with Serious Mental Health Conditions in Massachusetts

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Short Title: Stakeholder Driven Policy Recommendations to Improve Pre-ETS for Students with SMHC in MA

Youth and young adults with serious mental health conditions (SMHC) have extremely poor education and employment outcomes. 35% of students in special education with SMHC dropped out of high school before receiving a diploma in 2014-2015 (NCES, 2017). In 2007, only half (53%) of former special education students with SMHC out of school for up to 6 years found competitive employment (NCES, 2010). The Workforce Innovation and Opportunity Act (WIOA) of 2019 nationally mandates that state Vocational Rehabilitation (VR) systems provide Pre-Employment Transition Services (Pre-ETS) for students with disabilities to improve their transition to employment. However, students with SMHC have historically not been identified for special education or VR services such as Pre-ETS. Only about 10% of students with SMHC are served in special education (Forness et al., 2012). In 2019, the Massachusetts Rehabilitation Commission (MRC) modified its model of Pre-ETS delivery to accord with new mandates of WIOA. This mandate expanded Pre-ETS eligibility to youth ages 14-15 and a new category of “potentially eligible” students. The mandate also shifted away from individualized services to a “light touch” service approach, with more generalized transition services offered to a larger population of students.

This ongoing multi-year research study utilized a prismatic participatory approach to acquire new knowledge on barriers and facilitators to providing Pre-ETS to students with SMHC in MA. Interviews, surveys, and focus groups were used to engage multiple Pre-ETS stakeholders: students with disabilities receiving Pre-ETS and their families, MRC leadership and area directors, vendors from contracted agencies who deliver Pre-ETS, and high-school staff engaged in coordinating the delivery of Pre-ETS to students. The COVID-19 pandemic significantly impacted the delivery of Pre-ETS around the time of the new model roll out & required creative, virtual approaches to engage students and provide opportunities.

Overall, while the expanded eligibility to Pre-ETS is a positive change, many students and families desire individualized, tiered supports, & internship experiences, which can counter the new “light touch” model. Findings from the research resulted in these 8 recommendations to improve Pre-ETS delivery to youth with SMHC in MA:

- 1) Communicate to families and students earlier about Pre-ETS to allow for proactive planning;
- 2) Create a “menu” of available services, eligibility information, and relevant agencies so families and youth are empowered and informed about their options;
- 3) Incorporate a discussion of Pre-ETS into IEP meeting and coordinate school-based resources to fill service gaps;
- 4) Provide specialized training to contracted Pre-ETS vendors on working with students with SMHC;
- 5) Engage community mental health agencies in cross-agency collaboration to refer more students with SMHC to Pre-ETS;
- 6) Clarify the mission and value of Pre-ETS to high school staff and leadership to improve the school-vendor relationship and school buy-in;
- 7) Implement virtual signatures on parental forms;
- 8) Offer more individualized internship opportunities.

This project exemplifies the utility of a prismatic participatory approach to understanding the impacts of policy change on key stakeholders.

A Literature Review of the Neural Correlates of Emotional Face Processing in People with PTSD

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Purpose: Post-traumatic stress disorder (PTSD) is a common psychiatric disorder affecting about 5% of the US population. PTSD is characterized by alterations in emotional processing. Therefore, we opted to review the fMRI literature regarding emotional face perception in PTSD. By studying emotional faces in populations with PTSD, we can better understand how PTSD impacts the brain's ability to regulate various emotions in comparison to control groups. Furthermore, although traumatic life events are relatively common, a small proportion of individuals who experience them develop PTSD. Thus, the neural correlates of risk and resilience to PTSD are an important area of study. This literature review seeks to understand how brain function associated with emotional face perception is affected in people with PTSD relative to trauma exposed and healthy control groups. By reviewing literature with healthy trauma exposed groups, we hope to learn more about the differing neural responses to stimuli in trauma exposed populations who develop PTSD versus those who do not.

Methods: The systematic review was conducted using PRISMA guidelines. A PubMed search was conducted on February 22nd 2023 with the following keywords: fMRI AND PTSD AND "emotional faces", fMRI AND PTSD AND "face stimuli". Abstracts were reviewed to ensure that only fMRI studies that included emotional face stimuli with both a PTSD and a healthy trauma-exposed or no trauma control groups were included.

Results: The search identified 40 eligible records, of which 10 met criteria for inclusion. The most prominent finding was that those with PTSD experienced increased activation of the amygdala and diminished prefrontal cortex during emotional face tasks involving fearful or angry faces. Studies that included PTSD, trauma exposed, and healthy control groups reported overall greater amygdala activation in PTSD and trauma-exposed groups relative to healthy controls.

Conclusions: Functional alterations in the prefrontal cortex and amygdala were prominent findings in the literature. This is likely due to impairments in emotional regulation and processing in PTSD. Most studies that examined PTSD and trauma-exposed control groups indicate that the PTSD group experienced greater activation of the amygdala and diminished prefrontal cortex. Such differences in brain activity may be related to diagnosis of PTSD. Trauma exposed groups hyperactivation of the amygdala compared to healthy non-trauma exposed groups indicates that trauma affects the brain regardless of PTSD diagnosis. This review suggests an urgent need to study healthy trauma exposed groups to healthy control groups with no trauma to evaluate trauma's impact on brain function and structure.

Keywords: PTSD, fMRI, emotional faces, face stimuli

Correlations between GABA, Glutamate and Resting State Functional Connectivity: A Literature Search

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Background: Functional Connectivity (FC) is based on the observation that distinct brain regions display similar, coherent patterns of neural activity, which can be measured in vivo with functional magnetic resonance imaging. Even in the absence of a task or stimuli, certain brain networks are still active. Yet the neurochemical substrates, particularly GABA and glutamate, that may underly resting state networks have not been well established. We proposed two research questions:

1. Do glutamate and GABA levels within brain networks correlate with resting state functional connectivity within those networks and/or across networks?
2. If so, is the association between GABA and glutamate and resting state functional connectivity disrupted in patients diagnosed with psychiatric disorders?

Methods: We conducted an initial literature search with PubMed databases with the following criteria: 1) Use of both resting state functional magnetic resonance imaging and magnetic resonance spectroscopy to quantify GABA, glutamate, or both. 2) Inclusion of healthy individuals and/or individuals diagnosed with a psychiatric disorder.

We reviewed 14 initial studies. 8 of the studies included only healthy individuals and 6 studies included patients diagnosed with panic disorder, autism spectrum disorder, postpartum depression, major depressive disorder, psychosis, and schizophrenia. The studies were sorted based on study population, number of participants, region of glutamate and GABA measurement and functional connectivity network(s) that were investigated.

Results: We found that GABA appeared to be more significantly correlated with resting state functional connectivity while glutamate was found to have less significant correlations across studies. However, there was significant variability of results with no clear unifying trend across studies. Associations between GABA/Glutamate and resting state functional connectivity were disrupted in all psychiatric disorders.

Conclusions: We could not discern a definitive trend in the association of GABA and/or glutamate and resting state functional connectivity due to the small number of studies, small sample sizes and differences in regions of interest, both where glutamate and GABA were measured and the functional connectivity networks. The literature search will be used to guide a systematic literature review and guide data analysis for neuroimaging data that has been collected by CANDI.

Title: Evaluation of Online Gaming Use Among Pediatric Patients Post COVID-19 Pandemic: A Pilot Study

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Purpose: The DMS-5-TR and WHO have recently included Online Gaming Disorder as a condition warranting further investigation. Several studies have demonstrated increased video game use among the pediatric population following the COVID-19 pandemic. Currently there are numerous validated screening tools to measure the impact of online gaming use. However, no study to date has utilized the validated Internet Gaming Disorder Scale 9-Short Form (IGDS9-SF) while simultaneously accounting for the type of game, length of time played, and cyberbullying frequency in the pediatric population post COVID-19 pandemic. We hypothesize that the type of online game participants play will impact the length of gaming time and rates of cyberbullying while being associated with a higher overall score on the IGDS9-SF.

Methods: Our Multi-center study recruits individuals from UMass University Benedict Building Pediatric Outpatient Clinic and Worcester Community HealthLink Outpatient Clinic who are between the ages of 10y.o. and 17y.o. Participants are asked about demographics, whether they have played an online game within the past 12 months, 9 questions in the IGDS9-SF, and questions regarding frequency of cyberbullying behavior while playing online.

Results: This study is currently ongoing and preliminary data suggests that of the participants initially screened (n=20), all participants who were screened in (n=10) agreed to participate resulting in a participation rate of 100%. The remaining 10 were not approached as the provider deemed it not an appropriate time due to a variety of reasons. Of those who chose to participate (n=10), all reported playing online games within the last 12 months. Of the males (n=6), and females (n=4) who participated, the majority reported being White or Caucasian (n=9). The average hours per week playing online games was reported as 14 hours and 36 minutes with the highest cumulative hours per week being 39 hours, and the lowest being 1 hour. The most played games were Roblox with a cumulative average play time of 35 hours per week and FIFA 23 with a cumulative average play time of 34 hours per week. Of the IGDS9-SF questions, Question 8 regarding feelings of playing in order to temporarily escape or relieve a negative mood scored the highest average rating with a score of 2.5 (between Rarely and Sometimes). Question 1 regarding feelings of preoccupation with gaming behavior score an average of 2.2. All the participants exhibited little to no difficulty completing the questionnaire, regardless of age.

Conclusion: This is the first study to our knowledge comparing type of online game played, length of time played, IGDS9-SF scale and frequency of cyberbullying in a pediatric population post COVID-19 pandemic. Since the study is still ongoing, all conclusions are preliminary. By identifying potential risk factors for problematic gaming behaviors and cyberbullying, we hope to improve the education around healthy online gaming and the clinical care that pediatric patients receive.

Title: Creating Personas to Inform the Adaptation of a Digital Anxiety Sensitivity Intervention to Prevent Perinatal Anxiety

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Abstract:

Anxiety disorders are the most common mental health conditions in the perinatal period. Digital health approaches that offer scalable, evidence-based interventions, can decrease this burden by preventing and ameliorating perinatal anxiety. The goal of this study was to develop personas, or user profiles that allow for designers to tailor digital interventions, to inform the adaptation of an Anxiety Sensitivity Intervention for perinatal individuals and for digital health. Anxiety Sensitivity Interventions are brief, cognitive-behavioral interventions that prevent anxiety or reduce risk for anxiety disorders in the general population. Anxiety Sensitivity Interventions have not been examined among perinatal populations or in a digital health format. We used participatory User-Centered Design (UCD) methods to approximate and validate potential users of a digital health intervention to prevent perinatal anxiety. Phases included (1) Attribute development, (2) Persona creation, (3) Persona consolidation,

and (4) Persona validation. Three groups of advisory council members (n=14) with lived expertise from experiencing perinatal mental health challenges, developed personas (likely user profiles). We used cluster analysis to consolidate personas. We then validated these personas to determine if they reflected likely application users using interviews with individuals with lived experience of perinatal depression or anxiety and who experienced economic marginalization (n=12). Advisory council members generated six personas. Cluster analyses indicated that these clustered into three user profiles. These three personas were evaluated through end-user interviews that led to inclusion of a fourth user profile. Personas generated through this process had distinct characteristics and design implications including the need for 1) content personalization, (2) additional content describing support options and resources (e.g., doulas, midwives), (3) careful consideration of the type of information provided by users, and (4) transparent options for data sharing. A participatory User-Centered Design (UCD) approach has the potential to inform intervention development and adaptation of a digital health Anxiety Sensitivity Intervention for perinatal individuals.

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Implementing Routine Outcome Monitoring in Student Counseling Services:
A Proposed Quality Improvement Project

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Student Counseling Services (SCS) provides confidential access to mental health treatment, both psychotherapy and psychiatric medication, to students enrolled in UMass Chan Medical School. SCS has seen an increase in the proportion of students presenting for intake during each academic year in the past ten years. To meet the mental health needs of the growing study body of medical, nursing, and graduate students, SCS has hired additional staff with diverse areas of expertise, expanded its psychology and psychiatry training program, moved to a larger clinic space, transitioned to an electronic medical recording keeping system, and implemented telehealth services.

In light of the continued growth of SCS, it is increasingly important yet challenging to monitor the extent to which students benefit from services received and to identify students whose mental health is, or is at risk of, deteriorating while in treatment. One method by which this can be ascertained is through routine outcome monitoring (ROM), a practice of regularly tracking and measuring progress in psychotherapy with standardized self-report scales throughout the course of treatment. ROM has been found to improve psychotherapy outcomes, allowing therapists and clients to recognize and collaboratively address a lack of or poor treatment response (Lambert et al., 2018). The American Psychological Association (2006) and the Association of State and Provincial Psychology Boards (2015) have recommended the use of ROM in psychotherapy and competency-based supervision, respectively. Psychology trainees' exposure to ROM has been associated with increased use of this practice beyond training (Overington et al., 2015).

It is standard procedure in SCS for students to complete self-report questionnaires at intake evaluation. However, administration of self-report measures during a subsequent course of psychotherapy occurs at the discretion of the student's therapist. We propose a quality improvement project in SCS involving systematic implementation of ROM. Specifically, we propose administration of the Outcome Questionnaire-45.2 (OQ-45; Lambert et al., 1996), one of the routine intake measures, via the electronic medical record at a regular frequency during the course of psychotherapy in SCS. The OQ-45 is a psychometrically sound measure of overall psychiatric functioning and of three domains relevant to adult mental health. It was designed for repeated administration and provides cutoff scores, based on normative data, that indicate clinical significance for the total score and each of the three subscales.

An outline of the proposed QI project in SCS will be provided, including a procedure for systematic evaluation of psychotherapy progress and outcomes using ROM.

Dynamic modulation of interpeduncular nucleus GABAergic neurons by stress controls stress-induced anxiety.

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Recent work has identified a role for the medial habenulo-interpeduncular nucleus (MHb-IPN) circuit in the pathophysiology of drugs of abuse, particularly nicotine. This circuit also mediates the acute aversive effects of high nicotine doses and is a critical node for anxiety during nicotine withdrawal, a known stressor in mice. However, it is not known if the IPN is dynamically regulated by stress *in vivo* and if/how the IPN contributes to stress-induced behavior. To investigate the response of IPN neurons to acute stress, we expressed GCaMP into GABAergic IPN neurons and used *in-vivo* fiber photometry to record changes in GCaMP fluorescence during and following restraint stress, a powerful acute stressor in mice. During periods of restraint, we detected significant increases in GCaMP fluorescence from GABAergic IPN neurons, which persisted post-stress and was concomitant with heightened measures of anxiety-like behavior in the elevated plus maze and open field test. We also measured GCaMP activity from GABAergic IPN neurons during stress-induced self-grooming behavior. We observed significant reductions in IPN GABAergic activity during self-grooming bouts, possibly in an attempt to limit stress-activation of the IPN and minimize stress-induced anxiety. To test this hypothesis, we used optogenetics to silence IPN GABAergic neurons in restrained mice and measured stress-induced anxiety and grooming behavior. Photoinhibition of IPN GABAergic neurons significantly reduced measures of anxiety-like behavior and post-stress grooming. Taken together, our results highlight the IPN as a stress-responsive brain area that exhibits heightened activity during and following acute stress exposure, which leads to increased anxiety-like behavior that in turn, mediates anxiolytic behavioral responses to reduce IPN GABAergic activity as a novel stress-reduction mechanism.

From humans to rodents and back again: A cross-species investigation of opioid use disorder

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Background: The impact of opioid use disorder (OUD) and associated deaths remain a public health crisis. Opioid overdoses have increased seven-fold since 1999 and synthetic opioids like fentanyl have become the main drivers of opioid related deaths. Still, we lack a basic understanding of the mechanisms contributing to OUD. Current pharmacotherapies are largely aimed at symptomatic relief rather than targeting pathways underlying craving and relapse. Human and rodent studies have established that the nucleus accumbens (NAc) and dorsolateral prefrontal cortex (DLPFC) are two major neural substrates important for opioid reward. Furthermore, circadian disruptions like sleep disruption are a core feature of opioid use and may contribute to relapse. In-depth transdisciplinary investigations into the molecular and cellular adaptations including circadian-dependent changes that occur in OUD are lacking and could lead to the development of novel, more effective interventions. To solve this problem, we employ a cross-species approach using human post-mortem brain tissue of OUD subjects and mouse models of opioid use to understand the mechanisms underlying addiction-related behaviors.

Methods: In humans, we collected post-mortem NAc and DLPFC tissue from subjects with OUD and unaffected controls matched for sex, age, post-mortem interval, pH, and RNA quality. Both bulk and single nuclei RNA-sequencing was performed for separate experiments assessing transcriptional rhythms and cell-specific changes respectively. Furthermore, we used NPAS2-deficient mice to determine the role of NPAS2 in fentanyl self-administration, withdrawal, and sleep.

Results: Our results demonstrate that the NAc and DLPFC in those with OUD have significantly and opposingly altered transcriptional signatures. Gene ontology analyses of differentially expressed genes reveal pathways associated with extracellular matrix remodeling, circadian rhythms and immune signaling in the NAc and metabolism, immune and glutamatergic signaling in the DLPFC. Investigations into these circadian-dependent changes revealed robust transcriptional rhythms changes in both structures. The top predicted upstream regulators of transcripts that lost rhythmicity in the NAc of subjects with OUD included NPAS2, a circadian transcription factor with restricted expression to the mammalian forebrain. Corroborating our human findings, NPAS2-deficient mice exhibited increased fentanyl self-administration and withdrawal behaviors including disrupted sleep architecture. Follow-up studies using single nucleus sequencing in human post-mortem tissue signaling reveal that NPAS2 is reduced in D1 medium spiny neurons.

Conclusions: Our findings begin to uncover transcriptional alterations linked to OUD and how these alterations impact corticostriatal neural circuits in opioid dependence, craving, and relapse.

Depression Care Support

DCS (Depression Care Support); The Successful Implementation of a Telephone Outreach Program to Patients Newly Started on Antidepressants in Primary Care

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The UMMHC Office of Clinical Integration and UMMHC Department of Psychiatry

Summary and Program Description: The Office of Clinical Integration developed a modified version of the Collaborative Care Model for the treatment of depression in primary care to assist primary care providers (PCPs) starting their patients on medication for the treatment of depression. While over 100 RCTs have repeatedly demonstrated the clinical and cost effectiveness of supporting primary care providers through programs built on the principles of chronic disease management (1), sustaining these programs has been difficult after initial funding through grants has ceased. For this effort, we began with a commitment for a small amount of sustained support, obtained a small quality grant from Harvard Pilgrim Health Care, and developed a model that was consistent with available funding. Practices were explained the program through live and telephonic presentations, video seminars, and electronic mailings. In the DCS program, a best practice advisory alert is fired in EPIC when a patient is newly started on an antidepressant medication as defined by no prior use in the preceding three months. The alert is automatically linked to a PCP referral to our outreach worker who then establishes the validity of the referral to the program; calls the patient and explains the program and its voluntary nature; provides feedback to the primary care provider as well as an updated phq-9 score; a psychiatrist is available to answer questions from the outreach worker and communicate with the PCP as needed. Currently the program accepts approximately 60 referrals per month and is staffed for ten hours per week. During the study period, practices were assessed using available data based on the pharmacy claims submissions report which track a standardized HEDIS measure for antidepressant continuation. Results suggest that using the DCS program positively impacted patient adherence to prescribed medication therapy.

Results: 48 practices in our community medical group were compared pre and post DCS introduction and compared to practices not using the DCS program during the same time frames. DCS practices had a 68.9% treatment adherence rate as per the HEDIS measure in 2019 then with introduction of DCS in April of 2020 (launched during COVID-19) rates increased to 77.99% and now increased up to 81.3% during 2022. Non-DCS practices showed adherence rates of 69.56% in 2020 and 76.2% in 2022

Conclusions: Numerous studies have demonstrated the added value of supporting primary care practices in their treatment of patients with depression, a common and disabling disorder. The most widely disseminated model through the AIMS center at the University of Washington, has identified five key components (2,3): 1) Patient centered team care, 2) population-based care, 3) measurement-based treatment to target, 4) evidence-based care, 5) accountable care. The model has consistently shown benefits in clinical outcomes, resource utilization and overall cost reduction, yet implementation of the model has lagged behind other chronic disease management programs for medical conditions such as asthma and diabetes (4,5,6) We have offered a dismantled version of the program for a fraction of the cost that takes advantage of prior efforts to improve depression screening our in primary care network and supplement this with outreach from a non-clinical telephone worker. We have been able to use existing data from payers to examine the impact of the program and it suggests that the use of an outreach worker can yield an

approximately 10% increase in treatment adherence for prescribed medication in primary care. Qualitative feedback from patients and PCPs has been positive, although formal surveys have not been conducted.

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TITLE - WHATS COOKING IN THE KITCHEN? *Drawing parallels between two newer substances of abuse, Kratom and Krokodil.*

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Mr A., a 42 year old unresponsive male was brought in by EMS in ventricular tachycardia with pinpoint pupils. Naloxone was given and he was treated symptomatically. He reported using KRATOM for chronic pain and did not know that he could overdose on it. On observation, he did not demonstrate any symptoms of opioid withdrawal and was discharged within 3 days.

Miss B., a 34 year old female was transferred with sepsis and symptoms of a pulmonary embolism. Chart review showed frequent hospitalizations over the last year for chronic lower extremity ulcerations, recurrent DVTs, endocarditis, and septic cerebral emboli. She provided a history of KROKODIL use. Patient reported intense cravings and had features of opioid withdrawal. She was started on methadone; the dosage had to be regularly increased due to craving. She remained seriously ill, yet threatened to discharge against medical advice if IV Morphine was not given.

Kratom and Krokodil are newer substances of abuse in the US that act on mu-opioid receptors and cause euphoria similar to that of morphine. We compare these two substances in terms of epidemiology, pharmacokinetics, clinical presentation and trajectory of course.

Kratom is a **natural** substance, obtained from the leaves of a tropical plant *Mitragyna speciosa*. The most potent alkaloid, 7-hydroxymitragynine, is **7x more potent than morphine**. There are over 2 million users in the US where it is a **legal substance**. It is available as a **green powder**, and consumed as a **liquid brew**.

Krokodil is the street name for desomorphine, an illegal drug which is a **synthetic** derivative of codeine, manufactured easily from common ingredients like paint thinners and match sticks. It is **10x more potent than morphine**. It is a **yellow solution** and is **injected intravenously**. Both drugs are cheaper than heroin and are undetected in routine drug screens. Users of both drugs, tend to have a history of opioid use. Kratom has a **long half-life**. Use is typical in **an older population**. It is beneficial to reduce opioid craving and treat chronic pain. Krokodil has a **shorter half-life**, leading to faster withdrawal and craving. Use is common in **younger individuals**. Typical complications of opioid use, like respiratory depression is uncommon with both drugs. However, **cardiac arrhythmias, seizures** and **hepatotoxicity** are reported side effects from Kratom. Krokodil causes **immediate thrombophlebitis, hyper pigmented scaling and later multi organ dysfunction**.

To summarise, Kratom and Krokodil are common substances of abuse in the US. There is a misconception that Kratom is a harmless herbal supplement and that Krokodil is unavailable in the US. This poster aims to heighten awareness, which would help screen, diagnose and treat individuals using these substances earlier, as the eye does not see what the mind does not know. Knowledge of potential consequences of these substances can also help physicians educate their patients, particularly when a harm reduction approach is indicated.

Biological and Psychosocial Correlates of Social Cognition in Adolescents with Autism Spectrum Disorder (ASD)

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Objectives:

The dysfunctional immune responses in ASD associated with increased impairments in social cognition and the impact of interpersonal and social stress in ASD on inflammatory pathways is well-known. The connection between psychosocial stress, the immune system, and core deficits may provide greater insight into this debilitating disorder. Our major objectives include: 1) to examine the association of psychosocial stress with measures of social cognition; 2) to assess the relationship between peripheral inflammatory and neurotrophic proteins, psychosocial stress, and social cognition.

Methods:

Preliminary analysis includes 30 adolescents ages 13-17 years old [N=16 ASD 12.5% female, N=14 TD (controls) 21% female]. The Social Responsiveness Scale, Second Edition (SRS-2) was administered to measure social interaction and communication deficits. The Child and Adult versions of the Reading the Mind in the Eyes Tests (RMET-C and RMET-A, respectively) were administered as measures of theory of mind. Psychosocial stress measures included the Expressed Emotion (EE) assessed by the Five-Minute Speech Sample, NIH PROMIS scales. ProcartaPlex bead-based multiplex immunoassays were performed for simultaneous detection and quantitation of multiple protein targets in a subset of the plasma samples.

Results:

Youth with ASD demonstrated higher familial EE than TD, although not statistically significant ($p=0.2$). Parent-reported psychological stress in youth with ASD was significantly greater than TD ($p=0.001$). ASD youth described greater impairments in peer relationships than TD youth ($p=0.004$). ASD youth with greater psychological stress, impaired family and peer relationships demonstrated more errors on the RMET-A ($p=0.003$, $p=0.03$, and $p=0.009$ respectively). Higher scores on the SRS-2 were seen in ASD youth with greater psychosocial stress in EE and PROMIS measures but did not reach statistical significance. TNF-alpha and IL-10 demonstrated significant associations with measures of psychological stress ($p=0.07$ and $p=0.01$ respectively), but no group differences were noted.

Conclusion:

The preliminary results are consistent with our hypotheses suggesting the presence of higher psychosocial stress in youth with ASD which contributes to greater impairments in social cognition and a dysregulated immune profile. Further analyses with the larger dataset could help identify risk factors that may affect the development and/or maintenance of these deficits and be prime targets for intervention.

Reducing Restraint through Individualized Positive Behavioral Interventions and Supports (PBIS) in an Inpatient Psychiatric Setting

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Abstract

Aggressive and violent behaviors are significant concerns in inpatient psychiatric settings. These behaviors are often underreported and associated with a range of negative outcomes for both patients (restrictive practices, prolonged hospitalizations, poor quality of life, traumatization, overuse of medications, etc.) and staff (injury, high stress, burnout/turnover, low job satisfaction) (Lieberman et al., 2016, Iozzino et al., 2015, Kelly et al., 2015). Few hospitals have moved beyond the biomedical model and continue to rely on reactive measures to control and contain physical aggression, such as seclusion and physical, mechanical, or pharmacological restraints. Reducing restraint episodes is a primary goal for inpatient facilities due to the plethora of research that documents the negative impact of restraints on patient's psychological well-being, the associated risk of injury to staff and patients, including patient deaths (Forster, Cavness, & Phelps, 1999; Weiss, 1998), lack of effectiveness (Jones & Timbers, 2002), inconsistency between restraint use and principles of person-centered care (Steinert et al., 2013; Waldemar et al., 2016), and the high cost to psychiatric staff and institutions (Frueh et al., 2005; LeBel & Goldstein, 2005).

In response to such concerns, a growing number of researchers and practitioners have moved toward proactive, person-centered approaches to addressing challenging behavior, such as Positive Behavioral Interventions and Supports (PBIS). PBIS provides a multi-tiered framework for preventing and responding to challenging behavior by addressing environmental and contextual factors. This poster/presentation describes an initial study examining the effect that implementation of individualized PBIS plans had on restraint events in a population of chronically underserved adults with severe mental illness in a large public sector inpatient psychiatric hospital. Results indicated an immediate 75% reduction in restraints following implementation of individualized PBIS plans that was maintained over the following 12 months. Implications for future research and practice are explored as a means of improving clinical outcomes and quality of life of individuals in inpatient psychiatric settings.

Targeting PDGFR β to treat peripheral opioid tolerance and increase opioid safety

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Opioids are the mainstay treatment for severe pain, despite the high incidence of CNS-mediated adverse consequences such as respiratory depression or opioid use disorders (OUD). With continued use, opioids require escalation in dose to overcome the gradual decrease in analgesia due to tolerance. Strategies to increase opioid safety are needed. Peripheral opioid delivery is a safer alternative to systemic delivery, as it provides effective local analgesia with limited central side-effects. However, analgesic tolerance also occurs peripherally, via mechanisms that remain unknown. Centrally, activation of the mu-opioid receptor (MOPr) by opioids induces release of platelet-derived growth factor-B (PDGF-B); and inhibition of PDGF receptor beta (PDGFR β) prevents opioid tolerance. In the periphery, MOPr and PDGF-B are expressed in skin keratinocytes, and PDGFR β is expressed in peripheral sensory neurons (PSNs), which are known to convey tolerance. Previous studies also showed that optogenetic stimulation of keratinocytes modulates PSNs via release of keratinocyte-derived factors. Thus, we hypothesized that mechanisms of peripheral opioid tolerance could involve keratinocytes and PDGFR β signaling. We tested this hypothesis using mice behavioral pharmacology, optogenetics and *in situ* hybridization. We found that peripheral inhibition of PDGFR β , using imatinib or a selective PDGFR β antibody, could prevent tolerance from repeated intraplantar (i.pl.) morphine injections. Interestingly, we also found that PDGF-B was necessary and sufficient for peripheral morphine tolerance. In parallel, we discovered that repeated optogenetic activation of keratinocytes was sufficient to induce peripheral morphine tolerance which could be blocked by inhibitors of PDGFR β or of PDGF-B. Finally, we found that MOPr and PDGF-B were co-expressed in keratinocytes, and repeated injections of morphine i.pl. increased PDGF-B expression in these cells. Together, our data show that mechanisms of peripheral tolerance to morphine involves keratinocytes which may release PDGF-B and activate PDGFR β signaling on PSNs. These findings highlight that PDGFR β signaling could be targeted to increase peripheral opioid efficacy and safety by preventing dose escalation, and therefore preventing the occurrence of deleterious side effects and OUD.

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Abstract

A Randomized Pilot Study of Acceptance and Commitment Therapy to Improve Social Support for Veterans with PTSD

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Veterans with PTSD often have substantial interpersonal difficulties and low levels of social support, but few treatments address poor social functioning for Veterans with PTSD. To address the issue of social impairment among Veterans, a pilot randomized trial was conducted of Acceptance and Commitment Therapy to Improve Social Support for Veterans with PTSD (ACT-SS), a psychotherapy that targets social avoidance and eroded social relationships, compared to Person-Centered Therapy (PCT), a non-directive psychotherapy. Participants were randomized to twelve sessions of either ACT-SS (n=21) or PCT (n=19). Results showed that Veterans with PTSD had high ratings for satisfaction for both treatments. Contrary to the PCT group, participants in the ACT-SS group showed significant improvement in the quality of social relationships, engagement in social and leisure activities, and PTSD symptoms from the baseline assessment to the end of treatment and a three-month follow-up. Veterans in the ACT-SS group, but not the PCT group, also showed significant improvements in mindfulness and valued living and a reduction in experiential avoidance from baseline to the end of treatment, with sustained improvements in valued living at the three-month follow-up. Overall, the present study demonstrated the feasibility, acceptability, and positive preliminary outcomes of ACT-SS for Veterans with PTSD.

Keywords: PTSD; social impairment; social functioning; social support; relationships; acceptance; mindfulness; Veterans

Abstract

Addressing Female Trainee Experiences of Sexual Harassment and Discrimination in a Veterans Affairs Mental Health Service

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Experiences of sexual harassment in clinical environments have long been a concern of female mental health trainees and training programs. To better understand and facilitate organizational change related to these problems, a workgroup within a Veterans Affairs (VA) medical center was created to address this issue. Workgroup members reviewed the mental health and broader health care literature to inform recommendations for addressing sexual harassment in mental health care settings. To formally collect information from female mental health trainees, the workgroup held four facilitated listening sessions (FLS) to understand their specific concerns. The main themes that emerged from these FLS included experiences of inappropriate behaviors, safety concerns, the negative impact of gender discrimination, lack of support, lack of empowerment, not knowing the best way to address or cope with experiences, the importance of supportive supervision, needing more system-wide interventions, and needing more and better training to manage sexual harassment. Recommendations to improve mental health settings were developed based on this feedback and the literature, including proposals for the training of trainees and staff to prevent and address sexual harassment and gender discrimination, system-wide interventions in mental health services, improving the institutional environment, and supporting the professional development of female staff and trainees.

Keywords: gender, training, supervision, sexual harassment, discrimination

Caregivers' Reactions to Emerging Stress Biomarkers:

A Potentially Innovative Approach to Increasing Engagement with Support

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Background/Purpose: Caregivers are critical in oncology care, yet often suffer psychological burden and stress related to their role. While caregiver support programs often exist within cancer centers and additional supportive care interventions are being tested in research settings, significant barriers to caregiver engagement in such programs remain. Emerging biomarkers of stress - increasingly available to the public - may provide an opportunity to both objectively measure caregiver burden and foster caregiver willingness to seek additional support to manage stress associated with their role.

Methods: We report on a recently completed qualitative study with cancer caregivers exploring attitudes toward stress biomarkers and whether these data would be impactful in caregivers' pursuit of psychosocial support. Caregivers of patients with brain tumors were interviewed at a large academic cancer center and asked about their awareness of their own stress and reaction to 4 commercially available biomarkers (telomeres, cortisol, physical activity and heart rate variability). Once presented with biomarker data, caregivers were asked to discuss their reaction as if data was their own and their willingness to seek support after hypothetically receiving such information. We identified and extracted preliminary themes.

Results: Seventeen caregivers were recruited ($M_{age}=56.1$ years; $SD=12.3$; target: $N=20$), the majority of which were white (94.4%) females (77.8%). Initial themes suggest biomarker data would be impactful for caregivers to seek support and, for those that chose which biomarker would be most impactful (58.8%), 70% selected heart rate as the most impactful. Notably, some caregivers focused on how biomarker data may increase their subjective stress and biomarkers' sensitivity to change (e.g., actionable).

Conclusions: Our preliminary results suggest that caregivers, hypothetically, may find stress biomarker data potentially impactful in their willingness to seek additional psychosocial support and heart rate variability as particularly meaningful. Ongoing analyses will add to our understanding of the ways that caregivers interpret and react to emerging biomarker data and its potential contribution towards increasing caregivers' engagement with psychosocial support. Implications for clinicians and researchers will be discussed.

Title of poster: Sibling Support Program: A Novel Peer Support Intervention for Parents, Caregivers and Siblings of Youth Experiencing Mental Illness

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Abstract:

Caregivers and siblings of youth with mental illness often experience role-related psychological challenges, and it is important to focus on the needs of these family members. Existing literature demonstrates that caregivers and affected children benefit from participation in peer support and family-centered programs. This poster describes the Sibling Support Program (SSP): A Family-Centered Mental Health Initiative, a novel intervention for families of youth with mental illness. The SSP distinguishes itself from existing family-centered programs in that it utilizes a unique combination of peer support, parent mentor guidance, and clinician-led group therapy. The poster outlines the structure of the treatment model and presents preliminary data from participant surveys. Results show preliminary indications that the program provides both emotional and practical benefits. Along with high satisfaction ratings, family members report decreased feelings of isolation, gains in knowledge, and more positive thinking after program participation. Caregivers report that the SSP helped improve their understanding of the impact of a child's mental illness on family members and that they learned about effective family management strategies and access to resources. Siblings report learning coping strategies and feeling better after meeting peers with shared experiences.

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Abstract

Provider Perspectives on a Guided Acceptance and Commitment Therapy for Chronic Website Intervention

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Chronic pain is one of the most common and debilitating conditions facing Veterans. Acceptance and Commitment Therapy (ACT), a therapeutic intervention to increased acceptance, mindfulness, and valued living, has established efficacy for treating chronic pain, but has not been rolled-out nationally within the Department of Veteran Affairs (VA). Mobile interventions have been shown to improve access to mental health interventions but have not yet been applied to ACT for Veterans with chronic pain. To expand access to ACT for chronic pain, the current study sought to develop an online program guided by an embodied conversational agent (ECA) as a “virtual coach” for the proposed 7-week intervention. The primary aim of this study was to gather qualitative feedback from chronic pain providers (n = 10) on the Veteran ACT for Chronic Pain (VACT-CP) website for 1) intervention refinement (e.g., intervention elements and presentation) and 2) assessment of potential benefits, implementation barriers, and concerns.

Participants were 10 chronic-pain care providers within VA Bedford Healthcare System (psychologists, psychiatrists, nurses, & primary care providers) with interest in clinical technology care-integration. Feedback was gathered using a semi-structured “think-aloud” interview protocol. Rapid Assessment Procedures (RAP) were used to code data specifically for website development and assessment of major themes related to technology implementation. Major themes for intervention refinement emerging from interviews included changes to the ECA (picking a gender-neutral voice, less uncanny visuals), use of videos to highlight key concepts, and the creation of recruitment materials for effective in-clinic referrals (e.g., brochures, video “trailers” of the program). Providers also commented on the possible benefits of an ECA in creating a personalized connection to the program and the potential for the online program to motivate the self-management of mental health at home. Provider-identified barriers and concerns included liability and responsibility (e.g., developing a point of contact) when incorporating autonomous clinical technologies into their work. Findings indicate that providers are optimistic about using interactive, tailored mobile technologies for chronic-condition self-management, but have specific professional and institutional concerns that should be addressed early in development.

Keywords: chronic pain, embodied conversational agents, website interventions, technology development

Program Descriptions

Bedford Recovery from Addiction through Veteran Empowerment (BRAVE) lab
Principal Investigator: Victoria Ameal, PhD (Victoria.Ameal@va.gov)

Affiliations

VISN 1 Mental Illness Research Education and Clinical Center (MIRECC)
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The BRAVE lab conducts psychotherapy treatment development and care continuity research in substance use and related disorders. Much of this work is focused on the earliest phases of treatment, especially for individuals meeting criteria for moderate to severe substance use disorders. Treatment development projects apply the principles of Acceptance and Commitment Therapy to support the personally meaningful, functional aspects of individual recovery as early as possible in the treatment care continuum. Projects on naturalistic addiction treatment aim to give voice to the strengths and growth areas of the addiction treatment continuum from the perspective of care recipients themselves.

Currently Funded:

A Brief Values Intervention to Support Veterans in Early Buprenorphine Treatment (IK2RX003789; 2022-2027)

Buprenorphine treatment for opioid use disorder helps prevent relapse and reduce overdose risk, but medications and existing psychotherapy approaches do not address the functional consequences of opioid use during early treatment. This VA Rehabilitation R&D Career Development Award aims to address this gap using through development of a brief intervention informed by the values component of Acceptance and Commitment Therapy. The proposed treatment aims to support Veterans' personal functional goals during the first month of treatment, a critical and high-risk phase of the recovery process. This five-year project is currently in Phase 1 and actively recruiting providers and Veterans for stakeholder interviews to refine the draft intervention manual.

Recently Completed:

A national survey examining Veterans' experiences of addiction and mental health treatment during the COVID-19 pandemic (2020-2022)

This nationwide study examined Veterans' experiences of mental health and addiction treatment during the first year of the pandemic. The survey was administered between April 2021 and June 2021, and demonstrated high levels of access and satisfaction and minimal disruption in these markers relative to care received prior to the pandemic. Planned secondary analyses of this dataset will focus on social support, stigma, and valued recovery goals in addiction treatment.

Systematic review of interventions to support addiction outcomes following discharge from inpatient alcohol and opioid withdrawal treatment (2019-2021)

This project, led by Dr. Vicki Ameal and Dr. Nick Livingston from the National Center for PTSD at VA Boston, focused on identifying and evaluating the evidence base for interventions (psychosocial, medical, and combined) designed to improve outcomes following an inpatient admission to treat withdrawal. The series of three reports from this large project demonstrated recent emphasis on opioid use disorder treatments relative to the more common alcohol use disorder, some indication in favor of non-medical interventions for alcohol use disorder, and the importance of medications and reinforcement-based interventions for opioid use disorder.

Principal Investigator: David Cochran MD, PhD

Director, Neurobehavioral Technologies Program, Eunice Kennedy Shriver Center
Child and Adolescent Neurodevelopment Initiative, Eunice Kennedy Shriver Center
Associate Professor of Psychiatry and Pediatrics
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The Child and Adolescent NeuroDevelopment Initiative (CANDI) is a research division of the Eunice Kennedy Shriver Center at the University of Massachusetts Chan Medical School and is dedicated to biomarker discovery, neuroimaging, and treatment studies of individuals with neurodevelopmental disorders and intellectual and developmental disabilities, including autism and fragile X.

The Neurobehavioral Technologies program led by Dr. David Cochran, is a CANDI lab research initiative investigating the use of technologies at the brain-behavior interface to understand the neurobiological underpinnings of autism spectrum disorders and other neurodevelopmental disorders. The program aims to integrate EEG, functional near-infrared spectroscopy, magnetic resonance spectroscopy, functional magnetic resonance imaging, and resting state functional connectivity findings to drive biomarker discovery, and use augmented reality techniques to develop novel interventions for individuals with neurodevelopmental disorders.

Current projects and developing areas of investigation include:

- Measuring levels of excitatory and inhibitory neurotransmitters in the brain using specialized magnetic resonance imaging techniques, and examining how these neurotransmitter levels are connected to social cognition in autism spectrum disorder. (PI: Cochran)
- Evaluating the effect of a medication, gabapentin, on excitatory and inhibitory neurotransmitters in the brain of individuals with autism spectrum disorder. (PI: Cochran)
- Using electroencephalography (EEG) and functional near-infrared spectroscopy to characterize deficits in social engagement in autism spectrum disorders to more accurately assess ASD and to develop improved behavioral therapy methods. (PI: Modarres)
- Applied virtual reality, augmented reality and 3D gaming to understand and assist individuals with autism spectrum disorders, families and care providers with daily living, learning, empathy, and other areas. (PI: LeMoine)

CENTER FOR PSYCHOPHARMACOLOGIC RESEARCH AND TREATMENT

The mission of the Center for Psychopharmacologic Research and Treatment is to provide state-of-the-art care for patients suffering from Mood and Anxiety Disorders, conduct research on new and more effective treatments for these disorders, and teach current and future practitioners.

The Center is currently conducting a number of research projects for patients who suffer from Treatment-Resistant Depression, Major Depression with Psychotic Features, Post-traumatic Stress Disorder and Post-Partum Depression. The studies offer medication and physician visits at no charge to the participant. Current studies include:

A Randomized, Double-blind, Multicenter, Placebo-controlled Study to Evaluate the Efficacy, Safety, and Tolerability of Esketamine Nasal Spray, Administered as Monotherapy, in Adult Participants with Treatment-Resistant Depression (TRD)

The primary objective of this study is to evaluate the efficacy of each individual dose of esketamine nasal spray, 56 mg and 84 mg, compared with placebo nasal spray in improving depressive symptoms in participants with TRD, as assessed by the change from baseline in the MADRS total score from Day 1 (prerandomization) to the end of the 4-week double-blind treatment phase (Day 28).

A Phase 3, Multicenter, Randomized, Double-blind Trial of Brexpiprazole as Combination Therapy with Sertraline in the Treatment of Adults with Post-traumatic Stress Disorder (PTSD)

This phase 3 trial is intended to provide persuasive evidence that treatment of PTSD with combination treatment with brexpiprazole + sertraline is efficacious, safe, and well-tolerated. The study is a double-blind, randomized, controlled trial with 3 arms: placebo, sertraline, and sertraline + brexpiprazole.

Is Transcranial Magnetic Stimulation Combined with Sertraline a Possible Treatment for Major Depression with Psychotic Features in Adults? A Pilot Study

The purpose of this study is to observe whether combined transcranial magnetic stimulation (TMS) and antidepressant (sertraline) therapy may benefit patients with major depression with psychotic features and avoid the need for antipsychotic medication as measured by reductions from baseline on the GRID version of the 17-item Hamilton Depression Rating Scale (HAM-D), Delusion Assessment Scale (DAS), and delusion and hallucination items of the Schedule of Affective Disorders and Schizophrenia (SADS) after 6 weeks of therapy.

Safety and Efficacy of Spravato to Auvelity Cross-Titration in Major Depressive Disorder: A Pilot Study

The pilot study proposed is a small, single site, proof of concept, open label, two-arm study of 30 patients who have responded to esketamine (Montgomery-Asberg Depression

Rating Scale (MADRS) decrease by at least 50%). Prior to entering the study, subjects will be maintained on esketamine together with augmenting medications, and / or psychotherapy. After enrollment and screening, subjects will be randomized to receive Auvelity (45 mg of dextromethorphan, 105mg bupropion) or continue Spravato in a 1: 1 ratio. Follow-ups with patients will be performed weekly, and include MADRS scale administration, and a psychiatric medication visit. The primary endpoint will be the change from baseline on the MADRS six weeks post randomization.

Coming soon:

A phase III, multicenter, randomized, double-blind, placebo-controlled study to investigate the efficacy, safety, and tolerability of a single administration of COMP360 in participants with treatment-resistant depression (COMP 005)

In this study, the aim is to assess the efficacy of COMP360 25 mg (psilocybin) versus placebo for reducing symptom severity in Treatment Resistant Depression, when administered with psychological support.

Study of digital therapeutic app for FDA approval in treatment of postpartum depression

A multicenter, double blind, placebo-controlled study evaluating the efficacy and safety of a CBT based digital therapeutic as adjunct to treatment as usual of mild to moderate postpartum depression. Participants will receive either the cognitive behavioral based previously assessed app or an educational app on their smart phone for 8 weeks while mood is followed by standardized testing.



CPRT Team: L to R: Michelangela Yusif, MS; Bennett Wechsler, MD; Wendy Marsh, MD MPH; Anthony Rothschild MD; Chelsea Kosma, MA; Nikolas Martinez, BA, Karen Lambert, Administrative Assistant

Edmiston Lab Research Program

Our lab uses multimodal neuroimaging, neuromodulation, psychophysiological, clinical and neuropsychological assessment methods to better understand visual cortex function in people at risk for developing mood and anxiety disorders. We are particularly interested in how highly anxious individuals perceive novel and emotionally ambiguous visual stimuli. Current projects include: 1) an NIMH-funded fMRI study designed to assess novelty perception in individuals with personality-based risk factors for anxiety disorders, as well as a NARSAD Young Investigator-funded study designed to assess threat perception latency in individuals with high trait anxiety. We combine neuromodulation methods, such as transcranial direct current stimulation (tDCS), with fMRI. TDCS allows us to increase or decrease cortical activity simultaneously with fMRI data collection in the scanner. Therefore, we can directly assess the effects of modulation of cortical areas on broader network function and behavior.

Ayorkor Gaba, Psy.D.
Assistant Professor
Department of Psychiatry
Implementation Science and Practice Advances Research Center (iSPARC)

Dr. Ayorkor Gaba is a Clinical Psychologist and Assistant Professor in the Department of Psychiatry at the University of Massachusetts Chan Medical school as well as the Director of the Equity Division at the Massachusetts Center of Excellence for Specialty Courts and Behavioral Health Equity Advancement Lab (B-HEAL). Dr. Gaba's research aims to develop culturally and structurally informed behavioral health interventions and inform programs, practices, and policies to eradicate behavioral health and health care disparities. Her current work is at the intersection of behavioral health equity and justice and the legal system.

Dr. Gaba has a University of Massachusetts Center for Clinical and Translational Science funded KL2 Early Career Mentored Award where she utilizes an implementation science and community-engaged research approach to examine racial/ethnic disparities in access to and engagement in an evidence-based co-occurring mental health and substance use disorder (COD) treatment intervention, called Maintaining Independence and Sobriety through Systems Integration, Outreach and Networking-Criminal Justice (MISSION-CJ) embedded within four Massachusetts' Adult Drug Treatment Courts. Her KL2 builds on previous and ongoing implementation and evaluation projects in the criminal legal system. She is currently the evaluator for two SAMHSA funded behavioral health intervention projects-one in an Adult Drug Treatment Court and the other in a Family Drug Treatment Court in Massachusetts.

Dr. Gaba is a National Heart, Lung, and Blood Institute (NHLBI) PRIDE-CVD fellow and recently received seed funding to develop a culturally tailored intervention to address COD and cardiovascular disease risk among Black and African American men.

Principal Investigator: Sohye Kim, Ph.D.

The goal of my research program is to advance the science of the developing human social brain. My work seeks to: (1) discover early neural markers in the infant's social brain that predict long-term developmental outcomes, (2) identify potentially modifiable perinatal and early-life factors that influence the trajectory of the developing social brain, and (3) translate these discoveries into innovative strategies for prevention, early diagnosis, and treatment in high-risk children and families for enduring impact.

In January 2022, we launched the UMass Baby Brain Study (National Center for Advancing Translational Sciences, NIH) which uses two innovative neuroimaging techniques to establish first-in-human neural markers that can detect early differences and deficits in the infant's developing social brain. We use the functional near-infrared spectroscopy (fNIRS) at 4 months of age to measure the extent to which the infant brain tunes into and its activity becomes fine-tuned by social signals from the first social partner, the mother. We use the functional MRI (fMRI) at 6 months of age to measure the extent to which the infant's developing social brain regions are responsive to socially salient communicative cues from the mother. These infants are now returning for their 1-year visits and we plan to: (1) longitudinally follow this cohort of infants to assess their developmental outcomes, while also (2) extending this work to at-risk mother-infant dyads (e.g., infants of mothers with perinatal depression or addictions, infants who are at risk for autism). We believe that this line of work will serve as the basis for advancing our fundamental knowledge of the developing human social brain and discovering new diagnostics and therapeutics targeting the crucial earliest years.

Prior to coming to UMass, my work focused on using fMRI, along with neuroendocrine, and behavioral measures, to examine how risks seen in perinatal mothers compromise brain and neuroendocrine functions that are necessary to support postnatal social communication with their infants. This work has focused on disrupted dopamine and oxytocin circuitries in the perinatal maternal brain and the potential of oxytocin as a therapeutic agent in at-risk perinatal mothers (e.g., mothers with depression, trauma, addictions) and children (e.g., children with autism). While data collection is no longer ongoing, we're continuing data analysis on this dataset.

Lifeline for Families: Improving Family and Relational Health

<https://www.umassmed.edu/lifelineforfamilies/>

Executive Director: [Nancy Byatt](#), DO, MS, MBA, DFAPA, FACLP

At Lifeline for Families, we have joined our synergistic and like-minded Lifeline for Moms and Lifeline for Kids programs to 1) share resources and strategies, and 2) create new interventions that support both parents (and caregivers) and children in their relationship to each other. In combining our two programs, we lead the national movement in ground-breaking work focused on addressing parent and child mental health. Our overarching aim is to mitigate negative mental health outcomes by building the capacity of nontraditional settings to promote the mental health of families. Our goal is for there to be no wrong door for getting quality mental health treatment and support.

Community-Based, Family-Centered, Trauma-Informed Approach to Timely Detection and Management of Early Postpartum Hypertension

The goal of this project is to improve clinical outcomes, including mental health outcomes, among postpartum women experiencing health disparities by increasing awareness, detection, and timely care of postpartum hypertension, mental health, and cardiovascular complications. This project will compare the effectiveness of two multicomponent, multilevel healthcare delivery models focused on early detection and control of postpartum hypertension and the social and mental health factors known to impact maternal outcomes with the current standard of care and with each other. The project will enroll priority populations in three medical centers using an intervention study design, comparing standard of care for postpartum participants with: 1) a Remote Medical Model and 2) a Community Health Model. The project aims to improve mean postpartum systolic blood pressure at six weeks and reduce depression severity at three months postpartum.

Lifeline for Parents

This project aims to develop a model of a peer support approach for new parents. It will build on our existing scalable models of perinatal mental health care and early childhood trauma interventions. WE will develop the model using an iterative process incorporating feedback of key community partners in two working groups comprised of interdisciplinary experts. Through this process, we will identify best practices in peer support and determine mechanisms for accessing these services.

Whole Family Wellness: Supporting Parents Across Systems of Care

Mothering from the Inside Out (MIO) is an attachment-based parenting intervention that improves parental mental health and parent-child relationships. It centers parent wellness and self-regulation as the foundation for a strong parent-child relationship, with a particular focus on parents who have experienced trauma, adversity, or marginalization. While effective, MIO's scalability has been limited because it has been delivered in traditional mental health service models. Thus, we have obtained funding to adapt MIO for delivery by the community-based professionals who are already serving parents and their children. The project will have three phases covering three years: 1) elicit input from community partners to inform the adaptation of MIO for delivery by community-based professionals; 2) adapt MIO for delivery by community-based professionals; (3) beta test the new adapted model.

Lifeline For Kids: Promoting Trauma-Responsive & Relational Health Care

<https://www.umassmed.edu/lifelineforkids>

Executive Director, [Jessica L. Griffin, Psy.D.](#)

Medical Director, [Heather Forkey, MD](#)

The mission of the University of Massachusetts Chan Medical School's *Lifeline for Kids* (formerly the Child Trauma Training Center) is to improve the standard of care for youth who have experienced trauma by: reducing wait times for treatment for youth and families; increasing the number of professionals trained in trauma-informed care and trauma-responsive practices; strengthening family engagement and participation in culturally responsive treatment; and improving psychosocial outcomes for youth and families. Lifeline for Kids is led by Executive Director, Jessica L. Griffin, Psy.D, Medical Director, Heather Forkey, MD, Program Director, [Jennifer Malcolm-Brown, LICSW](#), and Training Director, [Zlatina Kostova, Ph.D.](#)

Trauma-Informed and Trauma-Responsive Care Training and Consultation: Our training efforts focus on training professionals in trauma-informed care and trauma sensitive practices – with the belief that you do not need to be a therapist to be therapeutic. We have trained over 100,000 professionals in trauma-responsive practices including: medical providers, schools, child welfare, law enforcement, legal professionals, and others.

Training of Mental Health Providers in Evidence-Based Treatment: We are a leader in promulgating and studying trauma-focused evidence-based treatments, particularly Trauma-Focused Cognitive-Behavioral Therapy, across the state since 2006 including multiple statewide and national EBT implementation efforts.

Development of Highly Innovative Access Solutions: A cornerstone of our mission to improve the standard of care for traumatized youth is LINK-KID, our state-of-the-art, trauma-informed statewide centralized referral system. LINK-KID streamlines the link between children in need of evidence-based treatment (EBT) for trauma and mental health providers trained in these treatments. LINK-KID helps youth receive quality treatment for trauma as soon as possible and decrease wait times while providing support during the waiting period. In 2019, LINK-KID was named by the US Government as a promising practice to address access issues for youth exposed to trauma.¹ We provide consultation to other states and regions on how to establish access programs in their area. Additionally, we have piloted other approaches such as the use of bridging services during waiting periods, “trauma educators” or “trauma coaches.”

Partnership with American Academy of Pediatrics and University of California, Los Angeles: Building off of our regional work, we partnered with the AAP and UCLA to develop a national program for pediatrics, Pediatric Approach to Trauma Treatment and Resilience (PATTeR) project, training physicians across the US using an ECHO training model. This program was a highly successful 5-year initiative in training medical providers in trauma-informed and trauma-responsive care, nationally². National and statewide (e.g., California) initiatives have grown out of this work including projects with the Center for Disease Control and UCLA/UCSF ACEs Aware Family Resilience Network (UCAAN).

National Resilience through Relationships Initiative: In 2020, we received a National Child Traumatic Stress Network grant focusing on disrupted caregiving (e.g., when the parent/child relationship is disrupted by the parent’s substance misuse, mental health struggles or trauma) to establish The Resilience Through Relationships Initiative - a national program designed to support professionals, parents and other caregivers in buffering youth from the impact of trauma.

¹ United States Govt. Accountability Office (2019). Report to Congressional Requestors on Children Affected by Trauma: Selected States Report Various Approaches & Challenges to Supporting Children. GAO-19-388.

² Forkey, H., Inkelas, M., Ocampo, A., Lopez, N., Vizueta, N., Griffin, J., Crane, M., Hurley, T., Balaban, Z., Shah, A., Szilagy, M. Pediatric Approach to Trauma Treatment and Resilience (PATTeR) – A novel relationship-based curriculum and approach to training pediatric professionals about providing trauma-informed care. *Academic Pediatrics* (2021), doi: <https://doi.org/10.1016/j.acap.2021.07.023>.

Lifeline for Moms: Helping Communities Optimize Perinatal Mental Health

<https://www.umassmed.edu/lifeline4moms/what-we-do/research/>

Executive Director: [Nancy Byatt](#), DO, MS, MBA, DFAPA, FACLP

Medical Director: [Tiffany A. Moore Simas](#), MD, MPH, MEd, FACOG

Multi-level barriers to providing needed perinatal mental health care are an ever-present challenge for obstetric, childbirth, pediatric, primary care, psychiatric, and early childhood professionals. We conduct perinatal mental health research that aims to increase access to and the quality of perinatal mental health care. This research involves developing, testing, and disseminating innovative approaches to integrating mental health care into obstetric, perinatal, and pediatric care settings.

Our academic and clinical perinatal mental health, obstetric, and pediatric experts develop innovative programs and resources, assessing their impact on individuals and systems. We do this in partnership with community-based partners and individuals with lived expertise in perinatal mental health conditions.

Deeply committed to developing equitable evidence-based care, we are also conducting projects to learn how our perinatal mental health interventions and programs can better promote equitable mental health care access, delivery, and outcomes.

Online Training for Addressing Perinatal Depression

The primary goal of this project is to develop, implement, and evaluate an online module to improve obstetric providers' knowledge, attitudes, and practices regarding perinatal mood and anxiety disorders.

Dissemination of Implementation Protocol for Integrating Obstetric and Mental Health Care

The goal is to disseminate our implementation protocol for integrating mental health care into obstetric care to obstetric practices across the United States.

Charting the Course for Patient-Centered Research to Address Inequities in Perinatal Mental Health and Maternal Mortality

The goal is to build the capacity for a diverse set of community partners to participate in patient-centered outcome research and comparative effectiveness research to advance a vision for health equity and racial justice for maternal mental health.

Comparative Effectiveness of Perinatal Psychiatry Access Programs

The primary goal is to operationalize the components of and evaluate the effectiveness of Perinatal Psychiatry Access Programs across the United States.

Perinatal Psychiatry Access Programs: Evaluating Patient, Provider, and Program Level Outcomes Across the US

The primary goal of this proposal is to develop a feasible and scalable approach to evaluating and optimizing Perinatal Psychiatry Access Programs in diverse real-world settings.

Dr. Lourah Kelly is currently a postdoctoral researcher at the University of Connecticut School of Medicine and is excited to join the faculty of UMass Chan in July 2023 as an Assistant Professor within the Implementation Sciences and Practice Advances Research Center. Her research focuses broadly on substance use and suicide prevention among transition aged youth (16-25 year olds). Her published manuscripts and conference presentations have focused on understanding the impact of suicidal thoughts on substance use treatment outcomes, identifying key demographic groups who are at highest risk for co-occurring substance use problems and suicidal thoughts, and formative work on features and content that are preferred by consumers of mobile health suicide interventions. Dr. Kelly's is dedicated to using this work to inform dissemination and implementation of suicide prevention and interventions among transition aged youth with substance use problems in acute care settings.

She completed her Clinical Psychology Ph.D. at Suffolk University in Boston, MA, followed by her clinical internship at the Rochester Institute of Technology Priority Behavioral Health Consortium. Her clinical training focused on evidence-based interventions for substance use and mental health problems for children, adolescents, emerging adults, and families. She is currently a licensed clinical psychologist in the state of Connecticut.

Dr. Kelly is the PI of a Pathway-to-Independence award titled "Development and evaluation of an avatar-guided mobile health intervention for emerging adults with alcohol misuse and suicidality" (K99AA029154). This project uses an iterative mixed-methods approach to design an avatar-guided intervention for emerging adults to reduce binge drinking and suicidal thoughts after an emergency department visit. This project also includes intensive mentorship and training in designing integrated alcohol and suicidality interventions for emerging adults, mobile health intervention development, conducting randomized clinical trials with fully technology-based interventions, and lagged sequential analysis with ecological data.

At UMass Chan, Dr. Kelly will be transitioning to the R00 phase of her award, which involves testing the usability of the avatar-guided mobile health intervention with young adults seen in the emergency department. The intervention will then be further refined based on the usability trial results prior to testing in a pilot feasibility randomized controlled trial. Because mobile health interventions have been shown to have greater efficacy when paired with human support (i.e., coaching), the avatar-guided intervention will be compared to the avatar-guided intervention plus brief coaching. Secondary aims of the RCT are to test for safety and early signals of efficacy on a range of alcohol, suicidal ideation, and outpatient care variables over 24 weeks. An exploratory aim is to examine within-person changes in same-day alcohol misuse and SI severity between groups via daily diary and ecological momentary assessment.

Dr. Kelly is also Co-Investigator of the Collaborative Hub for Emerging Adult Recovery Research (CHEARR; R24DA057632; PI Zajac). Dr. Maryann Davis also serves as Co-I on this project. Dr. Kelly's role is to mentor undergraduate students in careers related to recovery research in a trainee-to-investigator pipeline, assist with development and testing of a measure of recovery capital specific to emerging adults, and enhance dissemination of research findings through a recovery research track at a national conference.

Dr. Kelly highly values mentorship and has mentored of multiple undergraduate and graduate students, including for the Research Society on Alcohol mentorship program and Addiction Health Services Mentorship Program, and has co-mentored medical students.

ICE (Impulsivity, Cognition, and Emotion) Lab

PI: Andrew D. Peckham, PhD

Contact: andrew.peckham@va.gov

The ICE (Impulsivity, Cognition, and Emotion) lab, directed by Dr. Andrew Peckham, is a new clinical research program at the VA Bedford Healthcare System, beginning in 2023. Dr. Peckham's program of research is focused on understanding cognitive mechanisms of impulsivity and emotion dysregulation, with the goal of rapidly developing novel psychological interventions. In addition to transdiagnostic research, he also studies disorder-specific mechanisms and treatment for people with bipolar disorder.

Dr. Peckham is a licensed clinical psychologist at the VA Bedford Healthcare System, a Research Investigator in the VISN 1 New England Mental Illness Research, Education, and Clinical Center (MIRECC), and the Co-Director of the Bedford VA's Advanced Fellowship in Psychosocial Rehabilitation and Recovery (PSR). In addition, he is an Assistant Professor of Psychiatry at the University of Massachusetts Chan Medical School. Dr. Peckham completed his PhD in Clinical Science at the University of California, Berkeley, and his clinical internship at Harvard Medical School/McLean Hospital. Prior to joining the VISN 1 MIRECC, Dr. Peckham completed a postdoctoral fellowship supported by a NIMH National Research Service Award (F32 MH115530) at McLean Hospital, and received a Career Development Award from the National Institute on Drug Abuse (NIDA). Dr. Peckham's work has been recognized with the Rising Star Award from the Association for Psychological Science.

Previously Awarded Projects Include:

- *A Mobile Executive Functioning Intervention for Momentary Craving in Opioid Use Disorder*. A NIDA Career Development Award (K23) to develop and test a smartphone-based working memory intervention targeting craving in people with opioid use disorder. 2021-2022.
- *A Randomized Controlled Trial of Cognitive Control Training for Emotion-Relevant Impulsivity in a Naturalistic Clinical Setting*. This project was a NIMH-funded National Research Service Award (F32) designed to test adjunctive cognitive control training as an intervention for emotion-related impulsivity. 2018-2021.

Selected Recent Publications:

Peckham, A. D. (2021). Why don't cognitive training programs transfer to real life? Three possible explanations and recommendations for future research. *the Behavior Therapist*, 44(7), 357-360.

Peckham, A.D., Sandler, J. P., Dattolico, D., McHugh, R.K., Johnson, D.S., Björgvinsson, T., Pizzagalli, D.A., & Beard, C. (2021). Cognitive control training for urgency: A pilot randomized controlled trial in an acute clinical sample. *Behaviour Research and Therapy*, 146, 103968

DEAF YE

Center for Deaf Empowerment and Recovery

Our mission is to partner with the Deaf community to develop innovative addiction and mental health resources that are uniquely and expertly tailored for Deaf signing people.

DeafYES! provides culturally-affirmative, linguistically-accessible behavioral health services to Deaf therapy clients, while our NIAAA-, NCATS-, and NIDCD-funded programs of research revolve around developing innovative, evidence-based behavioral health interventions and research methodologies. Our work within the Deaf community has only been successful because of our participatory action approaches. Our team's clinical services and research studies are co-led by Deaf professionals, hearing professionals, and Deaf laypersons, ensuring that the work we do is relevant and accessible to our population of focus. In addition to this community co-leadership model, we continuously infuse the voice of Deaf community members into our work via ongoing qualitative interviews, focus groups, and community forums.

NIH-Funded Research (past 3 years)

Designing Deaf-MET: A Deaf-Accessible Pre-Treatment for Alcohol Use Disorder
NIAAA, K23AA029466

https://reporter.nih.gov/search/jfB_4rljMU6QyH7xyS-kDg/project-details/10283090

Piloting Signs of Safety: A Deaf-Accessible Therapy Toolkit for Alcohol Use Disorder and Trauma

NIAAA, R34AA026929

<https://reporter.nih.gov/search/WPaW6UXxPEyb9vHKWcLccA/project-details/9761412>

Sign Here: How to Conduct Informed Consent with Deaf Individuals
NIDCD, R21DC019216

<https://reporter.nih.gov/search/WPaW6UXxPEyb9vHKWcLccA/project-details/10361565>

Our Faculty



Melissa L. Anderson, PhD
Co-Director, *DeafYES!*
Deputy Director, iSPARC
Associate Professor of Psychiatry



Alexander M. Wilkins, PhD
Co-Director, *DeafYES!*
Assistant Professor of Psychiatry

Poster Title: Sibling Support Program: A Novel Peer Support Intervention for Parents, Caregivers and Siblings of Youth Experiencing Mental Illness
Principal Investigator: Emily Rubin, MA, MSW, LICSW

The *Sibling Support Program: A Family-Centered Mental Health Initiative (SSP)* was developed by social worker Emily Rubin, Director of Sibling Support at the E.K. Shriver Center and Assistant Professor in Psychiatry at UMass Chan. Rubin had noticed three troublesome trends among families of youth admitted for psychiatric hospitalization. First, she identified that caregivers and siblings were not receiving services during and after a child's psychiatric hospitalization, even though the events leading up to the hospitalization were often deeply traumatic (family members witnessing suicide attempts, physical assaults, police restraints, etc.). Second, she noticed that the clinicians treating the affected children were not routinely addressing the impact of the child's illness on caregivers and typically developing siblings. Third, she observed that many caregivers of youth admitted for psychiatric treatment appeared deeply demoralized [17].

From these observations, and with determination to support families of youth in psychiatric crisis, the SSP model was born with the following objectives: provide peer support for all family members, with parents and siblings in separate groups, so they can share their stories in safe and understanding settings; incorporate parent mentors into the intervention to empower and educate parents/caregivers; and provide a training opportunity to educate mental health clinicians in family-centered care practices.

The theoretical underpinning of the SSP stems from Dr. Murray Bowen's concept of Family Systems Theory, which posits that the family unit operates as a complex social system through which relationships, behaviors and patterns can be best understood, and that individuals are inextricably linked and interconnected within their family of origin [18,19]. Bowen believed that when one person within a family makes a change, it impacts the entire family system. Another of Bowen's teachings that is integrated into the SSP is the technique of normalizing conflicts within a family by showing how similar conflicts exist in other families [19]. Using the Bowenian approach, the SSP views the family as a whole system, as well as identified subsystems within the family: the sibling subsystem and the parental subsystem. Focusing on family interactions within these subsystems is the foundation of the SSP.

The SSP consists of four peer support groups offered simultaneously in different rooms: a young sibling group (ages 6–11); a teen sibling group (ages 12–18); a foundational, psychoeducational group for first-time participating caregivers; and a follow-up group for returning caregivers to address ongoing stresses that impact the family unit. The sibling groups are co-facilitated by psychiatry residents and other trainees with access to clinical supervision. The caregiver groups are facilitated by trained parent mentors under the supervision of a licensed, clinical social worker. Participants are encouraged to attend groups as often as they like.

The SSP was designed with input from family members, parent mentors and clinicians, which provided, in essence, a wraparound lens through which all aspects of program delivery were examined. For example, in the planning stages, Rubin assembled a SSP advisory group made up of family members to gather input on best practices. Families frequently shared that not enough clinicians understood the impact of mental illness on family members. Thus, training rotations were built into the design of the SSP, to provide hands-on opportunities for mental health trainees to work directly with impacted siblings in the group setting, and gain understanding of family-centered care strategies and skills.

At UMass Chan, the SSP serves as an elective rotation for psychiatry residents. To date, 76 clinicians have been trained in family-centered care across SSP sites.

Title: Electronic Brief Intervention to promote smoking cessation among hospitalized patients with cardiovascular disease

Investigators: Caridad Ponce Martinez, MD (PI); Kimberly Yonkers, MD; Katarzyna Pasciak

Significance:

Combustible tobacco use is the greatest cause of preventable illness and death in our country. Cardiovascular disease (CVD) is responsible for nearly 30% of deaths related to tobacco use.(2) If smokers with a myocardial infarct stop smoking, their mortality risk drops by 36% over the subsequent two years.(2) Medical hospitalization is an opportunity to engage such patients in smoking treatment. Unfortunately, only 21% (nationally) of medical inpatients initiate pharmacotherapy for tobacco cessation, illustrating both a gap in treatment and an opportunity for improvement.(3) At UMass Memorial Health Care (UMMHC) there is a recognized need for tobacco cessation counseling, but this often does not occur due to limitations in staffing, clinicians' time and training.

One counseling strategy that can be integrated into a consultation is a "Brief Intervention" (BI). BIs are short therapeutic interviews that motivate patients to a) reduce or stop their substance use, and b) develop a plan to address their goal.(4) Electronic administration of a BI (e-BI) addresses challenges related to implementation, fidelity and cost, and has been shown to be effective. We have previously tested a motivationally based e-BI on an outpatient basis (in reproductive health settings) and found that it was acceptable to patients and as effective as a clinician-delivered BI in reducing substance use.(5) Booster sessions can be delivered after discharge to increase the potency of the intervention. In this application, we propose to test the effectiveness of an e-BI and a booster in patients with CVD because the impact of smoking cessation on patient health in this group is great. Meeting the needs of cardiac inpatients with tobacco use disorder via novel electronic means can augment current staffing and address an existing care gap with the ultimate goal of enhancing the care and longevity of patients with CVD who are active smokers.

Project Summary:

We propose to evaluate implementation of a motivationally based electronic Brief Intervention (e-BI) and booster among current smokers with cardiovascular disease who are admitted to UMMHC, and assess the usability and acceptability of the electronic Brief Intervention (e-BI). The project will be a trial of 30 medical inpatients who will complete an assessment and receive the intervention while hospitalized. Upon discharge, they will be sent a text or e-mail including a booster session of the e-BI and complete a follow up assessment. Our project will increase the proportion of patients with cardiovascular disease who smoke cigarettes and receive smoking cessation counseling during their hospitalization at UMMHC.

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PI: Ryan Logan, PhD, Professor
Department of Psychiatry and Department of Neurobiology

Dr. Logan's research program uses various translational approaches to understand the relationships between sleep, circadian rhythms, and health. To do so, the laboratory conducts sleep and circadian rhythm studies in both human subjects and preclinical animal models of disease. His laboratory uses various experimental approaches ranging from genetics, functional genomics, and gene-editing to molecular and cellular biology through behavior. Moreover, an arm of the laboratory uses computational biology and bioinformatics to integrate findings across species from humans to preclinical models to investigate the basic biology of health and mechanisms related to human disease. His work uses state-of-the-art bioinformatics tools along with major efforts to develop new, innovative computational approaches for disease and therapeutic discoveries.

The primary niche of the Dr. Logan's laboratory investigates the bidirectional relationships between sleep, circadian rhythms, and substance use disorders – whereby sleep and circadian disruptions contribute to the vulnerability to substance use, craving, and relapse, and chronic use of substances leads to persistent, severe sleep and circadian disruptions. Thus, the aims of his research focuses on the following: 1) understand the environmental and biological factors by which sleep and circadian disruptions increase the risk for substance use and relapse; 2) understand the impact of substance use on sleep and circadian rhythms that contribute to the progression and severity of substance use disorders, substance dependence, and comorbid mood disorders; and 3) use translational approaches to discover and develop, or improve, therapeutics and intervention strategies for the treatment of substance use disorders and comorbid psychiatric disorders.

Several of the current projects in the laboratory include studies in postmortem brains of people with psychiatric disorders and various mouse and rat models of substance use, dependence, and withdrawal. A major initiative includes the use multi-'omics approaches (transcriptomics, proteomics, single-cell biology) of human postmortem brain tissues from subjects with opioid use disorder or substance use disorders with comorbid major depressive disorders. These discovery-based approaches are invaluable for identifying the cellular and molecular pathways in the human brain that are unique to substance use and mood disorders across multiple biological scales – from brain region and neural circuit, to synapses and individual cell types. Efforts to define the neurobiology of psychiatric disorders are critical for understanding the etiology of the disease and necessary for developing new therapeutics.

Computational approaches are then used to identify high priority genes, proteins, circuits, among other biological factors, in the human brain that can be integrated with preclinical models to experimentally manipulate and investigate the cellular and molecular mechanisms associated with psychiatric disorders. For example, using cross-species integrative analyses, the laboratory has identified a possible brain region- and cell type-specific molecular signaling pathway that links sleep and circadian disruption during opioid withdrawal to increased risk for opioid craving and relapse using data discovery in human brain and experimentation in preclinical rodent models.

Stephanie Puig, M.S. Ph.D.
Laboratory of opioid signaling and prevention of opioid use disorders.

Opioids remain the gold standard for the treatment of severe chronic pain. Unfortunately, they also cause deleterious side-effects, such as respiratory depression which can lead to death, or physical dependence and reward, which can lead to opioid use disorders (OUD). Many aspects of the opioid crisis are related to the development of analgesic tolerance, which requires dose-escalation in the clinic and dramatically reduces opioid safety as it increases the propensity of developing opioid side effects. Therefore, an ongoing challenge in opioid research is how to selectively prevent tolerance, dependence and reduce addiction liability without altering pain-relieving effects (Puig and Gutstein, *Nature Medicine*, 2017, PMID: 28134927).

Recent work from our laboratory points to a novel concept that: opioids side effects are selectively mediated via recruitment of receptor tyrosine kinase (RTK) signaling downstream of mu-opioid receptors (MOR), which are the targets of opioids used in the clinic. This is supported by the fact that RTK inhibitors like imatinib (platelet-derived growth factor beta (PDGFR β) inhibitor), gefitinib (epidermal growth factor (EGFR) inhibitor), or cabozantinib (vascular endothelial growth factor receptor (VEGFR) inhibitor) completely prevent tolerance to multiple prescription opioids (Puig et al, *eNeuro* 2020, PMID: 32111605; Lopez-Bellido, Puig et al, *The Journal of Neuroscience*, 2019, PMID: 31138657; Puig et al, *Mol. Pharm.* 2020, PMID: 32723769; Puig et al, Preprint Neuroscience, SSRN #4196992, 2022). Moreover, we also recently discovered that the RTK inhibitor, imatinib, blocks expression of opioid conditioned place preference (CPP) and decreases opioid lethality, suggesting that RTK inhibition can also block reward and respiratory depression. However, the underlying circuits and molecular mechanisms remain to be discovered.

Taken together, **our overarching hypothesis is that undesirable side effects of clinically used opioids could be eliminated by targeting RTK signaling.** Our initial focus is on imatinib and PDGFR β signaling as substantial evidence highlights that PDGFR β is both, necessary and sufficient to mediate opioids side effects. Therefore, we hypothesize that PDGFR β is a core mediator of side-effects caused by prescription opioids and could be targeted to increase long term opioid analgesic efficacy and opioid safety.

Our translational research program focuses on elucidating the underlying neural circuitry and molecular mechanisms of RTK mediated opioid tolerance, reward, and overdoses death.

1. **Identify circuits** underlying RTK-mediated opioid analgesic tolerance (peripheral and central), reward and respiratory depression. Objective: determine cell populations that mediate opioid side-effects for targeted intervention rather than traditional deleterious systemic treatments. Techniques: rodent behavioral pharmacology, rodent genetics and optogenetics, biochemistry, protein/RNA tissue imaging.
2. **Identify cellular and molecular mechanisms** underlying RTK-mediated side-effects downstream of MOR signaling. Objective: uncover novel targets, for safer treatment of opioid side-effects and prevention of OUD. Techniques: Tissue single nuclei transcriptomics, bulk proteomics, and *in vitro* high-resolution/high-speed live-cell microscopy
3. **Examine clinical implications of our findings:** RTK inhibitors are FDA approved for the treatment of malignancies and are well tolerated by patients. In addition, doses effective to block opioid side effects are estimated to be 10-20 times lower than those required in cancer treatment. Thus, holding the promise that safe interventions to treat chronic pain could be developed by repurposing RTK inhibitors to treat chronic pain and reduce the propensity of OUD development.

UMass Chan Psychiatry Research Day, PI Dara Drawbridge Description of Research

The **Massachusetts Center of Excellence (CoE) for Specialty Courts** is an initiative of the Massachusetts Executive Office of the Trial Court that aims to bring innovative, evidence-based, and equitable interventions to Specialty Courts and related settings. Initiatives are undertaken in three Divisions operated by UMass Chan: Implementation & Translation Division, Equity Division, and Research, Evaluation & Policy Division. The Implementation & Translation Division drives adoption, implementation, and sustainment of evidence-based, best, and innovative intervention through activities that translate scientific knowledge for the field and build system capacity. The Equity Division drives initiatives to advance equity and reduce disparities in access, engagement, retention, and outcomes by strengthening cultural humility and responsiveness, mitigating structural barriers, engaging community members, and supporting courts in making diversity, equity, inclusion essential components of programs, policies, and practices. The Research, Evaluation, & Policy Division drives initiatives to advance scientific knowledge of innovative, best, and evidence-based interventions at the intersection of behavioral health and the courts.

Risk-Need-Responsivity: Implementation Support (RNR-IS) uses the Interactive Systems Framework for Dissemination and Implementation and the Evidence-Based System for Innovation Support to build a community corrections programs' capacity to deliver an evidence-based approach for reducing the likelihood that people involved with the criminal-legal system will experience future system contact. This project uses a mixed-method design to support implementation at eighteen program sites across a northeastern state. All sites receive an initial 12-months of low intensity support delivered by an external implementation facilitation team, including a formative evaluation of implementation barriers, educational sessions, educational materials, and fidelity monitoring. Sites with fidelity challenges receive a second year of high intensity implementation support tailored toward the needs of individual sites.

Re-Imagining Community Service assists a community corrections program in re-designing its community service program, as the agency works to de-implement its current model and replace it with an evidence-based approach to reduce the likelihood that people referred to community service will experience future system contact.

Community Advisory Board: Risk-Need-Responsivity (CAB: RNR) assists a community corrections program in developing a community advisory board comprised of people with lived experience in the criminal-legal system to inform program policies and practices that align with an evidence-based approach for reducing the likelihood that people involved with the criminal-legal system will experience future system contact.

Shannon Community Safety Initiative (CSI): Local Action Research Partner provides technical assistance, research, evaluation, and implementation support to the City of Fitchburg in its gang prevention and intervention efforts.

Project Navigation, Outreach, Recovery, Treatment, and Hope (NORTH): Implementation Support provides implementation support to the Massachusetts Executive Office of the Trial Court on Project NORTH, a program that facilitates access to treatment through Recovery Support Navigators located in courthouses across 13 jurisdictions.

TEAM MEMBERS	PROJECTS
Dara Drawbridge, PhD	CoE Co-Director and Implementation & Translation Division Co-Director; RNR-IS (PI),
Brian Daly, MD	CoE Co-Director and Implementation & Translation Division Co-Director
Ayorkor Gaba, PsyD	CoE Equity Division Director; RNR-IS (Co-I), Re-Imagining Community Service (Co-I) & CAB:RNR (Co-I)
Meaghan Dupuis, MA, LMHC	CoE-Research, Evaluation & Policy Division Co-Director
Michael Kane, MA	CoE Research, Evaluation & Policy Division Co-Director
Joseph Sawicki, RPh., PharmD	CoE Consulting Pharmacist
Amy Thornton, BS	CoE Administrative Assistant
Emily Zitek, MA	CoE & Project NORTH Biostatistician III
Amber Scherer, PhD	CoE Project Director
Jinnia Baiye, BS	CoE & Shannon CSI & Project NORTH Research Coordinator II
Joshua Rumbut, MS	CoE & Project NORTH Software Engineer
Michelle Crist, PhD	RNR-IS, Re-Imagining Community Service, & CAB:RNR Post-Doctoral Associate
Gretchen Landry, MA	RNR-IS Research Coordinator I
Sydney Little, BA	RNR-IS Research Coordinator II

The Child and Adolescent NeuroDevelopment Initiative (CANDI) is a research division of the [Eunice Kennedy Shriver Center](#) at the [University of Massachusetts Chan Medical School](#) and is dedicated to biomarker discovery, neuroimaging, and treatment studies of individuals with neurodevelopmental disorders and intellectual and developmental disabilities, including autism and fragile X. The CANDI team is led by [Dr. Jean A Frazier](#) and [Dr. David N Kennedy](#) and is supported by child psychiatrists, neuropsychologists, statisticians, research coordinators, psychologists, and interested volunteers. **The Neurobehavioral Technologies program** led by [Dr. David M Cochran](#), is also housed within CANDI. The Neurobehavioral Technologies program investigates the use of technologies at the brain-behavior interface to understand the neurobiological underpinnings of autism spectrum disorders and other neurodevelopmental disorders. The program aims to integrate EEG, functional near-infrared spectroscopy, magnetic resonance spectroscopy, functional magnetic resonance imaging, and resting state functional connectivity findings to drive biomarker discovery and use augmented reality techniques to develop novel interventions for individuals with neurodevelopmental disorders.

Examples of active research studies in the CANDI lab include:

- Neonatal Biomarkers in Extremely Preterm Babies Predict Childhood Brain Disorders: The Elgan-3 Study (Extremely low gestational age newborns)
- Social Cognition: Research Study for Adolescents with an Autism Spectrum Disorder
- Long-term Antipsychotic Pediatric Safety trial
- Autism Care Network (ACN)
- Enhancing Social Skills for Transition-Age Teens/Young Adults with Autism Applied XR Roleplay Proof of Concept
- Gabapentin Trial with MRI: Research study for adolescents with an Autism Spectrum Disorder (ASD)
- Imaging Neural Markers of Social Engagement in the First Year of Life
- Several Fragile X clinical trials
- Fragile X Forward Registry

CANDI Team members include:

Julianna Bates, Lindsey Cincotta, David Cochran, Ann Foley, Jean Frazier, Christian Haselgrove, Steven Hodge, Isha Jalnapurkar, David Kennedy, Sohye Kim, Arline Mata, Taylor Merk, Mo Modarres, Sophia Moroney, Hannah Spear, Lauren Venuti

Megan Kelly, Ph.D.
Research Program Description

Megan Kelly, Ph.D. is a Professor of Psychiatry at UMass Chan Medical School and the Co-Director and Bedford Site Director of the VISN 1 Mental Illness Research, Education, and Clinical Center, focused on dual diagnosis research. Dr. Kelly has been conducting tobacco cessation research for the past 19 years, with a particular focus on the development of tobacco cessation interventions for people with comorbid mental health disorders. Her current tobacco research focuses on the development and evaluation of digital Acceptance and Commitment Therapy tobacco cessation interventions for several populations, including people with mental health disorders, socioeconomically disadvantaged Veterans, sexual and gender minorities, and young adults. Dr. Kelly is also the co-author of the book, *Cravings and Addictions: Free Yourself from the Struggle of Addictive Behavior with Acceptance and Commitment Therapy*.

Dr. Kelly has 22 years of clinical and research experience focused on PTSD, particularly the community reintegration of Veterans with PTSD. Dr. Kelly has developed a novel community reintegration intervention, *Acceptance and Commitment Therapy to Improve Social Support in Veterans with PTSD* (ACT-SS). The ACT-SS intervention improves interpersonal problems and social support for Veterans with PTSD who have eroded social support systems as a result of their PTSD symptoms. Dr. Kelly has published a description of the ACT-SS treatment, a test of the model underlying the ACT-SS treatment using a large sample of post-9/11 Veterans, and the ACT-SS pilot study results. Dr. Kelly is currently working on a VA Merit Award to test the efficacy of ACT-SS to Present-Centered Therapy in a multi-site clinical trial (Colorado, Connecticut, and Massachusetts sites). The ACT-SS manual has been disseminated to researchers and clinicians in several states. Presently, Dr. Kelly is also working on the development and evaluation of a mobile mental health application based on the ACT-SS intervention, called ACTsocial.

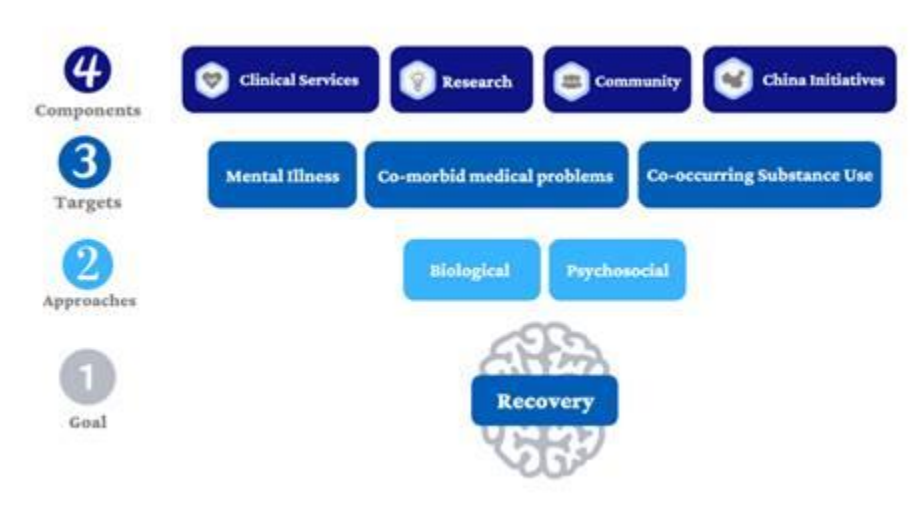
Despite pharmacologic advances, the treatment of schizophrenia remains a challenge. Thirty percent of schizophrenia patients suffer from treatment refractory psychosis, a source of considerable distress to patients and family members, and a frequent cause of costly hospitalization. The public health burden of schizophrenia demands the discovery of new treatment paradigms.

The mortality of schizophrenia patients is approximately twice that of the general population. This disparity is directly linked to an elevated cardiovascular risk that is caused by a cluster of clinical features that define the metabolic syndrome: abdominal adiposity, atherogenic dyslipidemia, hypertension, and impaired glucose metabolism.

The vast majority of patients with schizophrenia use substances. Between 60 percent and 90 percent of people with schizophrenia smoke cigarettes. In addition, between 40 percent and 60 percent use other substances. Substance use complicates the course of illness and the treatment of people with schizophrenia in several ways: It can exacerbate schizophrenia symptoms; affect the pharmacodynamics of the medication taken for psychiatric symptoms; and reduce the likelihood that people will follow the treatment plans recommended.

UMass MIND at the University of Massachusetts Chan Medical School (UMMS), Department of Psychiatry, aims to elucidate the etiology of each facet of the triple jeopardy (devastating mental illness, medical co-morbidity, and substance use), and possibly shared pathophysiological pathways and mechanisms among these three conditions. The goal of our research is to develop innovative intervention strategies combining pharmacological and psychosocial approaches to treat schizophrenia symptoms, medical co-morbidity and substance use, and ultimately to improve the quality of life in this patient population.

At UMass MIND, we aim to better the quality of life for our patient population through research. Our studies utilize both biological and psychosocial approaches to target symptoms of the triple jeopardy: mental illness, co-morbidities, and co-occurring substance abuse.



Work & Recovery Program

PI: Brian J. Stevenson, PhD

The Work & Recovery (W&R) program is an active research and clinical services program within VA Bedford Healthcare System. The overall aim of the W&R program is to improve vocational outcomes of individuals with addictions and co-occurring conditions. Since opening in 2016, the W&R program has received over 300 referrals for clinical services, and 19 psychology trainees (pre-doctoral interns and post-doctoral fellows) have completed clinical rotations through this program. Additionally, the W&R program has received over 1.3 million dollars in funding since 2018 to develop and test novel vocational interventions for veterans living with psychiatric disorders. Six psychology trainees (pre-doctoral interns and post-doctoral fellows) have completed research training through the W&R program.

Currently funded projects:

Improving Vocational Outcomes of Veterans with Psychiatric Disorders: Career Counseling & Development (2021-2026)

The overarching goal of this study is to develop and evaluate a career counseling/career development protocol for veterans living with psychiatric disorders and receiving vocational rehabilitation services through the VA. Phase One and Two of this study, which involved developing a treatment manual through stakeholder interviews and expert workgroups and testing the intervention through an open trial, have been completed. Phase Three, a feasibility randomized controlled trial comparing the newly developed protocol to treatment as usual is currently underway.

Community-Based Early Intervention for Veterans at Risk of Unemployment and Suicide: A Demonstration Project for Supported Employment- Engage and Keep (SEEK) (2021-2023)

The overarching goal of this project is to evaluate feasibility and implementation of an assertive outreach program for veterans who are employed but at risk of losing their jobs. This is a multi-site project taking place at three VA locations (Bedford, Cheyenne, and Chicago). Providers at these three locations have been trained in the provision of SEEK services and an evaluation is currently underway.

Projects being conceptualized:

Work as a Social Determinant of Health: Unpacking the Mechanisms Linking Employment and Substance Use

In collaboration with researchers from Veterans Affairs, University of Minnesota, and Cornell University, we are conceptualizing a prospective cohort study to develop and test a model explaining the relationships between substance use and job-seeking behavior on employment quality, and the relationships between employment quality and subsequent substance use. Seeking NIH funding.

Racial Disparities in the aftermath to a Positive Drug Screen during Job-Search

In collaboration with researchers from Veterans Affairs, we are conceptualizing a mixed method study to examine racial disparities in positive pre-employment drug screens as well as disparities in economic, social, mental health, and substance use outcomes stemming from job application rejection secondary to positive toxicology screening. Seeking VA funding.

Improving Vocational Outcomes of Veterans with Psychiatric Disorders: Employer Bias Training

In collaboration with researchers from Veterans Affairs, we are conceptualizing a multi-phase study to develop and test a novel supervisor bias training program to improve vocational outcomes of veteran employees who have addictions and co-occurring conditions. Seeking VA funding.

**Gina M Vincent, PhD, Professor & Co-Director, Law & Psychiatry Program
Research in Law and Psychiatry**

Dr. Vincent is a forensic psychology researcher with a commitment to improving the lives and trajectories of youth who come into contact with the juvenile justice system and their families. Most youth who get into trouble with the law do so due to normative adolescent behavior, a disadvantaged background, significant behavioral health concerns, or any combination of the above. Although most can be rehabilitated with the proper assessment and targeted services and supports, when the Law & Psychiatry Program started, the U.S. justice system was treating all youth punitively as if they were adults. For the past 20 years, Law & Psychiatry Program faculty (e.g., Dara Drawbridge, PhD, Thomas Grisso, PhD, Ira Packer, PhD), staff, colleagues, and I have used multiple research methods and implementation science to serve the mission of integrating evidence-based practices into juvenile and adult justice settings to improve outcomes.

Dr. Vincent has received funding from NIMH, NIDA, OJJDP, the National Institute of Justice, the John D. and Catherine T. MacArthur Foundation, and William T. Grant Foundation to study the effective implementation of screening and assessment methods in various juvenile settings, adolescent substance use, and psychometric analysis of screening and assessment tools. Research methods have ranged from neuroimaging studies of youth addiction and psychopathic traits, psychometric research to develop valid behavioral health screening and risk for reoffending assessments, and rigorous quasi-experimental studies to examine outcomes of implementing evidence-based practices on decisions regarding a youth's care and treatment. The result of this body of work has integrated practice, policy, and research by collaborating with justice systems in the implementation of methods to separate youth who may need more intensive justice intervention (e.g., detention) from the vast majority for whom only minimal legal involvement would redress their delinquency. As such, our portfolio has always blended funding for both research and technical assistance. Current research projects are as follows:

Optimizing Supervision and Service Strategies to Reduce Reoffending (National Institute of Justice [NIJ]); Rachael Perrault – Project Director, Karlie Rice, RCI: Over the last 10 years, juvenile justice systems have shifted towards a desire for use of more strengths-based approaches, known as Positive Youth Justice (PYJ), over the dominant risk-need-responsivity (RNR) approach of identifying and targeting youth's delinquency risk factors for proper services. However, to date there is no evidence the PYJ improves youth outcomes or reduces recidivism. This is a multi-state, retrospective and prospective study of youth from 15 probation offices designed to identify elements of PYJ (prediction of protective factors and use of strengths-based services) that may influence reductions in recidivism after taking youths' level of risk for reoffending, risk reduction services, and developmental stage into account.

Behavioral Health and Racial Disparities in Pretrial Jails (MacArthur Foundation); Spencer Lawson – Sr Research Scientist, Emma Narkewicz-RCII: This is a collaboration between researchers at UMass Chan, the Policy Research Institute, and George Mason University to conduct multiple studies of the impact of pretrial risk assessments on racial and behavioral health disparities in pretrial incarceration. The UMass Chan studies include: 1) a national study of MAYSI-2 data to examine behavioral health and racial disparities in youth incarceration, 2) a systematic review of disparate impacts of risk screening and assessment on justice decision-making, and 3) a comparison of the accuracy and staff acceptability of structured professional judgment versus score-based approaches to determine youths' risk for violence.

Development & Validation of a Pretrial Screen for Substantial Risk of Serious Harm (Colorado DHHS); Spencer Lawson & Karlie Rice: Researchers are designing and validating a novel pretrial detention screening instrument for youth detention placement decisions via a researcher-practitioner partnership with the state of Colorado. We will use data from the pilot screening version and rearrest records from over 1000 youth to create a valid, racially equitable, and feasible tool for identifying only youth at high risk for committing violence. Implementation of the final tool should reduce the overall detention rates and racial disparities among youth who are detained.

Yonkers Lab

My research focus, broadly, is the study and treatment of mental health among individuals who identify as women. This work has been continuously funded by the National Institutes of Health (NIH; as PI this includes 6 R01s, 6 R21s, an R 34 and a PCORI grant). I have multiple datasets from this work that are available for secondary analyses. I received funding to explore and validate the criteria for premenstrual dysphoric disorder (PMDD) in an early R21. My lab was one of the first to show serotonin reuptake inhibitors are effective treatments for PMDD, results that we published in *JAMA* in 1997. We went on to show that treatment could be effective even if it were limited to administration for half of the menstrual cycle or at “symptom onset” and taken for an average of 5 days prior to the onset of menses. These research innovations are now FDA-approved treatments and are included in a variety of guidelines for treatment of PMDD such as National Institute for Health and Care Excellence (NICE) guidelines, the Royal College of Obstetricians and Gynecologists and the American Academy of Family Practice. Serotonin reuptake inhibitors remain the most effective treatments for PMDD.

I began work in the late 1990s mapping the course of and treatment for perinatal depression. My work showed that 50% of episodes of postpartum depression were present during pregnancy, rather than limited to onset after parturition. My group published the only treatment trial for women with postpartum onset of depression establishing that early active treatment is more effective than placebo, even if illness was only present for a few weeks or months. My group sought and received funding to assess the perinatal consequences of psychiatric illness and/or treatment that occurred in pregnancy. This study was funded by the National Institute of Child Health and Human Development in a project that enrolled ~2800 women from 137 obstetrical practices in Connecticut and Massachusetts. Our findings showed an association between antidepressant use in pregnancy and preterm delivery but no association between preterm birth and a major depressive episode, particularly after we statistically controlled for substance use and medication treatment. Other findings from this project show that adverse birth outcomes are associated with maternal major depressive disorder *and* posttraumatic stress disorder, even after controlling for medication and substance use.

In recent years I focused on perinatal women with substance use disorders (SUD). My lab is one of the only ones to prospectively follow a cohort of women through pregnancy for two years postpartum to chart their course of substance use and health habits. Our work also includes treatment studies that found per oral progesterone (compared with placebo) administered postpartum is a viable treatment for postpartum women with a cocaine use disorder and helps them remain in remission. In other work, my collaborators and I showed that a motivational interview, administered by computer to women who use substances, is as effective, and sometimes more so, than a motivational interview provided by a clinician. This has real-world implications in that the computer interview is also cost effective. We are currently coupling this with text messages to find an optimal combination to help pregnant individuals who drink. This work is funded by a RO-1 from NIAAA. As a quality improvement project, we are working on this interview for medical inpatients who have heart disease and smoke.

A new project is development of a text messaging intervention, coupled with peer support, to help individuals at risk of perinatal depression. This system is based upon Interpersonal Psychotherapy for depression and is funded by a NIMH R34 grant.

[Martha Zimmermann](#), PhD

Assistant Professor

Lifeline for Families Center & Lifeline for Moms Program

Implementation Science and Practice Advances Research Center (iSPARC)

Department of Psychiatry

As many as 1 in 5 perinatal individuals experience an anxiety disorder, conferring significant risks to perinatal individuals and their children. Less than 7% of affected individuals, however, receive treatment for an anxiety disorder. Evidence-based interventions to address perinatal mental health are even less likely to reach perinatal individuals from groups that experience economic marginalization. Our team at Lifeline for Families has developed scalable interventions that help individuals navigate the perinatal mental healthcare pathway – including screening, assessment, triage, and treatment – that are being implemented in real-world settings across the U.S. Dr. Zimmermann’s research focuses on adding prevention to this pathway, by conducting to research to (1) identify risk and protective factors involved in the development of anxiety (2) leverage digital health to deliver prevention interventions at scale, and (3) incorporate prevention into obstetric settings.

Understanding Implementation Factors for Developing a Scalable Intervention to Prevent Perinatal Mood and Anxiety Disorders in Obstetric Settings

Dr. Zimmermann was awarded a seed grant from the UMass Chan Medical School Implementation Science & Practice Advances Research Center (iSPARC) to examine prevention practices and needs among perinatal individuals and obstetric providers. In this seed grant, she identified barriers and facilitators to implementing a prevention intervention. She focused on implementation factors relevant to individuals experiencing economic marginalization. Individuals with lived experience of perinatal mental health concerns who experience economic marginalization and the obstetrical providers who serve these populations want and interventions to prevent perinatal anxiety disorders. Factors influential included availability of mental health counselors, facilitation of prevention interventions by a trusted professional, digital health options, and flexibility in mental health intervention delivery approaches. Content that was perceived as increasing equitable intervention reach included emphasizing stigma reduction, using cultural humility and inclusive materials, and offering flexibility in options for prevention intervention content.

Developing a Scalable Intervention to Prevent Perinatal Anxiety in Obstetric Settings

Building on this work, Dr. Zimmermann is currently carrying out her KL2 project to adapt an Anxiety Sensitivity Intervention for a perinatal population and for digital health to prevent perinatal anxiety in obstetric settings. Anxiety Sensitivity Interventions are a promising approach for the prevention of perinatal anxiety that could be delivered via digital platforms. These brief, cognitive-behavioral interventions (<6 sessions) are designed for the prevention of anxiety by targeting a malleable risk factor. While Anxiety Sensitivity Interventions have demonstrated effectiveness in the general population, they have not 1) been examined among perinatal populations, 2) been scaled to reach a large population, 3) or developed for individuals from groups that have been marginalized. This project focuses on the adaptation of an Anxiety Sensitivity Intervention for perinatal individuals and for digital health using community-engaged, User-Centered Design (UCD) and implementation science approaches to maximize intervention reach. The intervention will include 1) a digital Anxiety Sensitivity Intervention for perinatal individuals, 2) a training for obstetric providers to assess and respond to risk, and 3) a clinical workflow for obstetric settings.