

GARVEY INSTITUTE for BRAIN HEALTH SOLUTIONS 1st Annual Meeting



UW DEPARTMENT OF PSYCHIATRY AND BEHAVIORAL SCIENCES


JÜRGEN UNÜTZER, MD, MPH, MA

Agenda



- 9:00-10:00 Welcome and Introduction to the Institute
- 10:00-10:50 Featured Presentations
- 10:50-11:00 Break
- 11:00-12:00 Working Sessions (link sent separately to participants)

Welcome and Introduction to the Institute

- 
- Introductions and Thank Yous
 - Brief History
 - Innovation Projects
 - Look ahead

Welcome from Paul G. Ramsey, MD

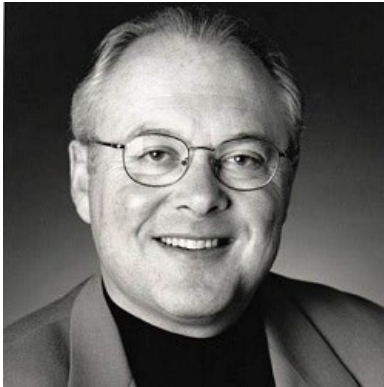
CEO, UW Medicine
Dean, UW School of Medicine



Mike and Lynn Garvey



Garvey Institute Community Advisory Board



Craig Cole



Rita Egrari



Joe Whittinghill



Ken Worzel

Thank You!

Garvey/Department staff members

Semhar Abraha

Mary Pyper

Becky Sladek

Andie Uomoto

Mike Walker

Presenters

Marco Pravetoni

Sunny Cheng, Sarah Kopelovich and Dror Ben Zeev

Rebecca Hendrickson and Nathan Sackett

Jeffrey Iliff

Breakout Facilitators & Presenters

Tom Grabowski and The Sports Institute at UW Medicine

Michael Persenaire and Anna Ratzliff

Becky Sladek, Andie Uomoto and the EHR EPIC team

Michele Bedard-Gilligan and Kristen Lindgren

Susan Ferguson and Christine Lee

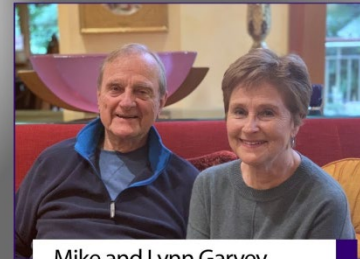
Garvey Institute for Brain Health Solutions

Put together the best minds in the Pacific Northwest to:

- improve the lives of individuals and families living with brain health and mental health problems today.
- discover better treatments for tomorrow.
- inspire the next generation of scientists and health care professionals caring for our families.

**UW Medicine Creates
Garvey Institute for Brain
Health Solutions**

[Click to learn more](#)



Mike and Lynn Garvey
Garvey Institute for Brain Health Solutions

The Brain 101



3 pounds. 75 % Water. Uses ~ 20 % of our body's energy.

- ~100 billion neurons (nerve cells)
- ~100 billion glia (support cells)
- ~100 trillion connections
- Complex circuits - modified until our mid 20s

Healthy brains

- Process information
- Create consciousness & experiences
- Create memories
- Solve problems
- Control our thoughts, feelings, behaviors, action & speech
- Shape who we are (personality)

When things go wrong...

Diseases affecting the brain

autism, anxiety, addictions, depression, bipolar disorder, schizophrenia, traumatic brain injury and posttraumatic stress disorder (PTSD), dementia

- affect nearly half of the world's population at some point
 - across the age span, but 50 % present by the age of 14; 75 % by age 24
- cause ~ 30 % of all health-related disability
 - 5 times more disability than diabetes or heart disease
 - 15 times more disability than cancer
- are a major cause of early mortality
 - In the US: a suicide every 13 minutes & a drug overdose every 8 minutes
 - Individuals with serious mental & brain illnesses die 20-25 years earlier
- cost the US more than \$ 1.5 trillion / year
 - Direct health care costs & indirect costs
 - absenteeism, presenteeism, reduced productivity, staff turnover; homelessness, crime

→ almost every family is affected, but fewer than half get effective care

Why UW Medicine?



- Global university
- Most innovative public university (Reuters)
- Leading School of Medicine
- # 1 rated hospital in Washington
- Strong neurosciences research community
- Strong and comprehensive clinical programs
- Strong training programs
- Strong partnerships (SCH, VA, FHCRC)
- Strong relationships with local and state policy makers

Mission & Vision



Garvey Institute for Brain Health Solutions

Treating and preventing disabling brain disorders from birth through old age

The mission of the GIBHS is to **improve the health for millions of people at risk for and affected by mental health, substance use, and other brain health disorders.**

We see a future where we can **prevent** disabling brain disorders through effective interventions from birth through old age and where those affected by mental health and substance use disorders receive effective **treatment**, enabling all of us to live healthy and productive lives.

Brief History to Date

- **August, 2017.** 2-day Planning Retreat in Fall City, WA
- **October, 2019.** Mike and Lynn Garvey announce founding gift: \$50 Million over 5-7 years (2020-2027)
- **May, 2020:** Launched 1st round of Innovation Grants: addictions, brain trauma, cognitive aging
- **January, 2021:** Launched 2nd round of Innovation Grants: brain health & technology
- **Fall, 2021:**
 - Established Community Advisory Board (CAB)
 - Completed first faculty recruitment
 - Launched 3 additional faculty recruitments
 - Launched Brain Health Science Writing Internship

Advisory Groups and Initial Areas of Emphasis

Addictions

- Seema Clifasefi, PhD
- Susan Ferguson, PhD
- Ray Hsiao, MD
- Mary Larimer, PhD
- Michael McDonell, PhD
- Joe Merrill, MD
- John Neumaier, MD, PhD
- Myra Parker, JD, MPH, PhD
- Richard Ries, MD
- Andrew Saxon, MD
- Mark Sullivan, MD, PhD

Brain health and cognitive aging

- Barak Gaster, MD, FACP
- Tom Grabowski, MD
- Jeff Iliff, PhD
- Thabele (Bay) Leslie-Mazwi, MD
- John Neumaier, MD, PhD
- Elaine Peskind, MD
- Patrick Raue, PhD
- Michael Schrift, DO
- Mark Snowden, MD, MPH
- Michael V. Vitiello, PhD

Trauma

- Michele Bedard-Gilligan, PhD
- Jesse Fann, MD, MPH
- John Fortney, PhD
- Jeanne Hoffman, PhD
- Kristen Lindgren, PhD

Technology and Brain Health

- Trevor Cohen, MBChB, PhD, FACMI
- Anind Dey, PhD, MS
- Amelia Dubovsky, MD
- David Dunner, MD
- Charles Engel, MD, MPH
- Brad Felker, MD
- Kevin Hallgren, PhD
- Ryan Kimmel, MD
- Sarah Kopelovich, PhD
- John Neumaier, MD, PhD
- Michael Schrift, DO
- Jaime Snyder, PhD
- William Solan, MD

Cognitive Aging & Brain Wellness

Promote brain wellness across the lifespan.

30 % of dementia could be prevented today.

Brain Wellness Check

Identify individuals & populations for prevention & intervention strategies

Activity, Exercise, Sleep & Brain Wellness

Physical, mental, social activity.

Exercise Rx

Brain Resilience

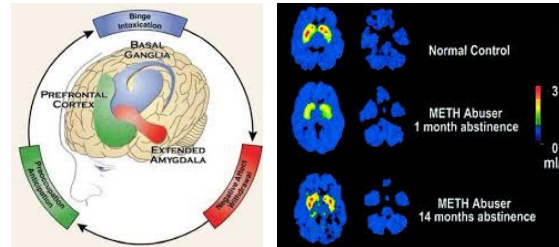
Cognitive reserve, neural plasticity, education & other lifestyle factors



Addictions

Basic Neuroscience (NAPE)

Risk & Resilience



Targeted pharmacotherapies and psychotherapies

vaccine development (endowed professorship)

novel therapeutics (e.g. psychedelics + psychotherapy)

Harm Reduction



Trauma

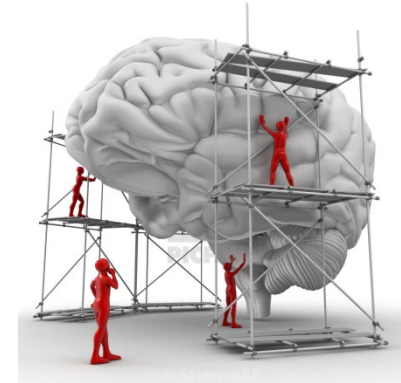
Physical & emotional trauma:

Study resilience & recovery in TBI and PTSD

Build 1st TBI Neuropsychiatry Clinic in PNW

Develop targeted interventions

Brain repair



Technology and Mental Health

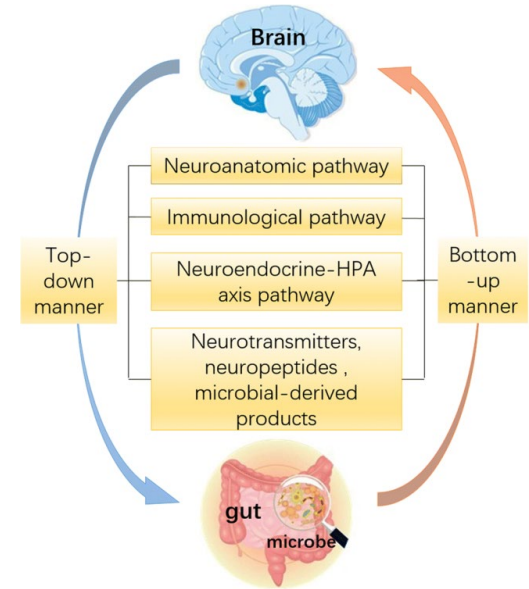


- **Innovation Grants** fund innovative uses of technology to improve access to and effectiveness of behavioral health care.
- Endowed professorship in mental health and technology: **neuromodulation therapies.**



Other 'Big Ideas'

- Brain & immune system
Neuroinflammation
- Brain & gut connection
'Microbiome'
- Light and mental health
Beyond SAD (Seasonal Affective Disorder)
- Neuromodulation
Direct brain stimulation
- Novel therapeutics for addiction



Innovation Grants

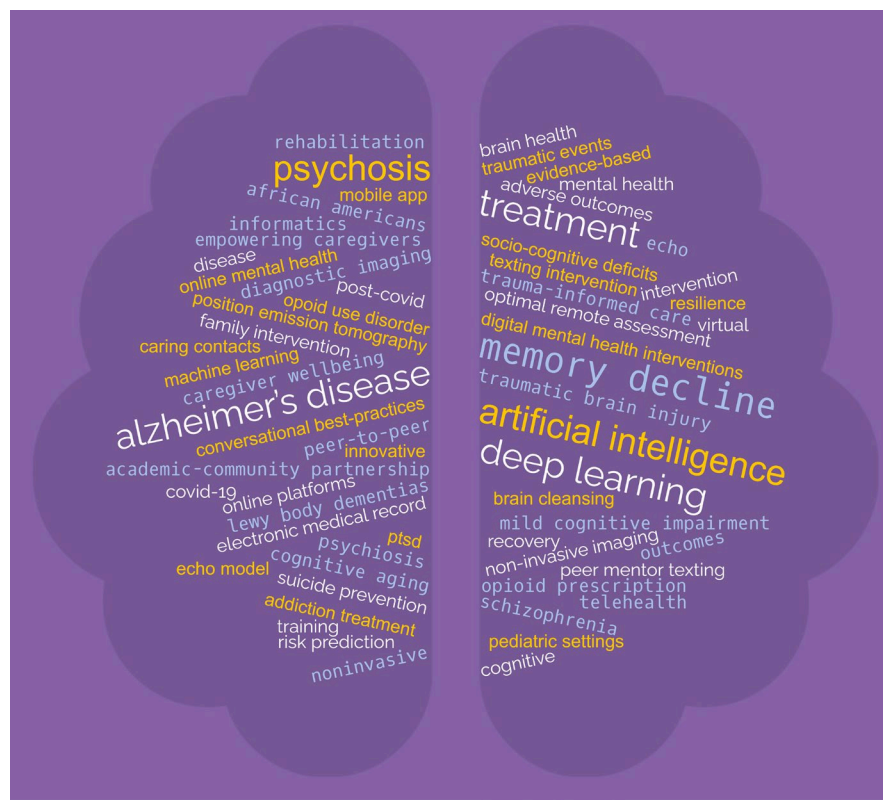


Provide funding for innovative, new ideas that can

- make a **substantial impact** on brain health through research, education, patient care and/or advocacy
- help advance the Institute's goals to improve brain health at a **population level**
- can be **rapidly translated** into clinical care / services
- serve as a proof of concept that can lead to **additional funding**
- are funded up to **\$100,000**

Innovation Grants: summary

- 24 grants awarded in 2020-2021
- 73 investigators from all 3 UW campuses, 9 Schools and Colleges, 20 departments, and numerous local and regional partners
- Numerous topics
 - Lewy Body Dementia
 - Alzheimer's disease
 - Psychosis
 - Traumatic brain injury
 - Schizophrenia
 - Opioid use disorder
 - Suicide prevention
 - Caregiver wellbeing
 - Neuroinflammation
 - PTSD
 - Digital interventions





- The Challenge >
- Founding Gift >
- Mission >
- Our Team >
- Community Advisory Board >
- Advisory Groups >
- Core Resources >
- News >
- Events >
- Contact Us >

Garvey Institute for Brain Health Solutions > Innovation Grants

Innovation Grants

The Garvey Institute for Brain Health Solutions is currently funding 24 projects led by UW teams that have the potential to make a big difference in brain health over the next five years. The work spans 9 schools and colleges and 20 departments across all three UW campuses as well as numerous local and regional organizations. The first round of funding focused on cognitive aging, trauma and addictions. The second round of funding focused on innovative uses of technology that have the potential to improve access to behavioral health care. The list of Garvey Institute partners and collaborators shows the Institute's commitment to further brain health across the University of Washington as well as locally, regionally and nationally.

Addictions

- + Improving opioid use disorder treatment using contingency management via mHealth
- + Innovative training for suicide prevention in addiction treatment settings

Cognitive aging

- + Improving the health and effectiveness of caregivers of people with Lewy Body Dementias
- + Remote assessment of cognitive aging and mental health in older African Americans during COVID-19
- + Synthesizing position emission tomography (PET) data from MRI using deep learning
- + Using deep learning to diagnose Alzheimer's disease and predict its progression
- + Using neurocomputational modeling to track memory decline
- + Validating a non-invasive method to measure water transport in brain health and disease

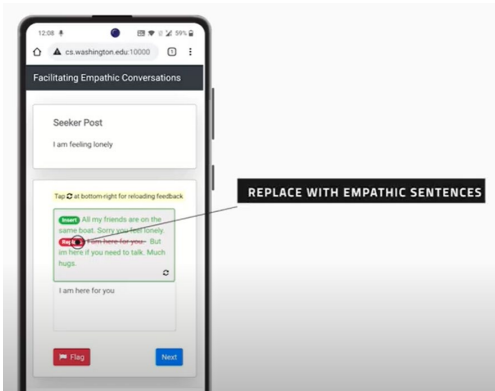
Neurobiology and neuroimaging

Innovation Grants: early successes



- New collaborations and with public and private organizations
- Patients getting treatment via clinical trials and pilot programs
- Providers and caregivers receiving education and support
- Brain health awareness via news stories
- Scientific presentations (meetings and conferences)
- Publications in scientific journals – prerequisites for further funding
- Leveraging initial investment to get additional funding
 - Public agencies (e.g. Department of Corrections, VA)
 - Federal grants (e.g. \$4.3 million from Department of Defense)
 - Washington State agencies (e.g. Healthcare Authority)

Innovative Tools



<https://www.youtube.com/watch?v=g04GLBU73FI>

Media coverage



Neurosciences startup gets Defense Dept. funds to test headband to improve sleep and 'clean' the brain

BY CHARLOTTE SCHUBERT on October 27, 2021 at 3:46 pm



Teletherapy often leaves out older people. Here's how a Washington researcher is trying to help them connect



Providers and caregivers education and support

"I gained valuable insights from everyone on the team. It was helpful to know I wasn't alone with some of the difficult cases I have, and that we were and continue to learn together whether we are relatively new to the field like I am, or been in the field many years (like the ECHO team members). Thank you for the opportunity to participate in this. Highly, highly recommend for others to join as well."

Patients getting treatment via clinical trials and pilot programs

"One participant has engaged very well and has earned \$110 thus far out of a possible \$380. 91% of those rewards have been earned through not using methamphetamine as determined by remote saliva drug testing and 9% of those rewards earned through completion of 34 CBT modules."

Presentations and publications



Repetitive Blast Exposure Results in Acute and Chronic Behavioral, Inflammatory, and Microbiome Dysfunction
Abigail G. Schindler Assistant Professor, University of Washington

Virtual Poster Session

Wed 1 PM - 3 PM

V496 Automated Language Analysis of Emotional Expression in schizophrenia: Development of a Novel Method and Preliminary Findings

Co-Authors

Ellen Bradley, Jake Portanova, Benjamin Buck, Josh Woolley*, Trevor Cohen*

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Endowed Faculty Recruitments

Completed Searches

- Marco Pravetoni PhD, Pharmacologist
 - Psychiatry & Pharmacology
 - Vaccine development for opioid use disorders
 - Joined UW on January 3, 2021
 - Laboratory in the renewed R&T Building at HMC
 - Hopes to collaborate with colleagues throughout UW Medicine



[To fight opioid crisis, UW researchers take new shot at developing vaccine against addictive drugs](#)
The Seattle Times | January 5, 2022

Active Searches

- Technology and brain health: focus on neuromodulation
- Addictions: focus on clinical trials
- Cognitive aging: 2 endowed professorships

Partnership opportunities

- UW ADRC, Memory & Brain Wellness Center
- Brotman Baty Institute for Precision Medicine
- UW Medicine Neuroscience Institute
- IHME (Institute for Health Metrics & Evaluation)
- ISCRM (Institute for Stem Cell and Regenerative Medicine)
- Institute for Protein Design
- Departments of Psychiatry & Behavioral Sciences, Neurology, Neurosurgery, Pharmacology, Medicine, Rehab Medicine, others
- UW Health Sciences Schools
- UW School of Public Health
- UW Schools of Computer Sciences, Engineering & Education
- UW Colleges or Engineering & Arts & Science
- Allen Institute for Brain Science
- Kaiser Permanente WA Health Research Institute
- VA Puget Sound Health Care System
- Seattle Children's
- Fred Hutchinson Cancer Research Center
- **Weill Neurohub (UW, UCSF, UC Berkeley)**

Weill Neurohub

November 12, 2019

New Weill Neurohub will unite UCSF, UC Berkeley, UW in race to find new treatments for brain diseases

[UW News staff](#)

\$106 million initiative will accelerate neuroscience research by embracing artificial intelligence, engineering, data science, other 'nontraditional' fields

Gift brings Weill Family Foundation philanthropic giving in neuroscience to over \$300 million, enabling bold approaches to curing these diseases

Berkeley
UNIVERSITY OF CALIFORNIA

UCSF
University of California
San Francisco

W UNIVERSITY of
WASHINGTON

UW effort represented by:

Ana Mari Cauce, President; Psychology

Tom Daniel, Biology

Jürgen Unützer, Psychiatry and Behavioral Sciences



"WORKING TOGETHER AND DRAWING ON DISPARATE EXPERTISE, WE CAN SPEED DISCOVERY OF HOW TO TREAT AND PREVENT DEVASTATING BRAIN AND NERVOUS SYSTEM DISORDERS."

— ANA MARI CAUCE / UW PRESIDENT

UNIVERSITY of WASHINGTON

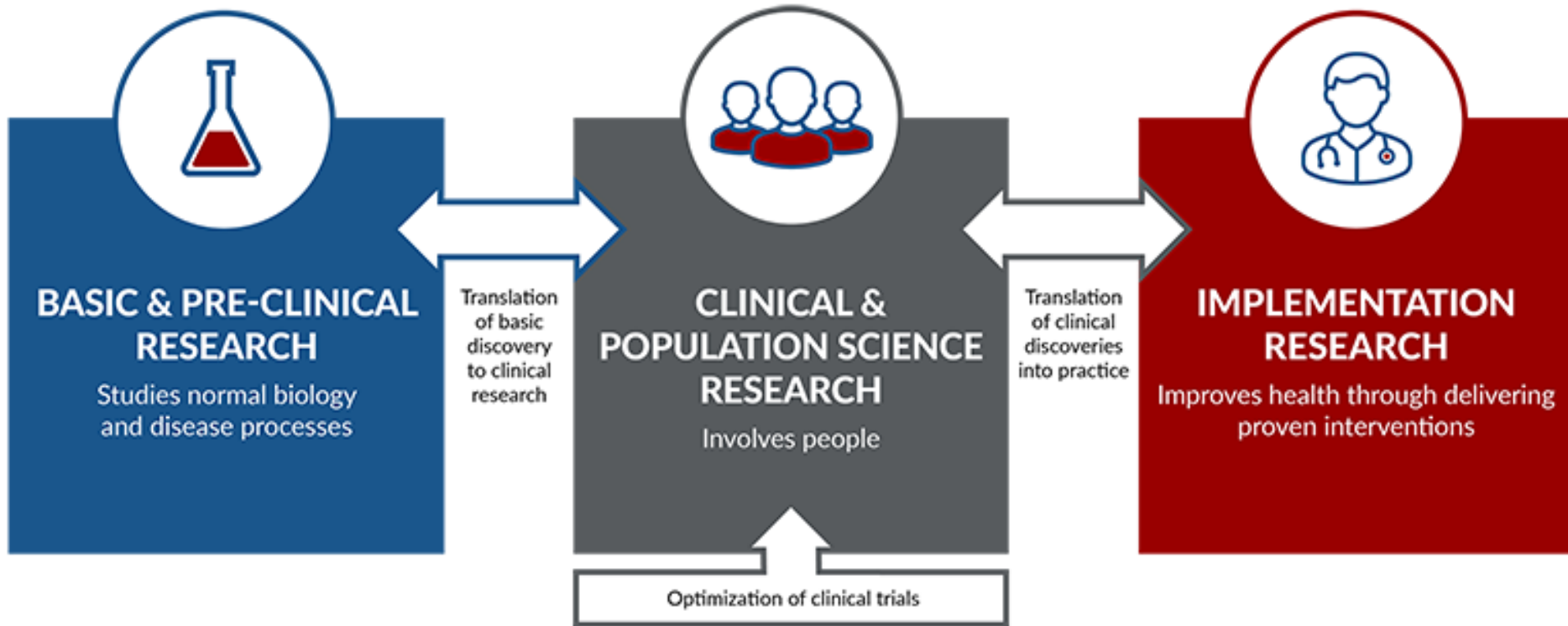


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The approach: Translational Research

Discover new treatments & rapidly implement them.



Weill Neurohub

Garvey Institute for Brain Health Solutions

Looking ahead




- New space(s) for Innovation Clinic: clinical trials & clinical research
- Clinical research support
- Implementation and training support
- Interdisciplinary training programs for clinicians & researchers
 - Brain Health Internship Year
 - 1-year fellowship in Behavioral Neurology / Neuropsychiatry
- New areas of research
- New partnerships

Leveraging the initial investment

Example: Workforce and training



- State funding – Behavioral Health Teaching Facility (2024) - \$234 M
- County funding – Behavioral Health Institute at Harborview Medical Center (2025) - \$78 M
- Additional philanthropy – e.g. Ballmer Group, Weill Neurohub
- New partnerships
- New research

- 
- **THANK YOU** to Mike & Lynn Garvey, Paul Ramsey, Don Theophilus, our CAB members, Faculty Advisors, Investigators, and Staff.
 - We deeply appreciate this truly remarkable opportunity to advance brain health and mental health at this critical time.
 - We are off to a fast start and growing
 - Building a great team
 - Inviting the best ideas to improve brain health & mental health
 - Recruiting additional collaborators to join the team
 - Developing new partnerships
 - Inviting new supporters and sponsors
 - Join us and help us get the word out. gibhs@uw.edu



Featured Presentations



Medication development for substance use disorders

Marco Pravetoni, PhD

Digital health interventions for people with schizophrenia and their caregivers

Sunny Cheng, PhD, and Sarah Kopelovich, PhD, and Dror Ben Zeev, PhD

Psychedelics in the treatment of trauma and addiction

Rebecca Hendrickson, MD, PhD, and Nathan Sackett, MD, MS

What the brain does when it sleeps

Jeffrey Iliff, PhD

Submit questions via chat

A microscopic view of brain cells, showing various neurons and their intricate network of dendrites and axons. The cells are rendered in shades of blue, purple, and orange, set against a dark, reddish background.

Garvey Institute for Brain Health Solutions

Treating and preventing disabling brain disorders from birth through old age

THANK YOU!

gibhs@uw.edu

For those of you attending the breakout working sessions, please use the breakout session link sent previously (also in the chat). Breakouts begin at 11 AM.

Center for Medication Development for Substance Use Disorders (SUD) and Overdose



MARCO PRAVETONI, PHD

PROFESSOR, DEPARTMENT OF PSYCHIATRY AND BEHAVIORAL SCIENCES

GARVEY INSTITUTE FOR BRAIN HEALTH SOLUTIONS 1ST ANNUAL MEETING

JANUARY 28, 2022

UW Medicine

Problem: Challenging target population → Few approved treatments → Limited medication development efforts

Complexity of SUD, Opioid Use Disorders (OUD) and Drug Overdose scenarios

- Heroin, prescription opioids, synthetic opioids, stimulants, designer drugs
- Poly drug use and street mixtures containing opioids/stimulants (e.g., fentanyl/methamphetamine)
- Accidental and deliberate exposure in non-users

COVID-19 pandemic accelerated alarming statistics worldwide

- United States: ~3 million with OUD, 2021 >100,000 fatal opioid overdoses

Current FDA-approved medications have real limitations

- Opioid receptor agonists & antagonists: side effects, sub-optimal efficacy, abuse liability, diversion
- No FDA-approved medications for methamphetamine addiction and overdose

Need more candidate products in the pre-clinical and early clinical pipeline

- Build the foundation for discovery, development, and translation
- Build the infrastructure for seeking FDA approval and clinical evaluation
- Demonstrate clinical proof of concept (POC) to attract investors or pharma partners

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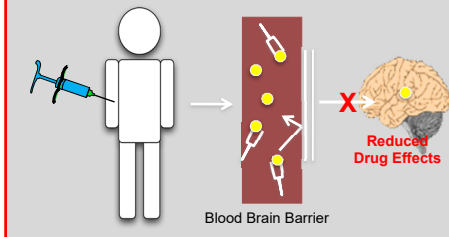
UW Medicine

Solution: Creating momentum to bridge the bench to bedside gap for novel interventions in SUD and Overdose

Pravetoni's pipeline of Biologics, Small Molecules, Devices, and Biomarkers

- Vaccines against heroin, oxycodone, fentanyl, and fentanyl analogs
 - 4 Phase I Clinical Trials (1 x ongoing NCT04458545, and 3 x pending FDA approval)
 - Pre-clinical and clinical biomarkers of vaccine efficacy
- Monoclonal antibodies (mAb) against toxicity and overdose
- Technologies to enhance vaccine or mAb efficacy
 - Adjuvant, carrier, polymer, immunomodulator, nanoparticles, mRNA
- Opioid antagonist formulations against toxicity and overdose
- Point-of-care antibody-based biosensors to detect opioids
- Applications of vaccines and mAbs beyond opioids
 - Methamphetamine, poisons (strychnine), chemical threats
 - SARS-CoV-2, antibiotic-resistant bacteria, cancer

Vaccines and mAbs are effective and selective for the target drug



End-to-end platform from discovery to clinical trial

- Multi-institution team, industry partners, contractors (CDMO/CRO), regulatory (DEA, FDA), clinical sites, business advisors, marketing and reimbursement strategists

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Mission: Garvey Institute created the Center for Medication Development to advance solutions for SUD/Overdose

Catalyst for translation and commercialization of novel treatment strategies

- Build ecosystem of scientists, physicians, stakeholders, entrepreneurs to foster innovation
- Integrate funding from philanthropy, government, public-private partnership, and private equity

Seeking strategic partnerships at UW School of Medicine and beyond

- UW Co-Motion and Foster School of Business to spark entrepreneurship
- UW School of Pharmacy, Institute for Protein Design
- Fred Hutchinson Cancer Center, Seattle Children's, Bill & Melinda Gates Foundation
- Local Venture Capital firms or other for-profit entities to invest in spin-off and start-ups

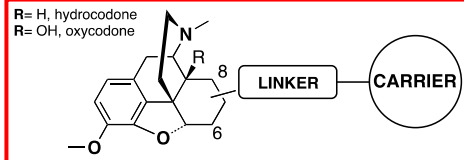
Seeking new opportunities and investment in center resources and projects

- Administrative core (e.g., project manager), instruments, recruit talent (e.g., Junior Investigators)
- Biobank of clinical samples from OUD and SUD patients to enable biomarker discovery
- Phase I clinical trial capability at UW or through CRO partners
- Pilot projects
- Create the environment to train next-generation of scientists/physicians/entrepreneurs

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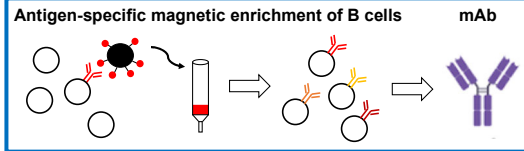
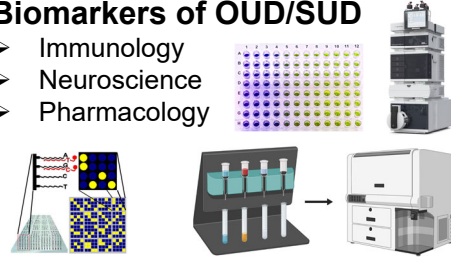
Q & A in Medication Development



- ### Vaccines & mAb
- Formulations
 - Delivery platforms
 - Immunomodulators
 - New materials

Biomarkers of OUD/SUD

- Immunology
- Neuroscience
- Pharmacology

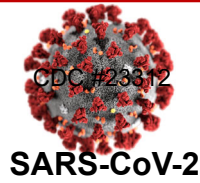


IND-enabling, Phase I-III

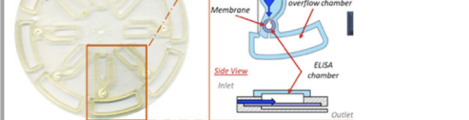
- GMP/GLP environment, regulatory support, operations

Small Molecules

Naloxone
Nanoparticles to treat
opioid overdose



Biosensors for field detection of drugs and chemicals



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Digital health interventions for people with schizophrenia and their caregivers

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Meet the Psychosis iREACH Team



Sarah Kopelovich, PhD
Intervention Team
Team Lead



Rachel Brian, MPH
Intervention Team
Research Program Manager



Jennifer Blank, BA
Intervention Team
Research Coordinator



Rene Gomez
IT Support
STEM/CSS IT Liaison



Sunny Cheng, RN, PhD
Design Team
Team Lead



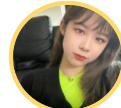
Myra Divina, MSci, BA
Design Team
Research Coordinator



Serene Gao
Design Team
Student, UX Designer



Ilia Savin
Design Team
Student, UX Designer



Mia Wang
Design & Dev Team
Student



Jamie Kim
Design Team
Student



Ziyi Li
Design Team
Student



Dong Si, PhD
Dev Team
Team Lead



Victor Chee
Dev Team
Student, Software Engineer



Jonathan Lee
Dev Team
Student



Skye Tran
Dev Team
Student



Yinzhou Wang
Dev Team
Student



Jakob Hoveland
Dev Team
Student



Vicky Xiang
Dev Team
Student

Addressing schizophrenia will take a VILLAGE

- Schizophrenia Spectrum and Other Psychotic Disorders are among the most complex psychiatric conditions to treat
- Families are on the frontlines
- Family Interventions for psychosis benefit all stakeholders

McDonagh, M., Dana, T., Selph, S., Devine, E. B., Cantor, A., Bougatsos, C., Blazina, I., Grusing, S., Fu, R., Kopelovich, S. L., Monroe-DeVita, M., & Haupt, D.W. (2017). *Treatments for Schizophrenia in Adults: A Systematic Review*. Agency for Healthcare Research and Quality.

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Addressing the Problem

- **<2% of families navigating psychosis will receive a Family Intervention.**
- **Psychosis REACH** launched at the UW in 2019.
- The goal was to bring **psychoeducation** and **skills training** direct-to-families.
- The effects of the training were impressive:
 - Reduced depression, anxiety
 - Reduced stigma
 - More hopeful
 - Feeling more effective at managing difficult behaviors

FOX 13 Live COVID-19 News Weather Sports Mornings Contests More

Family members of those with schizophrenia, psychosis head to UW for help

Published May 14, 2019 | FOX13 News Seattle Washington KCPQ

Mental Health Help at UW
1 minute left
Psychosis REACH: Recovery of Enabling Adult Carers at UW
A Special Session During National Week for Families and Caregivers
TRAINING FAMILIES TO HELP WITH MENTAL ILLNESS SEATTLE Q13 NEWS

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Mental Health Help at UW
Q13 News

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Addressing the Problem through Digital Solutions

- Digital delivery is critical to equitable and effective scale-up of Psychosis REACH to the 60 million prospective beneficiaries (that's a lot of villages!).
- The **Garvey Institute 1-year pilot grant** enabled our team to apply an Artificial Intelligence machine learning method to develop Psychosis *i*REACH.
- Psychosis *i*REACH will put Psychosis REACH skills coaching into the home and pockets of all Americans who are navigating life with psychosis.

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Next Steps



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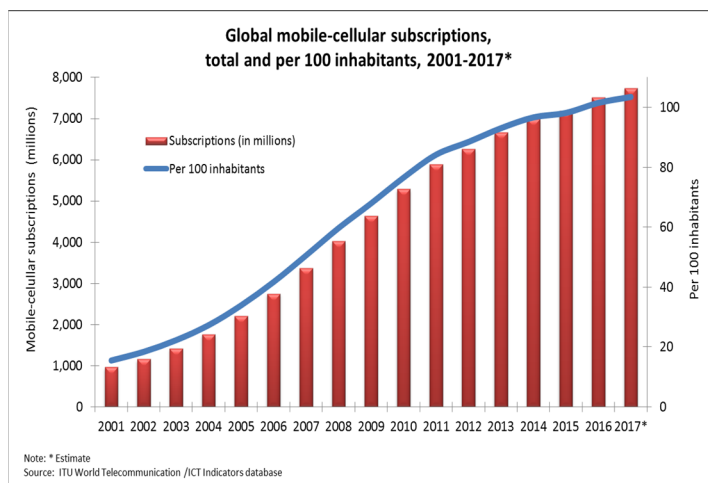
Early Psychosis is a Challenge (but there is an opportunity)

- Psychotic disorders are brain illnesses that increase individuals' risk for hospitalizations, substance use, homelessness, victimization, and suicide.
- Major declines occur during the first years of psychotic illness, a phase called early psychosis (EP)
- Time-sensitive treatment can mitigate negative outcomes, in some cases leading to partial or full recovery
- **BUT** young adults with EP are particularly challenging to engage in treatment...

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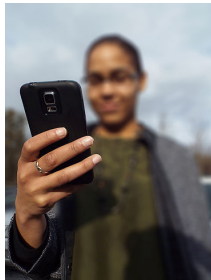
Approach to Address Problem/Challenge



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Mobile Interventionist



Hi its Sara! How are you feeling Ray?

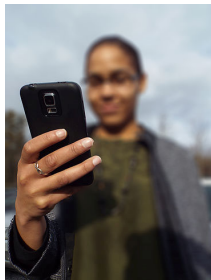


hi sara. voices talking about me

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Mobile Interventionist



That's stressful. You are not alone! lots of people hear voices.



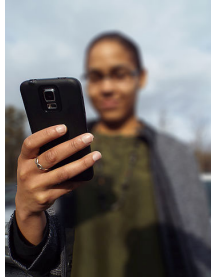
They say something bad if i take the bus

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Mobile Interventionist

I have a trick that can help you feel calm, even when voices are loud on the bus...wanna hear about it?

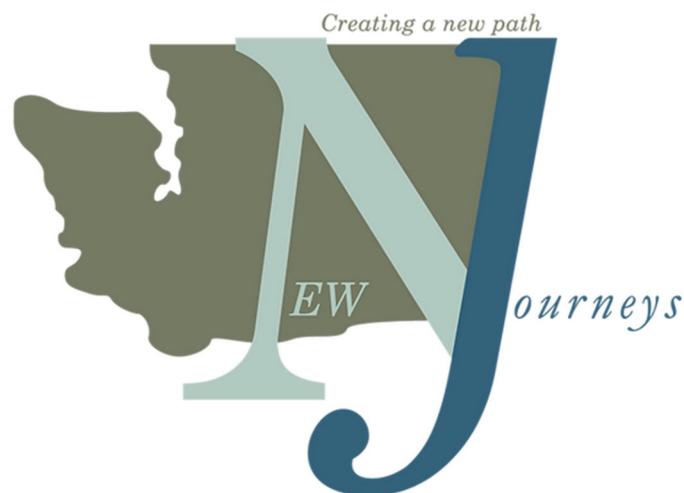


maybe.
what is it?

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Next Steps and Potential Collaborations



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Q & A

- Time for discussion
- 1-4 minutes

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Psychedelics in the treatment of Trauma and Addiction

NATHAN SACKETT, MD, MS AND REBECCA HENDRICKSON MD, PHD
 GARVEY INSTITUTE FOR BRAIN HEALTH SOLUTIONS 1ST ANNUAL MEETING
 JANUARY 28 2022

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Current treatments are inadequate



Case example: Tyler
 (not a specific
 person)

- PTSD: intrusive memories, always “on edge”, nightmares
- Alcohol: provides (brief) relief



Treatment: medications, intensive psychotherapy

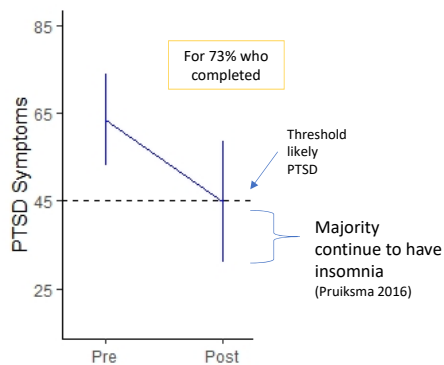
- Decreased intrusive memories, periods of sobriety
- Continued high internal distress
- Continued medical consequences: high blood pressure, heart rate, chronic pain

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Current treatments are inadequate

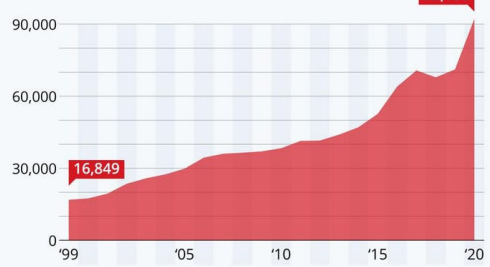
Effect of prolonged exposure therapy in a VA clinic:



Goodson, Lefkowitz, Helstrom, Gawrysiak
 – Journal of Traumatic Stress - 2013

Historic Spike In U.S. Drug Overdose Deaths

Number of drug overdose deaths in the U.S. from 1999 to 2020*



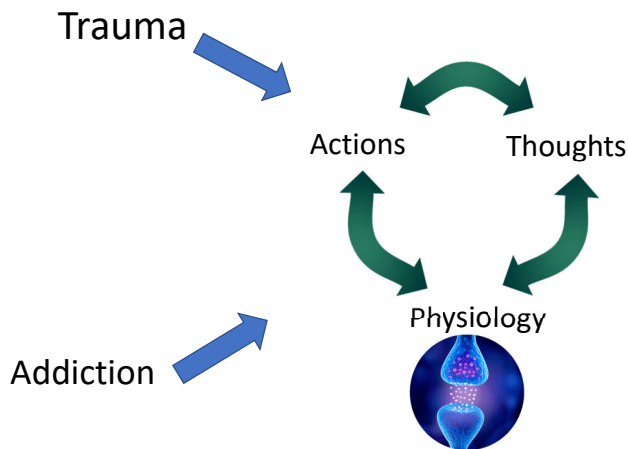
* Historical data from 1999 to 2019, Provisional figures for 2020
 Source: Centers for Disease Control and Prevention

Graphic: Forbes.com

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How to do better



- Hendrickson & Raskind, 2016, Experimental Neurology
- Hendrickson et al, 2018, Neurobiology of Stress

Medications: too blunt



Psychotherapy: not changing key components

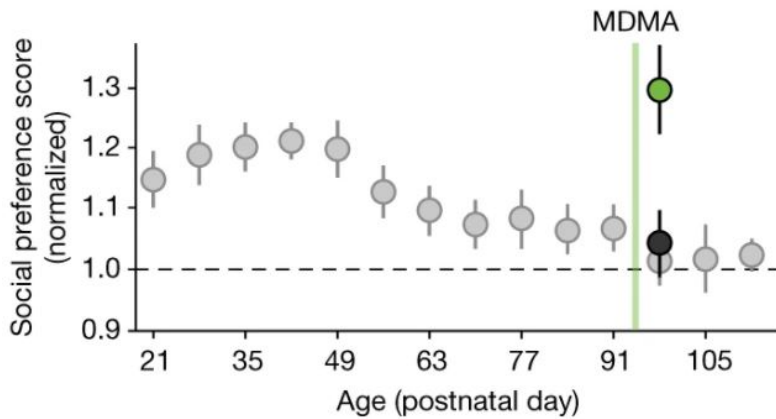


Enhanced efficacy + precision

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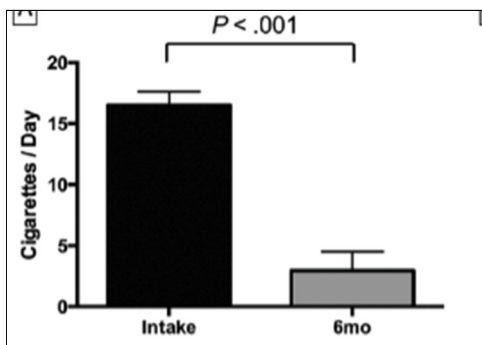
Why psychedelics?



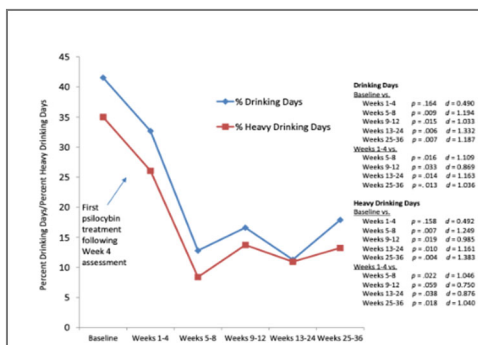
Nardou, Lewis and Rothhaas.
- Nature, 2019

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Promise for addiction: Psilocybin for Tobacco and Alcohol Use Disorder



Johnson, Garcia-Romeu, Cosimano, Griffiths
- Journal of Psychopharmacol - 2014



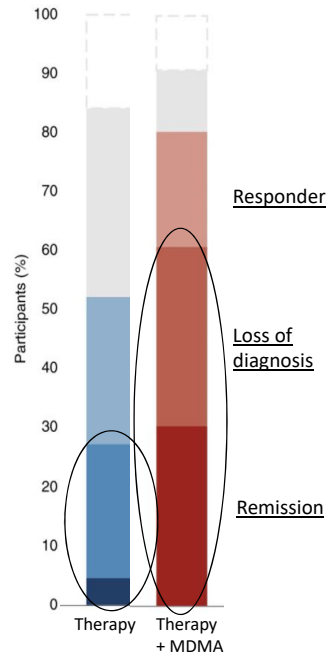
Bogenschutz, Forcehimes, Pommy, Wilcox, et al
- Journal of Psychopharmacology - 2015

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Promise for PTSD:



Mitchel, Bogenschutz, Lilienstein et al
 – Nature Med - 2021



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Application: Psychedelics for Addiction



- Center Aims:**
1. What psychedelic?
 2. What therapy?
 3. For what patient?



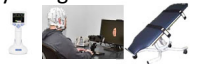
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Application: MDMA assisted therapy for PTSD

Questions:

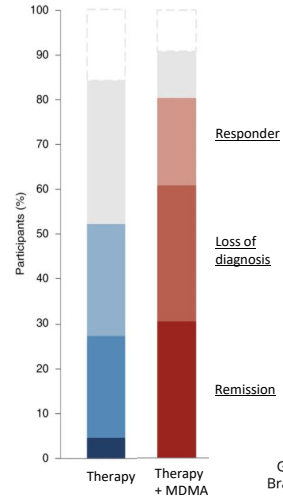
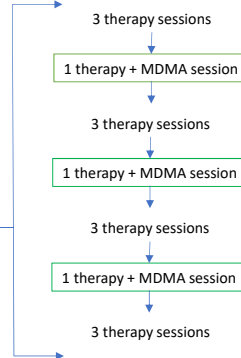
- 1) Who benefits?
- 2) Does it treat the missed symptoms?
- 3) How do we make it better?

- Broader access
- Pre/post physiologic assessment battery
- Collaborate with experienced psychotherapy researchers



Melanie Harned, PhD
Developer of DBT-PE

MDMA-assisted therapy for PTSD:



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Challenges & Next Steps

Obstacles

- Regulatory burden
- Limited government funds
- Complex



Requires

- Robust institutional support
- Core psychiatry, clinical research + neuroscience expertise



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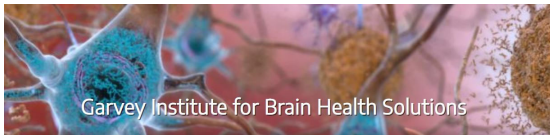
Questions?

UW study team:

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- T.A Bowdle, MD
- Anthony Back, MD
- John Neumaier, MD
- Kevin Hallgren, PhD
- John Roll, PhD

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- **Kori Blitstein, LICSW**
- **Ian Pocock, LICSW**
- Garth Terry, MD, PhD
- Melanie Harned, PhD
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 AND BEHAVIORAL SCIENCES



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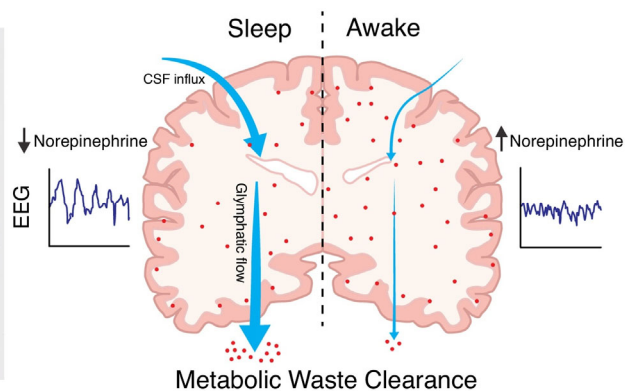
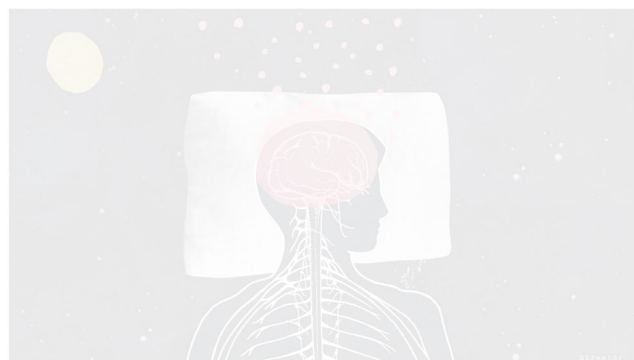
While you were (or weren't) sleeping

JEFFREY ILIFF, PHD

GARVEY INSTITUTE FOR BRAIN HEALTH SOLUTIONS 1ST ANNUAL MEETING
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The role of sleep in brain function and dysfunction



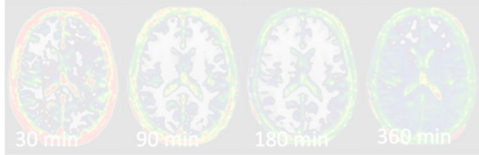
Hauglund et al. *Curr Op Physiol* 2020

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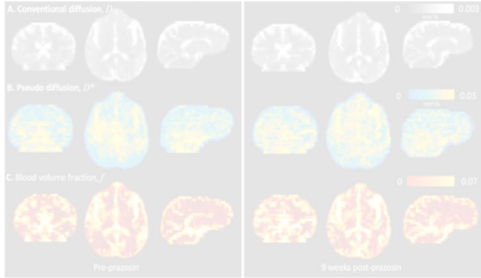
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Measuring and enhancing sleep-active waste clearance

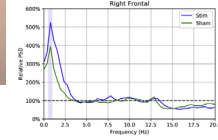
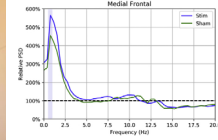
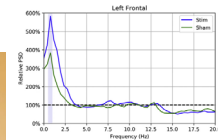
Delayed Contrast-enhanced T1 signal at 360 min



IVIM MRI, D^* (not D) increases with prazosin



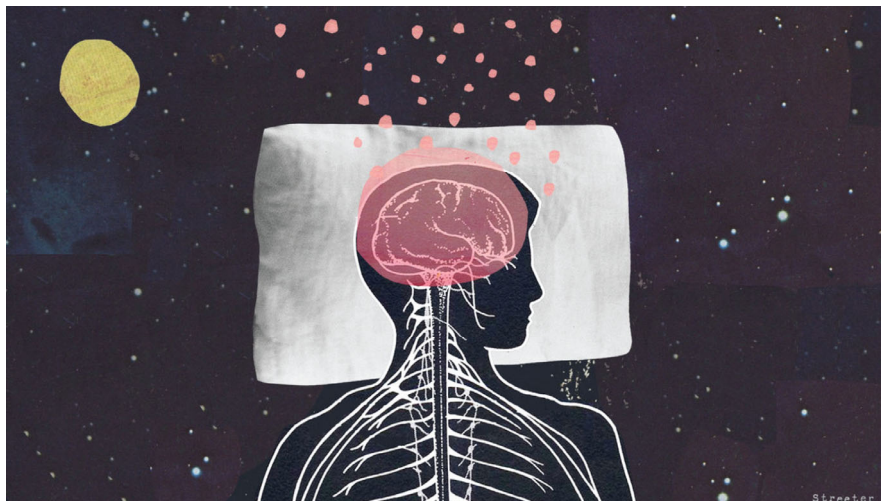
Rane, Saedler, IIIFF, Kernags (unpublished)



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Moving into sleep-relevant clinical populations



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Q & A

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Lab Funding



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