News & Impact 2022
PRECHTERPROGRAM.ORG

HEINZ C. PRECHTER BIPOLAR RESEARCH PROGRAM
MICHIGAN MEDICINE

A Letter From Our Director

Melvin McInnis, M.D., FRCPsych

Welcome to our annual newsletter! As our mission states, the goal of the Prechter Program is to improve life for people living with bipolar disorder. There is always so much to talk about and many projects to highlight. We looked for a theme for this year and in a moment of reflection, a rather simple question came to mind:

What defines success for the Prechter Program?

Success is CONNECTIONS

The answer to this question forms the theme of this year's newsletter and is summarized in one word: ***"Connected."*** The energy of the Prechter Program is nothing short of stunning in the number of connections it fosters. ***Connected*** is part of our strategic plan, it is part of our culture, and is fundamental to our open science/open data approach to the challenges of bipolar disorder. Success stems from collaborations, relationships, and team science.

Connected with the COMMUNITY

The Prechter Program has been connecting with the community for over 15 years of community engagement. We are connected through our public outreach programs and presentations — in person and online via educational webinars. Our panel discussions combine expertise in treatment strategies, public policy, lived experience, and scientific research. We love doing this! The 2021 annual Prechter Lecture that featured political scientist Norm Ornstein was a tremendous success. We hosted a webinar titled *"Bipolar Disorder — Then and Now"* that had over 230 individual logins. The Prechter Program is an "on the ground" program, connecting with people in the community who live with bipolar disorder and their families and friends. The growing public interest in our mission represents major successes for us. We remain connected with our study participants, and many participate in community events in addition to engaging in our diverse studies of bipolar disorder.

Connected LOCALLY

Our collaborative research model is at the heart of the scientific strategic plan of the Prechter Program. Our collaborating labs and research teams are themselves independent scientific teams that are connected with the Prechter Program, and access the clinical data and biological samples from the Prechter Program in their research. These affiliate labs join forces with the Program in many ways that include public outreach and educational events, as well as grant applications and other funding activities, such as meeting with potential philanthropic donors.

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Melvin G. McInnis, M.D., FRCPsych

Thomas B. and Nancy Upjohn Woodworth Professor of Bipolar Disorder and Depression

Professor of Psychiatry

Director, Heinz C. Prechter Bipolar Research Program

What Defines Success for the Prechter Program?

CONTINUED FROM COVER

Connected GLOBALLY

The Prechter Program has collaborative agreements with research teams in Australia, Europe, and Canada. We continue to host monthly online conference meetings with our collaborators in bipolar research, bringing together teams of bipolar researchers worldwide.

Success is PRODUCTIVE RESEARCH

Researchers strive to publish their work. The Prechter Program publishes on average 10–12 scientific manuscripts annually. In the current calendar year there have been 12 publications and several more are in the 'pipeline'.

The research in the affiliate labs continues to amaze me!

- **Dr. Mower Provost** from the University of Michigan College of Engineering has made significant gains in methodology to analyze speech from periodic sampling of the voices of study participants. There were major security and regulatory hurdles to get this project into production. We now have several participants using this technology — the next iteration of our PRIORI project.

- **Dr. O'Shea** from the stem cell research lab has identified 12 protein targets in the cargo of cellular exosomes (small organelles within the cell involved in metabolism) that are present in significantly different amounts in bipolar- vs. control-derived neurons. The process is underway to determine if these proteins could be targeted therapeutically.

- **Dr. Burgess** in the sleep lab studied sleep rhythms across seasons and didn't find an appreciable difference, but identified a research participant with non-24 syndrome, a condition wherein sleep is increasingly delayed into the night. This raises the question of how frequent such a pattern is among those living with bipolar disorder. She is conferring with other sleep experts to consider the implications and determine next steps.

Our research team is now in the office several days per week and it is simply a delight to be together in person. **Holli Bertram**, program manager, has seen that all has gone smoothly. As we welcome this new opportunity to again connect face-to-face, we are so proud of the work that the team has been doing over the past couple of years under the restricted COVID conditions.

Our data team continues to shine! Under the leadership of **Anastasia Yocum**, we have delivered data to collaborators, locally and internationally, like never before and have a team that helps with all aspects of the collaborative. **Claudia Diaz-Byrd** takes care of the data use agreements between institutions.

We welcome **Rachel Bresnahan**, our new marketing and communications specialist. We have some terrific programs in the planning stages that include outreach and education events.

Success is DETERMINED BY THOSE WITH LIVED EXPERIENCE

Our most important connection, however, is with the individuals who live with bipolar disorder and their family members. These are the relationships that nurture, teach, and inspire us every day at the lab! Ultimately, it is for those with lived experience that we keep pushing forward. **And no matter how we define success, ultimate success will be determined through their eyes.**

Success is PARTNERING WITH YOU!

Your support and interest help energize us each day. We are always glad to connect with you and share the latest activity. Please check out our website at **prechterprogram.org**, where you can peruse upcoming events (virtual and in-person) and sign up to receive our e-newsletter.

Prechter Program 2022:
By the Numbers

1,433
research participants

16
years of the Longitudinal Study of Bipolar Disorder

15-20
average publications per year

To learn more about our prolific publishing, visit **michmed.org/YlYja**

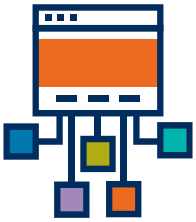
our data scientists filled over

55

requests for data from our Longitudinal Study, sparking new research projects

13
labs we're collaborating across the University of Michigan

5
international research collaboration groups



independent collaborations with

9

U.S. states and

3

countries

237
online attendees at our recent educational webinar about bipolar disorder

Cracchiolo Family $1 Million Gift Brings Support for Bipolar Research

An extraordinarily generous gift and a new relationship for the Prechter Program

A gift of $1 million from Raymond and Jane Cracchiolo was generously donated to the Heinz C. Prechter Bipolar Research Program after a Wayne State University fraternity walkathon benefit. The gift has aided our researchers' efforts to study bipolar disorder and provide hope to the many people living with it worldwide.

How a walkathon inspired the spirit of giving

On May 16, 2021, Wayne State University fraternity Pi Kappa Alpha (PiK) Delta Nu, hosted a walkathon to benefit the Prechter Program. The fraternity has members whose lives have been impacted by bipolar disorder, and they decided to give what they could to help fund research into this illness.

During the event, Mr. Cracchiolo, there to support his grandson Vincent (a member of PiK), connected with Prechter Program members and learned more about its mission and research. Impressed by the dedication of the fraternity to raise money for the work being done by the Prechter Program, Mr. Cracchiolo added his generous gift.

Members of the Cracchiolo family at a gathering to honor their tremendous gift.

"Everything has a beginning. Bipolar is our race to overcome. Having experienced this disease by our entire family 24 hours a day, one will not stand by. I was challenged by this awesome endeavor and am now affiliated with the Heinz C. Prechter Bipolar Research Program by supporting their talented staff in this pursuit." —Raymond Cracchiolo

Hazel Ruby McQuain Charitable Trust Gifts $1 Million to Support Bipolar Exosome Project

The Hazel Ruby McQuain Charitable Trust awarded the Prechter Program $1 million to support the bipolar exosome project out of Dr. O'Shea's stem cell lab. The generous gift was made in honor of Clyde Bartter. Mr. Bartter agreed to answer a few questions:

The Hazel Ruby McQuain Charitable Trust made a very generous gift to the Prechter Program in your honor this year. What is your connection to the trust?

I am a trustee emeritus of the organization. I worked with the trust for a total of 38 years, first as an employee and then as a trustee before stepping down last year. When I decided to step into emeritus, the trustees told me they wanted to make a trust gift to something I care about. I immediately thought of the Prechter Program and invited them to submit a proposal. The exosome project is very exciting and I am hopeful that what they are learning could lead to brand new treatments.

Please tell us a little about the trust.

Well, Hazel Ruby McQuain had no children. Her husband, who I had never met before I entered the company, sold his business to a NY stock exchange company. We ended up selling those stock shares and diversified into a portfolio company which worked out very well. Hazel hired an administrative team, with various trustees including myself, to manage the investments. The trust gives out 5% to charities each year, and presently that amounts to over $10 million annually.

And what is your connection to the Heinz C. Prechter Bipolar Research Program?

I'm honored to be a member of the Prechter Advisory Board. I've known Wally Prechter for over ten years and was glad to learn of the work that is underway here. I'm very interested in finding a cure for bipolar disorder because my daughter lives with it so I know how hard it can be. Also bipolar disorder has the highest rate of suicide in the world. We need answers and I hope one is found at the University [of Michigan].

Ultimately, what do you hope the Prechter Program will find?

I hope the researchers can find new medications for the problems associated with bipolar disorder, beyond the limited drugs already developed. There has to be more than lithium to help people. Lithium has side-effects and it doesn't help everyone. Many people get partial help from their current medications, but not enough. We need more drugs to attack the problems that people experience. If we can't cure it, I hope we can limit the impact bipolar disorder has on people's lives.

Is there anything else you'd like to add?

I like that Dr. McInnis is getting others interested in working on this problem jointly. He brought about the start of the global group of bipolar researchers that is now meeting regularly and collaborating on bigger projects. I'm very interested in finding a solution for bipolar disorder.

Also, I'm going to be 91 years old and I'm still working full time.

2022 **Prechter Program** Research Highlights

Connected with Research

A major component of research is communicating our Program's findings, publications, and successes to the research community. Despite the ongoing COVID-19 pandemic, Prechter Program research members have continued to present their important research at national and international conferences, and publish manuscripts in peer-reviewed scientific journals.

In 2022, Prechter Program researchers presented research posters and scientific talks at:

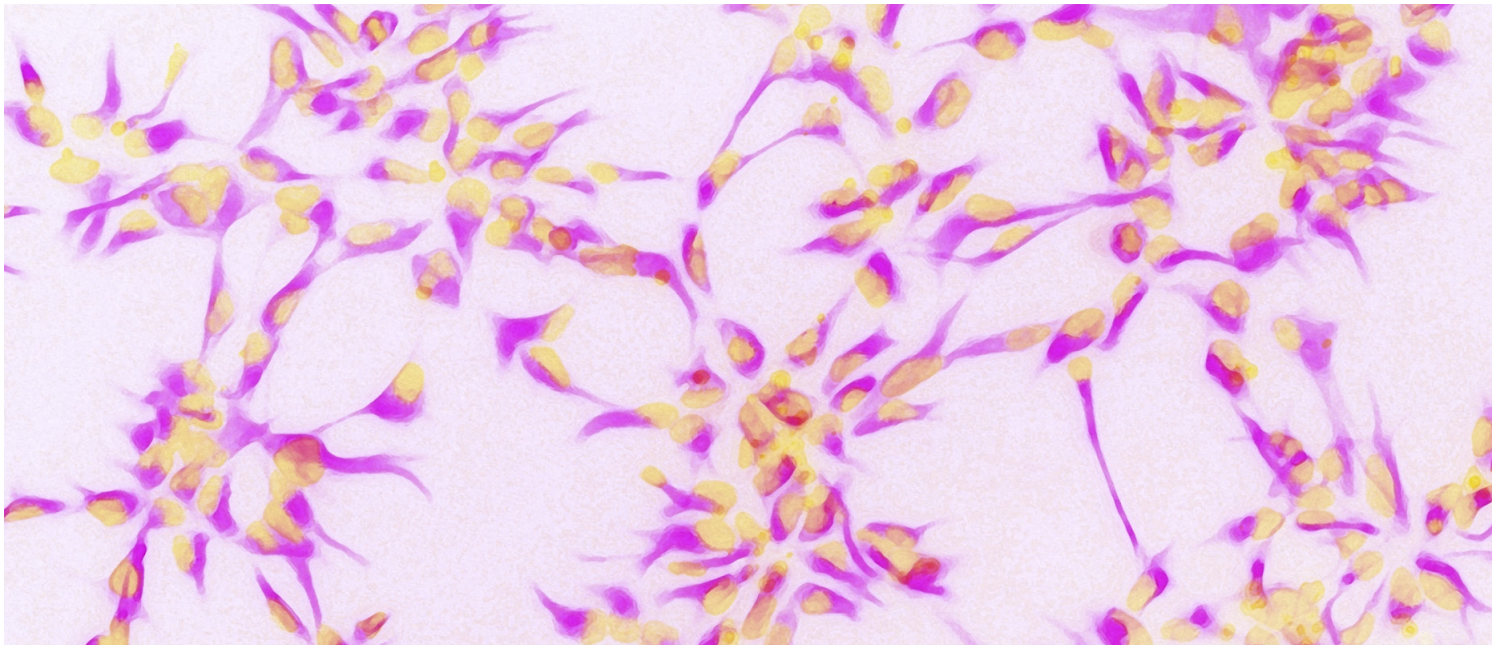
- Albert J. Silverman Research Conference
- British Biochemical Society meeting
- International Society for Stem Cell Research annual meeting
- Molecular Psychiatry Meetings
- 24th Annual International Society for Bipolar Disorders Conference
- Society for Research in Psychopathology annual meeting
- Society for Ambulatory Assessment conference
- American College of Neuropsychopharmacology annual meeting

Prechter Program researchers publish in scientific journals ranked in the top 10% of medical research journals that include:

- *Bipolar Disorders*
- *Journal of Affective Disorders*
- *Acta Psychiatrica Scandinavica*
- *Journal of Medical Internet Research*
- *Journal of Psychiatric Research*

- **Article:** "Attachment insecurity partially mediates the relationship between childhood trauma and depression severity in bipolar disorder." Published in *Acta Psychiatrica Scandinavica*
- **Article:** "Emotional awareness, affective dysregulation, and bipolar spectrum psychopathology: A path analysis." Published in *Bipolar Disorders*
- **Poster:** "Alcohol use predicts domain specific functioning in a longitudinal study of bipolar spectrum disorders." This poster was nominated for **Smadar Levin Best Poster Award.**
- **Dr. Sarah Sperry** was invited to join the Early & Mid Career Task Force at the International Society for Bipolar Disorders (ISBD) and helped develop and implement a needs survey to assess how ISBD can strengthen its programs for early career members.
- **Poster:** "Higher childhood trauma is related to lower cognitive functioning at baseline with similar rates of longitudinal change in bipolar disorder." Presented at the International Neuropsychological Society Annual Conference

Please visit our research publications webpage at **michmed.org/YIYja** for more information and links to the articles.



This image of bipolar cells was taken in Dr. O'Shea's lab.

AN UPDATE: Predicting Individual Outcomes for Rapid Intervention (PRIORI)

We have entered an exciting new era of the PRIORI project. Over the past several years, Drs. Emily Mower Provost and Melvin McInnis have worked tirelessly to develop a smartphone application and data pipeline to predict mood state changes based on variations in speech during phone calls and clinical interviews. The ultimate goal of such a technology is to improve our ability to identify necessary points of intervention for individuals living with bipolar disorder that are **passive, personalized, and in real time.** To do so, we must be able to capture and analyze speech across many different contexts and in "real life." With the critical and generous support of the **Baszucki Brain Research Foundation, Drs. Sarah Sperry** and **Emily Mower Provost** have initiated a study that deploys a new version of the PRIORI app that captures 30 second snapshots of speech every 15 minutes as individuals go about their normal daily lives.

Extending the PRIORI app to sample speech when participants use their phones requires rigorous testing and validation. PRIORI works by incorporating aspects of speech to recognize emotion valence and arousal. **Valence** refers to how negative or positive one might be feeling and **arousal** refers to how activated vs. calm/tired one is feeling. A high arousal negative emotion might be "frustrated" in contrast to a low arousal negative emotion which might indicate "bored." A high arousal positive emotion might be "excited" in contrast to a low arousal positive emotion of "calm/content."

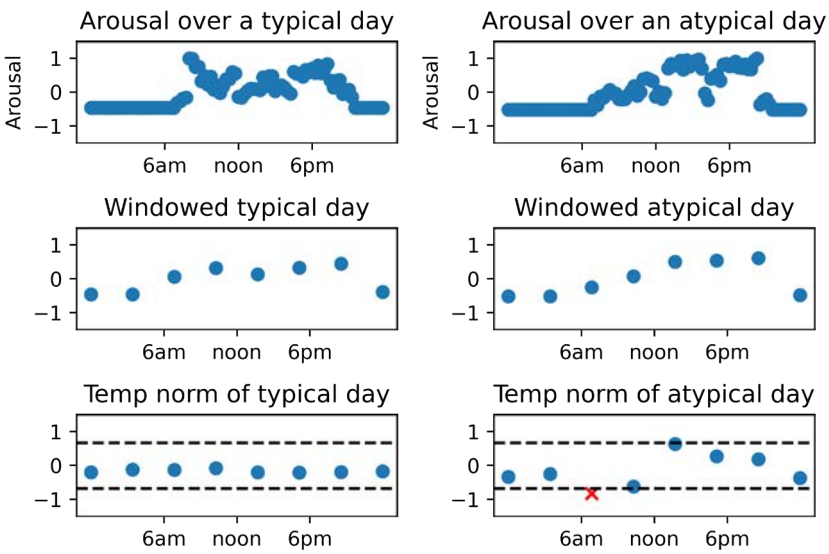
Our goal is to see whether the PRIORI ratings of emotion valence and arousal detected via speech match individuals' reports of their own emotions. To do so, individuals living with bipolar disorder are completing surveys on their smartphones that ask them about how they are feeling in real time. These questions will correspond in time with speech collected by the PRIORI app. Drs. Sperry and Mower Provost will then be able to assess whether changes in speech are associated with self-reported changes in emotions. This will allow us to better build a framework that can detect whether anomalies (changes) in speech are meaningful **in the moment.**

To show an example of how this might work, please refer to the included figure below that represents hypothetical data from an individual with bipolar disorder. The left column is a typical day, the right column is an atypical day. The first row shows raw values. The second row shows averaged values for that person. The third row shows our algorithm that detects when a specific value is an anomaly for that person — in other words, when emotional arousal reaches a level that is abnormal for that individual compared to their typical level of emotional arousal. The red X's represent times when these anomalies are detected. If these X's match a change in self-reported emotion, we are that much closer to validating the PRIORI app to be used in real-world environments. This represents an exciting new step in the PRIORI story.

We are so grateful to our participants who are helping us test and validate this important new version of the PRIORI app. We will continue to collect data for up to 12 months and enroll new participants interested in using PRIORI.

Emily Mower Provost, Ph.D.

Sarah Sperry, Ph.D.



Dr. Sue O'Shea's **Stem Cell Lab** Comings and Goings

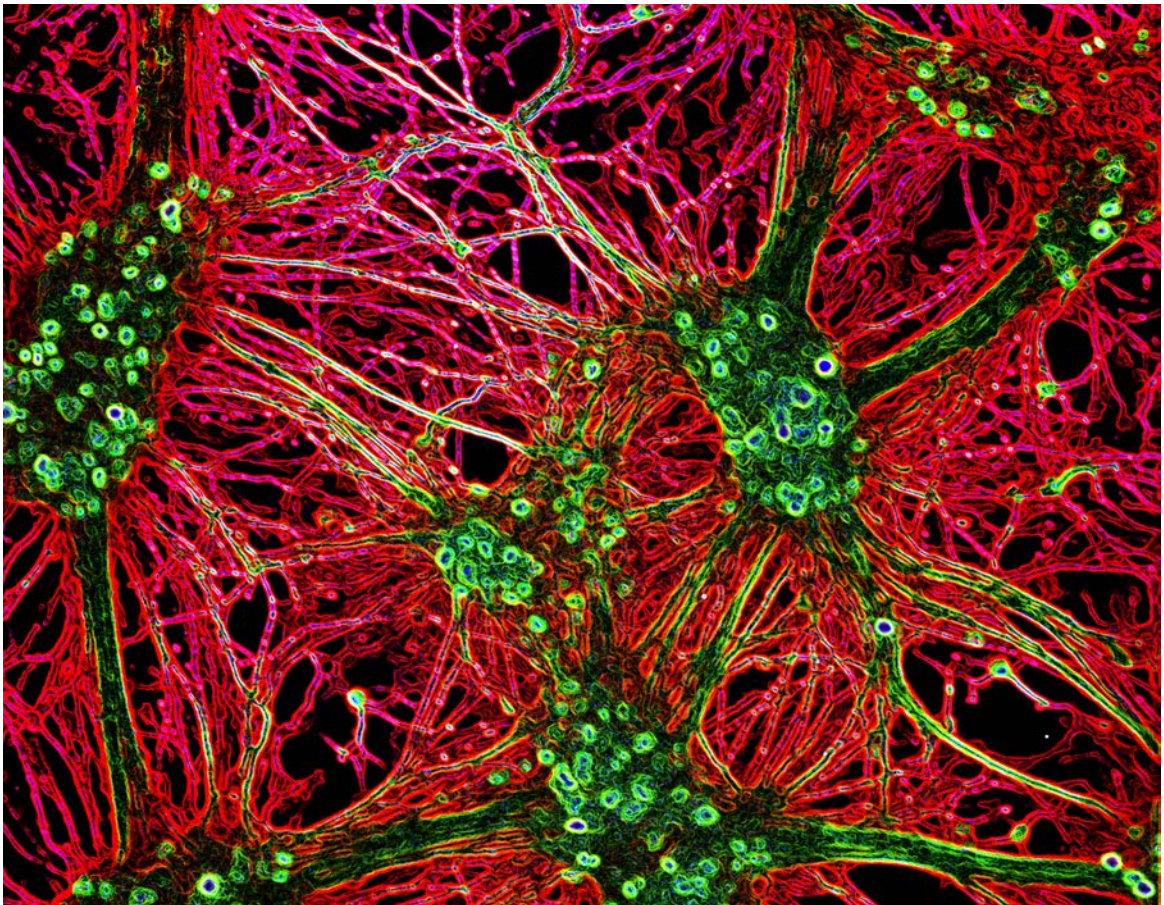
This spring and early summer have been a time of change — of finishing projects and moving. We are writing papers and taking on new jobs and projects. **Henry Tran**, who received his Bachelor of Arts with high honors for work in our lab studying bipolar patient (BP) organoids, is leaving to attend graduate school at the University of Chicago; he has been replaced by two undergraduate students, **Hannah Young** and **Finn Swaty**, who we hope will also stay with us as they complete their degrees.

We're all working to get definitive data or to write final bits of manuscripts — **Kate Campbell, Ph.D.,** is finishing her analysis of calcium signaling in control and bipolar patient glutamatergic neurons, **Dan Schill, Ph.D.,** is analyzing RNAseq data from bipolar patient GABA neurons, **Durga Attili, M.S.,** is studying the genes and proteins produced by bipolar brain organoids. All of these projects are focused on developing particular neural cell types from skin cells that have been converted to stem cells in a tissue culture dish. **This allows us to begin to understand how various cell types in bipolar brains are different from controls using living cells.**

One project that involves the entire lab is testing the role of proteins contained in **exosomes** in bipolar disorder cells. Exosomes are extremely small lipid bound particles that play two very different roles in the brain. One role is binding and removing toxic proteins from brain cells and then transporting them out of the cell and from the central nervous system to the periphery where they can be removed from the body. Their other role is in cell-cell communication where proteins produced by astrocytes are bound by exosomes, then transported from the cell and delivered to neurons to nurture and direct neuronal behavior. Both are critical to the normal development and function of brain cells and we believe they may be altered in the brain of bipolar disorder patients.

The image below is one of two that **Cindy DeLong, Ph.D.,** submitted, and was selected to be displayed at the Ann Arbor Art Fair this year. It illustrates the warp and weft of the brain neuropil, a dense network of interwoven nerve fibers and their branches and synapses. Green are neuronal cell bodies and red are processes that we use to model the bipolar brain. We hope you will check out Dr. DeLong's work on bipolar disorder at **bioartography.com**.

Special thanks and an award. In addition to the many generous individuals who support our lab, this year we received an important gift from the Hazel Ruby McQuain Charitable Trust, given in honor of advisory board member Clyde Bartter, specifically to advance our exosome work. Part of this gift funded the **2022 Clyde Bartter Bipolar Research Scholar Award,** which went to Durga Attili, M.S., and his highly technical work creating brain organoids (mini-brains in a petri dish) from induced pluripotent stem cells that will enable analysis of the developmental differences between brains derived from patients with bipolar disorder and those without.



Prechter Program Advisory Board

The Prechter Program Advisory Board meets annually for a thorough review of the prior year's activities. Presentations are made by both faculty and staff. This long-standing group consists of community members including business and civic leaders concerned with advancing treatment of bipolar disorder. In addition, a number of scholars and clinicians in related fields sit on the board.

The Scientific Advisory Board (SAB) is a subset of the Prechter Program Advisory Board and consists of international experts in the fields of science relevant to the work of the Prechter Program. The SAB is chaired by **Dr. Stephan Taylor**, Professor of Psychiatry at the University of Michigan.

The Prechter Program includes a network of 13 affiliated labs and the faculty forum. The affiliated labs have one or more projects in collaboration with the core research team of the Prechter Program. **This networking enhances the efficiency and synergy of the collaborations; data are shared, and new ideas emerge.**

The SAB meets regularly to review the progress of the Prechter Bipolar Research Program. The SAB reviews and advises on the priorities and scientific direction of the research conducted under the aegis of the Prechter Program. The members of the board are selected based on their scientific background and interest in research related to bipolar disorder and have a diverse range of backgrounds, ranging from the clinical sciences to the biological, physiological, and computational sciences.

This structure and organization encourages the connection and communication with our team members, our colleagues, and our community. Our most important connection, however, is with the individuals who live with bipolar disorder and their family members. These are the relationships that nurture, teach and inspire us every day!

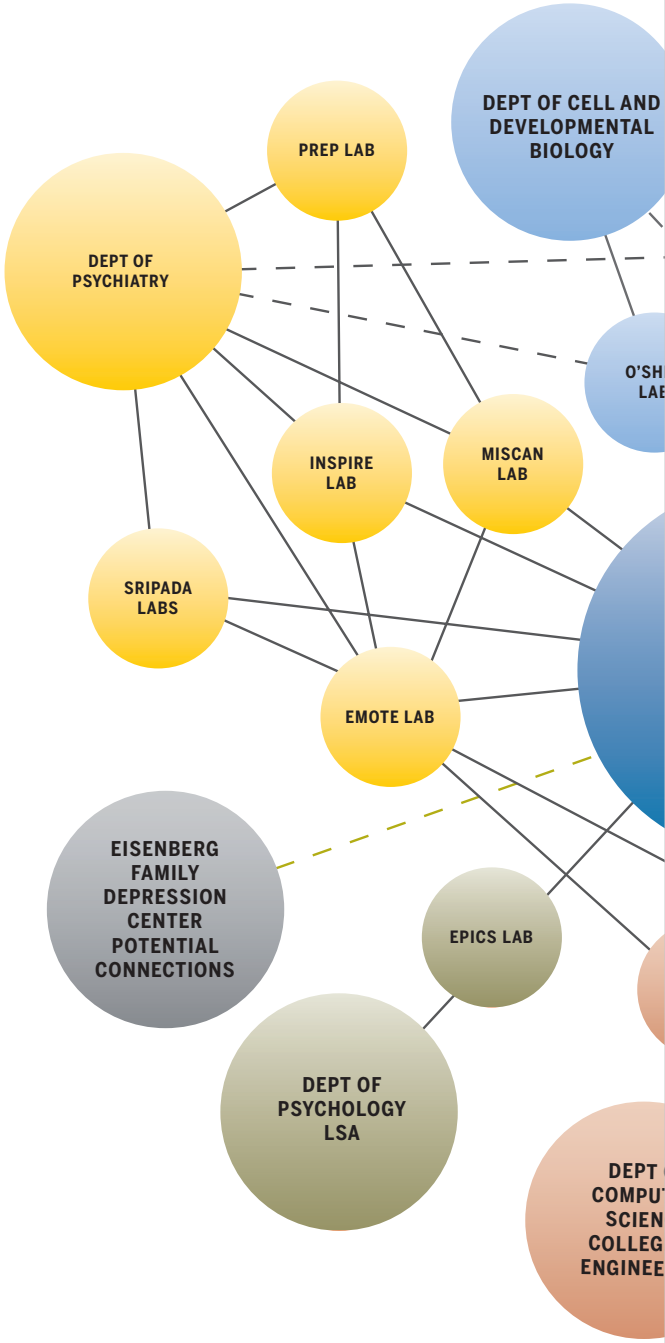
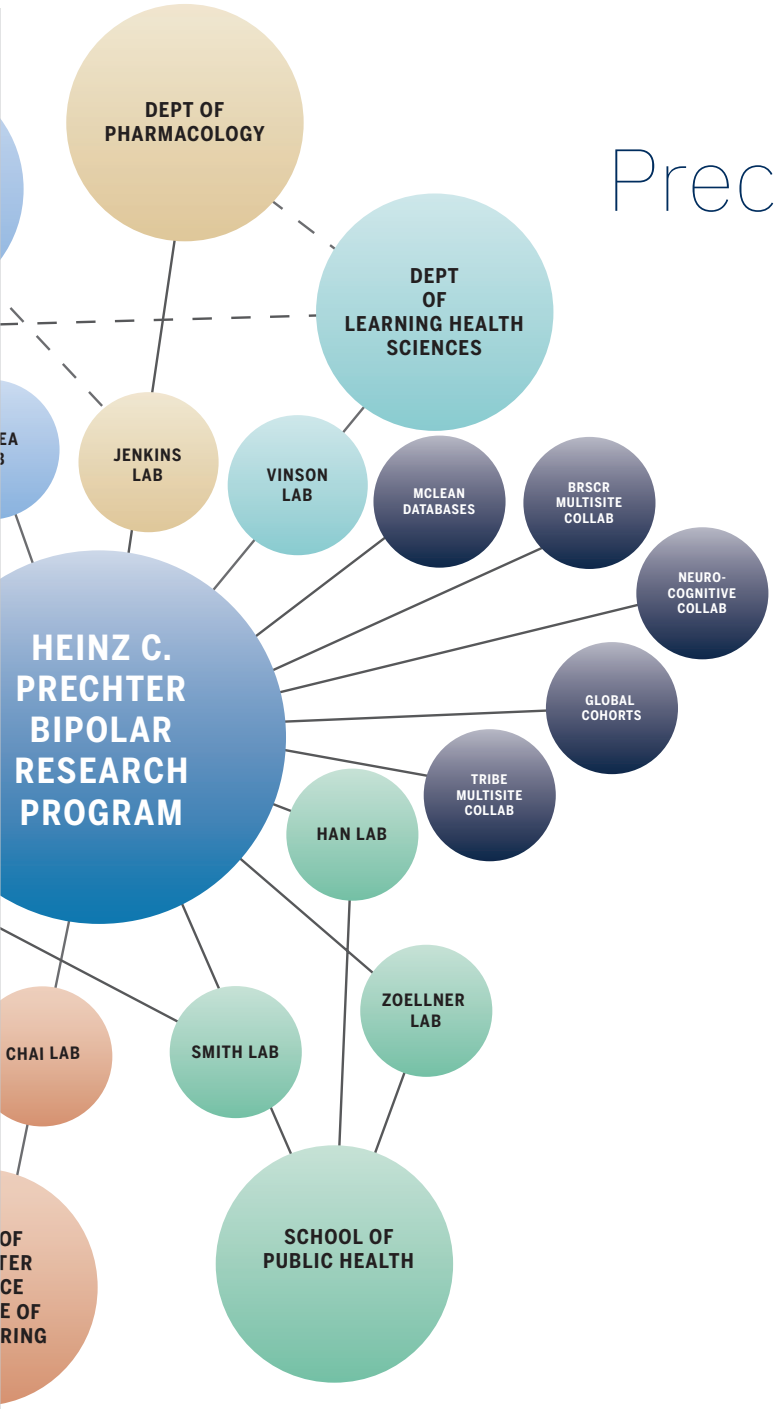


PHOTO: The Prechter Advisory Board meeting in May 2022 (L-R): Ivy Tso, Scott Snow, Stephanie Prechter, Elizabeth Guz, Sarah Sperry, Waltraud (Wally) Prechter, Melvin McInnis, Paul Jenkins, David Dunn, Stephan Taylor, Sandie Knollenberg, Charles Friedmann, James Shayman, Patricia Wagner, and Clyde Bartter. Not pictured: Brian Athey, Denise Illitch, Joshua Bess, Kristen Brennard, Katherine Burdick, Judith Tam, and Kathleen Valenti.



Prechter Program Growth

The Heinz C. Prechter Bipolar Research Program is a connected, collaborative program with the mission to discover mechanisms that contribute to bipolar disorder, predict, and improve outcomes, and develop effective innovative treatments. With our collaborators here at the University of Michigan and beyond, we are building a future with the goal of achieving personalized and evidence-based treatments for bipolar disorder to enable every individual with bipolar to lead a healthy and productive life.

As the Prechter Program is growing at the University of Michigan, new structures and collaborations have been put in place. We have appointed Associate Directors, and have established a ***Scientific*** Advisory Board in addition to the existing Prechter Program Advisory Board.

Our **Associate Directors** are leading the charge in innovative new fields of bipolar research and discovery. **Sarah Sperry** leads our work in the Clinical and Mobile Health Sciences. **Ivy Tso** and **Kelly Ryan** direct our Translational Neuroscience efforts. **Paul Jenkins** oversees our research in the Biological Sciences.

Network Key:

Solid line = Connected

Dashed line = Connected but not directly

Green dashed line = Potential connection

Exploring Lunar Cycling in Bipolar Disorder

Helen Burgess, Ph.D.,
Principal Investigator

It is increasingly recognized that lunar cycling may impact sleep and mood in humans. Some studies of people who do not have sleep disorders have reported that people go to bed later on nights around the full moon as compared to the new moon, and ***this can result in some sleep loss of about 20 minutes per night around the time of the full moon.*** Other studies have reported lower levels of melatonin secreted during the nights around a full moon versus a new moon — possibly due to increased light exposure around the full moon.

In bipolar disorder, mood changes in association with the lunar cycle have also been reported. Here, in the Prechter study, we have published on one participant who showed lunar cycling in his mood and sleep duration, recorded over 3.3 years. Near the full moon, the participant's sleep shortened, and his mood was more positive, whereas near the new moon, his sleep lengthened, and his mood was more negative. To further explore this, a small exploratory pilot study of lunar cycling was launched titled "Sleep Across the Seasons Study". Sleep was objectively tracked with wrist monitors, and mood was tracked with daily self-reports for a month within each season. In addition, urine was collected overnight on the nights of the full and new moons, to explore possible changes in melatonin and in markers of oxidative stress during the lunar cycle. Data analysis is ongoing, and we hope to publish results soon.

PREP-Prechter Science Meetings

The Prechter Program has numerous important collaborations with investigators within the Program for Risk Evaluation and Prevention (PREP) Early Psychosis Program, including **Drs. Takakuni Suzuki**, **Stephan Taylor**, and **Ivy Tso**. To facilitate these collaborations and foster an environment of shared learning and idea generation, Drs. Sarah Sperry and Suzuki are leading the "PREP-Prechter Science Meetings." All staff, students, clinicians, and researchers from the respective programs are invited to participate.

During these 90-minute biweekly meetings, investigators present on a range of topics relevant to Bipolar and Psychosis research, ranging from discussing new and ongoing project ideas to learning innovative techniques and topics. It is a nurturing environment to get critical feedback to move our science forward and learn from each other.

Recent talks by PREP-Prechter investigators include:

- Dr. Sperry's presentation on her K23 proposal, **"Affective and Cognitive Mechanisms of Emotion-Based Impulsivity in Bipolar Disorder: Linking Neural Oscillatory Dynamics to Real-World Outcomes"**
- Dr. Suzuki's presentation on **integrating real-time physiological monitoring to our studies to assess heart rate variability as an index of emotion dysregulation in bipolar and psychosis spectrum disorders**
- Graduate Students Margo Menkes, Carolyn Andrews, and Dr. Tso's presentation on **the development of a new task to assess affective inhibition, meaning the ability to behave appropriately for a given situation, and stop oneself from acting impulsively, in emotional situations**

Investigators outside of the PREP-Prechter Programs have been invited to give talks about their research to highlight innovative work that can inform our own science. Recent talks include:

- Drs. David Fresco (Michigan Psychiatry) and Lauren Bylsma's (University of Pittsburgh) presentation on **using ecological momentary assessment and ambulatory psychophysiology to implement Just-in-time-adaptive-interventions (JITAIs) for emotion dysregulation**
- Dr. Alex Weigard's (Michigan Psychiatry) presentation on **computational psychiatry approaches to emotion and cognition data**
- Dr. Jon Rottenberg's (University of Southern Florida) presentation on **measuring well-being in severe mental illness**

Connections: Global Collaborations

The Global Bipolar Cohort (GBC) has been hard at work with multiple projects:

The GBC is a collaboration where researchers from 13 institutions in 9 countries have participated monthly in discussions since the kick-off meeting in Ann Arbor, Michigan, in October 2019. The GBC focuses on outcomes, genetics, biological mechanisms, and clinical care to understand what drives bipolar disorder.

PROJECT 1:
LEAD: Janice Fullerton, Ph.D. (Australian GBC member)

- Survey: The goal of this online survey was to identify investigators across the globe with bipolar disorder (BD) research participants that would help amplify and diversify the published studies on the life course of BD. **The GBC survey found what has been reported in the current literature, which is that non-European ancestry is underrepresented, and longitudinal studies are scarce.** The survey identified 47 investigators from 23 countries, with 45 cohorts, predominantly of European ancestry, in various settings of care (i.e. hospital, community, private clinics, academia).
  - This abstract was accepted at the 22nd World Psychiatric Association, in Bangkok: *"Increasing Diversity in Bipolar Disorder Research Studies: Towards a Global Bipolar Cohort,"* where Dr. Fullerton will present results found in the GBC survey and bring continued awareness for diversifying research samples and the impact this has on outcome predictions and clinical care.

PROJECT 2:
LEAD: Balwinder Singh, M.D.: Patterns of Drug Treatment for Bipolar Disorder — A Global Bipolar Survey

- Dr. Singh along with Dr. Frye (Mayo Clinic) and Dr. Yocum have asked the GBC members to share their cohorts so we can describe the psychotropic medications used to treat BD at their site. There are 12 international sites, with over 10,000 responses showing the different patterns of use in medication prescription practices. The data is currently being analyzed for use of polypharmacy, describing any relationship between functional impairment and pharmacologic treatment, and discovering if any regional differences exist within the groups. Dr. Singh will present results in a manuscript for publication.

PROJECT 3:
LEAD: Melvin McInnis, M.D. & Claudia Diaz-Byrd: Learning Priorities for the GBC Collaborative

- Dr. McInnis and Claudia Diaz-Byrd put together a short survey for GBC members to determine what the future aims could be for the group. Responses came from North America, Asia-Pacific, and Europe-based investigators. **We found that developing new longitudinal cohorts, supporting existing cohorts and creating a global clinical trials network were high on the list of action items.** These ideas will now be tested against a much bigger group of investigators outside of the GBC membership. The survey is ongoing.

PROJECT 4:
GBC Symposium for 2023

- Dr. McInnis and Claudia Diaz-Byrd, along with GBC members, are working on designing a forum to bring together various stakeholders to Ann Arbor, Michigan, for a three-day conference in 2023. This will be a follow-up to the 2019 GBC conference that was the kickstart of the Global Bipolar Cohort collaborative and its relationship to the Milken Institute Center for Strategic Philanthropy (CSP). **One theme that will be explored in these sessions is the need to organize, harmonize and integrate data for all parts of the world.** What are the strategies to do this and to do it well? How will we reach out to investigators from around the world and provide a platform where we can identify barriers for maintaining longitudinal cohorts, sharing data across regional barriers, and translate this data into clinical knowledge for major impact?

Connections: Conversations with Collaborators

Anna Wrobel

Meet Ms. Anna Wrobel. She is finalizing her doctoral work at the Institute for Mental and Physical Health and Clinical Translation (IMPACT) at Deakin University in Geelong, Australia.

Anna is part of the TRIBe collaboration, which focuses on trauma research and its impact on bipolar disorder. Anna is particularly passionate about research translation to improve treatments of severe mental illnesses. In this last year, Anna has been hard at work using the Prechter dataset to look at trauma's role in treating bipolar disorder. Exposure to trauma has only recently been considered to have an impact on treatment outcomes, and having Anna's attention in this understudied area could yield important new insights. As Anna gets ready to receive her doctoral degree and steps forth as a scientific investigator in her own right, she will have her TRIBe cheering her on!

BRSCr and **TRIBe** Collaboratives Updates

BRSCr is a collaboration between the Prechter Program and international investigators examining the connection between sleep difficulties and bipolar disorder mood variations. Identifying and studying the connection between sleep and moods is essential for developing treatments that improve lives. BRSCr investigates the connection between sleep and bipolar disorder via a multifactorial approach by sharing perspectives and using the Prechter Program's longitudinal dataset gleaned from the Longitudinal Study of Bipolar Disorder.

BRSCr: Bipolar **R**esearch in **S**leep & **C**ircadian **r**hythms

- This year, the BRSCr team has identified eight different projects that are specific to sleep disturbances and bipolar disorder.
- Five new investigators have joined the current team, bringing the membership to 29 investigators.
- The team has decided to approach sleep disturbances and circadian rhythm changes by focusing on mood variability and mood patterns, cognitive impairments, seasonal patterns, increase in suicidal behaviors with sleep disturbances, effects of medications on sleep, and the role genes play in mood and sleep.
- These projects organically formed subgroups of investigators who share their expertise in sleep research, data management, bipolar disorder, and statistical methodologies monthly in order to make progress in discovering a better understanding on the impact of sleep in bipolar disorder.

TRIBe: Trauma **R**esearch **I**n **B**ipolar disorder

TRIBe is a group of international researchers exploring the impact of exposure to trauma in childhood or adulthood. The focus is on treatment outcomes, cognition, personality, and other medical and co-existing mental health conditions. TRIBe researchers accomplish this by using large longitudinal datasets that provide critical information highlighting the relationship between bipolar disorder and trauma.

In this past year, our 14 TRIBe members have established four main areas of research using the Prechter dataset:

- Interpersonal trauma and the role of depression
- Childhood trauma and severity of depression
- Personality traits as mediators in bipolar disorder
- Treatment outcomes for people with comorbid bipolar disorder and PTSD (post-traumatic stress disorder)

This past year, the group has been working on providing our two Ph.D. candidates, Samantha (Sammy) Russell and Anna Wrobel, both at Deakin University, guidance in the development of their research projects. Sammy has been focusing on which pharmacological treatments influence staying well in people with bipolar disorder and post-traumatic stress disorder (PTSD). Sammy is currently working with the Prechter data team to prepare her data for analysis. Anna's research project focused on lifetime trauma exposure and how this impacts treatment outcomes and the person's experience with bipolar disorder. Once her project was finalized this year, Anna submitted her findings to psychiatry journals, two of which have been published.

The team's work has resulted in two published works:

- "Attachment insecurity partially mediates the relationship between childhood trauma and depression severity in bipolar disorder," **michmed.org/W9e87**
- "Personality traits as mediators of the relationship between childhood trauma and depression severity in bipolar disorder: a structural equation model," **michmed.org/BzBWk**

Connections: In Our Community

Connection with our community, whether in the academic research community or simply within our local neighborhoods, is a foundational component of the Prechter Program.

For years, the Prechter Program has put on events in and around southeast Michigan to educate the public about bipolar disorder and the research that the Program is driving forward. We've presented at libraries, country clubs, community centers, on university campuses, even in a prison to inmates and prison staff, and as guest speakers for other mental health non-profits.

With the COVID-19 pandemic, we pivoted to webinars. This enables us to reach people beyond southeastern Michigan, since you can join from the comfort of your living room.

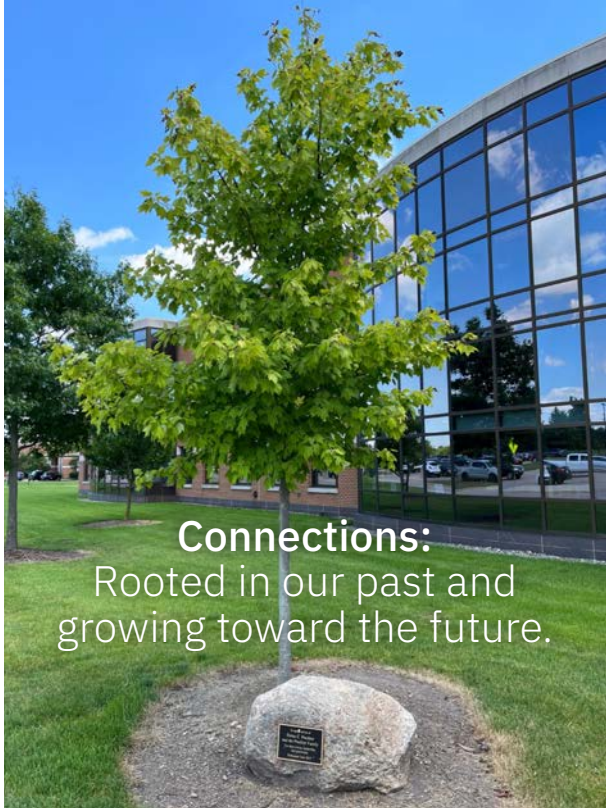
Our annual signature outreach event, the Prechter Lecture, is now in its 16th year. Last year, we presented keynote speaker Norm Ornstein, a political scientist who spoke about 'Reforming and Transforming Our Broken System on Serious Mental Illness.' This virtual event drew over 350 attendees. It was recorded and can be watched here **michmed.org/kvRa1**.

This year's Prechter Lecture is taking place in person in Ann Arbor, and those who can't attend in person will be able to watch the recording, which we will upload to our website. This year's keynote speaker is former WNBA All-Star Chamique Holdsclaw who lives with bipolar disorder.

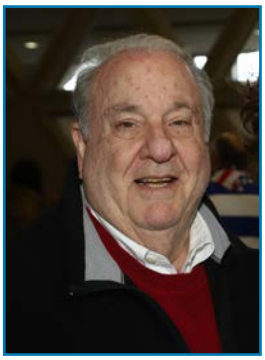
All news and events can be found on our website at **prechterprogram.org/news-events** — check it out and subscribe to our e-newsletter to stay up-to-date.

In the last year, members of the Prechter lab gathered for some team building while volunteering in the community (top photo). We volunteered with the Community Action Network (middle photo), a nonprofit organization serving Washtenaw County. Prechter Program lab members participated in grounds cleaning at the organization's Hikone Community Center twice last fall and assisted with organizing the Bryant Marketplace for the holidays.

A celebrated mental health benefit event in Ann Arbor, Yoga at the Big House (bottom photo), returned this August after taking a two-year pandemic hiatus. Yoga at the Big House is hosted by Citizen Yoga, a Detroit yoga studio, with the goal of bringing awareness to suicide prevention. The Prechter Program participated in the event with an informational table, along with our friends at the U-M Addiction Center and Athletes Connected. Proceeds from this special event went toward local nonprofit organizations.



This beautiful maple tree, planted in 2017 in appreciation of the vision, leadership and generosity of the Prechter Family, continues to flourish and grow along with the Prechter Bipolar Research Program. It stands outside of the Rachel Upjohn Building at 4250 Plymouth Road in Ann Arbor.



Jim Zack at the 2018 Bright Nights community education event, jointly presented with community partner Kadima.

In Memory of Jim Zack

The Prechter Bipolar Research Program mourns the loss of a longtime friend this year. H. James "Jim" Zack died on June 19, 2022. Jim and his wife Stephanie started a fund to honor and memorialize their daughter Katherine Hilary "Katie" Zack in 2015 while supporting bipolar research. Our research has benefited from the gifts to Katie's Fund of many, many friends over the years. We send our deep condolences to Stephanie, daughter Merrill, grandson Oscar and all who knew and loved Jim.

DEAR FRIENDS:

Throughout 2022, the Heinz C. Prechter Bipolar Research Program has continued its productive and expanded research, despite the challenges of the COVID-19 pandemic.

We have learned lessons on how to adapt, how to connect with each other in the lab, within the U-M community, and beyond. Our connections are vital to the Prechter Program's mission and to further the important work our lab and collaborators are dedicating themselves to.

Our strides in the last year have made impacts across the globe that we celebrate each day, and hope to continue those successes in the coming years. The Prechter Program increased our collaborations locally, nationally, and internationally.

Within the University of Michigan community, there are 13 different academic labs that we are collaboratively engaged with. We are fortunate to work with talented researchers across departments like Psychiatry, Cell and Developmental Biology, Pharmacology, Learning Health Sciences, Computer Science, the College of Engineering, Psychology, and the School of Public Health.

We are also working with independent collaborations across nine states. The Prechter Program is part of five different international research groups that focus on psychosis, trauma, and sleep and circadian rhythm.

Our Program is working with groups in Australia, France, UK, Germany, Canada, Spain, France, Norway, and Italy.

Our overarching goal is to focus and accelerate advancement of worldwide research with an open science approach by using the extensive data set of the Prechter Program.

Through these collaborations, we are remaining true to our missions to discover the mechanisms that contribute to bipolar disorder, predict and improve outcomes, and develop effective treatments.

None of this would be possible without your generous and committed support over the years.

Thank you so very much!

Waltraud E. Prechter
Founder of the Heinz C. Prechter Bipolar Research Program
BA, Ed, U-M School of Education

HEINZ C. PRECHTER BIPOLAR RESEARCH PROGRAM
MICHIGAN MEDICINE

16th Annual Prechter Lecture

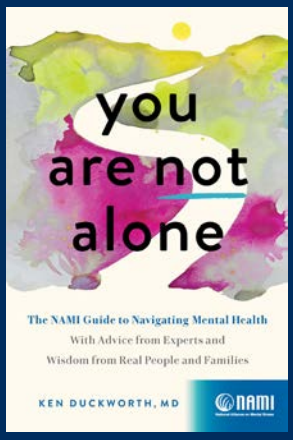
FEATURING: **Chamique Holdsclaw**

Former WNBA All-Star and mental health advocate

Mind/Game: The lifelong pursuit of order after a bipolar diagnosis

Wednesday, October 26, 2022, 6–9 p.m.

- FREE EVENT: **RSVP at PrechterProgram.org/lecture**
- KEYNOTE SPEAKER: Chamique Holdsclaw
- PANEL DISCUSSION:
  - Bipolar disorder research and Q&A with mental health experts
- RECEPTION:
  - Refreshments and community resources
- BOOK SIGNING:
  - NAMI Chief Medical Officer, Dr. Ken Duckworth, will be signing his new book, ***You Are Not Alone***. Books available for purchase.



- LOCATION:
  University of Michigan
  A. Alfred Taubman Biomedical Science Research Bldg
  Kahn Auditorium
  109 Zina Pitcher Place, Ann Arbor, MI, 48109

This event is funded by a generous gift from Donald & Mary Kosch.

If you are interested in making a donation or a bequest to support the Prechter Bipolar Research Program, please email Lisa Fabian at **fabianl@umich.edu** or call **734-763-4895**.

If you would like to talk with a lab specialist about taking part in research, please email **BPResearch@umich.edu**

OUR MISSION

The mission of the Heinz C. Prechter Bipolar Research Program is to discover the mechanisms that contribute to bipolar disorder, predict and improve outcomes, and develop effective, innovative treatments.

OUR VISION

We are building a future where personalized and evidence-based treatments for bipolar disorder will enable every individual with the illness to lead a healthy and productive life.

1-877-UM-GENES

PrechterProgram.org

To sign up to receive our yearly printed newsletter or our quarterly E-newsletter, please contact: Rachel Bresnahan at **bresnahr@umich.edu** or **734-232-0456**.

HELP IS AVAILABLE

In a mental health or substance use emergency, **call or text 988** from any phone to reach the national suicide and crisis lifeline.