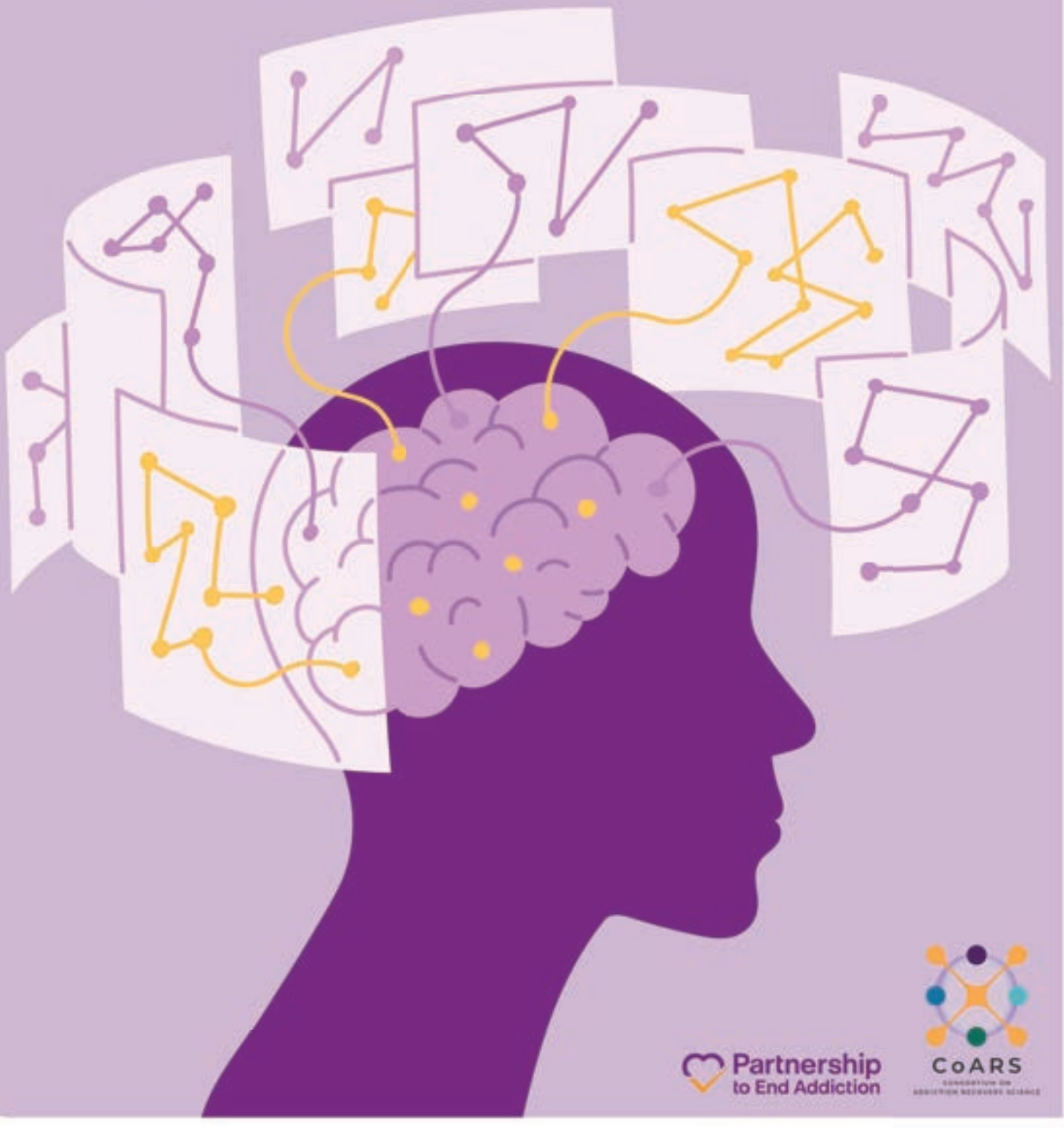
Proceedings of

Pushing the Boundaries:

A Dynamic View of Addiction Recovery Science

Meeting convened August 12 and 13, 2026
National Institutes of Health | Neuroscience Center Building,
6001 Executive Boulevard, North Bethesda, MD



Partnership to End Addiction

CoARS

Table of Contents

Executive Summary……3
Session 1. *Pushing the Boundaries of Addiction Recovery Science: Past, Present & Future*……..……..8
Session 2. *A Dynamic View of Recovery Across Life Stage & Recovery Phase*…….……13
Session 3. *Measuring Recovery as a Dynamic Process: Challenges & Opportunities*……..……19
Session 4. *Building Recovery Capital: Taking a Whole Person Approach to Addiction Recover*…….27
Day 1 Wrap. *Pulse Check – Thoughts on Day 1*……33
Session 5. *A Dynamic View of Recovery Across Social Contexts Part I: Families & Loved Ones*…..…….34
Session 6. *A Dynamic View of Recovery Across Social Contexts Part II: Social Networks*……...39
Session 7. *A Dynamic View of Recovery Across the Support Service Ecosystem*……..……...43
Session 8. *Supporting Long-Term Recovery: Sustainable Models of Recovery Support, Scale-Up and Scale-Out*……...48
Session 9. *Key Takeaways, Next Steps & Closeout*…..…….....54
Appendix 1: Researchers with Lived and Living Experience half-day session……..…….59
Appendix 2: Meeting Introduction slides……..……...61
Acknowledgements and Citation……..……74

Executive Summary

Day 1/Intro: Meeting overview and framing

SUMMARY: Presenters at this opening session included Lindsey Martin (Program Officer, NIDA, Treatment and Recovery Service Research Branch), Wilson Compton (NIDA Deputy Director), and Tisha Wiley (Chief, Treatment & Recovery Services Research Branch, Division of Epidemiology, Services & Prevention Research). Lindsey provided a frame for the meeting: (1) to think critically about where we are at; and (2) to think about where we want to go next—what folks at the meeting can do and how NIDA can further this. Wilson underscored the historic nature of the meeting (the first recovery science research meeting organized by NIDA), the importance of thinking about recovery and the recovery process at NIDA, and NIDA's commitment to this (reflected in adding "Recovery" to the branch name). Tisha reviewed the growth of recovery science in the NIDA portfolio in the past ten years as well as the importance of early recovery, understanding how recovery may look different for different substances and at different life stages, delineating how recovery support is different from treatment, and scaling up recovery support services. This meeting was a time to Connect, Create, and Don't Wait for the next funding announcements. People in recovery deserve answers now.

KEY TAKEAWAYS: NIDA's commitment to recovery science has been growing steadily over the past decade; this meeting will provide context to think about how best to address questions we have yet to address.

Day 1/Session 1: Pushing the Boundaries of Addiction Recovery Science – Past, Present & Future

SUMMARY: The panel was moderated by Lindsey Martin (Program Officer, NIDA). Panelists included: John Kelly (Massachusetts General Hospital), Katie Witkiewicz (University of New Mexico), Noel Vest (Boston University), Martha Tillson (University of Kentucky), and Tristan McClure-Begley (Acting Director, NIDA Division of Neuroscience & Behavior). The purpose of this panel was to provide an opportunity to reflect upon the past decade of federally funded recovery science, highlight key gaps and opportunities to advance the field, and discuss some of the tensions in the field of recovery science, unpacking some of the dynamics of the recovery process and considering the conceptual boundaries of the field. This panel addressed following questions: (1) Do we need a standardized operational definition of recovery? (2) How do we know if future research is truly centered on recovery as its primary focus? (3) What do you see as the most critical areas in need of further research?

KEY TAKEAWAYS: (1) The field needs standardization (at the very least for estimating prevalence), but we also need flexibility—to be person- and recovery-stage centered and to retain meaning for folks who identify with this status. One way forward is expanding from a primary focus on consumption to account systematically for problems that are caused by SUD and the resolution of those problems; (2) In addition to thinking about the people who show up in treatment or who identify as being in recovery, we also need to think about and study the people who aren't on our radar screen and how they got into recovery; (3) We also need to know more about long-term trajectories—like folks in long-term recovery who relapse. What happens at this stage and what do we do with these folks? We also need to know more about young people

and how to better engage these folks. We might be able to learn from existing datasets by looking at outcomes other than abstinence--widening the scope of investigation to larger environmental and social factors.

Day 1/Session 2: A Dynamic View of Recovery Across Life Stage & Recovery Phase

SUMMARY: This panel was moderated by Sean Lynch (Program Officer, NIDA, Treatment & Recovery Services Research Branch). Panelists included: Sandra Brown (UC San Diego; virtual), Michael R. McCart (Oregon Social Learning Center), Brenda Curtis, (NIDA Intramural Program), Hendrée E. Jones (University of North Carolina at Chapel Hill), and Joey Supina (Co-Founder, Sandusky Artisans Recovery Community Center; virtual). This panel focused on the topics of recovery pathways as well as on recovery supports across different life stages and phases. Regarding recovery and recovery pathways, the panel discussed recovery as a multifaceted term, encompassing not only a person's desired behavioral changes regarding substance use, but also their desired movement toward individualized life goals, a mindset of hope, strengthened relations with family members of choice, and potential resolution of co-occurring mental health conditions. The multifaceted nature of recovery makes outcomes harder to specify and measure in grant applications. This panel also talked about casting a wider net to capture the multifaceted nature of recovery: measuring things at different levels (individual, peer, family); capturing gender-specific and life stage specific nuances (younger folks may not use the term recovery); and leveraging advances in neuroimaging and digital data collection methodologies.

KEY TAKEAWAYS: Despite common threads, like belonging, sense of purpose, and social connections, heterogeneity in recovery may be the rule rather than the exception, which requires flexibility, diversity, and creativity in design and approach.

Day 1/Session 3: Measuring Recovery as a Dynamic Process: Challenges & Opportunities

SUMMARY: This panel was moderated by Jordan Jurinsky (Tufts University). Panelists included: J. Michael (Mike) Wilkerson (UTHealth Houston), Bettina Hoeppner (Massachusetts General Hospital), Sarah Zemore (Alcohol Research Group at the Public Health Institute), Michael Milham (Child Mind Institute), and Corrie Vilsaint. The aim of this session was to consider both the measures used and the broader conceptual and methodological questions that shape recovery science, including how recovery should be defined, how change should be captured over time, and which research designs and measurement approaches are needed to better understand recovery as it unfolds. The panel highlighted how we need to measure longer term outcomes and include better specificity about recovery stage because things may look different/folks have different needs depending on the stage. Recovery processes are also important to measure, and digital technologies might give us more and better data to capture them. It is also important to learn from folks who we aren't being treated and/or theretofore reflected in our studies to learn from them about how they think of recovery and their "recovery" processes.

KEY TAKEAWAYS: This panel highlighted several tensions and opportunities in the recovery science field. These tensions and challenges can help guide the next generation of recovery science.

Day 1/Session 4: Building Recovery Capital: Taking a Whole Person Approach to Addiction Recovery

SUMMARY: This panel was moderated by Peter Murray (Program Director, National Center for Complementary & Integrative Health (NCCIH; virtual)). The panelists included: Peter R. Chai, (Harvard University), Selena Neptune-Bear (Wabanaki Public Health; virtual), Sean Young (UC Irvine), Michell Debbink and Adam Gordon (University of Utah School of Medicine, ELEVATE Maternal Health Center of Excellence), and Valerie Diane Bradley (University of Maryland). This panel addressed questions on the meaning of “whole-person recovery” (e.g., expanding the focus to include mind, body, and spirit and thinking about person, social, community, and cultural aspects), the role of complementary and alternative medicine in recovery, barriers to whole-person recovery (e.g., trust and stigma as well as access to and potential concerns around tech), and the role of social determinants of health in recovery science. During the Q&A the following topics were discussed: (1) There is a need to address early recovery guilt and moral injury head-on; (2) GLP-1 meds may be a promising biomedical "on-ramp" to care (just don't ignore root trauma); and (3) Researchers must step up as public advocates (shape policy, guide equitable development).

KEY TAKEAWAYS: Recovery is more than clinical remission or a 28-day program and we need to shift to a lifelong, whole-person approach that is built with impacted communities, noting that building trust typically takes years, not months; and keep in consideration how to best help those with the most barriers. Last but not least, it is critical to focus on the other 167 hours of the week—the hours that we don’t see people and they are managing recovery on their own within their entire lived environment.

Day 2/Session 1: A Dynamic View of Recovery Across Social Contexts Part I: Families & Loved Ones

SUMMARY: This panel was moderated by Ashli Sheidow (Chestnut Health Systems). Panelists included Aaron Hogue (Partnership to End Addiction), Karen Osilla (Stanford University), and Janie Simmons (NDRI-USA). This panel highlighted the need for an agenda focused on engaging loved ones in treatment and recovery support services, identified key research gaps, and described work being conducted currently. Regarding the need for this work, research on CRAFT as well as on couples and family therapy demonstrates that families can be major assets to successful addiction treatment. But gaps remain, specifically research on: treatment and recovery options for persons whose romantic partners are also substance involved; online and technology-supported resources that teach family members how to help substance-using persons with their treatment and recovery and help family members increase their own coping skills and well-being; family navigator and family-to-family recovery coaching programs where families receive guidance and emotional support from other families who have had similar experiences. The panel noted that NIDA has recently funded a cohort of seven R61/R33 projects focused on engaging loved on in the treatment and recovery process.

KEY TAKEAWAYS: There is a clear need for research on this topic; NIDA will be leading the way and supporting research looking at: supporting substance-using members to transition successfully across systems of care; helping substance-using members create a recovery-friendly home environment; bolstering Substance-using Member motivation and habits to adhere to prescribed SU medications; and encouraging Substance-using Members to stay connected to peer, community, and employment resources—including re-enrollment in treatment when needed.

Day 2/Session 2: A Dynamic View of Recovery Across Social Contexts Part II: Social Networks

SUMMARY: This panel was led by Martha Tillson (University of Kentucky). Panelists included: Danny Valdez (Indiana University), Chyrell Bellamy (Yale University), and Brian Lovins (Justice System Partners). This panel focused on why broader social networks (connection outside of family and service use settings) matter, where people find belonging, and the role of technology and AI.

KEY TAKEAWAYS: Connection is central to recovery. We are not finding all those who need treatment, and we may learn a great deal about addiction and recovery from studying where folks are connecting with others (whether that is online or in other types of settings). We may also learn about how to better create community for those who have lost theirs or need to develop a new one. AI has potential to better connect folks who are isolated/marginalized, but it cannot be the only way. Researchers need to study the settings where folks find community, how they function over time, and how those communities can be supported.

Day 2/Session 3: A Dynamic View of Recovery Across the Support Service Ecosystem

SUMMARY: This panel was moderated by Bettina Hoeppner (Havard University/Mass General Hospital). Panel lists included: Patty McCarthy (Faces & Voices of Recovery), Felicia Pullan (The PILLARS and SAFE), Tess Drazdowski (Chestnut Health Systems), Kevin Wenzel (Maryland Treatment Centers), and Thomas D. Huggett (Lawndale Christian Health Center). This panel addressed key questions about whether we know enough about existing recovery support services, how these services fit into the larger continuum of care, and what else the field needs to be thinking about to bolster the science on recovery support services.

KEY TAKEAWAYS: The field needs to move beyond discussions about how to define recovery and instead answer larger questions about how to support it and those who are providing critical recovery support services. Research on some types of recovery support services is more mature than others, but the hope is that we will get to the point where we are also asking more nuanced questions than whether these services work, focusing on how (mechanisms of action) and for whom (moderators of effects) they work.

Day 2/Session 4: Supporting Long-Term Recovery: Sustainable Models of Recovery Support, Scale-Up and Scale-Out

SUMMARY: This panel was moderated by Wayne Kepner (Stanford University). The panel included: Sierra Castedo de Martell (The Phoenix; virtual), Serena Rodriguez

(UTHealth Houston), Peter Gaumond (Office of the National Drug Control Policy), Andrew Finch (Vanderbilt), and Adam Viera (New York State Office of Addiction Services and Supports). This panel discussed the importance of breaking down silos, identifying what is worth replicating, the challenges inherent to studying recovery support services (often not manualized and necessarily have to be adaptable), whether/how services should be rolled out before the dust on the research has settled, and the importance of thinking proactively about implementation science (not just as an "Aim 3" notion).

KEY TAKEAWAYS: In the recovery support services field, research has lagged behind the pace of service delivery (recovery support services are things that were not thought up in a lab but developed organically to address gaps in the service delivery system). That said, we do need research; this research may look different because this is a different kind of service, but much can be learned by thinking about scaling up and what would need to be in place sooner rather than later in the research pipeline.

Day 2/Wrap up: Key Takeaways & Next Steps

SUMMARY: This session featured reflections by Patrick Hibbard (Chestnut Health System), Amy Mericle (Alcohol Research Group at the Public Health Institute), and Tisha Wiley (Chief, Treatment & Recovery Services Research Branch), Division of Epidemiology, Services & Prevention Research). In addition to recapping key themes highlighted within and between the two meeting days (inviting audience participation), it was also hoped to discuss how the momentum from the meeting could be carried forward.

KEY TAKEAWAYS: Despite progress and support from NIDA, challenges in this space persist. Grant reviewer expertise is a challenge; participants were encouraged to not only volunteer to serve as a reviewer but to be proactive when submitting applications (e.g., finding the right review committee and contacting the SRO to ensure that necessary expertise is reflected on the committee). There are also tensions between the treatment and recovery support services communities due to different values, aims, and approaches. It may be helpful to lean into these (write a case study or letter to the editor) and begin dialogue to bridge silos. CoARS can further the momentum from the meeting and serve as a vital conduit to keep the dialog moving forward.

Q&A and Discussion of the Future of Recovery Science

SUMMARY: During this part of the showcase, attendees were provided an opportunity for brief clarifying questions. The focus then shifted to discussing how CoARS can be a platform for moving recovery science forward through showcases and NCARS by highlighting recovery science being conducted and through supporting the development of future recovery science in various topic- and task-specific workgroups.

KEY TAKEAWAYS: The NIDA meeting provided an opportunity to take stock of how far the field of recovery science has come, gaps in knowledge that remain, and exciting avenues for further investigation. The CoARS network is uniquely poised to continue carrying forward the momentum from this meeting.

Session 1. ***Pushing the Boundaries of Addiction Recovery Science: Past, Present & Future***

Lead: Lindsey Ann Martin, PhD, Program Officer, NIDA
Panel: John Kelly, PhD, ABPP, Massachusetts General Hospital
Katie Witkiewitz, PhD, University of New Mexico
Noel Vest, PhD, Boston University
Martha Tillson, PhD, University of Kentucky
Tristan McClure-Begley, PhD, Acting Director, NIDA Division of Neuroscience & Behavior

This session sets the framing for the meeting topics and their significance to the meeting:

i. An opportunity to reflect upon the past decade of federally funded recovery science and to highlight key gap areas and opportunities to advance the field
ii. This panel focused on surfacing some of the tensions in the field of recovery science, unpacking some of the dynamics of the recovery process, and considering the conceptual boundaries of the field

Core Discussion Topics

1. ***Do we need a standardized, operational definition of recovery? What would we gain in research and practice if we had a definition?***

John Kelly noted that we have come a long way and Bill White would be proud/inspired. Several definitions are out there but all speak to more than just removal of symptoms; recovery is about what folks gain. It all boils down to people getting better over time. Does an operational definition—beyond remission--get us anything more? What do you measure? When and for how long? With an operational definition, you can gain some guidance on what to measure and when. It may also help with replicability and building a science of recovery. NIAAA has one, and it does seem to have utility. But what would we add to it? The analogue to the WHO definition of “health”, which is more than the absence of disease, may be helpful here. We need some way to generate prevalence estimates, but we also need something that fits the broader definition of absence of disease and adding in flourishing and resilience.

Noel Vest noted the field needs standardization, but we also need flexibility to be person-centered. It may be more helpful to focus on the continuum of care and what is needed when. Furthermore, recovery is part of an individual’s identity and that is individualized by nature.

Katie Witkiewtiz asked whether recovery needs to be a super-human status? That’s a lot of pressure...recovery is personal and looks different for everyone. Also, goals don’t always measure how people define success. When working with people it is important to understand what recovery would look like to them. You can inquire about goals at entry to treatment and then ask if they were successful in meeting those goals. These

quantitative goals may not be met precisely how we define recovery and definitions will vary by people. Addiction is treated quite differently than other diseases and medical conditions. What if addiction CAN be cured…just like other diseases and we may be doing a disservice in not thinking about what this might look like.

Martha Tillson noted we need a goldilocks definition of recovery—something that is useful but also flexible. Being in recovery is inclusive and inspiring—it gives hope to those who want to be in it. So we need a definition that is meaningful to scientists and meaningful to people who identify as being in recovery.

Tristan McClure-Begley acknowledged that we need a definition that captures heterogeneity of recovery. Need a flexible and inclusive definition—like what was done for “receptors”. So that a definition of recovery is functionally relevant. The definition can evolve with what we know about it and as knowledge is generated regarding the functional relevance of the definition.

2. ***With the growth of the field of recovery science over the past 10 years, the umbrella of "recovery research" has become very large. How do we know if future research is truly centered on recovery as its primary focus? What are the fuzzy boundary areas?***

Martha Tillson said we need to think about how we organize ourselves and think about different aspects of recovery. There is also research that *informs* recovery science, but is that recovery science? Is an employment or housing intervention recovery science even if it supports recovery? If recovery science is a solar system what are the different planets (recovery capital), and what is the sun we are revolving around?

Katie Witkiewitz followed up on this analogy of the solar system by noting that a lot of our science to date represents the 10% of the population that engages in the services and not 90% who are struggling and who do not enter treatment. So, one of the planets of the recovery science solar system needs to include people who are never coming in to services. Not assume that what we understand in the 10% may apply to the 90%. It is important to think about all the people who don’t get on our treatment or research radar screens. What about them? We need to remember that many people are out there, and we need to remember that we only know about the people in recovery who we study—our findings may not apply to those outside of our studies. And many people in natural recovery do not identify as being in recovery. For example, patients with chronic pain often do not identify as having a substance use disorder (despite meeting criteria for OUD). Also, basic animal models do not necessarily translate to human models of addiction, let alone recovery. Animal models need to be more ecological.

Noel Vest asked the question of how many grant are being funded that are really “recovery science” or are they treatment studies using the term recovery? Many studies in the empirical literature are actually treatment with recovery in the title. The recovery process is different than treatment for a substance use disorder. Beyond treatment episodes, what are the institutional structures that allow people to thrive? This is a

challenge for NIDA and all researchers in this space to think about the phenomena of recovery and not just disease/abstinence.

John Kelly added that we also need to look at how people got into recovery among those who say they are in it. Post-acute stabilization is recovery science and need to understand how people maintain post-acute stabilization --that's recovery science. Recovery implies some kind of stability. Post acute stabilization, not first 12 weeks, beyond acute care qualifiers to be recovery. How did you do it? Fire is out? Successful drug avoidance, freedom, liberation.

Tristan McClure-Begley responded to the challenge about animal models as filling in gaps in understanding of recovery science. He noted as operational definitions of desired endpoints change that fundamental science isolates variables by design. He noted all models are wrong but they are still needed. We do need to invest in the development and validation of different contextual models and also look at genetic variability. Is it true that animal models and pharmacology are different than human models, yes, but we also have to isolate characteristics to understand mechanisms. For example, what is the difference in tolerance vs. self-administering vs. the alternative. Measurement problems are not necessarily construct validity problems. More complicated when we are talking about ecological perspective. Getting to the place where a cluster of characteristics with desired outcomes takes a long time. What we need to first get to and address is a measurement problem. We need good construct validity to improve studies of observable features.

3. ***This meeting is about pushing the boundaries of the field of addiction recovery science. With this framing in mind, what do you see as the most critical areas in need of further research?***

Noel Vest noted that we need to focus on people who we don't study—there's where the gold will be, conducting research outside of the box and not in the usual place and spaces. We may find invisible recovery pathways.

Martha Tillson said we need to think back to how people in recovery sort themselves, and what is not contained in those buckets. Recovery can happen in lots of places and lots of different ways. Need the voices of people not studied, those taking non-traditional paths. Listening to them can provide new ideas and new services and interventions.

John Kelly noted it is important to think about belonging and becoming; hope and optimism are also important. Role models are important and motivating; we need to know more about that process. We also need to know more about long-term trajectories—like people in long-term recovery who relapse. What happens at this stage and what do we do with these individuals? Right now, health care doesn't know how to manage risk and resilience and maintenance. The same treatments for those who are in long term recovery or different types of interventions? How do we support long-term resilience and recalibration. Also need to know more about young people. We need to better engage these folks.

Katie Witkiewitz offered that we can learn a lot from existing data sets and looking at different outcomes. We should go back to studies that looked at abstinence and then look at reduced use or other outcomes. Environment and social factors have largely been ignored as we have targeted just the individual and not understanding the ecology. Zip code level data can be used to gain a better understanding of whether risk factors are more or less predictive in certain environments. The environment can amplify or dampen individual risk factors. If we can understand those larger factors, we can intervene at different levels. Noel Vest also offered that sometimes the environment is the intervention.

Tristan McClure-Begley reiterated that we need better measures. What are we measuring and in what context? Across lab to clinical paradigms. We need certain conceptual understandings then measurement will evolve. Need more granular development consideration and then how measurement follows. In the lab we can go way further down to embryonic cells and patterning of CNS. Need for longitudinal studies with endpoints other than abstinence. Cancer analogy for "cure" is important but the way we got to the 5-year definition of cancer being cured took a lot of science. Started with successful surgeries, then to get to "cure" it took 30 years to observe a flattening of the risk profile. If we are interested in supporting assertions for alternative endpoints, then we need that degree of study and populations to study over long periods of time. This research requires large populations and an extended time period.

Audience Q&A

a. Is it useful to take different approaches to defining recovery…say for clinical versus recovery support services or different populations?

Yes, also, we don't need to re-invent the wheel. Lots of definitions out there and we do have some standard language now that we can use now.

b. Is it helpful to think about recovery as a noun versus a verb (i.e., an endpoint versus a process)? Is this way of thinking regarding measurement?

Yes, recovery is a process. Perhaps conceptualizing 5 or 6 domains that add up to recovery that one could measure and separately what domains drive the process.

c. What about non-abstinence outcomes? What do we measure?

We can move away from consumption and look at the problems that are caused by those problems and the resolution of those problems. Can basic science help with phenotypes about which type of recovery works best? We should think about life taking the place of the substance. We should also think about when people reduce, can they sustain? Would be great to identify phenotypes to know how to best help individuals have the best possible outcomes with different recovery pathways.

d. We also need to think about cultivating the recovery science pipeline, how are we cultivating the workforce for recovery science? Who is in training, grad school, etc.

e. Is part of the problem the focus on causal thinking within two constructs given how complex recovery is?

Yes, that has always been the problem. Addiction and recovery are complex (not A causing B) but multivariable, many people and settings and environments influence recovery. Some methods exist, but hard to replicate when you have an N=1. Methods have always been a challenge. Machine learning models and generative AI may help with this. We are getting closer with complex systems approaches, time series, group iterative modeling, but methods are still lagging behind.

f. Abstinence versus Recovery—How do we set a bar that is clinically meaningful but not impossible?

A lot of the research has focused on individuals with severe SUD. Muddies the water when trying to understand those with less severe SUD. We also need to think about public health and public safety; different stakeholders prioritize different outcomes. For example, Congress cares about public safety, unemployment/economic burden, ED visits, overdose, medical expenditures. Are you helping people preventing infectious disease, avoiding overdose, avoiding high medical costs, avoiding unemployment and use of public services à need to document that society is safer, healthier, economic security, living in community, working, happier. These metrics should be included in our science. Also, these outcomes are not mutually exclusive. The discussion of this question ended with the question: Can people define their own endpoints? For example, asking individuals what would be a meaningful goal or definition of recovery for you in xx time from now? Have they improved in what they would have defined? This definition may not be consistent across studies, but meaningful to those in recovery.

Session 2. ***A Dynamic View of Recovery Across Life Stage & Recovery Phase***

Lead: Sean Lynch, PhD, LCSW, Program Officer, NIDA
Panel: Sandra Brown, PhD, University of California, San Diego
Mike McCart, PhD, Oregon Social Learning Center
Brenda Curtis, PhD, Chief of the Technology and Translational Research Section/Unit within the Intramural Research Program, NIDA
Hendrée Jones, PhD, University of North Carolina
Joey Supina, Co-Founder & Exec. Director Sandusky Artisans Recovery Center

Core Discussion Topics

1. ***Recovery pathways are not the same over time and across life stages and co-occurring conditions. What are the different recovery pathways?***

Sandra Brown explained that there are 3 common pathways for adolescents and emerging adults:
(1) Strong commitment to 12-step programs in accessible locations, if and when accompanied by family support and school/community-based activity; (2) Better reintegration into families that have fewer persons with addiction problems, increase family rituals and recreational activities, and build a strong youth support network; (3) Individuation from family, which is more common among youth with families in which parents have SUD and other mental health problems, wherein youth become really engrossed or connected to some type of activity (e.g., school or sport) where they can be of value, remain in safe environments, and make it more likely to continue their substance abstinence and remain safe.

Mike McCart described an intertwined approach that helps people overcome a range of problems concurrently (e.g., SUD, PTSD, suicidal behavior, other co-occurring problems), one that moves away from a diagnoses- or substance-defined recovery and toward thinking about people as “whole people”. He noted that youth often shy away from diagnostic and other medical terminology. When the main focus is on designing treatment plans to treat a diagnosis, we lose the whole person and it becomes hard to treat any one domain in isolation from the others. In contrast, an integrated approach treats all these domains concurrently and treats people as whole people. This better aligns with how youth enter treatment, in that they’re entering with a desire to feel better and achieve certain goals and work toward certain values or aspirations. Clinically, he’s found this is the best place to start, by addressing the roadblocks to those goals rather than using the term recovery pathway; we can think of it as charting a goal or value-driven pathway.

Hendrée Jones suggested that there are no specific doors to recovery and that we need to expand how we think of recovery. We still need to change the stigma that taking medication somehow means you’re not in recovery. Also, half of the women she sees come in pregnant and others have parenting responsibilities; they are scared to come in for treatment and have rightful fear becase they’ve been treated horribly. It’s a major

issue, having an illegal behavior [SU] and having a child, and women are therefore scared to come deliver a child in a safe healthcare facility. As a system, we are creating barriers to treatment and recovery processes; however they come to us, we want to start with what their life goals are; what brings them in the door will likely keep them there if we focus on that. We can all think about our sense recovery, what is our one word for recovery—in her data, it's hope and resilience. From the late 80s to today, 50% of patients come in with a severe mood disorder, and she hasn't met a woman yet who hasn't experienced trauma; their clinic treats trauma as if everyone has it, asking patients to look at what they need to do to organize their nervous systems and to thrive.

Joey Supina stated that he started his center in 1996, and since then over 17,000 persos have come through. Currently a high school uses their center, and students get to graduate from there; they also reach out to their local juvenile justice site. They treat the person as a whole person, try to instill in the person a healthy way of life, ask them to achieve as best as possible wellness for themselves, and want each person to achieve a self-directed life and reach their own potentiality. He himself came into recovery at 26 yo and he's 78 yo now; when asked what he wanted out of recovery, he said, "I want to be 27 yo". The way he keeps the gift of recovery he's received is to give it away. The center is a peer-based recovery center. He's an artist, the center is open 7 days a week, and they are a nexus for stakeholders. If he were to climb Mount Everest, he'd want to go with someone who's been up there many times. They are a trauma-informed center and they have NAMI there. If someone had said to him at the start that in 52 years you're going to be speaking at this conference, he'd have laughed. His experience lets him explain to other people that anything is possible with sobriety and being in recovery. He tells people two things: If you're going to take a chance, you're going to win, or you're going to learn—and if you're drinking and using drugs, you're not going to learn; and, give yourself the opportunity to become the person you want to become.

Brenda Curtis reported that she started in St. Louis as a drug use counselor in a 12-step treatment center. They didn't have a lot of treatment in this area, it was mainly a peer-support type of place that she gladly supported. She develops tools to help people where they are and respects that there are different pathways to recovery. What she enjoys about digital tools is that they can be personalized to how a person defines recovery to them. They can also be very passive with how they collect data instead of asking constantly "Are you craving?" Digitally collected data can help the person, their provider, peers, etc. She endorses the idea of using personalized methods and definitions and giving people autonomy.

2. *What are main research gaps and opportunities to understand neuroplasticity and the brain, and could passive digital biomarkers serve as a scalable marker for biomarkers?*

Brenda Curtis indicated that it's hard to compare these two mechanisms, a lot of time we are comparing them in the context of saving money. Neuroplasticity and imaging have their place, but when we're trying to figure out what's happening in a person's day

and how people are dealing with distress, discrimination, and stress—smartphone and passive data collection captures in real-time as people are living their life, and we can use that information to fill in the gaps between office visits, etc. We ask people why they used drugs and when, and we don't have to rely on that anymore, we can do it in the moment. Most people have a phone or a wearable that is an accessible tool, which can allow for equity. For example: where are the biggest changes between adolescent early-stage versus long-term recovery?

Sandra Brown agreed with Dr. Curtis. Personal characteristics are going to influence the recovery process. We're in an exciting time of neuro-recovery, and many studies focus on neuroimaging; hers do, and ABCD does. They find cognitive improvements, but it's very hard to measure with any type of precision if the brain is improving, or are we learning to compensate for the challenges that substances have created for us. For example, in the ENCANTA study of mid-adolescence to mid-20s, with participants typically co-using cannabis and alcohol, they tracked very precisely the transition from multiple binges per month to less than once per month (mean = 5 per year). They found that the rate at which the brain develops, both in terms of white matter and grey matter and the neural networks, is remarkably improved. What would be normal for others in their age range without the challenges the brain has experienced with substances, the rate of change becomes normalized within one year; there's a real recovery in terms of how the brain was developing. This doesn't mean that you'd be up to what you would be doing if you never used substances, but the brain has regenerated brain cells and created connections; they learn and remember more efficiently, sleep and affect are better, and all are associated with changes that we can now measure through neuroimaging (both functional and structural DTI).

Brenda Curtis stated that they are also picking up these things on the smart phone: trauma, affect, craving, location, language that people are putting into their smartphone or putting online, shaking the phone or walking distances, and being able to combine these different modalities.

Hendrée Jones added that for perimenopausal, menopausal, and postmenopausal women, there is a beautiful opportunity to apply these tools to women who have brain fog, sleep problems, and hormonal changes creating vulnerability or resilience around substance use problems. Also, the "and" is important when examining multimodal data.

3. *What recovery support services and interventions are required to support all stages of life (youth, perimenopausal, older people, etc.)?*

Joey Supina described that persons travel through all stages of life at their center, and looking at women with pregnancy and postpartum is an understudied population. What he found to be most effective is to have someone with similar background or experience help someone trying to achieve their recovery. In 12-step programs they call it a sponsor. In their program, they call it a peer support mentor, which is similar but quite different, helping people live a self-directed life and reach their full potential. He doesn't expect someone to do something that's physically, mentally, or psychologically

impossible for them to do. At 26 yo he asked a counselor “Did you destroy any of your brain cells?”, and the counselor replied, “Oh yeah”. But the good news is that you gain wisdom, the wisdom of someone in recovery who is sober and clean for 3, 4, 5 years is a remarkable companion for someone who is just walking in the door. He is also so glad that all this talk today is happening because back in 1974 he doesn’t believe this would have occurred, it was really anonymous.

Mike McCart lamented that recovery services for 12-17 yo are severely lacking. He would love more research on recovery high schools, learn how they work and how they’re helpful. Peer support models for teenagers show promise, especially knowing how teens respond to their peers. We also need mor research on emerging adolescence to emerging adulthood, and also leverage points across community, family, etc. He helps people connect with their community; there are a lot of opportunities for teens especially when engaged in schools: theater, sports, robotics camps. But when you move into your early 20s a lot of those opportunities go away. You can get some of this through employment, but it’s tough if they’re not employed. When people are stigmatized and haven’t transitioned to independence, how can we reduce stigma and bolster resources for emerging adults?

Hendrée Jones stated that she appreciates John Kelly’s comment about once you’ve gotten through that acute crisis, that’s where the rubber hits the road with recovery. With her women, connection is very important. They study pregnancy and then if they’re lucky 1-year post-partum, but there’s a gap in what happens after year 1; we need up to five years and early childhood. There’s a huge disservice to men who use substances and have young children. Regarding family recovery, the family is a unique relationship in and of itself, we should have a research agenda about families, ask questions and get answers. We need a family recovery scale to take it to the next level, it’s truly a family illness and affects all the people around them. In her research she feminized the family/social recovery scale; women added items and took items away, and she created an individual recovery scale and had them define success. We need to look at gendered social recovery capital scales.

Brenda Curtis wondered whether we can match the type of support with which the person does well, as compared to the support their peers are receiving. We can look at environment (social, interpersonal, etc.), look at how people respond to those environments and triggers. We need to assess not only the females, but also men. They looked at men’s language of social support systems, and it was predictive of how they were going to do at 90 days. Also, are there things in their family and community that we can look at with digital tools that can help us predict how people will do. Again, multimodal data are needed; the ABCD dataset is doing some great work longitudinally in this area.

Sandra Brown reflected on the heterogeneity of people that we’re interested in helping. To be successful in the future, we need to embrace heterogeneity. We need to look at individual, family, biogenetic factors, what activities people are engaged in. More comprehensive studies will allow us to develop phenotypes that are clinically informed

and can help us determine what is most helpful to the person at this stage of life and given these life circumstances. An advantage we have is that we have the ABCD and INCANTA studies to ask clinically relevant questions that are critical. I also want to echo something that John and Katie mentioned, our outcomes are not just substance use, they're how recovery improves the quality of life for people and the financial impact for society as a whole, and the success of recovery in relation to those things, in our research and politically.

Audience Q&A

a. I ask people what they're interested in for outcomes, what is important to you, and then I think about writing a grant and imagine that reviewers are not going to be super interested in that. How can we operationalize that to get funded?

We (Tisha Wiley and Sean Lynch) were talking about this during the break. Think of multimodal measurement and say we're going to measure all the traditional outcomes in half the sample, and we're going to measure self-defined outcomes and interview them, and benchmark it with more established measure. We can ask these questions alongside what we already measure.

b. I've heard that Gen-Z may reject the term "recovery" he's heard the term "discovery" instead, what are people thinking?

I don't use the term recovery at all, youth may not even think of their situation as a medical problem, they focus on what they want to work on….Youth use the term wellness, or the journey of wellness; they sometimes try not to even use the term substance use. I ask, are you interested in approaching your problems in a different way? That can be helpful language to avoid scaring people away.

c. Regarding longitudinal studies, it's so difficult to do studies across the lifespan when R01 is a 5-year study. Where do we apply—is it NIDA, or NIA who's interested in doing a cohort study? How do we enroll a group of people when they're 16 yo and follow them until they're 80? We're not going to know if they're in recovery in the first couple of years, we likely won't know if they're in recovery until their 20s or 30s. How do we ask these questions when you're hoping for research renewals?

Talk to the NIDA Prevention and Epidemiological Research branches Amy Goldstein because they fund cohort research longitudinally…We may be able to take advantage of the open science model, e.g., ABCD data is accessible, and there are more questions that people can ask than they had when designing their specific aims. Having these open data sets, we can ask questions or refine them to get at how different people move through recovery to look at developmental questions…Your digital trace stays online forever, e.g., social media presence, so you can collect all that information and text messages as datapoints that were collected in real-time. The All of Us study and ABCD mingle or combine their data with other sources like the Gallup Poll to integrate individual and community-level factors. You can do a local study and can use some of

the open data to complement…I'm going to take your greatest liability and turn it into your greatest asset. There's a whole avenue of need for youth in recovery peer support, they are part of their solution. They're part of the high school in their center…Some issues that may arise are that the definitions or concepts of certain cohorts may no longer apply to future cohorts. I discourage us from thinking about needing a new cohort study that we'll follow over 30 years. Instead, identify like-minded folks and think about what is possible. National Addiction Treatment: people are funding this as their own research to track where people go. What is possible, what are the questions beyond a traditional cohort study, how can we combine data sources?

d. I want to hear more about what was added or deleted for gendered recovery capital.

Am I being a good mom, where are they getting social support, what does employment look like—maybe it's not full-time; childcare, are they getting resources from the community childcare vouchers or WIC checks, things like this they wanted to add.

Closing Comments

Michael McCart: Heterogeneity in recovery trajectories; funding language with personalized outcomes

Hendrée Jones: Recovery capital is more empowering than deficit-based, every single women identifies as being a mother, they always start with gratitude and it starts with the connection with their children, mothers, friends, the cohesion/belonging. I put my arm around you and feel like I belong.

Brenda Curtis: How to ensure that people in the community trust the digital tools we build and that we are trustworthy. As asking people to use digital technology to ensure that we aren't stigmatizing and increasing isolation from society. We want people to be part of a social support system and don't want people to rely too much on these digital tools.

Joey Supina: Taking away a sense of deep hope that we are giving people a purpose in life, we are enabling ourselves to become the best person we can become. Just becoming oneself. Know thyself. In my personal journey, in my stumbling, it allowed me to be open, and my community is my tribe that I belong to. All of us have a purpose, and if we give people a purpose we have done our job.

Sandra Brown: The level of precision that people are talking about: life goals, values, family. We need to use every measure we possibly can to ensure that they're incorporated in our studies, because that tells us how to create the optimal behavioral phenotypes to allow people to get the help they need. We are missing all the personal efforts that people are engaging in to modify their behavior before formal treatment. Get early indicators of personal efforts to see what helps and what is perceived as helpful.

Session 3. *Measuring Recovery as a Dynamic Process: Challenges & Opportunities*

Lead: Jordan Jurinsky, PhD, Tufts University
Panel: J. Michael (Mike) Wilkerson, PhD, UTHealth Houston
Bettina Hoeppner, PhD, Massachusetts General Hospital
Sarah Zemore, PhD, Alcohol Research Group
Michael Milham, MD, PhD, Child Mind Institute
Corrie Vilsaint, PhD (previously at Harvard Medical School)

Session Goal: Recovery is increasingly understood as a dynamic, multidimensional process that unfolds differently across individuals, pathways, developmental stages, and contexts. This discussion will consider both the measures we use and the broader conceptual and methodological questions that shape recovery science, including how recovery should be defined, how change should be captured over time, and which research designs and measurement approaches are needed to better understand recovery as it unfolds. Rather than reaching consensus on every issue, we hope the discussion identifies major opportunities, unresolved questions, and priorities that can help guide the next generation of recovery research.

Core Discussion Topics

1. ***When we describe recovery as a dynamic process, what does that require us to think about differently when studying and measuring recovery?***

Michael Milham: We need digital therapeutics; measuring in minutes, hours, and weeks could give us more of a complete picture. We can't fully understand recovery dynamics without understanding what is happening between sessions and with greater frequency.

Bettina Hoeppner: We need to assess things that happen every day and affect long-term recovery outcomes. We can't assume that what happens cross-sectionally is happening longitudinally.

Corrie Vilsaint: People may feel worse for a while; recovery could take a year or more. Recovery is a non-linear process and challenges our statistical models, so we need to think about embracing quadratic equations, not just linear equations.

Mike Wilkerson: We need to match the measure with the phase. One of my projects is a snapshot in time, and we used what we thought were the best measures, but we should have done things differently and we'll do that in the next project. I'm thinking about how I can better evaluate the interventions themselves instead of just focusing on the client: what are the mechanisms that are the most modifiable.

2. ***What should we mean by "recovery" for research purposes, and should that definition vary depending on the purpose (e.g., research, clinical care, service evaluation, policy)?***

Sarah Zemore: NIAAA has defined AUD recovery as AUD remission and absence of high-risk drinking, and used timed cut-points to differentiate early, sustained, and stable; NIAAA suggests that recovery is often marked by other psychosocial changes but doesn't incorporate those into their recovery definition. There is good reason for the SUD field to follow suit. Our main targets for intervention should be SUD remission and absence of risky substance use because addressing these problems is what we as a field are primarily charged with. We should also consider labeling this SUD resolution rather than recovery, because about 50% of people who have a resolved a problem with alcohol or drugs do not consider themselves to be in recovery and this term may be unclear or problematic for them. Why shouldn't we operationalize recovery as a universal construct? Because there isn't any good basis for doing so. We can't rely on definitions from people with lived experience because they just don't agree. In a prior study, almost 10,000 people who had successfully resolved an alcohol or drug problem defined recovery were asked about whether 35 recovery elements were part of their personal definitions of recovery. Analyses by our team found that just 4 elements were widely endorsed across 30 different subgroups defined by demographics, clinical characteristics, and help-seeking history. But the agreement was not total: Only 80% of people or more in these subgroups endorsed the 4 items. Also, certain subgroups defined recovery quite differently, including people in independent and non-abstinent recovery, people with mild/moderate severity, and people prescribed medications for OUD. So clearly recovery means different things to different people. We also can't use empirical data to define recovery because factors that are important to maintaining SUD remission will vary widely across individuals and service context. Recovery looks different for different people at different times, it isn't one thing. So we should stay away from saying these things are recovery and these things aren't. We don't want to say, sure you're in remission, but you're not in recovery because you're not grateful, or you don't have social support. Also, if we do develop a broad definition of recovery we could end up with more intrusive interventions and interventions that focus on things that aren't relevant to SUD remission for a particular person or a group of people, so they may be less effective. We should listen to the perspectives of people with lived experience and measure what they think is important, but we can measure those things as supportive or protective factors for substance use resolution rather than considering them as outcomes in themselves.

Bettina Hoeppner: We do have a definition of recovery that many people believe in. SAMHSA and NIDA agree on this: It is a process of change by which individuals improve their health and live self-directed lives. This was developed from a collaborative effort spanning many years, and the definition does not mention substance use. We would be going backwards not to have this definition. Just because we don't know how to measure recovery doesn't mean er shouldn't measure it.The WHO definition was originally the absence of disease and it was later revised. Remission is the absence of symptoms, but we should be thinking of thriving and flourishing. When patients come into treatment they don't say I want to stop my substance use, they say I want to feel better and improve my life, and it's important to stay true to that mission. Measures that are helpful include the BARC 10 and the SURE (Substance Use Recovery Evaluator). The SURE was made in collaboration with people with lived experience. It has 21 items

that can be used to describe differences in people and which areas improve. RCC directors say they like the SURE and BARC 10. They say the SURE is sensitive to change over time and it's being used in recovery data platforms, in RCCs, and in RCTs.

3. ***How should we distinguish recovery itself from the factors that support or reflect recovery (e.g., recovery capital, social support, quality of life, treatment, recovery support services)?***

Bettina Hoeppner: We have a measure Corrie Vilsaint was involved in developing, the Brief Assessment of Recovery Capital (BARC-10). We also have the Substance Use Recovery Evaluator (SURE) by Neale et al. Collaboration with clinicians and people with lived experience, back and forth on what to include, is a wonderful starting place. The SURE is a 21-item self-report measure that spans coping without substance use, self-care, relationships, material resources, and outlook on life. The SURE has been included in at least 6 RCTs and we are starting to have longitudinal data. It's in 106+ recovery centers. Sensitivity to change over time is important: We need measures that can show improvement over time.

Corrie Vilsaint: I'm being asked now what score we need to ensure better outcomes, but the state of recovery science and the measures are not there yet. We can't use these measures to make decisions in court or for providers to say "this" is success. We don't want to say to a parent, you can't have your kid because you got a score of X on a recovery measure. But this could be the work of our generation. Otherwise, people are going to use these measures and proceed without us. The BARC is starting to have some predictive capability for relapse. Do these measures define if someone is in recovery or not? No. But the goal of research is to measure improvements over time. It's the level of recovery capital at the recovery house that is predictive of outcomes. Weathering the deck to prevent the relapse.

Bettina Hoeppner: You are in recovery when you say you are in recovery. For research, we want to measure improvements over time. It's not to label people, it's to measure changes.

Sarah Zemore: I just want to clarify, it's great and important to understand predictors of substance use resolution and changes over time, but we shouldn't wrap these all up and call them "recovery."

Michael Milham: Narrow measures have a place and broad measures don't allow precision. One caution however regarding a narrow definition of recovery. There are recovery-adjacent risk factors; it may not matter what you call them, but without them, we may never solve the heterogeneity problem. Say I have someone struggling with depression, PTSD, and substance use; if I do not measure depression and PTSD, I won't know if I've addressed the issues that the person is dealing with. It won't be the best service to the research if we go too narrow with the definition.

4. ***Over what time scales should different aspects of recovery change, and what research designs are needed to capture meaningful change while distinguishing it from normal fluctuations?***

Mike Wilkerson: I have experience with community engagement and community partners across TX. We need to think about community burden for community partners. If we could ever coalesce around standard measures for community partners and academia, that could be valuable. Robin Thompson has a paper on recovery housing that captures data from people who are intending to apply or applying but never enroll. We can collect data and understand them, also data from those who are quickly entering and existing services. There's this continuum of care and the metrics need to shift as we go along. A lot of metrics are really good for people in early recovery, but there are ceiling effects and we aren't there yet to say THIS is when that ceiling effect happens and THIS is when we need to shift measures. We should shift to thinking about flourishing and thriving. I was struck by Noel's comment, an important question that we need to resolve around how we want to measure recovery: Do you believe this person has successfully recovered? The answer is not always the same if you ask the person in recovery versus the person who is entering that information. There needs to be conversations across agencies about how to talk about how we define and measure recovery. There's a huge need to minimize the "traditional collection" windows of 3, 6, 12 month assessments—to really identify what we think will change over time and measure it briefly, more frequently, and more objectively.

Michael Milham: I advocate for longitudinal design if you have devices like smartphones or wearables, second millisecond resolutions, active EMA, chat histories, journaling—they are more episodic but still much higher resolution than what we traditionally collect. It's a shift in the model: large-scale longitudinal cohorts, or take this into real world environments. If you see a future where you don't have to run trials in a brick and mortar setting, you can run them nationally with video technology. There are digital solutions: Sometimes there can be failures, and others do it really well with industry but may not think of their detriments. There's the challenge of capturing data in their entirety; it's not trivial to analyze all these data via profiles, clustering; we need some finite level of analysis. It's a huge challenge moving forward that we can step into. Regarding privacy: You're collecting data that could really wreck people's lives. This can become why people don't participate. We need safeguards and give people agency. There's incredible opportunity and we need a much more collaborative approach between what we know works in industry, clinical, and academia. Anything going so fast—it's ready in a year—may blow up. If you see someone struggling in a longitudinal study, what do you do? Some researchers might say they don't want any piece of intervention in their measurements for a longitudinal study. Review committees will constantly harp on these questions, and we need to be open to that.

5. ***How can measurement accommodate multiple recovery pathways, developmental stages, populations, and contexts while still allowing meaningful comparisons across studies?***

Mike Wilkerson: We need to collect measures with the help of social scientists…We need to look at who is showing up, there's a reason why people aren't showing up and we know why. because it wasn't designed for them. We need to figure out how we can collect data from those folks. Also, we should think about how much should the recovery services be tailored. I'd love to have recovery services tailored to non-English speaking, LGBTQ+, etc. housing, but how much tailoring? What can really be tailored? It's a challenge to stipulate: HERE's what it takes to be a certified recovery home. Stepped wedge designs may be useful to help figure out those components. Corrie wrote an article a few years back, and so many community organizations committed themselves to diversity, and there was a lot of energy for about a year in the spaces within which I work, and then it died, and it has nothing to do with current politics, it died before that. How can leadership commit to changes? This moves us into workforce development. Often the funding doesn't allow for it. I was on an HIV planning committee for state of Minnesota, which was designating priority targets based on epidemiological data. The Hmong community came to them to say they needed resources, but there were no data to support that. The state said, you need to get the data to prove that you need services. That was a bone-headed move. We need to collect data on the hidden populations and train the workforce to carry changes through.

Corrie Vilsaint: In terms of how measurement can impact different populations, sometimes "recovery" doesn't resonate with the person in front of us. Some people skip recovery measures for certain target groups. Instead of the item "I'm happy with my recovery journey", we could ask, "To what extent are you happy with your efforts to address your substance use concerns?". We need to be smarter than our tools. I use item response theory sometimes, they call themselves the gold standard in measurement testing and design, it comes from education, and some things may be replicable and others may not. In IRT, there is differential item functioning [DIF] (help account for measurement bias). When you design a survey and you have an item that's showing DIF, you may be asking sensitive information, such that participants may respond differently based on setting (e.g., they may respond differently in ED with authority figures vs. recovery centers with peers); I try to eliminate those items. We should ask: What is your preferred language? And make sure the items are invariant across different languages. 40% of Latinos said they would prefer Spanish if possible, even though they were doing it in English. Doing mean level tests won't tell you if there's bias between groups, you need to do factor analyses. In IRT, you can get a latent score instead of a raw score; when you don't have internal level measurement, you can use scores based on the latent construct that don't depend on internal level measurement.

6. ***What research designs and emerging measurement approaches (e.g., ecological momentary assessment, digital tools, qualitative methods, passive sensing, administrative data, social networks) could complement existing measures to better capture recovery as it unfolds?***

Michael Milham: We have EMA (ecological momentary assessment), which is structured data involving assessments, for example, 2-4 x/day over a period of days. Digital journaling is unstructured data that you can analyze with large language modeling (LLM) and it is an incredible opportunity. It can be guided or unguided. EMA involves assessments at specific times, maybe not at for example 3 a.m., when things may be happening. Digital journaling allows for participants to journal at this time when things are happening. It also allows for intervention or connection to care and support when there are risk signals and when people are reaching out. So you are learning more about people. For example, we are seeing that people with binary pronouns have risk differences. Chat histories will allow us to learn so much about the person. There are also different types of data collection that are emerging. With wearables, such as glasses, you can get so much information even about families and others. There are exciting opportunities and a lot of risks.

7. ***What advances in measurement infrastructure (e.g., common data elements, validation studies, harmonized datasets, pragmatic measures, longitudinal cohorts) would most accelerate recovery science over the next decade?***

Corrie Vilsaint: When I, John Kelly, and others worked to update the PhenX toolkit, we decided that some of the important areas to cover included the importance of objective measures, acute withdrawal symptoms. We recommended SEL-90 and craving; BARC-10; goals for substance use; social relationships; treatment recovery support utilization including medication and satisfaction. They were looking for a measure to evaluate all services, so we recommended one. We need to figure out who needs what in their recovery, how, and for what duration. I'm censored all the time, sometimes it's not even okay to put a black box over health disparity words because of the executive order. It's the emergence of a Jim Crow area. It's not designating something low priority, it's censorship, and we aren't even allowed to mention it in academia. Once I included reference to a John Kelly and Nora Volkow article in the New England Journal of Medicine in a presentation, but it mentioned harm reduction—that brief mention got the whole review got kicked out.

Sarah Zemore: I would call for longitudinal studies tracking SUD remission and substance use over time for long periods of time and until risk of remission after intervention plateaus, so that might be many years depending on substance. You might use stratified longitudinal designs to do that efficiently. In those studies we will need to employ common measures of SUD remission and low-risk substance use, and we will need to define low-risk SU for each substance—it's not clear what that is, so this will require research linking substance levels to SUD remission over time. If we define SUD resolution consistently in this way we can collapse across substance of choice in our work. I would also specifically call for measures of the core recovery elements that were commonly endorsed in the study on recovery definitions I described earlier: Recovery as a gradual process of change and development, being honest with oneself, taking responsibility for one's actions, and balanced reactions to life's ups and downs. These are hard to measure and I would like to see more work on that. Another specific measure of value would be substance use services "attractability," measuring how good

is a service at getting more people in. Perhaps there could be community-level measures of that. SUD services uptake remains extremely low and evaluating attraction should be part of evaluating recovery services. There could be a whole conference on maximizing recovery support services uptake.

Bettina Hoeppner: We need to consider objective and subjective measurement; perhaps there's a single item for recovery, and it's personally tailored. If we do objective measurement, it can get in the way because there are barriers to collecting saliva or other things. To be inclusive, we need to be comfortable with some subjective data. Not everyone needs to show up in person for services, there are a lot of apps out there, we need to give people support wherever and however they are, even if they're not in treatment.

Michael Milham: Objective measures always have appeal, and I always cautions against tossing out subjective measures, for example, pleasant feelings and energy level. In high-risk journaling almost all report high degree of euphoria. It's hard to assess for the middle ground, and for emerging issues; objective measures could help. Regarding subjective measurement, we need to do better because we hit people with these long lists; but, we want to give people measures that they'll complete. We need to find a balance there. Common data elements and harmonization are crucial in any field. Open science models were a game changer for neuroimaging, and consortiums started sharing incredible amounts of data. To drive the field faster, you need to use open models with proper controls. It's the willingness to be open that's the bigger challenge.

Audience Q&A

I want everyone to tell me what measures to use. For Corrie, her comments take courage to speak up, and the harms caused by not being allowed to talk about race and ethnicity is inspiring. Corrie and Sarah's comments get me thinking about the difference between measuring recovery within person and between persons. Co-occurring psychiatric disorders are prevalent, and 40-60% with SUD will meet criteria for a psychiatric disorder. How do we account for people experiencing challenges in other domains that may or may not be related to substance use?...[Sarah] Yes, we need standardized measures, for example remission (you're not using at a risky level), maybe it's standardized wellness, or we ask more about people's goals…[Michael M] Inter-individual differences are much more difficult to measure. In the digital space there's a high volume of data. As a psychiatrist, I'm often looking for changes within a person. If you have a reasonable baseline, you have an incredibly good approach to assess changes within that person; you absolutely see within person changes more quickly…[Corrie] Regarding co-morbidity, a couple of years ago Dr. Kelly and I and folks in mental health—maybe a SAMHSA meeting—argued that recovery measures accommodate both. People in mental health said they feel like they don't achieve recovery, they more manage their symptoms, but that there's more of a chance for recovery from SUD…[Tisha] People can use the PhenX toolkit…I am using digital footprints that predict data…[Michael M] With passive digital footprints, you'll lose your participants if you give these huge measures…I heard him talk about, Are we capturing

the within person variance? There are risks when people are in long-term recovery, such as weathering or grafted resilience. The cancer analogy falls apart because your cancer doesn't come back when you go through a breakup, but you might be at risk for resuming substance use…[Michael M] We may be talking more about resilience rather than cure from SUD, because if you're actually cured you're not at heightened risk again due to a breakup; but if you are at risk, you may be looking at risk factors and volatility or could have a profile that may say this person will resume use…We need sensitive measurement approaches that have both unstructured and structured options.

Session 4. ***Building Recovery Capital: Taking a Whole Person Approach to Addiction Recovery***

Lead: Peter Murray, PhD, Program Director, National Center for Complementary and Integrative Health, NCCIH (virtual)
Panel: Peter R. Chai, MD, Harvard University
Selena Neptune-Bear, MSW, Wabanaki Public Health (virtual)
Sean Young, PhD, University of California, Irvine
Michelle Debbink, MD, PhD, University of Utah School of Medicine/ELEVATE Maternal Health Center of Excellence
Adam Gordon, MD, MPH, University of Utah School of Medicine/ELEVATE Maternal Health Center of Excellence
Valerie Diane Bradley, MPH, MS, University of Maryland

This session examined recovery capital through a whole-person framework, including personal, social, community, and cultural resources; person-defined goals; culturally grounded healing; longitudinal care; practical and digital supports; and barriers to accessing these supports. The notes below combine three contemporaneous records and retain speaker-specific contributions where reasonably identifiable.

Core Discussion Topics

1. *What does whole-person health mean for addiction recovery, and how can it be operationalized?*

The discussion opened with the proposition that recovery cannot be reduced to remission or a single point in time. Whole-person approaches account for the intersection of substance use with mental health, pain, trauma, social relationships, communities, culture, and life circumstances. Recovery is a process occurring across time, and its components and supports may need to change as people's lives change. Participants asked how this broader concept could be made sufficiently concrete to evaluate in recovery research.

Selena Neptune-Bear emphasized that, for Indigenous communities, healing is more than stopping substance use. It encompasses mind, body, spirit, community, cultural experiences, and the events that have shaped a person's life. Recovery is not something that happens in isolation; it involves reconnecting with community, oneself, and sources of meaning and purpose. Questions about what healing means to a person may be more useful than focusing solely on how to stop using substances.

Sean Young described the whole-person perspective as extending beyond biomedical dimensions to psychological, social, and contextual influences. A complete understanding of a person requires attention to the contexts in which health behaviors and recovery unfold.

Michelle Debbink asked how the whole person is situated in the whole community and what prevents whole-person care from working in practice. Racism, fragmented health-care systems, historical harms, and other structural forces can separate people from resources required for health and healing. It is not sufficient simply to offer services without considering those forces.

Adam Gordon described four interrelated dimensions of recovery capital: personal capital (including knowledge and skills), social capital (friends and relationships), community capital (community connections and resources), and cultural capital (identity, culture, and belonging). Interruptions in community or cultural connections can have particularly harmful effects for veterans, Indigenous people, unhoused people, and others whose recovery may depend on these connections. Substance use reduction is not necessarily a person's primary goal; people may want to restore aspects of their former lives or improve their lives by pursuing new goals. Such goals require continuity of care, not just brief clinical encounters.

Valerie Bradley emphasized that individual and community values can drive recovery-related change. People with lived experience should help define priorities from the beginning, including through formative qualitative work. She described qualitative research among people receiving methadone treatment in which success meant a sense of accomplishment, not simply stopping use. Themes included improvements in physical and mental health; productivity, employment, and meaningful activities; relationships and social functioning; treatment engagement; and changes in substance use. Taken together, the panel underscored that recovery outcomes need to reflect what participants regard as meaningful progress.

2. *What interventions and approaches can build recovery capital?*

Valerie Bradley described a peer-delivered behavioral activation intervention within a methadone treatment setting. Certified peer recovery support specialists worked alongside patients to identify practical barriers to treatment goals, such as transportation, social supports, and health concerns. Peers then helped patients schedule personally meaningful and rewarding activities in everyday life. The peer relationship can differ from traditional provider–patient dynamics because participants help set their own activities and goals. Preliminary findings were described as promising for treatment engagement, retention, and progress toward goals. Bradley also discussed the recovery potential of environmental supports, including green spaces and time outdoors.

One intervention-oriented example in the discussion began with a participant's observation that they needed tools to help with recovery rather than additional interventions or treatment. Music-based approaches were discussed as tools for managing pain and anxiety, including among people living with HIV and co-occurring pain, and as approaches that could be used beyond a clinic appointment. Another example involved smartphone-based digital phenotyping to understand when a person might need support, such as around medication adherence or other daily needs, with the aim of offering tools matched to individuals across different phases of recovery.

Sean Young described a multiyear study using trained peer leaders in an online community to increase interest in medications for opioid use disorder (MOUD) and facilitate requests for information and linkage to a care navigator. Approximately 56% of participants had never previously tried MOUD. The approach aimed to reach people outside clinics and during the many hours in a week when they are not receiving formal care. The intervention improved information seeking and navigator linkage, alongside persistent systemic barriers to obtaining medication. It also distinguished between an absence of increased MOUD receipt at three months and evidence of increased receipt at a later follow-up. Young discussed potential uses of AI alongside telemedicine, ethically designed mobility/GPS research in people with opioid use disorder and chronic pain, and music-based approaches that teach attentive listening to improvisational music for pain and anxiety. These examples emphasized both outreach to people not engaged in services and practical support across everyday environments.

Selena Neptune-Bear described a photovoice project with Wabanaki community members that invited people to take and discuss photographs representing experiences of pain. Peer support helped participants tell stories behind the photographs. Intergenerational, community, spiritual, and emotional pain emerged prominently, rather than only physical pain. The photographs created a way to express experiences that can be difficult to capture using standard pain scales. The process of sharing and discussing images could itself be healing and offered an alternative to research practices that have historically harmed Indigenous communities.

Michelle Debbink discussed a culturally engaged, integrated perinatal recovery-care approach involving Indigenous communities. Group care, community and peer participation, and cultural practices were important alongside medical and mental-health services. Examples included culturally grounded ceremonies and supports together with medications and other clinical services. Group-based perinatal care may fit participants' cultural values better than exclusively individual appointments and can restore community connections while supporting health.

Adam Gordon highlighted the mismatch between the long course of recovery and short, episodic treatment encounters. Recovery and whole-person health may develop over many years, while formal care may last only weeks or months. He argued for long-term relationships with health-care professionals, integrated behavioral and primary care, and a reliable home for coordination over time rather than a fragmented succession of isolated treatment episodes.

3. *What barriers prevent the implementation of whole-person approaches?*

Adam Gordon emphasized that services cannot succeed without meaningful engagement with communities and efforts to reduce stigma. Building trust and developing community partnerships can take years. Health-care systems should recognize the cultural and social environments in which care takes place rather than assuming the intervention alone will be sufficient.

Michelle Debbink argued that responsibility for rebuilding trust rests with researchers and health-care institutions, particularly where those institutions have contributed to historical harm. Community-engaged approaches should address structural barriers rather than shifting responsibility onto people who have been poorly served by existing systems.

Sean Young challenged the assumption that building a clinic, mobile service, or other intervention site means people will use it. Technology and outreach methods familiar from commercial marketing may help inform people about services, including people not currently connected to health care. A key distinction is between making care available and actually reaching people who might benefit.

The panel also asked how to measure whole-person outcomes when interventions address environments, food insecurity, transportation, housing, community supports, or other social determinants rather than only substance use. Without meaningful measurement of these effects and their costs, programs may struggle to demonstrate value or obtain sustainable support and reimbursement. Fragmented systems, underfunding of recovery support services, and the limited time available in routine care were identified as practical impediments.

Valerie Bradley called for a shift from treating patients as passive recipients of services toward recognizing them as collaborators and decision makers in their own care. This would affect the choice of outcomes, design of services, and how recovery progress is assessed.

4. *How can technology and cultural values support whole-person recovery?*

Sean Young described the potential of technology to reach people during the roughly 167 hours per week outside a one-hour treatment encounter (this was initially mentioned by Tisha Wiley in her opening slides), including people who have not sought help and those needing continued support after entering care. He discussed peer-led online communities, telemedicine, and AI-enabled support as possible ways to extend reach without placing every responsibility on clinicians in brief visits. These tools may allow people to access help when a problem arises, not only at scheduled appointments.

The discussion also stressed that technological reach is unequal. Digital tools can lower thresholds for engagement but can worsen disparities when people lack devices, data plans, reliable internet, or familiarity with the technology. Gordon noted that technology should fit what people already use and prefer; a combination of approaches is likely to be more appropriate than any single solution. Bradley described variation across contexts: digitally mediated peer work during COVID was difficult for some urban participants without adequate phone access, whereas people in some rural settings preferred telephone and text-based contact.

Michelle Debbink emphasized data sovereignty, governance, and ethics, especially for communities whose information has historically been taken without meaningful benefit or return. AI and data-intensive methods may be unacceptable to some groups unless the tools are co-developed with intended users and give communities meaningful control over how their data are collected and used. These concerns extend beyond tribal sovereignty to broader questions about extractive research practices.

Sean Young raised the possibility that an additional digital divide will arise between those who learn to use AI tools and those who do not. Teaching people to use AI responsibly could therefore become part of equitable access, while safety, effectiveness, and user preferences remain important.

On social determinants of health, Adam Gordon stressed that lack of housing, transportation, food, or other essential supports can undermine access to care. Researchers and clinicians should document and address such structural barriers rather than attributing disengagement to individual failings. Michell Debbink described how intergenerational trauma, stigmatization, and fear of parent–child separation shape people's willingness and ability to obtain care, particularly in perinatal settings. Whole-person care must change the surrounding landscape of services and trust, not simply add treatment options.

Audience Q&A

Patrick Hibbard asked how whole-person recovery approaches can address criminalization of substance use, homelessness, and institutional stigma. Adam Gordon noted opportunities for research and advocacy related to incarceration and re-entry and encouraged researchers to communicate evidence outside academic journals. The discussion also highlighted narratives and lived experience as ways to influence public understanding and policy. Selena Neptune-Bear cautioned against overprotection in research that prevents people from having their voices heard; culturally grounded peer-led work and storytelling, including with justice-involved populations, can create opportunities for healing and participation.

Julie McCarthy asked about sequencing, combining, or repeating different interventions as people's needs change over time, rather than testing each intervention in isolation. The panel discussed tools, such as music or mind–body strategies, that can remain available and evolve with a person over time; the intensity or "dose" of support may change. Adam Gordon connected this question to better transitions along a continuum of care. Sean Young raised comparative effectiveness and personal preference: showing an intervention works relative to a control condition is not always enough to determine which approach is best for which person. For example, breathing-based interventions may be uncomfortable or painful for some patients. Person-centered selection and deployment of interventions may therefore be useful.

Kevin Wenzel asked about guilt, regret, forgiveness, and reconciliation following experiences during active addiction. Adam Gordon emphasized acknowledging moral injury and trauma and creating a safe space to discuss shame and remorse. Selena

Neptune-Bear described guilt and shame as important themes emerging through photovoice discussions; naming and exploring these experiences can support transformation and hope. Tisha Wiley linked this issue to the psychological distress that may increase during early recovery.

Tisha Wiley also asked how glucagon-like peptide-1 (GLP-1) medications might fit a whole-person approach, potentially serving as an entry point to care or other supports. Panelists considered these medications as one tool rather than a substitute for addressing stigma, trauma, relationships, or social needs. Michell Debbink highlighted the importance of not neglecting longstanding experiences of weight stigma in perinatal and other care. Adam Gordon noted that medication access and affordability are barriers but that medication-related visits could also create opportunities for engagement in broader services. The discussion raised the possibility of linking lower-stigma or more desired health services to additional whole-person care rather than assuming that treatment for a substance use disorder is always the initial reason a person enters the health system.

Ashli Sheidow observed that recovery community centers had not featured prominently in the discussion and should be considered among settings for whole-person care. Bettina Hoeppner asked where people would ideally access these interventions in their communities. Gordon emphasized helping providers and communities identify and coordinate existing resources. Sean Young also noted a need for researchers to engage with technology developers and entrepreneurs to inform the safety and effectiveness of products, while balancing broad access, commercial incentives, and appropriate protections.

Day 1 Wrap. ***Pulse Check – Thoughts on Day 1***

Speaker: Lindsey Ann Martin, PhD, Program Officer, NIDA

Audience: Key Takeaways

Whole person health is already happening in recovery community centers, what can we learn from them?...Where does prevention end and treatment begin, and then where does prevention begin again?...Recovery is about resilience, which is about social connections…We can look to community-based research for answers. There are a lot of data already with recovery housing, data developed by Oxford housing; we can learn from them about the early stages of recovery… Things that work for prevention (e.g., Icelandic Model), this same infrastructure can also support people in recovery. Prevention and recovery services branch could have some connection on RFAs etc. Treatment comes in between, but on the bookends, these could come together… The mental health has similar questions about recovery, can work together with addiction science; mental health also has relevant measures (RAS, recovery questionnaire)…Moving forward, to capitalize on this convening, we should canvas the expertise in this room, share emails, create opportunities for groups to work together on some of this…I'm hearing a lot of blended language around treatment and questions about medications. In NYC, recovery centers do not provide MOUD or counseling, not traditional forms of care. Medications are not considered recovery support, they are treatment; treatment and recovery are distinct. Recovery looks different from treatment in recovery spaces; what we DON'T do is medication. It is yoga and reiki, employment and parenting skills, social support—people are there because they want to be, and they are getting what they need.

Session 5. ***A Dynamic View of Recovery Across Social Contexts Part I: Families & Loved Ones***

Lead: Ashli Sheidow, PhD, Chestnut Health Systems
Panel: Aaron Hogue, PhD, Partnership to End Addiction
Karen Osilla, PhD, Stanford University
Janie Simmons, EdD, NDRI-USA

Overview: This session focused on expanding the focus of treatment and recovery to include families and engaged loved ones. This complex but meaningful work is supported by empirical evidence and ongoing studies. Q and A included questions about the complex nature of the work and measuring outcomes for family systems.

Core Discussion Topics

1. *What does the literature say about family of loved ones in recovery and what is most important in the work?*

Karen Osilla: We know that family are a component of getting people to treatment and recovery. We also know that sometimes family can be helpful, and at other times they can serve as a risk factor. We are also learning about the grief that families experience when their family member is living with SUD and also when they pass away. Community Reinforcement Approach and Family Training (CRAFT) is one effective approach to working with family and loved ones.

Janie Simmons: Romantic partnerships between drug users are rarely recognized in the research. They are often seen as violent, unstable, etc. My findings show that intimate partners have significant impact on each other's drug use. Structural barriers are at play especially for dual using couples.

Aaron Hogue: Began with a big picture level set. The national substance use crisis has created a family crisis. Many families have lost family members to lethal consequences, people using drugs experience shame and guilt, and family members also feel shame and guilt that can hardened into stigma. As a county point to this crisis, families can be major assets. The literature is clear: when service partners work with families, they significantly increase enrollment. Adolescent family therapy has the strongest outcomes even when tested against individually treatment, and both family and couples therapy effective. Involving family members improves outcomes.

2. *What is on the horizon or is next in this field?*

Aaron Hogue: Family member support can help launch recovery on more sustainable path. Seven NIDA studies in a recent cohort have investigating how people are transitioning across systems of care including how to bolster/improve habits, how to encourage SUD members to stay connected to peers, and the importance of a warm home environment. For those who do not enter treatment or the system of care, studies

are also investigating myriad ways to engage using technology to provide family support, recovery coaching, and coping strategies. In sum from a semi-utopic vision of diverse partners within addiction recovery science working collaboratively to drive and combat stigma, link families to the resources they need to be connected partners, disseminate these evidence-based practices for families, and craft service and reimbursement policies and also public health campaigns that increase the availability of family focused recovery activities.

Janie Simmons: New to recovery science but experienced in working with persons actively using substances. Currently funded to look at overcoming structural barriers for couples who are both using substances through a strengths-based approach including recovery capital as an outcome. This work utilizes a co-creation approach with meaningful engagement from stakeholders.

Karen Osilla: Noted the previous mention of the 10% of people with substance use problems that engage in treatment. Karen's work is at Federally Qualified Health Centers, and a lot of patients do not have family support. It is important to consider how we might engage the family at the system level. Broken relationships are hard and take a long time to heal. Things to consider: How do you help get family involvement started during treatment? How do you reduce stigma against MOUD? How do you integrate and measure family involvement? How do you measure differences in family members and system level changes that impact the family and the person in tx/recovery? Another important future direction is more focused science built on grief work with peer support. I am worried about the children of those who have substance using parents or have lost.

Janie Simmons noted that challenges of working with substance using couples who have children and knowing when to engage legal support or when mandatory reporting is required.

Aaron Hogue agreed that there are broken relationships within families, and that clinicians often look at families as part of the problem. Clinicians can feel that in order to align with a client, they need to either agree with client or not go into that "dark room" of family systems. This is a missed opportunity. Family involvement isn't magic dust; it is elbow grease. These evidence-based strategies family engagement strategies aren't perfect, but they can be taught. We don't have a knowledge gap; we have an implementation gap to create family-oriented systems of care.

Karen Osilla: Research on families has focused on romantic partners and parents. Siblings are also important, and research could expand to all types of family members.

Ashli Sheidow trained therapists to do genograms in previous studies, and she is now training therapists to do social networking activities. When doing these activities, adolescents often list a family of choice, and they may not have a lot of people on the page, or they may have several pages. With adolescents, you have to start with who is important to them and not with preconceived notions about who should be on the pages even if they are not positive influences and risk is involved.

Audience Q&A

a. What are your reflections on repairing harms done within a family system and when can these harms not be undone? Also, what do we do when a child has created new and strong bonds with a new caregiver, and a biological parent wants to engage and the child doesn't.

Anger is hard and hard to cope with by yourself. My hope is that we can figure out how to engage families within treatment. Right now, there are barriers as treatment is individually focused. My hope is that by engaging families earlier, this will help with the challenges you brought up…You don't have to be a therapist to do this work. We like to talk about "coming to terms" when thinking about dealing with family relationships. How do I come to terms with things I have done wrong? For all of us, we have come to terms with our family relationships even if our family member never enters a counseling session. This work can catalyze a recovery journey…There are missed opportunities when it comes to recovery science. This process of making amends has been happening for decades in the recovery space…Also, regarding that 7-year-old child mentioned in the first question who does not want to engage with the biological parent. There are ways to have a conversation with this parent in a safe and supportive way, and if you miss that conversation, you have missed a huge opportunity.

b. I am hearing a lot about disenfranchised loss and that the broader family unit that is also in recovery. Can you speak to that?

The blame that comes up related to overdose loss is paralyzing to families. In our peer grief work this is where that work comes in, relating validating and accepting...We encourage linkages to community support so that family members don't do this alone.

c. How can we build these skills in peer support workforce?

Partnership to End Addiction has family peer specialists and training and certification programs. They operate in the way that peer to peer service works. Family members with lived experience supports families. The Engaging Loved Ones work group is planning to do a literature on the state of the science on peer-to-peer family support that would share the work of this emerging workforce…Recovery community Centers (RCCs) can be a venue for family support. PTEA resources can be very helpful and can be disseminated in RCCs...SMART recovery has a family and friends' component. We can also learn from animal models using animals that pair bond and looking at the withdrawal experience. Even with bedding and pair bonded animals who experience pain. The partner animal will experience pain and self-medicate with alcohol. Interesting work can be done in this space.

d. I've been thinking a lot about this intergenerational piece and when a recovering person has people around them who actively use. What about when a person has family people who are in recovery themselves? What are the unique strengths and complications in this scenario?

One audience member shared a story of a community board member who only had one person who would still come and pick her up. It was an uncle, and he was the only one who didn't judge and asked her what she needed. This was important to her…There is evidence in the literature about dyads and when one person is trying to thrive and the other is struggling…Good boundaries make good relationships. What works in recovery for me may not be what works for my family member…When we work with parents with active addiction who are trying to help their teenagers, we let them know that we are not here to change them, but to help them set boundaries that support their child.

e. Recovery capital is seen as an individual aspect. Engaged loved ones are seen as social capital. Are there benefits or drawbacks to expanding recovery capital frameworks to include family systems?

This work with couples is a beautiful hall of mirrors. They are each other's social capital, and there is so much to untangle there…I have wondered about these recovery capital instruments. Is it about a certain number of metrics? Specifically, social capital is an important metric. If we collect more data across different groups can these findings be more generalizable? It will also be important to look at concordance and discordance rates on these and new measures.

f. I see a lot of enthusiasm and potential for CRAFT and other family-based therapies for patients and people in primary care in general. Less than 15% of people seek specialty treatment, so there is a lot of opportunity in primary care. I have concerns about reach, and sustainment of programs after pilot funding runs out. This also brings up questions about scalability. What about patients not who are not engaged in tx? We also have social workers and peer support, but we have little to offer during transitions when they are discharged. Final thing, we often see couples in programs, and there is the issue of patient confidentiality. We know things about the patient's partner in the room and how we handle that is difficult.

RCC and recovery peer support can help bridge the gap for transition times…We need help with the scalability of this work; we need more financial incentives and evidence to get to that.

g. Is it useful to take different approaches to defining recovery…say for clinical versus recovery support services or different populations?

Yes, also, we don't need to re-invent the wheel. Lots of definitions out there and we do have some standard language now that we can use now.

h. Is it helpful to think about recovery as a noun versus a verb (i.e., an endpoint versus a process)? Is this way of thinking regarding measurement?

Yes, recovery is a process. Perhaps conceptualizing 5 or 6 domains that add up to recovery that one could measure and separately what domains drive the process.

i. What about non-abstinence outcomes? What do we measure?

We can move away from consumption and look at the problems that are caused by consumption and the resolution of those problems.

j. Can basic science help with phenotypes about which type of recovery works best?

We should think about life taking the place of the substance. We should also think about when people reduce, can they sustain this reduction. It would be great to identify phenotypes to know how to best help individuals have the best possible outcomes with different recovery pathways…We also need to think about cultivating the recovery science pipeline, how are we cultivating the workforce for recovery science? Who is in training, grad school, etc.

k. Is part of the problem the focus on causal thinking within two constructs given how complex recovery is?

Yes, that has always been the problem. Addiction and recovery are complex (not A causing B) but multivariable, many people and settings and environments influence recovery. Some methods exist, but it is hard to replicate when you have an N=1. Methods have always been a challenge. Machine learning models and generative AI may help with this. We are getting closer with complex systems approaches, time series, group iterative modeling, but methods are still lagging behind.

l. Abstinence versus Recovery—how do we set a bar that is clinically meaningful but not impossible?

A lot of the research has focused on individuals with severe SUD. This muddies the water when trying to understand those with less severe SUD. We also need to think about public health and public safety; different stakeholders prioritize different outcomes. For example, Congress cares about public safety, unemployment/economic burden, ED visits, overdose, medical expenditures. Are you helping people prevent infectious disease, avoid overdose, avoid high medical costs, avoid unemployment and use of public services. There is a need to document that society is safer, healthier, economically secure, living in community, working, and happier. These metrics should be included in our science. Also, these outcomes are not mutually exclusive...The discussion of this question ended with the question: Can people define their own endpoints? For example, asking individuals what would be a meaningful goal or definition of recovery for you in xx time from now? Have they improved in what they would have defined? This definition may not be consistent across studies, but meaningful to those in recovery.

Session 6. ***A Dynamic View of Recovery Across Social Contexts Part II: Social Networks***

Lead: Martha Tillson, PhD, University of Kentucky
Panel: Danny Valdez, PhD, Indiana University
Chyrell Bellamy, MSW, PhD, Yale University
Brian Lovins, PhD, Justice System Partners
Mike Rallo, Helping Up Mission

Overview: This session discussed the pros and cons of broader social networks, including online, in filling gaps in connection to care and belonging. Panelists and audience members discussed AI and the reality that many people are already using these tools. Panelists and audience members agree that further research is needed. Martha Tillson, session lead, offered a closing summary and the importance of creative methodology to understand the work of these broader social networks over time.

Introduction: Martha Tillson described engaging with education and research as a part of her recovery and the social connection and belonging this created. She stated that connection is integral to recovery, and that the session would focus on connections. The social ecological model was central to the conversation about networks and communities outside of the family and service systems.

Core Discussion Topics

1. *Why is it critical to focus on these broader social networks and what gaps do they fill?*

Danny Valdez: We have to consider the unique needs of the individual. Recovery is not universal across everyone. We think about people who do not have family and social support. The world is changing. Gen Z has different needs and 2/3 of them prefer to receive care in digital space. What are networks of support in this space and how can we think through tech-oriented solutions?

Chyrell Bellamy: Opened with a poem to ground written by Amani Harrison (unsure of spelling), a colleague and a screen wright. This poem gets at essence of the work we all do helping people affirm themselves. I work with black and latin-a populations, and 70% of them are not engaging in treatment or support. There are not a lot of spaces made for these populations. They point towards churches and structures that are already there. A lot of the church members also disclosed lived experience.

Mike Rallo: Describes a picture of where he works with 300 men and 100 women and children. People stay there because it is a community, a college of addicts, they can take their own track. They find their own little community, and they are usually pretty strong in their recovery. It has been my experience, when people leave, they go get a job. We find that people that lose community, often relapse pretty quickly. It is important to find that community. Many of the men have been incarcerated and that has been a safety net and that may need to change with new support to succeed.

2. *Where are people finding belongingness and how does this look different for different sectors?*

Brian Lovins: Many of our folks find it in work. But due to criminal history, it is difficult, and employers tend to bring people with these histories together which can create challenges but also supports. Some probationers can only work in restaurants or other industries that may serve alcohol. The literature shows that people who are connected to people who have certain ideas about crime can increase this among others and those that have changed/improved views about crime can have positive influence. A lot of programs are now teaching about self-management strategies instead of just saying, "you must stay away from people."

Danny Valdez: Told a story about how he got into this work. He was new to recovery science and was interested in loneliness and isolation during COVID. The lab looked at what people were saying during this phase of isolation. People were reaching out online. Some people were using social media to ask for help, including asking about Narcan access. Who are the people who are self-selecting to use these technologies? Do they have strong support or no support? What are the predictors of online engagement?

Chyrell Bellamy: Told a story of how she got involved in working with churches. As a young person, I wanted to be a minister, but I was queer. When I was in my own recovery, I wanted to be accepted by my church. Faith was important in my recovery, but I didn't think it was a place I could go. I now am a true believer that churches are where people want to be. Sixty-five percent of black and latin-a individuals see the church as a place they want to be, and faith is something they want to hold on to. The challenge is that all churches are not ready to take it on. Every network is not a good network. We received a foundation award to help churches strengthen their spiritual recovery capital and deal with shame and stigma. Some people are going back to churches during recovery that are not good for them. Churches need to work on core and principle foundations to be good social networks.

Mike Rallo: When I came to the program, it was a bunch of pastors yelling at people telling them they were going to hell. I politely fired them. We do not do that now, and we know the role of meaning and purpose and developing identity. Connecting people with healthy churches. Many guys got abused in churches, and their view of God is different. We are walking with them and loving them. These men are not a project to be fixed, but a person with a story that needs to be told. We offer mutual aid and 12 step as well.

3. *As technology is becoming ubiquitous, what is the role of technology in recovery, the positive and negative, and the role of AI.*

Mike Rallo: We have phases in our program. Guys that need to learn computer skills. The first 45 days, they do not have access to any technology. They build bonds, read, etc. When they get the phones back, they become "idiots" and transform back.

Danny Valdez: I see it the same way in online environments. You may have close knit social network that may be unhealthy. There is evidence that online environments can be helpful for people that don't feel comfortable sharing with others. The transition to AI and LLMs has been a huge jump, but people are developing attachment. Digital environments are good, but are we jumping the gun instituting chat bots and prompting strategies are not helpful? We should be working with the people themselves and how they see tech informing their overall trajectory for recovery.

Chyrell Bellamy: I would like to know more about Reddit. I am a fan of Tik Tok and have met a group of women who are connected to recovery and do crafts, and I am going to meet up with them in person soon.

Danny Valdez: I started looking at conversations on Reddit during COVID. Specific groups, sub-Reddit's cancer, recovery, health, and specific sub-Reddit's are often led and moderated by health experts. You can track where people go in Reddit. Do they start in sub-Reddit's or general Reddits. There are people in recovery that use it for support.

Brian Lovins: I am excited about technology for people with justice system engagement. A lot of their work is focused on their crime or problem in court and related programs. Technology can connect people in rural areas and similar situations find support; a hero who has made it through. I think of this LGBTQ kid in a rural community who was 14 and kicked out by his dad. He is now lost with no connections. He can find people across the world who are in a similar situation who can help him get through that. When used well, technology and AI can close the gaps.

Audience Q&A

a. There is a tension between how science talks about the evidence versus how faith and other communities feel about their experience-informed strategies. How do we as the scientific community work with this tension as we are being encouraged to engage with faith community?

I live with that tension. People would ask me why I am here, why not just use the bible. Even at our mission's conference, people have asked why I am collecting all this data. I have created a compendium of best practice. I want to be able to get all of this research and data. I don't separate faith and science. I want the guys to know about the brain, and trauma, and neuro pathways, and how we can create new neuro pathways. I want to get data on this and share with other missions…I think it is imperative to create community, faith and science partnerships. It is vital that we introduce these concepts/ strategies to churches. I think they want it…It is a lack of information. This isn't different than components of the recovery community who don't want anything to do with EBP or science.

b. The question isn't, should we be using technology? It doesn't matter; they are already using it. Knowing folks are already using, should we harness it? Can we teach people how to ask and prompt. Church programs and carceral programs and journaling all could be loaded into a program. It isn't like Reddit. AI will always respond. A frictionless intervention. We can build systems that respond as Pastor Mike would. You don't have to wait for funding approval, run with it. What are your thoughts about this?

There is no putting the genie back in the bottle, but these models lack domain models to respond appropriately and lack connecting to the training models. Even Google now is first an LLM model. I want to focus on training opportunities to train models with more dynamic solutions that create iterative models that get better overtime. I think it is important to study efficacy and how people are using. There is an opportunity to work with boots on the ground so they can evolve over time…I agree with you as a scientist, but can this wait for a 5-year grant. People are already engaging with their social media of choice. And these are already tracking and responding. These technologies do not wait. Should we be educating folks or start building new things and content with experts that are vetted and trusted. What do we do now, knowing that our funding is slow?...We can't keep guys off their phones. After 45 days, we talk and train guys to understand the impact of technology…We have created systems, built a system for professional development that records your session, writes your note, and tells you how connected you were in that session to the success plan. Giving back staff purpose to their work and the movement of the individual. We can track progress in real time about how to react when you are moving forward or taking two steps back. I have been trying to do that in person and it hasn't work. But now I have staff that are integrating at 80-85%...I agree we need to do more about training and AI. Education is key. But people also need a hug. Particularly people who have been stigmatized.

Session 7. ***A Dynamic View of Recovery Across the Support Service Ecosystem***

Lead: Bettina Hoeppner, PhD, Massachusetts General Hospital/Harvard University
Panel: Patty McCarthy, MS, CEO, Faces & Voices of Recovery
Tess Drazdowski, PhD, Chestnut Health Systems
Kevin Wenzel, PhD, Maryland Treatment Centers
Thomas D. Huggett, MD, MPH, Lawndale Christian Health Center
Felecia Pullen, PhD, LMSW, Founder and CEO: The Pillars

1: In the scientific literature, what are the burning questions about recovery support services (RSS) that we need to ask next?

Patty McCarthy expressed frustration about yesterday's discussion on continuing to define recovery. We spent two years with SAMHSA to come up with the current definition. My ask of research is to use and measure this. All SAMHSA grants are using and funding using this. My vision for research is the recovery ecosystem—not one service or setting, but the whole infrastructure across the spectrum. I want to add the environment factors and policy factors that are conducive to recovery. We should look at communities where the recovery ecosystem works (e.g., Good Samaritan) and give the model to other states and communities. We should study the system and look at what works and is sustainable for the long term. Research on story/stigma and language is so important. In public perception about recovery, people had been thinking that all persons were still struggling. But after sharing personal stories and other work, there has been a huge change in survey results.

Bettina Hoeppner suggested that with the ecosystem model, it sounds like we are all working together, but in some ways we are siloed.

Tom Huggett stated that that the research question he reflects on are peers doing street outreach (funded by the state) on the West Side of Chicago. Over two summers 890 people were engaged, 15 were connected with ongoing treatment, there was a lot of Narcan distribution. We do a lot of this now with plastic newspaper stands, with 19,000 Narcan units in newsstands. This was a felt need from our peers. Peers can lend things that no one else can lend. "There are many things that can be seen only through eyes that have cried." Two main things come to mind. First: One of our peers who has been in active recovery 2-3 years says that we give a lot of hugs, that hugs are the beginning of recovery. 90% of the people we work with do not have phones. Personal contact is so important. How can our peers be most effective on the streets? Second: A previous panel talked about the role of spiritual practices. How can people be respectful, and tap into those deep spiritual practices, especially among our black communities. And folks who have been disenfranchised by faith communities. What is the respectful language that can support recovery?

Felecia Pullen offered that we should lead with love, be consistent, showing up from a heart-centered perspective, be dependable. Regarding a research question, I think that as a field, we should move beyond "Do recovery support services [RSS] work?" and

instead ask how they work and for whom do they work? We should move beyond the traditional language of measuring recovery via abstinence and retention. We should focus on language like dignity, respect, safe space, housing and employment outcomes. We do not typically include how a person's recovery has been enhanced by safe space. Anecdotally, how this works in our Center: Mr. Smart was the first person there in the morning and then walked her out at closing. He engaged with technology, not people. He was not ready to be social, and he was still using. But his position was: "When I'm in here, I'm not out there using or at home using". A recovery community center like hers can also provide harm reduction. The things that we think of as recovery are not what people are feeling themselves. We need to look at RSS and how they reduce health inequities. She is grateful for others who have had the courage to say Black and Latin-A. How do we look at race and poverty and intersection and geography and not talk about this. She is a recovery capitalist. Can we get back to health equity and the fact that black and brown people are not experiencing drops in overdose like other communities. What are the active ingredients in engagement? Is hugs the connection? Culture responsivity? What is the secret sauce?

Bettina Hoeppner indicated that we've focused on peer RSS in varied settings, what about peers in clinical settings?

Kevin Wenzel reported having questions similar to Felecia Pullen. Regarding peers, we know less about mechanisms and key ingredients that need to be tested. A second question is about implementation: How can we make RSS more available and integrate them better into the current treatment system? He has some ideas and is also thinking about how the treatment system fails at street outreach and linkage facilitation.

Bettina Hoeppner asked about young adults and who is not being held in our treatment services. What are questions about young adults?

Tess Drazdowski stated that emerging adults report the most problematic substance use but are less likely to engage in services. What is the utility of social networks, peers, probation offices? They trust these spaces more than clinical settings. How do we get evidence-based practices in those settings? Emerging adults, what are the spaces and recovery supports for this population? Sober bars, sober dance parties. If I'm choosing not to do substances, where do I go? Also, rural communities don't have a lot of recovery assets. Linkage to clinic care is helpful and needed, but we need to make those options more appealing. And we don't have good infrastructure in the system to meet those needs and also build up their support networks that may have a larger and more meaningful impact.

Audience Q&A

Working with RSS is also prevention. My study on drug courts shows that violent crime in communities with drug courts decreases. So this is prevention in the chronosystem, the ecological system. A parent who finds recovery is prevention for their children. How can we measure that? What add-on effects are happening around RSS?...We can

dovetail on recovery ecosystems and speak on recovery housing, which is all about social network and connection to community resources. Recovery housing is like recovery community centers, they have that magic as well…[Hoeppner] What do we need to know more of? Recovery housing research is more advanced because it has been studied longer. We need to know more about mechanisms of action, and for whom, implementation science and scaling them up. This is still work that needs to be done…Youth are less well represented in recovery housing, less than in the past. Everything we are talking about has a youth element and complications that come with that. Questions remain about who does it work for, and what elements make it work, and how does this differ from adults?...[McCarthy] I was 13 when I started using, by 17 I had been in residential treatment 3 times. There was not treatment for young people in VT, so I was sent out of state. I was connected back to 12-step in my community. We need more formal supports, but there are under-18 groups and we need to be more creative and look at what already exists…The power of hugs over time from the same person and having a longitudinal relationship. Provider burnout is a real issue, and patients also have to reintroduce themselves to new providers over time… [Hoeppner] Our work shows that some recovery community centers close down in a short time due to challenges. It's important to keep these open so hugs keep happening…[Pullen] Burnout is real, and we don't do enough research on peers working in their communities with trauma and staying in poverty. How do we create real career pathways, livable wages, reflexive supervision and support? How to help them thrive?... [Huggett] One of our principles is longitudinal sustainability. As providers, we are not just a service, it is mutual relationship. I still have a relationship with patients, brothers and sisters. How can we figure out how to improve peer support? The work we did ended when the grant ended; thankfully, the peers found new work. Some went on to get their certification. We find that in doing street outreach, immediate debriefing is helpful. We do debriefing in healthcare after an overdose in a shelter. We take time as a medical team to debrief even though we have done it many times. Our peers deserve debrief, and it is an opportunity to build skills. Maybe they say, "He ain't ready yet." How do we build and research skills around debriefing?...I'm hearing a lot about a shift in recovery visibility. We are not putting people with lived experience to open this up in new settings. What is the influence of peers in organizations that have not talked about recovery or are not set up with policies? What about social contagion?... [McCarthy] I was just looking at the Kelly et al. recent paper about emerging research needs. If recovery is contagious, how do we understand this phenomenon?...I wrote a commentary on that Kelly et al. paper, focusing on recovery high schools and collegiate recovery programs. We found half of the students have not been to treatment and half are LGBTQIA, with programs serving as de-facto LGBTQIA supports. We are only serving a small population of people who engage in higher education. We are missing 60%, and that is a place for recovery community centers to engage these folks. Many people like myself get into recovery in carceral settings. It is hard to get substances in jail, and so you are off substances for years, then re-enter the community. There is no research on people entering recovery in the prison system. How do we learn more about that process? This is just as important as ban-the-box for higher education and employment. Given state differences, with ban-the-box I couldn't have gone to school in Nevada. Now, there is pell grant eligibility for folks with criminal history, so college has become a second-chance center.

2: Workforce question: Peers are the heart and soul of interventions. What types of training and support they have to have and some they say they need?

Patty McCarty stated that there is a reciprocal benefit in peer recovery and understanding the impact of this work on peers' own recovery. We have 23 million Americans in recovery. What does it look like when a peer has the right tools? Medical providers use vital signs, but there are no metrics like this with peer work. We asked peers, What are the questions you need to know? Faces and Voices has "recovery vital signs" trademarked. If the peer worker has the appropriate tools, they are also tracking outcomes. At first they build relationships, but over time they use a recovery data platform, relationship rating scale between participant and peer, craving scale, PHQ-9, GAD-7, AUDIT, SURE, BARC-10, and GPRA (which we are now fading out). That's 9 tools, and peers can decide what measures are appropriate. They can use a sliding scale with how they are doing over time, and you can see what services have been implemented. We need to study how peers are equipped with proper tools and trained, and to demonstrate the quality of relationships and where support is needed.

Bettina Hoeppner indicated that clinicians also have burnout, what are the implications for burnout by peers and others?

Kevin Wenzel responded that he talks about this a lot with peers. We discuss in similar ways we do this for clinicians including debrief. Also, hope is central to the work. If peers and providers are experiencing hopelessness, this will impact patients.

Tom Huggett reflected on family support and how that is also important to peers, and also on prosocial activities. We have monthly meetings at a soul food restaurant, break bread together, share. The more prosocial informal activities may be a way to engage family members also.

Tess Drazdowski offered that her research experiences a lot of peer turnover in small studies. Changing headwinds and instability causes places to close. We also saw peer workers moving on to better opportunities because they weren't getting a living wage and not being supported. We need to think about how we're supporting career trajectories; yes, we can use strategies from other fields, but this is a very different field, and how well do the organizations that peers work for understand their role? Let's make sure we are not "clinicalizing" the peer workforce. What is the peer secret sauce, how to we objectively look at it? We know that operationalizing it is difficult, and we need to be ok with this, and reviewers need to know that.

Felecia Pullen asked, What trainings do your peers have? Practice-based evidence, where is it? Especially in the work peers do. Peers say what they want and what they need. They lead her. We need to move a little more from what do peers need to know and what do they need to have, toward what they need to be successful. They need certain certification so we can pay them. She'd rather give them more money for the work they do now, even before they're certified. It's easy to certify a peer but not so easy to teach them how to create authentic relationships with people. She's had 30

years of media marketing experience, worked for the yellow pages, she'd get a stack of leads to call. It was not until she developed a relationship that she was going to get a sale; she teaches a lot of those skills to her team, tips and tools that we can teach that they don't walk in the door knowing. She wishes there were a way—a toolkit, training—for funders to learn that you cannot buy/measure this. How do we value lived experience and account for this? She's not sure there's way, but we still need to teach the field to value lived and living experience. There needs to be a de-colonization of research, so that peers are coming up with research questions and methods. We need to get out of our own way and let the people design what we need to know.

Question 3 and Audience Q&A: Bucket list of things we haven't said yet.

[Huggett] although their clinic was a walk-in, it was a 1.5 mile too far away. What if we put peer outreach co-located with a shower, sandwich, exam rooms, and maybe started a conversation? Maybe foot washing, calluses, toenails. What if we had an enhanced recovery home in the same location? How could it be synergistic? Maybe a therapeutic garden next door for pro-social activities to reach the 90% we aren't reaching out to. We are planning this now…This is my work too, recovery housing and workforce. In TX, we have gotten money to open housing and money for MOUD, and integration of behavioral housing. They only started recovery coaching recently and now they are bringing in certifications. In less than one year with surge funding, all these services. How do we create sustainability and do no harm? How do we do it well? I work in a fragile community that has flooded recently…How many of your community partners are the people that have lived in the community for generations. We have a rural hill community, surrounded by treatment partners and housing who are service partners…[Pullen] I recommend that the people who live in that community, not providers, lead the way…[Huggett] I'm grateful to be here as a family doctor, not a researcher but a community-engaged participant, I live in the community where I work, and I want to support peers…[Wenzel] We don't have all of the answers. We don't have a cure for addiction yet. So we need to leverage all the perspectives we have and to identify all that is overlapping, to dream big with open minds…[McCarthy] My takeaway is the 5:15 concept: If they have 5 years sober, then they have the same risk as the general population of developing a SUD, which is at 15%. We need more research around this. Researchers allow us to share what works and to fund this work. We did 20,000 BARC-10 and thousands of recovery coaching sessions; these are data for you to use…[Drazdowski] I keep hearing that we should stop thinking of RSS as separate but part of ecosystem, make it more diverse/inclusive of special populations. We should do this in partnership with people with lived experience, designing research that is meaningful…[Pullen] We should right-size the triangle. Not research on people, but with people. If we want equitable outcomes, we need to stop asking people who use drugs to come to us, but make research and service meet their needs.

Session 8. ***Supporting Long-Term Recovery: Sustainable Models of Recovery Support, Scale-Up and Scale-Out***

Lead: Wayne Kepner, PhD, MPH, Stanford University
Panel: Sierra Castedo de Martell, PhD, MPH, The Phoenix *(*virtual*)*
Serena Rodriguez, PhD, MA, MPH, UTHealth Houston
Peter Gaumond, Office of the National Drug Control Policy
Andrew Finch, PhD, Vanderbilt University
Adam Viera, PhD, MPH, NY State Office of Addiction Services and Supports

Core Discussion Topics

1. ***If during these two days together we were able to get us on the same page, what is something we can all agree with to get us moving forward?***

Peter Gaumond stated that he hesitates to get on the same page because diverse perspectives are meaningful. However, when we talk about peer implementation across settings, peer-run agencies may be better poised to implement and serve as a connection to the more traditional services.

Andrew Finch noted one thing that stood out is that recovery is not linear, it is ecological and we need to understand ecologically validity with the communities that receive services. A hallmark of this work is education and advocacy. We need folks to educate funders about this research to create a full circle.

Adam Viera indicated that we all agree on the values of recovery and that we need to center lived and living experience in our work as well as the different communities that need to be included in this work.

Serena Rodriguez pointed to the diverse amount of experiences in the room, and to the space to share these questions. We need more opportunities like this to talk with each other and funders, and to think about who else needs to be at the table.

Sierra Castedo de Martell suggested we build on what was said earlier, that recovery is not superhuman, it's just human. We may not necessarily need specific measures about when we are recovered and are just human again. She has enjoyed discussion of the measures like quality of life, flourishing, etc. as human-oriented metrics. She wants to reinforce our shared humanity.

Wayne Kepner reflected on beginning to understand the term: recovery exceptionalism.

2. ***Define scaling. Take a RSS that you know well, and tell us how to scale it. Which part much be replicated to fidelity and which can be adapted.***

Sierra Castedo de Martell expressed thanks for this question. Some RSS are messy with lots of component parts. Take the Phoenix, which is comprised of volunteers who present others with activities, strategies, online, in communities, and carceral settings. The activities are widely varied: yoga, gym, art, etc. Each activity starts with ethos, values of the Phoenix and its space (9 core facets) and a trained volunteer, but everything else is open. Those are the only components that need to be done to fidelity. RSS are so different than treatment because they addresses those other 167 hours, so each target population needs to make their own goals in order to make those hours less excruciating. This is hard to measure, especially economically. We can measure service utilization and what different RSS phenotypes might look like, and model that out. It is not impossible as we now have digital tools, like the Recovery Data Platform, new apps etc. We have tools that decrease messiness and chaos.

Serena Rodriguez stated that due to this messiness, we as researchers and funders and reviewers start being a little uncomfortable knowing that data may look different. We need to figure out how to write methods indicating that we discuss these issues iteratively. Adaptation and implementation and sustainability are messy. We have theories, models, and frameworks that help to guide us.

Adam Viera observed that they are wrestling with this in NY. He was hired as associate commissioner of treatment services and then also informed that he'd oversee RSS. He was excited, but it shows how things are in flux. NY have 31 recovery centers in 62 counties that do incredible work, but one thing we struggle with as a state agency is to convey the value of that work, as we don't have standard definitions or measures for anything. Patients need to be classified: Who is in recovery or pre-recovery? What are the core services that need to be in every center in the state, as they are so different? Also, what are the most important outcomes? We want to replicate not only services but also processes, including peer-led values. How is this process happening? How should RSS be developed and how are they implemented?

Andrew Finch spoke about recovery high schools. First there were no principles of accreditation, and now we accredit schools according to four core principles about how to compare recovery HS to regular HS. This is very community engaged. The schools have to operate and provide recovery. The Association of Recovery HS worked to understand these principles, and then when states could get extra funding for it, suddenly every HS became a recovery HS. So, now we need to be able to say what is and isn't a recovery HS. There is still a lot of grey, but we start with four core elements and 24 standards that continue to evolve. Accreditation visits are iterative, and we come back and revisit the standards. It is practice-based evidence. As researchers, we know there are certain things that work better for certain populations. Do we know which staffing, admission, and size work better for certain groups than others? Right now it's all anecdotal, but it would be good to quantify and be empirically based. Start simple, build out, and go from there.

Peter Guamond offered that although he is not a researcher, what strikes him is that we have to stop doing research on people, and instead with people. This helps with understanding replication. This is measurable but harder. We need to replicate services with peer role integrity and know the differences in sponsor, clinician, peer, etc; and, have cultural competence to serve people on a different path. We need to respect the integrity of the peer process and increase co-location of RSS and treatment.

3. *Researchers like us hold evidence thresholds that don't match implementation site timelines. Name a field that may be scaling ahead of its evidence.*

Adam Viera pointed to peer services in settings that aren't ready for them, wherein roles and supervision are unclear. It is exciting, and he wants to see peer services but not at the cost of peer well-being, or peers being put in settings that don't support their recovery and at the lowest pay and low respect. He wants to see research not how peers can transform settings but be part of transformative process.

Andrew Finch answered the query "Who should decide when the evidence threshold is enough?": We should do it together.

Peter Gaumond reported he is a quasi-consumer of research and how it applies to policy. He relies on quality scoping reviews and those that have the expertise to better evaluate. Who decides in the end what is funded, it is going to be Congress who may not base decisions on evidence. We should rely on experts to give us that guidance.

Andrew Finch suggested that almost every RSS has been scaled up ahead of its evidence, especially for youth. But he thinks the work being done is lifesaving work. And we aren't out there doing things we don't think work. We can't wait for the research that takes so long. He believes that even as a researcher, and he asserts we will use the research to improve. We are building the plane as we fly it, but that is ok and it works.

Serena Rodriguez offered that she always starts implementation class with the slide about 17 years passing from bench to practice. We don't have that time. She likes the idea of practice-based evidence. We have hybrid effectiveness designs while also asking questions about implementation in a parallel process, so that we can build scalability evidence at the same time.

Sierra Castedo de Martell asserted that our capacity to come up with novel ways to care for one another is immense. We have been doing this since we were homo-erectus. That care will always outpace the evidence. She supports the development of new interventions, and at the same time she would encourage colleagues to play catch-up and follow the practice of RSS based on those who are providing care. This is practice-based evidence, and our job is to help tell the stories about the solutions people have already found, to help identify scalability, and improve creative solutions already found.

4. ***Effectiveness, implementability and scalability and sustainability are all different. When the grant ends, the RSS usually end. What if the RSS outcome was delivery of sustained service? Is sustainability over 2 years?***

Sierra Castedo de Martell exhorted that RSS providers must be a part of the initial design to ensure strong implementation, and if it isn't, what we can learn to make RSS more feasible or implementable.

Serena Rodriguez stated that she used to be an Aim 1 and 2 person and let someone else think about Aim 3 implementation. Nowadays, thinking about implementation and sustainability starts before the study project starts.

Adam Viera wondered what it would like to write a grant RFA that would allow CEOs and community partners and Co-PIs get renumerated for that service, in order to build RSS infrastructure, and to support mutual capacity building so that infrastructure is built at institutions. Researchers need to immerse themselves in community-based RSS. Also, we need to help provide research and publications access to community partners. How do we facilitate that? How can research legitimize the work that community-based organization are doing? There are ways that we can model research-practice collaborations. What would it look like for NIDA to collaborate with SAMHSA and model that at the community level?

Andrew Finch asked: Once the researchers have left in 2 years, how would they know if RSS worked? Maybe a post-study follow-up. In recovery HS, all interventions are delivered by staff; that is distinct from researcher delivery. It is an innovative idea to think about budgeting for staff training. Teach someone to fish. Are we training staff about marketing and funding diversification? HS staff aren't doing the work to raise money, write grants, and market their programs. This could be good sustainability training that could be in research budgets.

Peter Gaumond asserted that he'd start with bringing together everyone involved in building the program to talk about what is needed to sustain. When you evaluate, assuming that you have reasonable outcomes, produce something different than peer-reviewed publications, such as one-pagers or readable units to share outcomes. But this means you may not be able to implement in the way you originally intended and may need to release that control.

Andrew Finch agreed that how we share the outcomes is really important.

5. ***Every scale up reaches somebody last. It is the same somebody every time: incarcerated and rural populations. What would it look like if the last reached populations were the ones helping to build and design.***

Adam Viera stated that we don't always know who isn't being reached in NY with the data infrastructure lacking; that would give us this information and demographics. We may not see duplication and who isn't reaching services. Researchers could come in

and support that. We need to move away from adapting for those communities, and instead be investing in those communities to develop strategies. It needs to come from the community.

Andrew Finch relayed that early recovery HS were guilty of this. Eligibility criteria, tuition, etc. were limiting access to privileged families. People were saying, how do we open this up? Over time they started removing requirements of prior treatment or sobriety before entering. And students and staff begin diversifying. He thinks lowering the barriers to entry is key. You may also have to modify the program somewhat. For example, when people coming in didn't have sobriety or prior treatment, and they needed to add services for those students.

Peter Gaumond offered that he harkens back to when he was with the state and managed block grants to focus on pregnant women and people with criminal conviction. People who didn't have prior convictions weren't then able to get treatment. Especially with RSS, we need to look at the communities themselves and how we can build inclusive structures and reach out to communities that aren't being reached.

Sierra Castedo de Martell added that there can be a bit of leading astray if we're targeting a specific substance, not to say we don't need focus on expanding MOUD. What does this do for communities not as hard-hit by opioids? What about when methamphetamine is the problem, and when RSS for that is needed? She cautions against letting substance prevalence guide things due to geographic variation in use patterns, and given that polysubstance use stays stable over time as compared to single-substance use.

Selena Rodruguez indicated that she takes a slightly difference stance because she's at the NIH HIV institute. The R24 mechanism works, with 9 current hubs for capacity building for HIV. What would it look like if this community also had a national network? What would it look like if we had an RSS capacity network at NIDA?

Tisha Wiley (NIDA) offered that CoARS is becoming such a network. Maybe it isn't the same as the HIV network, but it started with R24s, and that group brought their network here, with NIDA POs supporting that group and also this meeting. Much of the original R24 funding for CoARS is ending; NIDA is here to listen and see what's next.

Audience Q&A

Essentially with RSS we are always playing catch up, and the scaling almost always by necessity outruns the research. RSS specialists don't need to be professional class to do good work, but the professional class needs RSS to improve outcomes. NIDA has scaled up research infrastructure to match RSS growth. Mutual help has a rich tradition of serving, and we didn't know empirically if it worked until NIAAA funded research on how AA works; that is now a mature literature. So now, people can with confidence refer to AA and expect people to derive benefit, including research on cost-effectiveness. Can NIDA learn from this?...RSS research has set forth a methodology for how to study

these services, even how to leverage RCT in populations that don't have to show up…Peer support has been around forever, including consumer-run services in mental health with strong evidence. Peer support exists in law enforcement and other spaces. SUD is the number-one stigmatized condition, so one difficulty with peer support is that to implement RSS, it takes a lot to overcome the stigma, especially in medical communities. There are national standards for RSS accreditation and standards for agencies that employ peers. SAMHSA has a long history of standards and accreditation and pilots to research practices before they scale up. Where is the opportunity to study and scale RSS?...There is a part in grant applications that requires us to describe a dissemination plan, and I would encourage you to write about ways to give research information back to communities and not just peer reviewed publicatons…I wish we could reverse engineer implementation science. Sometimes it is the environment that is the intervention, not the evidence-based practice itself, and this makes current implementation science frameworks hard to execute.

Session 9. ***Key Takeaways, Next Steps & Closeout***

Panel: Patrick Hibbard, PhD, Chestnut Health Systems
Amy Mericle, PhD, Alcohol Research Group
Tisha Wiley, PhD, Chief, Treatment & Recovery Services Research Branch, Division of Epidemiology, Services & Prevention Research, NIDA

This was the final session of the meeting. The goals were to:

i. Summarize and reflect on the main themes discussed during the meeting.
ii. Discuss next steps and opportunities to push the boundaries of addiction recovery science.

Core Discussion Topics

1. Key Meeting Takeaways

Tisha Wiley summarized her key takeaways from the meeting. **First takeaway**: What is recovery and how is it different from treatment? Tackling this question requires us to shift the horizon to outcomes past the 3 and 6 month follow ups and beyond the typical treatment outcomes we look at in research. We also need to shift from formal treatment ecosystems to the community, individual, and self-management of ups and downs of symptoms, mental health, and stressors encountered in daily life. For example, if someone in recovery is engaging in weekly activities like yoga class, the Phoenix gym, or YouTube videos – when do we start thinking of these activities as something they are just doing in their daily life rather than a recovery service? Further, if drugs and alcohol are easier to access than the help provided for substance use problems, how does that impact an individual's decision making? Artificial intelligence (AI) and frictionless access may change this conversation (i.e., through increased accessibility).

Second takeaway: Recovery is inherently social, and we need to consider the inherent complexity and how it interacts with the ecosystem. She also brought up reconciling the harms that happen to social supports during addiction and how fixing those harms is not always possible. She noted that mutual help is a huge gap in the NIDA funding portfolio and that we should be thinking about caregiver and support person interventions, and the social aspects of AI and faith.

Third takeaway: The need to focus on workforce issues and scalability (for example accreditation for the peer workforce). She noted that peers are coming into an ecosystem that already has a hierarchy and challenges.

Fourth takeaway: A focus on measurement issues in recovery science, specifically what we measure at the level of the individual versus at the population level. We need to consider who pays for a service and what does meaningful progress mean from the perspective of the payor. She also emphasized Felecia Pullen's earlier point about the need to have more peers, providers, and service recipients driving the research questions (i.e., research with people instead of on people).

Patrick Hibbard also shared his key takeaways from the meeting. First, he discussed the importance of delineating between recovery and treatment and also raised the question of how we move from surviving to thriving in recovery. He used a farm/garden analogy to illustrate this point (i.e., what happens after the fire? There is a process in agriculture for regrowth). He notes that a lot of addiction science has focused on putting out the fire, and recovery science focuses on what to do after the fire is out. Building from that analogy, different things are true at different times and places and in different climates (for example, recovery is different for younger people and different depending on the environment). Different recovery pathways are required depending on that timing and the recovery ecosystem. Second, the soil matters (i.e., factors such as families, housing, and transportation impact recovery). Where we garden, similar to where we recover, makes a difference (e.g., rural vs. urban) and sometimes the environment *is* the intervention. Patrick referred to Tisha's point about the other 167 hours per week that are not spent in treatment and how important that time is to recovery. Next, seasons also matter in both agriculture and recovery. You don't plant everything at the same time, and growth is not always linear. Science needs to understand critical inflection points (e.g., when? For whom? And when is it wanted?). In other words, we need to study not simply whether something works but under what conditions and for whom. Finally, deciding what to measure and when to measure it is important. He suggested that we measure from the beginning of treatment and recovery and not just from the end because we need to understand the whole growing season. We also need to get out of the greenhouse when we are studying recovery support services; in other words, test these services outside of overly controlled settings and randomized controlled trials.

Second, Patrick made the point that researchers should be a part of the recovery ecosystem and not just an outsider looking in. He is in favor of community-engaged research (i.e., doing research with people instead of on people). Along these lines, he mentioned that a half-day meeting is being held the next day for scientists with lived experience. The meeting will focus on making sure scientists with lived experience have a place at the table in terms of advancing recovery science. Many from this group are formerly incarcerated and in recovery and have direct lived experience related to recovery science. He stated that people with lived experience need to be able to advocate for people who cannot advocate for themselves (e.g., people who are unhoused). Finally, he stated that we need to make recovery probable, sustainable, and accessible. Technology could be used to achieve these goals and also to measure complex things in our data collection (for example, large language models, machine learning, large datasets).

Audience Q&A and Ideas

Bettina Hoeppner made a plea for NIDA to not take away the "training wheels." She shared her work on recovery community centers (RCCs) and how there is still a lot more to be done to raise awareness about recovery support services, including building tools and forging community connections. We also can't "clinicalize" the peer workforce, as this takes away from what we are trying to evaluate. She expressed concerns that a

lot of grant review committees do not yet understand the unique features of community-engaged research that is needed in recovery science. She requested NIDA's support for training programs, renewed R24s, RFAs, and more R61/R33 (phased) mechanisms.

Noel Vest requested more recovery science researchers on NIH study sections and raised the concerns that sometimes reviewers simply do not have the recovery science background to understand the importance of the work being proposed.

In response to this comment, Tisha Wiley suggested that the researchers in the room volunteer to serve on a standing study section by reaching out to Scientific Review Officers. There have been changes in the way NIDA is approaching reviews (e.g., all grants are now reviewed by CSR) so the standing study sections are more important than ever. Early career researchers can enroll in the Early Researcher review program. NIDA applications are reviewed in multiple standing committees: for example, IPTA, PDAH, ODHS, SIHH and CIHB (this is not an exhaustive list – they can be found on the CSR website or NIH Reporter. Some no longer exist with the same name as before.)

Amy Mericle pointed out that the NIDA-funded R24s focused on recovery support services have helped to develop the scientific workforce that can now serve as reviewers for these types of projects.

Sean Lynch noted that, when you submit your application to NIH, you can express a preference for a review group AND specify the expertise needed on that committee. This will help the Scientific Reviewer Officer to ensure that the needed expertise is represented on the review committee.

Tom Huggett noted the need for breaking down silos between treatment and recovery. There are certain things that get in the way of what we do in terms of treatment. He provided the example of Brixati, as some pharmacies don't carry injectable buprenorphine. Initiating buprenorphine is now much more challenging because there is less provider education required to initiate it and the street drug landscape has changed. How can we get hospitals to prescribe Brixati on discharge?

Tisha Wiley noted that NIH cannot fund anything that is advocacy, and there are some new rules around funding work related to public policy. However, NIDA does want to understand what is getting in the way of implementing interventions and services in the field that we know work and save lives. She suggested having listening sessions and finding out what is keeping your community partners up at night. It is helpful to NIDA when these issues and needs are documented in the scientific literature, even if it is just a case report or letter to the editor. Published papers that document what every provider in the field is experiencing (e.g., the issue Tom raised about Brixati) have a big impact and are helpful to the NIDA staff. She tries to systematically go to the conferences of key partners (e.g., American Correctional Association) and suggests we do the same and listen for common problems and points that we could elevate in the scientific research literature via publication.

Kevin Wenzel observed that there seems to be tension between treatment services and recovery support services that he had not noticed previously. He acknowledged that there are important differences between treatment and recovery but there are also substantial similarities and overlap. It is important to work together for the people we are trying to help. He shared the example of co-leading groups with peers and how this is a positive experience for him.

Patrick Hibbard agreed with the observation about the tension between treatment and recovery and also pointed out the salary differentials and different barriers faced by peers and clinicians.

Brian Lovins suggested that, when using participatory action research (listening/talking sessions), take average salary of everyone in room and then pay everyone the same hourly rate to even the playing field.

Tess Drazdowski added that recovery is not linear, which blurs the line between treatment and recovery.

Janie Simmons noted that people are kicked off methadone for unfair reasons and this is unlike care for other problems (e.g., diabetes). The relation between patients and methadone clinics can be viewed as paternalistic, and problems with treatment systems are major barriers to recovery.

Noel Vest stated treatment is clinical intervention that the treatment industrial complex has ruined whereas recovery is a community intervention.

Ashli Sheidow brought up the concern that new RFAs from NIH may not be possible. Recovery support services have been around for decades and so selling the innovation of these services to NIH review committees is challenging. RFAs would help with this problem.

2. Next Steps

Amy Mericle raised the question of what the next steps should be and how can we continue the momentum of this meeting and stay connected. She shared a few existing opportunities to stay connected via the Consortium on Addiction Recovery Science (CoARS): the monthly CoARS showcase series, upcoming NCARS conference in September (addictionrecoveryscience.org), and workgroups that cover many of the topics discussed during this meeting (information about workgroups can be found at addictionrecoveryscience.org). She then asked the audience and other facilitators to weigh in with ideas about how attendees can stay connected (e.g., via a listserv of people who attended the conference).

Michael Milham requested follow-up discussions to share knowledge about technology and methodology. These things are rapidly changing, and the funding often lags behind the needs.

Tisha Wiley noted that NIDA does not have the staff and infrastructure to support ongoing collaborations among this group but encouraged us to find ways to continue to push forward. We can connect through the list of e-mail addresses attached to the meeting's calendar invite. She also suggested that a journal may be interested in publishing a special issue that summarizes the panel discussions from this meeting.

Ashli Sheidow noted that Bettina Hoeppner has already created a CoARS directory, which is free to use. Anyone at the meeting or who is working in the recovery science field can sign up to be on the directory, which includes a list of each person's interests. You do not need to be a formal member of CoARS to join this directory, and it can be a way of connecting. This directory can also be found at addictionrecoveryscience.org

Appendix 1

Bonus Session (August 14th): Researchers with Lived and Living Experience (RWLLE)

- Participation
    - This part of the conversation had to do with RWLLE actively participating as much as possible. Though disclosure is absolutely an individual choice, those of us who are able to disclose our lived or living experience are encouraged to disclose in productive ways that provide awareness and destigmatization, as well as show those coming after us that they aren't alone.
        - One specific area for participation that came up is on NIH review groups. Lindsey Martin brought up, and encouraged people to apply for, the Early Career Reviewer Program.
    - This theme also includes continuing to show up in planning/strategy meetings about RWLLE. We discussed the possibility of an annual convening, potentially aligned with ongoing annual conferences (e.g., CPDD), as well as applying for funding (see below).
    - Discussed the importance of showing up in mutual aid circles as well (e.g., SURLE; sign up form is here if you're not already a part of the group), trying to make sure we're taking care of our own and each other's well-being.
    - Noel updated on CPDD 2026 that the Lived Experience Day/Track seemed to be a success, and the conference is likely to at least continue some of the momentum. However, it was also discussed that we want to keep our options open in case the winds change with this one specific conference and we need to pivot.

- Publications
    - Commentary: It is likely that those who planned and attended the NIDA RS two-day meeting will be putting together either one commentary, or a set of them. We discussed putting together our own commentary to go along with this/these.
    - Translation: We also discussed taking the high points from the commentary paper and translating it into a table, set of bullets, checklist, or similar product to disseminate the information to research teams, NIH, etc. We can probably use services of the JCOIN CERRC since many of us are part of the team and this idea falls directly in the CERRC's bailiwick.
    - Guidance for NIH Reviewers: Lindsey brought up previous work regarding considerations for American Indian and Alaska Native considerations for reviewing NIH applications as an example of something we could produce to help reviewers understand key elements when RWLLE are involved in an application.

- Grant submissions
    - Though we did not fully discuss applying for research grants based on the two-day NIDA RS meeting, there was conversation about how to

collaborate on this, working together to ensure not only are RWLLE included on the research teams, but that some projects are led by RWLLE. One part of this might be setting up a running list of membership in our rag-tag band of researchers, along with contact information and areas of expertise/interest.
    - We did spend a bit of time discussing applying for R13 grant(s), which help pay for a conference. It was mentioned that more than one R13 can be submitted simultaneously (e.g., one at NIDA and one at NIAAA), and the expectation is that the R13 money does not cover the entire conference (i.e., that other sources of money, like registrations or other contributions, are pursued). Noel updated that we still have some money from CPDD that might help with this.
    - We also discuss training grants, including smaller items like an R25 and larger mechanisms like a T32. However, the general consensus was that something like a T32 would require quite a bit of seniority, possibly something we can partner with other researchers (even those without lived experience) on, especially those with large ongoing projects that would qualify. The R25 seemed like a more likely mechanism that requires further discussion (Patrick and Martha are working on one but won't be submitting until the early 2027 cycle at the earliest).
    - The idea of a large center grant (e.g., P or U mechanism) was also floated, though this would also require collaboration with senior researchers and the application is a huge undertaking.

- Grants training
    - This theme overlaps quite a bit with the grant submissions discussion, though I decided to keep it separate since there might be more opportunities to get training, and help each other, outside of the scope of funded time.

Appendix 2

Introductory Slides





A decade of growth:
Active Grants with "Recovery" in Title

2016	
NIDA	**NIAAA**
7 *.4% of* *1777 Active Awards*	**5** *.7% of* *758 Active Awards*
$1.8M Direct Costs	$1.0M Direct Costs
7 MPIs 7 Institutions	5 MPIs 5 Institutions

12 MPIs
12 Institutions

Grants active on 8/12 of each respective year

A decade of growth:
Active Grants with "Recovery" in Title *or Abstract*

2016	
NIDA	**NIAAA**
76 *4.0% of* *1777 Active Awards*	**74** *9.7% of* *758 Active Awards*
$22.8M Direct Costs	$17.2M Direct Costs
77 MPIs 50 Institutions	75 MPIs 52 Institutions

148 MPIs
84 Institutions

Grants active on 8/12 of each respective year

A decade of growth:
Newly Awarded Grants with "Recovery" in Title

67% of New Awards = Services Research

7% of 1082 New TRSRB Awards

2016-2026	
NIDA	**NIAAA**
113 *1.2% of 7125 Newly Awarded Competing Awards*	**61** *1.8% of 3377 Newly Awarded Competing Awards*
$55.1M Direct Costs	$12.3M Direct Costs
139 MPIs 66 Institutions	56 MPIs 35 Institutions
31 Supplements	9 Supplements

Competing grants awarded between 8/12/2016 and 8/12/2026

Selected Milestones in NIDA's Recovery Science Portfolio

Year	Milestone
1962	California Civil Addict Program (basis for 33-year study reported on by Hser and colleagues)
1997	**Seminal Publication** | Hser et al. seminal drug treatment careers review
2005	Yih-Ing Hser P30 Awarded
2005	**6 Awards** | RFA-DA-05-006 "Neurobiology Of Behavioral Treatment: Recovery Of Brain Structure & Function"
2015	Final Year of Hser P30
2018	**3 Awards**| SBIR RFA-DA-18-001 "Wearable to Track Recovery and Relapse Factors for People w/ Addiction"
2018	**Seminal Publication** | John Kelly "SAMHSA Recovery Research and Evaluation Technical Expert Panel Summary Report"

Selected Milestones in NIDA's Recovery Science Portfolio

Year	Milestone
2020	**5 Awards** | RFA-DA-20-014 "Research Networks for the Study of Recovery Support Services for Persons Treated with Medications for Opioid Use Disorder" **Critical Milestone | Organic Synergy → COARS**
2021	**5 Awards** | IMPOWR (Integrative Management of chronic Pain and OUD for Whole Recovery)
2022	**6 Awards** | RFA-DA-22-034/043 | Recovery R24s 2.0 + R34s
2023	**5 Awards** | RFA-DA-23-009/010 "Enhancing Social Connectedness and Ameliorating Loneliness to Prevent and Treat SUD and Support Recovery"
2024	**4 Awards** | RFA-DA-24-016, "Patient Engagement Resource Centers"
2024	HEAL Recovery Research Workshop (DNB lead + TRSRB)
2024	**Critical Milestone** | Inaugural National Conference on Addiction Recovery Science
2025	**Official Branch Name Change** | Treatment and **Recovery** Services Research Branch
2025	NIDA Congressional Briefing on Recovery Science + Nora's Blog
2026	**7 Awards** | RFA-DA-26-024 "Engaging Loved ones in Recovery Processes to Enhance Recovery Capital and Outcomes"

July 2025 Congressional Briefing on Addiction Recovery Science: Highlights

- Highlighted Opportunities Related to:
  - Linking clinical treatments/settings to community-based recovery support services
  - Engagement of family and support persons
  - Harnessing neuroplasticity to help the brain heal and recover from addiction
  - Youth/emerging adults in recovery



From left to right: Aaron Hogue (Partnership to End Addiction), John Kelly (Massachusetts General Hospital), Nora Volkow (NIDA Director), Noel Vest (Boston University) & Tisha Wiley (TRSRB Chief)

Hosted by
Friends of the National Institute on Drug Abuse
Sponsored by Congressman Paul Tonko

What is recovery science?

And what does it mean to take a dynamic view & push the boundaries?

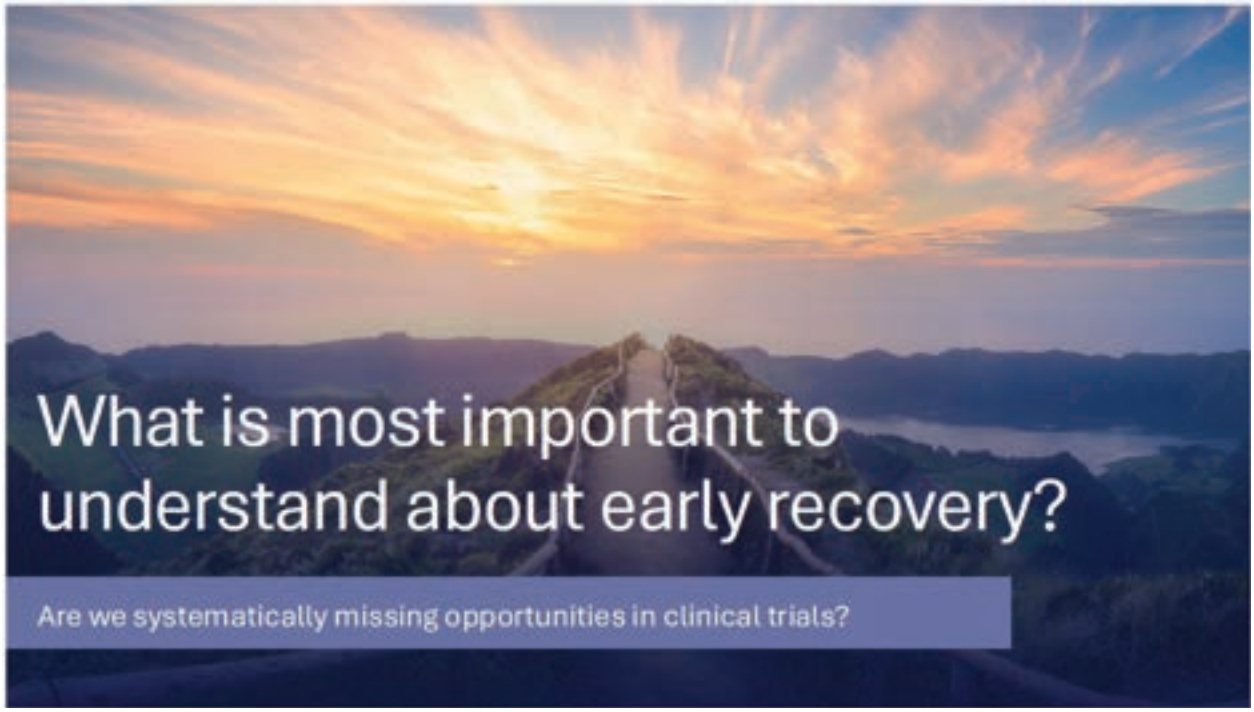
OUR AGENDA

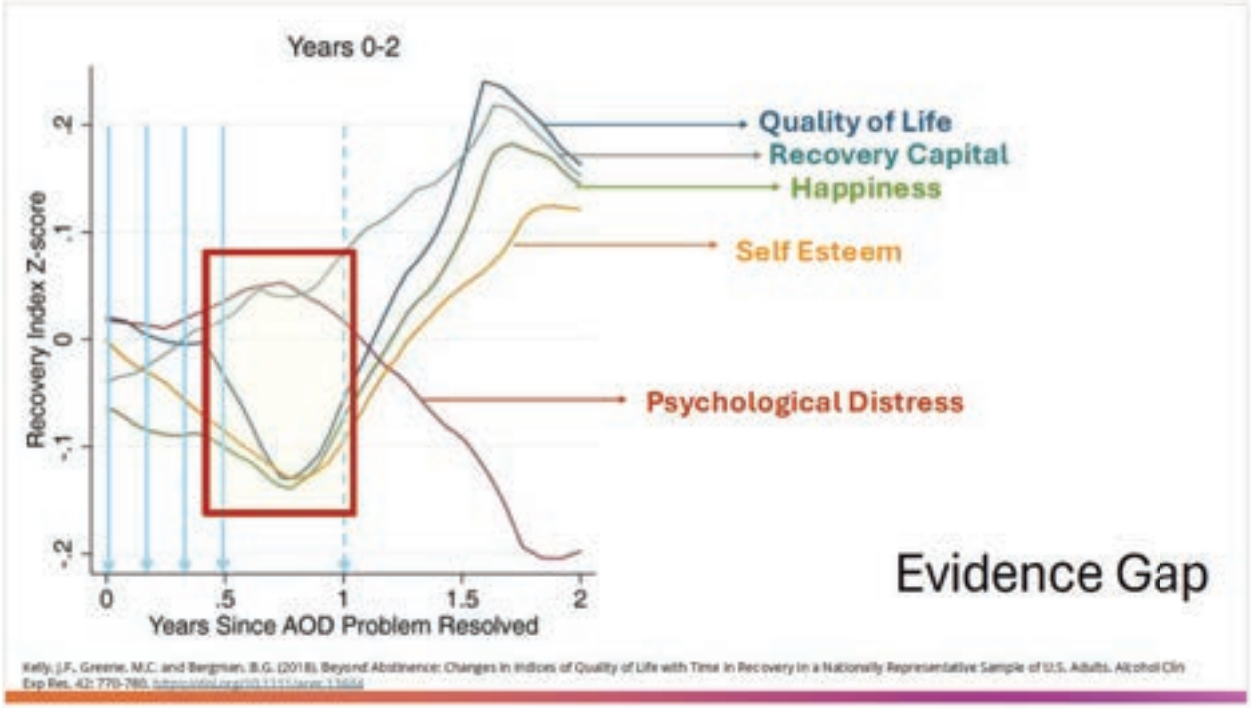
- Life Stages & Development
- Recovery Processes
- Measurement Challenges
- Biological Mechanisms
- Recovery Capital
- Whole Person Perspectives on Health
- Social Relationships
- Digital Relationships
- Family & Loved Ones
- Faith
- Societal Obligations
- Recovery Services
- Coercive Systems
- Scaling Recovery Supports
- Professionalization of Peers







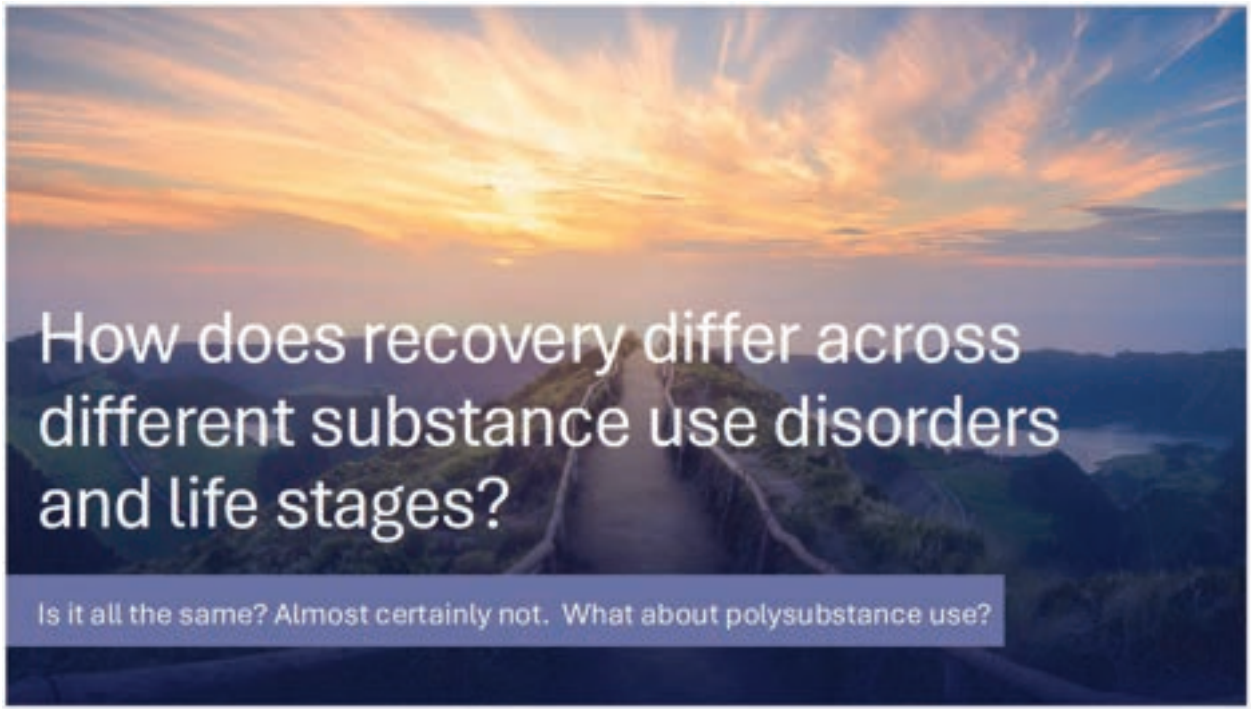

What is most important to understand about early recovery?
Are we systematically missing opportunities in clinical trials?

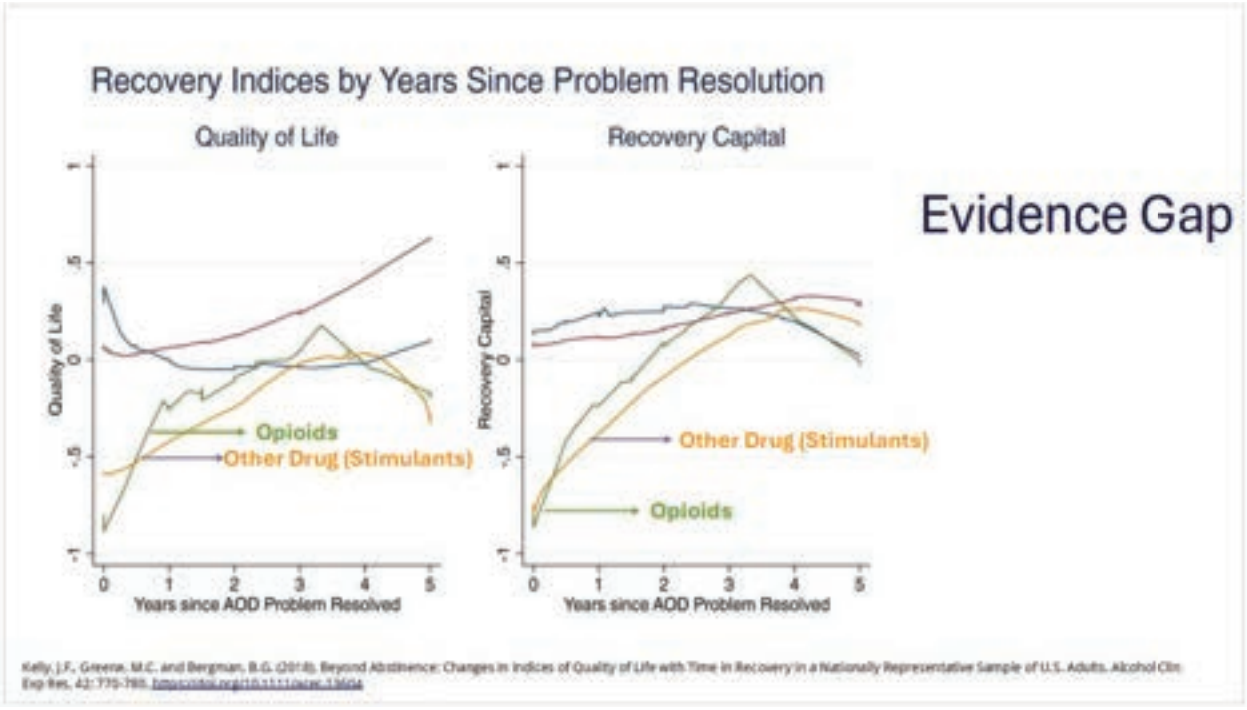

Years 0-2
Recovery Index Z-score
.2
.1
0
-.1
-.2
0
.5
1
1.5
2
Years Since AOD Problem Resolved
Quality of Life
Recovery Capital
Happiness
Self Esteem
Psychological Distress
Evidence Gap
Kelly, J.F., Greene, M.C. and Bergman, B.G. (2018) Beyond Abstinence: Changes in Indices of Quality of Life with Time in Recovery in a Nationally Representative Sample of U.S. Adults. Alcohol Clin Exp Res. 42: 770-780.

Early Recovery: **Surviving to Thriving**

- Understanding Dynamics of Moving from Surviving to Thriving
  - It gets worse before it gets better?
- From "Adherence", "Compliance", and "Abstinence" to Self-Management & Personalized Definitions of Recovery
- What if treatment and recovery support are more readily available or more desirable?
  - Implications of AI & GLP-1's?
- What would it mean to take a demand-driven view of treatment and recovery rather than a supply-driven view?







Kelly, J.F., Greene, M.C. and Bergman, B.G. (2018), Beyond Abstinence: Changes in Indices of Quality of Life with Time in Recovery in a Nationally Representative Sample of U.S. Adults. Alcohol Clin Exp Res, 42: 775-785. https://doi.org/10.1111/acer.13604



Time: A week in recovery |

The Other 167 Hours....



Addressing The Relationships That Shape People's Lives

Engaging Loved Ones

Seven new awards made in 2026 focused on the roles of family, friends, partners, and peers in the recovery process.

- Karen Alexander
- Fred Muench
- Julie McCarthy
- James McMahon
- Karen Osilla
- Susan Ramsey
- Martha Tillson



Meeting People Where They Live, Work, & Play:
Building Recovery Communities

Recovery High Schools

Recovery Collegiate Programs

Recovery Gyms

THE PHOENIX
RISE | RECOVER | LIVE

Recovery Community Centers

ARCO
Alliance for Recovery Centered Organizations

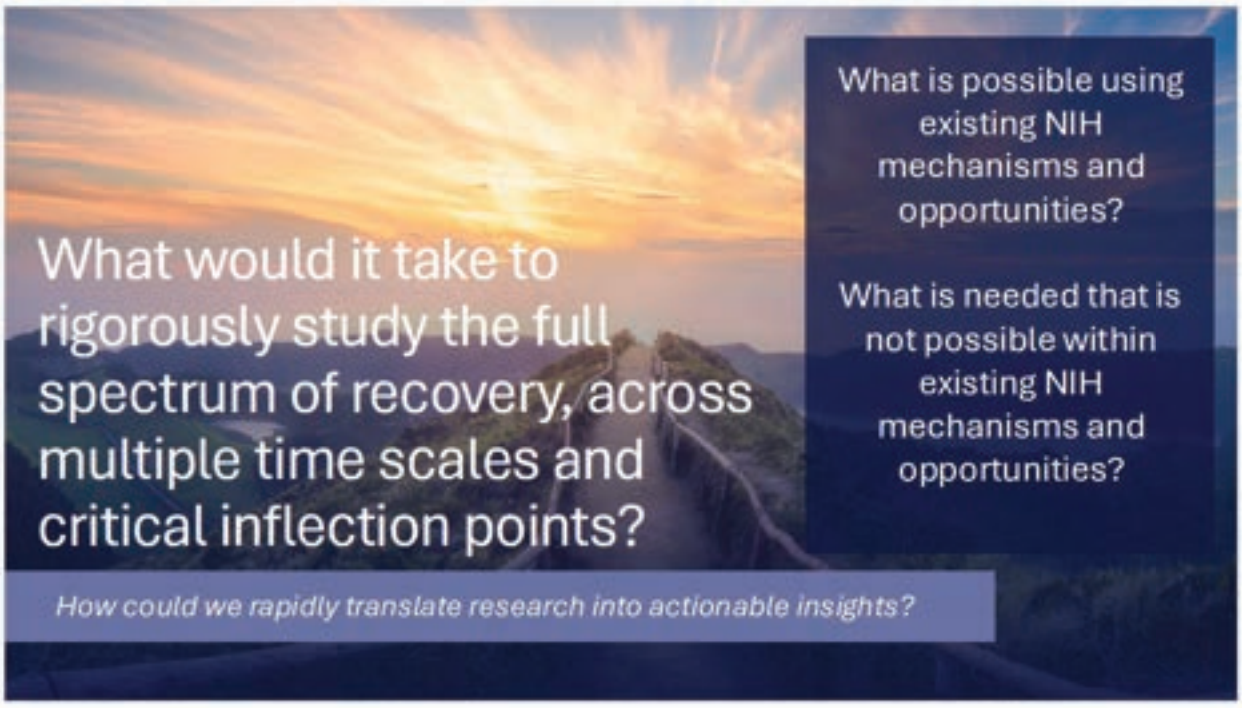
Recovery Housing

OXFORD HOUSE

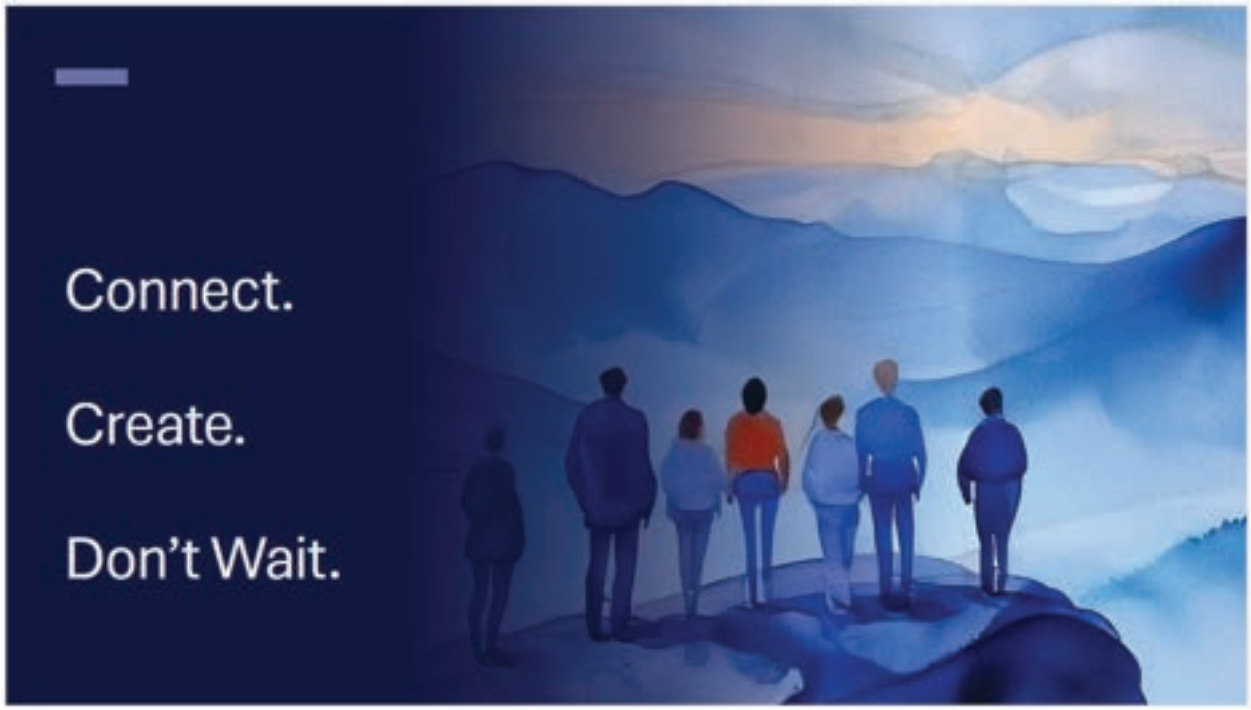
Faith Communities

IMANI
BREAKTHROUGH

What does scalability & sustainability look like in this context?


What would it take to rigorously study the full spectrum of recovery, across multiple time scales and critical inflection points?
How could we rapidly translate research into actionable insights?
What is possible using existing NIH mechanisms and opportunities?
What is needed that is not possible within existing NIH mechanisms and opportunities?


With Gratitude to:
Lindsey Martin
Sean Lynch
Planning Committee
Sarah Duffy


Connect.
Create.
Don’t Wait.

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