

# NIAAA SPECTRUM

Volume 13, Issue 1 | Winter 2021 | <https://www.spectrum.niaaa.nih.gov>

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES • National Institutes of Health • National Institute on Alcohol Abuse and Alcoholism

## FEATURE

### RECOVERY—COMING TO TERMS WITH THIS COMPLEX CONCEPT



For many years, the concept of recovery from alcohol use disorder (AUD) has permeated our societal discourse and been celebrated for individuals with AUD who do recover. Yet, recovery's complex nature has led to ambiguity about its meaning. This lack of agreement about the kinds of outcomes that define recovery has

complicated efforts to compare findings across recovery research studies. Finding agreement about what recovery means—what it looks like to scientists, healthcare providers, and affected individuals alike—is vital to advancing this area of alcohol research.

“The notion of recovery is fundamental to scientific research on AUD, and essential for improving the care and treatment of individuals with AUD,” says NIAAA Director George F. Koob, Ph.D. “The knowledge of how one gets better from AUD, or any other psychiatric disorder for that matter, will greatly facilitate treatment and recovery research.”

In the latest attempt to bring clarity to this important topic, NIAAA has developed a consensus definition of recovery from AUD. The new definition, which takes into account remission from AUD, cessation from heavy drinking, and improvements in dimensions of well-being, was unveiled on September 30, 2020, in a virtual roundtable discussion sponsored by NIAAA's Division of Treatment and Recovery Research (DTRR). The roundtable featured presentations by leading extramural recovery researchers John Kelly, Ph.D., Massachusetts General Hospital and Harvard Medical School; Stephen A. Maisto, Ph.D., Syracuse University; Constance Weisner, Ph.D., Kaiser Permanente Northern California; Katie Witkiewitz, Ph.D., University of New Mexico; Jalie A. Tucker, Ph.D., M.P.H., University of Florida; and Christine Timko, Ph.D., Stanford University. The presenters discussed a wide range of topics related to defining recovery in general and to NIAAA's definition specifically, as well as the challenges associated with defining recovery in clinical practice. (Please see the NIAAA website for [more information about the virtual roundtable.](#))

## IN THIS ISSUE

### FEATURE



- 1 Recovery—Coming to Terms With This Complex Concept

### NEWS FROM THE FIELD



- 3 Abstinence May Influence Changes in the Gut Microbiome of People With Alcohol Use Disorder

### SPOTLIGHT

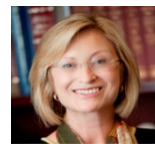


- 4 Alcohol and COVID-19: Behavioral and Biological Effects



- 6 Supporting Research on the Link Between Alcohol and Cancer

### NOTEWORTHY

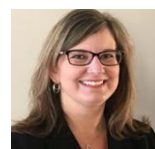


- 7 Adolescent Alcohol Use—A Crucial Developmental Period Explored in Recent NIAAA Mendelson Lecture



- 8 Science Symposium at NIH Commemorates 50 Years of Advancing Alcohol Research

### 5 QUESTIONS WITH ...



- 10 Vicki E. Buckley, M.B.A., NIAAA Executive Officer/Associate Director for Administration, and Deputy Ethics Coordinator

“To be sure, the discussion will continue on the meaning of recovery,” notes Brett Hagman, Ph.D., a Program Director in DTRR, who co-moderated the recent virtual discussion with Dan Falk, Ph.D., of DTRR. “But the emerging picture of recovery is one of a dynamic process with multiple pathways that may not always include abstinence.”

**NIAAA-Supported Research on Recovery**

In addition to developing a consensus definition to improve consistency across AUD recovery research, NIAAA continues to support [research that explores the complex nature of, and varied paths to, recovery](#). For example, some individuals with alcohol and other substance use disorders (SUDs) enter peer-operated sober living houses to facilitate their recovery. [Research led by Douglas L. Polcin, Ed.D., of the Public Health Institute in Oakland, California, is seeking to better understand the role of helping behaviors](#) (i.e., giving help as well as receiving help from recovering peers, family members, and friends) in sustaining recovery for individuals in sober living environments. While setting or environment plays an important role in the road to recovery, some individuals are able to recover on their own without peer assistance or professional treatment. To improve our understanding of this phenomenon, Paul Gilbert, Ph.D., of the University of Iowa, leads a [study to identify the processes associated with recovery outside of treatment](#) and to test how recovery definitions relate to those processes and recovery outcomes.

Mutual support groups, such as Alcoholics Anonymous (AA) and other 12-step programs, are among the most popular choices for helping individuals begin and maintain recovery from alcohol and other SUDs. In a current study, J. Scott Tonigan, Ph.D., of the University of New Mexico and colleagues are developing [an empirical model to identify the specific mechanisms of AA that lead to behavior change and improved alcohol outcomes](#). In another study of mutual support programs, Sarah E. Zembore, Ph.D., and colleagues at the Public Health Institute in Oakland, California, are conducting a [national study on the nature and effectiveness of secular, abstinence-based alternatives to 12-step groups](#), including Women for Sobriety, LifeRing Secular Recovery, and SMART Recovery.

While remission from AUD symptoms and cessation from heavy drinking are key components of the NIAAA consensus definition described above, research has demonstrated that improvements in physical and mental health, quality of life, and other dimensions of well-being are important recovery indicators. A study led by Elizabeth Bowen, Ph.D., at the State University of New York at Buffalo aims to develop a [new measure of recovery capital](#), defined as the ways in which physical, social, human, and cultural resources might shape a person's likelihood of sustaining recovery from alcohol and other SUDs. Research being led by Katie A. Witkiewitz, Ph.D., at the University of New Mexico is using a [framework for classifying AUD based on neurobiological and behavioral characteristics](#) to examine its utility in predicting AUD treatment outcomes and recovery.

**Roundtable Definitions**

**Recovery From AUD**

Recovery is a process through which an individual pursues both remission from AUD and cessation from heavy drinking. An individual may be considered “recovered” if both remission from AUD and cessation from heavy drinking are achieved and maintained over time. For those experiencing alcohol-related functional impairment and other adverse consequences, recovery is often marked by the fulfillment of basic needs, enhancements in social support and spirituality, and improvements in physical and mental health, quality of life, and other dimensions of well-being. Continued improvement in these domains may, in turn, promote sustained recovery.

**Remission From DSM-5 AUD**

[Remission from AUD, as defined by the 5th edition of the Diagnostic and Statistical Manual of Mental Disorders \(DSM–5\) criteria](#), requires that the individual not meet any AUD criteria (excluding craving). Remission from AUD is categorized based on its duration: initial (up to 3 months), early (3 months to 1 year), sustained (1 to 5 years), and stable (greater than 5 years).

**Cessation From Heavy Drinking**

Cessation from heavy drinking is defined as drinking no more than 14 standard drinks per week or 4 drinks on a single day for men and no more than 7 drinks per week or 3 drinks on a single day for women. Cessation from heavy drinking can be categorized based on the duration: initial (up to 3 months), early (3 months to 1 year), sustained (1 to 5 years), and stable (greater than 5 years).

For more information, visit <https://www.niaaa.nih.gov/division-treatment-recovery-research#aud>

NIAAA is also interested in enhancing our understanding of recovery among adolescents. A study conducted as part of NIAAA's [National Consortium on Alcohol and Neurodevelopment in Adolescence](#) is examining neurocognitive improvement among abstinent youth who transitioned to heavy drinking during the study and have entered a period of abstinence. Investigators led by Susan Tapert, Ph.D., at the University of California San Diego, use behavioral therapy to support the maintenance of abstinence among the adolescents in the study, who then participate in a recovery assessment protocol that examines weekly mood and behavioral changes, sleep and activity levels, and neurocognitive and neuroimaging changes.

Findings from the studies described above as well as future research efforts to revisit the NIAAA consensus definition with knowledge gained are expected to fill critical knowledge gaps and transform how the field perceives and approaches AUD recovery.

### The Pandemic and AUD Recovery

For people in AUD recovery, stress is the most common reason for relapse. The COVID-19 pandemic has caused a collective increase in stress across the United States and around the globe. Finding healthy ways to cope with stress is vital to long-term recovery. Recovery programs based on mutual peer support—as well as many different behavioral therapies—involve social support and are very helpful for people who struggle with maintaining sobriety or regulating their alcohol consumption. However, scheduling in-person visits might prove difficult at the moment. People currently in recovery or those who need help may benefit from telehealth and online support group meetings. The [NIAAA Alcohol Treatment Navigator](#) website provides information about telehealth and online support group meeting options.

## NEWS FROM THE FIELD



### ABSTINENCE MAY INFLUENCE CHANGES IN THE GUT MICROBIOME OF PEOPLE WITH ALCOHOL USE DISORDER

Chronic heavy drinking, a common symptom of alcohol use disorder (AUD), has been linked to changes in the levels and types of beneficial bacteria in the gut, known as the gut microbiome. Changes in the gut microbiome, often termed microbial dysbiosis, can lead to further downstream health problems such as liver disease, inflammation, and malnutrition. Now a recent study supported by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) and the National Institutes of Health (NIH) Clinical Center reports that the gut microbiome of people with AUD can recover during abstinence, thereby increasing the benefits of stopping or reducing drinking.

This study focused on changes in the gut microbiome in currently drinking AUD patients who stopped drinking either in the days before admission or at the onset of inpatient treatment, which can be a first step in longer-term recovery. The study involved 22 adults with AUD who were enrolled in an alcohol treatment program at NIH. The newly abstinent participants were grouped as either “less heavy” (consumed fewer than 10 drinks per day during the past 90 days) or “very heavy”

(consumed 10 or more drinks per day during the past 90 days). For up to 4 weeks, the researchers repeatedly collected stool samples, dietary intake data, gastrointestinal assessment scores, and mental health status reports from the participants.

To gain a comprehensive picture of changes to the gut microbiome, which in most people is a diverse assemblage of many thousands of bacterial species, the team used a technique known as 16S rRNA gene sequencing to analyze the microbial composition of participants' stool specimens. The researchers looked at microbial abundance, diversity, and changes in the microbiome over time, and compared differences between the lighter- and heavier-drinking participants.

The team found that the microbiomes of the lighter- and heavier-drinking AUD groups differed the most when abstinence was initiated, with the heavier-drinking group having a lower diversity in the gut microbiome. Although the diversity of the gut microbiome of both groups increased following abstinence, reflecting an increasing variety of different types of bacteria in the gut and became more similar over time, AUD patients who drank more heavily prior to abstinence had more extensive changes in microbe diversity in their gut microbiome over time. These findings suggest that the effects of heavy drinking on gut microbiome diversity may be reversed by abstinence and a healthy diet.

The study expands our understanding of the effects of alcohol on the gut microbiome, finding that the level of alcohol consumption could be a key factor in predicting imbalances in the gut microbiome. The study also expands our understanding of the benefits of abstinence beyond improvements in mental health and prevention of further organ damage, and suggests that abstinence could be a major player for a positive gut microbiome intervention.

Reference:

Ames, N.J.; Barb, J.J.; Schuebel, K.; Mudra, S.; Meeks, B.K.; Tuason, R.T.S.; Brooks, A.T.; Kazmi, N.; Yang, S.; Ratteree, K.; Diazgranados, N.; Krumlauf, M.; Wallen, G.R.; and Goldman, D. Longitudinal gut microbiome changes in alcohol use disorder are influenced by abstinence and drinking quantity. *Gut Microbes* 11(6):1608–1631, 2020. PMID: 32615913

SPOTLIGHT

ALCOHOL AND COVID-19: BEHAVIORAL AND BIOLOGICAL EFFECTS



During the course of the pandemic, researchers and scientists from across the biomedical spectrum have focused on the diverse health impacts of the novel coronavirus. For their part, alcohol researchers are investigating numerous ways that alcohol might affect COVID-19 risk and severity, as well as how the COVID-19 pandemic may influence alcohol consumption patterns and problems. These new studies will complement what scientists already know about alcohol’s behavioral and biological effects.

*Behavioral Effects During the Pandemic*

Alcohol has long been known as a “social lubricant” that decreases the inhibitions people may have when interacting with others. It also impairs individuals’ decision-making, threat detection, and impulse control, which may in turn impact adherence to COVID-19 prevention guidelines for physical distancing and mask wearing.

Researchers have also long known that stress can contribute to an increase in alcohol use among people who drink. Stress also increases the risk of relapse among people in recovery from alcohol use disorder (AUD). The pandemic has added new stress to many people’s lives as a result of a wide range of factors, such as uncertainty about the future and feelings of isolation while physical distancing. Early evidence from surveys suggests that some people are drinking more, while others are drinking less, but of those individuals drinking more, stress was associated with increases in alcohol use. There are also signs that alcohol use increased among college students, particularly among those reporting higher levels of stress and anxiety.

The physical distancing that has been imposed during the pandemic may be particularly challenging for people who are suffering from or are vulnerable to AUD, since social isolation could serve as a source of stress that motivates drinking to cope. People in recovery from AUD are also challenged by physical distancing measures,

since face-to-face therapy sessions and in-person mutual support group meetings that are often critical for successful treatment and recovery are unavailable to most people right now. As discussed below, options for one-on-one sessions through telehealth or participation in online mutual support groups are helping to address this significant treatment challenge.

#### *Biological Effects During the Pandemic*

It is possible that drinking excessively during the pandemic could interfere with the immune system, thereby increasing the risk of infection with SARS-CoV-2 (the virus that causes COVID-19) and worsening the prognosis. Alcohol misuse over the short-term—such as after an episode of binge drinking—can reduce the ability of the innate immune system, the first line of defense in the body for detecting and destroying foreign invaders, to fight infections. This impairment can make it easier to catch a cold or other virus. Long-term excessive drinking can lead to chronic systemic inflammation as well as an impaired ability to defend against infections.

In the lungs, excessive alcohol damages epithelial cells that line the lung surface and is associated with acute respiratory distress syndrome (ARDS), a potentially fatal lung condition that can require the use of a ventilator. Research prior to the pandemic suggests that alcohol misuse increases the risk of developing, and dying from, ARDS. Among patients who survive ARDS, a history of excessive alcohol use is associated with an increased duration of mechanical ventilation and prolonged length of stay in an intensive care unit (ICU). Ultimately, impaired immune system function and an increased susceptibility to respiratory illness could contribute to more severe COVID-19 symptoms and greater risk of mortality. Ongoing research will shed light on the potential role of alcohol misuse in COVID-19 susceptibility and severity.

#### *Finding Help During the Pandemic*

The recent approval of effective vaccines to prevent COVID-19 is a hopeful sign that better news about the pandemic is on the horizon. That said, adherence to public health measures such as wearing masks and social distancing will be necessary well into 2021, and face-to-face therapy sessions and in-person mutual support groups for people struggling with alcohol use problems or mental health challenges will likely remain unavailable for some time. Fortunately, telehealth appointments with clinicians and virtual mutual support group meetings have become important options during the pandemic and will continue to be a vital way to access treatment. The [NIAAA Alcohol Treatment Navigator](#) helps adults find telehealth and online support group meeting options for themselves or an adult loved one. Through this website, clinicians can access [information to help their patients and clients in need of alcohol treatment](#).

Even as we turn the corner on the COVID-19 pandemic, understanding the short- and long-term health consequences of this pandemic will be crucial in helping us to be prepared for future public health crises.

#### References:

Rodriguez, L.M.; Litt, D.M.; and Stewart, S.H. Drinking to cope with the pandemic: The unique associations of COVID-19-related perceived threat and psychological distress to drinking behaviors in American men and women. *Addictive Behaviors* 110:106532, 2020. PMID: 32652385

Lechner, W.V.; Laurene, K.R.; Patel, S.; Anderson, M.; Grega, C.; and Kenne, D.R. Changes in alcohol use as a function of psychological distress and social support following COVID-19 related University closings. *Addictive Behaviors* 110:106527, 2020. PMID: 32679435

Fan, E.; Beitler, J.R.; Brochard, L.; Calfee, C.S.; Ferguson, N.D.; Slutsky, A.S.; and Brodie, D. COVID-19-associated acute respiratory distress syndrome: Is a different approach to management warranted? *The Lancet Respiratory Medicine* 8(8):816–821, 2020. PMID: 32645311

Stevens, J.P.; Law, A.; and Giannakoulis, J. Acute respiratory distress syndrome. *JAMA: The Journal of the American Medical Association* 319(7):732, 2018. PMID: 29466593

Boé, D.M.; Vandivier, R.W.; Burnham, E.L.; and Moss, M. Alcohol abuse and pulmonary disease. *Journal of Leukocyte Biology* 86(5):1097–1104, 2009. PMID: 19602670

Simou, E.; Leonardi-Bee, J.; and Britton, J. The effect of alcohol consumption on the risk of ARDS: A systematic review and meta-analysis. *Chest* 154(1):58–68, 2018. PMID: 29288645

SPOTLIGHT



## SUPPORTING RESEARCH ON THE LINK BETWEEN ALCOHOL AND CANCER

During National Cancer Prevention Month this February, NIAAA continues its efforts to advance knowledge about the [link between alcohol and cancer](#). In the United States, alcohol use is estimated to be the third-largest modifiable risk factor for cancer, behind only cigarette smoking and excess body weight. Research has shown that alcohol misuse increases the risk of cancers of the oral cavity, esophagus, larynx, pharynx, liver, colon, and rectum. Studies have also shown that even moderate alcohol consumption increases the risk of breast cancer in women.

In a recent effort to foster investigator-initiated research in this area, NIAAA and the National Cancer Institute (NCI) jointly issued a [notice of special interest \(NOSI, NOT-CA-20-034\)](#) to encourage research on the relationships between alcohol and cancer, spanning biological and behavioral mechanisms; health disparities; and cancer prevention, treatment, and survivorship.

An example of an area of research that the NOSI encourages is epidemiological analyses across the lifespan. Most studies to date have looked at patterns of alcohol use only during a limited age range. By looking across larger swaths of the lifespan, researchers can determine how drinking patterns and amounts at different stages of life—such as binge drinking at younger ages or sustained patterns of moderate alcohol consumption—are associated with cancer risk. The NOSI also encourages researchers to explore whether people may be more vulnerable to the influence of alcohol use in different developmental and hormonal transition periods.

Another area of interest is the effects of light or moderate alcohol consumption on cancer risk. For example, as noted above, research has shown a small but important association between alcohol consumption and breast cancer—for each 10 grams of alcohol consumed (less than 1 standard drink) per day, a woman’s chance of developing postmenopausal breast cancer increases by around 9 percent. This NOSI identifies a need for additional research to clarify the relationship between alcohol dosage and breast cancer risk, as well as research to show how alcohol can lead to breast cancer.

Visit the [NOSI webpage](#) for more information.

References:

Islami, F.; Goding Sauer, A.; Miller, K.D.; Siegel, R.L.; Fedewa, S.A.; Jacobs, E.J.; McCullough, M.L.; Patel, A.V.; Ma, J.; Soerjomataram, I.; Flanders, W.D.; Brawley, O.W.; Gapstur, S.M.; and Jemal, A. Proportion and number of cancer cases and deaths attributable to potentially modifiable risk factors in the United States. *CA: A Cancer Journal for Clinicians* 68(1):31–54, 2018. PMID: 29160902

Terry, M.B.; Michels, K.B.; Brody, J.G.; Byrne, C.; Chen, S.; Jerry, D.J.; Malecki, K.M.C.; Martin, M.B.; Miller, R.L.; Neuhausen, S.L.; Silk, K.; Trentham-Dietz, A.; and Breast Cancer and the Environment Research Program. Environmental exposures during windows of susceptibility for breast cancer: A framework for prevention research. *Breast Cancer Research* 21(1):96, 2019. PMID: 31429809

World Cancer Research Fund, American Institute for Cancer Research. *Alcoholic Drinks and the Risk of Cancer*. Continuous Update Project, 2018. Figure 5.12: CUP Dose-Response Meta-Analysis for the Risk of Postmenopausal Breast Cancer, per 10 Grams Increase in Alcohol (as ethanol) Consumed by Day. Available at: <https://www.wcrf.org/sites/default/files/Alcoholic-Drinks.pdf>. Accessed January 8, 2021.

## NOTEWORTHY

## ADOLESCENT ALCOHOL USE—A CRUCIAL DEVELOPMENTAL PERIOD EXPLORED IN RECENT NIAAA MENDELSON LECTURE



Sandra A. Brown, Ph.D., delivered the 2020 [Jack Mendelson, M.D., Honorary Lecture](#) on September 22. The title of her presentation was “Discerning Risks and Effects of Alcohol in the Midst of Adolescent Development.”

Dr. Brown currently serves as Vice Chancellor for Research and Distinguished Professor of Psychology and Psychiatry at the University of California San Diego. She is an internationally recognized scientist whose research has substantially increased our understanding of how alcohol and other substances impact adolescent development and how the impact of alcohol and other substances contributes to outcomes that persist into adulthood. She also plays major roles in nationwide research consortia that are investigating the neurobiological and behavioral changes that occur during adolescence and emerging adulthood—the [National Consortium on Alcohol and Neurodevelopment in Adolescence \(NCANDA\)](#) and the [Adolescent Brain Cognitive Development<sup>SM</sup> Study \(ABCD Study®\)](#)—in which she serves as Co-Director and Co-Principal Investigator, respectively.

In her lecture, Dr. Brown highlighted that alcohol is the substance of choice among adolescents. Although adolescents drink about half as often as adults, when they do drink, adolescents consume twice the amount and in a shorter time period. Dr. Brown discussed what is known about how alcohol alters adolescent brain development, including potential effects on brain structure and function that may contribute to poor learning, poor memory, and lack of self-control. Although some changes appear long lasting, some may resolve with abstinence.

Dr. Brown discussed findings from NCANDA that showed heavy drinking during adolescence disrupts normal brain growth trajectories, particularly in executive functions such as inhibitory control. She said that NCANDA confirms that impulsive behavior is a strong predictor of early onset drinking and demonstrated that risk factors change as a person matures. In addition, the onset of moderate to heavy drinking seems to be related to lifetime stress and trauma. Dr. Brown also explained how adolescents who drink have more sleep disturbances compared to adults, suggesting that alcohol and sleep may influence each other. She concluded her presentation by describing the ABCD Study, including the challenges as a result of the COVID-19 pandemic. Dr. Brown described the open science model of the study and reviewed early data about alcohol and other substance use, suicidal thoughts and behaviors, and screen time among children ages 9–10 years in the study sample. Her work illustrated the power of large integrated longitudinal multi-disciplinary approaches to the study of the vulnerability and ultimate prevention of alcohol use disorder.

To view Dr. Brown’s talk, please visit the [National Institutes of Health videocast website](#).

NOTEWORTHY



## SCIENCE SYMPOSIUM AT NIH COMMEMORATES 50 YEARS OF ADVANCING ALCOHOL RESEARCH

The year 2020 marked the 50th anniversary of the National Institute on Alcohol Abuse and Alcoholism (NIAAA), part of the National Institutes of Health (NIH).

Created in 1970, NIAAA is the world’s largest funder of alcohol research—supporting innovative basic, translational, and clinical research to advance the diagnosis, prevention, and treatment of alcohol use disorder (AUD) and alcohol-related problems across the lifespan. With its broad research portfolio, NIAAA focuses its work on health topics that touch the lives of almost every family and community throughout the United States.

To celebrate this milestone anniversary, NIAAA hosted a scientific symposium, “Alcohol Across the Lifespan: 50 Years of Evidence-Based Diagnosis, Prevention, and Treatment Research,” on November 30 and December 1, 2020. Below is the list of presenters, their presentation titles, and a brief description of their presentations that were featured at the 2-day virtual event:

- **George F. Koob, Ph.D.**, NIAAA Director, “Celebrating 50 Years of Alcohol Research: Advances, Challenges, and Priorities”

Despite much progress in alcohol research over the past 50 years, challenges remain. These challenges include addressing interactions between AUD and co-occurring mental health conditions, implementing targeted interventions to reduce alcohol misuse among women and senior adults, closing the AUD treatment gap, and tracking the lasting impact of the COVID-19 pandemic on alcohol misuse, treatment, and recovery. The COVID-19 pandemic could further exacerbate outcomes of alcohol misuse, particularly for individuals who drink to cope with loneliness or stress related to the pandemic.

- **Katherine Keyes, Ph.D.**, Columbia University, “Age, Period, and Cohort Effects in Alcohol Use in the 20th and 21st Century: Implications for the Decades to Come”

Alcohol consumption has varied across the United States throughout time, and in particular the cohorts born in the late 1970s and early 1980s have evidenced greater alcohol consumption in adulthood than others. These increases in alcohol consumption in adulthood have been greater among women than men, leading to gender convergences in drinking as well as in consequences of heavy alcohol consumption. Increases in drinking among adult women have been concentrated among those with the highest socioeconomic position and education, suggesting shifting social sanctions around alcohol use. The next decade of alcohol-related research and intervention will need to contend with the dynamic changes in the epidemiology of alcohol use and consequences.

- **Marc Schuckit, M.D.**, University of California San Diego, “AUD Risk, Diagnoses and Course in a 35-year Prospective Study Across Two Generations of 453 Families: Implications for Prevention”

This presentation reviewed key findings from the NIAAA-sponsored, 35-year San Diego Prospective Study of two generations of subjects, with more than 1,500 individuals from 453 families. The study identified a genetically influenced low level of response (low LR) to alcohol that was apparent before the development of AUD and that predicted a high risk for future heavier drinking and alcohol problems. The every-5-year prospective evaluations of the original subjects and their offspring also identified



environmental and attitudinal characteristics that operated in concert with the low LR to predict AUD risk, and used that information to decrease AUD risk in new groups of adolescent drinkers with low LR by teaching them how to modify those environmental and attitudinal mediators of risk.

- **Susan Tapert, Ph.D.**, University of California San Diego, “Alcohol and the Adolescent Brain: What We’ve Learned and Where the Data Are Taking Us”

Rates of binge drinking increase substantially during adolescence, as the brain is continuing to develop. Data suggest that the brain appears vulnerable to the effects of repeated binge drinking during adolescence, evidenced by relative reductions in memory and cognitive performance, enhanced cue reactivity, accelerated gray matter decline, and attenuated white matter growth. Future longitudinal studies will show whether these effects reverse with reductions in alcohol intake.

- **Rajita Sinha, Ph.D.**, Yale School of Medicine, “Alcohol’s Dark Side: The Role of Stress Neurobiology in Risk of and Recovery from Alcohol Use Disorder”

This presentation described the effects of binge alcohol and chronic heavy alcohol use on stress biology and brain stress and motivation pathways. These progressive brain and body alterations with binge and heavy alcohol use result in greater emotion and stress dysregulation, mood and anxiety symptoms, higher alcohol craving, and compulsive alcohol intake. Treatment options to reverse these changes and improve alcohol use outcomes were also discussed.

- **Barbara Mason, Ph.D.**, Scripps Research, “Looking Back, Looking Ahead: Current and Future Medications for the Treatment of Alcohol Use Disorder”

NIAAA is engaged in supporting the development of multiple pharmacotherapies to treat AUD. This presentation encompassed a review of currently available medications to treat AUD and future drug targets. Methods to expedite new AUD pharmacotherapies were discussed, from repurposing of drugs approved for other uses, through early phase evaluation of therapeutic potential in a human laboratory model of AUD, to later phase multisite clinical trials.

- **Michael Charness, M.D.**, Veterans Affairs Boston Healthcare System, Harvard Medical School, “Fetal Alcohol Spectrum Disorders: Awareness to Insight in Just 50 Years”

Fetal alcohol syndrome was first described shortly after the creation of NIAAA, and the understanding of this disorder evolved with the guidance and support of NIAAA. A half century later, NIAAA-funded research has led to important insights into the epidemiology, etiology, diagnosis, and treatment of fetal alcohol spectrum disorders.

- **Vijay Shah, M.D.**, Mayo Clinic, “Hope through Discovery—Alcohol-Associated Liver Disease”

The impact of alcohol-associated liver disease on societal disease burden is increasing, especially in younger and female demographics. Increasing attention is directed towards the need for AUD therapy for individuals with alcohol-associated liver disease, although many barriers impede progress in this area. Advances in digital technology, and recognition at a society level that destigmatization of this patient population benefits everyone, should pave the way for clinical progress in this area.

These presentations covered the state of the science in a broad range of areas germane to NIAAA’s mission and included discussions of new research opportunities to continue advancing the field. Archived videocasts of [Day 1](#) and [Day 2](#) of the symposium are available on NIH Videocast.

“NIAAA has fostered tremendous scientific progress over the past five decades,” says NIAAA Director George F. Koob, Ph.D. “Each year brings still greater knowledge about how alcohol affects the brain and body, and how best to prevent and treat alcohol misuse.”

NIAAA also created a [50th Anniversary page](#) on its website to highlight major events and accomplishments over its 50-year history.

5 QUESTIONS WITH. . .

VICKI E. BUCKLEY, M.B.A.

*NIAAA Executive Officer/Associate Director for Administration, and Deputy Ethics Coordinator*



**1** You're known for "wearing many hats" at NIAAA—How would you characterize the nature of your various roles?

Yes, I do wear quite a few hats, but that is one of the things that I love most about my job. Each business area is critical to the success of our mission. In my role, I am able to identify opportunities for improvements and efficient process implementation that meet at the intersection of regulations and policy and our organizational needs. This gives me the opportunity to develop implementation strategies to minimize the administrative burden of regulations on our staff. Ethics, information technology, human resources, budget, administrative policy, and travel—to name just a few—all support our research on alcohol use disorder, or AUD. I strive to create and maintain

an environment where that role is truly supportive and provides a framework of integrity and expert advice for our staff.

**2** Can you share more about your background and how you've been able to adapt and evolve into bridging NIAAA's scientific and administrative sides?

I have worked for the federal government for almost 30 years and have been at the National Institutes of Health [NIH] for 21 years. I spent my early years working as a laboratory technician for the Department of Defense and pursuing a degree in chemistry. Once I began working for NIH in the National Institute of Mental Health intramural program, I changed directions to obtain an undergraduate degree in healthcare management and a master's in business administration from Mount St. Mary's University. Each of my experiences helped to shape my approach to my current role at NIAAA and now gives me insight into the different needs of staff throughout our organization.

**3** We see many challenges associated with COVID-19—How has NIAAA successfully managed operations during the pandemic?

I am truly proud of NIAAA and the amazing job that everyone has done to make this unprecedented transition to a virtual work environment during the pandemic. It has been difficult, to say the least, but we started early to get staff trained and set up with accounts and systems—for example, operating system updates for security and compatibility, VPN accounts, approved telework agreements, and updated passwords—in the weeks preceding the transition, and that proactive approach was key to success. We have a team who is managing PPE [personal protective equipment] and safety awareness and training, as well as monitoring schedules and floor plans to manage occupant density at our locations.

Each of these efforts has allowed for a successful partial return of our intramural program. The return was critical to continue research within our basic and clinical programs. Our staff have selflessly volunteered to assist NIH with COVID-19 testing, as well as with the efforts needed to manage supplies, signage, and cleaning protocols, which

allowed for the safe partial intramural return. In addition, our extramural staff have been able to maintain and thrive in our virtual environment and have taken on significant efforts related to COVID-19 research.

## 4 What are some of the ways in which NIAAA continues to promote diversity in the workplace and prepare the scientific workforce for the future?

Diversity and inclusion are top priorities for NIAAA, and we will continue to strive for improvements in every aspect of the organization. We have recently created a new committee composed of members with varying experience and background to broadly represent the organization. The committee will be identifying barriers and recommending new and innovative solutions to improve efforts. The goal is to strengthen our culture to ensure that those values are woven into every aspect of our mission, from scientific research to staffing within the Institute.

## 5 Outside of work, what are some of your favorite activities?

In addition to spending time with my family and friends, I enjoy pursuing three great loves: dogs, amateur photography, and the outdoors. Luckily, these things typically go hand in hand, and I am happiest when I am outside enjoying nature. Over the years, that has involved many different adventures, including surfing, scuba diving, hiking, travel, boating, paddleboarding, cycling, and now camping. During the early weeks of the pandemic, we purchased a small travel trailer and have been spending every possible moment exploring, camping, and hiking in some of our beautiful Maryland state parks, while still being able to physically distance and stay safe. This has allowed us to maintain our balance during the challenges that we have all faced during the pandemic. Our dog also loves to hike, so we get to combine time spent with her with nature and hiking—and we get lots of opportunities for photography along the way!

### ABOUT US

*NIAAA Spectrum* is NIAAA's triannual webzine. With engaging feature articles, short news updates, and colorful graphics, *NIAAA Spectrum* offers accessible and relevant information on NIAAA and the alcohol research field.

### CONTACT US

#### National Institute on Alcohol Abuse and Alcoholism (NIAAA)

Publications Distribution Center  
 P.O. Box 10686, Rockville, MD 20849-0686  
 888-MY-NIAAA (888-696-4222)



National Institute  
 on Alcohol Abuse  
 and Alcoholism