

Four Decades at the Forefront of Addiction Research and Training

CHRISTOPHER W. KAHLER, PhD

ABSTRACT

This article summarizes the accomplishments and 43-year history of the Center for Alcohol and Addiction Studies (CAAS) at the Brown University School of Public Health, with a particular focus on the Center's work on substance use and chronic disease since the school's accreditation in 2013. Select research is highlighted as examples of the Center's broad range of clinical translational research that have informed fundamental understanding of addiction and the interventions, practices, and policies that most effectively reduce harm and support recovery.

KEYWORDS: Substance use; addiction; chronic disease; treatment; harm reduction

INTRODUCTION

Established at Brown University in 1982 under Founding Director David Lewis, MD, the Center for Alcohol and Addiction Studies (CAAS) maintains a 43-year legacy as one of the nation's most influential hubs for addiction science, serving as a leading source of robust evidence for effective substance use treatment and harm-reduction strategies. Following Lewis, Peter Monti, PhD, served as the CAAS director from 2000 to 2022, providing visionary leadership while CAAS's research and training capacity grew exponentially during a period of robust National Institutes of Health (NIH) funding. Most recently, longtime CAAS faculty member Suzanne Colby, PhD, served expertly as interim director from 2022–2023, and this author has proudly held the director position since 2023.

CAAS's mission is to "Improve the health and well-being of all individuals and communities impacted by substance use and addiction through collaborative, multidisciplinary research, exceptional education and training, and meaningful community engagement." As the oldest research center in the School of Public Health, CAAS brings together more than 40 faculty in the school—including psychologists, social workers, physicians, epidemiologists, and health services and policy researchers supported by more than \$90 million in research funding—in addition to over 25 faculty affiliates across the university and affiliated hospitals. CAAS faculty have pioneered one of the nation's most influential

postdoctoral addiction research training programs, which has produced over 200 leaders improving the health of individuals and communities domestically and globally. This training program has been continuously supported for 40 years by a training grant from the National Institute on Alcohol Abuse and Alcoholism (NIAAA), and for 23 years by a training grant from the National Institute on Drug Abuse (NIDA).

SCIENTIFIC FOCUS AND INNOVATIONS

CAAS has contributed fundamental knowledge to our understanding of addiction, spanning the continuum from determining who is most at risk to which interventions work best in specific populations, and assessing the profound impact of treatment and harm reduction on individual and community health. Our faculty, trainees, students, and staff have been at the forefront of crucial advances.

Pioneering Behavioral Therapies

CAAS research established the initial evidence on cue reactivity in addiction, directly leading to the development of cue exposure and skills training as effective addiction therapies, and has provided a crucial evidence base for promoting smoking cessation in people with other substance use disorders or mental illness. We continue to lead highly influential research, adapting motivational interviewing as a harm reduction tool across diverse populations—from reducing alcohol use in those experiencing stigma, trauma, or acute illness/injury to reducing substance-related harms in adolescents and young adults.

Driving Addiction Medicine

The legacy of groundbreaking CAAS research in addiction medicine includes major trials testing the only two medications to treat alcohol use disorder that have gained U.S. Food and Drug Administration (FDA) approval in the last 30 years (naltrexone and acamprosate) and extends to current trials of novel pharmacotherapies for alcohol use disorder like GLP-1 agonists and methylenedioxymethamphetamine (MDMA).

Leveraging Technology

CAAS houses leading innovative, technology-driven research, including the application of wearable sensors,

mobile apps, and smartphone surveys to understand substance use and recovery in daily life, and applying treatment technologies like virtual reality and brain stimulation.

Informing Policy

CAAS research directly informs policy and practice, for example, by innovating methods to reduce opioid overdoses through improved availability and access to overdose reversal medications and medications that support long-term recovery. Other policy-relevant work has examined how flavors affect e-cigarette use in adolescents and adults, provided critical analysis of e-cigarette flavor policy, and generated evidence that reduced-nicotine cigarettes can reduce tobacco addiction—research used by the FDA to propose a new rule to reduce the amount of nicotine in cigarettes.

NEW DIRECTIONS IN SUBSTANCE USE AND HEALTH

Since the accreditation of the Brown University School of Public Health in 2013, CAAS has increasingly focused on addressing the critical role of substance use as a public health threat to the prevention and management of chronic disease. This work has led to the two largest NIH-funded projects in the center's history.

For 15 years, CAAS has housed the Alcohol Research Center on HIV (ARCH) funded by a program project grant from the NIAAA. In partnership with the Providence/Boston Center for AIDS Research (CFAR), ARCH-supported research among people with HIV has demonstrated that alcohol has both direct effects on liver function and indirect effects on viral control and immune function through reduced adherence to antiretroviral therapy. ARCH research has shown how alcohol contributes to brain structural abnormalities and cognitive dysfunction, as well as how alcohol is associated with systemic inflammation. Intervention research has shown that an app-based intervention can reduce unhealthy alcohol use and sexual risk behavior in men who have sex with men; demonstrated that brief interventions, motivational interviewing, and text messaging are viable approaches to address unhealthy alcohol use in HIV care; developed adaptations of individual and couples-based approaches tailored for sexual and gender minority populations with HIV; and evaluated implementation of a cascading train-the-trainer model that resulted in major increases in the rates of alcohol screening and brief intervention delivered in HIV-care settings in South Africa. The ARCH also funded a series of innovative pilot grants (some co-funded with the Providence/Boston CFAR), hosted intensive summer workshops, and supported a robust program of postdoctoral training in alcohol and HIV research.

CENTER FOR ADDICTION AND DISEASE RISK EXACERBATION

In 2019, CAAS received funding from the National Institute on General Medical Sciences (NIGMS) to establish a Center of Biomedical Research Excellence, creating the Center for Addiction and Disease Risk Exacerbation (CADRE), which facilitates rigorous, multidisciplinary research that illuminates how substance use exacerbates the progression and outcomes of chronic disease. Through its emphasis on translational human laboratory studies, real-world behavioral assessment and the recruitment of diverse and underserved populations, CADRE strengthens CAAS's capacity to conduct impactful research that informs prevention, treatment, and public health policy and benefits the community.

CADRE plays a critical role in cultivating the next generation of substance use researchers across Rhode Island. CADRE's Clinical Lab Core and REACH Core provide investigators with scientific, methodological and technical support, including clinical and laboratory support, blood processing and analysis, and participant recruitment and engagement support. Recently, CADRE purchased the only FibroScan® machine devoted solely to research at Brown University. Noninvasive liver imaging with vibration-controlled transient elastography (VCTE™) allows for early detection of liver fibrosis that can result from unhealthy alcohol use alone and in combination with metabolic syndrome. CADRE services are available to investigators both within and outside Brown University, and can be accessed through competitive pilot-funding opportunities or by fee-for-service mechanisms that allow researchers to incorporate CADRE resources into new and ongoing studies.

CADRE supports a wide array of research projects that reflect its commitment to understanding how substance use interacts with physical and mental health across diverse populations. For example, partnering with Clínica Esperanza and The Hepatology Clinic at Rhode Island Hospital, a CADRE-supported project is providing no-cost, on-site liver scans to study participants with cardiometabolic and alcohol-consumption risk factors, aiming to prevent the progression of liver disease. Another CADRE project is partnering with Rhode Island-based organizations to examine how parental alcohol use and stress shape youth behavioral risk trajectories. Current CADRE projects are examining how nicotine product use among individuals with obesity influences smoking harm reduction and health outcomes, and are leveraging wearable and mobile assessment technologies to evaluate real-time patterns of cannabis use related to mood and depressive symptoms. Prior CADRE studies have explored how alcohol use affects inflammation in people living with HIV; how incarceration, tobacco use and alcohol use intersect within the social networks of justice-involved individuals to influence cardiovascular disease risk; and how alcohol consumption may influence biological markers associated with aging and Alzheimer's disease.

THE FUTURE

In 2023–2024, CAAS underwent a comprehensive strategic planning process, culminating in the Center’s strategic plan, *CAAS Forward*. The plan identifies our mission-driven research priorities, including: (a) deepening research in harm reduction with a particular focus on medical comorbidities; (b) leading efforts to integrate laboratory and ecologic research methods; (c) expanding research on health equity and addiction; and (d) accelerating the translation of research into practice. Additionally, *CAAS Forward* prioritizes the deepening of CAAS’s engagement with the local community, serving as a trusted source of information and collaboration, a partner to researchers and clinicians throughout the state, and a contributor to policy advances. Given the massive economic, social, community, and individual health costs of substance use and addiction, CAAS can play a vital role in Rhode Island supporting effective practices and policies that reduce use and harms and support recovery in our state. As the research community navigates a challenging funding climate at NIH, robust centers like CAAS will remain essential resources to maintain research continuity, to support the next generation of addiction scholars, and to innovate solutions to some of our most pressing public health priorities. We welcome engagement in our seminar series and new community, clinical and research partnerships to ensure our vital mission is shared with all.

Author

Christopher W. Kahler, PhD, Professor of Behavioral and Social Sciences and Psychiatry and Human Behavior, and Director of the Center for Alcohol and Addiction Studies at the Brown University School of Public Health, Providence, RI.

Disclosure

The author has no disclosures to report.

Correspondence

Christopher W. Kahler, PhD
Center for Alcohol and Addiction Studies
Box G-S121-5
Brown University
Providence, RI 02912
christopher_kahler@brown.edu