



# Vermont Center on Behavior & Health

The University of Vermont

YEAR IN REVIEW 2017-2018



# From The Director



I am delighted to have another opportunity to share our latest accomplishments in this 2017-2018 Year in Review for the Vermont Center on Behavior and Health, which includes the UVM Center of Biomedical Research Excellence (COBRE) and the UVM Center of Tobacco Regulatory Science (TCORS). As the subsequent pages will attest, we continue making great strides in elucidating relationships between personal behavior patterns and risk for chronic disease and premature death, developing more effective behavior-change interventions, and reducing health disparities.

Our studies surrounding unhealthy behavior – tobacco use, physical inactivity and prescription opioid abuse – are impacting scientific understanding and potential clinical treatments of these pressing and expensive public health problems. In the last year alone, our investigators have published more than 50 peer-reviewed articles in these important topic areas. We are also thrilled to announce that we have successfully renewed our TCORS and COBRE awards that will provide critical support for the VCBH through August, 2023.

To further disseminate the latest research examining these critical national and international issues, we sponsor an annual national conference on behavior and health and publish an annual Special Issue of Preventive Medicine based on the conference proceedings.

We deeply appreciate the outstanding support and dedication of all VCBH faculty, fellows, and staff members, UVM Academic Departments, Colleges, and Administrative Offices, Brown University, Johns Hopkins University School of Medicine, and other university collaborators, and the NIH and FDA without whom none of this would be possible. To follow VCBH progress over the next year, we encourage you to visit the VCBH website: [www.med.uvm.edu/behaviorandhealth](http://www.med.uvm.edu/behaviorandhealth).

Sincerely,

Stephen T. Higgins, Ph.D.  
Director, Vermont Center on Behavior and Health  
Vice Chair, UVM Department of Psychiatry  
Virginia H. Donaldson MD '51 Endowed Professor of Translational Science



## Year in Review 2017–2018

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# 6th Annual Behavior & Health Conference

## US Opioid Epidemic: The Need for Innovation and Greater Treatment Capacity



Stephen Higgins, Ph.D.

The exclusive focus of this year's conference is the nation's opioid epidemic with a specific emphasis on innovative strategies to increase access to medication assisted treatment, providing more effective chronic pain management strategies in the context of the epidemic, and building additional treatment capacity. These topics are among the major priorities of the U.S. Department of Health and Human Services and the National Institutes of Health.

Scholars from leading universities and

medical centers share their research and knowledge throughout the 2-day program, October 11-12.

### 2018 Opening Remarks

Vermont U.S. Senator Patrick J. Leahy will offer opening remarks on how the opioid epidemic is impacting Vermont and the nation, and federal efforts he is leading to curb this national epidemic.

Vermont State Attorney General, Thomas J. Donovan Jr. (T.J.) will offer his opening remarks on Day 2. Attorney General Donovan is a Vermont native and continues to fight to make Vermont communities healthier, safer, and more prosperous.

### 2018 Keynote Speaker: Sharon Walsh, Ph.D.



Sharon Walsh

Sharon Walsh, Ph.D., is the Director of the Center on Drug and Alcohol Research (CDAR) and Professor of Behavioral Science at the University of Kentucky. The CDAR conducts research on biological, psychological, sociopolitical, and clinical aspects of substance abuse and related behaviors. This Center has a long-standing history of providing effective training and evidence-based treatment, intervention, and prevention approaches.

Dr. Walsh, a Ph.D. graduate of Rutgers University, focuses her research on pharmacological issues in opioid and cocaine dependence. In addition to her role as Professor and CDAR Director, she is appointed as a Special Government Employee of the Food and Drug Administration. She has participated in two invited national initiatives for the NIH and NIDA, and has presented nationally and internationally on the opioid epidemic.

## 2018 PROGRAM Topics/Speakers

*\*Subject to change. See conference program for complete schedule.*

### THURSDAY, OCTOBER 11 8 A.M. – 4:30 P.M.

#### Opening Remarks:

Stephen T. Higgins, PhD, Director, Vermont Center on Behavior and Health

U.S. Senator Patrick J. Leahy of Vermont

Thomas J. Donovan, Jr., Attorney General, State of Vermont

#### Keynote Address: Deploying Science and Ethics to Change Hearts and Minds: The American Opioid Crisis

Sharon L. Walsh, Ph.D., Director, Center on Drug and Alcohol Abuse, Professor of Behavioral Science, University of Kentucky

#### Panel on Pain and Addiction Management

##### ■ Pain Management in Opioid Addiction Populations: An Overview

A. Thomas McLellan, M.S., Ph.D., Founder, Treatment Research Institute

##### ■ Pain Management, Addiction and Medication Development

Jack E. Henningfield, Ph.D., Vice President, Research, Health Policy, and Abuse Liability, Pinney Associates, Professor of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine

##### ■ Pain Management in Addicted Populations in Primary Care

Jeffrey H. Samet, M.D., M.P.H., Editor, Addiction Science & Clinical Practice, Chief, General Internal Medicine, John Noble MD Professor in General Internal Medicine, Professor of Public Health, Boston University Schools of Medicine and Public Health, Boston Medical Center

##### ■ Development and Pilot Testing of a Behavioral Intervention for Chronic Pain Tailored to People Living with HIV

Jessica S. Merlin, M.D., Ph.D., Associate Professor of the Division of General Internal Medicine, Department of Medicine, University of Pittsburgh

#### Panel on Innovative Efforts to Initiate Treatment

##### ■ Initiating Treatment in Incarcerated Populations

Lauren Brinkley-Rubinstein, Ph.D., Assistant Professor of Social Medicine, University of North Carolina Chapel Hill

##### ■ Initiating Treatment During Hospitalization for Endocarditis

Laura C. Fanucchi, M.D., M.P.H., Assistant Professor of Internal Medicine, University of Kentucky College of Medicine

##### ■ Initiating Treatment as Part of Prenatal Care

Marjorie C. Meyer, M.D., Associate Professor of Maternal Fetal Medicine, Vice Chair for Obstetrics, Department of Obstetrics, Gynecology and Reproductive Science, Larner College of Medicine, University of Vermont

##### ■ Initiating Treatment in the Emergency Room: Implementation

Andrew Herring, M.D., Associate Research Director, Emergency Medicine Specialist, Alameda Health System

### FRIDAY, OCTOBER 12 8 A.M. – 2 P.M.

#### Opening Remarks:

Stephen T. Higgins, PhD, Director, Vermont Center on Behavior and Health

Thomas J. Donovan Jr. (T.J.), Vermont State Attorney General

#### Panel on Treatment in States Lacking Adequate Infrastructure

##### ■ Unlikely Beginnings: How Appalachia became the Epicenter of the Opioid Epidemic

Jennifer R. Havens, Ph.D., M.P.H., Associate Professor, Center on Drug and Alcohol Research, Department of Behavioral Science, University of Kentucky College of Medicine

##### ■ Opioid Overdose Education Efforts

Kelly E. Dunn, Ph.D., Associate Professor, Behavioral Pharmacology Research Unit, Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine

##### ■ Technology-assisted Buprenorphine for Expanding Treatment Access

Stacey C. Sigmon, Ph.D., Tenured Associate Professor of Psychiatry and Psychological Science, University of Vermont

##### ■ Naloxone and Beyond: Clinical and Public Health Interventions to Address Overdose

Alexander Y. Walley, M.D., MS.c., Associate Professor of Medicine, Director, Addiction Medicine Fellowship, Clinical Addiction Research and Education Unit, Boston Medical Center/Boston University School of Medicine

##### ■ Comprehensive Medical Response to the Opioid Epidemic

Adam Bisaga, M.D., Professor of Psychiatry, Columbia University Medical Center, Research Scientist, New York State Psychiatric Institute

##### ■ Evaluation of Treatment Impact in the Vermont Hub and Spoke Model

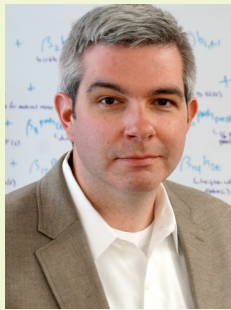
Richard A. Rawson, Ph.D., Research Professor, Vermont Center on Behavior and Health, Department of Psychiatry, University of Vermont, Professor Emeritus, Department of Psychiatry and Biobehavioral Sciences, University of California Los Angeles

##### ■ Injection Opioid Use and Hepatitis C & HIV in New England

Peter D. Friedmann, M.D., M.P.H., Associate Dean for Research, University of Massachusetts Medical School- Baystate, Chief Research Officer, Baystate Health

##### ■ Addiction and Suicide: An Overview

Sanchit Maruti, M.D., Department of Psychiatry, University of Vermont Medical Center Addiction Treatment Program, University of Vermont



Thomas Ahern, Ph.D.

## COBRE PROJECT DIRECTORS

**Thomas Ahern, Ph.D.**, Assistant Professor, Division of Surgical Research and Department of Biochemistry, Measuring the Impact of Lifestyle and Behavior on Breast Cancer Incidence in High-risk Women; Mentor: Brian L. Sprague, Ph.D.



Christopher Brady, M.D.

**Christopher Brady, M.D.**, Assistant Professor, Department of Ophthalmology: Retina Division, Improving Linkage to Care after Ocular Telehealth Screening in Diabetic Adults; Mentor: Stephen T Higgins, Ph.D.



Allison Kurti, Ph.D.

**Allison Kurti, Ph.D.**, Assistant Professor, Department of Psychiatry, Smartphone-based Financial Incentives to Promote Smoking Cessation among Pregnant Women; Mentor: Stephen T. Higgins, Ph.D.



Thomas Longden, Ph.D.

**Thomas Longden, Ph.D.**, Research Assistant Professor, Department of Pharmacology, The Effects of Stress on Capillary-to-arteriole Communication in the Brain; Mentor: Mark T. Nelson, Ph.D.



Andrea C. Villanti, Ph.D.

**Andrea C. Villanti, Ph.D.**, Associate Professor, Departments of Psychiatry and Psychology, Improving Smoking Cessation in Socioeconomically Disadvantaged Young Adults; Mentor: Stephen T. Higgins, Ph.D.

## COBRE The Center of Biomedical Research Excellence

The VCBH is proud to announce that our application to continue our Center of Biomedical Research Excellence (COBRE) award for another 5-year period has been approved for funding by the NIH's National Institute on General Medical Sciences (NIGMS). The COBRE Phase II will continue to focus on investigating relationships between personal behaviors and risk for chronic disease and premature death. Unhealthy personal behaviors (e.g., substance abuse, physical inactivity) account for 40% of premature deaths in the U.S. annually and substantially increase healthcare costs and health disparities.

There is a tremendous need for (a) greater scientific understanding of the mechanisms underpinning vulnerability to these risk behaviors and (b) more effective interventions to promote behavior change. We approach these challenges using the concepts, principles, and methods of behavioral economics and behavioral pharmacology. This effort involves key interdisciplinary collaborations (a) across multiple academic departments and colleges within UVM, (b) with key Vermont community healthcare leaders, and (c) with other national and international university collaborators, including Brown University, University of Kentucky, and University of Oviedo (Spain).

An overarching priority of our COBRE project is to continue to support the selection and career development of excellent UVM junior faculty (see sidebar). We support and mentor a maximum of five junior faculty projects at any one time. The COBRE junior faculty, referred to as Project Directors (PDs), receive generous research funding and mentoring by senior faculty with the overarching goal of having them succeed in obtaining their first NIH independent research grant (RO1 or equivalent).

## TCORS The UVM Center on Tobacco Regulatory Science

The UVM Tobacco Center of Regulatory Science (TCORS) application to continue has also been approved for another 5-year period--a momentous accomplishment for the VCBH. The UVM TCORS will continue as one of ten such centers in the U.S. that are supported through a cooperative agreement of the National Institutes of Health (NIH) and Food and Drug Administration (FDA). The particular NIH Institute providing support varies depending on the research topic being investigated with UVM TCORS funding coming through the National Institute on Drug Abuse (NIDA) and FDA. The Family Smoking Prevention and Tobacco Control Act has given the federal government (i.e., FDA) the authority to bring science-based regulation to the manufacturing, marketing and distribution of tobacco products. UVM and the other TCORS centers will continue providing scientific expertise relevant to the FDA's tobacco regulatory mission.

UVM's Center focuses on a crosscutting integrative theme (vulnerable populations) and two of the scientific domains (addiction and behavior) prioritized by FDA's Center for Tobacco Products in carrying out its charge of regulating tobacco products. Building on research conducted in the previous funding period, we approach these priorities using the concepts, principles, and methods of behavioral economics and behavioral pharmacology. The center will continue to work closely with collaborators and consultants from Brown University, Johns Hopkins University, University of Minnesota, Wake Forest University, and University of Pittsburgh.

Our crosscutting priority is researching tobacco products in vulnerable populations, including women of childbearing age/pregnant women, individuals with comorbid other substance use disorders, and individuals with comorbid serious mental illness. Each of these populations is at increased risk for tobacco use and dependence or tobacco-related adverse health

## RESEARCH SNAPSHOT



My research broadly focuses on measuring and improving health-related behaviors in vulnerable populations. In one large study, we look at the effects of different levels of nicotine in cigarettes among several vulnerable groups including those with depression and anxiety. I lead another large study that examines the use of incentives to improve attendance at cardiac rehabilitation among low socio-economic-status patients. My lab also conducts several other research projects including several at the intersection of tobacco use and cardiac health as well the use of e-cigarettes in vulnerable populations.

**DIANN E. GAALEMA, PH.D.**,  
VCBH Assistant Professor, Departments of  
Psychiatry and Psychology

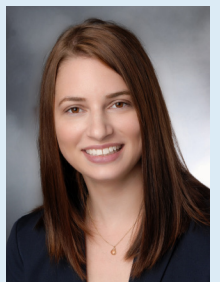
outcomes. Yet despite these serious vulnerabilities, these populations are typically excluded from tobacco regulatory studies. For the FDA to effectively execute its tobacco regulatory responsibilities, having sound scientific evidence on how new tobacco products impact vulnerable populations is critically important. Our goal is to assist in providing the FDA with that evidence.

Regarding specific research priorities, the Center will continue to focus on reduced nicotine standards in combusted tobacco products. We will examine the extent to which the availability and appeal of alternative non-combusted sources of nicotine (i.e., e-cigarettes) may moderate the impact of reduced nicotine standards on reducing the addiction potential of cigarette smoking. This topic will be investigated in each of our vulnerable populations. Regulating the nicotine content of cigarettes and other products is an important responsibility of the FDA that has tremendous potential to reduce smoking prevalence and improve U.S. public health.

## FORMER VCBH PRE-DOC HIRED AS FDA SOCIAL SCIENTIST

**Mollie Miller, Ph.D.**, a former postdoctoral research associate with UVM TCORS at Brown University and former UVM predoctoral fellow, was hired as a Social Scientist at the FDA Center for Tobacco Products. Dr. Miller previously participated in a 1-year National

Academy of Medicine sponsored Tobacco Regulatory Science Fellowship at the FDA. Congratulations, Dr. Miller!



## Garavan Receives T32 Award Focused on Training in the Neurobiology of Substance Abuse

VCBH Investigator, **Hugh Garavan, Ph.D.**, has been awarded a 5-year T32 pre and post-doctoral training program from NIDA, making this the second NIDA T32 training program within the VCBH. The purpose of this newest program is to train predoctoral and postdoctoral scholars in the application of complex systems approaches to the neurobiology of substance abuse. The core curriculum will incorporate: 1) the established complex systems graduate certificate at the University of Vermont; 2) course work in neurosciences, psychology and addiction, including classes focused on developing human subjects research skills; as well as 3) specialized courses designed to directly and effectively bridge the gap between the core disciplines. The overarching aim of the program is to produce researchers poised to apply state-of-the-art analytic tools to understand the neurobiology of drug abuse.

Dr. Garavan states his team is, “very excited to extend VCBH activities in this direction. Bringing complex system methodologies to bear on the rich data sets routinely collected by VCBH researchers will hopefully yield new insights into the mechanisms and processes underlying health-related behaviors.”

## Ades & Gaalema receive Editorial Acceptance in Top Cardiology Journal

The editorial titled, “Geographic Variations in Cardiac Rehabilitation Use: Regional Variations in Medical Care or in Patient Behaviors?”, by VCBH Researchers **Philip Ades, M.D.**, and **Diann Gaalema, Ph.D.** was accepted for publication in one of the leading cardiology journals, *Circulation*. The editorial describes the importance of individual patient’s health oriented behaviors and socio-economic measures as key factors explaining regional variations in cardiac rehabilitation participation. Just as there is a “stroke belt” and an “obesity belt”, patient behaviors explain lower use of cardiac rehabilitation in the South and the far West. Dr. Ades explains that, “without the input of Drs. Higgins and Gaalema, this line of thinking would have never come into play. I have learned so much in my collaborations with the VCBH.”

## Sigmon Co-authors JAMA Psychiatry Paper on Novel Treatment for Opioid Use Disorder

VCBH Faculty, **Stacey Sigmon, Ph.D.**, along with other leading opioid addiction researchers, have published in paper in *JAMA Psychiatry* looking at whether weekly and monthly subcutaneous (SC) buprenorphine depot formulations are non-inferior treatments compared to a daily sublingual (SL) combination of buprenorphine and naloxone. Daily SL buprenorphine with naloxone has shown to effectively treat opioid use disorder but with limitations including sub-optimal medication adherence and intravenous misuse. Researchers believe that weekly and monthly SC buprenorphine extended release formulations, may address these limitations while still proving to be effective. The randomized clinical trial of 428 participants demonstrated that long-acting buprenorphine formulations did indeed appear to be effective for the treatment of opioid use disorder.



## RESEARCH SNAPSHOT

I am working closely with Diann E. Gaalema, Ph.D., finalizing results and manuscript preparation for a COBRE-supported study on incentives to encourage cardiac rehabilitation participation in low socio-economic-status/Medicaid patients. I am also mentoring Sherrie Khadanga M.D., who will soon be coming on as junior faculty in Cardiology on a study looking to determine behavioral factors that result in much lower cardiac rehabilitation rates for women vs. men. COBRE pilot funding will support this work. We are also working on a randomized-controlled trial optimizing exercise-training results for women in cardiac rehabilitation. I continue my work with the CDC working on methods to increase cardiac rehabilitation participation across the U.S. In 2016 I became the first University of Vermont Philip Ades M.D. Endowed Professor of Cardiovascular Prevention.

**PHILIP ADES, M.D.**,  
VCBH Associate Director, Professor of  
Cardiovascular Medicine



## Fourth Preventive Medicine Special Issue on Behavior, Health and Health Disparities

There is a broad consensus that vulnerable populations are at a significantly higher risk for poor health outcomes due to an increase in tobacco use. Vulnerable medical populations like those diagnosed with diabetes or heart disease, also present with higher rates of obesity. Personal behaviors such as tobacco use and physical inactivity/obesity are among the most important modifiable causes of chronic disease and its impact on population health. To effectively manage the public health consequences and decrease the negative impact of tobacco use and obesity, science is increasingly turning to personal behavior change for solutions.

To share the latest research on these pressing matters, VCBH Director **Stephen T. Higgins, Ph.D.**, collaborated with experts on a fourth Special Issue of the peer-reviewed journal *Preventive Medicine*, which was published in November 2017. “The U.S. ranks near the bottom on measures of population health relative to other industrialized countries despite

spending orders of magnitude more on health care than any other nation.” Higgins writes in his introduction. “Population health experts agree that the area of personal behavior, or lifestyle, such as substance abuse, physical inactivity/obesity, and non-adherence with medical regimens is the single largest contributor to this situation.” The takeaway, explains Higgins, is that, “behavior change represents an essential step in improving population health generally and curtailing health disparities more specifically”. The fifth Special Issue is due to appear in November 2018, focusing exclusively on current scientific and policy issues in tobacco regulatory science.



## UVM TCORS Reduced Nicotine Study in JAMA PSYCHIATRY

Cigarette smoking is recognized as the number-one cause of preventable disease and death in the U.S., but it is a habit that is tough to break. The addictiveness of cigarettes is attributed to the nicotine content, which is a topic of high interest to the FDA. UVM TCORS Director, **Stephen T. Higgins, Ph.D.**, led a multi-site clinical trial examining the effects of reduced nicotine content cigarettes in vulnerable populations. The *JAMA Psychiatry* paper titled, “Addiction Potential of Cigarettes With Reduced Nicotine Content in Populations With Psychiatric Disorders and Other Vulnerabilities to Tobacco Addiction”, discusses the findings from the study which suggest that reducing the nicotine content in cigarettes may also decrease their addiction potential especially in populations with increased vulnerabilities. The study garnered significant national media coverage.



## Heil Receives NIDA Award for Study on Pregnant Women with Opioid Use Disorder

**Sarah Heil, Ph.D.**, is now the Co-Principal Investigator of a \$3.3 million grant from the National Institute on Drug Abuse to conduct a multi-site treatment trial of pregnant women with opioid use disorder. Dr. Heil and colleagues from the University of North Carolina Chapel Hill, Johns Hopkins University, and Virginia Commonwealth University, will compare maternal, fetal, and neonatal outcomes associated with medically-supervised withdrawal (MSW) vs. opioid agonist therapy (OAT). OAT is the recommended standard of care, but there is increasing interest in MSW during pregnancy. Mixed results from weak studies in the existing scientific literature make it difficult to draw clear conclusions about the relative risks and benefits of MSW and OAT during pregnancy. The results will help patients, providers, medical societies, and governments make more informed decisions about the treatment of opioid use disorder during pregnancy.



## UVM TCORS Research Presented at High-Visibility Sessions at 2018 SRNT Conference

VCBH Director, **Stephen T. Higgins, Ph.D.**, and other leading tobacco researchers, were invited to deliver the plenary presentation at the 2018 SRNT conference to provide supporting evidence of a proposed FDA nicotine reduction policy. Their symposium titled, "Reducing Nicotine Content in Cigarettes: A Discussion of the Evidence and Policy Implications", aligns with the FDA's recent announcement proposing a reduction in nicotine content in cigarettes. This proposal has undoubtedly been influenced by research on the impact of this policy, which is the primary focus of UVM's Tobacco Center of Regulatory Science (TCORS).

**Allison Kurti, Ph.D.**, and Dr. Higgins co-chaired

a presentation on tobacco use among reproductive-aged women titled, "Vulnerabilities to Tobacco Product Use and Strategies to Reduce Use Among Women of Reproductive Age".

**Andrea Villanti, Ph.D., M.P.H.**, gave a plenary talk on "Developing Research to Inform Tobacco-Related Policy", as part of her 2018 Jarvik-Russell Early Career Award.

FDA Commissioner, **Scott Gottlieb, M.D.**, commended all SRNT presenters stating they are "exactly the kind of people we had in mind when we envision who would contribute to the science underpinning dialogue [on nicotine reduction] and participate in the discussions we all need to have."

## Garavan and Potter Speak to Progress of Adolescent Brain Cognitive Development (ABCD) Study



The Adolescent Brain Cognitive Development (ABCD) study is the largest long-term brain development and child health study in the United States. Funded by the National Institutes of Health (NIH), researchers in the fields of neuroscience and adolescent development

from 21 research sites across the country coordinate and conduct the project. Together, they track the development of 10,000 participants through adolescence into young adulthood. **Hugh Garavan, Ph.D.** and **Alexandra Potter, Ph.D.**, UVM ABCD Principal Investigators and VCBH Researchers, reported on the progress of the study, both nationwide and in Vermont. Dr. Garavan presented initial results describing the national and Vermont sample focusing on behaviors such as levels of exercise, hours of sleep, and extracurricular activities. Dr. Garavan states, "The main take home message in this early stage of the study is the level of variation in all of these measures in the sample. This sets the state of longitudinal element of this study which will entail following the sample of the next ten years in order to map their neurodevelopmental trajectories."

## Sigmon Invited to Speak in Addiction Medicine 2018 Symposium

VCBH faculty and investigator, **Stacey Sigmon, Ph.D.**, was invited to be a part of the 7th Annual Translational Science Symposium titled: "Addiction Medicine 2018: Translational Science at the Cutting Edge". This symposium, co-sponsored by the Boston University Clinical & Translational Science Institute and the Boston Medical Center Grayken Center for Addiction, featured ground breaking addiction medicine research and new policy initiatives being explored in addiction treatment. Dr. Sigmon presented on her novel Interim Buprenorphine Treatment system, which uses technology-assisted interim buprenorphine medication dosing for those who are on a wait list to enroll in opioid use treatment. This dosing regimen supports the delivery of pharmacotherapy while minimizing non-adherence and other individual and societal risks that are present during treatment delays.

## Lecture Series

### Monthly Lecture Series Brings National Behavior & Health Experts to UVM

The VCBH Lecture Series is a monthly event that brings national and international scholars in the area of behavior, substance abuse, neurobiology, tobacco regulatory science, and health to UVM's Larner College of Medicine. The invited guest spends a day visiting with VCBH student trainees and faculty members, in addition to giving a public lecture. Speakers for 2017-2018 included: Michelle Lofwall, M.D., University of Kentucky; Reagan Wetherill, Ph.D., University of Pennsylvania; Jaimie Gradus D.S.c., M.P.H., U.S. Department of Veterans Affairs; Kelly Dunn, Ph.D., Johns Hopkins University; Adam Leventhal, Ph.D., University of Southern California; David Holtgrave, Ph.D., Johns Hopkins University. The VCBH also partners with the University of Vermont Psychiatry Grand Round's program to bring in additional guest speakers including Richard Rawson, Ph.D., University of Vermont/University of California Las Angeles and Matthew Price, Ph.D., University of Vermont.

## RESEARCH SNAPSHOT



We have recently completed studies of whether a) smoking cessation makes non-drug rewards less rewarding, b) larger amounts of reduction in cigs/day increase the probability of a quit attempt, c) continuing nicotine patches after a lapse reduces the likelihood of a relapse, d) stopping e-cigarettes causes withdrawal, e) study characteristics influence the estimate of the effectiveness of medications for smoking cessation and alcohol problems, f) number of cigs/day varies much in smokers, and g) empathy, working alliance and beliefs about nicotine addiction mediate the effects of behavioral treatments for smoking cessation.

**JOHN R. HUGHES, M.D.**,

*TCORS Associate Director, Professor, Departments of Psychiatry and Psychological Sciences*





# Trainee Focus

My research focuses on nicotine reduction among smokers not ready to quit and the influence of methodological characteristics on studies' outcomes. I recently completed my dissertation: a randomized trial to test reducing cigarettes per day versus switching to very low nicotine content cigarettes. Other recent projects include 1) a fine-grained secondary analysis testing the influence of short term reduction in smoking on initiating quit attempts, 2) a comparison of distal vs proximal predictors of quitting smoking, and 3) meta-analyses to identify the influence of non-pharmacological study characteristics on treatment efficacy among trials of medications for alcohol and tobacco dependence.



**Elias Klemperer,**  
T32 Predoctoral Fellow

My research focuses on substance use disorders and women's health. More specifically, I am interested in contraceptive use and pregnancy outcomes among women with opioid use and tobacco use disorders.



**Heidi Melbostad,**  
T32 Predoctoral Fellow



My current research involves promoting smoking cessation among socioeconomically disadvantaged pregnant women. As part of this research, I am investigating the intersection of the Cigarette Purchase Task (CPT) and Delay Discounting (DD) in predicting quit attempts during the current pregnancy with this population (Nighbor et al., 2018;

**Tyler Nighbor, Ph.D.,**  
T32 Postdoctoral Fellow

under review, Journal of the Experimental Analysis of Behavior). Additionally, I am investigating urban versus rural differences in smoking prevalence among a nationally representative sample of pregnant and non-pregnant women.

I have most recently been investigating e-cigarette patterns, measures, and correlates using a large, nationally representative dataset. I am also currently interested in the intersectionality of psychiatric disorders and cigarette use.

**Maria Parker, Ph.D.,**  
TCORS Postdoctoral Fellow



My research involves studying the effects of low-nicotine content cigarettes on the structural and functional neurobiology of individuals from vulnerable populations. Additional projects include identifying predictors of behavioral health problems in adolescence using longitudinal multimodal datasets.



**Philip Spechler,**  
TCORS Predoctoral Fellow



As a fourth year graduate student, I am currently investigating how smoking and related behaviors are affected by reducing nicotine content in cigarettes in populations especially vulnerable to smoking. Specifically, I've been investigating the interaction between mentholation and nicotine content. In addition to this work, I've been investigating the impact that smoking during pregnancy has on food reinforcement using an operant choice task.

**Danielle Davis,**  
TCORS Predoctoral Fellow

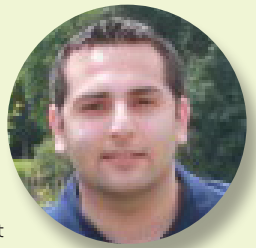
My primary area of research has focused on e-cigarettes as well as other alternative tobacco products. Most recently I have examined abuse liability of e-cigarettes under a behavioral economic approach. In a separate line of research, I have investigated the use of combusted and non-combusted tobacco products among cardiac patients.



**Irene Pericot-Valverde, Ph.D.,**  
TCORS Postdoctoral Fellow

## RESEARCH SNAPSHOT

My research mainly focuses on investigating the effects of nicotine exposure on the brain using structural and functional neuroimaging. I am currently part of the ongoing TCORS project where I am looking at the impact of 12 weeks of very low-nicotine content cigarettes on the brain in vulnerable populations. In another project, I examine the structural and functional neural correlates of low nicotine exposure as well as the genetic contribution of nicotinic receptor polymorphisms in a large sample of light smoker and non-smoker adolescents. Alongside my current research, I am also interested in applying novel machine learning techniques on big data sets to identify the neurobiological and behavioral risk factors underlying substance use and psychiatric diseases.



**BADER CHAARANI, PH.D.,**  
*Assistant Professor, Department of Psychiatry*

Working with Stacey Sigmon, my research interests are in better understanding different problematic health behaviors including tobacco and opioid abuse. I work on projects related to the intersection between substance use and psychopathology and tobacco regulatory science-focused projects examining different harm reduction strategies.



**Joanna Streck,**  
TCORS Predoctoral Fellow



I am working on a randomized comparative effectiveness trial using incentives to promote smoking cessation in disadvantaged mothers of young children. I am also currently leading a manuscript examining the use of home smoking bans over the antepartum and postpartum period among pregnant smokers and the association of smoking bans with nicotine exposure, birth outcomes, and smoking abstinence.

**Diana Keith, Ph.D.,**  
T32 Postdoctoral Fellow



# Local and Global Health

## VCBH Researcher Evaluates Vermont Hub and Spoke Model against Opioid Addiction

**Rick Rawson, Ph.D.**, a research professor with the VCBH, led an evaluation of the Vermont hub and spoke system of care against opioid addiction. The report summary brief outlines the findings of the 2017 study to understand the impact of the model on those in treatment, and their



families. The evaluation shows a 96% decrease in opioid use after admittance into the hub and spoke treatment program, along with a 90% decrease in illegal activity among study participants. Dr. Rawson is, "inspired by the treatment going on in primary care settings" and believes this will, "change the course of opioid addiction and recovery".

## UVM Accomplishments in Opioid Research Featured in Vermont Medicine

Over the past 5 years, Vermont has become a national leader in combating the opioid epidemic that has shaken the U.S. Vermont is specifically known for their "hub and spoke" system of care, developed by UVM Clinical Assistant Professor, John Brooklyn, M.D. This system incorporates addiction treatment into primary care. The "spokes" are a network of physicians who will administrate medication assisted treatment and the "hubs" are centers in which addiction specialists provide more intensive treatment for patients that require a higher level of support. UVM Researchers, Stacey Sigmon, Ph.D. and Richard Rawson, Ph.D., are leaders in opioid research and evaluating the effectiveness of the hub and spoke system. Dr. Rawson's 2017 assessment of the hub and spoke system and Dr. Sigmon's work in

innovative treatment options to support and expand capacity within treatment centers, were both featured in the summer 2018 *Vermont Medicine* magazine. This issue features an in depth article on the hub and spoke system and the key UVM players involved in making this such a success.



## VCBH Director Presents at 2018 UVM Cancer Center Symposium

**Stephen T. Higgins, Ph.D.**, presented VCBH research at the 2018 Clinical and Translational Research Symposium presented by the University of Vermont's Cancer Center. The focus of this year's symposium was on Cancer Control in a Rural Environment. Dr. Higgins' presentation, "Reducing Cigarette Smoking Among Disadvantaged Women", highlights his tobacco research on investigating smoking rates in disadvantaged rural women, a population in which cigarette smoking is greatly over-represented.



## Rawson and Villanti meet with Director of the Palestinian Substance Abuse Research Center

VCBH Researchers, **Rick Rawson, Ph.D.**, and **Andrea Villanti, Ph.D.**, recently hosted our Palestinian colleague, Dr. Mohammed Afifi, Director of the Substance Abuse Research Center in Gaza, Palestine. Dr. Afifi visited UVM to discuss evidenced based training of health care professionals to address tobacco use prevention. Dr. Rawson has been working with Dr. Afifi, Dr. Richard Isralowitz, at Ben Gurion University of the Negev (Israel), and other researchers in that region for more than 20 years. Drs. Rawson and Villanti are addressing the harmful impact of tobacco smoking and generating a proposal response to a NIDA International program announcement for UVM.

## RESEARCH SNAPSHOT



I am conducting a randomized controlled dismantling trial of an intervention to promote more effective contraceptive use among opioid-maintained women at risk for unintended pregnancy. I am also beginning a multi-site trial comparing medically-supervised withdrawal vs. agonist maintenance in the treatment of pregnant women with opioid use disorder in terms of maternal and neonatal outcomes. Furthermore, I am conducting studies evaluating the effects of very low nicotine content cigarettes in pregnant and non-pregnant women of low socioeconomic status, part of a series of studies being conducted with vulnerable populations in our Center on Tobacco Regulatory Science.

**SARAH H. HEIL, PH.D.**,

*VCBH, Associate Professor with Tenure, Departments of Psychiatry and Psychological Sciences*

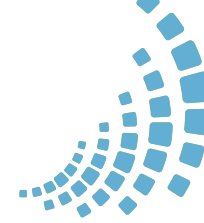


## Trainee Highlights

The VCBH is proud of its multi-faceted training program supported by the TCORS Center grant and a T32 training grant, which has continuously been funded since 1990 from the National Institute on Drug Abuse. Graduates of our training program have gone on to become successful researchers in academia, government, and health departments, as well as clinical psychologists and social scientists. 2018 was a big year for VCBH as three trainee graduates are taking the next step in their career. TCORS postdoctoral fellow, Irene Pericot-Valverde, Ph.D., accepted a Research Program Director position with a faculty appointment at Clemson University. T32 predoctoral fellow, Elias Klemperer, Ph.D., was accepted into the prestigious Yale School of Medicine Doctoral Internship in Clinical and Community Psychology. TCORS predoctoral fellow, Cecilia Bergeria, Ph.D., accepted a postdoctoral fellowship in the Behavioral Pharmacology Research Unit at Johns Hopkins University School of Medicine, working with some of our TCORS collaborators. We wish nothing but continued success and happiness for all four training program graduates!







## List of 2017–2018 Publications

The following list represents VCBH publications from September 2017 to October 2018. They are listed in alphabetical order by first VCBH author.

Abrams DB, Glasser AM, **Villanti AC**, Pearson JL, Rose S, Niaura RS. Managing nicotine without smoke to save lives now: Evidence for harm minimization. *Prev Med*. 2018 Jun 23.

Abudayyeh HS, Glasser AM, Johnson AL, Cohn AM, Wagener TL, Mays D, **Villanti AC**. Social and substance use correlates of adult hookah use, 2016. *Addict Behav*. 2017 Dec 9;79:39-44.

**Ades PA, Gaalema DE**. Geographic variations in cardiac rehabilitation use: Regional variations in medical care or in patient behaviors? *Circulation*. 2018 May 1;137(18):1909-1911.

**Ades PA**, Savage PD. Obesity in coronary heart disease: an unaddressed behavioral risk factor. *Prev Med*. 2017 Nov;104:117-119.

**Ahern TP**, Veres K, Jiang T, Farkas DK, Lash TL, Sørensen HT, Gradus JL. Adjustment disorder and type-specific cancer incidence: a Danish cohort study. *Acta Oncol*. 2018 Apr 24:1-6.

### RESEARCH SNAPSHOT



My current research has two areas of focus. I have a clinical opioid research program with the overarching goal of developing and evaluating more efficacious treatments

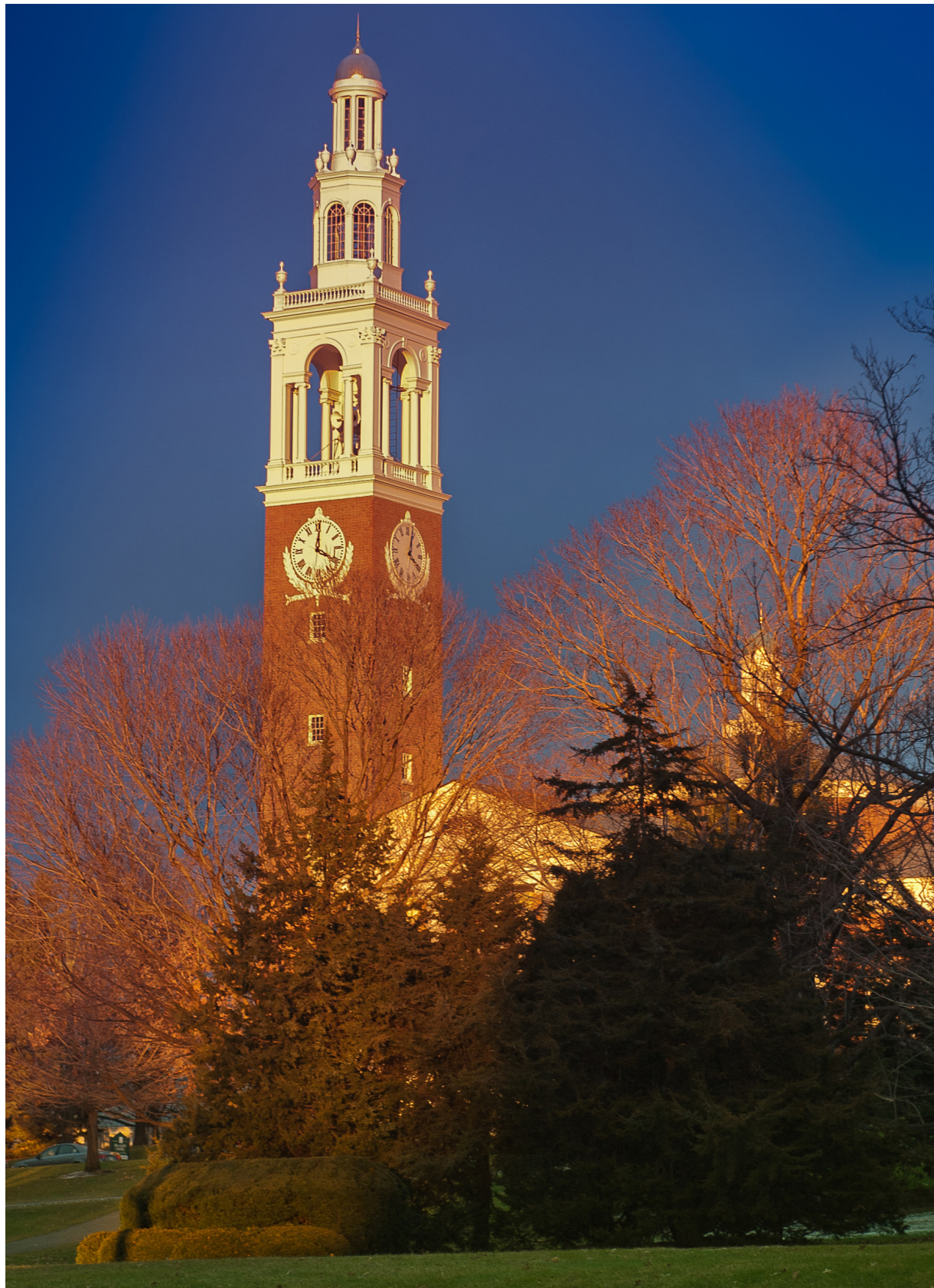
for opioid dependence. I am currently conducting two randomized trials seeking to replicate and build further upon our recently-developed interim buprenorphine dosing regimen for reducing illicit opioid use, injection drug use and related risk behaviors in waitlisted opioid abusers. I also have a longstanding research interest aimed at leveraging behavioral economic principles to support healthy behaviors, especially among disadvantaged populations. Currently this involves tackling cigarette smoking among the challenging population of opioid-dependent patients. Finally, I am the Director of Vermont's first and largest opioid treatment program, which currently delivers methadone or buprenorphine maintenance treatment to approximately 1,000 Vermonters.

**STACEY C. SIGMON, PH.D.,**

VCBH, Associate Professor,  
Departments of Psychiatry and Psychology



Participants listen to a presentation at the VCBH 2017 Behavior and Health Conference.



Albaugh MD, Orr C, **Chaarani B, Althoff RR**, Allgaier N, D'Alberto N, Hudson K, Mackey S, **Spechler PA**, Banaschewski T, Bruhl R, Bokde AL, Bromberg U, Buchel C, Cattrell A, Conrod PJ, Desrivieres S, Flor H, Frouin V, Gallinat J, Goodman R, Gowland P, Grimmer Y, Heinz A, Kappel V, Martinot JL, Paillere Martinot ML, Nees F, Orfanos DP, Penttila J, Poustka L, Paus T, Smolka MN, Struve M, Walter H, Whelan R, Schumann G, **Garavan H, Potter AS**. Inattention and reaction time variability are linked to ventromedial prefrontal volume in adolescents. *Biol Psychiatry*. 2017 Nov 1;82(9):660-668.

Arger CA, **Heil SH, Sigmon SC, Tidey JW, Stitzer ML, Gaalema DE**, Durand HJ, **Bunn JY**, Ruggieri EK, **Higgins ST**. Preliminary validity of the modified cigarette evaluation questionnaire in predicting the reinforcing effects of cigarettes that vary in nicotine content. *Exp. Clin. Psychopharmacol*. 2017 Dec;25(6):473-478.

**Bergeria CL, Heil SH, Bunn J, Sigmon SC, Higgins ST**. Comparing smoking topography and subjective measures of usual brand cigarettes between pregnant and non-pregnant smokers. *Nicotine Tob Res*. 2017 Jun 27.

Borgquist S, Bjarnadottir O, Kimbung S, **Ahern TP**. Statins - a role in breast cancer therapy? *J Intern Med*. 2018 Jun 20.

Brunette MF, Ferron JC, Geiger P, **Villanti AC**. Menthol cigarette use in young adult smokers with severe mental illnesses. *Nicotine Tob Res*. 2018 Apr 12.

Cassidy RN, **Tidey JW**, Cao Q, Colby SM, McClernon FJ, Koopmeiners JS, Hatsukami D, Donny EC. Age moderates smokers' subjective response to very low nicotine content cigarettes: Evidence from a randomized controlled trial. *Nic Tob Res*. 2018 Apr 28.

Cepeda-Benito A, Doogan NJ, Redner R, Roberts ME, **Kurti AN, Villanti AC**, Lopez AA, Quisenberry AJ, Stanton CA, **Gaalema DE, Keith DR, Parker MA, Higgins ST**. Trend differences in men and women in rural and urban U.S. settings. *Prev Med*. 2018 Apr 5

**Chaarani B, Spechler PA**, Ivanciu A, Snowe M, Nickerson JP, **Higgins ST, Garavan H**. Multimodal neuroimaging differences in nicotine abstinent vs. satiated smokers. *Nicotine Tob Res*. 2018 Apr 6.

Collins L, Glasser AM, Abudayyeh H, Pearson JL, **Villanti AC**. E-cigarette marketing and communication: How e-cigarette companies market e-cigarettes and the public engages with e-cigarette information. *Nic Tob Res*. 2018 Jun 5.

Cooper KM, **Bernstein IM, Skelly JM, Heil SH, Higgins ST**. The independent contribution of uterine blood flow to birth weight and body composition in smoking mothers. *Amer J Perinatol*. 2018 Apr;35(5):521-526.

## RESEARCH SNAPSHOT



My lab continues to study risk factors underlying adolescent substance use. We have identified a risk profile (combining psychosocial, brain and genetic factors) for initiation of cannabis use complementing our previous research on risk factors for binge drinking. An additional substance abuse focus of the last year has been the effects of very low levels of substance exposure. Utilizing longitudinal data from a large study of adolescents, we have studied the effects of very light cannabis, alcohol and cigarette use on brain structure and function and have observed brain changes, some moderated by genes associated with substance use.

**HUGH GARAVAN, PH.D.**

Professor, Departments of Psychiatry and Psychology, VCBH Director of Neuroimaging

D'Alberto N, **Chaarani B**, Orr CA, **Spechler PA**, Albaugh MD, Allgaier N, Wonnell A, Banaschewski T, Bokde ALW, Bromberg U, Büchel C, Quinlan EB, Conrod PJ, Desrivieres S, Flor H, Fröhner JH, Frouin V, Gowland P, Heinz A, Itterman B, Martinot JL, Paillere Martinot ML, Artiges E, Nees F, Papadopoulou Orfanos D, Poustka L, Robbins TW, Smolka MN, Walter H, Whelan R, Schumann G, **Potter AS, Garavan H**. Individual differences in stop-related activity are inflated by the adaptive algorithm in the stop signal task. *Hum Brain Mapp*. 2018 Aug;39(8):3263-3276.

Dittus KL, Gramling RE, **Ades PA**. Exercise interventions for individuals with advanced cancer: a systematic review. *Prev Med*. 2017 Nov;104:124-132.

Doogan NJ, Roberts ME, Wewers ME, Stanton CA, **Keith DR, Gaalema DE, Kurti AN**, Redner R, Cepeda-Benito A, **Bunn JY**, Lopez AA, **Higgins ST**. A growing geographic disparity: rural and urban cigarette smoking trends in the United States. *Prev Med*. 2017 Nov;104:79-85.

D'Silva J, Cohn AM, Johnson AL, **Villanti AC**. Differences in subjective experiences to first use of menthol and non-menthol cigarettes in a national sample of young adult cigarette smokers. *Nicotine Tob Res*. 2017 Aug 17.

Fujii MH, Hodges AC, Russell RL, Roensch K, Beynnon B, **Ahern TP**, Holoch P, Moore JS, Ames SE, MacLean CD. Post-discharge opioid prescribing and use after common surgical procedures. *J Am Coll Surg*. 2018 Jun;226(6):1004-1012.

**Gaalema DE**, Leventhal AM, **Priest JS, Higgins ST**. Commentary: Understanding individual differences in vulnerability to cigarette smoking will require attention to the intersection of common risk factors. *Prev Med*. In press.

**Gaalema DE, Pericot-Valverde I, Bunn J, Villanti AC,** Cepeda-Benito A, Doogan NJ, **Keith DR, Kurti AN,** Lopez A, **Nighbor T, Parker M,** Quisenberry A, Redner R, Roberts ME, Stanton CA, **Ades PA, Higgins ST.** Tobacco use in cardiac patients: Perceptions, use, and changes after a recent myocardial infarction among US adults in the PATH study (2013-2015). *Prev Med.* 2018 May 7.

**Gaalema DE,** Savage PD, Leadholm K, Rengo J, Naud S, **Priest JS, Ades PA.** Clinical and demographic trends in cardiac rehabilitation: 1996-2015. *J Cardiopulm Rehabil Prev.* In press.

Ganz O, Johnson AL, Cohn AM, Rath J, Horn K, Vallone D, **Villanti AC.** Tobacco harm perceptions and use among sexual and gender minorities: findings from a national sample of young adults in the United States. *Addict Behav.* 2018 Jan 31;81:104-108.

Harrasz OF, **Longden TA,** Dabertrand F, Hill-Eubanks D, **Nelson MT.** Endothelial GqPCR activity controls capillary electrical signaling and brain blood flow through PIP<sub>2</sub> depletion. *Proc Natl Acad Sci U S A.* 2018 Apr 10;115(15):E3569-E3577.

Henningfield J, **Higgins ST.** Commentary: Are We Guilty of Errors of Omission on the Potential Role of Electronic Nicotine Delivery Systems as Less Harmful Substitutes for Combusted Tobacco Use? *Prev Med.* In press.

**Higgins ST.** Editorial: 4th Special Issue on behavior change, health, and health disparities. *Prev Med.* 2017 Nov;104:1-3.

**Higgins ST, Bergeria CL, Davis DR, Streck JM, Villanti AC, Hughes JR, Sigmon SC, Tidey JW, Heil SH, Gaalema DE, Stitzer ML, Priest JS, Skelly JM,** Reed DD, **Bunn JY, Tromblee MA,** Arger CA, Miller ME. Response to reduced nicotine content cigarettes among smokers differing in tobacco dependence severity. *Prev Med.* 2018 Apr 4.

**Higgins ST, Heil SH, Sigmon SC, Tidey JW, Gaalema DE, Hughes JR, Stitzer ML,** Durand H, **Bunn JY, Priest JS,** Arger CA, Miller ME, **Bergeria CL, Davis DR, Streck JM,** Reed DD, **Skelly JM,** Tursi L. Addiction potential of cigarettes with reduced nicotine content in populations with psychiatric disorders and other vulnerabilities to tobacco addiction. *JAMA Psychiatry.* 2017 Oct 1;74(10):1056-1064.

**Higgins ST,** Redner R, Arger CA, **Kurti AN, Priest JS, Bunn JY.** Use of higher-nicotine/tar-yield (regular full flavor) cigarettes is associated with nicotine dependence and smoking during pregnancy among U.S. women. *Prev Med.* 2017 Nov;104:57-62.

**Higgins ST,** Redner R, **Priest JS, Bunn JY.** Socioeconomic disadvantage and other risk factors for using higher-nicotine/tar-yield (regular full-flavor) cigarettes. *Nicotine Tob Res.* 2017 Nov 7;19(12):1425-1433.

Higgins TM, Dougherty AK, Badger GJ, **Heil SH.** Comparing long-acting reversible contraception insertion rates in women with Medicaid vs. private insurance in a clinic with a two-visit protocol. *Contraception* 2018 Jan;97(1):76-78.

**Keith DR, Kurti AN, Davis DR, Zvorsky IA, Higgins ST.** A review of the effects of very low nicotine content cigarettes on behavioral and cognitive performance. *Prev Med.* 2017 Nov;104:100-116.

Khadanga S, **Ades PA.** What do we tell patients with coronary artery disease about marijuana use? *Coron Artery Dis.* 2018 Jan;29(1):1-3.

**Kurti AN, Bunn JY, Villanti AC,** Stanton CA, Redner R, Lopez AA, **Gaalema DE,** Doogan NJ, Cepeda-Benito A, Roberts ME, **Phillips JK,** Quisenberry AJ, **Keith DR, Higgins ST.** Patterns of single and multiple tobacco product use among U.S. women of reproductive age. *Nicotine Tob Res.* (2018).

**Kurti AN,** Redner R, Lopez AA, **Keith DR,** Stanton CA, **Gaalema DE, Bunn J,** Doogan NJ, Cepeda-Benito A, Roberts ME, Phillips J, **Higgins ST.** Tobacco and nicotine delivery product use in a national sample of pregnant women. *Prev Med.* 2017 Nov;104:50-56.

**Kurti AN,** Redner R, **Nighbor T,** Lopez AA, **Keith DR, Villanti AC,** Stanton CA, **Gaalema DE, Bunn JY,** Doogan NJ, Cepeda-Benito A, Roberts ME, Phillips J, Parker M, Quisenberry A, **Higgins ST.** Examining the relationship between pregnancy and quitting tobacco products among a U.S. national sample of women of reproductive age. *Prev Med.* In press.

## RESEARCH SNAPSHOT



My research focuses broadly on designing and implementing behavioral interventions to promote health among vulnerable populations, with an emphasis on cigarette smoking cessation among socioeconomically disadvantaged women. I am also interested in incorporating technology in behavioral interventions (e.g., Smartphones, remote behavior monitoring devices) to increase their attractiveness and their reach. I am currently preparing to lead a study examining the feasibility, efficacy, and cost-effectiveness of a Smartphone-based financial incentives intervention to promote smoking cessation among pregnant women. In addition, as a member of a working group focused on tobacco use cessation in vulnerable populations, I am leading projects examining use of tobacco and nicotine products in national samples of women of reproductive age, as well as how patterns of tobacco and nicotine use change upon transitioning into and out of pregnancy.

**ALLISON KURTI, PH.D.,**

*Assistant Professor, Department of Psychiatry*

Lopez AA, Redner R, **Kurti AN, Keith DR, Villanti AC,** Stanton CA, **Gaalema DE, Bunn JY,** Doogan NJ, Cepeda-Benito A, Roberts ME, **Higgins ST.** Tobacco and nicotine delivery product use in a US national sample of women of reproductive age. *Prev Med.* 2018 Mar 17.

Matusiewicz AK, **Melbostad HS, Heil SH.** Knowledge of and concerns about long-acting reversible contraception among women in medication-assisted treatment for opioid use disorder. *Contraception.* 2017 Nov;96(5):365-369.

Mays D, **Villanti AC,** Niaura RS, Lindblom EN, Strasser AA. The effects of varying electronic cigarette warning label design features on attention, recall and product perceptions among young adults. *Health Comm.* 2017 Dec 13:1-8.

Mercincavage M, Lochbuehler K, **Villanti AC,** Wileyto EP, Audrain-McGovern J, Strasser AA. Examining risk perceptions among daily smokers naïve to reduced nicotine content cigarettes. *Nicotine Tob Res.* 2018 Apr 28.

Miller ME, **Tidey JW, Bunn J, Gaalema D,** Scott-Sheldon L, **Pericot-Valverde I,** Japuntich S. Self-perceived mental health status and population-level tobacco use disparities. In press. *Tobacco Regulatory Science*

Miller ME, **Tidey JW,** Rohsenow DJ, **Higgins ST.** Electronic cigarette expectancies in smokers with psychological distress. *Tob Regul Sci.* 2017 Jan;3(1):108-114.



**Parker MA, Streck JM, Bergeria CB, Bunn JY, Gaalema DG, Davis DR, Barrows AJ, Sigmon SC, Tidey JW, Heil SH, Higgins ST.** Reduced nicotine content cigarettes and cannabis use in vulnerable populations. *Tob Reg Sci.* In press.

**Parker MA, Streck JM, Sigmon SC.** Associations between opioid and nicotine dependence in nationally representative samples of United States adult daily smokers. *Drug Alcohol Depend.* 2018 May 1;186:167-170.

Pearson JL, **Villanti AC.** Recommendations for linking client data with clinic services to improve our ability to make inferences. *Addiction.* 2018 Aug;113(8):1393-1395.

**Pericot-Valverde I,** Elliott RJ, Miller M, **Tidey J, Gaalema DE.** Posttraumatic Stress Disorder and tobacco use: A systematic review. *Addict Behav.* 2018 May 3;84:238-247.

**Pericot-Valverde I, Gaalema D, Priest J, Higgins ST.** E-cigarette awareness, perceived harmfulness, and ever use among U.S. adults. *Prev Med.* 2017 Nov;104:92-99.

**Phillips JK, Higgins ST.** Applying behavior change techniques to weight management during pregnancy: impact on perinatal outcomes. *Prev Med.* 2017 Nov;104:133-136.

**Phillips JK,** King SE, **Bernstein IM, Skelly JM, Higgins ST.** Associations of maternal obesity and smoking status with perinatal outcomes. *J Matern Fetal Neonatal Med.* 2018 Jun;1-17.

Rengo JL, Savage PD, Barrett T, **Ades, PA.** Cardiac rehabilitation participation rates and outcomes for patients with heart failure. *J Cardiopulm Rehabil Prev.* 2018 Jan;38(1):38-42.

Rengo JL, Savage PD, Shaw JC, **Ades PA.** Directly measured physical function in cardiac rehabilitation. *J Cardiopulm Rehabil Prev.* 2018 May;37(3):175-181.

Riley H, Headley S, Winter C, Mazur S, **Gaalema DE,** Goff S, Lindenauer PK, Pack QR. Effect of smoking status on exercise perception and intentions for cardiac rehabilitation enrollment among patients hospitalized with an acute cardiac condition. *J Cardiopulm Rehabil Prev.* 2017 Nov 8.

Riley K, **Gaalema DE,** Headley S, Lindenauer P, Goff S, Pack QR. Patient perception of how smoking status influences cardiac rehabilitation attendance after an acute cardiac hospitalization. *J Cardiopulm Rehabil Prev.* In press.

Roberts ME, Doogan NJ, Stanton CA, Quisenberry AJ, **Villanti A, Gaalema DE, Keith DR, Kurti AN,** Lopez AA, Redner R, Cepeda-Benito A, **Higgins ST.** Rural vs. urban use of traditional and emerging tobacco products in the United States, 2013-2014. *Amer J Public Health* 2017 Oct;107(10):1554-1559.

Smith TT, Hatsukami DK, Benowitz NL, Colby SM, McClernon FJ, Strasser AA, **Tidey JW,** White C, Donny EC. Whether to push or pull? Nicotine reduction and non-combusted alternatives – two strategies for reducing smoking and improving public health. *Prev Med.* 2018 Mar 29.

**Spechler PA,** Allgaier N, **Chaarani B,** Whelan R, Watts R, Orr C, Albaugh MD, D'Albarto N, **Higgins ST,** Hudson KE, Mackey S, **Potter A,** Banaschewski T, Bokde ALW, Bromberg U, Büchel C, Cattrell A, Conrod PJ, Desrivieres S, Flor H, Frouin V, Gallinat J, Gowland P, Heinz A, Ittermann B, Martinot JL, Martinot MP, Nees F, Orfanos DP, Paus T, Smolka MN, Walter H, Schumann G, **Althoff RR, Garavan H;** IMAGEN Consortium. The initiation of cannabis use in adolescence is predicted by sex-specific psychosocial and neurobiological features. *Eur J Neurosci.* 2018 Jun 11.

**Streck JM, Ochalek TA,** Badger GJ, **Sigmon SC.** Interim buprenorphine treatment during delays to comprehensive treatment: Changes in psychiatric symptoms. *Exp Clin Psychopharmacol.* 2018 Jun 25.

**Streck JM, Ochalek TA,** Miller ME, Meyer AC, Badger G, Teneback C, Dixon A, **Higgins ST,** Sigmon SC. Promoting smoking abstinence among patients with chronic obstructive pulmonary disease: Initial feasibility. *Prev Med Rep.* 2018 Jun 30;11:176-179.

**Streck JM, Heil SH, Higgins ST, Bunn JY, Sigmon SC.** Tobacco withdrawal among opioid-dependent smokers. *Exp Clin Psychopharmacol.* 2018 Apr;26(2):119-124.

Taghavi T, Arger CA, **Heil SH, Higgins ST,** Tyndale RF. Cigarette consumption and biomarkers of nicotine exposure during pregnancy and postpartum. *Addiction.* 2018 Jun 19.

Taghavi T, Arger CA, **Heil SH, Higgins ST,** Tyndale RF. Longitudinal influence of pregnancy on nicotine metabolic pathways. *J Pharmacol Exp Therap.* 2018 Feb;364(2):238-245.

## RESEARCH SNAPSHOT

During the past 12 months, I have been leading a team conducting an evaluation of the Vermont hub and spoke system of opioid dependence treatment with funding from the Vermont Department of Health. Our team has traveled throughout the state and collected data and conducted interviews with over 100 patients who are in treatment in hubs and spokes and with 30 individuals addicted to opioids who are out of treatment. This activity, together with my participation in numerous community, state and national meetings/trainings on opioid addiction policy, represents the dissemination core of the Vermont Center on Behavior and Health.

**RICHARD RAWSON, PH.D.,**  
VCBH, Research Professor,  
Department of Psychiatry



**Irene Pericot-Valverde, Ph.D.,** received the 2018 NIDA Women & Sex/Gender Differences Junior Investigator Travel Award. Dr. Pericot-Valverde is completing her second year as a VCBH TCORS Postdoctoral fellow.

**John Hughes, M.D.,** has been appointed Deputy Editor of Nicotine and Tobacco Research, one of the few peer-reviewed journals devoted exclusively to the study of nicotine and tobacco.

T32 predoctoral trainee, **Heidi Melbostad, M.A.,** was awarded the 2018 NIDA Young Investigator Travel Award.

VCBH Investigator, **Sarah Heil, Ph.D.** receives promotion to Full Professor on the Tenure Pathway.

VCBH faculty and COBRE Project Director, **Andrea Villanti, Ph.D.,** was awarded the SRNT 2018 Jarvik-Russell Early Career Award, which honors members early in their careers who have made extraordinary contributions to the field of nicotine and tobacco research

**Tidey JW, Davis DR,** Miller ME, **Pericot-Valverde I,** Denlinger-Apte RL, **Gaalema D.** Modeling nicotine regulation: A review of studies in smokers with mental health conditions. *Prev Med.* In press.

**Villanti AC,** Collins LK, Niaura RS, Gagosian SY, Abrams DB. Menthol cigarettes and the public health standard: A systematic review. *BMC Public Health.* 2017 Dec 29;17(1):983.

**Villanti AC, Gaalema DE, Tidey JW, Kurti AN, Sigmon SC, Higgins ST.** Co-occurring vulnerabilities and menthol use in U.S. young adult cigarette smokers: Findings from Wave 1 of the PATH Study, 2013-2014. *Prev Med.* 2018 Jun 8.

**Villanti AC,** Niaura RS, Abrams DB, Mermelstein R. Preventing smoking progression in young adults: the concept of preescalation. *Prev Sci.* 2018 Mar 10.

**Villanti AC,** Niaura RS, Pearson JL, Glasser AM, Abrams DB. Fostering transparency in e-cigarette research synthesis: The utility and limitations of methodological hierarchies. *Addiction.* 2018 Mar;113(3):409-410.

## RESEARCH SNAPSHOT

My research is focused on youth and young adult tobacco use, including prevention and cessation, and one of my current studies, supported by the COBRE (P20GM103644), focuses on

improving cessation in socioeconomically-disadvantaged young adult smokers. For the past several years, I have also conducted rapid, responsive research to inform tobacco-related policies, particularly the FDA regulation of tobacco products. A focus of my work in this area has been on the disproportionate prevalence of menthol and other flavored tobacco product use in young people. I also conduct research on health communication related to tobacco products and policies. Currently, I am conducting a study to examine perceptions of nicotine and relative harm of tobacco products in U.S. young adults (R03CA212694) with the goal of informing public education on nicotine.

**ANDREA VILLANTI, PH.D., MPH,**  
Associate Professor, Department of Psychiatry



TCORS predoctoral trainee, **Dianelle Davis, M.A.** has been awarded a COBRE pilot study that examines the association between maternal smoking and relative reinforcing value of food in infants.

**Villanti AC,** Johnson AL, Rath JM. Beyond education and income: Identifying novel socioeconomic correlates of cigarette use in U.S. young adults. *Prev Med.* 2017 Nov;104:63-70.

Wen X, Eiden RD, Justicia-Linde FE, Wang Y, **Higgins ST,** Thor N, Haghdel A, Peters AR, Epstein LH. A multicomponent behavioral intervention for smoking cessation during pregnancy: a non-concurrent multiple baseline design. *Translational Behavioral Medicine.* 2018 Apr 10.

Zvorsky I, Skelly JM, **Higgins ST.** Effects of financial incentives for smoking cessation on mood and anxiety symptoms among pregnant and newly postpartum women. *Nicotine Tob Res.* 2018 Apr 2;20(5):620-627.



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