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.

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

TABLE OF CONTENTS

Annual Conference ............................................................... 2
The Center of Biomedical Research Excellence (COBRE) .................. 4
The Vermont Center on Tobacco Regulatory Science (TCORS) ............. 5
Research News ................................................................. 6
Trainee Focus .................................................................. 10
Local and Global Health ....................................................... 12
List of 2017 - 2018 Publications .............................................. 15
Noteworthy .................................................................. Inside Back Cover
US Opioid Epidemic: The Need for Innovation and Greater Treatment Capacity

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 US 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’s 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, 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 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-Rubin, 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, University of Vermont

■ Naloxone and Beyond: Clinical and Public Health Interventions to Address Overdose
Alexander Y. Walley, M.D., M.S.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
Sanjib Marutti, M.D., Department of Psychiatry, University of Vermont Medical Center Addiction Treatment Program, University of Vermont

YEAR IN REVIEW 2017-2018
THE YEAR IN REVIEW 2017-2018

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 (R01 or equivalent).

The UVM Tobacco Center of Regulatory Science (TCORS) award 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 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 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 as the use of e-cigarettes in vulnerable populations.

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.

C O B R E  P R O J E C T  D I R E C T O R S

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., 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., Assistant Professor, Department of Psychiatry and Psychology, Improving Linkage to Care after Ocular Telehealth Screening in Diabetic Adults; Mentor: Stephen T Higgins, Ph.D.

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

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 as the use of e-cigarettes in vulnerable populations.

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

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.


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 (R01 or equivalent).

The UVM Tobacco Center of Regulatory Science (TCORS) award 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 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 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 as the use of e-cigarettes in vulnerable populations.

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

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 as the use of e-cigarettes in vulnerable populations.

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

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 as the use of e-cigarettes in vulnerable populations.

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

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 as the use of e-cigarettes in vulnerable populations.

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

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 as the use of e-cigarettes in vulnerable populations.

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

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 intransitive 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.

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.

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 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 stage 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; Jaime Grudis D.Sc., 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.

**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 dependence.

Elias Klemperer, T32 Predoctoral Fellow

I am currently investigating smoking cessation and psychiatric comorbidities in pregnant and newly postpartum women. This includes examining the impact of our financial incentives treatment on psychiatric symptomatology in addition to examining behavioral economic measures that may capture individual smoking characteristics that make quitting more difficult for some women.

Ivori Zvorsky, T32 Predoctoral 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.

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, 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.

Tyler Nighbor, Ph.D., T32 Predoctoral Fellow

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 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 research focuses on 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

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

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 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 Predoctoral Fellow
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.

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.
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

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.

Abudayyeh HS, Glasser AM, Johnson AL, Cohn AM, Wagener TL, Maye 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.
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


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


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 for opioids 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 care of the Vermont Center on Behavioral and Health.

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

Noteworthy

Irene Pericot-Valverde, Ph.D., received the 2018 NIDA Women’s 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.

RESEARCH SNAPSHOT

My research is focused on youth and 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 (R03CA212664) with the goal of informing public education on nicotine.

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

T Corys predocotrallar, Daniele 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.