



RESEARCH RESOURCES & POTENTIAL COLLABORATORS FOR TRDRP APPLICANTS

- A statewide consortium on thirdhand smoke (THS) research includes the University of California San Francisco (UCSF) **Tobacco Biomarkers Laboratory**. This laboratory is directed by Peyton Jacob, Ph.D. and Neal Benowitz, M.D. in the Clinical Pharmacology Program, Department of Medicine at UCSF. Investigators in the Clinical Pharmacology Program conduct studies on the pharmacology and toxicology of tobacco use including development of new biomarkers and analytical methods. The UCSF Tobacco Biomarkers Laboratory collaborates with other investigators to analyze samples on a recharge basis, and they welcome collaborations with TRDRP applicants. Tobacco product toxicants that can be detected and quantified include nicotine and metabolites, carcinogen biomarkers, thirdhand smoke components, tobacco specific nitrosamines, and various smoke toxicants. THC, CBD, and metabolites can also be detected and quantified. The following link describes the various assays and costs: <https://cancer.ucsf.edu/research/cores/tobacco-biomarkers>. Inquiries may be directed to **Dr. Peyton Jacob**, peyton.jacob@ucsf.edu.
- A statewide consortium on thirdhand smoke (THS) research (<https://thirdhandsmoke.org>) which includes the University of California San Francisco (UCSF) **Human Exposure Laboratory**. This laboratory is directed by Suzaynn F. Schick, Ph.D., in the Division of Occupational, Environmental and Climate Medicine in the Department of Medicine. The Schick Laboratory generates thirdhand smoke under controlled conditions and has a bank of THS samples available to share with other investigators including THS aerosol samples on Pall Emfab filters, THS-exposed cotton terry cloth, THS-exposed 3M paper and a small collection of THS on other substrates. For the filters, the age of the THS aerosol and the mass of particles on the filter are known. For the THS-exposed materials, the amount of total particulate material that the materials were exposed to, and the duration of exposure are known. The nicotine content of a sample can be determined by submitting the sample to the Tobacco Biomarkers Laboratory at UCSF. We also have EDTA plasma and urine samples from healthy nonsmoking volunteers who have been exposed to THS under controlled conditions. Contact **Dr. Suzaynn Schick** (Suzaynn.schick@ucsf.edu) with your research proposal if you are interested in obtaining samples.

- **Plasmid, Database, and Web app Resources** from Dr. Henry Lester's lab include: **Plasmids** developed by the laboratory include the iNicSnFR family, intensity-based nicotine-sensing fluorescent reporters, available at Addgene, <https://www.addgene.org> Full sequences, binding parameters, and drug sensitivities are available in a database, iSnFRbase, at Github. See https://github.com/lesterha/lesterlab_caltech; **The Nicotine Web app** is <http://insideout.caltech.edu:9988/webapps/home/> The Nicotine App serves for research on the pharmacodynamics (PD) and pharmacokinetics (PK) of nicotine action in the brain. For instance, users can simulate how a "slow" metabolizer needs to smoke less often but chaperones his receptors just as much as a "fast" metabolizer. A sophisticated user may experiment with the parameters to understand how changing the relative EC50s of the "outside-in" and "inside-out" pathways induce changes in the balance between the effects of the "bolus" and of the prolonged phase. The Nicotine App has two additional research capabilities. (1) A user can upload a .csv file to input arbitrary smoking / vaping times and frequencies, then watch the results. (2) A user can output the graphed parameters to a .csv file. The Nicotine App was written in MATLAB Simbiology and is hosted on the Amazon Web Services Cloud, running a MATLAB Web Apps Server. The source code and further documentation are on Github at the URL given above. Inquires may be directed to **Dr. Henry Lester's** email: lester@caltech.edu.
- The **Behavioral Testing Core** is funded by the University of California Irvine, Office of Research, Schools of Medicine, and Biological Sciences (www.ucibtc.org). This state-of-the-art high-throughput facility is equipped with video monitoring and recording capabilities to ensure rigorous and reproducible testing of rodent behavior in mice and rats. The core facility aims to assess learning/memory and anxiety through a variety of methods, including the Morris water maze, novel object recognition, fear conditioning, T-maze, operant touch-screen systems, spontaneous alternation, conditioned taste aversion, inhibitory avoidance, Barnes maze, open field, and elevated plus maze. If you need services across the UC system, industry, or any other academic network, please reach out to the Director of the UCI BTC: **Dr. Shahrdad Lotfipour** at: shahrdad@uci.edu.
- Tobacco-related cardiovascular health effects research projects include investigators from the University of California Los Angeles (UCLA) **Integrative Cardiovascular Physiology Laboratory**. This laboratory is directed by Mary Rezk-Hanna, Ph.D. in the School of Nursing and focuses on investigating the cardiovascular effects and potential harms of conventional, new, and emerging tobacco products and the mechanisms by which these products affect

cardiovascular function. The UCLA Integrative Cardiovascular Physiology Laboratory collaborates with other investigators to study the short- and long-term changes in physiological function associated with tobacco products use, including flavored hookah (i.e., waterpipe) smoking and the integrative (systemic to molecular) biological mechanisms that mediate these physiological changes. The investigators welcome collaborations with TRDRP applicants. Direct inquiries to **Dr. Mary Rezk-Hanna**, mrezk@ucla.edu.

- The **Radiochemistry and Positron Emission Tomography (PET) Laboratories** are directed by Drs. Arthur Brody (Addiction Psychiatrist), David Vera (Radiochemist), and Carl Hoh (Nuclear Medicine Physician) at the University of California San Diego (UCSD) and VA San Diego Healthcare System (VASDHS). These researchers conduct molecular imaging studies with PET scanning in participants with tobacco/nicotine dependence and other conditions. Collaborations with TRDRP applicants are welcome for assistance in navigating radioligand setup and in PET scan analysis. On a recharge basis, these researchers also provide researchers the radiopharmaceuticals that are already being produced in Southern California. If interested, please contact **Arthur Brody, M.D.**, at abrody@health.ucsd.edu.
- A statewide collaborative consortium on thirdhand smoke (THS) research (<https://thirdhandsmoke.org/>), includes **the Analytical Core for Environmental Markers**, directed by Dr. Eunha Hoh, and the **Thirdhand Smoke Resource Center**, led by Dr. Georg Matt, both at San Diego State University. The Analytical Core and Thirdhand Smoke Resource Center collaborate with other investigators to analyze samples for environmental markers and provide sampling kits for thirdhand smoke collection within the consortium. These chemical analyses include nicotine, cotinine, tobacco-specific nitrosamines (TSNAs), nicotelline, and heavy metals in various materials such as surface wipes, silicone wristbands, dust, and non-routine household materials (e.g., fabrics). The Analytical Core also offers rapid chemical analysis for nicotine assays in surface wipe samples within 3 weeks if a study requires screening. Additionally, they provide kits for environmental sampling, including clean materials (wipes and silicone wristbands) and instructions for sample collection. The Analytical Core for Environmental Markers and Thirdhand Smoke Resource Center welcome collaborations with TRDRP applicants via subcontract or service agreement. For more information, please contact **Dr. Eunha Hoh** (ehoh@sdsu.edu) and **Dr. Georg Matt** (gmatt@sdsu.edu).
- A **Social Media Toolkit** was prepared by the Thirdhand Smoke Resource Center, whose mission is to share information, resources, and technical support with

California's residents, communities, businesses, health care professionals, and policymakers about the toxic legacy of tobacco smoke residue and to achieve indoor environments that are 100% free of tobacco smoke toxicants. The purpose of this toolkit is to make these resources publicly available for use by other tobacco control and tobacco prevention researchers, advocacy groups, and individuals. The toolkit is divided into two sections: Overview Posts – Social media posts (single or swipe) intended to provide a broad overview of thirdhand smoke. Awareness Days/Months – Social media posts (single or swipe) intended for use in a specified month or on a specified day. The following link shows the available social media posts and related resources:

<https://thirdhandsmoke.org/single-image-posts-social-media-toolkit/> For more information, please contact **Dr. Rachael Record** (rrecord@sdsu.edu).

- A course title, “**Second- and Thirdhand Smoke: What Every Healthcare Provider Needs to Know**” has been created by the Thirdhand Smoke Resource Center (<https://thirdhandsmoke.org>) specifically for residency training in medical school education and for healthcare providers. The course dives deeper into the risks of exposure to the toxic air contaminants that are found in secondhand smoke. The course explains how secondhand smoke is transformed into thirdhand smoke residue, explores its properties, illustrates different exposure pathways, and discusses risks associated with exposure to the chemical residue left behind on surfaces, in dust, and in materials of indoor environments. The course offers healthcare providers and students of healthcare foundational knowledge and tools to educate patients, implement preventive measures, and promote a healthier environment for all. The course is available on the [Canvas Free For Teachers](#) website and mobile app suite. To sign up for the course and delve into the field of secondhand and thirdhand smoke exposure and its implications for healthcare practice, contact **Dr. Georg Matt** (gmatt@sdsu.edu).
- [Resources](#) to prevent and reduce use of all tobacco/e-cigarette/nicotine products, all cannabis products, and all other drugs, including fentanyl are available from the Stanford REACH Lab, founded and led by Dr. Bonnie Halpern-Felsher. Below is a list of evidence-based curriculums provided by **The REACH Lab**. Their curriculums have been widely used by schools in the US and many countries across the globe and are developed to map onto national health education standards. Each interactive lesson includes teacher talking points (e.g., a script), activities, videos, and more. The REACH Lab would be more than happy to collaborate with anyone interested. For more information, please contact **Dr. Bonnie Halpern-Felsher** (bonnieh@stanford.edu).
- In 2016, with funding from TRDRP, Dr. Halpern-Felsher and the REACH Lab developed the [Tobacco Prevention Toolkit](#), a set of curriculums and lessons designed to help educators work with youth to prevent and reduce

- their tobacco use. Since 2016, the Toolkit curriculums have reached well over **2.8 million youth**. For more information, please contact **Dr. Bonnie Halpern-Felsher** (bonnieh@stanford.edu).
- The [**You and Me, Together Vape-Free**](#) curriculum is a vaping prevention curriculum that sits within the Stanford REACH Lab's Tobacco Prevention Toolkit. The curriculum includes 6 lessons for the middle and high school curriculums and 2 lessons for elementary school students (focused on the brain and other health effects, impact on the environment, marketing, stress and coping, and vaping cannabis), each providing activities, online quiz games, and worksheets in addition to presentations, resources, and other materials aimed at addressing key factors associated with youth e-cigarette use, including changing adolescents' attitudes towards and misperceptions about e-cigarettes; increasing their refusal skills to pulls of flavors, marketing, and social media; reducing stress and depression which have been linked to e-cigarette initiation and use; improving coping; and decreasing intentions and actual use of all e-cigarette products. We also have a Spanish Version of the curriculum. With funding from TRDRP, they are also developing and evaluating an LGBTQ-focused version of the curriculum, as well as an environmental lesson. For more information, please contact **Dr. Bonnie Halpern-Felsher** (bonnieh@stanford.edu).
 - The [**Smart Talk: Cannabis Awareness and Prevention Curriculum**](#), which is part of the Stanford REACH Lab's [**Cannabis Awareness and Prevention Toolkit**](#), includes 5 lessons (focused on the brain and other health effects, impact on the environment, marketing, stress and coping), each providing activities, online quiz games, and worksheets in addition to presentations, resources, and other materials aimed at addressing key factors associated with youth cannabis use, including changing adolescents' attitudes towards and misperceptions about cannabis; increasing their refusal skills to pulls of flavors, marketing, and social media; reducing stress and depression which have been linked to initiation and use; improving coping skills; and decreasing intentions and actual use of all cannabis products. The curriculum includes an elementary, middle, and high school program. They also have a Spanish Version of the curriculum. For more information, please contact **Dr. Bonnie Halpern-Felsher** (bonnieh@stanford.edu).
 - [**Safety First Curriculum**](#) is a comprehensive, harm reduction-based drug education and intervention curriculum at the Stanford REACH Lab. The 13-lesson curriculum providing students with honest, scientifically accurate information on cannabis, e-cigarettes, alcohol, opioids/fentanyl, hallucinogens, and other drugs. The purpose of all of our curriculums is to encourage youth to abstain from use, but this curriculum also includes a clear harm-reduction message for youth who are experimenting or using, to provide high school students with scientifically accurate information to empower them to quit and/or reduce harm, should they choose to continue to use. **Safety**

- First is designed to be implemented in classrooms by health teachers. Each lesson can be completed in a 45- to 50-minute class period. Safety first allows for asynchronous student learning; contains learning activities that can be completed collaboratively as a class, at home individually, or with a family member, parent, or household member; encourages media and health literacy skills, relying on vetted learning techniques such as the CRAAP test; and maintains a trauma-informed approach. For more information, please contact **Dr. Bonnie Halpern-Felsher** (bonnieh@stanford.edu).
- The **Healthy Futures: Alternative-to-Suspension Curriculum** designed by the REACH Lab which is directed by Dr. Halpern-Felsher. The curriculum addresses the great need to incorporate a restorative justice lens, use motivational interviewing, and encompass other best practices in helping young people stop using tobacco. It is a free, online, easily accessible, and evidence-informed curriculum. It includes lessons on the brain, health effects, cost, and wellness. Healthy Futures uses a trauma-informed and restorative practice lens and principles of motivational interviewing (MI) and cognitive-behavioral therapy (CBT) to help students understand the harms of nicotine, reduce stress, increase positive coping, and provide resources to quit. For more information, please contact **Dr. Bonnie Halpern-Felsher** (bonnieh@stanford.edu).
 - **Resources** are available at the **Tobacco Endgame Center for Organizing and Engagement** (<https://organizingtoendtobacco.org>). The center is directed by the American Heart Association and their mission is to drive a comprehensive training and technical assistance program that engages California's tobacco control movement and the public to achieve the ambitious and overarching goal of the elimination of tobacco use statewide by 2035.
 - **Resources** are available at the **American Lung Association** to enhance your professional skills while serving your community with training and certification (<https://www.lung.org>).
 - **Tobacco Prevention and Control, and Health Equity.**
 - “Global Tobacco Control: Learning From the Experts” (free class, Johns Hopkins University), here <https://globaltobaccocontrol.org/en/online-courses/global-tobacco-control-learning-experts>
 - A Socioecological Approach to Addressing Tobacco-Related Health Disparities – NCI Tobacco Control Monograph Series 22, here <https://health.gov/healthypeople/tools-action/browse-evidence-based-resources/monograph-22-socioecological-approach-addressing-tobacco-related-health-disparities>.
 - Health Justice in Tobacco Control Training Guide by The Center for Black Health & Equity, here <https://centerforblackhealth.org/healthjusticeguide/>

Video on California's history of tobacco control and prevention, California Tobacco Control Program, here <https://tobaccofreeca.com/ca-story>.

- **Resources for Mentoring Diverse Trainees**

- The Science of Effective Mentorship in STEMM, by The National Academies of Sciences, Engineering and Medicine (NASEM), here <https://www.nap.edu/resource/25568/interactive> and <https://www.nap.edu/read/25568>.
- “Looking at Myself in the Future”: how mentoring shapes scientific identity for STEM students from underrepresented groups. Kaitlyn Atkins, Bryan M. Dougan, Michelle S. Dromgold-Sermen, Hannah Potter, Viji Sathy1 and A. T. Panter, here <https://stemeducationjournal.springeropen.com/articles/10.1186/s40594-020-00242-3>
- Ten simple rules for developing a mentor–mentee expectations document, <https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1005709>
- National Research Mentoring Network (NRMN), here <https://nrmnet.net/#undergradPopup>
- Culturally Aware Mentoring by the Center for the Improvement Mentored Experiences in Research (part of NRMN, here <https://cimerproject.org/cam-nrmn/> LOOP at UCSF - support tobacco control advocates to connect, communicate, and collaborate effectively with California's diverse priority populations to eliminate commercial tobacco use, here <https://theloop.ucsf.edu/>
- Anti-Racism Resources for the Biomedical Research Training Community, here https://www.diversityprogramconsortium.org/pages/anti-racism_resource.

- **Examples of California Organizations Active at the Intersection of Tobacco Prevention and Control, Social Justice, and Health Equity.**

- African American Tobacco Control Leadership Council (AATCLC), here <https://www.savingblacklives.org/>
- Asian Pacific Partners for Empowerment, Advocacy and Leadership (APPEAL)
Advocacy and Data dissemination to achieve Equity for Priority populations on Tobacco (ADEPT, part of APPEAL), here <https://appealforhealth.org/> and <https://appealforhealth.org/programs/capacity-building/adept/>.
- Breathe California, here <http://www.breathecalifornia.org>.

- California LGBT Tobacco Education Partnership, here <http://www.lgbtpartnership.org>.
- California Youth Advocacy Network (CYAN), here <https://www.cyanonline.org/> Latino Coordinating Center for a Tobacco-Free California (HLCC), here <https://healthcollaborative.org/hlcc>.
- Programs of the California Health Collaborative (CHC), (<https://healthcollaborative.org>) include the list below.
 - Native Star Foundation, here <https://www.native-star.org>.
 - RISE – Statewide Rural Coordinating Center, here <https://healthcollaborative.org/rise-statewide-rural-coordinating-center>. ***If TRDRP applicants are interested in reaching rural partners in California***, please contact Shelly Brantley, MPA, Project Director (sbrantley@healthcollaborative.org); and JoAnn Saccato, MA, Project Coordinator (isaccato@healthcollaborative.org).

California State-Wide Coordinating Agencies:

- **AMPLIFY! Statewide Coordinating Center for African American/ Black Communities**
AMPLIFY! a project of the URSA Institute, is a Statewide Coordinating Center which supports CTPP-funded African American/Black regional projects and the greater African American community. AMPLIFY provides technical assistance, capacity building, mutual support, collaboration, and LOVE to address the complex issues of tobacco control in the African American/Black community.
- **Hispanic/Latino Coordinating Center**
The Hispanic Latino Coordinating Center (HLCC) is a statewide project of the California Health Collaborative in partnership with the University of Southern California, dedicated to reducing tobacco-related disparities among Latinos in California. The HLCC primarily supports eight Hispanic/Latino Regional Projects with the adoption of policy, systems, and environmental changes by providing tailored assistance and access to information and resources. The HLCC facilitates statewide collaboration and partnerships in order to provide policy strategy recommendations, support and engage in educational activities with local policy makers, provide assistance with materials development and translation, and offer leadership development and training opportunities.
- **Rural Initiatives Strengthening Equity (RISE)**
The Rural Initiatives Strengthening Equity (RISE) project accelerates the adoption and implementation of policy, system, and environmental change initiatives that are designed to prevent and reduce tobacco use and increase

health equity among California's rural residents. RISE provides support and capacity building efforts to rural tobacco control projects through learning institutes, an advisory committee, and their policy platform initiatives, in order to facilitate stakeholder engagement and collaborative partnership opportunities among rural communities.

- **SPARC: Statewide Pacific Asian Resource and Coordinating Center**
Asian Pacific Partners for Empowerment, Advocacy and Leadership (APPEAL) serves as the lead organization for the Statewide Pacific Asian Resource and Coordinating Center (SPARC) to address tobacco disparities for the diverse Asian/Pacific Islander (API) communities in California. SPARC's enabling system will support API regional networks to promote social change aimed at preventing and reducing tobacco use.
- **Tribal Community Coordinating Center**
Through the guidance of a Tribal Advisory Council, the statewide Tribal Community Coordinating Center (TCCC) addresses the impact of non-ceremonial tobacco by providing culturally appropriate assistance to California Indian Tribes to assess and implement tobacco related programs.
- **WE BREATHE**
WE BREATHE is the Statewide Coordinating Center for the Lesbian, Gay, Bi-Sexual, Transgender, and Queer (LGBTQ) serving tobacco control projects. They focus on the facilitation, coordination, and collaborative flow of information between LGBTQ regional projects and other CTPP-funded projects. They engage new voices in tobacco control efforts to assist in accelerating the adoption of regional LGBTQ tobacco control efforts by educating and engaging LGBTQ influencers, developing tailored messaging for LGBTQ audiences, and educating LGBTQ individuals to advocate to reduce tobacco-related health disparities.

If you would like to contribute a Research Resource to this list, please contact Jen Jackson (Jennifer.Jackson@ucop.edu).