Project Description

Study of Drug Users Currently Enrolled in NJ Methadone Treatment Programs

HYPOTHESES:
1) Our new studies that were begun in summer 2016 will reveal community-level dynamics relevant to public policies.
2) We shall examine the genetics of methadone dose as well as of other drugs
3) The medical and behavioral factors and new biomarker data are predictive of specific health and vital status outcomes.

PROJECT DESCRIPTION (Include design, methodology, data collection, techniques, data analysis to be employed and evaluation and interpretation methodology)

We received funding in 2018 from the National Institute on Drug Abuse (NIDA) to begin a new project investigating the association of genetic and other biological factors with methadone maintenance treatment dose. This complements our prior initiatives in this area.

Clients enrolled in drug treatment programs (including medication-assisted treatment programs) suffer from a variety of disadvantages and medical issues, including access to care, complications from infectious agents, and drug-related problems such as overdoses. We have developed an expanding interdisciplinary team of faculty co-investigators and senior drug treatment program staff to embark on a set of endeavors. Current program clients will be interviewed at NJ drug treatment programs using an extensive structured interview we developed asking about their demographics, behaviors, and attitudes, with particular foci on: hepatitis C infection and the availability and barriers to treatment for hepatitis C; issues related to drug overdoses; patterns of drug abuse, including alcohol and tobacco; and nutrition. We have documented low rates of treatment for hepatitis C, in the face of continuing high rates of infection. Beyond the epidemiology, the health policy and system implications are being explored.

The above project complements and builds upon several national prospective cohort studies that Dr. Weiss designed in the mid 1980's while he was at the National Cancer Institute (NCI), which totaled about 11,084 enrollments from over ~10,000 different persons nationally, including ~2,500 from NJ. He joined the NJMS faculty in 1987. These studies have substantial accumulated medical, laboratory and questionnaire data, plus a linked biospecimen repository of over 100,000 vials. The follow-up period is >30 years, with an extensive baseline database. These constitute the only large cohort study of adults with high rates of human immunodeficiency virus (HIV) and hepatitis C virus (HCV) infection within New Jersey, and furthermore included both men and women and a diverse racial/ethnic mix, from the start. In September 2012, in the largest material transfer from NIH in legacy UMDNJ history, 82,962 vials were transferred from NCI to Dr. Weiss, supplementing other specimens already held here. Linkage and personal identifying data are known to us. Collaborations are being renewed with many of the original treatment programs and with the NJ Department of Health and the NJ State Cancer Registry.

Preliminary, detailed sample size calculations incorporating estimates of various outcome measures have
already been performed. Planning for the judicious use of these repository samples and data sets has begun.

NIDA has agreed to analyze biospecimens from our subjects, ascertaining the presence or absence of ~800,000 single nucleotide polymorphisms (SNPs, that is, genetic variants) that may affect risk for a broad array of diseases and conditions, including various chronic diseases and cancers, drug addiction, tobacco use, etc. We anticipate analyses both using GWAS approaches (as part of the NIDA Genetics Consortium, of which Dr. Weiss is a member) as well as creating polygenic risk models when examining disease outcomes.

Current novel findings from our past studies include a picture of long-term mortality due to liver failure, the association of specific drugs such as tobacco and cannabis with lung cancer, the epidemiology and impact of infection with HCV and HIV, occurrence of overdoses, and health issues among male and female drug users with a focus on chronic diseases such as cancer, including hepatocellular carcinoma and lung cancer.

The detailed specific project based upon our new field initiatives, with an appropriate timeline for a summer project, will be developed with the student based upon her/his past experience, training, and interests. Dr. Daniel M. Rosenblum, Assistant Professor, will also provide mentorship on the project.

It is anticipated that the student will be trained so as to interview subjects in the field, assist with the ongoing study endeavors, and participate in data analyses.

SPONSOR’S PUBLICATIONS MOST RELEVANT TO THIS RESEARCH:

Recent Abstracts:
- Savan Kabaria, Jessica Connor, Breanne E. Biondi, Matt Pulaski, **Daniel M. Rosenblum, Stanley H. Weiss**. Human T-Cell Lymphotropic Virus Type II Infection Is Associated with Increased Medical Mortality in a National Long-term Cohort of Injection Drug Users. 14th Annual AMA Research Symposium – Medical Student Section, Walt Disney World Swan and Dolphin Resort, Orlando, Fla. Nov 11, 2016. (Mr. Kabaria is NJMS Class 2019.)
Summer 2020 Student Research Program
Project Description


**Past Relevant Student Summer Projects:**


**Journal Publications (selected):**

- Briggs NC, Battjes RJ, Cantor KP, Blattner WA, Yelin FM, Wilson S, Ritz AL, Weiss SH, Goedert JJ. Seroprevalence of human T cell lymphotropic virus type II infection, with or without human


Summer 2020 Student Research Program
Project Description

THIS PROJECT IS SUITABLE FOR:
UNDERGRADUATE STUDENTS □ ENTERING FRESHMAN □
SOPHMORES □ ALL STUDENTS □

THIS PROJECT IS WORK-STUDY: Yes ☑ or No □

THIS PROJECT WILL BE POSTED DURING ACADEMIC YEAR
FOR INTERESTED VOLUNTEERS?: Yes ☑ or No □

WHAT WILL THE STUDENT LEARN FROM THIS EXPERIENCE?
• Receive training in confidential study procedures.
• Receive training in conducting in-person interviews using a written questionnaire.
• Develop comfort working with staff and subjects in novel outpatient settings.
• How to design follow-up analyses in cohort studies, such as nested-case control designs.
• Strategies for efficient use of health data.
• How to approach the analysis of datasets.
• How to perform critical and systematic assessment of methodologies, and their practical applications.
• How critical assessment of findings can lead to changes in approach or implementation.
• How to understand and utilize power calculations in setting project objectives and goals that appear feasible.
• For those who include a laboratory based component, how to conduct lab analyses and assess results.

USEFUL RELEVANT PRIOR EXPERIENCE AND SKILLS
(Note: Only some of these skills are requisite for a specific project. However, some skill(s) are important to enable getting a jump-start.)
• Prior experience with data analysis and data analysis software such as MS Excel; knowledge of more advanced software, such as SAS, would permit participation in complex data analyses.
• Prior fieldwork experience in urban areas, including client interviewing and/or administration.
• Excellent written and communication skills.
• Prior experience working on a research team.
• If interested in a lab-associated component: prior relevant lab experience.
• Human subjects protection training and certification through the Rutgers-specified CITI course for Social, Behavioral, and Epidemiologic Research Investigators. (See orra.rutgers.edu/citi for details.) Certification will be REQUIRED at least 6 weeks prior to starting, to give adequate time to be added to our current IRB protocol.
• Car and driver’s license extremely helpful for this project, since it involves access to community sites, or else pairing with another research assistant who has such access.