Assignment Description
The Fellow’s assignment would be in the Violence and Injury Prevention - Mental Health Promotion branch of the Prevention Services Division. The Fellow will have the opportunity to collaborate across divisions within the department because excessive alcohol use is a cross-cutting risk factor for a number of short- and long-term health outcomes for the department.

The mission of CDPHE is to protect and improve the health of Colorado’s people and the quality of its environment, so that Colorado will be the healthiest state with the highest quality environment. The Fellow will work closely with staff in the Prevention Services Division (e.g. Opioid Overdose Prevention Program, Cancer Program) and have the opportunity to build and develop relationships with other substance use and behavioral health epidemiologists (e.g. the Retail Marijuana Health Monitoring Program) within CDPHE. The Prevention Services Division improves the health and well-being of all Coloradans through health promotion, evidence-based public health prevention programs, and assurance of access to health care – especially to address non-communicable diseases and conditions (violence, injury, chronic diseases, oral health, maternal and child health).

Day-to-Day Activities
CDPHE promotes partnership and teamwork. Both mentors will ensure that the Fellow receives an orientation to CDPHE, other state agencies, and partner organizations. Initially, the Fellow will shadow department staff and key partners. Then, the Fellow will work collaboratively with partners to ensure that analyses and projects are not conducted in isolation from the intersecting efforts within CDPHE and elsewhere in the state.

The Fellow’s day-to-day activities, learning opportunities, and challenging tasks will include:

- Critical thinking in weekly meetings with mentors (2-4 hours/week minimum).
- Developing and implementing projects that address all applied epidemiology core competencies, such as: design and conduct an evaluation of a public health surveillance system (e.g. evaluating the use of Colorado Hospital Association hospital claims data for alcohol surveillance); evaluate the effect of changes in statewide alcohol policy (e.g. Sunday alcohol sales in 2008) on alcohol-related harms or develop a new set of data indicators (e.g. creating statewide indicators for alcohol outlet density surveillance); data collection, analysis, and dissemination, including preparation of fact sheets, blog posts, oral presentations, and peer-reviewed manuscripts.
- Collaborate with staff in the Prevention Services Division, across divisions (e.g. Center for Health and Environmental Data) and across state and local agencies (e.g. Colorado Department of Human Services, local public health agencies) on projects.
• Gain proficiency in evidence-based public health, CDPHE’s Health Equity Framework, cultural competency, and other applied epidemiology competencies through reading, trainings, live or archived webinars, seminars at the University of Colorado School of Public Health, and conferences.

• Participate on new national workgroups (e.g. the CSTE Alcohol Morbidity Workgroup) Particiapte with members in the State Epidemiological Outcomes Workgroup and Alcohol Policy Subgroup (2 working meetings/month), Attorney General’s Substance Abuse Trend and Response Task Force (4 times/year), CSTE Alcohol Subcommittee (1 conference call/month), CSTE Alcohol Morbidity Workgroup (6 calls/year), and as needed, staff meetings of the Prevention Services Division (2 times/year), the Violence and Injury Prevention – Mental Health Promotion Branch (1 interactive meeting/month).

• Take a daily 15 minute wellness break (e.g. walk, meditate, bike ride using CDPHE bike library)

Potential Projects

Surveillance Activity

Develop Statewide Indicators for Alcohol Outlet Density in Colorado

Colorado’s statutory framework for regulating alcohol sales has been rapidly changing in the last five years. As laws impacting alcohol outlet density (AOD) continue to evolve in Colorado, the state public health department is tasked with creating new, innovative surveillance systems to track AOD and its impact on communities. The Fellow will work with mentors to create statewide indicators for alcohol outlet density, which will be responsive to the specific statutory and regulatory context in Colorado. The Fellow will lead the indicator design process and get hands on experience cleaning, analyzing, interpreting, and disseminating these AOD surveillance data. These indicators will be used at the state and local levels to monitor changes in AOD over time and can be used to assess: 1) potential correlations between AOD and marijuana outlet density; 2) associations between AOD and relevant health outcomes (e.g. violence, motor vehicle crashes/fatalities, alcohol-related EMS encounters); and 3) associations between certain types of alcohol outlets (e.g. liquor stores, bars) and relevant health outcomes.

Surveillance Evaluation

Evaluation of Emergency Department and Hospital Discharge Data for Public Health Alcohol Surveillance

Extensive work has been done nationally among injury epidemiologists to understand and evaluate the use of emergency department and hospital discharge data for public health surveillance. However, this type of surveillance system evaluation has not been executed for alcohol. In Colorado, the state public health department has access to claims data from the Colorado Hospital Association, and epidemiologists regularly receive requests to look at emergency department and hospital discharges by substances (e.g. alcohol, marijuana, opioids). Given the unique context and issues surrounding the use of emergency department and hospital discharge data for alcohol, this project will work to evaluate the use of these data for public health alcohol surveillance purposes. The Fellow will get hands on experience cleaning, analyzing, and interpreting the Colorado Hospital Association data to evaluate the surveillance system. Additionally, the Fellow will receive support through both the state and national working groups who are regular users of these data (e.g. CSTE Alcohol Morbidity Workgroup, CDPHE
Colorado Hospital Association Data User’s Group). This project will evaluate CDPHE proposed case definitions for alcohol based on coding guidance from the CSTE Alcohol Morbidity Workgroup and will collaborate with other state substance use epidemiologists (e.g. marijuana, opioids) to compare the burden across substances.

**Major Project**  
**Evaluation of Colorado’s 2008 Sunday Alcohol Sales Policy Change**

Based on research quality and findings, the Community Preventive Services Task Force recommends limiting the days of alcohol sales to reduce excessive alcohol use and related harms. This project aims to evaluate the public health impact of a July 1, 2008 Colorado statutory change, which allowed liquor stores to sell full-strength beer, wine, and liquor on Sundays. Previously, the only alcohol legally sold on Sundays was 3.2 beer in grocery and convenience stores. The Fellow will collaborate with the legal team at ChangeLabs Solutions to understand the specific details of the policy change, do a literature review of peer-reviewed evaluations on limiting or expanding days of alcohol sales, and design the methodology to assess the public health impact of the policy change in Colorado. Potential data sources that could be used to assess the effect of this policy include, but are not limited to Colorado alcohol consumption data, alcohol-involved motor vehicle crashes/fatalities or alcohol-involved EMS encounters. The Fellow will have the opportunity to lead this project from epidemiological design to dissemination, with the opportunity to author a peer-reviewed manuscript.

**Surveillance Activity**  
**Assessment of Alcohol and Opioid Co-occurrence in Colorado**

The Violence and Injury Prevention - Mental Health Promotion branch at the Colorado Department of Public Health and Environment houses both the Alcohol Epidemiology Program and the Opioid Overdose Prevention Program. This project would investigate the use of alcohol and opioids among Coloradans using state and national public health data sources to assess the prevalence and risks associated with using these two substances. For example, the Fellow could investigate the risks of alcohol and opioid use among older adults (55+ years) using 2016 and 2017 Colorado Behavioral Risk Factor Surveillance Survey data on alcohol and opioid use as well as alcohol screening and brief intervention data in primary care settings. Additionally, the Fellow could analyze and assess emergency department and hospital discharge data from the Colorado Hospital Association where both CDC and CSTE recommended alcohol and opioid codes are present in the diagnosis fields. If needed, the Fellow could partner with the Prescription Drug Epidemiologist to contextualize these data using the prescription drug monitoring program or Colorado alcohol and opioid use estimates from the National Survey on Drug Use and Health.

**Major Project**  
**Analysis Design and Dissemination of 2018 Behavioral Risk Factor Surveillance System Binge Drinking Module**

The Alcohol Epidemiology Program at the Colorado Department of Public Health and Environment successfully added the Centers for Disease Control and Prevention Binge Drinking Module to the 2018 Behavioral Risk Factor Surveillance System (BRFSS) survey through a competitive proposal process. This
is the first Colorado BRFSS survey that will include these validated questions on binge drinking, which will support the interpretation of the four core BRFSS alcohol questions and the evidence-based prevention of excessive alcohol use and related harms at state and local levels. The Fellow will lead the analysis design of the Binge Drinking Module and will gain competencies in working with state weighted survey data and CDC BRFSS Optional Modules. The Fellow will closely partner with epidemiologists and data stewards in the Center of Health and Environmental Data to execute the analysis, interpret the findings, and create a dissemination plan to ensure these novel data in Colorado are used for program planning and decision-making across the state. This project will build the Fellow’s capacity as an alcohol epidemiology subject matter expert and expose the Fellow to one of the most commonly used state public health surveillance systems, the BRFSS.

**Preparedness Role**

The Fellow will attend the quarterly coordinating meetings of branch staff and emergency preparedness staff, which currently focus on preparing for an outbreak of overdoses, such as with fentanyl. The mentors will ensure that the Fellow collaborates with emergency preparedness staff to make certain that this required competency is prioritized.

**Additional Activities**

Colorado is an exciting environment to be an alcohol epidemiologist. With Colorado’s regulatory landscape changing for alcohol, it is even more critical that the state public health department works to maintain and augment its surveillance of excessive alcohol use and related harms. The mentors will work with the Fellow to select additional projects that both match the Fellow’s interests and build upon core epidemiological competencies. Although this opportunity is focused on the epidemiology and prevention of excessive alcohol use, the Fellow can decide whether he or she is interested in getting exposure to additional program topics or specialized methods. Given the cross-cutting nature of alcohol epidemiology, the opportunities to partner across programs and state agencies are extensive; the mentors will regularly communicate with the Fellow to ensure that the fellowship experience and projects align with the Fellow’s long-term professional goals.

The following project ideas would involve a number of internal and external partners and would build numerous competencies in alcohol epidemiology:

- Partner with other states on a study of unspecified liver cirrhosis deaths to assess the proportion of these deaths with evidence of a history of excessive alcohol use in order to calculate an updated alcohol-attributable fraction to improve estimates of alcohol-attributable deaths
- Use the CDC’s Alcohol-Related Disease Impact methodology to assess alcohol-attributable deaths by county or region in Colorado
- Investigate trends in self-reported binge drinking among new moms over time using Colorado’s Health eMoms survey data
• Partner with the Colorado Cancer Registry and Cancer Program to analyze and interpret trend data on the incidence of alcohol-related cancers; connect these outcomes to youth and adult alcohol consumption data in a written report or fact sheet for state and local partners

Mentors

Primary  Kacy Crawford MPH
          Alcohol Epidemiologist

Secondary Barbara Gabella MSPH
          Senior Epidemiologist