RESEARCH DAY
Thursday, April 11, 2019
McNamara Alumni Center
TRANSFORMING PUBLIC HEALTH FOR 75 YEARS

For 75 years, the School of Public Health has prepared some of the most influential leaders in the field and transformed the way public health is practiced around the globe. While our programs and research have evolved to meet current needs and demands, our focus and determination to protect and promote the health of all populations have not changed.

The research presented today by our students and faculty showcase the strategies and creative solutions they are using to confront the most pressing health challenges in Minnesota, the nation, and the world.

Here are a few ways the SPH is tackling complex health issues to meet the needs of a changing world.

Proven Impact. Our research has led to many innovations:
- Legislation that allows Medicaid payment for services from a certified doula for pregnant women in Minnesota
- Legislation that requires all new and remodeled buildings to be fully accessible to people with disabilities
- The first report to show high rates of concussions associated with youth football players (1983)
- Changes in the care and treatment of HIV-positive people worldwide based on the SPH global START trial
- Development of the Minnesota Model used nationwide to track foodborne illness outbreaks

$800,000
Average faculty research award – the highest per capita at the UMN

#6
NIH funding among schools of public health

TOP 20
Most highly NIH-funded researcher in the nation, Prof. Jim Neaton, Biostatistics

Learn more: sph.umn.edu
PROGRAM SCHEDULE
All Research Day activities will be held in the McNamara Alumni Center Great Hall.

8:30 a.m.  Registration / Check-in

9:00 a.m.  Welcome
John R. Finnegan Jr.
Professor and Dean, School of Public Health

9:15 a.m.  Student Poster Viewing and Judging Session

10:45 a.m.  Lightning-Round Presentations
Antineoplastic Drugs: An Occupational Hazard for Healthcare Workers
Hannah Kaup, MS (PhD student)

Identifying Key Predictors of Patient Outcomes
Shannon McKearnan, BA (PhD student)

Perceptions of Violent Encounters between Police and Young Black Men
Rhonda Jones-Webb, PhD, Professor
Collin Calvert, MPH (PhD student)

Adjusting Noncompliance in Meta-analysis
Jincheng Zhou, MS (PhD student)

Using Low-cost Aerosol Sensors to Monitor Personal Exposure to Ambient Air Pollution
Kimberly Anderson, PhD, Assistant Professor

Assessing the Impact of Direct-to-Consumer Telemedicine on Quality, Utilization, and Spending
Jiani Yu (PhD student)

Multidisciplinary Primary Care Practices in Rural vs. Urban Areas
Laura Smith, BA, (PhD student)

11:45 a.m.  Best Student Poster Award Presentation

12:00 p.m.  Q&A with Lightning-Round Presenters

12:30 p.m.  Program ends
1. Adam Aasen
An analysis of mental health and psychosocial support for infectious disease outbreak emergencies
Public Health Administration & Policy, MPH

2. Adepeju Adesina
Detection and measurement of airborne viral particle concentrations
Environmental Health, PhD

3. Odichinma Akosionu
More than Bingo: Nursing home activities, quality of life and racial disparities
Health Services Research, Policy & Administration, PhD

4. Aleksandra Alcheva
Relative mitochondrial DNA content in oral mucosa cells from African-American and White smokers
Environmental Health, PhD

5. Taiwo Aremu
The relationship of cost and utilization of the Supplemental Nutrition Assistance Program (SNAP) to the prevalence of childhood obesity in the United States
Public Health Administration & Policy, MPH

6. Kirsten Arm
Identifying successful strategies to improve healthy beverage consumption in early childhood among high-risk groups: A qualitative study
Public Health Nutrition, MPH

7. Jessie Austin
Race-related stressors and resources for resilience: Associations with emotional health, behavioral health, and academic investment among African American adolescents
Maternal & Child Health, MPH

8. Xing Bai
Generalized confidence interval calculation for the total variance in a single-factor random-effects ANOVA model with application to medical device comparison problems
Biostatistics, MS

9. Jennifer Ballinger
Determining efficacy of the Great Lakes Indian Fish & Wildlife Commission’s Fish Consumption Advisory
Public Health Administration & Policy, MPH

10. Kelsey Bigbee & Kara Ulmen
Program evaluation skill building in Kolkata, India
Public Health Nutrition, MPH

11. Rebecca Burton
Use of core industrial hygiene competencies and tools to assess total worker exposure during additive manufacturing
Environmental Health, PhD

12. Yazmin Cespedes
How does place influence children’s willingness to try new vegetables? Community Health Promotion, MPH

13. Shannon Sullivan Cigan
Variation in levels of urinary cadmium and its relationship with occupation in smokers from the Multiethnic Cohort Study
Environmental Health, PhD

14. Ann Conmy
Health insurance literacy in Minnesota: Change over time
Public Health Administration & Policy, MPH

15. Andrew DiLernia
A Random covariance model for simultaneous estimation of brain connectivity and clustering
Biostatistics, PhD

16. Sara Dufour
Smoke-Free policy trends in owner-occupied multi-unit housing
Community Health Promotion, MPH

17. Anne Eaton
Non-parametric estimation for event-free survival with component-wise censoring
Biostatistics, PhD

18. Alex Everhart
The de-adoption of cardiovascular therapies with new clinical evidence of safety or efficacy concerns
Health Services Research, Policy & Administration, PhD

19. Jiani Zhou
De-adoption of Erythropoiesis-stimulating agents by physicians after new evidence showed they are ineffective and unsafe
Health Services Research, Policy & Administration, PhD

20. Melanie Firestone
Can aggregated restaurant inspection data help us understand why individual foodborne illness outbreaks occur?
Environmental Health, PhD

21. Sina Golzarian
A Conceptual model of medical scribes and the possibility of their role as a safety net
Public Health Administration & Policy, MPH

22. Bin Guo
Phenome-wide SNP-set association test based on GWAS summary data to identify novel disease-gene association
Biostatistics, PhD
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<td>Nurses and emergency room technicians' perspectives on falls prevention in the Emergency Department (ED) at Regions Hospital</td>
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<td>Amelia Harju</td>
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<td>Establishing an antineoplastic surveillance program in preparation for USP Chapter &lt;800&gt;</td>
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<td>Tounhia Khang</td>
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<td>Benedict Khoo</td>
<td>How does the microbiome of Ixodes scapularis facilitate habitat range expansion into colder temperatures?</td>
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<td>Rachel Kuhnly</td>
<td>Reducing readmissions: A qualitative study analysis to inform strategies for reducing readmissions among Allina Health's senior population</td>
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<td>Yue Li &amp; Zhijian Lin</td>
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<td>Colleen Longacre</td>
<td>Evaluating travel distance to radiation treatment among cancer patients in Minnesota</td>
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<td>Weiwens Ng</td>
<td>Does the patient health questionnaire measure mood-related quality of life in nursing home residents?</td>
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<td>James Normington</td>
<td>A Bayesian difference in differences framework for measuring the impact of primary care redesign on diabetes outcomes</td>
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<td>Ashley Oglesby</td>
<td>Knowledge and attitudes on expedited partner therapy for Chlamydia among reproductive-aged women in Minnesota</td>
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<td>Fredrick Ogugua</td>
<td>Prevalence of Hookah dependence among Hookah smokers in the US</td>
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<td>Danielle Paciulli</td>
<td>Equal access for individuals with Developmental Disabilities (IDD) for oral health care</td>
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<td>Jun Young Park</td>
<td>Integrative factorization of bidimensionally linked matrices</td>
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<td>Madeleine Pick</td>
<td>Palliative care knowledge and attitudes: Results from national HINTS data</td>
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<td>Xuanzi Qin</td>
<td>Pharmaceutical patents and access to cancer drugs: Generic entry of aromatase inhibitors</td>
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<td>Ankita Rajpurohit</td>
<td>Bidirectional relationship of periodontitis (gum disease) &amp; Type 2 Diabetes and the effect of periodontal therapy to lower diabetic outcome in such patients</td>
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<td>Summer Robbins</td>
<td>Early childhood caries in Minnesota children under ages 5 years: A policy analysis</td>
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Student posters continued on next page >>
44. Abhismitha Ramesh
Survey research methods: A public health approach in adrenoleukodystrophy research
Maternal & Child Health, MPH

45. Austin Rau
Characterizing Leptospirosis vulnerability in Puerto Rico
Environmental Health, MPH

46. Jayati Saha
Association between drinking caffeinated coffee and mental depression: NHANES 2005-2006
Epidemiology, MPH

47. Souvik Seal
Genetic association analysis with multiple correlated traits in families
Public Health, PhD

48. Angela Sechler
A policy analysis of restricting access to Supplemental Nutrition Assistance and its health impact on formerly incarcerated women in Minnesota
Public Health Administration & Policy, MPH

49. Joseph Servadio
Assessing the sensitivity of spatial resolution and scale for Visceral Leishmaniasis surveillance in Brazil
Environmental Health, PhD

50. Trishna Sharma
Analysis of the effectiveness of two non-invasive fecal tests used for colorectal cancer (CRC) screening in average-risk adults
Public Health Administration & Policy, MPH

51. Henry Stabler
Non-profit hospitals and community health: Hospital strategy under the Affordable Care Act’s enhanced community benefit regulations
Health Services Research, Policy & Administration, PhD

52. Sailee Tambe
Oral health literacy and outcomes in Central Wisconsin adults
Epidemiology, MPH

53. Mariana Tuttle
How are Minnesota’s county jails providing care for pregnant women who misuse opioids?
Public Health Administration & Policy, MPH

54. Timothy Usset
Building spiritual strength: An emerging evidence-based treatment for PTSD, moral injury, and spiritual distress
Public Health Administration & Policy, MPH

55. Scott Vial
Salmonella Serotype Dublin testing results of boneless and ground beef purchased for the National School Lunch Program, October 2013 - July 2017
Environmental Health, PhD

56. Kristen Wanta
Breastfeeding and human milk expression experiences of employees and students at a large state university in the Midwest
Maternal & Child Health, MPH

57. Richie Houhong Xu
HIV-related stigma interventions in LMIC healthcare setting: A scoping review
Epidemiology, MPH

58. Yi Yang
A Bayesian hierarchical variable selection prior for pathway-based GWAS using summary statistics
Biostatistics, PhD

59. Rina Yarosh
Risk factors for De Novo and therapy related Myelodysplastic Syndromes (MDS)
Epidemiology, MPH

60. Noelle Yeo
Implementation of USDA Smart Snack regulations in Minnesota secondary schools
Public Health Nutrition, MPH

61. Bianca Zarders
Differences in vision screening access in children ages 3-5 by race/ethnicity in Minneapolis, Minnesota
Maternal & Child Health, MPH
Kimberly Anderson, PhD
Assistant Professor, Division of Environmental Health Sciences

Using Low-cost Aerosol Sensors to Monitor Personal Exposure to Ambient Air Pollution

Exposure to ambient air pollution is everywhere. The World Health Organization estimates that nearly 11.5 percent of all deaths are attributable to indoor and outdoor air pollution. Furthermore, WHO’s air pollution models estimate that more than 90 percent of the world’s population live in areas that exceed the 2.5 particulate matter standard – identifying air pollution exposure as a global health priority. In this talk, Kimberly Anderson will describe the growing push for low-cost air pollution monitors and the difficulties associated with the low-cost sensors’ reliability and robustness as compared to stationary environmental monitoring equipment. She will also discuss the evaluation of a low-cost aerosol sensor to determine its utility for personal air pollution exposure monitoring.

Kimberly Anderson is an assistant professor in the Division of Environmental Health Sciences. She received her BS in Industrial Hygiene from Clarkson University, her MS and PhD in Industrial Hygiene from the University of Iowa. Dr. Anderson’s research interests focus on evaluating exposure to aerosols, investigating associations between aerosols and adverse health effects, and developing scientific and engineering solutions that protect human health.
**Collin Calvert, MPH**  
PhD Student, Division of Epidemiology & Community Health

*Perceptions of Violent Encounters between Police and Young Black Men*

High profile events in recent years have drawn attention to the problem of violent encounters between police and young black men in the U.S. In 2016, black men between the ages of 18 and 44 were more than three times as likely as white men of the same age group to be killed by a police officer. In this talk, Rhonda Jones-Webb and Collin Calvert will highlight findings from their recent study on how different stakeholder groups (e.g., police, young black men, parents) perceive the problem of police-youth violence, including causes and potential solutions to the problem.

Collin Calvert is a doctoral student in the Division of Epidemiology and Community Health, specializing in social and behavioral health. Collin holds a Master of Public Health degree from the University of Minnesota and a bachelor’s degree in Anthropology from Macalester College. His training includes interrupted time series analysis using ARIMA modeling and correlated data analysis using mixed models. He has also been a teaching assistant in graduate-level public health courses on evaluation and research methods, taught course labs on data management and analysis using Stata, and trained graduate research assistants in data collection and analyses.

**Rhonda Jones-Webb, PhD**  
Professor, Division of Epidemiology & Community Health

Rhonda Jones-Webb is a Professor in the Division of Epidemiology and Community Health, whose research focuses on alcohol epidemiology and policy with a special focus on race, class, and neighborhood influences. As a leading scholar on alcohol use and alcohol-related problems among African Americans, her research focuses on three primary areas: 1) alcohol consumption and alcohol-related problems among African Americans; 2) environmental factors associated with alcohol consumption and alcohol-related problems among African Americans and low income populations; and 3) environmental policies to prevent alcohol-related problems.
Hannah Kaup, MS
PhD Student, Division of Environmental Health Sciences

Antineoplastic Drugs: An Occupational Hazard for Healthcare Workers

Antineoplastic drugs, more commonly known as chemotherapy, pose an occupational risk to healthcare workers. Recent updates to handling guidelines in the United States and Canada will require healthcare facilities using these medications to perform routine surveillance by measuring surface contamination levels. Little guidance for conducting surface measurements of these drugs is available. In this talk, Hannah Kaup will discuss several gaps in our understanding of exposures to chemotherapy medications and why implementing effective controls has proven difficult. She will share insights from her current work and discuss future projects to protect the health and safety of healthcare workers.

Hannah Kaup is a PhD student in the Division of Environmental Health Sciences. She received her BA in both Biology and Chemistry from St. Catherine University in 2011. She then worked as an analytical chemist at General Mills and 3M before returning to school in 2016 to complete an MS degree in Industrial Hygiene at the University of Minnesota. She has a strong interest in healthcare safety, specifically in hazardous drug handling.

Shannon McKearnan, BA
PhD Student, Division of Biostatistics

Identifying Key Predictors of Patient Outcomes

Predictions of patient risk for health outcomes are important measures for physicians. They can inform and guide them as they make decisions about patient treatments, and can aid in the allocation of scarce resources. Some machine learning techniques can yield very accurate predictions of patient risk, but their methods lack intuitive interpretation. In these cases, feature selection is an important step to identify meaningful predictors. In this talk, Shannon McKearnan will describe her work with collaborators on one method of feature selection for such a machine learning technique, with a focus on its application to predicting outcomes for oropharyngeal cancer patients based on high-dimensional imaging data.

Shannon McKearnan is a third-year PhD student in the Division of Biostatistics. She is working with her advisors Associate Professor Julian Wolfson and Assistant Professor David Vock on risk prediction for health outcomes, machine learning methods, and the use of electronic health record data.
Laura Smith, BA  
PhD Student, Division of Health Policy & Management  

**Working Together: Multidisciplinary Primary Care Practices in Rural Areas**  
Rural communities have long faced primary care physician shortages. Nurse practitioners (NPs) – registered nurses with additional training and education – are a rapidly growing part of the rural provider workforce. In this talk, Laura Smith will take a deep dive into how physicians and NPs work together to provide primary care in rural communities. She will also describe the use of a novel source of service claims and electronic health record data to study differences in patient complexity, visit length, appointment wait times, and payer mix.

Laura Smith is a fourth-year doctoral student in the Division of Health Policy and Management and a graduate research assistant at the Rural Health Research Center. Her broad research interests include health economics and health policy. She uses large datasets to study quality and access in health care, with a particular focus on primary care and nurse practitioners. Prior to her studies at the University of Minnesota, Laura earned a BA in mathematics from St. Olaf College and worked on Medicare payment policy evaluations at the Lewin Group.

Jiani Yu  
PhD student, Division of Health Policy & Management  

**Assessing the Impact of Direct-to-Consumer Telemedicine on Quality, Utilization, and Spending**  
Telemedicine, the use of telecommunications technology to remotely diagnose and treat patients, has the potential to improve access to care and provide lower-cost alternatives for health care services. In recent years, there has been a sharp rise in direct-to-consumer (DTC) telemedicine services, which introduced convenient alternatives to in-person services for non-emergent primary care conditions. While the number of options for DTC telemedicine services has grown, its potential to transform the delivery of care and decrease health care costs is still largely unknown. In this talk, Jiani Yu will share research that evaluates the impact of a DTC telemedicine visit for urinary tract infections on quality, utilization, and spending outcomes relative to those initiated with an in-person visit over a 30-day episode of care, and the extent to which DTC telemedicine visits replaced in-person visits for the same condition.

Jiani Yu is a PhD candidate, with a focus on health economics, in the School of Public Health Division of Health Policy and Management. Prior to her PhD program, she worked as a research associate for the American Institutes for Research. Jiani's research interests are primarily in the areas of innovations in health care delivery, alternative payment models, and variation in the prices of health care services and access to care.
Jincheng Zhou
PhD Student, Division of Biostatistics

Adjusting Noncompliance in Meta-analysis

Noncompliance occurs in randomized clinical trials (RCTs) when some participants do not follow their assigned treatments and may create bias in estimating a treatment effect. Meta-analysis is a valuable statistical technique to combine estimated treatment effects from multiple independent clinical trials. It improves the statistical power, and has become increasingly popular in medical research. However, noncompliance rates are generally different between treatment arms and across studies, thus current meta-analysis methods cannot account for noncompliance. In this talk, Jincheng Zhou will first illustrate the noncompliance problem through a real case meta-analysis of epidural analgesia in labor on the outcome cesarean section, then describe an innovative Bayesian hierarchical framework to make causal inference for meta-analysis of RCTs in the presence of noncompliance and missing data.

Jincheng Zhou is a PhD candidate in the Division of Biostatistics. She is working with her advisor Professor Haitao Chu on Bayesian causal effects in meta-analysis. Prior to her PhD program, she obtained a medical degree in Preventive Medicine, an MS in Biostatistics, and worked as a Biostatistician at the Minneapolis Medical Research Foundation before returning to school in 2015.

STUDENT POSTER AWARDS

Doctoral and Master’s Student Posters

The Best Student Poster Awards recognize student poster presentations, in correlation with their poster abstracts that have been reviewed and rated by a panel of judges on the following merits: topic prominence; presentation objectives; purpose; practice impact; academic impact; originality; tone; and overall communication of scope, context and rationale.

First place award recipients in the Doctoral and Master’s student categories will receive an engraved plaque, their poster prominently displayed outside of the School of Public Health Office of the Dean (Mayo A302), and an opportunity to “Lunch with the Deans” at the Campus Club. Second and third place award recipients will receive a plaque honoring their recognition.

People’s Choice Award

The People’s Choice Award recognizes the research project voted as the audience favorite. First place award recipients in the Doctoral and Master’s student categories will receive a certificate honoring their recognition.
ACKNOWLEDGMENTS

Doctoral and Master’s Student Abstract and Poster Judging Committees

Thank you to our abstract and poster judges

- Bjorn Berg, Assistant Professor, Division of Health Policy and Management
- Jesse Berman, Assistant Professor, Division of Environmental Health Sciences
- Zobeida Bonilla, Assistant Professor, Division of Epidemiology and Community Health
- Alicen Burns Spaulding, SPH Alumni, PhD ’13 (Epidemiology and Community Health)
- Mary Butler, Assistant Professor, Division of Health Policy and Management (SPH Research Committee member)
- Dori Cross, Assistant Professor, Division of Environmental Health Sciences
- Eun Mia Jung, Researcher, Division of Environmental Health Sciences
- Eric Lock, Assistant Professor, Division of Biostatistics
- Sue Mitchell, SPH Alumni MPH ‘88 (Public Health Administration and Policy)
- Jonathan Oliver, Assistant Professor, Division of Environmental Health Sciences
- Helen Parsons, Associate Professor, Division of Health Policy and Management
- Kelly Searle, Assistant Professor, Division of Epidemiology and Community Health
- Kumi Smith, Assistant Professor, Division of Epidemiology and Community Health
- Kate Welshons, SPH Alumni, MPH ‘16 (Maternal Child Health)
- Katie White, Associate Professor, Division of Health Policy and Management

A big thank you to all of our volunteers

School of Public Health Research Day would not be possible without the work of our dedicated volunteers. Volunteers have helped out in a great many ways; assisting our students with posters, liaising with attendees on our behalf, tallying ballots, and many other tasks. Because of this invaluable contribution, we are eager to say a big public “Thank you!”