

## Appendix B – SHOW Ancillary Studies Ongoing 2019-2020

### Applied Public Health / Community Health Projects

Study	Start Year	End Year	Funding	Collaborators	Summary
PACCS	2020	2021	DHS/CDC	Ryan Westergaard, WI Dept of Health Services	DHS asked SHOW to conduct 3 waves of COVID-19 antibody testing among the SHOW 2014-2016 statewide representative sample and 2017-2020 sample which includes underrepresented populations in Milwaukee. Goals is to have statewide testing for surveillance and tracking purposes. Waves occur in July/August 2020, October/November 2020, and March/April 2021.
COVID-19 Outbreak Investigation	August 2020	August 2020	DHS/CDC	Westergaard, Schultz, Malecki UW Madison University of Pennsylvania, Johns Hopkins, CDC, WI DHS	In early August 2020, DHS utilized the SHOW infrastructure for two days of antibody testing of >150 adolescent males at a Mukwonago Jewish Camp where an outbreak had occurred in June/July 2020. SHOW proved its unique ability as a research infrastructure to respond quickly in a pandemic and coordinate efforts rapidly to launch COVID-19 antibody testing within less than 2 weeks notice. SHOW provided phlebotomists, supplies, equipment, and consulting on logistics and planning in order to successfully conduct blood draws for antibody tests and saliva samples for COVID-19 research for investigators at University of Pennsylvania & Johns Hopkins University.
LatinX Pilot	2019	2020	SHOW/WPP NCE Funds	Kristen Malecki, Population Health Sciences;	Conduct SHOW Core survey and biosample collection with a focus on recruiting LatinX community members in the City of Milwaukee. LatinX population is underrepresented in health research and this pilot will explore methods to recruit and retain participants, including focus group meetings with community leaders, adaptations to recruitment and appointment methods to include convenience sampling and public facilities for interviews rather than households.
EPHT Carbon Monoxide Monitoring	2017	ongoing	DHS/CDC	Meiman, Werner. WI Dept. of Health Services. Wisconsin Environmental Public	The EPHT program is partnering with SHOW to implement a module in the core survey during the next triannual sample in order to assess the prevalence of functional CO detectors in homes and assess characteristics of WI residents who are

				Health Tracking program, WI Dept. of Health Services	protected by CO monitors as well as their awareness of CO risk and need for monitoring.
SHOW and Tell 2	2019	2020	Start-up funds	Heidi Brown, SMPH, Obstetrics & Gynecology/Urology	This project investigates the use of electronic messaging as an approach for dissemination of lower urinary tract symptoms prevention interventions to clearly define populations of women who are motivated to receive bladder health promotion materials in this manner.
UWCCC Cancer Survivorship Survey	2018	2020	UWCCC	Noelle LoConte, Amy Trentham-Dietz, SMPH, UWCCC	Wisconsin Comprehensive Cancer Survivor Survey to past SHOW participants reporting a cancer diagnosis. The goal of the survey is to learn about how having cancer impacted their health, quality of life, household income, and ability to work.
Burmese Angler's Study	2017	2019	DHS/ATSDR	Henry Anderson, Jon Meiman, WI Dept. of Health Services	This project will implement a biomonitoring program to evaluate body burden of both legacy and emerging contaminants among anglers who are Burmese immigrants and their descendants residing in the Milwaukee Estuary Area of Concern (AOC) community.
Anglers III	2017	2019	DHS/ATSDR	Henry Anderson, Jon Meiman, WI Dept. of Health Services	This project will implement a biomonitoring program to evaluate body burden of both legacy and emerging contaminants among anglers residing in the Milwaukee Estuary Area of Concern (AOC) community.

### Translational Research Projects

Study	Start Year	End Year	Funding	Collaborators	Summary
Accelerating Metabolism and Diabetes Research at UW Madison	April, 2020	ongoing	UW 2020/ VCRGE	Lamming, Dudley Cryns, Vincent Simcox, Judith Bradfield, Christopher Anderson, Rozalyn Alan Attie, Troy Hornberger, Dawn Davis,	Project supports new technology necessary to build a state of the art Lipodomics research core at the UW Madison

				David Pagliarini, Federico Rey	
Improving biomarkers of metabolic syndrome in African American populations	2020	Ongoing	Start Ups/ NIH UW BIRCWH Award	Judith Simcox	Metabolic disease markers were developed largely on data from Western European Caucasians populations and recent studies showed that they are poor predictors of metabolic health in minority groups including African American, Latino Americans and Native Americans. This project tests the hypothesis that inflammatory markers such as high sensitivity CRP and arachidonic acid are predictive markers of metabolic disease in African American.
REWARD – Residential, Epigenetic Weathering and Disadvantage	2019	Ongoing	NIH/R01	Michal Engleman, UW Sociology Kristen Malecki, Population Health Sciences;	Using ~1400 past SHOW participants to (1) Examine the association of individual and neighborhood-level disadvantage with epigenetic markers of accelerated biological aging. 2) Aim 2 Investigate the epigenetic mechanisms linking accelerated biological aging ( $\Delta$ DmA) with two weathering-related phenotypic outcomes with well-known social disparities (cardiometabolic, inflammation). (3) Characterize the impact of disadvantage across the life-course on epigenetic markers of aging. (birth certificate linkage, longitudinal follow-up)
Obesity, Toll Like Receptors and Immune Response	2020	ongoing	NIH/R21	Kristen Malecki and Maria Nikodemova, Population Health Sciences;	Test the hypothesis that obesity modulates Toll-like receptors expression and activation in PBMCs. Blood draw on SHOW past and new SHOW participants.
Microbiome Reliability Pilot	2019	2020	SHOW Biobank Pilot Funds	Maria Nikodemova, Population Health Sciences	Test how stool samples stored at different temperatures for different lengths of time affects microbiome diversity and richness. Useful for understanding how shipping and storage logistics for getting stool samples back to SHOW from the field before processing and storage in -80C freezer affects the science.
The Human Microbiome in Health and Disease	2019	ongoing	NIH	David Andes, Currie, Safdar, SMPH, Medicine, Medical Microbiology & Immunology	Center of Excellence for Translational Research (CETR) application. Project building on the WARRIOR-SHOW data and specimens to explore antimicrobial activity of human associated bacteria as well as the potential role of fecal microbiome in conferring resistance to pathogen invasion.
Role of dietary isoleucine and	2019	ongoing	SHOW	Dudley Lamming, SMPH, Medicine; Endocrinology	SHOW biorepository samples and existing data for individuals with dietary intake on isoleucine and histidine will be used to

histidine in regulating health of mice and humans					investigate how circulating levels of these amino acids correlate with dietary consumption and BMI and whether a relationship exists between fibroblast growth factor 21 levels and lower diet or plasma amino acid levels.
Understanding population end of life planning.	(2020-delayed due to COVID)	ongoing	Department of Family and Community Health	Julia Lubsen	Follow-up of SHOW participants to determine what end of life planning and health care decision-making is in place among a general population based sample. Questions were being developed to be added to the next face to face follow-up of SHOW participants. This work is on hold until Spring 2021 due to COVID-19
Emotions and Wellness Study	2019	ongoing	NIH/NIMH	Richard Davidson, SMPH, UW Center for Healthy Minds	The purpose of this study is to determine how our emotions, brain, and body processes interact to learn what factors promote health and well-being. SHOW's role is to identify eligible past SHOW participants (2008-2016) and send them materials about this study so that past SHOW participants can contact them if they are interested in participating.
All of Us	2018	ongoing	NIH	Murray Brilliant, Marshfield Clinical Research Foundation	This is a national study with a goal of recruiting one million participants. SHOW's role is to identify and recruit eligible past SHOW participants (2008-2016) to participate.
Epigenetics, metabolism and host Microbiome	2018	ongoing	Existing funds, NIH submission	John Denu, WID, Biomolecular Chemistry	WARRIOR-SHOW cohort blood (PBMC) sample collection. This was a pilot study focusing on aging. They are looking for biomarkers to assess the aging process. They are looking for metabolite markers in the PBMCs and the role of themicrobiome in this process.
Systemic Biomarkers of Health Disparities	2018	ongoing	ICTR	Tracy Downs, SMPH Urology and UWCCC, Roz Anderson, SMPH, Medicine and UWCCC	Existing measures from SHOW will be used to identify individuals by obesity class and plasma samples will be used to validate markers of metabolic status. SHOW data and biosamples will be used in the investigation.
Toxoplasma and Protection of Weight Gain	2017	ongoing	VCRGE – Microbiome Initiative	Laura Knoll, Medical Microbiology; Federico Rey, Bacteriology; Kristen Malecki, SMPH, Population Health Sciences	Data, biorepository samples and microbiome data from the SHOW-WARRIOR cohort will used to investigate the role of asymptomatic infection with Toxoplasma gondii in preventing weight gain. Both animal and human models are proposed in the investigation.

Developmental Toxicity Associated with Piperonyl Butoxide Exposure	2017	ongoing	NIH-NIEHS	Robert Lipinski, Comparative Biosciences, Veterinary Medicine	This study investigates the Hedgehog pathway in animal models and correlates developmental toxicity-associated concentrations of pesticide synergist piperonyl butoxide (PBO) in the mouse with those in humans (women of child-bearing age). SHOW biorepository samples and data will be used to provide a foundation for improved risk assessment. The long term goal of the project is prevention of complex birth defects through identification of high-risk populations and defined windows of exposure to environmental agents.
Allostatic Load in Adults ...with Food Allergy	2017	ongoing	SoN pilot	Anne Ersig, School of Nursing	The study will examine clinical measures and genetic markers of allostatic load among young adults with food allergies and matched healthy controls using data and DNA from SHOW.

### University Grant Development Projects

Study	Start Year	End Year	Funding	Collaborators	Summary
Center for inherited disease research high throughput sequencing and genotyping resource (CIDR)	2019	ongoing	NIH/NHGRI	Kristen Malecki, Population Health Sciences; Michal Engelman, Sociology	SHOW DNA was submitted for GWAS and EWAS analysis from 600 participants of the WARRIOR-SHOW cohort for expanding the SHOW data resource for new grants and discoveries;
Asthma Phenotypes and Subclinical CVD	2019	ongoing	AHA	Matthew Tattersall, Medicine, Cardiology	Career Development Award to investigate subclinical cardiovascular disease measures in asthma patients and age and gender-matched SHOW controls.
CREATE	2017	2020	UW2020	Janean Dilworth-Bart, SoHE; James Schauer, CoE; Kristen Malecki, Population Health Sciences	Cumulative Risks, Early development and emerging Academic Trajectories (CREATE); the SHOW infrastructure is being used to support this pilot study that will document psychosocial, chemical, and non-chemical stressors among 60 low-income 3- to 4-year old children living and attending preschool.
Examining Potential of the Microbiome in Children to Reduce Antibiotic Resistance (EPIC)	2017	2019	UW VCRGE – Microbiome Initiative	Nasia Safdar, Medicine, Infectious Disease	Examining the Potential of the Microbiome in Children to Reduce Antibiotic Resistance: the EPIC Study. Investigation of the influence of daycare on MDROs and gut microbiome in children aged 6 months to 5 years of age.