



2015 Outcomes Report

# Wisconsin Partnership Program

*Making Wisconsin a healthier state for all*





# Table of Contents

## Grants Awarded by the Oversight and Advisory Committee

### Community Academic Partnership Fund

Adopting an Easy-to-Read Medication Label in Wisconsin . . . . .	3
Building the Infrastructure to Make Wisconsin the Healthiest State: Strengthening and Integrating Community Health Improvement Processes and Plans (CHIPP). . . . .	4
LIFE Foundation Cross Plains Community Project. . . . .	5
The Menominee Community Journey to Wellness. . . . .	6
Preserving Infant and Child Health . . . . .	7
Promoting Physical Activity in Child Care . . . . .	8
Safe and Healthy Food for the Hungry . . . . .	9
Safe Schools for Wisconsin’s Transgender Youth . . . . .	10
Understanding the Role of Childhood Adversity in Adult Health Outcomes in Wisconsin . . . . .	11
Winnebago County Comprehensive Sexual Health Education Pilot Program . . . . .	12
Wisconsin Obesity Prevention Network. . . . .	13
YMCA and UW OBGYN Partnership Promoting Healthy Weight in Pregnancy . . . . .	14

### Lifecourse Initiative for Health Families

Bethel AME Church Jobs for Fathers . . . . .	15
The Beloit Youth Internship Program. . . . .	16
Family Connectedness for New and Expectant Mothers. . . . .	17
Family Peer Navigation and Home Visit Project. . . . .	18
Focus on Fathers Initiative . . . . .	19
Normalizing Breastfeeding: Building Social Support and Community Capacity . . . . .	20
PWNS Birthing Project . . . . .	21
UNCOM Initiative for Healthy Families . . . . .	22

## Grants Awarded by the Partnership Education and Research Committee

### Collaborative Health Sciences Program

Predicting Alzheimer’s Disease Using Multimodal Machine Learning . . . . .	23
--	----

### New Investigator Program

Cholecystokinin in the Survival of Human Pancreatic Islets . . . . .	24
Circulating Tumor Cells in Renal Cell Carcinoma: Biomarkers for Personalized Medicine . . . . .	25
Cystic Fibrosis MRI: Tracking Lung Function and Response to Therapy . . . . .	26
Dissecting Cross-Species Transmission of Influenza Virus. . . . .	27

### Strategic Grant

Wisconsin Center for Infectious Diseases (WisCID). . . . .	28
--	----

## Measuring Impact

The Wisconsin Partnership Program, created in 2004 by the Blue Cross & Blue Shield United of Wisconsin conversion, provides resources to fund research, education and community initiatives. It represents a far-reaching commitment of the University of Wisconsin School of Medicine and Public Health to improve the health of the people in Wisconsin for many years to come.

The Partnership Program's governance and funding decisions are carried out by two committees: the Oversight and Advisory Committee (OAC) and the Partnership Education and Research Committee (PERC). The primary responsibility of the Oversight and Advisory Committee is to direct and approve funds for public health initiatives while the Partnership Education and Research Committee allocates and distributes funds for education and research initiatives that advance population health.

The Program gauges its impact by measuring outcomes of funded initiatives. This can include results such as development of new methods and therapies, capacity building, policy, systems and environmental change, measurable health improvements and more. The reports include outcomes ranging from statewide policy change that increases physical activity and nutrition for children in childcare to identification of new markers of resistance for cancer therapies leading to more personalized and better cancer treatment options.

Significant and lasting change has been demonstrated by the Partnership Program's funded initiatives. The following report describes, at length, the outcomes of these and other awards that ended in 2015.

## Facilitators and Barriers to Wisconsin's Adoption of an Easy-to-Read Medication Label

**Grantee:** Wisconsin Health Literacy

**Grant Title:** Adopting an Easy-to-Read Medication Label in Wisconsin

**Geographic Location:** Statewide

**Academic Partner:** David A Mott, PhD, FAPhA, RPh, UW-Madison School of Pharmacy

**Dates:** 5/1/2013–4/30/2015

**Amount:** \$42,891

**Program:** Community Academic Partnership Fund



**The Challenge:** National studies indicate that adverse drug events are responsible for 3.6 million office visits per year, 700,000 emergency room visits and 117,000 hospitalizations. In one study, 46 percent of patients across all literacy levels misunderstood one or more medication dosage instructions. Seniors are particularly at risk of misunderstanding drug labels and misusing medications, leading to negative health outcomes such as falls. Also, national pharmacy chains have developed 31 different label styles, resulting in variability in the clarity and complexity of dosage instructions.

To address the labeling problem, in May 2013, the United States Pharmacopeia (USP) released a set of evidence-based standards for patient-centered medication labeling. The publication of these standards was a significant innovation; however, little has been done to adopt these standards in Wisconsin.

**Project Goal:** This project aimed to assess key pharmacy stakeholders' current attitudes toward the USP standards, likelihood of adoption and barriers to adoption. Wisconsin Health Literacy (WHL) conducted 17 interviews within settings that serve a geographically and racially representative sample of the population. Those interviewed included pharmacists and pharmacy managers (chain and independent), primary care providers, pharmacy software vendors, members of the USP and other states' pharmacy boards who had already enacted standards.

**Results:** Many key stakeholders were unaware of the new USP standards, but when informed, were quick to support their use. The main barrier in following the standards seemed to be that medication bottles had to be larger in order to fit the medication labels recommended by the USP. Therefore, local pharmacists felt that the necessary step in adopting the standards was with software developers, pharmacy owners and managers.

The interview findings were shared in a paper titled *“Adopting an Easy-to-Read Medication Label in Wisconsin.”* In an ongoing effort to increase awareness of the USP standards and motivate voluntary adoption, the paper is being distributed in print and is available via the web at [wisconsinliteracy.org](http://wisconsinliteracy.org).

The next phase of this project was sustained with funding from the Healthier Wisconsin Partnership Program at the Medical College of Wisconsin. As a result, Wisconsin Health Literacy is now conducting a two-year pilot involving implementing and evaluating label improvements at three pharmacy systems with 48 pharmacy sites and convening a Medication Label Summit in 2017. Wisconsin Health Literacy hopes to broaden adoption standards across the state.





## Enhancing Collaborative Processes to Improve Community Health

**Grantee:** Wisconsin Association of Local Health Departments and Boards

**Grant Title:** Building the Infrastructure to Make Wisconsin the Healthiest State: Strengthening and Integrating Community Health Improvement Processes and Plans (CHIPP)

**Geographic Location:** Statewide

**Academic Partner:** Julie Willems Van Dijk, PhD, RN, UW School of Medicine and Public Health, Population Health Institute

**Dates:** 4/1/2011–03/31/2015

**Amount:** \$349,140

**Program:** Community Academic Partnership Fund

**The Challenge:** Community Health Improvement Processes and Plans (CHIPP) aim to identify and address local community health issues and are required for local health departments by the state of Wisconsin. Prior to this grant, there were limited formal models, standards or resources to support the process, and a significant lack of knowledge about the most effective practices. CHIPP quality varied greatly across the state.

**Project Goal:** The grantee conducted an assessment of current CHIPP resources and processes by conducting focus groups, an online survey, literature review and a national review of standards and best practices. Based on this assessment, an action plan, tools, resources and support services were developed to address gaps in the CHIPP process. Statewide partners and project

staff participated in the Wisconsin Partnership-funded Healthy Wisconsin Leadership Institute Community Teams training and then were paired with 10 communities with fewer resources and lower health rankings. The communities received technical assistance from trainees while completing several phases of CHIPP, setting objectives and identifying strategies and plans to implement priorities.

**Results:** This project resulted in a CHIPP model, tools and resources that the 10 communities have utilized and are now available on [wicommunityhealth.org](http://wicommunityhealth.org). A comprehensive data document, published on the website, allows those who conduct CHIPPs to identify a core set of health indicators and choose future targets for their indicators. Through collaborative efforts, 70 percent of these indicators are now available through the *County Health Rankings & Roadmaps* site, one of the most popular sites for collecting county health data.

Additionally, the project resulted in strong partnerships and shared resources and leadership. Collaboration involved state-level leadership as well as academic and community partnerships, which have been sustained. In addition, one of the pilot communities received accreditation and the others stated that they are adequately prepared to plan implementation of their community health priorities.

This project was sustained with a second Partnership Program grant that focuses on implementation and evaluation, and includes system and policy efforts. It will convene communities, utilize partnerships and support implementation of policy-oriented strategies to focus on the priority area of alcohol misuse.



## Building a Culture of Fitness in a Rural Wisconsin Community

**Grantee:** LIFE Foundation/Village of Cross Plains

**Grant Title:** LIFE (Lifestyle Initiative for Fitness Empowerment) Foundation Cross Plains Community Project

**Geographic Location:** Village of Cross Plains

**Academic Partner:** Daniel Jarzemsky, MD, UW School of Medicine and Public Health, Department of Family Medicine

**Dates:** 4/1/2014–5/31/2015

**Amount:** \$35,360

**Program:** Community Academic Partnership Fund



**The Challenge:** “We have no senior center, no teen center, no place to go to be active, and we do like our brats and beer,” replied Cross Plains community residents when asked by Cross Plains doctors about rising weights and sedentary lifestyles. In Cross Plains, 70.79 percent of adults are either overweight or obese. This number is higher than the percentage of overweight and obese people in the U.S. (68.5 percent), in Wisconsin (62.8 percent) and in Dane County (59.3 percent).

**Project Goal:** The project aimed to work with the Village of Cross Plains and surrounding townships to raise awareness about obesity, gather community input on possible strategies for improvement and garner support in the community for long-term, sustainable strategies. Collecting data from Cross Plains and the county, and coupling that with evidence-based scientifically supported interventions, the goal was to culminate with a comprehensive strategic plan ready for implementation with measurable outcomes.

**Results:** The project created a five-year strategic plan that includes a community wellness fitness center, multi-use trails, fitness classes, programs through UW Health Cross Plains, a pedometer walking club, walk-to-school programs, community gardens and farmers’ markets. The coalition is taking a collective impact approach to implement the five-year strategic plan.

Coalition membership grew from six to 27 members with a support network of 80 residents. It is comprised of community leaders in health care including doctors, a dentist, nurses, a pharmacist, a dietitian and EMS, as well as representatives from local government, law enforcement, school, fitness, nutrition and business.

The Village of Cross Plains and its Parks and Recreation Department agreed to a Memorandum of Understanding, voicing a commitment to the LIFE Foundation with a long-term co-administrative role in the sustainability of evidence-based fitness and

nutrition programs. A new community wellness fitness center is proposed in conjunction with a new village administrative building. Plans include an office for LIFE with a long-term advisory commitment to Parks and Recreation.

The LIFE Foundation goals and activities were shared in local newspaper articles, social media posts, presentations held at community events and meetings, press releases, LIFE brochures and a new health-focused website, [crossplainslife.org](http://crossplainslife.org). The foundation is continuing its work with a Wisconsin Partnership Program Community Opportunity Grant for \$50,000.





## Menominee Community Workgroup Achieves Significant Policy, System and Environmental Changes

**Grantee:** Menominee Indian School District

**Grant Title:** The Menominee Community Journey to Wellness

**Geographic Location:** Menominee County

**Academic Partner:** Alex Adams, MD, PhD, UW School of Medicine and Public Health, Department of Family Medicine and Community Health

**Dates:** 6/1/2013–7/31/2015

**Amount:** \$44,214

**Program:** Community Academic Partnership Fund

**The Challenge:** Menominee County, made up of the Menominee Reservation, is the poorest Wisconsin county and consistently ranks last in Wisconsin's County Health Rankings. Menominee people suffer from high rates of cardiovascular disease, type 2 diabetes and rising cancer rates that may be due to rapidly increasing rates of obesity. There is significant need to implement sustainable changes in family health behaviors to decrease obesity and chronic disease, thereby improving the health of future generations.

**Project Goal:** To address these and other challenges, the Menominee community created the Community Engagement Workgroup (CEW), a dedicated group within the tribe consisting of many sectors: academia, community, tribal clinic staff, school district staff, youth-serving organizations, human services, food distribution and more. The

Wisconsin Partnership Program funded the CEW to implement policy, systems and environmental changes and develop a comprehensive data management and evaluation plan for childhood obesity and health monitoring. The committee worked to identify shared goals, align activities, resources and evaluation measures, and create 90-day work plans to address actionable and achievable aims.

**Results:** Many new tribal members and organizations joined the CEW and all tribal agencies sent representatives. The CEW achieved significant policy, systems and environmental changes related to obesity that include:

*Policy changes:*

- Strengthened school nutrition policies and meal programs
- Implemented a tribal wellness policy to support employee physical activity during the workday
- Lengthened recreation center hours

*Systems changes:*

- Built a new grocery store on the reservation
- Provided students with healthy foods for the weekend through the school-based Smart Sacks program
- Developed gardening programs and school and community gardens

*Environmental changes:*

- Refinished the track and opened it to the community
- Developed new sidewalks in the primary research community
- Developed school and community gardens

The project also developed a data management and long-term evaluation plan for childhood obesity and health monitoring. The CEW's work continues via funding from other grants to the Menominee Nation. In addition, Menominee is one of the two pilot communities in the Wisconsin Partnership Program's Obesity Prevention Initiative (OPI).



## Child and Infant Deaths Reviews Inform Prevention Efforts

**Grantee:** Children’s Health Alliance of Wisconsin

**Grant Title:** Preserving Infant and Child Health

**Geographic Location:** Statewide

**Academic Partner:** Timothy Corden, MD, UW School of Medicine and Public Health, Department of Population Health Sciences; and Emmanuel Ngui, DrPH, UW-Milwaukee School of Public Health

**Dates:** 4/1/2012–12/31/2015

**Amount:** \$398,469

**Program:** Community Academic Partnership Fund



**The Challenge:** Each year more than 700 children and more than 400 infants die in Wisconsin. For every injury-related death there are 21 injury hospitalizations and 629 emergency department visits. The majority of these deaths and hospital visits are considered preventable. Fetal Infant Mortality Review (FIMR) and Child Death Review (CDR) share the common goal of preventing future deaths and injuries by identifying the risk factors and circumstances surrounding each death. Wisconsin CDR teams review most deaths to children younger than age 19 while FIMR teams review all infant deaths younger than age one and most stillbirths greater than 20 weeks gestation and/or 350 grams.

**Project Goal:** The purpose was to establish strong collaboration between two separate systems, FIMR and CDR, to increase effectiveness of prevention efforts in target counties. The project improved data collection, quality and interpretation, established

collaboration between FIMR and CDR and ensured FIMR/CDR teams gained experience in translating data into best practices, interventions and programs.

**Results:** The Case Reporting System from the National Center for Fatality Review and Prevention was expanded to include more than 50 variables focused on maternal, fetal and infant health. Wisconsin is automatically uploading birth and death records with free and automatic access to encourage use of the system from FIMR/CDR teams. At this time, more than 90 percent of CDR and FIMR teams use this data system.

The project increased the number of FIMR teams from two to eight and CDR teams from 49 to 57. The CDR team’s coverage increased from 47 to 59 of Wisconsin’s 72 counties. CDR teams exist for more than 93 percent of Wisconsin’s child population younger than age 19.

Eight counties (Dane, Kenosha, Marinette, Milwaukee, Racine, Rock, Walworth and Wood) were provided technical assistance, including identification of ways to collaborate with existing CDR teams, assistance accessing records from medical or other institutions and help running and creating reports.

Data from Wisconsin’s first joint CDR and FIMR report (located on the Children’s Health Alliance website at [chawisconsin.org](http://chawisconsin.org)) has been used to educate policymakers, inform prevention activities at the state and local level including creation of the educational home visiting tool, *Sleep Baby Safe*, and demonstrate the burden of sleep-related deaths in grant applications. The project leveraged funding from the Centers for Disease Control and Prevention (CDC) for a total of \$658,434 and the National Center for Fatality Review and Prevention for \$165,000.





## Successfully Increasing Physical Activity in Early Childhood

**Grantee:** Supporting Families Together Association

**Grant Title:** Promoting Physical Activity in Child Care

**Geographic Location:** Statewide

**Academic Partner:** Alexandra Adams, MD, PhD, UW School of Medicine and Public Health, Department of Family Medicine and Community Health

**Dates:** 7/1/2011–6/30/2015

**Amount:** \$388,148

**Program:** Community Academic Partnership Fund

**The Challenge:** Childhood obesity rates continue to reflect substantial health disparities with 43.9 percent of Native American children, 35.6 percent of Hispanic children and 23.5 percent of African American children being overweight. Children ages two to five are establishing eating habits and activity levels; therefore, this stage of development provides the ideal window of opportunity for developing foundations for physical activity and obesity prevention.

**Project Goal:** This project aimed to attain 120 minutes (half unstructured) of physical activity each day for toddlers and preschool children in 14 early care and education settings. The sites for the intervention were strategically chosen to include high proportions of children who are minorities or have lower socioeconomic status, including rural and urban communities. Providers received four hours of

training, which outlined evidence-based practices and policies, physical activity resources, equipment and curricula. Then they received individualized technical assistance, focusing, in part, on achieving parent engagement.

**Results:** Toddler and preschool children increased their average number of minutes of physical activity by 49 percent (see Figure 1). The project reached an average of 470 children each year. Additionally, 122 early care and education professionals were trained. These providers doubled the amount of teacher-led physical activities and included more intentional and planned activities. Providers also engaged parents in helping their children achieve physical fitness using strategies such as interactive activities during drop-off/pick-up and family fun nights with nutritious meals and physical activities.

The project sustained physical activity as sites with written activity policies of at least 60 minutes/day significantly increased. The project also collaborated

to influence statewide policy and licensing for early child care providers. Starting in 2017, Wisconsin's child care quality rating and improvement system will guide child care providers in offering 90 minutes of daily physical activity versus the previous 60-minute requirement.

### Average Minutes of Physical Activity

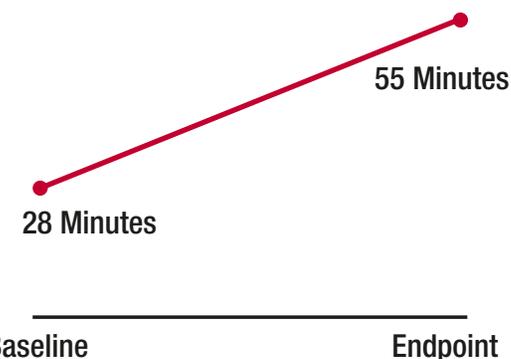


Figure 1. The average minutes of moderate to vigorous physical activity from the beginning of the program to the end increased 49 percent.



## Safe & Healthy Food Pantries

**Grantee:** Wisconsin Community Action Program Association

**Grant Title:** Safe & Healthy Food for the Hungry

**Geographic Location:** Adams, Columbia, Dane, Kenosha and Racine counties

**Academic Partner:** Amber Canto, MPH, RDN, UW-Extension; and Barbara Ingham, PhD, UW-Madison Department of Food Science

**Dates:** 4/1/2013–03/31/2015

**Amount:** \$48,036

**Program:** Community Academic Partnership Fund



**The Challenge:** Food pantries are key components of the local food environment for tens of thousands of individuals in Wisconsin. Reliance on pantries has increased 56 percent in Wisconsin since the onset of the recession in 2007. Despite this growing need and use, food pantry inventories have never been systematically evaluated for food safety and nutritional quality, nor has a systematic effort been made to engage and educate pantries as active partners in improving the safety and nutritional quality of distributed food.

**Project Goal:** The objective of this grant was to develop and implement a food pantry self-assessment toolkit. Six food pantries and three Community Action Programs participated in the piloting and development of the toolkit that allows food pantry staff to:

- self-evaluate the quantity, nutritional quality and safety of current inventory

- develop strategies to align food procurement and distribution with food safety/dietary guidelines
- implement food distribution policies that ensure clients receive healthy food packages
- implement strategies to reinforce healthy food messages to clients in conjunction with the Supplemental Nutrition Assistance Program Education (SNAP-Ed) in an effort to improve client food choice

**Results:** The project successfully created a 74-page toolkit for food pantries. Additionally, UW Extension developed an online version of the toolkit, which includes supplemental training and discussion opportunities at [fyi.uwex.edu/safehealthypantries/](http://fyi.uwex.edu/safehealthypantries/). All participating food pantries identified specific action items to improve the nutritional quality and food safety at their pantries, and added plans to develop policy statements related to nutrition and food safety.

The project received additional funding for \$8,520 from the Wisconsin Department of Public Health to print 600 color copies of the toolkit to disseminate to The Emergency Food Assistance Program (TEFAP) outlets statewide, TEFAP coordinating organizations and county extension staff. A presentation in July 2015 to the statewide TEFAP Advisory Council introduced the toolkit and explored ways it can be used. Also in July, 45 UW-Extension Family Living and Nutrition Education program educators were trained to use the toolkit.





## Implementing Policy Change to Ensure Safe Schools for Wisconsin's Transgender Youth

**Grantee:** GSAFE

**Grant Title:** Safe Schools for Wisconsin's Transgender Youth

**Geographic Location:** Statewide

**Academic Partner:** Maurice Gattis, PhD, UW-Madison School of Social Work; Sara McKinnon, PhD, UW-Madison Department of Communication Arts; and Karma Chávez, PhD, UW-Madison Department of Communication Arts

**Dates:** 5/1/2014–7/31/2015

**Amount:** \$50,000

**Program:** Community Academic Partnership Fund

**The Challenge:** Currently, transgender and gender non-conforming students in Wisconsin's K–12 public schools are not protected against discrimination under state law. Students are harassed daily at school, and often have no access to a safe bathroom or locker room and are excluded from field trips or sports. As a result, many transgender children report feeling less connected, are absent from or late to school, drop out, have lower grade-point averages and have poorer health than peers.

**Project Goal:** The project aimed to conduct and disseminate research documenting the experiences of transgender and gender non-conforming youth in Wisconsin public schools, assist in school district policy change and develop a model intervention to reduce discrimination and improve educational and

health outcomes for transgender and gender non-conforming youth in Wisconsin public schools.

**Results:** The project supported non-discrimination policy change in the La Crosse, Monona Grove, Milwaukee, Racine and Superior school districts. The organization is now working with two additional school districts (Beloit and Shorewood) and continues to work with Superior to develop a train-the-trainers approach for effective implementation of policies that add protections for transgender and gender non-conforming youth.

Focus groups or interviews were conducted with transgender and gender nonconforming youth, parents of transgender youth, school administrators and professionals. Themes emerged and centered around feelings of safety, environmental accommodations, grades, acceptance and respect. Based on these results, a report titled, "School Experiences of Transgender and Gender Non-Conforming Students in Wisconsin" was created

which provides recommendations for school districts ([gsafewi.org/](http://gsafewi.org/)).

The report was shared through various lists and networks including the Department of Public Instruction and the Department of Health Services. Additionally, the report was shared with more than six state agencies and the Adams-Friendship, Ashland, Beloit, Menominee Indian, Milwaukee and Racine school districts.

The project disseminated findings at five national conferences, was included in five media reports including the Wisconsin State Journal and Wisconsin Public Radio, and currently has two publications under review and a book contract with Columbia University Press.

The research team and community partner developed an intervention model that, through further support from the Wisconsin Partnership Program, will be implemented and evaluated in 2016 in two districts that have passed gender inclusive non-discrimination policies.



## Gathering Data on Adverse Childhood Experiences to Inform Prevention Efforts

**Grantee:** Wisconsin Child Abuse and Neglect Prevention Board

**Grant Title:** Understanding the Role of Childhood Adversity in Adult Health Outcomes in Wisconsin

**Geographic Location:** Statewide

**Academic Partner:** Barbara Knox, MD, UW School of Medicine and Public Health, Department of Pediatrics and Kristen Shook Slack, PhD, UW-Madison Department of Social Work

**Dates:** 7/1/2013–6/30/2015

**Amount:** \$47,425

**Program:** Community Academic Partnership Fund



**The Challenge:** Fifty-eight percent of Wisconsin adults have experienced one or more Adverse Childhood Experiences (ACEs). These include emotional, physical or sexual abuse, witnessing domestic violence, growing up in a household with substance abuse, mental illness, separated or divorced parents or having an incarcerated household member. The more cumulative ACEs individuals

experience, the more likely they are to have a variety of health and social problems later in life. Currently, ACE data is being collected in Wisconsin, however, studies recommended additional data regarding health and social issues be collected to better inform prevention and intervention efforts.

**Project Goal:** The project aimed to gather data on childhood poverty and neglect, further analyze existing data, provide education about ACEs to policymakers, and test the feasibility of including ACE data in public health surveillance systems and the County Health Rankings.

**Results:** The project developed and tested childhood poverty, neglect and resiliency questions. These questions were included in the 2014 and 2015 survey samples. Additional analysis was conducted on previous data resulting in increased understanding of ACE impacts on health outcomes and disparities. Figure 1 highlights major disparities in health

outcomes between those with no ACEs and those with four or more ACEs.

The project resulted in key individuals from state and local organizations trained as ACE Master Trainers who must conduct at least four ACE trainings throughout the state each year. Forty-three ACE Master Trainers have become active between 2014 and April 2016. In 2015 alone, they presented to approximately 3,300 individuals from settings that include Wisconsin governmental departments, local health departments, coalitions, tribes and other community organizations.

Additionally, recommendations based on the ACE data have been made to policymakers and a report has been disseminated at [preventionboard.wi.gov](http://preventionboard.wi.gov).

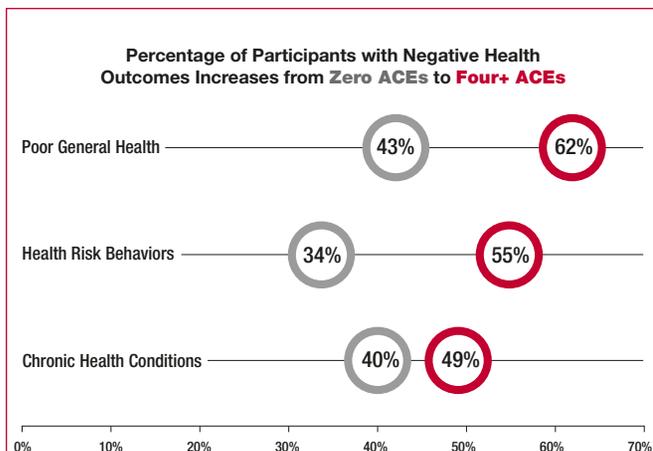


Figure 1. Prevalence of Health Category Indicators by ACE score  
Source: Wisconsin BRFSS, 2011-2013





## Comprehensive Sexual Health Education Increases Student Acceptance and Improves School Climate

**Grantee:** Winnebago County Health Department

**Grant Title:** Winnebago County Comprehensive Sexual Health Education Pilot Program

**Geographic Location:** Oshkosh School District

**Academic Partner:** Juyeon Son, PhD, UW-Oshkosh Department of Sociology

**Dates:** 5/1/2013–10/31/2015

**Amount:** \$39,482

**Program:** Community Academic Partnership Fund

**The Challenge:** Two of the most commonly reported communicable diseases in Wisconsin are the sexually transmitted infections (STIs) chlamydia and gonorrhea. In Winnebago County, about 70 percent of chlamydia infections occur among 15 to 24-year-olds. Research demonstrates that comprehensive sex education delays initiation of sexual activity, reduces the number of partners and increases contraceptive use.

**Project Goal:** The aims of this project were to develop and pilot a middle school sexual health curriculum based on National Sexuality Education Standards, train health educators to deliver an approved curriculum and measure the impact on student knowledge and risky sexual behavior in comparison with current curricula. Initially, the Oshkosh school district's sex education curriculum was evaluated for gaps, including a need to focus on

identity, pregnancy and reproduction and healthy relationships. Training was provided to health educators in the Oshkosh school district. Two other school districts also attended training.

**Results:** The group that received comprehensive sexual health education had a higher average score in three focus areas: sexual identity, pregnancy and reproduction and STIs. However, overall there was no significant difference between the new and old curricula for increased knowledge of sexual health.

The new education did significantly affect awareness and the degree of openness toward more diverse sexual identities and gender equality. Students who identify as lesbian, gay, bisexual, transgender and queer (LGBTQ) are more likely to indicate that they felt sad or helpless, have considered attempting suicide or have actually attempted suicide compared to heterosexual students. This curriculum's focus on

identity offers a potential future strategy to prevent bullying and suicide among LGBTQ students and encourage acceptance of gender differences.

In 2016, the project will present results at the annual meeting of the Midwest Sociological Society and Safe Healthy Strong Conference, and plans to submit a manuscript for publication.



## A Statewide, Integrated Approach to Obesity Prevention

**Grantee:** Wisconsin Partnership for Activity and Nutrition (WI PAN)

**Grant Title:** Wisconsin Obesity Prevention Network

**Geographic Location:** Statewide

**Academic Partners:** Dale Schoeller, PhD, UW-Madison College of Agricultural and Life Sciences; and Alexandra Adams, MD, PhD, UW School of Medicine and Public Health

**Dates:** 09/01/2012 – 08/31/2015

**Amount:** \$400,000

**Program:** Community Academic Partnership Fund



**The Challenge:** Recent data shows that 39 percent of third- through fifth-graders, 23 percent of high school students, and 64 percent of adults in Wisconsin are obese or overweight. The epidemic of obesity leads to increases in chronic diseases that have catastrophic effects on public health and medical costs. While many groups and organizations are working independently to address and prevent obesity, there is a need to coalesce efforts to avoid duplication and competition when moving research, public health and policy initiatives forward.

**Project Goal:** This project aimed to build and sustain the statewide Wisconsin Obesity Prevention Network (WOPN) based in a collective impact framework. The framework aims for collaborative participants to achieve a common agenda, create backbone support infrastructure, identify shared measurement systems, conduct mutually reinforcing activities and allow for continuous communication.

**Results:** WOPN has built organizational capacity and continues to serve as the support infrastructure of the effort by facilitating communication, building

coordination and promoting collaboration around obesity prevention strategies and interventions statewide. Through WOPN's efforts, an additional 50 organizations are now working together towards common goals. A statewide common agenda was established with input from advisors across the state representing government, nonprofits, the private sector and communities. Statewide priorities have been identified in the following settings: early childhood, schools, community-built environment and community-food systems/food retail.

Additionally, WOPN staff initiated or facilitated community-academic partnerships, which have brought together faculty from urban and regional planning, local food systems and food economies, dietetics and community studies with community leaders in local and state government, cooperative extension and nonprofit organizations. Successes of these partnerships include:

- The Wisconsin Early Childhood Obesity Prevention Initiative worked with the Wisconsin Department of Children and Families on the statewide quality

improvement system for childcare providers, influencing them to change physical activity criteria from 60 to 90 minutes daily and expand the nutrition criteria to include breastfeeding and youth gardening.

- WOPN received several grants including one to work on statewide public education and messaging to improve physical exercise by ensuring access to safe streets, and another grant to expand physical activity and education opportunities in school districts in Crawford County and the Fox Valley as well as the Northwest region of the state.

WOPN significantly contributed to the planning and development of the Partnership Program's 2014 Obesity Prevention Initiative, which invested \$8.6 million over five years. In 2015, WOPN changed its name to healthTIDE (healthTIDE.org).





## Promoting Healthy Weight Before, During and After Pregnancy

**Grantee:** YMCA

**Grant Title:** YMCA and UW OBGYN Partnership Promoting Healthy Weight in Pregnancy

**Geographic Location:** City of Madison

**Academic Partner:** Cynthia Anderson, MD, MPH, UW School of Medicine and Public Health, Department of Obstetrics and Gynecology

**Dates:** 5/1/2013–08/30/2015

**Amount:** \$24,132

**Program:** Community Academic Partnership Fund

**The Challenge:** Obesity in pregnancy, excess gestational weight gain and postpartum weight retention are associated with severe, long-term adverse health outcomes for women and their children. Obesity has a disproportionate impact on low-income, minority women in Wisconsin. The South Madison Redevelopment District, home to the most racially diverse population in Dane County, faces such income and health disparities. Community initiatives that promote healthy weight before, during and after pregnancy can decrease tremendous health burdens.

**Project Goal:** The YMCA and UW School of Medicine and Public Health Department of Obstetrics and Gynecology partnership aimed to assess needs of underserved women in South Madison, evaluate community readiness and design pilot programs aimed at promoting healthy weight



for low-income women before, during and after pregnancy.

**Results:** The project assessed current needs in the South Madison area and found a gap in services related to prenatal and postpartum programming. Community members cited numerous barriers that kept them from using existing programs (see Figure 1). Also, the vast majority of participants had difficulty identifying existing resources in the community for women who were pregnant, planning pregnancy or post partum. Among community members who identified specific programs, there was more awareness of weight management and fitness programs than nutrition programs.

This project was successful in forming many collaborations, beginning with the Prenatal to One Working group (POWr). It brought together

and solidified invested partnerships with community members, community partners and academic partners.

Moving forward, the project plans to pursue programming that includes prenatal and postpartum fitness classes developed and offered in collaboration with the Department of Obstetrics and Gynecology and the YMCA of Dane County in the South Madison area.

### Barriers to Using Existing Programming



Figure 1. South Madison women identified the above barriers to utilizing local prenatal and postpartum services.

## Helping Men Find Employment to Decrease Health-Related Stress

**Grantee:** Bethel African Methodist Episcopal Church

**Grant Title:** Bethel AME Church Jobs for Fathers

**Geographic Location:** City of Beloit

**Academic Partner:** Jeffrey Lewis, PhD, UW-Extension

**Dates:** 7/1/2013–6/30/2015

**Amount:** \$122,896

**Program:** Lifecourse Initiative for Healthy Families



**The Challenge:** In 2014, unemployment among African Americans in Wisconsin was the highest of any state. Some African American fathers face serious barriers to finding and keeping work, including lack of job skills and preparation, employment opportunities and employment-related support. By improving employment and financial conditions, fathers help reduce stress-related emotional, mental and physical health issues and provide support for positive family development.

**Project Goal:** The project aimed to provide pre-employment training and support for African American fathers in Beloit, ages 18 to 30 through “a community circle” and seminars. The program utilized an African American cultural and spiritual perspective and focused on unemployed and underemployed African American fathers who are single, non-custodial dads with high school education or less.

**Results:** The project was successful in providing pre-employment training for African American fathers. Program staff reports, final survey results and participants’ written comments suggest that the program increased pre-employment-related knowledge and skills and allowed each participant to establish goals and plans to secure employment.

The participants developed an individual employment plan which included a cover letter and resume, attended job fairs, learned strategies for approaching potential employers and received a schedule of employment workshops. Of participants who completed the full eight weeks (64 enrolled, 38 completed), 50 percent obtained employment while enrolled in the program.

The project also created new support networks for men. Participants reported that the program had a positive influence on their identity and helped them develop into more responsible fathers. The network has been sustained and integrated into church programming.



## Developing a Youth Internship Program in Beloit

**Grantee:** Pentecostal Tabernacle Church of God in Christ

**Grant Title:** Beloit Youth Internship Program

**Geographic Location:** City of Beloit

**Academic Partner:** Brian Christens, PhD, UW-Madison, School of Human Ecology

**Dates:** 7/1/2013–6/1/2015

**Amount:** \$41,646

**Program:** Lifecourse Initiative for Healthy Families

**The Challenge:** The community of Beloit, Wisconsin faces many tough challenges. The unemployment rate among African Americans in Beloit is currently estimated at a staggering 18 percent and among African American youth ages 16-24 living in Beloit, the rate of unemployment is even higher at 46.5 percent. Youth-focused internship programs that aim to reduce the number of African American adults who are unemployed or underemployed are limited. Having financial security can help alleviate poor health outcomes associated with social and economic conditions.

**Project Goal:** This project aimed to develop the Beloit Youth Internship (BYIn) Program to provide meaningful internship experiences for African American youth in Beloit. Through mentoring and professional skills training, including leadership and

life coaching, the program encourages social and economic success during and after high school by putting students on the pathway to employment and/or higher education.

**Results:** The major result of this development project is that the BYIn Program design and template are ready for implementation. The program framework includes monthly seminars or workshops in the following major program areas: health and wellness, professionalism and developing business acumen, life planning and goal setting, career exploration, academic and post-secondary preparation, financial literacy, spirituality, parents seminars and connections, and leadership and community involvement. A mixed-method evaluation tool was developed to effectively gauge program success and adherence to objectives during implementation.

To inform program development, three focus groups were conducted with 17 students ages 13 to 16 and primarily from low-income homes. Participants shared intimate stories and ideas for ensuring program success and meeting the needs of the community.

Engaging the community was essential to successful development of the program. Commitments and partnerships were forged with Blackhawk Technical College, the School District of Beloit, the Beloit Fire Department, Beloit College and other area businesses and organizations to sponsor student interns, contribute and participate in seminar programming and offer meaningful pre-college experiences and opportunities consistent with program goals. Project staff are currently seeking grant opportunities to pilot the program.



## Challenges for New and Expectant Mothers in Milwaukee

**Grantee:** Children’s Service Society of Wisconsin

**Grant Title:** Family Connectedness for New and Expectant Mothers

**Geographic Location:** Milwaukee communities of Metcalfe Park, Amani/Franklin Heights and Lindsay Heights

**Academic Partner:** Mary Jo Baisch, PhD, RN, UW-Milwaukee College of Nursing

**Dates:** 1/1/2014–6/30/2015

**Amount:** \$50,000

**Program:** Lifecourse Initiative for Healthy Families



**The Challenge:** Being a new or expectant mother can be challenging. It is even more so when lacking social support systems, feeling isolated and living in a low-income neighborhood where high chronic stress and poverty create additional challenges. The Children’s Service Society of Wisconsin (CSSW) uses a Family Finding Program designed for children in foster care, which encourages them to develop familial connections. CSSW proposed to test this model with families of new and expectant mothers living in low-income neighborhoods who lack an extended family support system. Research shows that family and social support is a determinant of health and can be vital during an infant’s first year of life because mothers can learn from supportive individuals and are more likely to use health care services.

**Project Goal:** This project focused on improving family support systems using the evidence-based Family Finding Model. While traditionally a model used in child welfare, this project tested its applicability with high-risk pregnant women with few extended family members. After identifying healthy social supports, the study assessed changes in parenting abilities, maintaining medical appointments, reduced stress and levels of depression.

**Results:** Ultimately, the Family Finding model did not work in the population identified. It encountered significant barriers to enrollment as 237 individuals were contacted, yet only four women consented and enrolled. Specific barriers included expectant mothers’ primary focus on survival needs, the strict inclusion criteria that only pregnant women could enroll and recruitment occurring in winter months. The project concluded that the social support model used was more relevant for women who had stable housing and employment and whose survival needs were being met. Also, it may be more applicable to young parents who had been in foster care as children and may have lost contact with family members.



## Coordinating Services in a Culturally Competent Manner

**Grantee:** Children’s Hospital of Wisconsin-Community Services; Children’s Service Society of Wisconsin

**Grant Title:** Family Peer Navigation and Home Visit Project

**Geographic Location:** City of Beloit

**Academic Partner:** Sara Busarow, MD, MPH, UW School of Medicine and Public Health, Population Health Sciences

**Dates:** 7/1/2013–6/30/2015

**Amount:** \$116,656

**Program:** Lifecourse Initiative for Healthy Families

**The Challenge:** In Beloit, infants born to African American mothers are twice as likely to die before age one compared to infants born to white mothers. One cause may be the pervasive chronic stress in these women’s lives. Community services are available that may help protect against chronic stressors, but many families find these services difficult to navigate. Culturally competent service providers who understand their community’s norms must be positioned to provide these needed services.

**Project Goal:** The Family Peer Navigation (FPN) project aimed to assist Beloit African American families with navigating community systems by coordinating services and encouraging development of self-advocacy and leadership skills. The grantee organization, Children’s Service Society of Wisconsin, also worked to improve the cultural competency of its

staff at the Exchange Family Resource Center Network (ExFRCN) to better serve clients and build trust among the diverse groups who access services.

**Results:** A total of 217 families were served during the project. Three levels of assistance were available, depending on family needs. Home visiting services were provided to 27 families, exceeding the goal of 20 families. Peer Navigators assisted 70 families with enhanced referrals or advocacy, far surpassing the goal of 30 families. Additionally, 120 families received information and simple referrals, though the initial goal was 200 families. On program feedback forms, the majority of clients reported increased knowledge and utilization of community resources and improved self-advocacy skills. Clients were also highly satisfied – 81 percent rated the program as a 9 or higher on a 10-point scale and 92 percent would recommend it to a relative or friend.

In order to provide more culturally competent service navigation, Peer Navigators were recruited from the target community and trained. Cultural competency training was also provided to all ExFRCN staff during the project. Survey results showed significant self-reported changes in staff cultural competency, including increased knowledge about the Beloit African American community, understanding of cultural differences and roles and increased leadership skills. Community partners reported greater awareness of the FPN project, understanding of its purpose and recognition of its role as a critical partner in community family systems. The organization is sustaining the project by funding a 0.5 FTE position to support parent leadership, self-advocacy and systems navigation.



## Focusing on Fathers to Improve Children's Health and Well-Being

**Grantee:** Young Men's Christian Association

**Grant Title:** Focus on Fathers Initiative

**Geographic Location:** Racine County

**Academic Partner:** Noelle Chesley, PhD, UW-Milwaukee, Department of Sociology; and Sarah Halpern-Meekin, PhD, UW-Madison, School of Human Ecology

**Dates:** 6/1/2013–8/31/2015

**Amount:** \$111,036

**Program:** Lifecourse Initiative for Healthy Families



**The Challenge:** In the city of Racine, 39 percent of African American households live in poverty and a high percentage are headed by a single individual. Female-headed households with children are more likely to be living in poverty (33.6 percent) than households headed by only males (23.9 percent) or married-couple (9.3 percent) households. Involved fathers bring positive benefits to their children that no other person is as likely to bring and high-quality interaction by a father predicts better infant health.

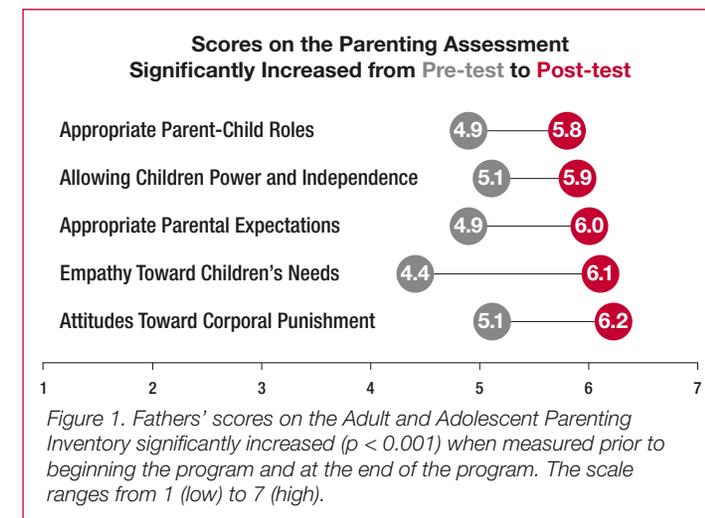
**Project Goal:** This project expanded the YMCA's Nurturing Fathers™ Program by adding sessions, participants, home visitation and a healthy relationship education component. Fathers were referred to a 13-session fatherhood education program that promotes the practice of responsible fatherhood. Fathers were also encouraged to enroll in home visitation to teach and model positive parenting, as well as a 15-hour marriage and relationship education program with their child's mother/significant other to improve the odds that participants will choose, remain in or develop healthy relationships.

**Results:** Over the two and a half years of the grant cycle, 300 men participated in the program. The program was successful in serving an at-risk population of men who were facing significant challenges: a substantial number are currently incarcerated; most had no education beyond high school; a majority had annual earnings below \$15,000; and most were parenting in complex families, having children with partners with whom they do not live.

Of the men who enrolled, two-thirds completed the program. Men who completed the program saw a significant increase in their parenting scores, representing a move toward lower-risk parenting attitudes (see Figure 1) over time. Some research has linked improvement in these attitudes to reducing subsequent risk of child maltreatment, thereby improving children's emotional well-being.

Funding to sustain programming was received from the United Way of Racine County. They will serve 120 fathers in the areas of employment, financial literacy

and healthy relationships. The program also affected other local systems, encouraging the staff to improve their interactions with fathers.





## Improving Breastfeeding Among African American Women

**Grantee:** African American Breastfeeding Network

**Grant Title:** Normalizing Breastfeeding: Building Social Support and Community Capacity

**Geographic Location:** City of Milwaukee

**Academic Partner:** A. Michelle Corbett, MPH, CHES, UW Center for Urban Population Health

**Dates:** 7/1/2013–6/30/2015

**Amount:** \$149,953

**Program:** Lifecourse Initiative for Healthy Families

**The Challenge:** Breastfeeding exclusively for three to four months is related to significant decreases in infections, allergies, obesity, respiratory tract infections and many other health problems including a 50 percent decrease in Sudden Infant Death Syndrome (SIDS). Increased breastfeeding rates are associated with lower health care costs and improved infant survival. However, breastfeeding rates fall far below medical recommendations and the issue is most pertinent for African Americans whose breastfeeding rates are two and one-half times less than white mothers. Fifty-two percent of African American mothers initiate breastfeeding in the hospital, but only nine percent are exclusively breastfeeding at three months, and four percent are exclusively breastfeeding at six months.

**Project Goal:** The project aimed to increase knowledge of the value of breast milk and breastfeeding; increase breastfeeding initiation in the hospital; increase family support, especially among fathers; and build community capacity to better understand breastfeeding disparities as a public health issue. The goal was to reach 120 pregnant mothers and an additional 100 support individuals from their families. The project took place in Milwaukee with in-home lactation support for first-time breastfeeding mothers; Community Breastfeeding Gatherings (CBGs), which included educational sessions; presentations from family- and child-service organizations; and training Father Peer Advocates.

**Results:** This project gained local and national media coverage to help convey breastfeeding disparities, and the work was presented at a national maternal and child health conference.

Other project successes included:

- 113 pregnant mothers attended at least one CBG, just seven short of the targeted goal of 120.
- The project reached a total of 83 support persons. Encouragement from these individuals is necessary for sustainability of breastfeeding, a learned behavior. These supporters included 34 fathers who also received referrals to community resources and the chance to ask questions about pregnancy and parenting.
- The project's attendance at community events and health fairs increased awareness of the project and the benefits of breastfeeding.
- The project resulted in formation of new partnerships and an increase in referrals from hospitals, providers, WIC sites and prenatal care coordination organizations.
- The organization received funding from United Way of Greater Milwaukee and Waukesha County to continue CBGs.



## Champions Improve Outcomes for Women and Children

**Grantee:** Professional Women's Network for Service, Inc.

**Grant Title:** PWNS Birthing Project

**Geographic Location:** Cities of Racine and Kenosha

**Academic Partner:** Teresa Johnson, PhD, UW-Milwaukee College of Nursing

**Dates:** 7/1/2013–6/30/2015

**Amount:** \$130,925

**Program:** Lifecourse Initiative for Healthy Families



**The Challenge:** African American infant mortality rates for Racine and Kenosha are 18.2 and 10.3 deaths per 1,000 births, respectively. The negative impact of stress on African Americans is highly correlated to inflammation during pregnancy which increases chances of a high-risk pregnancy that may include hypertension, diabetes, preterm labor and low- birthweight babies. Researchers continue to find evidence of the impact of stress on African Americans and new health care delivery and support models and methods are emerging that are meant to help women manage or decrease their stressors in order to achieve healthy pregnancy and birth outcomes.

**Project Goal:** Professional Women's Network for Service is recognized for introducing the Birthing Project in the Racine and Kenosha communities. The current grant aimed to expand recruitment and training of Sister Friend volunteers in the African American community who mentor, nurture and support pregnant women through pregnancy, birth

and infancy. The project focused on goal setting, handling racism, relationship building, relaxation, budgeting and soothing and coping techniques.

**Results:** The Birthing Project successfully assisted 100 percent of its mothers in receiving prenatal care and continued well-baby appointments. Eighty-five percent of women initiated breastfeeding and 90.5 percent of babies (n =38) weighed over 5.5 pounds at birth. Forty-two participants were served during the grant period and 95 percent of the women identified as a racial minority. The project encouraged women to set educational and career goals prospectively for the next two to five years. At the end of the grant, 85 percent of mothers were in school, obtained work or both.

Since 2008, 30 percent of women who were initially participants have continued with the organization as volunteers and advocates. The women who serve as Sister Friends and mentors also strengthen inter-

generational connections and promote healthy pregnancy messaging and support to women in the community.

The project received the Nancy L. Henry Youth Advocate Award from the Racine Branch-National Association for the Advancement of Colored People in October 2014. The award was given to the Birthing Project Sister Friend Program for the practical, emotional and social support given to pregnant women ages 14 to 44 years of age for the last eight years. The project continues to find support in the community. It was featured in several local newspapers and received funding for one year from March of Dimes.





## Healthy Pregnancy and Understanding Trauma's Role in Life Outcomes

**Grantee:** United Neighborhood Centers of Milwaukee (UNCOM)

**Grant Title:** UNCOM Initiative for Healthy Families

**Geographic Location:** City of Milwaukee

**Academic Partner:** Mary Jo Baisch, PhD, RN, UW-Milwaukee College of Nursing

**Dates:** 7/1/2013–12/31/2015

**Amount:** \$95,867

**Program:** Lifecourse Initiative for Healthy Families

**The Challenge:** In 2010, it was reported that Milwaukee County had an infant mortality rate of 10.0 per 1,000 live births, whereas Wisconsin has an infant mortality rate of 6.4. Most troubling is the African American infant mortality rate of 17.2 per 1,000 births; nearly three times the statewide rate. Preterm labor, one causal factor of infant mortality, is associated with stress related to poverty, racism and adverse childhood events or trauma.

**Project Goal:** United Neighborhood Centers of Milwaukee (UNCOM), a collaborative of eight agencies, aimed to develop drop-in centers for families experiencing stress. The project developed a curriculum focused on principles of reproductive health, potential impacts of stress on pregnancy, infant/child growth and development and healthy relationship skills. The project also conducted trauma-

informed care training for more than 200 staff from six neighborhood centers to recognize signs and symptoms of trauma and its widespread impact thereafter.

**Results:** The initiative was able to provide relevant, important health and wellness education in an open and inviting venue in three neighborhood centers. In discussion groups, participants were able to share parenting advice and learned important information about the relationships between stress, health and healthy pregnancy.

The curriculum was shared with all UNCOM agencies and three are actively implementing components of the curriculum. In a number of instances, information and training have been incorporated into existing and new UNCOM agency programming.

The program successfully developed and implemented a train-the-trainer program focusing on using a trauma-informed approach, and agency staff have begun to apply these principles in their interactions with neighborhood center members. Agency staff are now more willing to address pregnancy and other health-related issues in their organizations and provide services with a trauma-informed care approach.



## Improving Prediction of Alzheimer's Disease

**Grantee:** Sterling Johnson, PhD, UW School of Medicine and Public Health, Department of Medicine, Geriatrics

**Grant Title:** Predicting Alzheimer's Disease Using Multimodal Machine Learning

**Dates:** 1/1/2012–2/31/2014

**Amount:** \$299,539

**Program:** Collaborative Health Sciences Program



**The Challenge:** Approximately 110,000 individuals in Wisconsin and 5.5 million nationally have Alzheimer's disease (AD), with that number projected to triple by 2050. Accurately diagnosing individuals with Alzheimer's prior to cognitive decline would allow for improved prevention and treatment and, hopefully, eventually a cure. This project identified a need to use a comprehensive variety of data sources and image analysis approaches to increase accuracy of diagnosis at several disease stages in order to best predict future cognitive decline.

**Project Goal:** The new methodology proposed to identify a multimodal disease marker using longitudinal imaging and cognitive and lab data sources to best identify Alzheimer's disease in different stages of severity. After developing a novel image analysis algorithm, it was applied to an

ongoing clinical trial aiming to have a more sensitive methodology for detecting treatment effects resulting in fewer individuals needed to participate in research studies, a constant goal in research.

**Results:** Partnerships were formed between the Department of Medicine, including the division of Geriatrics, and the Department of Biostatistics and Medical Informatics to develop a framework and algorithm for predicting early Alzheimer's disease. The project successfully developed a new method that included imaging, clinical and longitudinal data. They found this was superior to other approaches and then applied it to a clinical trial study. As expected, using this methodology improved estimation of treatment effects and reduced the needed number of subjects. The project also published seven papers, and

presented at multiple conferences to disseminate their work. A patent is pending. They also obtained two National Institutes of Health (NIH)-supported grants, including an R01, and have submitted another proposal for funding.



## Defending Insulin Production to Treat Diabetes

**Grantee:** Dawn Belt Davis, MD, PhD, UW School of Medicine and Public Health, Department of Medicine

**Grant Title:** Cholecystokinin in the Survival of Human Pancreatic Islets

**Dates:** 2/1/2013–7/31/2015

**Amount:** \$100,000

**Program:** New Investigator Program

**The Challenge:** The prevalence of type 2 diabetes is rapidly climbing in Wisconsin and currently affects over 300,000 people in the state. Obesity is a major risk factor for type 2 diabetes. With obesity, individuals require more of the hormone insulin to maintain normal blood sugar levels. If they cannot meet the demand for more insulin, they develop elevated blood sugars and diabetes. The  $\beta$ -cells within the pancreas produce insulin, and a key defect in type 2 diabetes is increased  $\beta$ -cell death, leading to inadequate insulin production. There currently are not any therapies for diabetes that directly target  $\beta$ -cell survival. The hormone cholecystokinin (CCK) can protect against the destruction of  $\beta$ -cells in mouse models of diabetes, but had not been tested in human tissue.

**Project Goal:** The project aimed to examine whether the CCK hormone protects against  $\beta$ -cell death in human islets obtained from organ donors. The team transplanted human islets into a mouse, where they could study the response of these islets in a living organism. The mice were then treated with CCK or a control treatment for three weeks, and the amount of  $\beta$ -cell death was measured after the treatment.

**Results:** The project successfully demonstrated that the CCK hormone is able to protect human pancreatic  $\beta$ -cells from death. CCK has potential as a new therapeutic for patients with diabetes as it can help prevent the loss of the insulin-producing cells, allowing patients to maintain normal blood glucose levels.

A \$50,000 pilot from the Department of Medicine at the UW School of Medicine and Public Health was awarded to further elucidate the mechanism whereby CCK protects  $\beta$ -cells from death. The work has been presented at nine meetings or conferences and received an award for “Best Talk” at the Incretin 2015 symposium at the University of British Columbia, attended by international leaders in the field. This award provided key preliminary data for an R01 grant application from the National Institutes of Health.



## Personalizing Treatment for Kidney Cancer

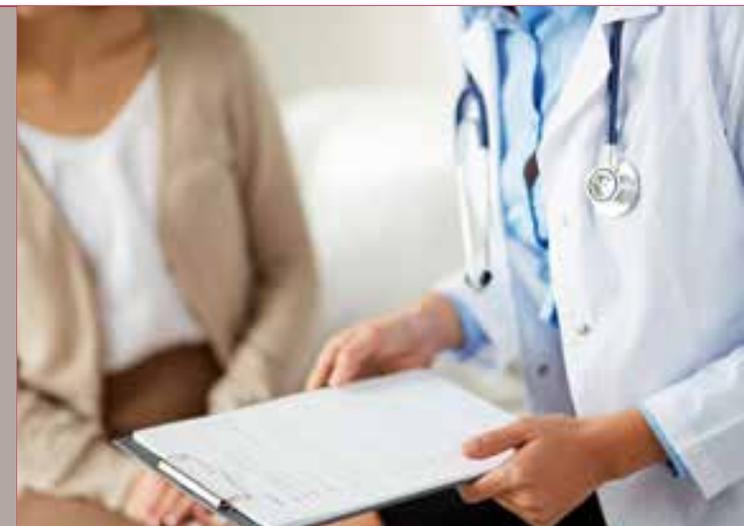
**Grantee:** Joshua Lang, MD, UW School of Medicine and Public Health, Department of Medicine

**Grant Title:** Circulating Tumor Cells in Renal Cell Carcinoma: Biomarkers for Personalized Medicine

**Dates:** 2/1/2013–7/31/2015

**Amount:** \$99,964

**Program:** New Investigator Program



**The Challenge:** Kidney cancer is the most lethal urologic malignancy and the eighth leading cause of cancer death in the United States. Despite the advent of multiple therapies in the last decade, metastatic kidney cancer remains incurable with a median survival of less than two years. In fact, nearly all patients who initially benefit from those therapies develop resistance within a year. Given the significant toxicities and cost of current treatments, a critical need exists to personalize treatment for the greatest chance of benefit to patients.

Circulating tumor cells are shed from metastatic cancers into the blood of patients and can be predictive of treatment outcome. Only one technology is licensed by the FDA to evaluate circulating tumor cells (CTCs) and it is not effective in renal cancer.

**Project Goal:** The project aimed to capture CTCs from patients with kidney cancer. The goal was to investigate the molecular makeup of the CTCs to identify which therapeutic agents may be best for each individual.

**Results:** The project identified new CTC markers of resistance to cancer therapies. Results could identify early signs of treatment resistance, personalize treatments and allow for combinations of treatments to target cancer resistance. The research team established partnerships with multiple academic and industrial collaborators to move to the next steps, validating this CTC test for reproducibility and testing in large clinical trials. This network of partners is the infrastructure to performing multi-institution clinical trials across nearly every stage of kidney cancer. The project presented two abstracts and one oral presentation of results at national meetings.

This work has been presented at three International Conferences (Society for the Immunotherapy of Cancer, American Association for Cancer Research, American Urologic Association) and is currently under review for publication. A request for further funding support has been submitted to the National Institutes of Health in an R01 application as well as industry clinical trials.



## New MRI Techniques Improve Therapeutic Fit for Cystic Fibrosis Patients

**Grantee:** Scott Nagle, MD, PhD, UW School of Medicine and Public Health, Department of Radiology

**Grant Title:** Cystic Fibrosis MRI: Tracking Lung Function and Response to Therapy

**Dates:** 06/01/2011–05/31/2015

**Amount:** \$99,839

**Program:** New Investigator Program

**The Challenge:** The average age of death for someone with cystic fibrosis (CF) is only 38 years old and 90 percent of people with CF die of lung disease. There are an increasing number of therapies and drugs being tested to help people with CF live longer; however, assessing the outcomes of these therapies on lung function has been problematic. Measures of outcomes do not capture early changes in lung function and current techniques such as computed tomography (CT) expose patients to radiation, increasing the risk of developing cancer later in life.

**Project Goal:** This project researched magnetic resonance imaging (MRI) techniques to evaluate lung structure and function without the risks of radiation exposure. The research project conducted multiple scans of 30 CF patients to compare how effectively

disease severity was reflected by MRI as compared to several other currently used techniques, including CT and chest X-ray.

**Results:** The research project produced several improved MRI methods for assessing lung function and structure in patients with CF and other lung diseases. Ultimately, the new techniques show potential for improving the fit of treatment to each individual CF patient, allowing for improved outcomes for these patients.

Preliminary results have been presented at nearly 20 conferences, including two international scientific meetings, and resulted in eight publications in scientific journals. In addition, the dataset from the project is valuable because, to the research team's knowledge, no other research has such a full range of MRI, CT and chest X-ray data on CF patients.

As a result of this work, CF drug studies are now beginning to use MRI to measure patient outcomes, and the primary investigator has impacted other cystic fibrosis researchers in many fields by advising on the use of lung MRI in research protocol development. The next step for this project includes a multicenter study to assess outcomes for a CF drug not yet approved in young children.



## “Zoo for Flu” Model Helps Researchers Better Understand How Influenza Virus Transmits Across Species

**Grantee:** Andrew Mehle, PhD, UW School of Medicine and Public Health, Department of Medical Microbiology and Immunology

**Grant Title:** Dissecting Cross-Species Transmission of Influenza Virus

**Dates:** 2/1/2013–1/31/2015

**Amount:** \$100,000

**Program:** New Investigator Program

*Right: Cells infected with different influenza viruses were engineered to express different colors. The green and red cells display two different viruses and the yellow cells are infected with both viruses.*



**The Challenge:** Infections from seasonal influenza viruses cause up to 36,000 deaths per year in the United States. Seasonal infections are punctuated by pandemic outbreaks as new viruses move from animals to humans, often causing high mortality. As an agricultural state, Wisconsin residents are particularly susceptible to cross-species influenza virus transmission. Influenza is remarkably adept at infecting an array of hosts, each presenting a new environment the virus must navigate for successful infection. Recent data reveal a more diverse host range than previously known.

**Project Goal:** To provide critical information to help predict and prevent future pandemic influenza outbreaks, the goal of this project was to better understand the range of hosts, the barriers to transmission and the mechanisms of restriction. Using the “Zoo for Flu” model, the project team introduced engineered viruses to a large panel of cell lines from diverse hosts to identify barriers to cross-species

transmission. The project chose to assess the pandemic potential of a newly identified virus in bats. The team then characterized how and which pathways influenza uses to adapt and move between species.

**Results:** The findings impact understanding of how influenza jumps between species. The research team exposed a panel of cell lines from bats of diverse species to a typical human-origin influenza A virus. All of the tested bat cell lines were susceptible to influenza infection.

Also, research and surveillance will now be able to quickly assess threats posed by new strains. The team developed new technologies for rapid screening of cells for infection as well as genomic techniques to identify genetic changes that occur as the virus evolves. These techniques identified a new molecular mechanism exploited by influenza virus as it adapts to replication in bat cells.

The principal investigator received an R01 from the National Institutes of Health National Institute of Allergy and Infectious Diseases for \$1,250,000. The award will use tools developed from this project to generate preliminary data and execute aims. The study also resulted in collaborations within the United States and internationally. The principal investigator was invited to write a commentary for the journal *Viruses* and the work was selected in a highly competitive process for a talk at the 2014 Keystone Symposia: Cell Biology of Virus Entry, Replication and Pathogenesis. Two publications in the *Journal of Virology* discussed the project results.





## Creating the Wisconsin Center for Infectious Diseases

**Grantees:** Bruce Klein, MD, UW School of Medicine and Public Health, Department of Pediatrics, Department of Medical Microbiology and Immunology

**Grant Title:** Wisconsin Center for Infectious Diseases (WisCID)

**Dates:** 7/1/2008–8/31/2014

**Amount:** \$1,205,964

**Program:** PERC Strategic

**The Challenge:** Despite advances made in reducing infectious diseases, the overuse of antibiotics has produced microbes that are resistant to the major antibiotics used against them. These threats are accentuated by lack of new antibiotics and the withering of the antibiotics pipeline as industry emphasizes the more lucrative development of chronic disease drugs. Compounding these crises is the recognition that microbes contribute to a far wider array of diseases than previously thought. In addition to well-known infectious diseases (e.g., tuberculosis, pneumonia and strep throat) that are responsible for much illness and 25 percent of deaths worldwide, microbes are associated with diseases and disorders previously thought to be due to other factors (e.g., stomach ulcers, cancer, colitis, atherosclerosis and schizophrenia).

**Project Goal:** The project aimed to create a virtual Center of Infectious Diseases to foster interdisciplinary research in microbiology and infectious disease, promote training in microbial sciences and rapidly translate resulting research discoveries into novel therapies and preventive measures. The Center was designed to integrate fragmented efforts of outstanding campus physicians and scientists allowing them to better apply the tools of microbiology, immunology and public health to combat infectious and inflammatory disease. The project also trained pre- and post-doctoral basic and clinical scientists in rigorous novel scientific methods essential to tackle key clinical and public health problems.

**Results:** WisCID fostered new collaborations and extramurally funded research in the areas of antimicrobial drug discovery, symbiosis (e.g., beneficial microbiology) and immunity and inflammation. It expanded research training opportunities through extramural funding of a National Institutes of Health (NIH)-supported T32 training

program entitled “Microbes in Health and Disease,” that is now in its second cycle with a total of 40 trainees supported. WisCID spawned a number of new grants and patents and helped leverage a five-year, \$16 million NIH Center Grant at UW-Madison focused on antimicrobial drug discovery. A multidisciplinary team of researchers led by Dr. David Andes, professor of medicine and division chief of infectious diseases, is using this funding to study natural products from insects, plants and marine organisms. To date, more than 400 novel compounds have been discovered that are being tested for development as antibiotics.

In the future, WisCID aims to compete for its third cycle of funding for the Microbes in Health and Disease training program, submit a precision medicine-focused proposal to PERC’s Collaborative Health Sciences Program, apply for a UW 2020 grant on microbiome and an NIH U01 on immunity/inflammation.







Wisconsin  
Partnership Program  
UNIVERSITY OF WISCONSIN  
SCHOOL OF MEDICINE AND PUBLIC HEALTH

750 Highland Ave. 4230 HSLC  
Madison, WI 53705  
(608) 265-8215  
[med.wisc.edu/partnership](http://med.wisc.edu/partnership)