

## **Life Sciences in the Department of Applied Health Science**

### **Indiana University - Bloomington**

The Department of Applied Health Science plays a critical role in the Indiana University Life Sciences Initiative through a strategic and collaborative array of research, educational and environmental initiatives. Collectively, these initiatives seek to reduce health disparities among Indiana's diverse communities, enhance citizens' quality of life, and support the economic stability of Indiana.

#### **LIFE SCIENCES RESEARCH**

The research agendas of the faculty and students in the Department of Applied Health Science span topics focused on the most critical public health issues facing communities throughout Indiana.

**Improving Family Health:** The stability and well-being of the family, however it is defined, plays a vital role in ensuring that individuals live productive and healthy lives over the course of their lifespan. Research seeks to understand developmental and relational issues that both support and challenge the health of individuals, couples, and families. Current projects include: examination of the impact of Hurricane Katrina media depictions on family health across ethnicity and class; exploration of the relationship between hip/hop popular music and sexual health among African-American families; an examination of media's influence in ethnic family health and examination of how families make and reshape meaning after a perinatal loss.

**Reducing the Impact of Tobacco and other Drugs:** Tobacco and other drugs represent one of the greatest threats to the health and safety of Indiana and have a significant impact on the state's economy. Research in this area addresses policy, behavioral, and social responses to the challenges that tobacco and other drugs present to the well-being of our state's population. Current projects include: study of smoke-free policy and smoking norms; prevention of high-risk drinking among college students; longitudinal studies of multi-level prevention programming on gate-way drug use; and initiatives to decrease youth access to tobacco through the Tobacco Retailer Inspection Program.

**Preventing Overweight and Obesity:** With its substantial costs in health care and lost wages and its enormous impact on morbidity and mortality, obesity is rapidly becoming a critical life science issue of the 21st century. Research and effective programs are needed to address the environmental and behavioral factors. Current projects include formative research to understand psychosocial determinants of eating and physical activity behaviors and the study of intergenerational transmission of obesity risk factors. Linked closely to immediate application in

public health is a study to monitor fruit and vegetable intake and behaviors of Indiana school children receiving the USDA Fresh Fruit and Vegetable Program.

**Enhancing Sexual Health:** A sexually healthy society is essential to a viable population. On a global and local level, research in this area strives to attend to the major determinants of infections, disorders, and dysfunctions that impact the ability of individuals to live their lives in satisfying and productive ways. Current projects include: prevention of HIV; sexually transmitted infections and unintended pregnancy; the intersection of mental health and sexual behaviors; and clinical research focused on the efficacy of sexual health products such as condoms and lubricants that are among the staples of the public health workforce.

**Understanding and Advancing Nutritional Well-Being to Avoid Chronic Diseases, including Diabetes and Cardiovascular Disease:** Delaying the development of chronic diseases is greatly impacted by good nutrition practices, and maintaining a desirable body size. Our research in nutrition crosses many life science disciplines, including biochemistry, physiology, and medicine, and thus involves several partnerships to explore the relationships of food nutrients to biological markers of good health. One avenue of inquiry explores how physical activity interacts with nutrition in impacting vascular health following the metabolic stress of a high fat meal. Another avenue is the study of dietary components and their impact on asthma.

**Promoting Health in Workplaces and Schools:** As the economic and educational engines of the state, workplaces and schools present unique opportunities to reach populations at risk and to improve the health of diverse communities. Research in this area is focused on the development of comprehensive and effective models for comprehensive workplace and school health promotion. Current projects include: a needs assessment of the employees of one of the divisions of IUB to identify levels of risk behaviors and preferences for worksite wellness activities; study of relationships between wellness markers and occupational safety hazards in a hazardous industry; and support to after school programs serving Indiana youth between the ages of 10 and 14 years of age.

**Responding to Health Disparities:** All individuals, regardless of race, ethnicity, or socioeconomic status, should have the opportunity for long, healthy, and productive lives. Factors that facilitate and those that impede the achievement of these goals are the focus of the Center for Minority Health. Current projects include: study of healthy lifestyles among African American females; health counseling and lay health education among participants in the Black and Minority Health Fair; and analysis of factors associated with infant mortality and prenatal care among Hispanic women.

Across these research areas, faculty and students of the Department of Applied Health Science utilize cutting-edge quantitative and qualitative methodologies which strive to conduct research that:

**Is Transdisciplinary.** A unique strength of the Department of Applied Health Science is the wide range of disciplinary perspectives brought to a single academic unit by our faculty and students. Collectively, these cover the disciplines of education, psychology, anthropology, public health, nutrition, human development, family studies, industrial hygiene, and occupational health.

**Is Community Engaged.** Our research efforts are conducted in ways that are collaborative, participatory, and informed by the unique insights offered by the lived experiences of those who reside in this state. Our goal is to bridge the gap between research and practice by supplying evidence-based training as well as resources and services to the community at large.

**Is Applied.** Researchers in our department strive to conduct work that seeks to improve the practice efforts of community-based and other health professionals who are working on the front lines to solve Indiana's public health challenges.

**Strives to Train the Next Generation of Life Sciences Scholars and Professionals.** The Department of Applied Health Science has over 30 doctoral students and over 50 masters students who come to our department from countries all over the world. As ambassadors of our Department, these students enter the workforce well prepared to make significant contributions to populations throughout Indiana and around the globe.

## **LIFE SCIENCES EDUCATION AND PRACTICE**

Our commitment to the Life Sciences Initiative includes important education and practice programs that serve as strategic vehicles for linking the Department's research efforts with those to build the capacity of Indiana's public health professionals.

**AmeriCorps.** AmeriCorps Improving Health Throughout Indiana (AIHTI) With support from the Governor's Office of Faith-Based & Community Initiatives, the Indiana State Department of Health and the IU Department of Applied Health Science jointly are enabling AmeriCorps Members and their host organizations to provide effective health promotion programs throughout Indiana. These programs are designed to reduce health disparities by improving nutrition and physical activity among children, youth, and families. Community organizations, schools, worksites, faith-based organizations, government agencies, health care providers, and many other host organizations work together to improve the lives of Hoosiers. Research is conducted to assess and consequently increase the impact of AIHTI on improving the lives of AmeriCorps Members; strengthening Indiana organizations that host Members, and improving the lives of AmeriCorps end beneficiaries-- i.e., the people of Indiana.

**Indiana Prevention Resource Center (IPRC).** The IPRC is a statewide research-based training, evaluation, technical assistance and information resource center. Its audience is community professionals, volunteers, and government officials associated with alcohol, tobacco and other drug and problem gambling prevention and treatment services provided to Indiana residents. Among the services offered are state and local data collection and reporting on drug use trends, and PREV-STAT a tool using census and market research data to generate reports on risk and protective factors in neighborhoods or larger areas. The Center is active with Indiana's State Epidemiological Outcomes Workgroup in the development of a surveillance system for alcohol, tobacco and other drug use and related outcomes at sub-state levels.

**MICHIANA Coordinated School Health Program Leadership Institute** is a combined effort of the American Cancer Society (ACS), Indiana Department of Education (IDE), Michigan Department of Education (MDE), and Association for Supervision and Curriculum Development (ASCD), with support from CDC's Division of Adolescent and School Health, designed to foster organizational change in 18 local school districts (10 in Indiana and 8 in Michigan) so they become healthier places to learn and work. Within these districts, three-member teams employed newly-acquired leadership skills to foster implementation of healthier practices programming for students and staff members consistent with recommendations from the school health, public health, and school improvement literatures, resulting in healthier people. Since 2003, faculty have served on the Core Team of the Institute, chaired the Evaluation Committee and served as team facilitators.

**Creating a Healthy School Using Healthy School Report Card** was authored by faculty for the Association for Supervision and Curriculum Development with funding from the Robert Wood Johnson Foundation. This manual contains 11 needs assessment instruments along with accompanying guidance that empowers school district staff members to actively engage members of the school community in a process that results in a long-term Healthy School Improvement Plan. The manual is used throughout the United States with adaptations for use in other countries including Canada.

**Preventing Underage and High-Risk Drinking.** Funded by the US Department of Education, this prevention program uses a coordinated, multi-strategy approach to reduce high-risk and underage drinking among IUB students. Program goals include screening, brief interventions, and normative education in the halls of residence, using trained peers; developing a social norms campaign to reinforce the cognitive and behavioral skills learned through the online course; and performing community- and policy-level assessment, planning, and implementation via a campus-community coalition.