

May 10, 2023

**IMPROVING FOOD SECURITY, DIETARY INTAKE AND HEALTH
through integrated science and engineering approaches**
Dr. Heather Eicher-Miller
(Purdue University, West Lafayette, Indiana, USA)
is the Laureate of the Danone International Prize for Alimentation
DIPA 3rd Edition

Paris, May 10, 2023. Dr. Heather Eicher-Miller, Associate Professor in the Department of Nutrition Science of the College of Health and Human Sciences at Purdue University, USA, is the Laureate of the 3rd Edition of the Danone International Prize for Alimentation (DIPA) for her groundbreaking research into *Improving food security, dietary intake, and health through integrated science and engineering approaches*.



Dr. Heather Eicher-Miller
Purdue University, West Lafayette
Indiana, U.S.A.

Dr. Eicher-Miller's pioneering research has tremendous implications for households experiencing food insecurity.

Dr. Eicher-Miller's research is focused on food insecurity which affects 11% of US households and creates uncertainty regarding the availability of nutritionally adequate and safe foods. Her work has documented immediate and chronic adverse dietary and health outcomes associated with food insecurity among diverse populations.

Her efforts to evaluate and create evidence-based interventions, programs, and policies have reduced food insecurity and improved access to resources which enhance health.

Dr. Eicher-Miller has also developed novel analytical and methodological techniques, including temporal dietary patterning, to more effectively quantify and evaluate the relationship between dietary behavior and health.

Addressing food insecurity

"Food insecurity is an unsolved problem, associated with poor dietary intake, health outcomes and shorter lifespans."

The U.S.A. produces enough food to meet the dietary needs of its entire population, however, many households still face food insecurity. Solving food security and the related dietary and health problems is advanced through creating more healthful environments and policies and changing individual behaviors.

Dr. Eicher-Miller's goal is to improve the dietary intake and health of low-resource groups and eliminate food insecurity. She addresses the complexity of these problems with pioneering integration of multidisciplinary team science in health, exercise, social and computer sciences, family studies, community development, statistics, and engineering to find sustainable and effective solutions.

Dr. Eicher-Miller's research is focused on three key areas:

- Investigating food environments and policies;
- Improving and creating new interventions;
- Changing food behaviors.

Investigating food environments and policies

The scope of knowledge on food insecurity, dietary status, and health outcomes among very low food secure households has been mainly unknown. It was only since 2015 that food insecurity was a recognized issue in the Dietary Guidelines for Americans. In addition, the intervention context was limited to the household food environment despite the broad influence of the community and organizations such as local food pantries which offer a point-of-contact for interventions among difficult-to-reach low-resource groups.

Dr. Eicher-Miller's team documented extremely poor dietary quality, a high prevalence not meeting nutrient recommendations, and a strikingly high percentage of obesity, diabetes,

heart disease and related risk factors among food pantry clients.

She investigates the food pantry as a point-of-intervention to learn how clients use services and to identify novel ways to capitalize on this unique community food environment.

Improving and creating nutrition interventions

Nutrition education offers a potentially powerful intervention to improve food security.

Dr. Eicher-Miller secured funding for a project team representing expertise in statistics, community development, and health science, to lead a randomized, controlled evaluation of a major federal nutrition education program in the U.S., the Supplemental Nutrition Assistance Program-Education (SNAP-Ed).



The team determined a 25% improvement in household food security one year after receiving the program. The nutrition education program was effective in both rural and urban settings and in variations of other environmental contexts, independent of food assistance. To go further, Dr. Eicher-Miller and her team currently explore dietary intake among adults who receive SNAP-Ed and their children. Previous studies have shown that households with food insecurity are known to reserve food considered "healthful" for children. Therefore, Dr. Eicher-Miller and her team will determine how the nutrition education program may affect children's and adult's dietary intake when household food security improves. The findings will be used to create supplementary educational material focused on improving healthful dietary intake for children and adults living in food insecure situations.



Dr. Eicher Miller's multi-disciplinary team pursue several projects to improve food security at food pantries, and to study dietary intake among those using food assistance programs.

Investigating dietary behaviors

Dr. Eicher-Miller also works to discover the complex nature of dietary behavior over time. An initial project in this area was focused on discovering the daily time-bound routines of dietary intake, including the times and amounts of energy consumed over a 24-hour day, to characterize and validate temporal dietary patterns in U.S. adults.

One year after the beginning of the application process, the 3rd Edition of the DIPA received twenty (20) applications from all over the World. The Selection Committee chaired by Prof Suzanne Higgs, from the Birmingham University in the U.K. and constituted of international Experts, pre-selected eight (8) final applications. The Jury of the 3rd Edition of the DIPA, chaired by Dr Michael Prelip from the University of California, Los Angeles, U.S.A. and made up of six international Experts, gathered in April 2023 and recognized Dr. Eicher Miller's innovative and interdisciplinary approach, associating engineering and multidisciplinary approaches.



Dr. Michael Prelip
Jury Chair of the DIPA 3rd Edition
University of California, Los Angeles
U.S.A.

"The Jury decided to award Dr. Heather Eicher-Miller for her strong contribution to the field of Alimentation; her ability to lead interdisciplinary teams; and her commitment to mobilize her findings to effect real, lasting change on food insecurity."

- More info on the DIPA 3rd Edition available on www.danoneinstitute.org

Notes:

- The Danone International Prize for Alimentation (DIPA) is a 100,000 Euro award set up to recognize multi-disciplinary research that represents a major advance in Alimentation – the umbrella term for sustainable eating and drinking practices that contribute to the health of individuals, including food choice, purchase, preparation, cooking and meal organization, and their determinants.
- Open to mid-career emerging leaders, the DIPA is awarded every two years by the Danone Institute International in collaboration with the French "Fondation pour la Recherche Médicale".
- The Danone Institute International (DII) is a not-for-profit organization aiming to promote human health through developing and disseminating knowledge about the links between food and health, and to highlight the importance of nutrition in health.
- The "Fondation pour la Recherche Médicale" aims to contribute to the development of pioneering and innovative French medical research, leading to medical advances for all. It is an independent organization that operates through the generosity of its donors.

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