Homeland Security
Science and Technology

Food Protection and Defense Institute (FPDI)

A DHS **Emeritus Center of Excellence***

FPDI defends the safety and security of the food system by conducting research to protect against vulnerabilities in the food supply chain, from farm to table, and to reduce the potential catastrophic attacks on public health and the economy.

LAUNCH	2004
PARTNERS	More than 20 university, government, and industry partners
EXPERTISE	Supply chain management and security, epidemiology, risk analysis/assessment, economics, molecular biology, food microbiology, biomedical engineering, toxicology, cyber security
DHS ALIGNMENT	DHS Office of Health Affairs, DHS Office of Infrastructure Protection, U.S. Customs and Border Protection, Chemical Security Analysis Center, DHS Office of Policy

Feedback from Our Partners

*"In the old days, agriculture meant feeding Minnesota. Today it means feeding the **world and protecting the planet's food supply from disease and determined terrorists**; our federally funded Food Protection and Defense Institute does just that."*

Eric Kaler, President
University of Minnesota

Research and Education Capabilities

- Chemical/biological agent behavior, detection, and modeling
- Communication and web portal development for food and agriculture professionals
- Risk communications for foodborne outbreaks
- Education and training for the current and future homeland security workforce

Food Protection and Defense Institute
A Homeland Security Center of Excellence

A nationwide consortium led by:

University of Minnesota - Twin Cities
R285 LES Bldg
St. Paul, MN 55108

fpdi@umn.edu
http://foodprotection.umn.edu/
(612) 624-2458

**DHS Emeritus Centers of Excellence no longer receive base grant funding. DHS and its operational components can access Emeritus Centers through DHS Basic Ordering Agreements (BOAs).*

University Partners

Alabama A&M University, AL*
Georgia Institute of Technology, GA
Kansas State University, KA
Universidad del Este, Puerto Rico*
University of Massachusetts, Amherst, MA
University of Minnesota, MN
University of Texas, San Antonio, TX
Whittier College, CA

**Minority Serving Institution (MSI)*

Enterprise Partners

Association of State and Territorial Health Officials
Centers for Disease Control and Prevention
Federal Bureau of Investigation
Food and Drug Administration
Gryphon Scientific
Institute of Food Technologies
National Association of County and City Heatlh Officials
North Carolina Department of Agriculture & Consumer Services
Risk Sciences International
U.S. Department of Agriculture
U.S. Department of Defense

For a complete list of partners and more information, please visit **fpdi@umn.edu**

For more information on DHS Centers of Excellence, please visit **hsuniversityprograms.org**

Impacts

Mitigating risk and rapidly identifying food system disruptions

Disruptions to the nation's food supply result in billions of dollars in losses per year, affecting 10-percent of all commercially sold food. Food companies are using two FPDI-developed technologies: the Criticality Spatial Analysis (CRISTAL) tool to understand how and where supply chains are vulnerable to disruptions and the Focused Integration of Data for Early Signals (FIDES) tool to rapidly identify and mitigate the impact of food contamination events.

Reducing vulnerability at food production facilities

Adulteration and contamination of the food supply results in economic loss and millions of illnesses, hospitalizations, and deaths annually, costing the Nation more than $77.7 billion a year. FPDI has developed several software tools, the Food Adulteration Incidents Registry (FAIR), Intentional Adulteration Assessment Tool (IAAT), and the Food Defense Readiness Assessment (FDRA) that allow firms to mitigate against intentional adulteration threats.

Applying laser technology to detect food contamination

FPDI researchers are developing a field and forensic application of Raman Spectrometry to detect contaminants in food (i.e., adulterants) food from a safe, non-contact distance of 1–10 meters. To demonstrate the viability of the system, this project will target contaminants commonly found in economically motivated adulteration use cases such as melamine in milk, calcium carbonate in flour, and inferior olive oil substitutes.

Preparing the food defense workforce

Working in conjunction with Saint Paul Public School District Career and Technical Education Teachers, in association with Emergency Responders in Minneapolis, FPDI develops food defense curricula and tabletop response exercises to train and educate current and future food defense responders.