



PERIODIC TABLE OF FOOD INITIATIVE

Unlocking Food Composition Data to Improve Human and Planetary Health

Imagine a world where farmers choose to grow specific foods to combat food insecurity and diet-related chronic diseases using practices that are also good for the planet. A world where people everywhere are enabled to select customized diets that support their vitality. This future harnesses the power of food not only as a solution to hunger, but as an essential resource to support the well-being of communities and the environment.

The Periodic Table of Food Initiative (PTFI) is accelerating this future to empower data-driven solutions to our most pressing food system challenges: climate change, biodiversity loss, and malnutrition.

THE PROBLEM

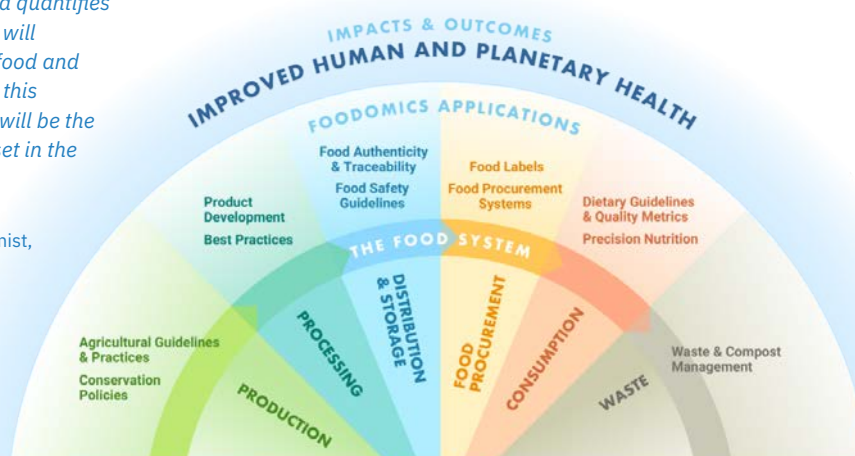
Food System Challenges. Diet-related diseases account for 1 in 5 deaths around the world, while dominant farming practices compromise the health of our planet. These challenges inequitably impact the world's most vulnerable populations. We need to transform food systems through data-driven solutions for healthier people and a healthier planet.

Knowing Our Food. Food is comprised of thousands of components, also known as biomolecules, including macronutrients, micronutrients, and specialized metabolites that make up our diets and impact our nutrition and health. The majority of food components remain unknown. Concurrently, technical challenges and a lack of global coordination have prevented the availability of comprehensive data on the known food components.

For the first time in history, we can imagine a deep understanding of the components in our food, how they interact in our diets and how they vary with environmental conditions and food system practices.

"A database that captures and quantifies the molecular content of food will revolutionize the agriculture, food and health sectors. Once in place, this publicly accessible database will be the greatest single knowledge asset in the history of food."

Bruce German, Ph.D.
Distinguished Professor and Chemist,
University of California Davis



MISSION

The Periodic Table of Food Initiative is providing democratized tools, data, and training on the comprehensive composition of the world's food supply to a global ecosystem of scientists, practitioners, consumers and policy makers.

VISION

We envision a world where each stakeholder involved in food and health systems is empowered to develop data-driven solutions for enhanced human and planetary health.

OFFERINGS

As an enabling platform, we are providing tools, data, and training to empower a global ecosystem to better know our food and diets in order to develop food system solutions.

Tools. We are developing and distributing standardized analytical methods based on omics technology to catalog the diversity of components in food.

Data. We are enabling a global ecosystem to generate and explore food composition data through an open-access data platform along with visualization tools.

Training. Through Good Food U, we are providing innovative education based on a unique model that integrates cutting-edge research, training, and data applications to train and inspire the next generation of food, agriculture, health, and nutrition leaders.

Innovative Uses of Food Composition Data: Planetary Health

The PTFI is leveraging food composition data as a key resource in the development of solutions for planetary health through three pathways:

(1) Climate Effects on Food. Food composition data collected over time and space can serve as an indicator and predictor of the impact of climate change on food systems.

(2) Regenerative Agriculture and Agroecology.

Food composition data can provide quantitative evidence for scaling farming practices that support people and the planet.

(3) Planetary Health Diets. Food composition data can inform the design of diets for mitigating diet-related chronic disease and climate change that are place-based and accessible.

CURRENT STATE

Tools. We have developed standardized multi-omics tools including metabolomics, lipidomics/fatty acids, and ionomics as well as a platform to facilitate the discovery of novel food biomolecules. We are currently developing tools for glycomics, amino acids, and aromatics.

Data. We are refining a centralized data platform with data-processing pipelines for automated annotation of biomolecules to enable standardization across labs globally.

Food Procurement. We are taking a transparent approach to access and benefit sharing related to food procurement and data use based on international regulatory frameworks and ethical considerations. We are refining our metadata strategy and have started to populate the Periodic Table of Food with an initial 500 foods.

Global Ecosystem and Training. We have built an ecosystem of nine Centers of Excellence around the world as well as identified initial National Lab Hubs and Partner Labs that are adopting PTFI omics tools to populate the Periodic Table of Food data platform.

Research and Translation. We are supporting a range of transdisciplinary demonstration projects that apply PTFI tools including those in the areas of: (1) regenerative agriculture and agroecology; (2) climate change solutions and; (3) diet-related chronic disease.

UPCOMING MILESTONES

Global Data Preview

October 2023 - Get a peak of what is in the Periodic Table of Food

Global Distribution of Tools

January 2024 - PTFI omics tools are available for global adoption

Global Public Launch of PTFI Data Platform

March 2024 - Join us to explore the diverse components of over 1,200 foods from around the world as well as fascinating data stories

FUTURE OUTLOOK

Tools. Decision-making tools for diverse food system stakeholders fueled by PTFI data.

Data. Data platform representative of the planet's edible biodiversity; data from 100+ interventions on health benefits of food grown from regenerative systems; data on impacts of climate change on food quality based on food composition.

Training. 10,000+ learners globally trained via Good Food U empowered to apply PTFI data.

CONTACT

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Visit the PTFI website: www.foodperiodictable.com

GLOBAL ECOSYSTEM

Our vision is dependent on a global network of partners across sectors managed by the PTFI Secretariat, comprised of the American Heart Association and Alliance Bioversity CIAT.

FUNDING PARTNERS



MANAGING SECRETARIAT



CENTERS OF EXCELLENCE

Ethiopian Public Health Institute, Ethiopia
Kwame Nkrumah University of Science & Technology, Ghana
Mahidol University, Thailand
National Institute of Nutrition and Health, Mexico
Pontificia Universidad Javeriana, Colombia
The University of Adelaide, Australia
University of California, Davis, USA
University of the South Pacific, Fiji
Wageningen University & Research, Netherlands

RESEARCH & TECHNOLOGY PARTNERS



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