



Periodic Table of Food Initiative (PTFI)

Call for Expressions of Interest for Centers of Excellence (CoE)

The Periodic Table of Food Initiative (PTFI) is seeking Expressions of Interest from public and private organizations to serve as Centers of Excellence around the globe, with special interest in those centered in and/or strongly supporting low- and middle- income countries / the Global South. PTFI CoE selection will prioritize organizations located outside of the United States, Canada, and Europe.

Overview:

The [Periodic Table of Food Initiative](#) (PTFI) is a revolutionary enabling platform that aims to catalogue chemical diversity (nutritional dark matter) of foods using the latest mass spectrometry and ‘omics’ technologies. Taking a global multi-sectoral collaborative approach informed by the scientific, academic, health, agricultural, food, and entrepreneurial sectors, the PTFI will accelerate the evidence base and transform contributions of food diversity to human health. By developing a technical platform (low-cost mass spectrometry kits, standards, analytical methods, cloud-based analytical tools), and a public database, PTFI will democratize its availability and use for stakeholders across the world.

Established and funded by the [Rockefeller Foundation](#), PTFI also receives funding from the [Foundation for Food and Agriculture Research \(FFAR\)](#) and [Seerave Foundation](#). A coalition of the [American Heart Association \(AHA\)](#) and the [Alliance of Bioversity International and the International Center for Tropical Agriculture \(CIAT\)](#) will serve as the permanent Secretariat of the PTFI.

Centers of Excellence

Centers of Excellence are fundamental in achieving the vision of the PTFI. Primarily they will deliver the following functions: (1) drive innovation and translational opportunities for the PTFI through demonstration projects; (2) identify opportunities and collaborations in the standardization of technologies and tools; (3) in coordination with a network of labs, support capacity building for the use of PTFI technology in the Global South and around the world.

Roles and responsibilities of Centers of Excellence

- Drive innovation and help identify key translational opportunities of PTFI in agriculture, health, food science, nutrition and environmental science.
- Inform the identification and implementation of demonstration projects that will showcase the revolutionary potential of revealing the content of nutritional dark matter.
- Identify opportunities to standardize technology and tools.
- In coordination with the Secretariat, establish, maintain, and engage a network of diverse laboratories and partners from their region in research, capacity building and use for the PTFI.
- Assist in the analysis and cataloguing of the PTFI database accessions and ensure quality assurance/quality control.
- Participate in discussions that inform the allocation of funding for technical analyses to public and private laboratories.
- Inform sample management strategy and its implementation for globally sourced foods.
- Inform the implementation of database strategy and development of tools for data mining.
- Participate in Multistakeholder Advisory Committee, as appropriate.



Criteria for selecting Centers of Excellence

Expressions of Interest will be assessed with the following criteria:

- Relevant expertise working in issues related to food, agriculture, nutrition, and health.
- Commitment to and clearly articulated vision for sharing access to and benefits of the PTFI with low- and middle- income countries / the Global South.
- Vision to catalyze public goods and private sector innovation.
- Infrastructure and technical expertise in mass spectrometry and analysis of food.
- Computational data processing capabilities or expertise for data analysis.
- Interest and ability to coordinate regional/national networks of public and private laboratories.
- Commitment and ability to convene partners in the development of capacity building programs as needed.
- Capacity to raise complementary funding from national and regional bodies for translational research and demonstration projects.

PTFI will provide limited base funding to leverage expertise and capacity of selected Centers of Excellence towards the goal of the initiative. Managed through an RFP, Centers of Excellence will be prioritized for implementing demonstration projects.

Major work streams of PTFI:

- **Inventory of foods:** PTFI has undertaken a global multi stakeholder collaborative process to seek nominations of and select foods from all regions of the world. Dietary importance, geographical diversity and innovation potential are some of the criteria used for the identification and selection of foods. The result of this process is a remarkable collection of the most inspiring foods from every region of the world, which are of great cultural and scientific interest. PTFI will share results of the work widely.
- **Technical Platform:** The PTFI is creating a technical platform for standardized mass spectrometry-based analytical approaches for deep compositional analyses of food including the discovery of new food molecules. It will comprise kits, methods, and data processing services to enable a network of public and private laboratories to analyze thousands of foods around the globe by food composition category. The PTFI will take a phased approach to the development of kits, informed by the initial inventory of 100 food before expanding it to 1000 foods. To develop this technical platform, PTFI will work with reagent manufacturing, mass spectrometry, and data processing companies across the globe.
- **Periodic Table of Foods (PTF) Database:** Data generated by networks of laboratories will be assembled into a large and robust public reference database of food compositions. Once the database is in place, the scientific community and private sector can build on this public resource by adding analyses of additional foods, varieties, and cooking methods. PTFI has developed a database management strategy and consulted key stakeholders in this process. The Secretariat in collaboration with partners are working on implementing the database strategy, building on the American Heart Association's Precision Medicine Platform-- a cloud-based technology solution that enables the global medical research community to accelerate breakthroughs in cardiovascular and brain diseases.
- **Access and benefit sharing:** Benefit sharing is a core component of the PTFI impact pathway.



We are developing guiding principles and a framework for access and benefit sharing, so that technology, data and insights from PTFI are accessible to wider stakeholders and countries. PTFI will comply with applicable access and benefit sharing (ABS) agreements. PTFI will generate and share benefits with stakeholders from developing countries through partnerships, training and technology transfer both during the development of the database and afterwards.

- **Sample management:** Food analyses will be informed by a common approach to sample collection and access to materials for the network of laboratories participating in the network. The PTFI has developed a sample management strategy, a key framework guiding collection, storage, and shipping of food samples, and management of metadata associated with them.
- **Case Studies:** The PTFI will develop case studies, which will serve as communication tools to raise awareness on the importance and revolutionary nature of the initiative. We aim to develop 10-12 case studies covering public health, environmental conservation and restoration, agricultural efficiency and innovation, and food innovation and engineering in partnership with interested experts and institutions.
- **Demonstration Projects:** The PTFI will issue requests for proposals (RFPs) for demonstration projects that can answer global questions around food, nutrition, and health utilizing the technical platform and PTF data to demonstrate its revolutionary nature. The selected projects will be aligned with the interests and strategies of the Funders Consortium, relevant to a diversity of approaches and audiences with scalable results and impacts. PTFI Centers of Excellence will play a key role in identifying and implementing demonstration projects.

PTFI Governance and Management:

The governance and management model of PTFI reflects the global nature of the initiative that is collaborative and inclusive (see Annex 1).

- **Funder Consortium Board** sets strategy and identifies priority issues for investment. Established by the Rockefeller Foundation, the PTFI currently receives funding from two additional donors - the Foundation for Food and Agriculture Research (FFAR) and Seerave Foundation. They form the core governance and decision making body of PTFI.
- **Secretariat:** A coalition of Alliance of Bioversity International and CIAT, a CGIAR Center and the American Heart Association (AHA) will serve as the permanent Secretariat of the PTFI, coordinating, facilitating and managing the day-to-day operations of the PTFI. Selected through a competitive process, the CIAT-AHA Secretariat brings together human health and food systems fields, merging complementary research and development communities into a single platform that is needed to achieve the ambitions of the PTFI.
- **Verso Biosciences:** The lead technology partner establishing the vision and strategy for the development of PTFI methods, standards and kits. Verso will coordinate the overall technology development and deployment in coordination with networks of both public and private laboratories, the Secretariat and Centers of Excellence.
- **Centers of Excellence network** will drive innovation and translational opportunities of PTFI. They will inform the identification of demonstration projects and implement some of the activities of PTFI based on their expertise and strategies established by Funder Consortium Board and coordinated by the Secretariat. In its geographic role, Centers of Excellence will coordinate a network of laboratories that use PTFI technology and support capacity building.



They may also play a thematic role covering annotation, development of tools, etc.

- **Scientific Advisory Committee:** With the purpose of ensuring scientific integrity of PTFI, this committee will provide scientific guidance and input to the FCB and Secretariat. It will review and provide insights on overall strategy, science quality, methods, and applications of the PTF database.
- **Multi-Stakeholder Advisory Committee:** This committee will represent a broad range of stakeholders from different sectors, geographies and expertise, informing Funder Consortium Board and the Secretariat on PTFI strategy and priorities. The purpose is to ensure that PTFI integrates a broad range of perspectives, needs, challenges, and opportunities from several sectors.

Submission Guidelines

If your organization is interested in serving as a Center of Excellence for the PTFI, please submit an expression of interest that is no longer than five (5) pages addressed to the PTFI Secretariat (ptfi@cgiar.org) with the following information.

- Applicant organization name(s), description(s), and address. Please include a contact person's name, title, and contact information.
- Summary of experience and qualifications to serve as Center of Excellence aligned with the **Criteria for selecting Centers of Excellence** (see section above)

The deadline for submission is 5 November 2021. The PTFI Secretariat will review expressions of interest and make a decision in consultation with the Funder Consortium. If you have any questions, please reach out to the PTFI Secretariat (ptfi@cgiar.org). Centers of Excellence will be announced by 15 December 2021.



PERIODIC TABLE OF FOOD INITIATIVE

Annex: 1

Governance and Management model of PTFI

