



# Sample Management Strategy

## Periodic Table of Food Initiative Request for Proposals

The Periodic Table of Food Initiative (PTFI), a global effort to create a public database of the biochemical composition and function of the food we eat using the latest mass spectrometry technologies and bioinformatics, is seeking proposals for a Sample Management Strategy (the Strategy). The Strategy is meant to address issues including but not necessarily limited to: sampling protocols; access policy for samples; navigating relevant international permitting and regulatory requirements; database composition; and biobanking strategy for the long-term preservation and distribution of sample replicates. The Initiative will be naming an Institutional Home in early 2021 that will implement this strategy to fulfill the goals of the PTFI.

Please see our website [www.foodperiodictable.org](http://www.foodperiodictable.org) for more information on the PTFI.

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### OVERVIEW: PERIODIC TABLE OF FOOD INITIATIVE

Food is at the center of the world's most urgent challenges and largest opportunities. Yet our scientific understanding of the foods that nourish us is still rudimentary. At most, 150 of food's biochemical components are measured and tracked in conventional databases, which only represents a tiny fraction of the tens of thousands of biochemicals in food. A food system that supports human and planetary health requires a rigorously collated public database of the full range of nutritionally relevant molecules in food to catalyze research and innovation that will enable us to understand the relationships between food, diet, health, nutrition, and environment.

The Periodic Table of Food Initiative (PTFI) is a global effort, currently funded by the Rockefeller foundation. The PTFI will strengthen and support ongoing work by institutions around the world by developing low-cost mass spectrometry kits, standards, methods, cloud-based analytical tools, and a public database – the Periodic Table of Food (PTF) – that will include a quantitative and qualitative analysis of thousands of foods.

The PTFI will begin by analyzing 1,000 foods that are representative of the geographic and cultural diversity across the world. Once the database is in place, the scientific community and private sector can build on this public resource by adding analysis of additional foods, varieties, and preparation methods. The PTFI technical platform will enable conditions for a rapid acceleration in research and innovation in both the public and private sectors.

### SAMPLE MANAGEMENT STRATEGY COMPONENTS

The PTFI is a groundbreaking initiative that will create standardized kits, methods, and panels to ensure that all PTFI-related scientific analysis is rigorous and comparable. In order to have a standard output, the input must also be standardized. A Sample Management Strategy is meant to provide standards for sample management from physical specimen to data. It should consist of the following elements:

- **Sampling Protocols:** The PTFI should have high quality samples for present and future analysis. The Sample Management strategy should outline protocols for collection, processing, and aliquoting of diverse food samples. In addition, this section must outline which types of samples will be most helpful to answering research questions (eg. a freeze dried powder, an herbarium specimen, seeds etc.). We expect this may encompass multiple sample types.
- **Access Policy:** The Sample Management Strategy should outline criteria and processes for accessing samples.
- **Permitting and Regulatory Environment:** The Sample Management Strategy should put forth protocols for adhering to international regulations such as the Nagoya Protocol and the International Treaty on Plant Genetic Resources for Food and Agriculture. The PTFI team is open to contracting a lawyer to help draft this section if necessary. In addition, this section should outline logistics for shipping plant and animal materials across international borders.
- **Database:** This section should address the data requirements for tracking metadata, preliminary processing, and storage conditions for all samples. The resulting database is meant to be available for research purposes.
- **Biobanking:** This section should outline the physical storage needed to complete the project, length of sample preservation, purpose of sample preservation, and the number of samples/aliquots persevered. We hope to have sufficient aliquots for subsequent research. It should also speak to the feasibility of having more than one PTFI biobank.

## SUBMISSION GUIDELINES

Expressions of Interest should be 2-3 pages and outline 1) your (organization's) qualifications to write the plan; 2) examples of similar work you have completed; 3) your expected costs for writing the plan; and 4) your expected timeline for completing the plan. Proposals are due to [ptfi@merid.org](mailto:ptfi@merid.org) on October 22<sup>nd</sup>.

The plan authors will have two months to complete the Sample Management Strategy and are expected to interact with members of the PTFI community with interest/expertise in sample management and biobanking. In addition, they are expected to meet regularly with the PTFI Lead Strategist and Technical Advisor and the Executive Director of Public Intellectual Property Resource for Agriculture, who is a PTFI Advisor.