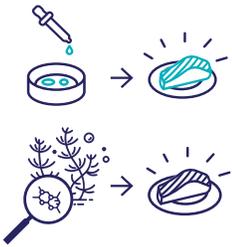


Our oceans hang in a precarious balance. Overfishing and harmful fishing practices have damaged fragile marine habitats, destabilized ocean ecosystems, and severely depleted global fisheries—and demand for seafood products will only continue to grow.

Detailed Compositional and Structural Characterization of Seafood Products



Plant-based and cell-based seafood present a novel solution: providing consumers with delicious seafood products with a fraction of the environmental burden. However, virtually no dedicated funding has been expended in the development of plant-based and cell-based seafood, resulting in substantial knowledge gaps for new product development. This industry exhibits tremendous potential to benefit from concerted resource allocation toward developing publicly accessible data to guide innovators in this space.



One area of urgent need is information on the parameters that define high-quality meat from a number of seafood-relevant species. A deep understanding of the molecular and structural signatures that define consumer experiences like taste, aroma, and texture is critical for developing both plant-based and cell-based products that replicate these sensory experiences as well as nutritional, aesthetic, and processing qualities.



The proposed research will address a critical knowledge gap that is hampering the development of high-quality, sustainable plant-based and cell-based seafood products: detailed characterization of the seafood products that they aim to emulate. The resulting public resource will enable researchers and innovators to accelerate the development and widespread commercial adoption of plant-based and cell-based seafood.

1x

project scope

- \$30,000 budget
- 15 species
- compiling existing information into a public database plus new data for a few attributes, including pH, color, and tissue microstructure

5x

project scope

- \$165,000 budget
- 15 species
- adding novel data for more complex traits, like texture, aroma, protein functionality, and other sensory attributes

10x

project scope

- \$295,000 budget
- 30 species
- adding same type of data as 5x scope but for twice as many species

<6 months

Timeline to completion:

- less than six months from when the work begins



Optional add-on packages:

- nutritional analysis
- protein digestibility

30 species

Up to 30 exemplar species, representing 13 classes of highly consumed seafood-relevant organisms.