

PROTEINS OF THE FUTURE CHALLENGE 2023

Protein Division Sponsored Student Competition

Organized by IFT's Protein Division, this competition is created to bring students closer to the advances and challenges of protein innovation currently occurring in the science of food world. By participating in this competition students will:

- Work on ideas to solve real-life food global problems
- Enhance their knowledge in food proteins (Functionality, environmental impact, extraction methods, nutritional value, etc.)
- Apply previous acquired knowledge
- Improve teamwork skills
- Improve presentation skills
- Gain exposure and prestige

Eligibility

- Both undergraduate and graduate students
- Students enrolled in food science-related programs
- Must be IFT members

Teams

- Teams of 2-3 students
- Undergraduate students, graduate students or both together
- With or without mentor (e.g., professor, industry expert, etc.)

Topics

Students will select one the five topics listed below. The students will then choose a specific protein/product example for the essay.

- Topic 1: Environmental impact: Consumers are shifting protein consumption from traditional proteins to alternative proteins, therefore alternative proteins are being used more and more to develop new foods made from more suitable sources. What is the environmental impact of that shift? (Including increased production). Calculate/estimate the environmental impact of a specific product or product category made with an alternative protein(s) replacing a specific product or product category made with a traditional protein(s).
- Topic 2: Scale up: Many alternative proteins show promising potential to replace traditional proteins in lab-research. In order to use them as food ingredients in the food industry they will need to be extracted and commercialized in much larger volumes. How can lab-based protein extraction scale up to industrial capacities? Use a specific alternative protein and directly compare to current extraction methods of a traditional protein.

- Topic 3: Functionality: To reach certain textures or other sensorial attributes using alternative proteins is a challenge when developing new foods. Use a specific alternative protein(s) to demonstrate how it can have similar function (e.g. structural function or sensorial attributes) as a specific traditional protein in a specific food product or product category?
- Topic 4: Nutritional value: Different proteins have different amino acid composition and different values of digestibility and bioavailability. Propose a food product made with alternative proteins and show how it compares to a similar product made with traditional proteins in terms of amino acid composition, digestibility, and bioavailability.
- Topic 5: Commercial / market research. Commercializing food products made with alternative proteins to the right markets is also a challenge. Choose a specific product or product category to show how products made with alternative proteins can impact current and/or future market demands compared to its equivalent or a similar product or product category made with traditional proteins.

Guidelines

- Write an idea that is created exclusively for the IFT Proteins of the Future Challenge. Only clear and well-organized ideas that cover all the requested fields will be judged. The essay has a max 1,500 words limit, excluding references.
- Submit via entry form all student and team information
- Via e-mail address found in entry form, submit your title, issue addressed, current state of the issue, proposed solution. There is 1,500 words limit to these sections altogether.
- List your references (not counted in the word limit) and attach any illustrations
- Essays will not only be judged by the scientific approach, but also on creativity, innovation, ability to address the challenge, feasibility, implementation, and clarity of the ideas.

Specifically:

- Under 'Topic to be addressed' (Environmental impact, scale-up, functionality, or nutritional value, commercial/market research)
 - Why an innovation is necessary in this topic
- Under 'Current state of an issue within the selected topic'
 - Define the specific example/problem to be addressed (Traditional protein and/or food product and/or food category)
 - The relevancy of the problem to be addressed will be judged as well as the clarity of its explanation.
 - Scientific background
 - Impact of the current traditional protein/product (Market, environmental, nutritional, etc.)
- Under 'Proposed solution'
 - Propose a solution, include any market data that support the solution
 - Consider the entire food chain (from farm to fork)
 - Feasibility of the idea (Briefly describe how it relates with the other four topics in this challenge)

- Specify the originality of the idea, is this a new idea or refinement of an existing idea? (Both are evaluated equally if they are clearly defined)
 - Scientific background
 - Possible ways of implementation
 - Potential added value of the idea
 - Targeted customer/consumers
- Definitions:
 - Traditional protein: Food proteins that have been extensively consumed globally in the last decades/centuries. Examples include but not limited to animal proteins (meat, dairy proteins, etc.) and cereal proteins.
 - Alternative protein: Food proteins with low consumption or with consumption increase in the last decade. Examples include but not limited to plants, pulses, vegetables, insects, algae, etc. (Be creative).
 - Food product: Select a specific food product as you would find it in the supermarket, however, do not include specific brands. Examples include but not limited to: Sausages, rice krispies, milk (2% fat), mozzarella cheese, cereal bars, chocolate chip cookies, etc.
 - Food product category: Select a specific food product category as you would find them in the supermarket, however, do not include specific brands. Examples include but not limited to: Breakfast cereals, burger patties, milk, cheese, bakery products, etc.

Entry process

Deadline: April 30, 2023.

Awards

Competition participants will be notified of their status prior to IFT FIRST: Annual Event & Expo, with a general certificate awarded for 1st, 2nd, and 3rd place. Monetary prizes of \$1000, \$750, \$500 will be given to the 1st, 2nd, and 3rd place team respectively. There will be additional recognition on social media, through Protein Division communications, and IFT publications. Winners will be recognized at the IFT FIRST Protein Division social event, and they will be invited to present their idea during the event.

Judges

A panel of experts in food proteins including academic and industry experts from the IFT Protein Division will judge the entries. External international recognized experts in proteins can also be invited to be judges.

Judging criteria

The submission will be evaluated based on 5 aspects: Relevancy of the addressed problem, Scientific merit of the proposed solution, Innovation of the proposed solution, practical application of the proposed solution, and quality of the submission.