Exploration of Foods and Foodomics

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Exploration of Foods and Foodomics: a new adventure

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"If you want to go fast, go alone, if you want to go far, go together."—African proverb

Our global food system is under increasing strain. A changing climate, pests, and stresses on water and land use have made life increasingly difficult for farmers. Raising livestock for meat also uses a lot of land and energy which is under increasing demand from a rising population and growing middle class. How can we produce and supply enough safe and nutritious food in a sustainable way to a population which is expected to rise almost 10 billion by 2050?

Food systems need to be repositioned from just supplying food to providing high-quality diets for all. Pandemics, as obesity need to be eradicated, while hunger is still a problem in many countries in the world in which today almost 800 million people are chronically hungry and 2 billion suffer micronutrient deficiencies. The connection between diet and health needs to explode and must be able to provide all the real power and benefits that we can obtain from the food that we eat, with clear (and personalized) advice about what is healthy and what is noxious for our health. This will require deeper scientific work (foodomics), as well as policy initiatives far beyond agriculture to encompass trade, the environment, and health, which harness the power of the private sector and empower consumers to demand better diets, that must go far behind an economic benefit for a few.

According to the Food and Agriculture Organization (FAO) [1], these are the 15 main trends relative to the future of food and agriculture:

1. Population growth, urbanization, and aging; 2. Global economic growth, investment, trade, and food prices; 3. Competition for natural resources; 4. Climate change; 5. Agricultural productivity and innovation; 6. Transboundary pests and diseases; 7. Conflicts, crises, and natural disasters; 8. Poverty, inequality, and food insecurity; 9. Nutrition and health; 10. Structural change and employment; 11. Migration and agriculture; 12. Changing food systems; 13. Food losses and waste; 14. Governance for food and nutrition security; 15. Development finance.

These trends, if effectively solved, envision food systems that are far more nature-positive, deliver improved and more resilient livelihoods, empower disadvantaged groups, and produce a healthy mix of foods at affordable prices [2]. These are defined as nutritious, healthy (meaning they help prevent diseases),

safe, affordable, and culturally acceptable diets that support optimal nutrition and health and cause low environmental pressure and impact [3].

It is clear that we will have to face huge challenges in the non-distant future; here, we would like to highlight the important role that Food Science and Technology, including omics approaches (e.g., genomics, proteomics, metabolomics, foodomics), will run in many of these crucial trends, including the integration of big data, information technology, and artificial intelligence throughout the food chain, or incorporating more and more the concepts of sustainability and green all along the food systems.

This new journal, *Exploration of Foods and Foodomics* (EFF), is born with the spirit of serving as a platform for modern research on Food Science and Technology, with a special emphasis on the use of modern omics approaches. Based on these principles, in addition to being online and peer-reviewed, EFF will have state-of-the-art electronic review and publication, a quick turnaround time from submission to publication, a rigorous and transparent peer review process, wide promotion, and meticulous production. Reference linking to cited papers will increase usage and make the journal more attractive in an increasingly competitive environment. All article processing charges (APCs) are also covered until at least mid-2025, so you can publish now for free. EFF is an international journal that will provide a platform for advances in:

- Food safety and risk assessment (quality control, additives, contaminants, toxicity, etc.)
- Food chemistry and nanochemistry (chemistry of foods, micro- and nano-encapsulation, delivery systems, etc.)
- Food authenticity (biomarkers, origin, species identification, etc.)
- Foodomics, nutrigenomics & nutrigenetics (application of genomics, transcriptomics, proteomics, metabolomics, personalized nutrition, etc.)
- Food engineering (sustainable and environmentally clean processes, process intensification, biorefinery, Life Cycle Assessment, etc.)
- Food technology & processing (non-thermal processing technologies, etc.)
- Food biotechnology (microorganisms, processes, etc.)
- Food packaging & shelf life (Biodegradable systems, natural additives, etc.)
- Food hydrocolloids
- Food microbiology & microbiome
- Food allergy & nutritional immunology
- Food by-products and sustainable foods (revalorization, safety, processing, etc.)
- Novel foods & alternative species (strategies to ensure long-term biodiversity, etc.)
- Food & health: nutraceuticals and functional foods
- Sensorial perception of food
- Nutrition & metabolism
- Clinical nutrition (diets for special needs, sports and diets, etc.)
- Nutritional epidemiology
- Food security-agriculture policy economics and environment: one health model (emerging risks, etc.)
- Food labelling, modelling, (bio)sensing, digitalization & data handling
- Food social impact & consumers' science and preferences

Thus, this journal is aimed at a wide audience of food science researchers, technologists, and food professionals. EFF will publish Original Articles, Reviews, Protocols, Commentaries, Perspectives, Editorials, and Letters to the Editor, and will also regularly publish special exploration issues to highlight advances at the cutting edge of research or on multidisciplinary topics. We are grateful to the group of prestigious international researchers who have joined us as Associate Editors. For us, it has been a challenge to achieve

a multidisciplinary team able to tackle all topics mentioned above. Associate Editors will be in charge of managing the review process in their own discipline. Moreover, many outstanding researchers have also joined EFF as Editorial Board Members; for sure, their assistance will be key to the success of EFF. We want to acknowledge all of them, and also the Editorial staff that, with their commitment and hard work, will undoubtedly lead to a successful Journal. We encourage you to join us in this new adventure by submitting manuscripts and participating in manuscript reviews. We also welcome applications to join EFF as Associate Editors or Editorial Board Members.

"Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less."—Marie Curie

Abbreviations

EFF: *Exploration of Foods and Foodomics*

Declarations

Author contributions

The authors contributed equally to the work.

Conflicts of interest

The authors declare that they have no conflicts of interest.

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Consent to publication

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