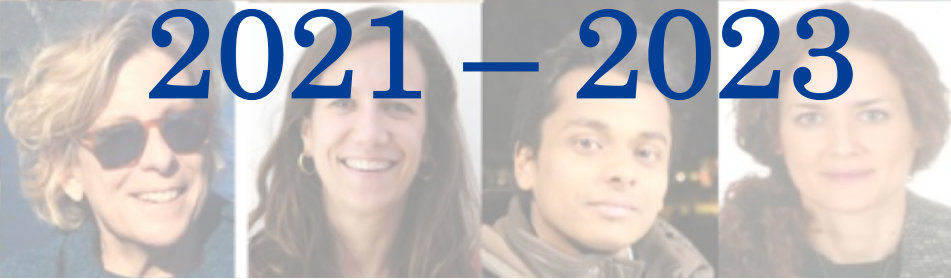
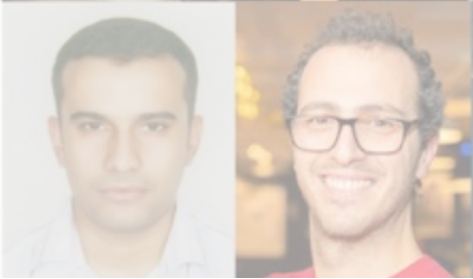
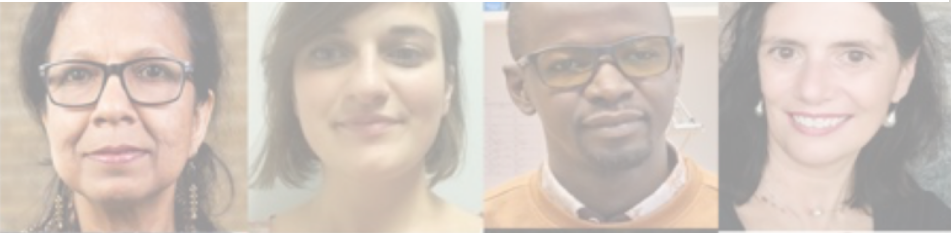
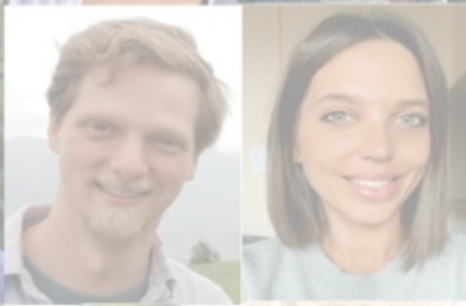




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ULB **BrIAS** **VUB**

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2021 – 2023

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BrIAS REPORT 2021 – 2023

The institutes for advanced studies, of which the most famous example is the Princeton Institute for Advanced Study, receive international researchers of a very high scientific standard and with different backgrounds for periods up to several months, to enable them to develop interdisciplinary research around a broad predefined theme, in complete independence and in an ideal setting for reflection and creativity.

This report is the first of, what we hope, is a long series of reports on successive interdisciplinary themes addressed by BrIAS, the Brussels Institute for Advanced Studies.

Between May 2021 and May 2023, over 100 activities were organised around the theme of "The past, present and future of food, climate and sustainability". For this first pilot theme, BrIAS welcomed 46 Senior Fellows, 12 Junior Fellows, and over 200 guest speakers to discuss, challenge, brainstorm, and propose ideas for future research. The fellows came from 25 countries, including developing countries which face critical challenges concerning sustainability.

Next to the scientific objectives, we wished to take advantage of the pilot phase to progressively develop the organisation of BrIAS. One major unexpected problem was the COVID-19 pandemic. Thanks to the continuous and very efficient involvement of the programme directors and the administrative managers, the BrIAS activities were seamlessly organised.

The past two years have provided an extremely rich and rewarding intellectual and social experience to all, including of course the nearly fifty foreign fellows who attended the activities either in person or by remote connections. We hope that the following paragraphs will provide you with a more comprehensive view of BrIAS and its theme activities.

Frank Deconinck and Serge Jaumain (BrIAS Co-directors)

BriAS @ Usquare

The future location (opening mid-2024)



ABOUT BrIAS

The Brussels Institute for Advanced Studies (BrIAS), co-founded by the Université libre de Bruxelles (ULB) and the Vrije Universiteit Brussel (VUB) in 2018, is an incubator of ideas and research which expands upon the mission of other Institutes of Advanced Studies by focusing on sustainable development and urgent themes with a great societal impact.

Located in the heart of Brussels, it attracts the very best scientists, artists, and designers, from different geographical, disciplinary, and socio-economic backgrounds. We believe our institute's value is in bringing these voices and thoughts together.

BrIAS is currently situated on the ULB and VUB campuses. Starting from the academic year 2024-2025, however, the BrIAS fellows will live, work and spend a stimulating time together at the "Usquare", the prestigious, renovated, listed late 19th-century military barracks in Elsene / Ixelles within walking distance from the campuses of both the ULB and VUB.

The vision of the Brussels Institute for Advanced Studies is to create an environment for incubating ideas, with no philosophical or political restrictions, where top researchers, coming from diverse fields, are allowed to pursue their research in an atmosphere of total freedom, collaboration, mutual emulation and cross-fertilisation. BrIAS facilitates collaborations with acknowledged researchers in danger of persecution and from countries facing critical challenges pertaining to sustainability.

This vision supports the longstanding traditions and aspirations of both the Université Libre de Bruxelles and Vrije Universiteit Brussel of breaking down the walls of ignorance and dogmatism through science, without taboos or prejudice.

ADMINISTRATION

BriAS Directors



Professor Dr. em. Frank Deconinck (VUB) obtained his PhD in Medical Physics from the VUB. He was research associate at the University of California in San Francisco (UCSF) and researcher at Brookhaven National Laboratory. He is Professor em. of Medical Physics at VUB. In the nuclear field, he is Honorary Chairman of the Board of Governors of the Belgian Nuclear Research Centre (SCK CEN) and the European Nuclear Society. He coordinates Rad4Med.be, network representing the Belgian expertise in nuclear science and technology applications for healthcare. In the socio-cultural field he organised, together with Mrs. Deconinck-De Ries, the exhibition 'Tactile Graphic Art', accessible by blind and visually impaired persons. It was selected in 1989 by UNESCO for the U.N. World decade for cultural development. His main research domain was medical imaging and image processing, with a particular emphasis on nuclear scintigraphy and magnetic resonance imaging. He also researched the way we understand graphical image information to help translate this information to blind persons.



Professor Dr. Serge Jaumain (ULB) is Professor of Contemporary History at the ULB where he is co-director of AmericaS – the Interdisciplinary Center for the Study of America - and Advisor to the Rector for Development Cooperation.

He is also the President of the NGO ULB-Cooperation and the President of the Scientific Council of the Institut des Amériques (Paris) He has formerly served as Vice Rector for International Relations at the ULB. He published or directed more than 30 books including three dictionaries. His research focuses mainly on the history of mass distribution, French-speaking immigration in America, Canadian history and the history of tourism.

BriAS Administrative Managers



ir Annette M. Hansen, Msc, coordinated the BriAS day-to-day activities, logistics, social media, website, and finances until Fall 2022 after which she became a BriAS Junior Fellow and coordinated several BriAS workshops. She is an agricultural and food historian as well as an (ethno)archaeobotanist specialised in the Islamic world, mainly in Jordan, Israel, and Sudan, and is also involved in historical farming experiments in the Netherlands. After studying Classical and Near Eastern Archaeology and Arabic Studies at Bryn Mawr College (USA), she obtained an MSc in Archaeological Science at the University of Oxford. She is currently completing her PhD dissertation at the University of Groningen (Netherlands) on 'The Agricultural Economy of Southern Bilad as-Sham, from the Byzantine-Islamic transition through the Ottoman period' in which she integrates written and (ethno-)archaeobotanical sources. She is also a Research Associate at the research group Interdisciplinary Historical Food Studies (FOST) at VUB.



Dr Silvana Porco coordinated the day-to-day activities, logistics, website, and finances of BriAS from 2022 to 2023. She gained her PhD degree in molecular plant biology from the University of Nottingham (UK). She was a postdoctoral fellow at the University of Southern California (Los Angeles, USA). During her PhD, she worked on the role of auxin in lateral root development, while in her postdoctoral training, she worked on the root circadian clock.

BrIAS 2021-2023 PILOT PHASE

BrIAS Program Directors



Professor Dr Paul Erdkamp¹ coordinated the BrIAS subtheme Climate change and society over the past two millennia. Erdkamp is Professor of Ancient History and the director of the research group Social and Cultural Food Studies (FOST) at the VUB and General Editor of the Palgrave Studies in Ancient Economies. Most of his work deals with the economic history of the Roman world, with a special interest in climate change, nutrition and food supply. Erdkamp is also the Vice Dean of the Faculty of Languages and the Humanities and Head of the Department of History, Archaeology, Art studies and Philosophy.

¹ 2021-2022



Professor Dr. Christian Hermans (ULB) coordinated the BriAS subtheme *Food for plants - waste for food?* Hermans is an F.R.S.-FNRS research associate and director of the Crop Production and Biostimulation Laboratory at the Brussels Bioengineering School, ULB. He is currently the coordinator of an EU network on Sustainable Crop Production. He gained his PhD degree from ULB and Geneva University, Switzerland. He was a postdoctoral fellow at Colorado State University, USA. The environmentally sustainable intensification of agricultural production is the core research theme of the Crop Nutrition unit. Crop characteristics are identified for improving resilience, while limiting the environmental footprint.



Professor Dr. ir. Frits Heinrich (VUB) was BriAS Academic Co-Director academic year 2021/2022 and BriAS Program Director on behalf of VUB in 2022/2023; since 2023 he is an Honorary BriAS Fellow. Frits is Assistant Professor of Ancient History, Agricultural History, and Food History at the research groups Interdisciplinary Historical Food Studies (FOST) and Industrial Microbiology and Food Biotechnology (IMDO) at the Vrije Universiteit Brussel. His interdisciplinary research focuses on the intersection between archaeobotany, (agricultural) history, and biochemistry. As an archaeobotanist Frits is currently involved in various international archaeological fieldwork projects on sites in Egypt, Sudan, and Jordan, where he also conducts ethnobotanical research. Frits is Assistant Director of the EoS project AGROS (*Agriculture, diet, and nutrition in Greco-Roman Egypt. Reassessing ancient sustenance, food processing and (mal)nutrition*) and founding director of the FOST-Lab for interdisciplinary food research.

BriAS Academic Co-Directors



Professor Dr Nel De Mûelenaere served as a BriAS Academic co-director. She coordinated the BriAS subtheme Food systems and green deal policies in and beyond Europe. De Mûelenaere is also a member of research group Social and Cultural Food Studies (FOST) at the VUB. She is a historian of 19th- and 20th-century Europe, and her research focuses on the relation between humanitarian aid, food and gender during and after the First World War. One strand of her work examines the experiences and impact of female American relief workers in Belgium and France. Another looks at food and living standards of Belgian families during and after WWI and the development of home economics and nutritional science. De Mûelenaere is Chair of the Research Committee of the Faculty of Languages and the Humanities.



Professor Dr David Cannella served as a BriAS Academic co-director. He coordinated the BriAS subtheme Food for plants - waste for food? Cannella is director of the Photobiocatalysis unit, part of the Crop Production and Biostimulation Laboratory at the Interfaculty School of Bioengineers, ULB. He graduated as biotechnologist from the Sapienza University of Rome, Italy. He obtained his PhD in Biochemistry at the University of Copenhagen, Denmark, and was a visiting scholar in Brazil, Norway and Sweden. He is focusing on the depolymerization of bioresources into simple molecules with great added value, as well as on the synthesis of bio-based materials.

BrIAS RESEARCH THEME 2021-2023

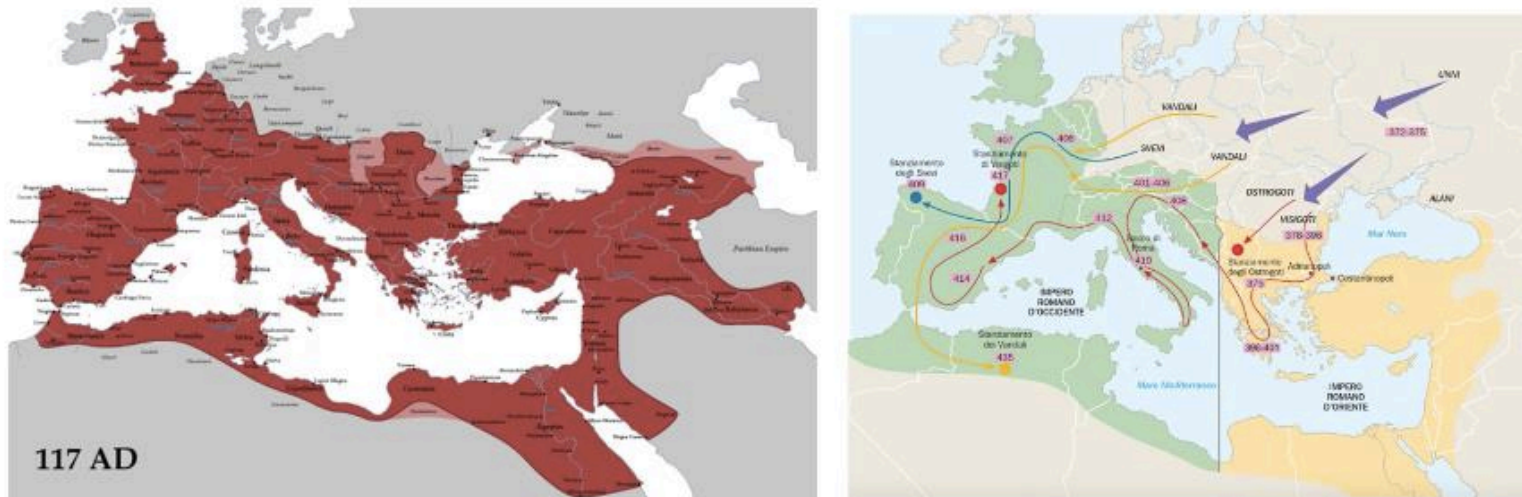
The Past, Present and Future of Food, Climate Change and Sustainability

Under the general heading "food", BrIAS approached this topic from a wide array of viewpoints, with the input of scholars from biology, chemistry, ecology, agricultural sciences, hydrology, anthropology, ethnography, political sciences, biotechnology, sociology, economic botany, economics, ecology, urban studies, history, archaeology, medicine, law, etc. In addition, BrIAS involved policymakers and NGOs at a national and supranational level, focusing on the legal aspects of future agricultural and food technologies, medical, and nutritional aspects of food.

To preserve coherence and be inspired by current societal and academic debates, we have identified one core theme that received special attention in the activities: the world's future food supply is in jeopardy. The prospect of fast-growing populations combined with environmental degradation and shrinking agricultural yields because of the climate crisis has urged researchers from all disciplines to develop new ways of thinking about food security and sustainability. BrIAS brought together top experts working on this topic to share their insights with the academic community and policymakers.

Feeding the population has been a main concern of societies throughout human history, as the vagaries of the weather and other natural and human catastrophes frequently caused famine and hardship. 'Give us our daily bread' reflects an ever-present fear of hunger and starvation. However, it was only in modern times that this concern reached a global scale when it was coupled to the spectrum of global overpopulation and the degradation of the environment. Most famously, Thomas Malthus (1766-1834) in his essay on the principle of population warned about increasing poverty if the population was to grow unrestrainedly, giving birth to a concept that it is at the heart of modern social theories. Less well-known is the response of William Godwin, who in 1820 calculated that the world could sustain a population of 8 billion people. At the time, the world population was nowhere near that figure, but it has grown exponentially since.

Understanding how climate affected the growth and decline of the Western Roman Empire is a fascinating future step. Key to understanding the possible effects of climate change we are currently experiencing



Courtesy of Professor Monica Bini

The Green Revolution came in time to feed the ever-growing populations, and may even have stimulated growth, while the realization emerged that large famines in the modern world resulted from societal failure.

However, the detrimental impact of intensive modern agriculture has subsequently been recognized. Current modes of intensive agriculture cause long-term damage to the environment due to the depletion of water and chemical pollution, which will eventually prevent the further use of soil for the next generations. In addition, the awareness of climate change has increased worries about the sustainability of the world population and current food systems. With the emergence of a better understanding of past climate change and the recognition that current global warming is manmade came increasing concerns for the future of humankind. Fears for the future have sparked an interest in the past, as theories that ascribe the collapse of past civilisations, ranging from the Mayas to the Roman Empire, to climate change and failing food supply systems are widely accepted. The link with societal concerns for the 21st century is obvious.

By 2050, society will be challenged to almost double food production from existing land areas to feed more than nine billion people. According to FAO, achieving global food security and eliminating malnutrition are among the most challenging issues humanity must face. Policymakers, scientists and the public recognize that policies, agricultural practices and food production have to change to guarantee the long-term well-being and sustainability of future generations. Agricultural development must combine fundamental research with advanced technologies to produce more healthy food with fewer inputs.

BriAS Programme directors and Fellows, across academic disciplines, developed an integrated program on the theme.



BrIAS FELLOWS 2021-2022

Prof. Dr. Mark G.M. Aarts , Wageningen University, The Netherlands

Prof. Dr. Ferran Antolín , Deutsches Archäologisches Institut, Germany and University of Basel, Switzerland

Dr. Gabriela Berto, University of São Paulo, Brazil

Dr. Jeroen Candel, Wageningen University, The Netherlands

Dr. Claudia Chiodi, Université libre de Bruxelles, Belgium

Dr. Jorge L. Del Cueto Chocano, Université libre de Bruxelles, Belgium

Dr. Stefan Gerth, Fraunhofer Institute for Integrated Circuits IIS, Germany

Prof. Dr. em. Cormac Ó Gráda, University College Dublin, Ireland

Dr. Heli Huhtamaa, University of Bern, Switzerland

Dr. Duncan Keenan-Jones, University of Queensland, Australia

Prof. Dr. Natsuko I. Kobayashi, University of Tokyo, Japan

Dr. Elaine Kuanhui Lin, National Taiwan Normal University, China

Prof. Dr. Alan Matthews, Trinity College Dublin, Ireland

Dr. Taraka Ramji Moturu, Université libre de Bruxelles, Belgium

Dr. Rathana Peou Norbert-Munns, Utrecht University, The Netherlands and FAO Regional Office Asia and the Pacific

Prof. Dr. Seth Murray, Texas A&M University, USA

Prof. Dr. Antonella Pasqualone, University of Bari 'Aldo Moro', Italy

Prof. Dr. Andrea Pieroni, University of Gastronomic Sciences, Italy

Dr. Mauro Rizzetto, American School of Classical Studies at Athens (ASCSA), Greece

Prof. Dr. Hatem Rouached, Michigan State University, USA

Dr. Philippa Ryan, Royal Botanic Gardens, Kew, London, UK

Dr. Pauline Scheelbeek, London School of Hygiene & Tropical Medicine, UK

Prof. Dr. Michela Schiavon, University of Turin, Italy

Prof. Dr. Fernando Segato, University of São Paulo, Brazil

Prof. Dr. em. Peter Shewry, University of Reading, UK

Prof. Dr. Christopher Vincent, University of Florida, USA

Prof. Dr. Fiona Williamson, Singapore Management University

Dr. Marco Zarattini, Université libre de Bruxelles, Belgium



BrIAS FELLOWS 2022-2023

Dr. Ehab Abdulbur-Alfakhory, Vrije Universiteit Brussel, Belgium

Dr. Antonino Biundo, Università degli Studi di Bari Aldo Moro, Italy

Dr. Bhaswati Bhattacharya, Göttingen University, Germany

Prof. Dr. Jessica E. C. Dijkman, Utrecht University, The Netherlands

Prof. Dr. Joseph Dubrovsky, Universidad Nacional Autónoma de México, Mexico

Dr. Marie-Cécile Dupas, Université libre de Bruxelles, Belgium

Dr. Mennat-Allah El Dorry, Ain Shams University, Egypt

Dr. María de la Fuente Ruiz, Université libre de Bruxelles, Belgium

Prof. Dr. María d. P. García-Aparicio, University of Alcalá, Spain

Dr. Lien González Pérez, Universidad de Las Américas (UDLA), Ecuador

Prof. Dr. Matthew Hannaford, University of Lincoln, UK

Ir. Annette Hansen, Vrije Universiteit Brussel, Belgium

Dr. Philippe Hinsinger, INRAE, Montpellier, France

Prof. Dr. Natusko I. Kobayashi, University of Tokyo, Japan

Prof. Dr. Beat Kumin, University of Warwick, UK

Dr. Leslie Lipper, University of California, Berkeley, USA

Dr. Nassirou Mahamadou Adamou, Université Abdou Moumouni de Niamey, Niger

Prof. Dr. Hiro Masunaga, Nagoya University, Japan

Prof. Dr. Antonia Matalas, Harokopio University of Athens (HUA), Greece

Dr. Alex McAlvay, Institute of Economic Botany, New York Botanical Garden, USA

Prof. Dr. Laura Motta, University of Michigan, Ann Arbor, USA

Dr. Rathana Peou Norbert-Munns, Utrecht University, The Netherlands and FAO Regional Office Asia and the Pacific

Prof. Dr. Dawn Nagel, University of California, Riverside, USA

Prof. Dr. Antonella Pasqualone, Università degli Studi di Bari Aldo Moro, Italy

Dr Ankit Praman, Université libre de Bruxelles, Belgium

Dr. Pierre Purseigle, University of Warwick, UK

Dr. Rajeshwari Rajann, Bengaluru University of Horticultural Sciences, India

Dr. Mauro Rizzetto, Ca'Foscari University of Venice, Italy


Prof. Dr. Pelin Kocatürk Schumacher, Norwegian University of Life Sciences, Norway

Dr. Devi Taelman, Vrije Universiteit Brussel, Belgium

A.M. Nasir Uddin, ActionAid, Bangladesh

Dr. Vicka Versele, Vrije Universiteit Brussel, Belgium

Dr. Jehan Waeytens, Université libre de Bruxelles, Belgium

VUB  **INTERDISCIPLINARY
HISTORICAL FOOD STUDIES
RESEARCH GROUP**

ULB BriAS VUB

Eat Like an Egyptian
Interdisciplinary insights into food and (mal)nutrition in Roman Egypt.

Prof. Dr. ir. Frits Heinrich

Frits.Heinrich@vub.be

Courtesy of BriAS Honorary Fellow Professor Dr. ir. Frits Heinrich

BriAS activities May 2021 – June 2023

May 2021

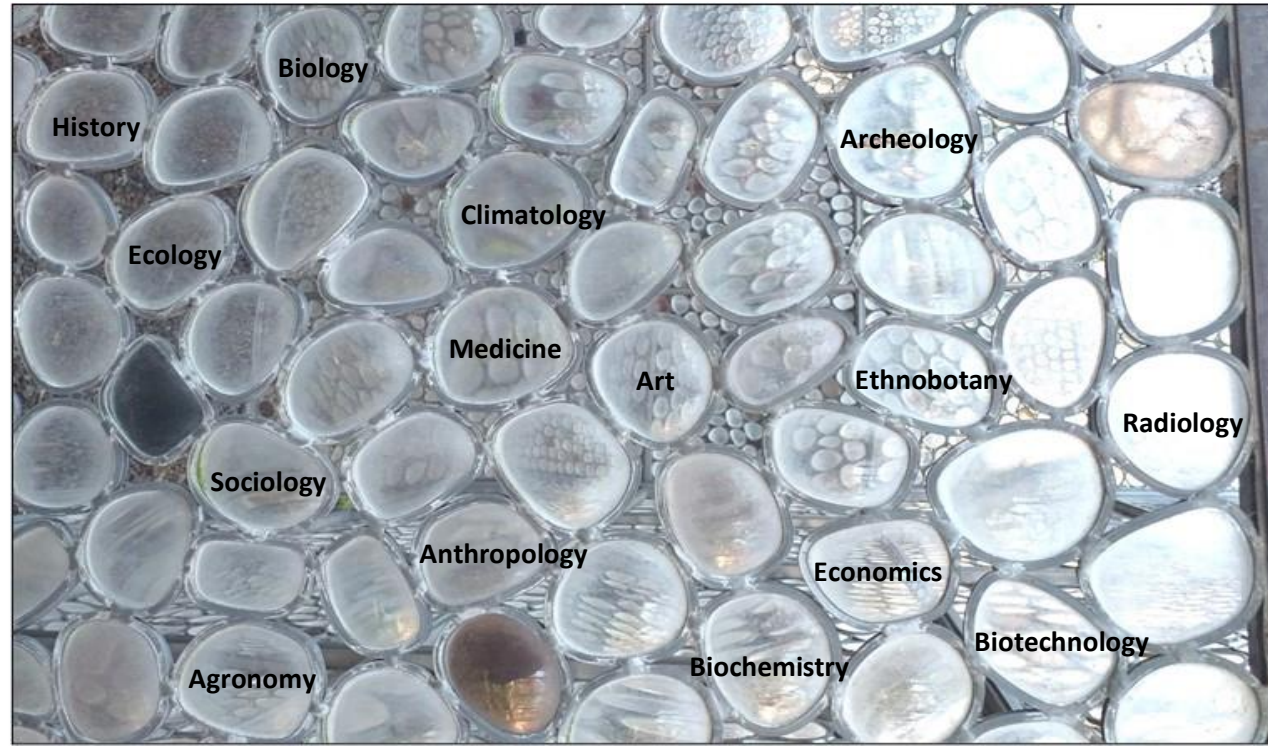
- 10 May 2021 BriAS Talk
 - **Eat like an Egyptian: Interdisciplinary insights into food and (mal)nutrition in Roman Egypt**, Professor Dr. ir. Frits Heinrich (VUB)
- 12 May 2021 BriAS Talk
 - **Food for plants - waste for food?** Professor Dr. Christian Hermans and Professor Dr. David Cannella (ULB)

September 2021

- 28 September 2021 BriAS Workshop
 - **Diet, Health and Nutrition. Perspectives from the Past.**

November 2021

- 12 November 2021 BriAS Talk
 - **Biostimulants**, ir. Guillaume Wegria (Fyteko)
- 17 November 2021 BriAS Talk
 - **Alimentation, élevage et émergence de maladies à potentiel pandémique: recherche, expertise et communication**, Professor Dr. Marius Gilbert (ULB)
- 17 November 2021 BriAS Talk
 - **Voeding: Verlosser of Venijn?** Professor Dr. Elisabeth De Waele (VUB/UZ Brussel)
- 24 November 2021 BriAS Talk
 - **Pain inventu, pain perdu?** Professor Dr. Frédéric Debaste (ULB)



Courtesy of BriAS Honorary Fellow Professor Christian Hermans

- 24 November 2021 BrIAS Talk
 - **The EU's Farm to Fork Strategy: the difficult road towards a European food policy**, Professor Dr. Erik Mathijs (KU Leuven)

December 2021

- 15 December 2021 BrIAS Forum:
 - **Long term, evidenced-based governance for protein diversification.**
- 16 December 2021 BrIAS Talk
 - **Photonics enhanced sensors for food safety screening**, Professor Dr. ir. Wendy Meulebroeck (VUB)

January 2022

- 19 January 2022 BrIAS Workshop
 - **Transdisciplinarity in agricultural and food sciences.**
- 20 January 2022 BrIAS Workshop
 - **Eating From the Wild. Interdisciplinary Perspectives on Wild Plant Use and Foraged Food.**
- 26 January 2022 BrIAS Forum
 - **Climate-smart agriculture for food security.**
- 27 January 2022 BrIAS Talks
 - **Agriculture and land use in EU climate policy**, BrIAS Fellow Professor Dr. Alan Matthews (Trinity College Dublin, Ireland)
 - **Can we improve crop photosynthesis to increase sustainable crop production?** BrIAS Fellow Professor Dr. Mark Aarts (Wageningen University and Research, The Netherlands)
- 31 January 2022 BrIAS Forum
 - **Funtastic food Hemp: big opportunities from an ancient weed.**

Was provisioning for bread production different to provisioning for beer production?

Ceramic Manufacture

Beer Brewing

Grain management and Bread Production

Bread Baking

Accounting

Courtesy of Professor Leslie Anne Warden
Line drawing by IFAO, Institut français d'archéologie orientale

February 2022

- 2 February 2022 BrIAS Talk by special guest Professor Dr. Randall Wisser (INRAE, Montpellier, France):
 - **Deconstructing and bypassing maladaptation to mine diversity in maize.**
- 3 February 2022 BrIAS Talks
 - **Pizza: an ancient product in constant evolution**, BrIAS Fellow Professor Dr. Antonella Pasqualone (University of Bari, Italy)
 - **Opportunism and complexity in biology and crop improvement: from discovery to prediction with genomics and phenomics**, BrIAS Fellow Professor Dr. Seth Murray (Texas A&M University, United States of America)
- 7 February 2022 BrIAS Talks
 - **The health, environmental and resilience aspects of sustainable diets in Europe – Synergies and trade-offs**, BrIAS Fellow Professor Dr. Pauline Scheelbeek (London School of Hygiene and Tropical Medicine, United Kingdom)
 - **Selenium biofortification: strategies, main outcomes and relevance for human health**, BrIAS Fellow Michela Schiavon (University of Turin, Italy)
- 8 February 2022 BrIAS Workshop
 - **Upcycled food: challenges and opportunities.**
- 9 February 2022 BrIAS Workshop
 - **Photosynthesis and primary production.**
- 11 February 2022 BrIAS Workshop
 - **Mineral nutrition of plants – implication for human health.**
- 15 February 2022 BrIAS Forum
 - **Implications of the European Green Deal for agri-food trade with developing countries.**
- 16 February 2022 BrIAS Forum
 - **The past, present and future of food innovation.** Guest speakers: Dr. Adam Preslar (CTO, Hazel Technologies, Inc.), Dr. ir. Frédéric Debaste (Bioengineering School and Polytechnic School of Brussels, Université libre de Bruxelles), and Mr. Yannick Schandene (Co-Founder, Fermenthings).



Courtesy of BrIAS Fellow Mr. Nasir Uddin

- 17 February 2022 BrIAS Workshop
 - **What can we learn from the evolution of EU agricultural policy.**
- 23 February 2022 BrIAS Talk
 - **Extra Radiocesium contamination in agricultural products**, BrIAS Fellow Dr. Natsuko Kobayashi (University of Tokyo, Japan)
- 24 February 2022 BrIAS Talks
 - **Developing climate resilience agriculture policies in Asia Pacific, framing the futures food system**, BrIAS Fellow Dr. Rathana Peou Norbert-Munns (Bangladesh Centre of Advanced Studies/CCAFS, Thailand)
 - **Evolution and agronomy vs. disease globalization and climate change: How we can leverage ecological niches to help citrus production survive**, BrIAS Fellow Professor Dr. Christopher Vincent (University of Florida, United States of America)

March 2022

- 1 March 2022 BrIAS Forum
 - **Sustainable food systems in Europe and beyond: what to expect?**
- 3 March 2022 BrIAS Talks
 - **Diversity in composition of modern and older types of wheat**, BrIAS Fellow Professor Dr. Peter Shewry (Rothamsted Research & University of Reading, United Kingdom)
 - **Climate resilient cereal crops in Europe**, Dr. Jorge del Cueto Chocano (Crop Production and Biostimulation Laboratory (CPBL), Université libre de Bruxelles, Belgium)
- 8 March 2022 BrIAS Talks
 - **Fostering EU food democracy**. BrIAS Fellow Professor Dr. Jeroen Candel (Wageningen University and Research, The Netherlands)
 - **System genetics to decipher how plants make sense of multiple environmental cues**. BrIAS Fellow Professor Dr. Hatem Rouached (Michigan State University, United States of America)
- 16 March 2022 BrIAS Workshop
 - **Biostimulation and Plant Protection.**

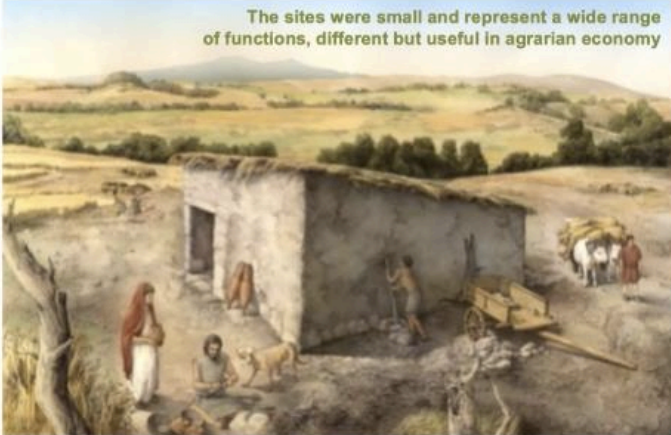
www.sas.upenn.edu/romanpeasants

Agriculture and local economies of Roman central Italy (1st BC-AD 1st, up to AD 5th)

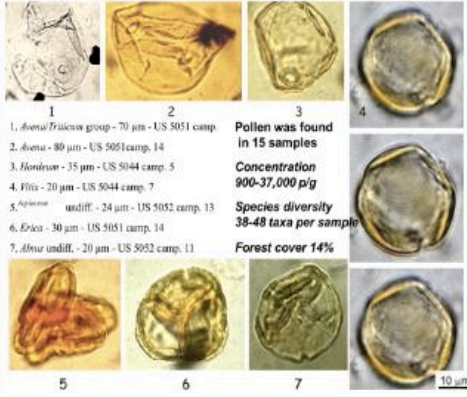
THE ROMAN PEASANT PROJECT

Information on the land-use, agrarian landscape and site function to illuminate the complexity of Roman peasant life-ways (Bowes et al 2020)

The sites were small and represent a wide range of functions, different but useful in agrarian economy



Roman sites were built in patches of **fields and pastures** simultaneously present in the territory intensively exploited and managed by farmers and peasant people.



1, *Avena Práicow* group - 70 µm - US 5051 camp.
 2, *Avena* - 80 µm - US 5051 camp. 14
 3, *Hordeum* - 35 µm - US 5044 camp. 5
 4, *Frits* - 20 µm - US 5044 camp. 7
 5, *Abies* undiff. - 24 µm - US 5052 camp. 13
 6, *Erica* - 30 µm - US 5051 camp. 14
 7, *Abies* undiff. - 20 µm - US 5052 camp. 13

Pollen was found in 15 samples
Concentration 900-37,000 p/g
Species diversity 38-48 taxa per sample
Forest cover 14%

Palynology of Mediterranean archaeological sites shows a **multifunctional land use** (long tradition) even during the Roman period

22

Bowes K 2020 – University of Pennsylvania Museum of Archaeology and Anthropology

Courtesy of Professor Anna Maria Mercuri

- 17 March 2022 BIAS Talks
 - **Agriculture, risk and resilience strategies among early farmers (6th to 3rd millennium BC) in the Northwestern Mediterranean.** BIAS Fellow Professor Dr. Ferran Antolín (Deutsches Archäologisches Institut, Germany)
 - **Exploiting the natural variation in the model plant Arabidopsis for improving nutrient usage in crops.** BIAS Fellow Dr. Taraka Ramji Moturu (Crop Production and Biostimulation Laboratory (CPBL), Université libre de Bruxelles, Belgium)
- 24 March 2022 BIAS Talks
 - **Nanotechnology in food industry.** BIAS Fellow Dr. Gabriela Berto (University of São Paulo, Brazil)
 - **Genetically engineered microorganisms in food technology.** BIAS Fellow Professor Dr. Fernando Segato (University of São Paulo, Brazil)
- 30 March 2022 BIAS Forum
 - **New frontiers of food production and food waste upcycling.** Guest speakers: Julien Jacquet (CEO, Permafungi), Prof. Dr. em. Max Mergeay (Université libre de Bruxelles and SCK CEN, Belgium), and Dr. ir. Natalie Leys (Space Life Science Research program at SCK CEN, Belgium)
- 31 March 2022 BIAS Talks
 - **Connecting past to present – a long term view of changing crops, agriculture, and foodways in northern Sudan.** BIAS Fellow Dr. Philippa Ryan (Royal Kew Botanical Gardens, United Kingdom)
 - **Gastronomy in the Capital of Europe: a Very Short History.** Professor Dr. em. Peter Scholliers (Vrije Universiteit Brussel, Belgium)

April 2022

- 5 April 2022 BIAS Workshop Part 1
 - **Long-term perspectives on Foodways & Agriculture in Northeast Africa.**
- 6 April 2022 BIAS Workshop Part 2
 - **Long-term perspectives on Foodways & Agriculture in Northeast Africa.**

Closing event of BrIAS Spring 2022 Program:
*The past, present, and future of food, climate,
and sustainability*



Closing session of BrIAS
The BrIAS Team
Vrije Universiteit Brussel &
Université libre de Bruxelles



Mr. Raschad Al-Khafaji
Director
FAO Liaison Office with the
European Union and Belgium



Dr. Rathana Peou Norbert-Munns
Utrecht University
Copernicus Center
FAO Regional Office Asia
and the Pacific

14:00-16:00 CET | Thursday 14 April 2022 | ULB-Plaine Salle Solvay, Building NO, 5th Floor & [Teams](#)



- 7 April 2022 Brias Talks
 - **Animal resources and environments in the south-eastern Mediterranean: shaping food production in the Graeco-Roman period**, Brias Fellow Dr. Mauro Rizzetto (American School of Classical Studies at Athens, Greece)
 - **System biology approach to redesign root morphology in oilseed rape**, Brias Fellow Dr. Claudia Chiodi (Crop Production and Biostimulation Laboratory (CPBL), Université libre de Bruxelles, Belgium)
- 12 April 2022 Brias Talks
 - **Vaccine-like alternative method for plant protection: stimulating the innate immune system of plants**, Brias Fellow Dr. Marco Zarattini (Crop Production and Biostimulation Laboratory (CPBL), Université libre de Bruxelles, Belgium)
- 13 April 2022 Brias Workshop
 - **The long-term influence of Imperialism, Colonialism and Acculturation on Agricultural and Dietary change in Africa.**
- 14 April 2022 Brias Talks
 - **Closing session** by the Brias Team, Dr. Raschad Al-Khafaji Director, FAO Liaison Office with the European Union and Belgium, and Dr. Rathana Peou Norbert-Munns, FAO Regional Office Asia and the Pacific.
- 26 April 2022 Brias Workshop
 - **Foresight planning and scenarios development for resilient food systems.**

June 2022

- 16 June 2022 Brias Workshop Part 1
 - **Climate Change & Society: Perspectives from Past & Present.**
- 17 June 2022 Brias Workshop Part 2
 - **Climate Change & Society: Perspectives from Past & Present.**



Courtesy of Brias Fellow Dr. Mennat-Allah El Dorry

January 2023

- 19 January 2023 BrIAS Talks
 - **Plant Roots: The hidden half of plants: why to study them?** BrIAS Fellow Professor Dr. Joseph Dubrovsky (Universidad Nacional Autónoma de México, Mexico).
 - **A taste of History: A walk through Egyptian Food Archaeology**, BrIAS Fellow Dr. Mennat-Allah El Dorry (Ain Shams University, Egypt).
- 24 January 2023 BrIAS Workshop
 - **Root biology and agriculture ecological system – Part I.**
- 26 January 2023 BrIAS Talk
 - **Enzyme Promiscuity for the Sustainable Polymer Industry**, BrIAS Fellow Dr. Antonino Biundo (Università degli Studi di Bari Aldo Moro, Italy).

February 2023

- 2nd February 2023 BrIAS Talk
 - **Development of the diffusive gradients in thin films technique (DGT) for platinum (Pt), palladium (Pd), and rhodium (Rh) in natural water**, BrIAS Fellow Dr. Ehab Abdulbur-Alfakhory (Vrije Universiteit Brussel, Belgium).
- 7th February 2023 BrIAS Workshop
 - **Interdisciplinary approaches to food in NE Africa**



Courtesy of BriAs Fellow Professor Jessica Dijkman

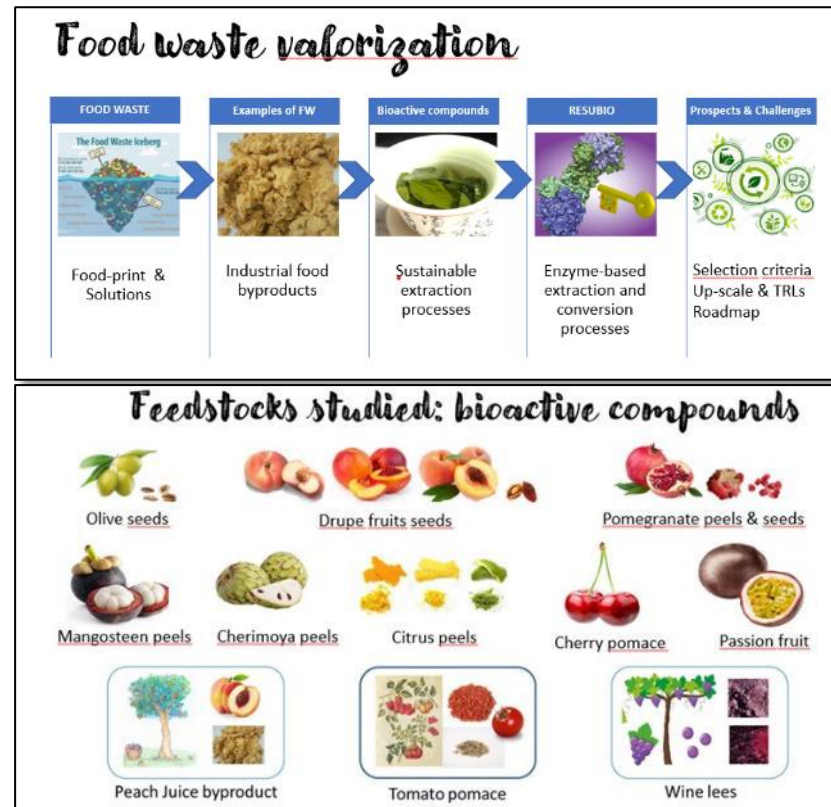
- 9th February 2023 BrIAS Workshop
 - **C4Future – Fortifying and enhancing resilience in C4 crops for current and future climate change adversities.**
BrIAS Talks
 - **Traditional knowledge, cultural ecosystems, and crop diversity for food security in a changing climate,** BrIAS Fellow Dr. Alex McAlvay (Institute of Economic Botany, New York Botanical Garden, USA).
 - **Does *Galleria mellonella* really bio-assimilate polyethylene?** BrIAS Fellow Dr. Jehan Waeytens (Université libre de Bruxelles, Belgium)
- 14th February 2023 BrIAS Workshop
 - **Remembering how to live here: Historical and traditional agricultural practices for climate change resilience.**
- 16th February 2023 BrIAS Talks
 - **Tracing the growth of the Global Agri-Food Trade Network: Structure and evolution since 1986,** BrIAS Fellow Dr. Marie-Cécile Dupas (Université libre de Bruxelles, Belgium)
 - **Lifestyle during the transition to parenthood, need for a multifactorial and family-based approach,** BrIAS Fellow Dr. Vická Versele (Vrije Universiteit Brussel, Belgium).
- 23rd February 2023 BrIAS Talks
 - **Biobased fertilizers towards circular economy,** BrIAS Fellow Professor Dr. Pelin Kocatürk Schumacher (Norwegian University of Life Sciences, Norway)
 - **Opportunities and challenges to mitigate the emerging pathogens exposed to adaptation against climate change,** BrIAS Fellow Dr. Rajeshwari Rajanna (Bengaluru University of Horticultural Sciences, India).



Courtesy of Professor Darlene L. Brooks Hedstrom

March 2023

- 2nd March 2023 BriAS Workshop
 - **Radioactive contamination in agriculture**, with BriAS Fellow Professor Dr. Natusko I. Kobayashi (University of Tokyo, Japan).
- 3rd March 2023 BriAS Workshop
 - **Fermented food and health**
- 7th March 2023 BriAS Talks
 - **Society and Climate in Roman Antiquity: Archaeological and Paleoclimatological Data from Central Italy**, BriAS Fellow Dr. Devi Taelman (Vrije Universiteit Brussel, Belgium).
 - **Role of poplar UDP-glycosyltransferase 72 family in lignification**, BriAS Fellow Dr. Nassirou Mahamadou Adamou (Université Abdou Moumouni de Niamey, Niger).
- 8th March 2023 BriAS Welcoming ceremony
 - **Welcome** by the Rector of the ULB, Annemie Schaus and the Rector of the VUB Jan Danckaert
 - **Presentation of BriAS** by its co-directors Frank Deconinck and Serge Jaumain
 - **Short presentations of the research of the 2023 Fellows:** Mennat-Allah El Dorry (Ain Shams University, Egypt) and Philippe Hinsinger (French National Institute for Agricultural Research)
 - **Announcement of the BriAS theme for next year**
- 9th March 2023 BriAS Talks
 - **Root foraging and mining strategies – key strategies for the agroecological transition in a changing climate**, BriAS Fellow Dr Philippe Hinsinger (INRAE, Montpellier, France).
 - **The two- or three- step milk revolution**, BriAS Fellow Professor Dr Antonia Matalas (Harokopio University of Athens (HUA), Greece).
- 10th March 2023 BriAS Workshop
 - **Coffee Production in India: Problems & Prospects.**

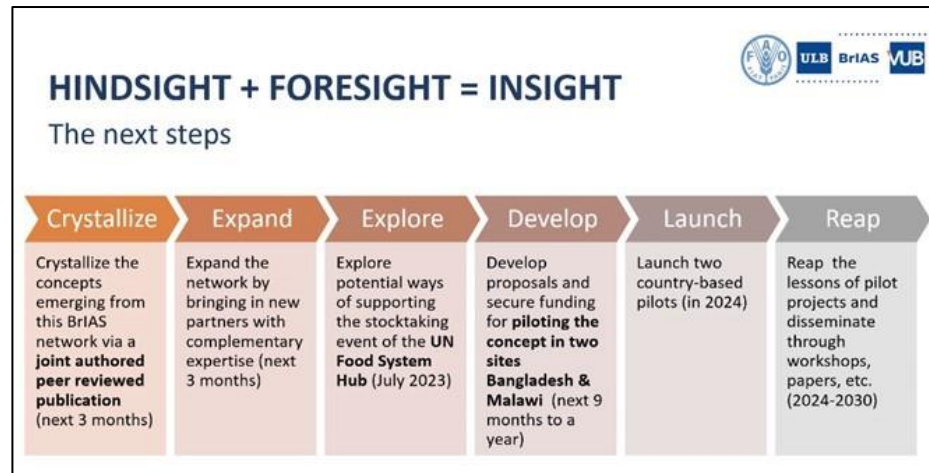


Courtesy of BriAs Fellow Professor Dr. Maria del Prado García Aparicio

- 14th March 2023 BrIAS Workshop
 - **Root biology and agriculture ecological system – Part II.**
- 16th March 2023 Brias Talks
 - **Food and urban resilience in the era of the great war**, BrIAS Fellow Dr. Pierre Purseigle (University of Warwick, UK).
 - **Coffee and Sustainability: A view from India**, BrIAS Fellow Dr. Bhaswati Bhattacharya (Göttingen University, Germany).
- 21st March 2023 BrIAS Workshop
 - **Biostimulants**, with BrIAS Fellow Professor Dr. Lien González Pérez (Universidad de las Américas (UDLA), Quito, Equator).

BrIAS Workshop

 - **Genomic strategies to bring innovation in Public health to improve surveillance.**
- 23rd March 2023 Brias Talks
 - **Tracing the history of food systems in eastern Africa: drivers and implications for food security**, BrIAS Fellow Dr. Matthew Hannaford (University of Lincoln, UK).
 - **Food waste: from environmental problem to multiple benefits**, BrIAS Fellow Professor Dr. Maria del Prado García Aparicio (University of Alcalá, Spain).
- 24th March 2023 BrIAS Workshop
 - **Food production, redistribution, and consumption in the Venetian Lagoon between Antiquity and the Contemporary Era.**



Courtesy of BriAs Fellow Dr. Rathana Peou Norbert-Munns

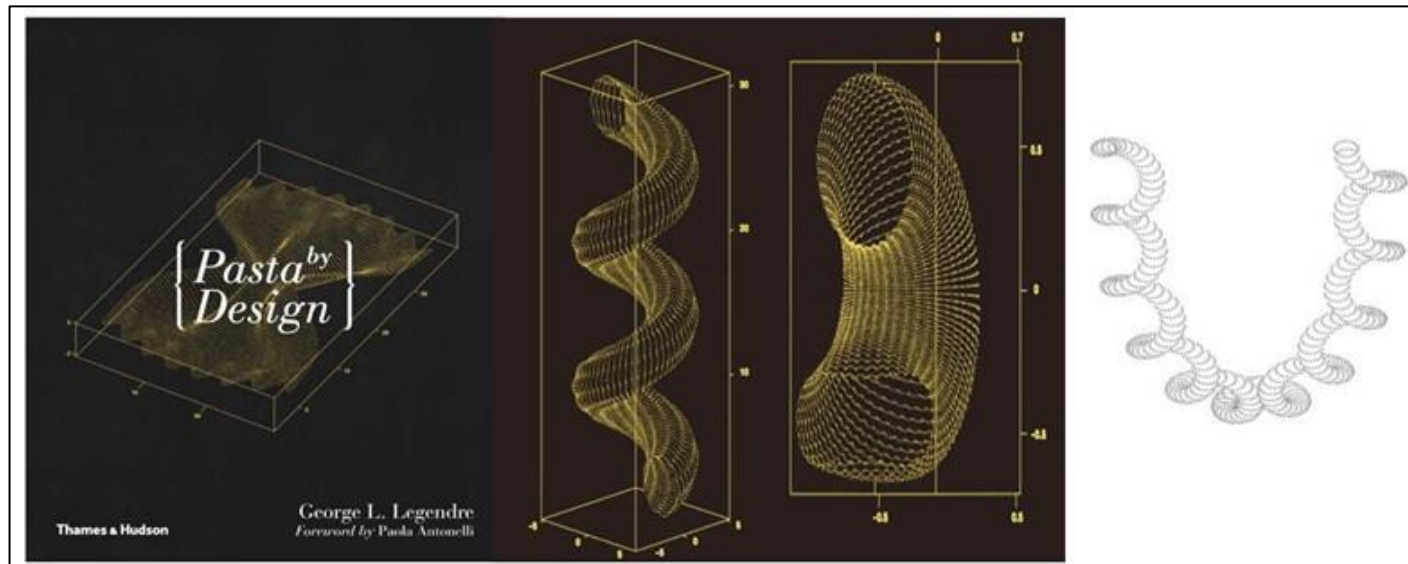
- 28th March 2023 BriAS Workshop
 - **Fractionation technology.**
Brias Talks
 - **How does climate change affect agricultural transformation for poverty reduction?** BriAS Fellow Dr. Leslie Lipper (University of California, Berkeley, USA).
 - **Animals in the Roman-early medieval transition. From Britannia to England, from Venetia to the Venetian Lagoon,** BriAS Fellow Dr. Mauro Rizzetto (Ca'Foscari University of Venice, Italy).

- 30th March 2023 Brias Talks
 - **Coping with food crisis in premodern towns,** BriAS Fellow Professor Dr. Jessica Dijkman (Utrecht University).
 - **Learning from the futures; Foresight for Agri-food system transformations in Asia and Pacific,** BriAS Fellow Dr. Rathana Peou Norbert-Munns (Utrecht University, The Netherlands and FAO Regional Office Asia and the Pacific).
BriAS Writeshop
 - **Reimagining food systems: Enlarging and enriching time horizons for informed decision making.**

April 2023

- 3rd April 2023 Brias Talks
 - **Challenges and opportunities in pasta innovation,** BriAS Fellow Professor Dr. Antonella Pasqualone (University of Bari Aldo Moro, Italy).
 - **How much is too much? Negotiating early modern drink consumption,** BriAS Fellow Professor Dr. Beat Kumin (University of Warwick, UK).

- 4th April 2023 BriAS Workshop
 - **Olds plants for new uses: a journey through selection, domestication and economics of crop species for more sustainable or resilient food systems.**



Courtesy of BriAs Fellow Professor Dr. Antonella Pasqualone

- 6th April 2023 Brias Talks
 - **The past, present and future of food, climate and sustainability**, Brias Fellow Nasir Uddin (ActionAid, Bangladesh).
 - **Tropical convection and anvil clouds: do they moderate climate change, or accelerate it?** , Brias Fellow Professor Dr. Hirohiko Masunaga (Nagoya University, Japan)
- 11th April 2023 Brias Workshop
 - **Carbon and climate change – From the atmosphere to the bottom of the ocean.** 13th April 2023
 Brias Talks
 - **Glacio-hydrological modelling: global importance and impact**, Brias Fellow Dr. Ankit Pramanik (Université libre de Bruxelles, Belgium).
 - **Food systems in early cities: a sustainability issue?** Brias Fellow Professor Dr. Laura Motta (University of Michigan, Ann Arbor, USA).
- 14th April 2023 Brias Workshop
 - **Re-imagining agri-food system transformations: Enlarging and enriching time horizons.**
- 17th April 2023 Brias Workshop
 - **Dietary dilemmas: Influences on consumer ‘choice’ in preindustrial societies.**
- 18th April 2023 Brias Workshop
 - **The circadian clock and /or time of day regulation of cellular processes in a changing climate.**
- 19th April 2023 Brias Workshop
 - **Flatbreads: History, innovation and sustainability.**
- 20th April 2023 Brias Talks
 - **Time and resilience: Efforts to design climate-smart plants**, Brias Fellow Professor Dr. Dawn Nagel (University of California, Riverside, USA).
 - **Methane hydrates and anthropogenic ocean warming: Is there a potential hydrate-carbon cycle-climate feedback?** Brias Fellow Dr. Maria De La Fuente Ruiz (Université libre de Bruxelles, Belgium).

Closing Ceremony of the BrIAS 2022-2023 Program:
*The past, present, and future of food, climate,
and sustainability*



The BrIAS Team



Mr. Raschad Al-Khafaji
Director
FAO-Brussels Liaison Office with
the European Union and Belgium



Mr. Olav Hofland



Dr. Maureen Duru
The Food Bridge



14:00-16:30 CET | Thursday 27 April 2023 | ULB-Plaine Salle Solvay, Building NO, 5th Floor & 

- 21st April 2023 BrIAS Workshop
 - **Agriculture, climate and society in Italy 2000 BCE – 1000 ACE.**
- 25th April 2023 BrIAS Forum
 - **Getting antimicrobial therapy back on track.**
- 27th April 2023 BrIAS Closing Event
 - **The Past, Present and Future of Food, Climate, and Sustainability**, the BrIAS team, Mr. Raschad Al-Khafaji, Director of FAO-Brussels Liaison Office with The European Union and Belgium, Dr. Maureen Duru, Director and founder of The Food Bridge, and Mr. Olav Hofland, PhD candidate at the European University Institute.



Courtesy of Dr. Maureen Duru

AFFILIATION OF INVITED SPEAKERS

Universities and Scientific Research Institutions

- Aarhus University, Denmark
- Ain Shams University, Egypt
- American University of Beirut, Lebanon.
- Bengaluru University of Horticultural Sciences, India
- Belgian Nuclear Research Center (SCK CEN), Belgium
- Brandeis University, USA.
- Brunel University, UK
- Ca' Foscari University of Venice, Italy
- Carlsberg Research Laboratories, Copenhagen, Denmark
- Catholic University of Sacro Cuore, Italy
- Celignis Analytical, Limerick University, Ireland
- Center of Archaeological Research in Metz, France
- CNRS Paris, France
- Colorado State University, USA
- Cornell University, USA
- Cyprus University of Technology
- Czech University of Life Sciences Prague, Czech Republic
- Drexel University, USA
- Erasmus School of Social and Behavioural Sciences, The Netherlands
- Erasmus University Rotterdam, The Netherlands
- European Space Agency, European organisation
- European University Institute, Florence, Italy
- Flanders Marine Institute, Belgium
- Flanders Research Institute for Agricultural, Fisheries and Food (ILVO), Belgium
- Forschungszentrum Jülich, Germany
- Fraunhofer Institute for Integrated Circuits IIS, Fürth, Germany
- Gabii Project, USA.
- German Institute for Global and Area Studies, Germany
- German Institute for Food Technology, Germany
- Ghent University, Belgium
- Goce Dalchev University – Stip, North Macedonia.
- Göttingen University, Germany
- Harokopio University of Athens (HUA), Greece
- Helmholtz Centre for Environmental Research – UFZ, Germany
- IBMCP, Valencia, Spain
- INRAE, Paris, France
- INRAE, Dijon, France
- INRAE, Nantes, France
- INRAE, Montpellier, France
- INRAE, Université d'Angers, Angers, France
- Institute of Agrochemistry and Food Technology (IATA-CSIC), Spain
- Institute of Economic Botany, New York Botanical Garden, USA

- International Crops Research Institute for the Semi-Arid Tropics, India
- Instituto de Ciencia y Tecnología de Alimentos y Nutrición, Spain
- International Hellenic University, Thessaloniki, Greece
- Katholieke Universiteit Leuven, Belgium
- Leiden University, The Netherlands
- Ludwig Maximilian University, Germany
- Manchester University, UK
- Marburg University, Germany
- Max Planck Institute for Plant Breeding and Research, Germany
- Michigan State University, USA
- Michigan Technological University, USA
- Nagoya University, Japan
- National History Museum Paris, France
- Naturalis Biodiversity Center, Leiden, The Netherlands.
- Newcastle University, UK
- Norwegian University of Life Sciences, Norway
- Palacky University, Olomouc, Czech Republic
- Roanoke College, Virginia, USA.
- Saint Joseph University of Beirut, Lebanon
- SciencesPo Paris, France
- Sciensano, Belgium
- Simon Fraser University, Canada
- Sivas University of Science and Technology, Sivas, Turkey
- Sorbonne Université, France.
- Technische Universität Wien, Austria
- The Ohio State University, USA
- Trinity College, Dublin
- Universidad de Las Américas (UDLA), Ecuador
- Universidad Nacional Autónoma de México, Mexico
- Universidade de Coimbra, Portugal
- Università degli Studi di Bari Aldo Moro, Italy
- Università di Modena e Reggio Emilia, Italy
- Université Abdou Moumouni de Niamey, Niger
- Université Catholique de Louvain-la-Neuve, Belgium
- Université de Liège, Gembloux Agro-BioTech, Belgium
- Université de Namur, Belgium
- Université Grenoble Alpes, France.
- Université Libre de Bruxelles, Belgium
- Université Paris-Saclay, INRAE, France
- University College London, UK
- University of Alcalá, Spain
- University of Amsterdam, The Netherlands
- University of Antwerp, Belgium
- University of Barcelona, Spain
- University of Bern, Switzerland
- University of Bonn, Germany
- University of California, Los Angeles, USA
- University of California, Riverside, USA
- University of Copenhagen, Denmark
- University of East Anglia, UK
- University of Geneva, Switzerland
- University of Guelph, Canada
- University of Heidelberg, Germany
- University of Hohenheim, Germany
- University of Hull, UK
- University of Lincoln, UK

- University of Manchester, UK
- University of Manitoba, Winnipeg, Canada
- University of Maryland, College Park, USA.
- University of Michigan, Ann Arbor, USA
- University of Naples L'Orientale, Italy
- University of Oxford, UK
- University of Padova, Italy
- University of Pisa, Italy.
- University of Queensland, Australia
- University of Rostock, Germany
- University of São Paulo, Brasil.
- University of Sussex, UK
- University of Tokyo, Japan
- University of Toronto, Canada.
- University of Warwick, UK
- University of York, UK
- University of Zagreb, Zagreb, Croatia
- Utrecht University, The Netherlands
- Venice International University, Italy
- Vrije Universiteit Brussel, Belgium
- Wageningen Center for Development Innovation, The Netherlands
- Wageningen University & Research, The Netherlands
- Wye College University of London, UK

Policy Centres/Institutions

- ActionAid, Bangladesh
- European Centre for Development Policy Management
- Directorate of the French Treasury, France
- Council for Agricultural Research and Economics (CREA)
- German Agency for International Development, Germany
- Agricultural Business Chamber of South Africa, South Africa
- Alliance for a Green Revolution in Africa, South Africa
- Bureau for Food and Agricultural Policy in South Africa, South Africa
- FAO-Brussels Liaison Office with The European Union and Belgium
- FAO Regional Office Asia and the Pacific, Thailand
- FAO, Italy
- European Commission, Belgium
- EAT Forum, Norway
- The Food Foundation
- Agroscope, Switzerland
- NBFC, National Biodiversity Future Center, Palermo, Italy
- The Food Bridge vwz, Belgium
- Foresight4Food Initiative, Oxford University, UK
- Systems Innovation Copenhagen Hub, Denmark

Companies

- LaavaTech, Estonia
- SenseGrass (India, USA, France, Chile)
- CleanTech Region Solutions, Sweeden
- European Industrial Hemp Association,European Organisation
- CANBE CBD FARM, Belgium
- Hazel Technologies, Inc. (USA, UK)
- Permafungi, Belgium
- Fermenthings, Belgium
- Co-op UK, UK
- Biotalys NV, Belgium
- FytoFend SA, Belgium
- Royal Botanical Gardens, Kew, UK
- Heritage Harvest Ltd., UK.
- CMD Biowin Agro Research- Keral, India
- WSSS Farmers Fairtrade Association, India
- Coffee Planter, Kodagu, India
- Fyteko SA, Belgium
- Apeha.Bio NV, Belgium
- Bio Base Europe Pilot Plant, Ghent, Belgium

Countries of BriAS Fellows and invited speakers

- Australia, Bangladesh, Belgium, Brazil, Canada, Croatia, Cyprus, Czech Republic, Denmark, Ecuador, Egypt, France, Germany, Greece, India, Ireland, Italy, Japan, Lebanon, Mexico, Niger, North Macedonia, Norway, Republic of Singapore, Spain, Switzerland, Syria, Taiwan (China), Thailand, The Netherlands, Turkey, United Kingdom, USA.

Beer Tasting



IMDO Pilot bakery, brewery and chocolaterie, VUB

Erasmus House



From left to right: Mennat-Allah El Dorry, Frank Deconinck, Natalia Doctor and Joseph Dubrovsky.



Waffle Testing

From left to right: Philippe Hinsinger, Lien González Pérez, Jessica E.C. Dijkman, and María del Prado García-Aparicio.

SOCIO-CULTURAL LIFE IN BRUSSELS

BriAS and its founding universities strive to break down the walls of ignorance and dogmatism by stimulating breakthrough research at the highest level of creativity, without any taboos or prejudice. This implies crossing boundaries and building bridges between disciplines as well as between the different socio-economic and cultural environments.

The Brussels Region is a patchwork of such environments. It offers a unique potential for creativity and ground-breaking progress and is therefore very attractive for high-level researchers, artists, designers and all those who want to help shape a harmonious and sustainable future.

By inviting high-level researchers and experts, and by organising activities, BriAS contributes to the prestige of the Brussels universities, region and influence zone. Next to its scientific activities, BriAS organised highly appreciated socio-cultural activities to let the Fellows feel the incredibly rich political, cultural, and scientific history and life in Brussels.

ACKNOWLEDGEMENTS

BriAS wishes to thank all colleagues, fellows, invited speakers and staff members whose contributions were essential to the success of the first pilot phase. In particular, we extend our gratitude to our rectors and the members of our accompanying committee, Marius Gilbert, Pieter Ballon, Daniele Carati and Mieke Gijsemans for their continuous support and advice.

BriAS gratefully acknowledges the financial support by ULB and VUB as well as contributions received from the Association Vinçotte Nuclear (AVN), the Food and Agriculture Organization of the United Nations (FAO), the doctoral school "Plant Science" of the F.R.S.-FNRS, the Warwick Food Global Research Priority and the individual speakers.

BrIAS 2023-2024 THEME

Following an independent evaluation of theme proposals, a jury composed of representatives of the European University Alliances CIVIS and EUTOPIA, of the VUB and ULB vice-rectors and of the directors of the R&D rectorates, BRIAS selected the topic of '**Sustainable Robotics**' for its 2023-2024 edition. As Robotic and Automated Devices become an integral part of our lives, it has become critical to understand if they can be truly durable and how they could optimally contribute to sustainability as a whole.

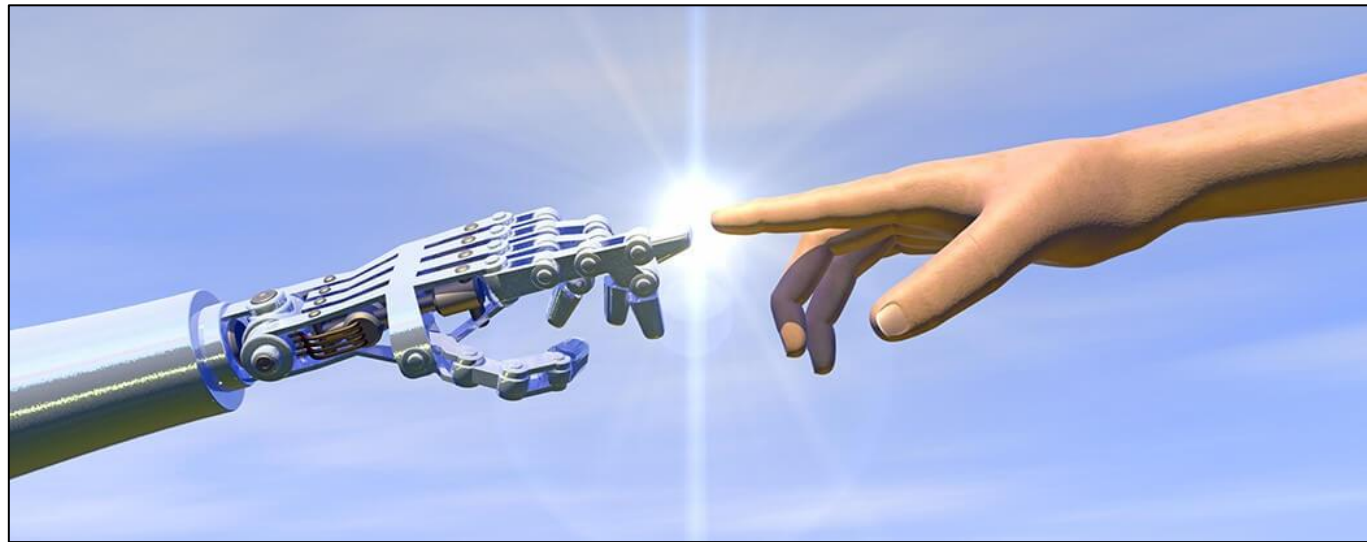
Five years ago, 93 countries agreed on the UN Sustainable Development Goals (SDGs), which are a blueprint to achieve a better and more sustainable future for Society. They address the global challenges, including those related to poverty, inequality, climate, environmental degradation, prosperity, peace, and justice.

Within the ULB and VUB, researchers have been actively working on understanding how Robotics could contribute to these SDGs. Many hopes have arisen. Social robots are under investigation since they could support social inclusion of individuals, in particular children with autism. Drones and automatic solutions are being developed for precision agriculture scenarios to reduce hunger and more sustainable agriculture. To lessen the burden on construction workers, new construction robots are developed. However, doubts and concerns were also raised. The sustainable production of robots is a major challenge in itself, due to the need for rare-earth elements. Their disposal leads to the creation of challenging e-waste at the end of the life cycle.

Robotics will have a great impact on our society/economy/environment and bring with them complex challenges. Hence, robots have the potential to speed up progress towards these developmental goals or be an inhibitor for them. Some believe robots are showing us the way towards a utopia, whilst others predict doom-laden scenarios. Moreover, there are tensions and contradictions between the SDGs. This also reflects in applications of robots. The enablers or inhibitors are also connected to hopes and fears. But it is we humans who invent and create technology and we should have the power (and responsibility) to shape our own future.

For three years we developed an ad-hoc interdisciplinary collaboration between different research fields, experts with affiliations from universities, the industry, and government - diverse in gender and geographical zones. This project took several actions with the community, summarized on www.sustainable-robotics.org.

The BRIAS project will allow our experts in Robotics, Control, Automation to go further, and achieve a dream: bringing together experts from across the world to tackle critical debates (from Food to War), explore challenges for the present and future challenges (from sustainable materials to life-cycle assessments).



https://stock.adobe.com/be_nl/images/

BriAS Program Directors 2023 – 2024

Prof. Dr. Emanuele Garone received his Ph.D. in Systems Engineering in 2009 from University of Calabria, Italy, where he also worked as a post-doc and appointed professor until 2010. In 2010 he joined the Service d'Automatique et d'Analyse des Systemes (SAAS) of the Université Libre de Bruxelles as a professor, where he leads one of the two research groups of the department. The main research focus of Prof. Garone is constrained control, with a particular emphasis on the development of low-computational cost schemes for nonlinear systems. The other theoretical interest of Prof. Garone concerns problems where optimal estimation problems are coupled with optimization and logistics aspects, including but not limited to optimal sensor selections, optimal planning to collect data, and control over unreliable channels. Prof. Garone is also very active in applying the system theoretic approach to a large spectrum of real-world applications, ranging to robotics and aeronautics control problems, to battery fast charge and to exotic applications in epidemiology and agronomy. He is author of more than 200 papers in peer-reviewed international journal and conferences and is associate editor for the AIAA Journal of Guidance, Control, and Dynamics.

Prof. Dr. ir. Bram Vanderborght obtained his PhD from the Vrije Universiteit Brussel in 2007. He performed research at JRL lab in AIST, Tsukuba (Japan) and did his post-doc researcher at the Italian Institute of Technology. Since 2009 he is professor at the VUB. He had an ERC starting grant and is currently coordinating three EU projects on smart and self-healing sustainable materials for soft robots. His research interests are human-robot collaboration for applications for health and manufacturing like exoskeletons, prostheses, social robots, drones and cobots. He is affiliated to Imec, Belgium, as scientific collaborator and leads Brubotics, the multidisciplinary Brussels Human Robotics Research Centre and affiliated with FARI, the AI centre for the common good. He co-initiated the Homo Roboticus project on keeping the human values central in a robotized world.

BriAS Academic co-directors 2023 - 2024

Prof. Dr. An Jacobs is a sociologist working at SMIT (Studies on Media, Innovation and Technology) since 2005. Currently she is a part time Associate Professor in the Department of Media and Communication Studies, teaching Interpretative research methods at the Vrije Universiteit Brussel (VUB) in Belgium. She is also Principal Investigator at the research centre SMIT. In this position, she is Program manager of the Data and Society program, and an interim unit leader of the research unit 'Digital Health and Work' in close cooperation with Imec (Belgian/Flemish R&D and innovation hub in nanoelectronics and digital technology).

Prof. Dr. Carl Mörch is co-director of FARI – AI for the Common Good Institute (ULB-VUB) and a member of the AI Ethics & Law Board of the Federal initiative AI4Belgium. He is also a member of the Ethics Special Interest Group of CLAIRE and a co-chair of CLAIRE Brussels office.

Carl aims at fostering high-quality applied projects related to AI, Data and Robotics that could serve the Brussels Region and its inhabitants. With FARI, he wants to support initiatives that can reinforce education around these technologies and could help bridge the gap with civil society. In 2020, Carl was awarded a Postdoctoral Fellowship by the International Observatory on the Societal Impacts of Artificial Intelligence and Digital Technologies (OBVIA). He was from 2020 to 2021 a postdoctoral fellow at the Université de Montréal and Mila – Québec Artificial Intelligence Institute. He is also a lecturer and adjunct professor at UQÀM (Montréal, Canada). His personal research work is oriented towards the concrete application of high-level ethical principles in applied domains. In general, he is interested in the responsible development of technologies in society, health care (Psychology and Dental Medicine in particular).

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Contact: brias@vub.be