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Re-UNITA RESEARCH Newsletter

Editorial

While Eastern European countries are usually praised for the distribution of women in academia, gender equality and equity are still far from being just. On the one hand, despite being more numerous, the number of women is drastically dropping as we get towards positions with more power and responsibility. On the other hand, we witness societal biases reflected in gendered self-selection in academic fields of study.
At West University of Timisoara, as part of the Re-UNITA project, we have conducted an internal study on the state of gender in 2022, across five dimensions of university life: Leaders and Decision-Making Bodies, Recruitment and Career Progress, Work-Life Balance, Research, and Students and Teaching.

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Cultural Heritage

Archaeology of Ceramic Production and Consumption Centres in Central Asia. A Remote Sensing Approach.
Project reference: PID2020-114096GA-C22 (2021-2025)

Researchers:
Paula Uribe Agudo (reference researcher); Enrique Ariño; Jorge Angas; Verónica Martínez-Ferreras; Josep Mª Gurt; Alfredo Serreta

This project focuses on the investigation of ceramic production and consumption centres in Central Asia, specifically in Uzbekistan, using a set of remote sensing techniques. Consequently, we approach this research by applying remote sensing from a global and integrative perspective, based on non-invasive techniques and channelled through a multi-scale study in relation to the project coordinated by the University of Barcelona.
Thus, the aim is to provide new methodologies for the registration and formal and geometric categorisation of ceramic material culture; 3D geometric documentation and techno-functional analysis of the ceramic production kilns and, finally, the research, restitution and relationship of the urban planning of the production/consumption centres and their territory. These objectives will be carried out through the application of automatic image correlation techniques to obtain 3D models; analysis of high-resolution spatial, multitemporal and multispectral satellite images; low altitude multispectral and thermal orthophotos by means of drone and integrating all data for geoprocessing into a Geographic Information System.

Circular Economy

"Precious e POMACE Projects"

As part of the regional POR FESR projects, the biochemistry group of the Department of Life Sciences and Systems Biology at UNITO collaborated with local companies and regional innovation poles to recover bioactive molecules from food processing waste.
Cosmetics and supplements from pomace and superfoods from tomato peels are produced in a strictly eco-friendly way. This was the aim of the Precious and POMACE projects, which allowed us to collaborate with several Piedmontese companies to make the most of agro-food waste, which is still rich in antioxidant molecules, precious for our health and a potential substitute for some traditional phytochemical treatments.
https://frida.unito.it/wn_pages/contenuti.php/743_gestione-del-territorio-delle-risorse-e-dei-rifiuti-sostenibilit-ambientale/506_dai-diamanti-non-nasce-niente-dalle-bucce-nascono-saponi-e-superfood/

Renewable Energies

Incineration with energy recovery

Waste incineration is one of the widely used waste disposal technologies which both reduces waste volume and NOx amount and recovers energy as a last alternative of judicious use.
Controlled burning, known as combustion, decreases the volume of solid waste destined for landfills, and also recover energy from the waste burning process. This generates a renewable energy source and reduces carbon emissions.
Incineration with energy recovery refers to the combustion of waste under controlled conditions to generate electricity and heat. The technology produces energy and heat, reduces the volume of municipal solid waste (MSW) that must be handled and destroys harmful substances.
Waste-to-energy or energy-from-waste is the process of generating energy in the form of electricity and heat from the primary treatment of waste, or the processing of waste into a fuel source.
Incinerators have electric efficiencies of 14-28%. In order to avoid losing the rest of the energy, it can be used for e.g. district heating (cogeneration). The total efficiencies of cogeneration incinerators are typically higher than 80% (based on the lower heating value of the waste).
Cogeneration is common for both electricity (500 kWh/tone) and heat (1000 kWh/tone) to be generated, with the latter used in providing industrial or district heating.

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https://iphunizar.com/proyectos-de-sus-integrantes/arqueologia-de-los-centros-de-produccion-ceramica-y-de-consumo-en-asia-central-una-aproximacion-desde-la-teledeteccion/

Virtual museum: https://sketchfab.com/IPAEB

A multi-scalar photogrammetric recording approach in Termez (Uzbekistan):
https://doi.org/10.5194/isprs-archives-XLII-2-W15-93-2019

Reports:
http://www.ub.edu/prehist/component/tlpteam/team/ipaeb-preliminary-report-of-the-work-of-the-international-pluridisciplinary-archaeological-expedition-to-bactria?Itemid=220

References:
https://olcstage.worldbank.org/sites/default/files/sco/E9CB337D-79D8-EAF4-44EE-AF3A7ADADADF/swm_m03/story_content/external_files/DMG_Incineration.pdf
https://en.wikipedia.org/wiki/Waste-to-energy
https://www.epa.gov/smm/energy-recovery-combustion-municipal-solid-waste-msw#EnergyRecovery

PhD student of the month

Inés Escudero Gruber holds a degree in Art History from the University of Zaragoza and completed the official Master in Cultural Heritage Management. She obtained her research proficiency diploma and has dedicated herself to research in combination with cultural management.

In 2019 she joined the Department of Art History and the IPH (Humanities and Heritage Research Institute) of the University of Zaragoza, after gaining a ministerial grant for PhD studies, linked to the i+D project "Las mujeres artistas en España (1804-1939)". She has obtained her PhD focusing on the the visual arts produced during the Spanish Civil War, which she has just defended.

She is currently part of the team working on the i+D project "Las artistas en la escena cultural española y su relación con Europa (1803-1945)", and she is also a member of the consolidated research group Vestigium, both led by her PhD advisor, Dra. Concha Lomba.

https://iphunizar.com/ines-escudero-gruber/

Woman researcher of the month

Alejandra Consejo, PhD, is the principal investigator and research coordinator of MAiCRO, an innovative research project for early eye disease detection that got awarded the UNITA Innovation Prize 2022 in the non-hubs category.
Dr Consejo is a physicist specializing in Biomedical Engineering, particularly in the human eye and vision science. In 2017, she was awarded the EYRA award as best PhD graduate in Europe. Her research aims to develop new techniques and models to better understand the human eyes. She has worked at Wroclaw University of Science and Technology (Poland), The University of Manchester (UK), and more recently, as a postdoc, at Antwerp University Hospital (Belgium) and the Polish Academy of Sciences (Poland).
She currently works as an assistant professor and researcher at the Applied Physics Department at the University of Zaragoza (Spain).

https://alejandraconsejo.blogspot.com/

https://ucc.unizar.es/noticia/alejandra-consejo-investigadora-unita-del-mes

Highlights

Network of shared research infrastructure among UNITA´s Universities, providing the researchers a database that includes these cutting-edge infrastructures from the different parties that can be used to improve their research through their use.
In case you would like to benefit from this agreement, please, contact with your national responsible or send an email to info.reunita@unizar.es explaining: your University of origin and the infraestructure you would like to use.
The complete catalogue of the infraestructures that could be shared with special conditions for researchers from the UNITA Alliance:
https://reunitaresearchinfrastructure.i3a.es/en

ESAF (The European Science Advisors Forum) is a non-formal network consisting of advisors, experts, and scientists whose main goals are to provide a forum for EU countries' main science advisors to exchange information and ideas and to improve the science-based political decision-making culture in the EU.
The last annual meeting of ESAP in Vilnius addressed the theme "The role of science advice in rebuilding the society" and was attended by the president of the Advisory Board for Research, Development and Innovation, Octavian Mădălin BUNOIU.
The next annual meeting of ESAF will take place in Timisoara, in September 2023.
https://esaforum.eu/
https://esaforum.eu/esaf-annual-meeting-2022-esaf-8-the-role-of-science-advice-in-rebuilding-the-society/