

Research Report 2024



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From left: Alex Weissensteiner · Rector, Tanja Mimmo · Vice-Rector for Research and Innovation, Ulrike Tappeiner · President. Photo: unibz | Matteo Vegetti

Preface

Research at unibz is shaped by a clear goal: to produce knowledge that is both excellent and relevant to today's challenges. In 2024, the university reached a new milestone in its research activity, with €14.5 million in third-party funding and 112 new projects launched. This growth confirms unibz's capacity to attract funding at regional, national and European levels, and to respond to increasingly complex societal and environmental challenges.

As a multilingual and interdisciplinary institution rooted in the Alpine region, unibz combines strong theoretical foundations with a pronounced applied orientation. Fundamental research provides the basis for long-term innovation, while applied research ensures that knowledge can concretely contribute to create impact. This balance is reflected in the work of our five faculties and eight competence centres, which serve as bridges between academic research and practical needs. Key research areas include sustainable systems, digital and green transition, social inclusion and regional development – fields where unibz is actively contributing to both local solutions and EU-wide priorities.

2024 was also a year of strategic development. Two new competence centres were established: the International Competence Centre on Food Fermentations (ICOFF), focusing on sustainable food innovation, and the Compe-

tence Centre for the Management of Cooperatives, supporting the transformation of cooperative enterprises. These centres strengthen unibz's role as a partner in regional innovation and knowledge exchange.

To name a few examples at the European level, unibz contributed to major Horizon projects such as CyclOps, which develops new technologies for managing environmental data, and Smart Protein, focused on plant-based food innovation. unibz also took part in PROSPER, a Jean Monnet network addressing economic resilience in the EU. In addition to the overall funding mentioned above, over €5.6 million secured from the European Social Fund Plus (ESF+) allowed to support PhD scholarships, research positions and new master's programmes aligned with the region's development strategy. Innovation was marked by the patenting of NESTED, a compact three-stage speed reducer developed by the Faculty of Engineering. Recognition also came on the international stage: post-doctoral researcher Ali Bataleblu received the Young Scientist Award at ICQIS 2024 for his work on sustainable manufacturing. In addition, unibz joined the Alliance for Fruit, Wine and Vegetable Production – strengthening research collaboration in agriculture across German-speaking regions.

In 2024, the Stiftung Südtiroler Sparkasse and the Südtiroler Sparkasse renewed their generous support by funding the unibz Research Award and the Sustainability Award. Open to researchers throughout South Tyrol, these initiatives further reinforce the university's commitment to fostering dialogue between science, society and the local economy.

These achievements were made possible thanks to the commitment and creativity of our academic community – professors, researchers and PhD students – supported by dedicated administrative staff. To them, and to our public and private partners, we extend our sincere gratitude. Together, we are building a university that not only advances knowledge, but proactively contributes to a more sustainable, inclusive and innovative future.

Highlights

1.

unibz in the European CyclOps Project

unibz, Eurac Research, and Ontopic, the first unibz spinoff, are partners in the European CyclOps project, funded by Horizon Europe, to develop advanced data management technologies. The goal is to automate the entire data lifecycle using Knowledge Graphs, structures that enhance connections between different data types and improve operational efficiency. The focus of the South Tyrolean partners, including the unibz team led by Prof. Diego Calvanese from the Faculty of Engineering, is on environmental data, such as satellite images and air and water quality indicators. The ultimate goal of the

project is to enable better data management, foster the development of high-value services and strengthen Europe's global competitiveness in this strategic sector.

2.

NESTED Patent: A Three-stage Speed Reducer

Prof. Franco Concli and Lorenzo Maccioni from the Faculty of Engineering have patented NESTED, a new concept of a three-stage cycloidal speed reducer. Speed reducers are mechanical devices designed to reduce the rotational speed of a motor while increasing its torque. Unlike conventional two-stage designs, NESTED allows for significantly higher transmission ratios while main-

taining compact dimensions. This innovative solution provides high power density and is competitive in terms of efficiency, mechanical reliability and cost. Due to its reduced size, NESTED is particularly well suited for sectors such as robotics and industrial automation, where precision, control and efficiency in motion systems are crucial.

01 — To create a secure and competitive single market for data, 'Common European Data Spaces' (CEDS) were developed. Photo: KOBU Agency | Unsplash
02 — From left: Franco Concli, Lorenzo Maccioni. Photo: unibz | Giulia Maria Marchetti

01



02



3.

New Competence Centre for the Management of Cooperatives

The Free University of Bozen-Bolzano has launched the Competence Centre for the Management of Cooperatives, dedicated to international and interdisciplinary research and knowledge transfer on cooperatives. Its goal is to strengthen the competitiveness and transformation capacity of the cooperative sector in South Tyrol in light of current challenges. Funded by the Office for Cooperatives of the Autonomous Province of Bozen/Bolzano, the Centre collaborates with local cooperative associations and national and international research institutes to develop practical and future-oriented solutions. Under the

leadership of Prof. Richard Lang, the Centre explores different cooperative business models and their interaction with key societal changes that are shaping the future of life and work in South Tyrol, among which sustainability, digitalisation and demographic shifts.

4.

Over €5 Million ESF+ Funding for unibz

The Free University of Bozen-Bolzano will receive over 5.6 million euro from the European Social Fund Plus (ESF+) until 2028 for the training of highly qualified professionals. This is unibz's largest funding allocation to date. These resources will support 7 PhD scholarships, 14 research grants, 8 fixed-

term research positions and 3 new master's programmes. This investment in education and research will contribute to strengthening the competitiveness of local businesses. By contributing to research projects within the framework of the Smart Specialisation Strategy of the Autonomous Province of Bozen/Bolzano, unibz also promotes the development of innovative solutions to current and future job market and societal challenges. The new multidisciplinary and multilingual master's degrees will prepare students for careers in business, public administration and the social sector, boosting the region's innovation and competitiveness.

03 — The round table discussion during the inauguration of the Competence Centre for the Management of Cooperatives. From left: Monica Devilli, Robert Zampieri, Nicola Grosso, Gianluca Salvatori. Photo: unibz
04 — Campus Bozen-Bolzano City Center. Photo: unibz | Serena Osti

03



04



Highlights

5.

Aliasghar Bataleblu Wins the Young Scientist Award at ICQIS 2024

Aliasghar Bataleblu, postdoctoral researcher at the Sustainable Manufacturing Lab at NOI Tech-park in Bruneck-Brunico, led by Prof. Erwin Rauch of the Faculty of Engineering, won the Young Scientist Award at the International Conference on Quality Innovation and Sustainability (ICQIS) 2024 in Lisbon, an event dedicated to the exchange of best practices in the fields of quality, innovation, and sustainability. His paper "Sustainable Manufacturing Design Decomposition Based on Axiomatic Design Theory" was developed in collaboration with Prof. David Cochran from Purdue University (USA)

within the "SFDD- Sustainable Factory Design Decomposition" project, funded by the Autonomous Province of Bozen/Bolzano. His work focuses on Model-Based Systems Engineering application for sustainable manufacturing in order to find alternative solutions for accelerating the transition toward sustainable factories.

6.

unibz part of the Jean Monnet Network PROSPER

The Free University of Bozen-Bolzano is one of 12 universities across the EU participating in the Jean Monnet Network PROSPER (Project to Research Opportunities to Strengthen Prosperity and Economic Resilience in the EU). Coordinated by the Dublin

City University Brexit Institute & Dublin European Law Institute, PROSPER is the only project funded under the 2024 Jean Monnet internal network call. The network aims to address major EU challenges such as globalisation, climate change and economic inequality through interdisciplinary research and the promotion of best practices. Within the Network PROSPER, unibz, coordinated by Prof. Stefania Baroncelli of the Faculty of Economics and Management, will contribute to strengthening the EU's overall prosperity by promoting strategic initiatives to bolster economic stability and growth.

05 — Aliasghar Bataleblu during the ICQIS 2024 Conference. Photo: Aliasghar Bataleblu
06 — The participants at the kick-off Conference "Rebuilding a Prosperous European Economy" of the Jean Monnet Network PROSPER. Photo: PROSPER



7.

Inauguration of the ICOFF Competence Centre

On October 29, 2024, the ICOFF (International Competence Centre on Food Fermentations) was inaugurated at NOI Techpark in Bozen-Bolzano. Led by Prof. Raffaella Di Cagno from the Faculty of Agricultural, Environmental and Food Sciences, the centre promotes research on food fermentation with a focus on the economic, social and environmental sustainability of the food system, on circular economy and on consumers' well-being. Key research areas include the development of new functional and preservable foods, gut microbiome studies and by-product recycling. ICOFF aims to transfer research results directly to the

industrial sector, creating innovations with both local and global impact. For this reason, the centre carries out joint research projects with leading food companies, which in turn financially support young researchers at the centre.

8.

unibz Joins the Alliance for Fruit, Wine and Vegetable Production

In November, during the Interpoma apple trade show in Bozen-Bolzano, eleven research and education institutions from German-speaking regions signed a declaration of intent to establish the Alliance for Fruit, Wine and Vegetable Production. The Free University of Bozen-Bolzano is part of this network, which

aims to strengthen the agricultural sector through cross-border collaboration in research, innovation and education. The focus is on scientific cooperation in the areas of agricultural production, oenology and sustainability. The alliance seeks to develop practical solutions to ecological and economic challenges, promote young talent and optimise resource use. It also aims to intensify the exchange between research and practice, increase the visibility of the sector and facilitate access to funding opportunities.

07 — Some of the participants at the round table during the opening of ICOFF. From left: Carlo Giuseppe Rizzello, Raffaella Di Cagno, Alex Weissensteiner, Stefan Cappelle. Photo: unibz | Matteo Vegetti
08 — Alex Weissensteiner during the event for the establishment of the Alliance for Fruit, Wine and Vegetable Production. Photo: Laimburg Research Centre | Agnese Martinelli

07

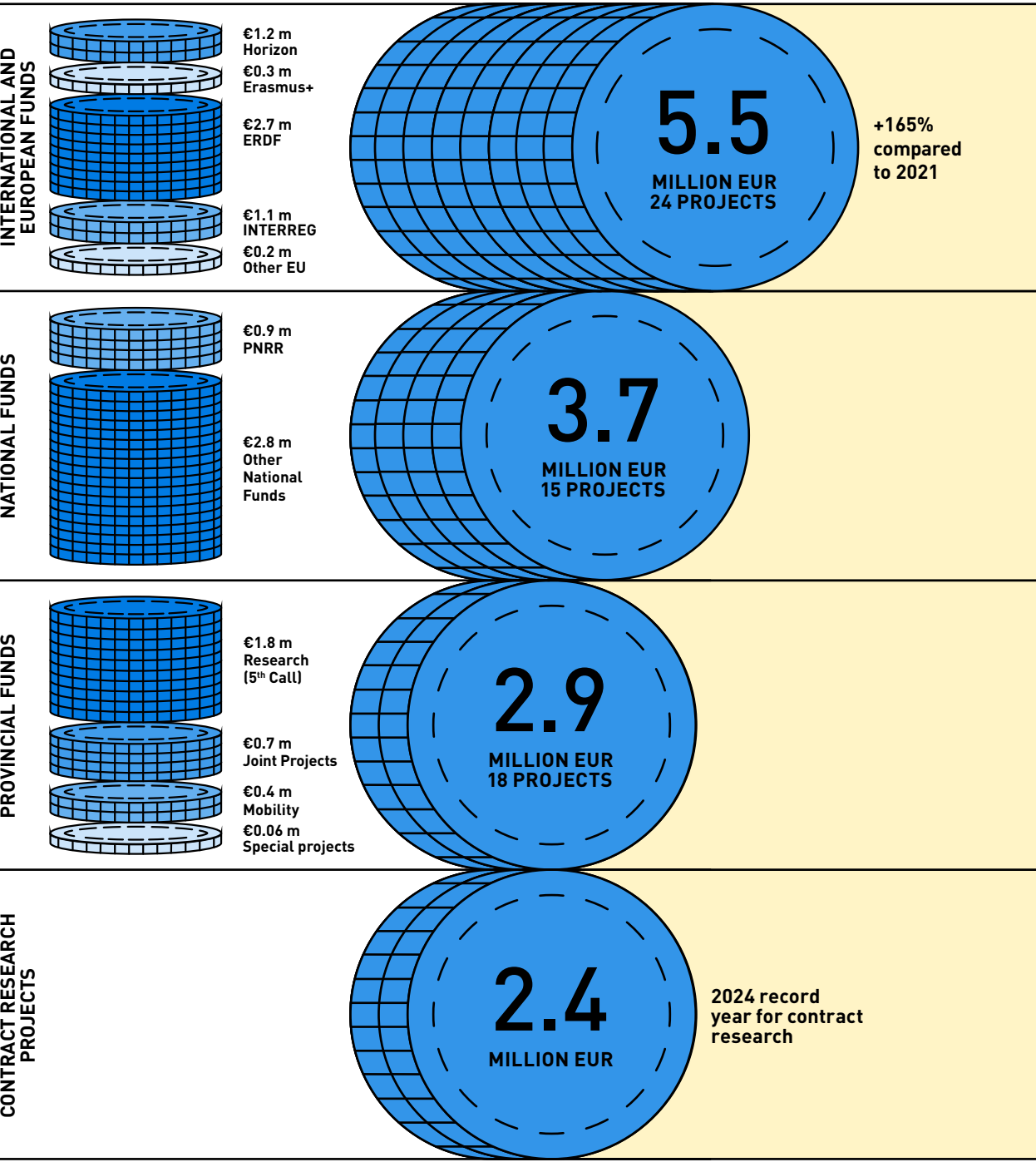


08



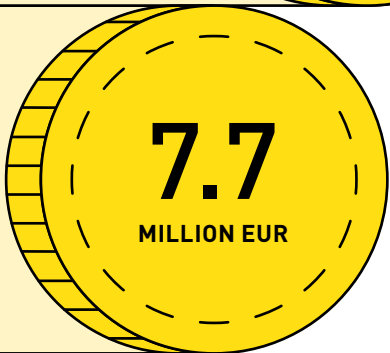
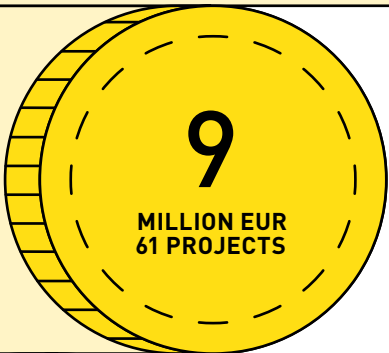
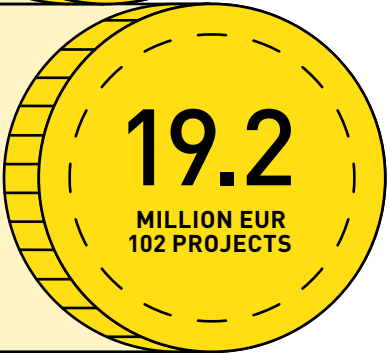
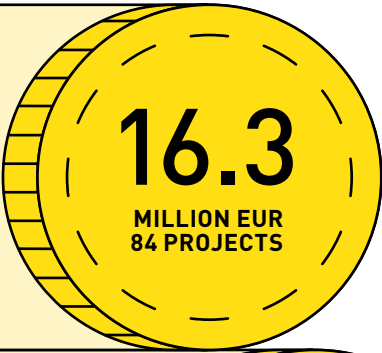
Figures on Research Third-Party Funds 2024

14.5 million EUR
112 new projects
+147% compared to 2021



Third-Party Funds 2021–2024

52.1 million EUR in four years
521 projects



Third-party funding on the rise

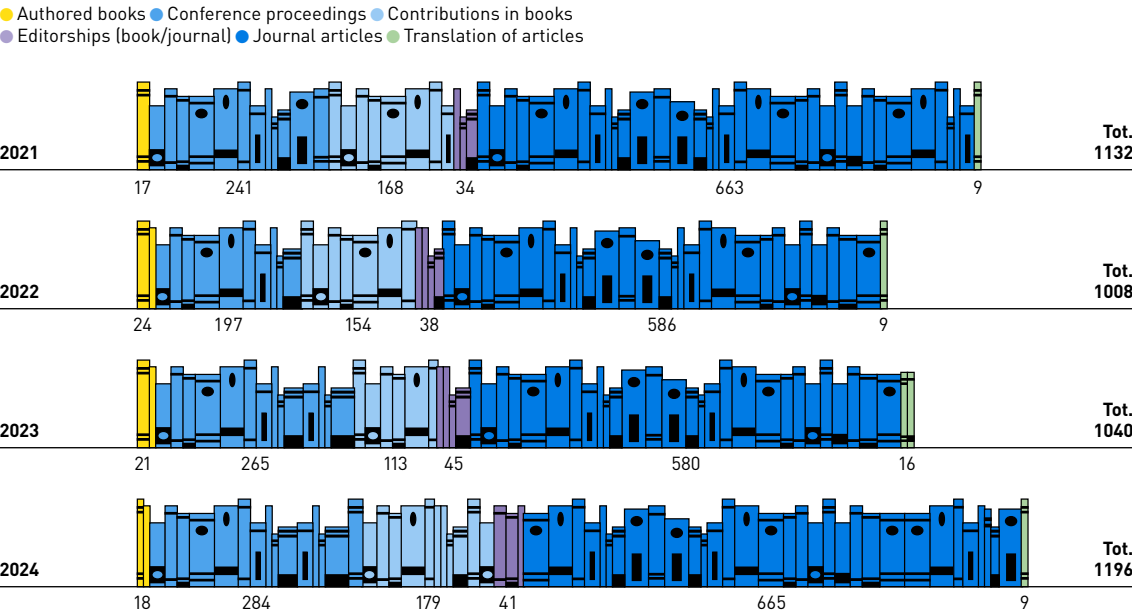
The steady growth in Horizon and Erasmus+ projects, the doubling of ERDF funds in 2024 compared to 2023, and the solid performance in Joint Projects supported by provincial funding have fostered the creation and consolidation of strategic international partnerships.

National funding remains high, confirming the university's ability to attract diverse resources at the national level.

2024 marks a record year for contract research, with the highest funding ever recorded – a clear sign of growing trust from companies and institutions in the university's capacity to meet the needs of the region and the production system.

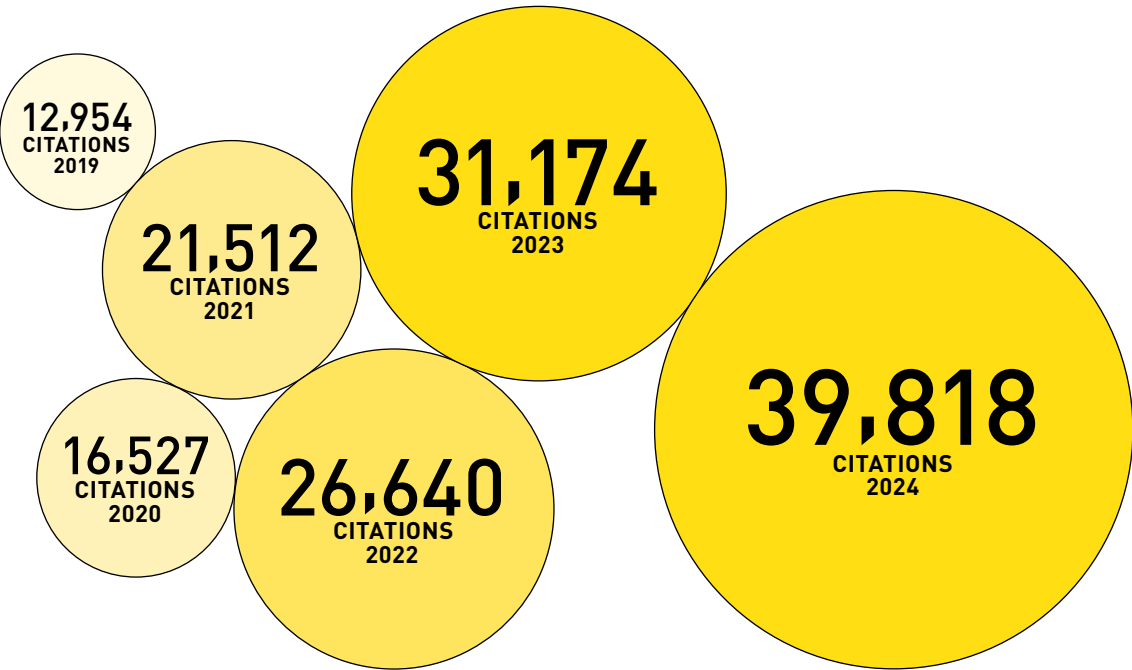
Figures on Research Publications and Citations

unibz Publications 2021– 24 by Publication Type (Source: Boris)



unibz Citations in Scopus 2019–24

Peer-reviewed publications from authors with unibz affiliation (Source: Scopus)



Faculty of Agricultural, Environmental and Food Sciences



Photo: unibz | Matteo Vegetti

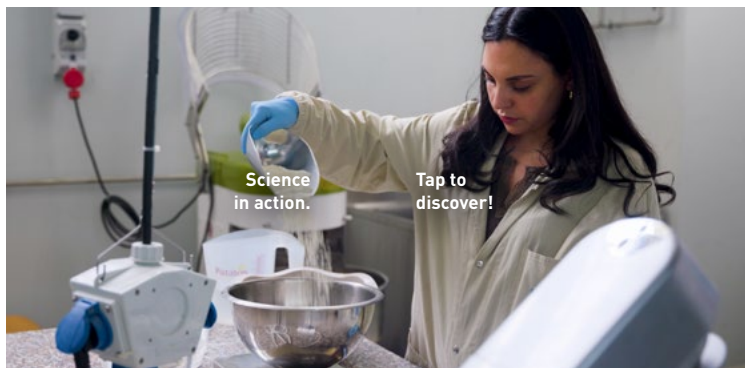
KEY DATA

PEOPLE

395 Students, of whom
97 PhD Students
28 Tenured Professors
18 Researchers
44 Research Assistants
12 Technical Staff
11 Administrative Staff

The increasing demand for healthier lifestyles has spurred interest in dealcoholized wines, with a global market worth over \$10 billion. This study examines the chemical composition of partially dealcoholized wines and consumer perception through instrumental chemical analysis, sensory analysis and surveys. Preliminary results from a survey of over 300 respondents from within and outside the region

indicate strong growth potential, particularly among young people, and broad acceptance among those seeking healthier alternatives or subject to religious/dietary restrictions. The project aims to help producers improve the taste and quality of dealcoholized wines while developing effective marketing strategies.



Video: unibz | Matteo Vegetti

Agrotourism, understood as tourist accommodation provided by farms, has varying impacts on the businesses themselves. The project analyzes differences in sustainability between enterprises that offer guest accommodation and those that do not. The study examines the economic, ecological and social impacts of this practice based on surveys conducted in South Tyrol, Trentino

and Tyrol. The results show significant social and ecological differences: agrotourism farms use renewable energy and organic methods more often, but their agricultural production volume decreases. No clear economic advantages related to this practice were observed. The enterprises involved in the study will be analyzed also in the coming years to validate the results over time.



Photo: Unsplash | Ricardo Gomez Angel

DEAL – Study of Acceptability of Novel Grapevine Products That Have Lower Actual Alcoholic Strength

👁 INFO

DURATION
06/2024 – 06/2026

BUDGET
€72,000.00

FUNDING
PNRR-Project OnFoods

PARTNER
unibz (Partner), Kellerei Bozen, Vason Group

UNIBZ RESEARCHER TEAM
Emanuele Boselli (PI), Wasim Akhtar, Adriana Teresa Ceci, Edoardo Longo, Gavin Duley

WEBSITE
www.onfoods.it

onfoods

AGRITOUR – The Sustainability of Agritourism

👁 INFO

DURATION
01/2023 – 12/2024

FUNDING
unibz, Eurac Research

PARTNER
unibz, Eurac Research, Universität Innsbruck

UNIBZ RESEARCHER TEAM
Christian Fischer (PI), Giulia Grillini

Smart Protein demonstrates the potential of fermentation to create sustainable and nutritious dairy alternatives that are appreciated by consumers. Brewery by-products were fermented and integrated into traditional cheese formulations to develop a primo sale cheese analogue with improved nutritional properties, even without the use of rennet as a coagulant. Fermentation of a mixture of chickpea and red lentil

flours and avocado pulp allowed the development of fully vegan cream cheese analogues with improved nutritional profile and textural properties. The beneficial effects of fermented foods on gut health were also tested using the Simulator of Human Intestinal Microbial Ecosystem (SHIME®).



SHIME in the Micro4Food laboratory. Photo: NOI Techpark | Harald Wisthaler

The Southeastern Alps have the highest proportion of endemic plants in the Eastern Alps. This is probably due to weak glaciation during the Pleistocene glacial maxima and the diverse topography of the area. The areas that remained unglaciated during glacial maxima served as long-term habitats, supporting the emergence of endemic biodiversity. Large parts of the genomes

of six plant species endemic to the Southeastern Alps were sequenced to understand how climate change and glacial cycles have influenced their evolutionary history and genetic diversity over time and space. These results will improve our understanding of why areas such as the Southeastern Alps are hotspots of endemism.



Specimen of Tufted Horned Rampion (*Physoplexis comosa*). Photo: CONE

SMARTPROTEIN – Plant-based Proteins and Microbial Fermentations as Allies for Human and Environmental Health

INFO

DURATION
01/2020 – 06/2024

BUDGET
€9,630,342.73 (unibz €539,375.00)

FUNDING
EU Project – Horizon 2020

PARTNER
unibz, University College Cork, AB InBev, Agresearch Limited, ARCA Srl, Barilla G. e R. Fratelli SpA, Beotronics, Danone Nutricia Research, Delphy, Dohler GmbH, Endori, Equinom, EurA AG, Fraunhofer, Ghent University, Glanbia Ireland, HES-SO Valais-Wallis, INTIA, MOGU Srl, Müller's Mühle, Novozymes, ProVeg International, Quinoa Marche Srl, Siccadania, Soguima, Teagasc, Thai Union Group, The Good Food Institute, Università degli Studi di Udine, UCC Academy, University of Copenhagen, Woerle

UNIBZ RESEARCHER TEAM
Marco Gobetti (PI), Anastasia Palatzidi, Olga Nikoloudaki, Stefano Tonini, Andrea Polo, Ali Zein Alabiden Tlais, Lena Granehaell, Hana Ameer, Kashika Arora, Raffaella Di Cagno

WEBSITE
smartproteinproject.eu

CONE – Ecology, Genetics and Conservation of Endemic Plant Species of the Eastern Alps

INFO

DURATION
12/2021 – 11/2024

BUDGET
€75,290.00

FUNDING
Internal Funding

PARTNER
unibz (coordinator), Universität Innsbruck, Università di Pisa, Museo delle Scienze di Trento

UNIBZ RESEARCHER TEAM
Camilla Wellstein (PI), Philipp Kirschner

Sulphur dioxide (SO₂) is widely used as a preservative in wines. In order to reduce the amount of SO₂ used in red wine production due to its allergenic potential, Vinox 1 aims to evaluate the use of hydroxytyrosol (HT) as a complementary antioxidant additive. Organic red wines were enriched with different concentrations of HT during bottle storage and compared at different time points with a

control wine not enriched with HT. Our study shows that the addition of HT to organic wine exerts an additional antioxidant effect during the first six months of storage, protecting the wine from oxidation. Our results highlight the benefits of HT in wine-making, making it promising for food preservation.



The research laboratory Oenolab. Photo: NOI Techpark | Ivo Corrà

The first part of the project analyzed different cattle breeds and identified 64 possible traits related to genetic resistance to the main diseases of zootech-nical interest. This second part of the project focuses on two South Tyrolean cattle breeds, Tyrolean Grey and Pinzgauer, to identify traits associated with disease resistance. Data on health, breeding and farm prac-

tices were collected and analyzed to find correlations with welfare, productivity and sustainability. This study contributes to the development of more sustainable dairy cattle farming in the region through the use of dual-purpose breeds (used for both milk and meat production), while pre-serving biodiversity and cultural heritage.



Photo: Unsplash | Claudio Schwarz

VINOX 1: Supplementing Wine with Natural Anti-oxidants: A Step Towards Sulfite Reduction

👁️ INFO

DURATION
10/2023 – 10/2024

BUDGET
€11,400.00

FUNDING
Commissioned Research

PARTNER
unibz (coordinator), NUTRAMENTIS, Nova Mentis, Massey University of New Zealand

UNIBZ RESEARCHER TEAM
Emanuele Boselli (PI), Adriana Teresa Ceci, Aakriti Darnal, Simone Poggesi, Prudence Fleur Tchouakeu Betngam Edoardo Longo, Renzo Nicolodi, Reeta Davis, Meg Walsh, Kevin O'Connor, Enrico Angelo Altieri, Fabio Trevisan, Tanja Mimmo

DUAL BREEDING II – Functional traits in dual-purpose breeds – Part II

👁️ INFO

DURATION
07/2021 – 01/2024

BUDGET
€61,500.00

FUNDING
Commissioned research

PARTNER
unibz (coordinator)

UNIBZ RESEARCHER TEAM
Matthias Gauly (PI), Thomas Zanon

WEBSITE
dualbreeding.com



Faculty of Design and Art



Photo: unibz | Eleonora Lunardonì

KEY DATA

PEOPLE

350 Students, of whom
11 PhD Students
18 Tenured Professors
9 Researchers
16 Research Assistants
17 Technical Staff
9 Administrative Staff

As children's health and natural habitats face increasing threats deriving from human activity, there's a growing need to rethink urban spaces to foster the relationship between children and nature. PLAYGROUND explores whether outdoor play areas can help reintroduce biodiversity into urban environments, while enhancing children's well-being. In Bozen-Bolzano, researchers are collaborating with citizens to

design and prototype new forms of play that promote recreation, social connection and contact with nature. The project is based on the growing interest in urban greening as a response to biodiversity loss, pollution and climate change impacts.



Video: unibz | Matteo Vegetti

P+ARTS is a two-year project aimed at advancing artistic research in Italy. Led by the New Academy of Fine Arts (NABA), in collaboration with eight Higher Education for Artistic, Musical and Dance Training (AFAM) institutions and two universities, it seeks to establish common research methods and enhance funding opportunities for artistic research. Its three core goals are:

- 1) building a research culture through collaboration and scholarships;
 - 2) fostering innovation via exhibitions and digital ecosystems;
 - 3) redefining the artist's role through master's programs and global networks.
- P+ARTS promotes exchange, inclusivity, internationalization and sustainability in the creative industry.

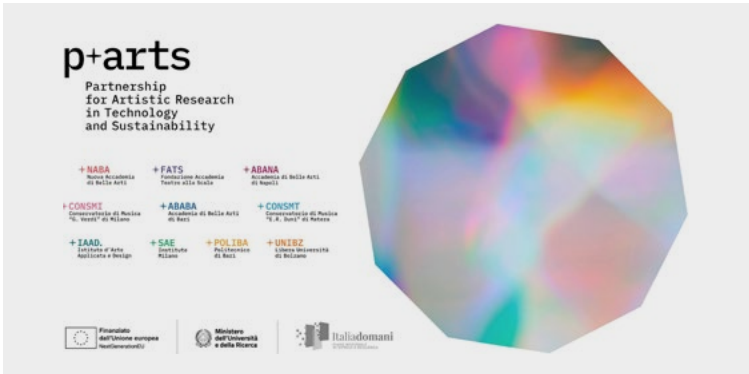


Image of the research project "P+ARTS" | NABA

PLAYGROUND: Designing Visions of Play in a More-than-Human-World

INFO

DURATION
12/2023 – 12/2025

BUDGET
€50,000.00

FUNDING
Internal Funding

UNIBZ RESEARCHER TEAM
Sónia Amélia Cabral Matos (PI), Nicole Faiella Perdomo, Teresa Palmieri, Jacopo Ammendola



P+ARTS – Partnership for Artistic Research in Technology and Sustainability

INFO

DURATION
04/2024 – 03/2026

BUDGET
€4,386,134.80 (unibz €185,141.09)

FUNDING
National Funding

PARTNER
unibz, Fondazione Accademia d'Arti e Mestieri dello Spettacolo Teatro alla Scala, Accademia di Belle Arti Bari, Politecnico di Bari, Conservatorio di Musica Giuseppe Verdi – Milano, Accademia di Belle Arti Napoli, Istituto d'arte Applicata E Design – Torino, SAE Italia International Technology College, Conservatorio di Musica Egidio R. Duni – Matera

UNIBZ RESEARCHER TEAM
Marcello Barison (PI), Gerhard Glüher (Co-PI), Roberto Gigliotti, Davide Ferrando, Claudia Mainardi, Luigi Savio, Alessandro Montefameglio

For over two centuries, industrial materials shaped our lives, often at environmental and social costs. As global awareness of waste and ecosystem depletion grows, interdisciplinary approaches are emerging as essential for rethinking materials, production methods and innovation. MICST explores how cross-sector collaboration can drive circular, sustainable practices. Focusing on South Tyrol,

the project explores the potential of agro-food waste to generate new bio-based materials using technologies like fermentation and supercritical fluids. The project aims to inspire new business models, foster local value chains and enable holistic, circular systems for industry, agriculture and society.



The project MICST aims at developing new materials through a multidisciplinary approach. Photo: MICST

“Change Agents” promotes a more inclusive, participatory and collaborative approach to social design that values the needs of communities and the knowledge of activists and third-sector organizations as drivers of everyday change. The project explores how to better connect design academia with the NGO ecosystem, fostering mutual understanding and long-

term collaboration. This effort led to the creation of the “Change Agents Blueprints”, a handbook that combines a literature review focused on social design with practical, experience-based methods for building and evaluating partnerships between academia and the third sector.



Presentation of the Blueprints during the final dissemination event at ELISAVA. Photo: SDN CCM

Materials-Based Innovation as Catalysts for a Sustainable Transition Into Circularity in South Tyrol

INFO

DURATION
06/2024 – 05/2027

BUDGET
€449,187.50 (unibz €299,650.00)

FUNDING
Autonomous Province of Bozen/Bolzano – South Tyrol

PARTNER
unibz (coordinator), Laimburg Research Centre, Autonomous Province of Bozen/Bolzano – Waste Management Office

UNIBZ RESEARCHER TEAM
Nitzan Cohen (PI), Camilo Ayala Garcia, Secil Ugur Yavuz, Aart van Bezooijen, Elisabeth Tauber, Sonia Matos, Laura Bordini, Noa Ruth Paul, Giovanna Ferrentino, Luisa Petti

WEBSITE
designfrictionlab.com/project/micst

Change Agents: Blueprints for Interinstitutional Collaborations in Social Design

INFO

DURATION
12/2022 – 11/2024

BUDGET
unibz €40,000.00

FUNDING
Eu Project – Erasmus+

PARTNER
unibz, Moholy-Nagy University of Art and Design, Elisava Barcelona School of Design and Engineering, University of the Arts Berlin, Estonian Academy of Arts, Shenkar College of Engineering, Design and Art, Officine Vispa, Democratic Society

UNIBZ RESEARCHER TEAM
Teresa Palmieri (PI)

WEBSITE
socialdesignnetwork.org/project/erasmus-change-agents



Like other cities marked by fascist rule, Bozen-Bolzano bears visible traces of a difficult past that still affects daily life and collective memory. In recent years, efforts have been made to re-contextualize these traces through various initiatives. But what does it mean to “curate fascist legacies”? Exhibitions can create narratives that connect past and present, shaping how history is interpreted in today’s



Drei mal Sieg, Karin Welponer, 2010.

society. Exhibitions serve both as research tools, highlighting key themes and intersections, and as means of sharing content through active public engagement. CuFa explores how to mediate, transfer and communicate the city’s fascist legacy in contemporary life.

CuFa – Curating Bolzano Fascist Legacies: A Sustainable Approach to a City’s Dissonant Heritage

👁️ INFO

DURATION
10/2022 – 09/2025

BUDGET
€90,000.00

FUNDING
Internal Funding

PARTNER
unibz (coordinator), Municipality of Bolzano, Architekturmuseum der TUM, BAU, Lungomare

UNIBZ RESEARCHER TEAM
Roberto Gigliotti (PI), Andrea di Michele (Co-PI), Waltraud Kofler Engl, Gianluca Camillini, Davide Ferrando

The DSooE project (from “Zoe”, meaning “life” in Greek) develops practices for designing technologies that allow different species to share habitats in a non-competitive way, thereby promoting the conservation and restoration of ecosystems. The study offers insights into ecological coexistence by combining multi-species and multi-site ethnographic research on the interaction of

fish and wolves with these technologies, with the analysis of innovative more-than-human design projects that consider the needs of all species involved. This pioneering work introduces a new, scalable method that can support environmental policymaking in Italy and the EU.

DSooE: Dialoguing Species – Designing Common Worlds through Ethnographies

👁️ INFO

DURATION
11/2023 – 11/2025

BUDGET
€249,352.00 (unibz €130,295.00)

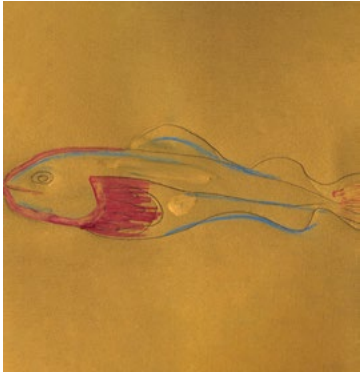
FUNDING
National Project – PRIN 2022

PARTNER
unibz (coordinator), Politecnico di Torino

UNIBZ RESEARCHER TEAM
Elisabeth Tauber (PI), Seçil Uğur Yavuz



A goby fish (Gobiidae) and its artistic representation. Photo 01: Politecnico di Torino | Lara Giordano; Photo 02: unibz | Lisa Maria Zellner



01

02

Faculty of Economics and Management



Photo: unibz | Eleonora Lunardoni

🔑 KEY DATA

PEOPLE

1105 Students, of whom
28 PhD Students
40 Tenured Professors
25 Researchers
15 Research Assistants
1 Technical Staff
18 Administrative Staff

Technological innovations, such as digitalization, electrification and automation, are transforming urban mobility. Autonomous vehicles are expected to encourage the diffusion of shared vehicles, making them more affordable. AVENTT analyzes how the shift to autonomous shared vehicles will affect driver behavior and urban congestion. Using theoretical, empirical and experimental methods, and

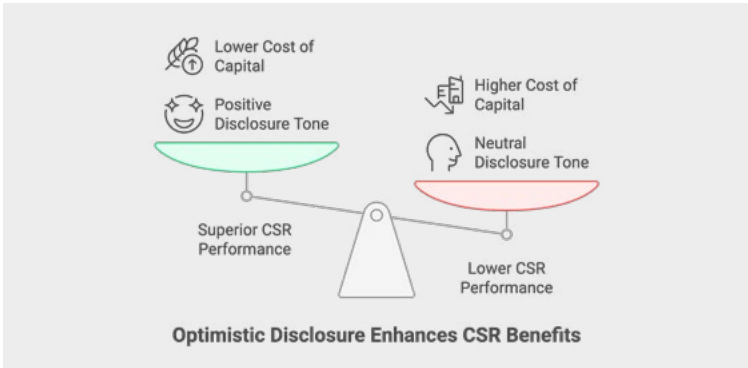
involving both economists and legal experts, the project highlights that future efficiency in urban mobility will largely depend on how the mobility market is regulated. Policymakers must therefore develop a clear regulatory framework to reduce urban congestion in the era of shared mobility.



Video: unibz | Matteo Vegetti

The study examines how companies' sustainability performance and the tone of their sustainability reports affect their financing costs. Firms that perform well in corporate social responsibility (CSR) tend to use more positive language in their reports, while low performers do not show clear patterns. We saw that, taken alone, strong CSR performance and an optimistic tone

are linked to higher financing costs yet, when combined, they lead to lower costs, suggesting that companies with strong CSR performance can benefit financially from a positive communication style. These effects were stronger before sustainability reporting became mandatory in the EU, showing that regulations may influence the impact of reporting strategies.



Impact of the tone of CSR performance communication on the cost of capital. Photo: Paul Pronobis (generata con AI)

AVENTT – Autonomous Vehicles and New Technologies in Transport: Market Design and Legal Issues

INFO

DURATION
04/2020 – 04/2024

BUDGET
€514,354.00 (unibz €142,498.00)

FUNDING
National Project – PRIN 2017

PARTNER
unibz, Università degli Studi di Roma Tor Vergata, Università di Trento

UNIBZ RESEARCHER TEAM
Federico Boffa (PI), Alessandro Fedele, Steven Stillman, Mirco Tonin

CSR Performance, Disclosure Tone, and Cost of Capital: Evidence from European Non-Financial Reporting

INFO

DURATION
02/2023 – 02/2025

BUDGET
€25,000.00

FUNDING
Association Francophone de Comptabilité, ESCP Business School Paris

PARTNER
unibz (coordinator), ESCP Business School Paris

UNIBZ RESEARCHER TEAM
Paul Pronobis (PI)

THESEUS examines the solidarity measures taken by the EU and its member states to address global humanitarian crises. It provides the first comprehensive analysis of the factors that undermine solidarity and offers concrete policy recommendations to make humanitarian aid more effective and more responsive to global needs. The project has three main goals: 1) to examine how state fragility affects soli-

darity measures; 2) to analyze the impact of solidarity and fragility on key political objectives, including EU-member states coordination in humanitarian aid, the humanitarian-development-peace nexus and the humanitarian-sustainability nexus; 3) to use current migration to Europe as a case study.



Photo: Unsplash | Mathurin NAPOLY / matnapo

In today's interconnected world, global virtual teams (GVTs), with members working online across different time zones, are increasingly common. These teams face challenges, including differences in time zones and individual chronotypes (natural sleep-wake cycles). The study explores how these temporal factors affect team dynamics and performance. The project examines

"temporal activation patterning", which involves coordinating team members' engagement times considering temporal asynchrony. The study shows that considering only one source of temporal diversity can lead to misleading conclusions about team alignment, with important implications for management practices and team cohesion and performance.



Global virtual teams are spread across different time zones and work online. Photo: Unsplash | Sigmund

THESEUS – Time for Efficient Solidarity as EU Strategy

👁 INFO

DURATION
12/2022 – 11/2024

BUDGET
172.990,00 €

FUNDING
Autonomous Province of Bolzano/Bozen – South Tyrol – Seal of Excellence

PARTNER
unibz (coordinator), Università della Svizzera italiana

UNIBZ RESEARCHER TEAM
Francesca Pusterla Piccin (PI), Roberto Farneri

Temporal Diversity in Global Virtual Teams

👁 INFO

DURATION
06/2020 – 02/2024

FUNDING
Internal Funding

PARTNER
unibz (coordinator), University of North Carolina at Greensboro, Wirtschaftsuniversität Wien, Mae Fah Luang University

UNIBZ RESEARCHER TEAM
Marjaana Gunkel (PI)

Faculty of Education



Photo: unibz | Eleonora Lunardonì

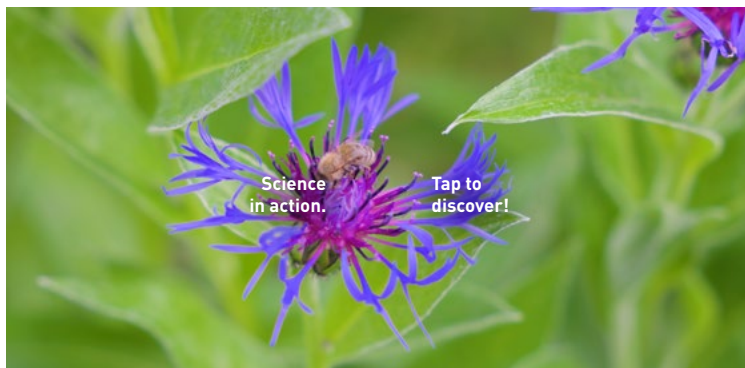
KEY DATA

PEOPLE

1427 Students, of whom
44 PhD Students
48 Tenured Professors
34 Researchers
41 Research Assistants
21 Administrative Staff

Over the last century, demographic growth and industrial development contribute to the depletion of natural resources, the degradation of ecosystems and worrying changes in the global climatic conditions. A fragmented ecosystem cannot provide the basic benefits, or ecosystem services, that people need. The aim of FRACTAL is to combat ecosystem degradation by promoting Green Infra-

structure (GI) in rural, peri-urban, and urban areas of the Alps. Targeting young and adult citizens, farmers, beekeepers, and public administrations, FRACTAL developed GI pacts, an innovative educational toolkit including a board game, and tailor-made outreach events to raise awareness of the role of GI in ecosystem connectivity and resilience.



Video: unibz | Matteo Vegetti

INTERCOMP addresses the urgent need to strengthen the intercultural competences of educators and stakeholders working with refugee and migrant students by providing them with an educational resource designed specifically for this purpose. In particular, it aims to develop an educational course, co-designed with educators from schools and universi-

ties, integrating social-emotional learning and coaching methods. A key highlight is the cross-sectoral collaboration to improve inclusive pedagogy. Outcomes include a tested training course, scientific outputs and their dissemination to non-academic audiences and a European network of intercultural education ambassadors.



INTERCOMP strengthens educators' intercultural skills to support children from diverse backgrounds, including refugees and immigrants. Photo: Pexels | Max Fischer

FRACTAL – Fostering gReen infrAstruCTure in The Alps

👁 INFO

DURATION
04/2023 – 09/2024

BUDGET
€445,786.00 (unibz €161,000.00)

FUNDING
EU project – Interreg Alpine Space Program

PARTNER
unibz (coordinator), National Institute of Biology (SI), National Park Triglav, Wirtschaftsagentur Burgenland

UNIBZ RESEARCHER TEAM
Mita Drius (PI), Luana Silveri, Eduardo Martins Guerra, Daniele Iettri, Robert Philipp Wagensommer, Michele Cagol, Franca Zadra

WEBSITE
www.alpine-space.eu/project/fractal



INTERCOMP – Development of Educators' Intercultural Competencies

👁 INFO

DURATION
02/2022 – 01/2025

BUDGET
€387,337.00 (unibz €69,825.00)

FUNDING
EU Project – Erasmus+ KA 2

PARTNER
unibz, Cyprus Ministry of Education, Culture, Sport and Youth, International Council of Sport Science and Physical Education of Germany, Aristotle University of Thessaloniki, University of Limerick

UNIBZ RESEARCHER TEAM
Antonella Brighi (PI)

WEBSITE
intercomp.web.auth.gr



This research project contributes to the international debate on financial literacy among young citizens, focusing on the gender gap and the accountability of financial education policies. In line with the UN Sustainable Development Goals, it assesses the financial literacy of young people in South Tyrol, examines how it is transmitted in schools and investigates how targeted programmes can reduce

gender disparities. The research group involved in the project also created the Economic Education Lab (LabEE), to promote activities with schools, professional development programmes for teachers and third mission initiatives in collaboration with Studium Generale, schools and foundations.



Photo: Pexels

The development and use of digital technologies in social and health care services requires a deeper understanding of the real-world application of technology. The project explores the use of digital technologies in social and health care services by focusing on the experiences of both service users and social workers, combining qualitative case studies with a national

survey. The design and findings are discussed with an advisory board including service users and professionals. The findings highlight how social work can play a key role in promoting inclusive digital innovation and support the development of more inclusive policies and services, as well as innovation in social work education and training.



Photo: Pexels | Andrea Piacquadio

EECA2030 – You Count: Education for Economic Citizenship According to the 2030 Agenda

👁 INFO

DURATION
10/2022 – 09/2025

BUDGET
€120,000.00

FUNDING
Free University of Bozen-Bolzano

PARTNER
unibz (coordinator), Fondazione per l'Educazione Finanziaria e al Risparmio FEDUF, Banca d'Italia

UNIBZ RESEARCHER TEAM
Monica Parricchi (PI), Mirco Tonin (co-PI), Doris Kofler, Michele Cagol, Federico Boffa, Claudia Curi



DigItIn – Digital Technologies for Social Inclusion? The Experience of Service Users and Social Workers in Social and Health Care Settings

👁 INFO

DURATION
11/2023 – 11/2025

BUDGET
263,997.00 (unibz €115,778.00)

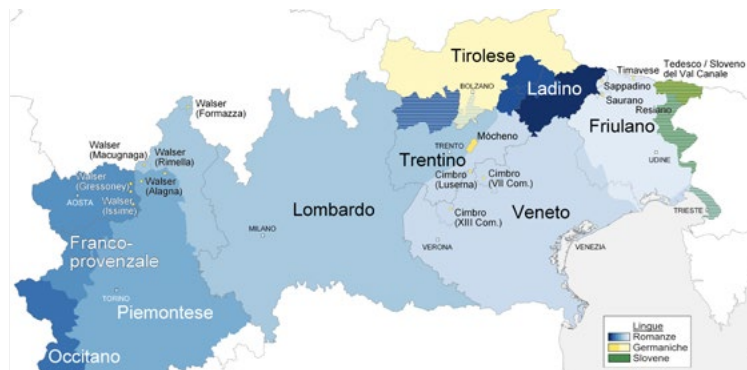
FUNDING
National Funding – PRIN 2022 PNRR

PARTNER
unibz, Università degli Studi di Milano-Bicocca, Università Roma Tre

UNIBZ RESEARCHER TEAM
Urban Nothdurfter (PI), Eleonora Melchiorre, Maria Alessandra Molè

AlpiLink aims to promote and study the Germanic, Romance and Slavic minority languages and dialects spoken in the Alpine regions of Italy. To collect data that is comparable across these languages, the project uses the crowdsourcing platform [alpilink.it](#). Speakers can contribute by recording their responses to various linguistic tasks (e.g. translation, image description). These audio recordings are freely

available on an interactive online map. AlpiLink follows an Open Science policy, publishing all collected data on Zenodo. The project also includes a citizen science component, VinKiamo, which features various activities, including the involvement of high school students in the research process.



The linguistic varieties investigated by AlpiLink. Image: AlpiLink

Population ageing will increasingly affect the economy, health care, the labour market and social ties across Europe. Understanding the factors behind inequalities in healthy ageing is therefore crucial. SOFIA addresses this by looking at frailty, both physical and social, as a key to stratifying the older population and dividing it into homogeneous groups.

Using both administrative and European longitudinal data, SOFIA created a new social frailty indicator and aims to develop stratification procedures based on socio-health conditions and to implement a demo-economic model for regional projections. The results provide concrete tools for planning more effective and sustainable health and social policies.



Photo: Pexels | Matthias Zomer

AlpiLink – German-Romance Language Contact in the Italian Alps: Documentation, Explanation, Participation

INFO

DURATION
06/2022 – 05/2025

BUDGET
€531,307.00 (unibz €121,091.00)

FUNDING
National Project – PRIN 2020

PARTNER
unibz, Università degli studi di Verona, Università di Trento, Università di Torino, Università della Valle d'Aosta

UNIBZ RESEARCHER TEAM
Birgit Alber (PI), Angelica Bonelli, Silvia Dal Negro, Alexander Glück, Joachim Kokkelmans, Alessandro Vietti, Ruth Videsott

WEBSITE
[alpilink.it](#)



SOFIA – SOcial and health Frailty as determinants of Inequality in Ageing

INFO

DURATION
05/2022 – 05/2025

BUDGET
€692,409.00 (unibz €132,539.00)

FUNDING
National Project – PRIN 2022

PARTNER
unibz (coordinator), Università degli Studi di Padova, Università degli Studi del Molise, Università degli Studi di Bologna, Università degli Studi di Torino

UNIBZ RESEARCHER TEAM
Giulia Cavrini (PI), Elisa Cisotto



SOFIA
Social and health Frailty as determinants of Inequality in Aging

Faculty of Engineering



Photo: unibz | Eleonora Lunardonì

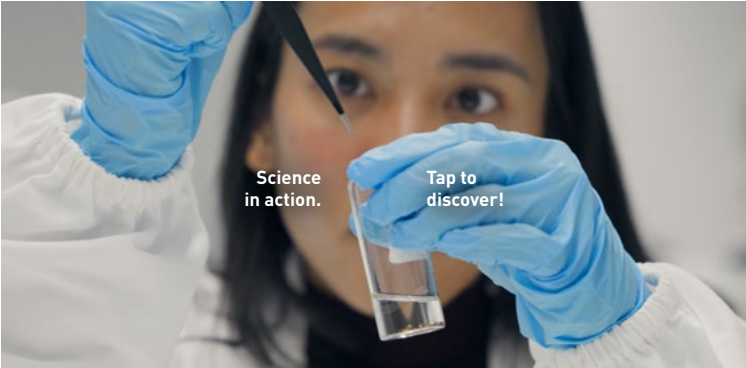
KEY DATA

PEOPLE

879 Students, of whom
161 PhD Students
44 Tenured Professors
36 Researchers
58 Research Assistants
14 Technical Staff
19 Administrative Staff

FLEXIBOTS brings together electronics with advanced mechanical microsystems. ETH Zurich developed biocompatible, flexible, millimeter-scale micro-robots that can be controlled by magnetic fields and unbz equipped them with ultra-thin electronic sensors, antennas, and transistors, creating robots that can sense their surroundings and send signals. To do this, new manufacturing methods

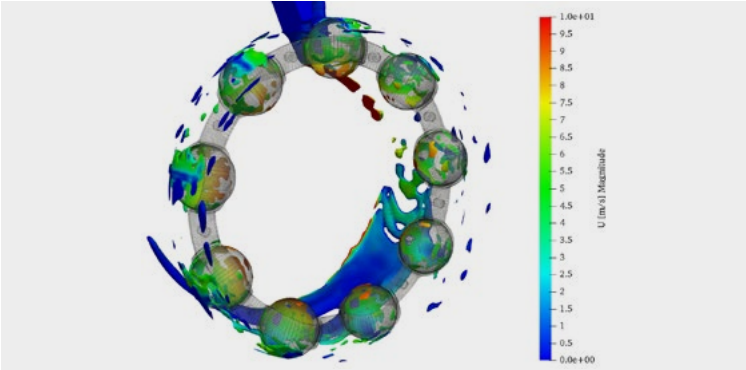
were needed to ensure compatibility between electronic thin-film components and the flexible microrobots. This breakthrough opens up exciting possibilities, from medical uses to industrial inspections in hard-to-reach places.



Video: unbz | Matteo Vegetti

Approximately 23% of the energy generated worldwide is lost due to friction in machines. Nearly 40% of this energy loss could be saved over the next 20 years, reducing CO₂ emissions by up to 3300 million tonnes per year. Tribology, the science that studies friction and lubrication, plays a key role in the field of engineering. Since bearings, the machine parts that help things

move smoothly by reducing friction between moving parts, are used everywhere, it is important to make them more efficient. HyperCUBE focuses on testing greases used in bearings, improving models that describe their behaviour and understanding how they perform in real-world conditions to support the development of greener and more efficient machines.



Lubrication of a bearing. Photo: HyperCUBE | Franco Concli

FLEXIBOTS – Flexible Electronics meets μ -Robotics: Route for Augmented Bio-Intelligent Medical Treatments

👁 INFO

DURATION
02/2021 – 09/2024

BUDGET
€266,430.00

FUNDING
Autonomous Province Bozen/Bolzano – South Tyrol (Joint Projects I-CH)

PARTNER
unibz, ETH Zurich, Università degli Studi di Modena e Reggio Emilia

UNIBZ RESEARCHER TEAM
Niko Münzenrieder (PI), Giuseppe Cantarella, Diane Corsino, Federica Catania

HyperCUBE – Grease Modelling Strategies for CFD of Rolling Element Bearings

👁 INFO

DURATION
03/2024 – 03/2025

FUNDING
Schaeffler Technologies AG & Co. KG

PARTNER
unibz (coordinator), Schaeffler Technologies AG & Co. KG

UNIBZ RESEARCHER TEAM
Franco Concli (PI)

SustainHEAT supports the decarbonization of buildings by improving heating systems. Sustainable heating systems, such as hybrid heat pumps with natural refrigerants and combustors powered by renewable fuels, will be developed and tested within the project. Their impacts will be evaluated in terms of energy efficiency, their ability to adapt to energy demand in heating and electricity networks,

and environmental impact. As an additional goal, the project wants to update training paths for designers and installers by providing a sustainable heating system sizing tool and organising workshops for knowledge transfer. Taken together, these activities will support the transition to more sustainable heating solutions.



Photo: SustainHEAT

5VREAL integrates Artificial Intelligence, Edge Computing and 5G technology to transform volleyball not only from a tactical point of view, but also from an entertainment perspective. The developed solution provides real-time ball tracking, player action detection and match analysis to provide technical insight to coaches and team staff, while also generating info-

graphics on big screens and TVs to enhance the fans' experience. A final demo event showcased the system's potential, demonstrating how advanced video analytics and fast networks can improve both performance analysis and spectator engagement in sport.



Innovative technologies can improve volleyball performance analysis and spectator engagement. Photo: FBK | Andrea Franceschini

SustainHEAT – Sustainable Heating Systems for Decarbonising Buildings

👁 INFO

DURATION
10/2023 – 10/2026

BUDGET
€1,120,016.84 (unibz €318,179.00)

FUNDING
EU Project – ERFD

PARTNER
unibz, Eurac Research

UNIBZ RESEARCHER TEAM
Massimiliano Renzi (PI), Marco Baratieri, Francesco Patuzzi

5VREAL – 5G Volley Reality Experience and Analytics Live

👁 INFO

DURATION
10/2023 – 12/2024

BUDGET
€1,242,498.14 (unibz €127,153.00)

FUNDING
National project – Ministero delle Imprese e del Made in Italy, Piano di Sviluppo e Coesione – MIMIT FSC 2014– 2020: Tecnologie 5G. Progetti di sperimentazione e ricerca

PARTNER
unibz (coordinator), Vodafone Italia, Fondazione Bruno Kessler, Small Pixels, Euro Media Group

UNIBZ RESEARCHER TEAM
Oswald Lanz (PI), Marco Montali, Giuseppe Di Fatta, Andrea Janes, Andrea Rosani, Ivan Donadello

The digital economy needs engaged citizens equipped with the skills to contribute to a safe, green and fair society. OSCAR supports the improvement of education and training systems by developing and testing an innovative, high-quality and inclusive European platform to promote transversal digital skills among high school students. The platform offers online and hybrid non-conventional learning



Photo: unibz

experiences and is supported by guidelines for organising coding camps that recreate in-person dynamics through a holistic approach (addressing logistics, multilingualism and inclusion). As use cases, OSCAR will launch three camps focused on timely topics: serious games, extended reality and app development.

OSCAR – Promoting crOss-cutting Digital Skills Through Europe-wide Non-Conventional LeARning Experiences

INFO

DURATION
12/2023 – 11/2027

BUDGET
€1,493,185.00 (unibz €305,592.00)

FUNDING
Eu Project – Erasmus+, KA2

PARTNER
unibz (coordinator), University of Jyväskylä, University Jaume, Università degli Studi di Bari Aldo Moro, Direzione Istruzione e Formazione Italiana Bolzano, Ministero dell'Istruzione e del Merito, Diputació de Castelló

UNIBZ RESEARCHER TEAM
Ilenia Fronza (PI), Claus Pahl, Xiaofeng Wang

WEBSITE
oscar-codingcamps.eu



ReSS-Pro helps manufacturing companies improve efficiency and sustainability. Business operations often consume significant amounts of natural resources, so reducing these while maintaining profits is key. As companies digitalize, they generate data that can improve process management. Current predictive tools can forecast process outcomes, but don't indi-

cate when and how to intervene to ensure a high probability of success while limiting resource consumption. ReSS-Pro develops an advanced IT system that extends predictive monitoring with smart recommendations to help manufacturers boost efficiency and reduce waste, balancing profit and sustainability.



ReSS-Pro develops solutions for the sustainability of organisational processes based on artificial intelligence and process mining techniques. Photo: generated with AI

ReSS-Pro: Recommender Systems for Sustainable Processes

INFO

DURATION
12/2023 – 12/2025

BUDGET
€72,000.00

FUNDING
Fondazione Cariverona

PARTNER
unibz (coordinator), DataLane S.r.l.

UNIBZ RESEARCHER TEAM
Fabrizio Maria Maggi (PI), Ivan Donadello

WEBSITE
sites.google.com/view/ress-pro/about-ress-pro

Competence Centre for Economic, Ecological and Social Sustainability

The Competence Centre for Sustainability integrates research, teaching and knowledge transfer on ecological, social and economic sustainability in South Tyrol. It is dedicated to studying the economic, environmental and social dimensions of policies and actions aimed at sustainable development at both local and global levels. Its mission is to conduct excellent research, engage in public and private partnerships

Sustainability is increasingly key to corporate success. This project assesses the ESG performance of the 100 largest companies in South Tyrol using publicly available data. ESG measures a company's environmental, social and governance impact. In addition to financial indicators, the project considers CO₂ emissions, environmental certifications, compensation systems, gender diversity in leadership and sustainable supply chains. A central feature is the ESG

and foster educational initiatives that advance sustainability in South Tyrol and beyond. The core objective is to promote and accelerate the region's transition to greater sustainability. The Centre's research areas are: 1) Economic Sustainability; 2) Social Sustainability; 3) Environmental Sustainability.

KEY DATA

DIRECTOR
Elisabeth Gsottbauer

STEERING BODY
Elisabeth Gsottbauer
Aart van Bezooijen
Camilla Wellstein

SCIENTIFIC COMMITTEE
Athanassia Athanassiou
Robert F. Engle
Martin Gerzabek
Klaus Egger
Heidi Röhrler
Kathrin Madl

Top 100 ranking, published with an AI-based ESG score on an interactive platform. The goal is to enhance transparency, improve sustainability reporting and provide data-driven insights for companies, policymakers, researchers and society.

Decarbonisation, Governance and Sustainability: The South Tyrolean Top 100

INFO

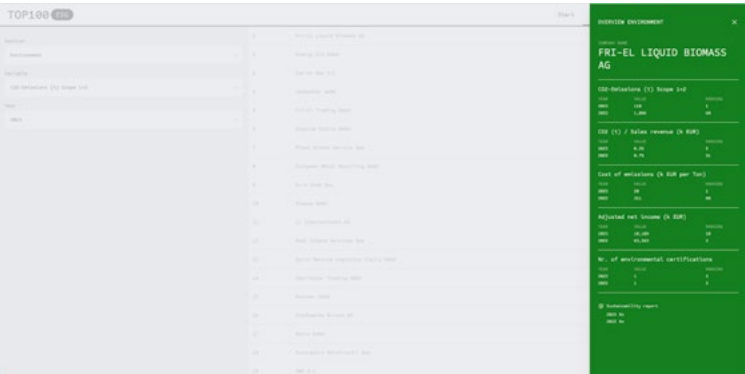
DURATION
12/2024 – 05/2025

FUNDING
Internal funding

UNIBZ RESEARCHER TEAM
Luca Menicacci (PI), Massimiliano Bonacchi

WEBSITE
top100esg.projects.unibz.it

TOP100 ESG



Ranking of the company FRI-EL LIQUID BIOMASS AG in the "Environment" section. Image: Top100 ESG

Competence Centre for the Management of Cooperatives

Cooperatives are agents of development that address problems with social impact in an interdisciplinary perspective.

The Competence Centre conducts and shares research on cooperative enterprise management, advancing scientific knowledge and promoting innovation to address current challenges in the cooperative sector. It collaborates closely with South Tyrolean stakeholders working to develop and strengthen the

cooperative system, as well as with national and international research partners. The Centre's research focuses on three main areas: 1) the institutional role and regional importance of cooperatives; 2) leadership, management, and corporate governance; 3) personnel management within cooperatives.

ASSETS aims at driving innovation in the social economy across Europe. Although social economy organizations (SEOs), such as cooperatives, make up over 10% of EU enterprises and support 13.6 million jobs, they face challenges related to legal issues, financing, scalability and unstable working conditions.

Assessing their social impact remains problematic and existing evaluation tools often prioritize accountability over addressing local needs, limiting their effec-

tiveness. To address these issues, ASSETS follows a four-step strategy: conducting cross-regional research and case studies, enhancing evaluation tools, developing a digital collaboration platform and improving working conditions in SEOs.

KEY DATA

DIRECTOR
Richard Lang

STEERING BODY
Richard Lang
Alessandro Narduzzo
Peter Agstner

SCIENTIFIC COMMITTEE
Johanna Mair
Dietmar Rößl
Francesco Rullani
Manuela Paulmichl
Christian Tanner
Alex Baldo

ASSETS – Advancements in Social Economy Through Technological Solutions

INFO

DURATION
11/2024 – 10/2027

BUDGET
€2,999,593.75 (unibz €305,725.00)

FUNDING
EU Project – Horizon Europe

PARTNER
unibz (partner), Aristotle University of Thessaloniki, Roskilde University, Universität zu Köln, Izmir Institute of Technology, National Distance Education University, Società Cooperativa Sociale Sole, European Movement International, Ethos Legal Solutions, Ainigma, Artemis Research & Innovation, P2P Lab, Huset Venture, Doğa Derneği, Fundación Entretantos

UNIBZ RESEARCHER TEAM
Lang Richard (PI), Giovannini Michela, Piccoli Alessandra

WEBSITE
assetsprojecthub.eu



Photo: Faidra Stylianou

Competence Centre for Mountain Innovation Ecosystems

The Competence Centre for Mountain Innovation Ecosystems, fully funded by the National Plan for Recovery and Resilience (PNRR), aims to promote the development of new products, processes and lifestyles capable of consolidating or maintaining local traditions that guarantee the survival and demographic viability of mountain contexts. The centre also promotes interaction between universities and the region in sectors consid-

ered strategic for the successful implementation of green and smart transitions and contributes to the creation of a tourism ecosystem in which culture acts as a key driver of strategic innovation.

iNEST aims to boost innovation in the North-East of Italy by bringing together research institutions, industry and communities in Innovation Ecosystems. These ecosystems support the development of new technologies, products and services to strengthen regional sustainability and competitiveness. The project is organized in a Hub-Spoke structure. unibz is working on three spokes: 1) the development of new products, processes and lifestyles for consolidating or

supporting local traditions that guarantee the vitality of mountain contexts (Spoke 1); 2) the green and digital transition in the manufacturing sector (Spoke 3); 3) the creation of a tourism ecosystem in which culture acts as a key driver of innovation (Spoke 6).



iNEST Event [27 February 2025]. Photo: unibz | Matteo Vegetti

KEY DATA

DIRECTOR
Fabrizio Mazzetto

STEERING BODY
Fabrizio Mazzetto
Guido Orzes
Serena Volo

SCIENTIFIC COMMITTEE
Maurizio Bergamini Riccobon
Christina Paulus
Antoniotto Guidobono Cavalchini

iNEST – Interconnected Nord Est Innovation Ecosystem

INFO

DURATION
09/2022 – 12/2025

BUDGET
unibz €8.371.054,00

FUNDING
National Funding – PNRR

PARTNER
unibz (partner and Spoke coordinator), Università degli Studi di Padova, Università degli Studi di Verona, Università Ca' Foscari Venezia, Università Iuav di Venezia, Università di Trento, Università degli Studi di Udine, Università degli Studi di Trieste, Scuola Internazionale di Studi Avanzati, Consiglio Nazionale delle Ricerche, Istituto Nazionale di Oceanografia e di Geofisica Sperimentale, Corila, Cresme, Eurac Research, Fondazione Bruno Kessler, Fondazione Università Ca' Foscari, Fondazione Edmund Mach, Friuli Innovazione, Hub Innovazione Trentino, Autorità di Sistema Portuale del Mare Adriatico Orientale – Porti di Trieste e Monfalcone, Polo Tecnologico Alto Adriatico, t2i

UNIBZ RESEARCHER TEAM
Fabrizio Mazzetto (PI), Guido Orzes (Co-PI) und Teammitglieder des Kompetenzzentrums

WEBSITE
www.consorzioinest.it

Competence Centre for Plant Health

Plant health is essential for food quality and environmental sustainability, but it is increasingly threatened by climate change and pests. South Tyrol plays a key role, with around 25,000 hectares cultivated with apples, grapes and other crops. The Competence Centre for Plant Health investigates abiotic and biotic stress factors to understand their impact on plant health, monitor changes, predict future challenges and develop

timely and practical solutions. The focus lies on plant-environment interactions, disease control and technological innovations for sustainable agriculture. The Centre's research is divided into three areas: 1) Abiotic Factors; 2) Biotic Factors; 3) Technology and Management.

HuMUS supports the EU Soil Mission by promoting dialogue, knowledge sharing and stakeholder engagement to protect and restore soil health across European regions and municipalities. It creates spaces for social dialogue, builds shared understanding of soil challenges and strengthens regional cooperation. Through case studies, capacity building and an Open Call for pilot projects, HuMUS empowers local actors, fosters social innovation and connects public

authorities, citizens, farmers and researchers to co-create solutions and advance sustainable land management. The project helps integrate soil health into regional strategies and promotes best practices and long-term collaboration at all levels.



Photo: HuMUS

KEY DATA

DIRECTOR
Tanja Mimmo

STEERING BODY
Tanja Mimmo
Andrea Battisti
Suzanne Zeilinger

SCIENTIFIC COMMITTEE
Carmen Büttner
Michele Morgante
Ilaria Pertot
Michael Oberhuber

HuMUS – Healthy Municipal Soils

INFO

DURATION
01/2023 – 12/2025

BUDGET
€3,276,679.50 (unibz €195,937.50)

FUNDING
EU Project – Horizon Europe

PARTNER
unibz (partner) Anci Toscana, Università degli Studi di Scienze Gastronomiche, Chambre regionale d'agriculture des Pays de la Loire, Universität Hohenheim, Asociacion Empresarial de Investigacion Centro Tecnológico Nacional Agroalimentario Extremadura, Stichting Louis Bolk Instituut, Agroecology Europe, Universidad de Granada, Ernährungsrat Stadtregion Stuttgart, Regionalno Sdruzhenie Na Obstini Tsentralna Stara Planina, Fundacion Fundecyt, The Andalusian Agricultural and Fisheries Management Agency, Regional Rural Development Standing Working Group In See, Regional Development Agency for Podravje – Maribor, Landwirtschaftskammer Nordrhein-Westfalen, Vegopolys Valley, University of Córdoba

UNIBZ RESEARCHER TEAM
Tanja Mimmo (PI), Raphael Tiziani, Natalia Rastorgueva, Stefano Cesco, Luigimaria Borruso, Baquy M Abdulaha Al

WEBSITE
humus-project.eu

Competence Centre for School Inclusion

The Competence Centre for School Inclusion conducts research, fosters collaboration and promotes knowledge exchange on inclusive education. It supports schools and kindergartens in removing cultural, policy and practice barriers to ensure all students, especially those at risk of exclusion, can participate and succeed in their education. The Centre works locally and internationally to evaluate and improve

school inclusion, develop teacher training concepts and create guidelines for inclusive practices. The Centre aims to present and discuss evidence from the Italian and South Tyrolean inclusive school systems within international scientific networks, while also promoting inclusive practices in local kindergartens and schools.

GOODWILL addresses the international need for high-quality inclusive education, as outlined in the 2030 Agenda, while responding to specific regional challenges. It empirically explores school development and teacher professionalization processes in 20 schools in the Autonomous Province of Bolzano/Bozen, focusing on school cultures as key interfaces between individuals and organizations. All schools are part of a quality initiative by the German

Education Directorate, which combines process support with in-school teacher training. Initial findings, theoretical frameworks and transferable concepts have been shared at international conferences, published and discussed with regional practitioners.

KEY DATA

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GOODWILL – Researching school Development: Pathways to Inclusive and Quality Education 2030

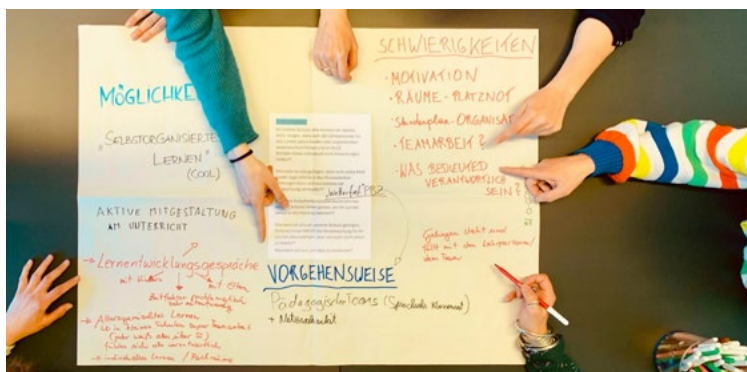
INFO

DURATION
09/2023 – 09/2026

FUNDING
Internal funding

Autonomous Province of Bolzano/Bozen – German Education Directorate

UNIBZ RESEARCHER TEAM
Simone Seitz (PI), Giulia Consalvo, Sara Baroni, Petra Auer, Francesca Berti



The first results of the qualitative study were discussed in a World Café with professionals and network partners. Photo: Goodwill

Competence Centre for Social Work, Social Pedagogy and Social Policy

The Competence Centre conducts research on social issues of regional, national and international relevance, with a focus on participatory approaches that support the development of a democratic society. Its main research areas include: 1) Child and Youth Welfare; 2) Ageing, Care, Diversity, Gender and Migration, with attention to the effects of demographic change; 3) Social Policy, Innovation in the Social Sector, Social Secu-

urity and Participation, especially through the proactive design of local social policy and integrative social planning. Current projects address poverty and confidence building in the context of “Dopo di Noi” and support for migrant women victims of gender-based violence.

GMQUANT conducted an exploratory questionnaire among social workers in South Tyrol as the first phase of an ethnographic research project titled “Understanding migrant women’s parenting in advocacy practices: critical issues and good practices”, running from 2024 to 2027. Preliminary findings point to perceived cultural differences in parenting practices, language barriers and a lack of social support networks. These insights reflect the complexity of migra-

tion processes and related social positioning and will be further examined through qualitative interviews with both social workers and migrant women in order to implement more effective advocacy practices.

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GMQUANT – A Quantitative Survey on the Parenting of Migrant Women in the Perception of Social Workers in South Tyrol

INFO

DURATION
09/2024 – 12/2024

FUNDING
Internal Funding

UNIBZ RESEARCHER TEAM
Dorothy L. Zinn (PI), Marina Della Rocca



The graph shows the keywords in terms of the frequency with which they are mentioned (from big = often to small = rare). Image: GMQUANT

Competence Centre for Sustainable Tourism

The Centre for Sustainable Tourism conducts applied research in tourism and sustainability to support the transition to a more sustainable future. In collaboration with key tourism stakeholders in South Tyrol, it promotes research and knowledge transfer across society, culture, economy and ecology, which are essential areas for developing responsible socio-economic practices and sustainable tourism. Its main

research areas are: 1) Indicators for Socio-Economic Sustainability; 2) Sustainable Tourism and Digital Transformation; 3) Sustainable Mobility in Tourism. The Centre brings together expertise, fosters synergies and supports funding initiatives to strengthen sustainable tourism in South Tyrol.

Tourism has boosted South Tyrol's prosperity, but its intensity has led to undesirable effects such as traffic, housing shortages and landscape overuse, reducing public acceptance. Despite this, tourism remains a key factor in balanced socio-economic development, making a shift toward sustainability essential. The Centre aims to develop and test methods that support a transition to sustainable and responsible socio-economic tourism practices. It analyzes

tourism's economic impact, explores its role in the circular economy and uses big data tools and online reviews to identify trends. Future goals include a regional tourism monitoring system and a dashboard to track guest sentiment in real time.



Photo: IDM Südtirol Alto Adige | Manuel Ferrigato

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Sustainable Tourism

INFO

FUNDING
Autonomous Province of Bozen/
Bolzano – South Tyrol

PARTNER
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WEBSITE
www.unibz.it/it/home/research/competence-centre-sustainable-tourism

International Competence Centre on Food Fermentations

The International Competence Centre on Food Fermentations (ICOFF) pioneers sustainable food innovation by developing functional ingredients and micro-organisms and by optimising bioprocesses, industrial processes that use living organisms. Key research areas include the improvement of plant-based alternatives using pulses, the recycling of food by-products (e.g. fruit, dairy by-products) through sourdough fermenta-

tion – an ancient and natural biotechnology – and the valorization of exotic fruits. In addition, the centre focuses on the development of probiotics, postbiotics and apple-derived food supplements. Through tailor-made microbial fermentation, the centre advances clean-label, nutrient-rich and eco-friendly food solutions.

ICOFF promotes sustainable food production through microbial bioprocessing. Key initiatives include the development of plant-based cheese/meat alternatives from pulses, the recycling of bread and pasta waste through sourdough fermentation and the conversion of dairy by-products into new fermented beverages. Research is also exploring the valorization of exotic fruits through tailored fermentation, probiotic and postbiotic consortia, phenolic-rich fruit supplements



Bioreactor. Photo: unibz | Matteo Vegetti

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The Potential of Fermentation: A Natural, Clean and Sustainable Way to Preserve Human Life and Our Planet

INFO

DURATION
07/2024 – 12/2026

FUNDING
Autonomous Province of Bozen /
Bolzano – South Tyrol, Fondazione
Sparkasse and Food / Pharmaceutical
Companies

PARTNER
unibz (coordinator), all 9 ICOFF companies

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WEBSITE
www.unibz.it/it/home/research/international-competence-centre-food-fermentations

Third Mission and Social Impact

1.

Coding Camp 2024: MobileDev Meets AI

MobileDev is the title of the computer science summer school dedicated to high school students that the Faculty of Engineering (Prof. Ilenia Fronza) has been organising for thirteen years. The camp consists of a one-week (20-hour) hands-on lab simulating a professional environment for developing mobile software. Over the years, it has led to the creation of real apps downloadable from online stores – such as an app that locates the nearest defibrillator in the city. In September 2024, the initiative focused on AI-based application development and engaged 235 aspiring mobile app developers, with 100 attending

in person at NOI Techpark and 135 participating online. The camp offered intensive training in software design and programming. It is one of the university's strategic Third Mission initiatives to strengthen digital skills among the younger generation in South Tyrol.

2.

The South Tyrol Alliance for Sustainability: Public Events and Online Platform

Inspired by the UN 2030 Agenda and its Sustainable Development Goals (SDGs), the South Tyrol Alliance for Research in Sustainability (S.T.A.R.S.) is a key player in the region's sustainability strategy. Coordinated by unibz, the alliance brings together the

province's seven main research institutions to form an interdisciplinary and inter-institutional network. Its mission is to conduct sustainability research and provide policymakers with the knowledge necessary for decision-making aligned with the SDGs. In 2024, the Alliance enhanced its outreach efforts to raise community awareness of environmental, economic and social issues by organising a rich programme of public lectures and open classes on sustainability. These public events, together with the launch of a new web platform in June 2024 (www.research-alliance-for-sustainability.it), served as essential Third Mission tools to foster informed dialogue between researchers and the public.

01 — Prof. Ilenia Fronza at the opening of the MobileDev Summer School. Photo: unibz | Matteo Vegetti
02 — Web platform of the Research Alliance for Sustainability in South Tyrol. Photo: unibz

01



02



3.

INCLU5ION – Industry 5.0 for Inclusion

Launched in 2024, INCLU5ION is a collaborative project with Fraunhofer, CoopBund, Novum and the Belgian social enterprise Mariasteen. It aims to make production processes more accessible and inclusive for people with disabilities. Led by Prof. Erwin Rauch, the Smart Mini Factory project focuses on individuals with physical or cognitive disabilities working in industrial or craft settings. Using Industry 5.0 technologies, the project promotes inclusive, human-centred work environments. The project's goal is to create production spaces that are truly accessible and human-centred, enriched by anthropo-

centric technologies that assist workers and enhance their abilities. One of the main activities is classifying inclusive technologies through expert consultation and analysis. The expected results will contribute to the development of fairer, more sustainable, human-centred workplaces, where technological innovation becomes a tool for dignity and participation.

4.

SUSTCOTECHCERT – Workshops for Sustainable Enterprises

The sustainability of economic activities, in economic, environmental and social terms, is now an unavoidable goal. To support and enforce this objective, new

legal standards are emerging at international, European and national levels in multiple countries to safeguard human rights (for workers involved in unsustainable production or people living in affected areas) and environmental resources (threatened by unsustainable activities). SUSTCOTECHCERT aims to analyse new contractual forms, technical standards and certification systems that support sustainable economic relationships. In 2024, within this project, unibz organised four thematic workshops on corporate sustainability targeting companies and local stakeholders. Topics ranged from sustainable communication to environmental certifications with the aim of encouraging

03 — The Smart Mini Factory at unibz. Photo: unibz | Matteo Vegetti
04 — Laura Valle, Professor of Private Law and Contract Law at the Faculty of Economics and coordinator of the project SUSTCOTECHCERT. Photo: unibz | Alexander Erlacher

03



04



companies to adopt more responsible practices. The collaboration with the Chamber of Commerce of Bolzano further strengthened the local impact by fostering dialogue between academia and the production system.

5.

Advanced Management Training for 43 South Tyrolean Healthcare Managers

On 5 April 2024, unibz launched its first healthcare management course as part of the National Recovery and Resilience Plan (PNRR – Piano Nazionale di Ripresa e Resilienza). Funded by the “Next Generation EU” initiative with a budget of around 170,000 euros, the programme was designed for 43 managers

from South Tyrol’s healthcare sector. Structured into two 200-hour modules, the course was designed to specifically address local needs, equipping future healthcare leaders with up-to-date skills and tools to meet contemporary healthcare challenges. This initiative fully reflects the university’s mission to contribute to the province’s development by offering high-quality programmes aligned with local needs. Prof. Marjaana Gunkel, Dean of the Faculty of Economics, was entrusted with the scientific direction of the course. This course is a vital part of the strategy to strengthen the South Tyrolean healthcare system, confirming unibz’s role as a reliable partner for regional skills development.

6.

unibz Supporting the Citizens’ Climate Assembly

In 2024, the Free University of Bozen-Bolzano provided scientific support to the South Tyrol Citizens’ Climate Assembly, which was promoted by the Autonomous Province of Bozen-Bolzano as part of the Climate Plan 2040. Five public meetings saw the direct involvement of university experts, who provided data, analyses and tools to help attendees understand the local impacts of climate change. This initiative is part of a broader research project analysing the operation of Climate Citizens

05 — The presentation of the course to the participants. Photo: unibz | Matteo Vegetti
06 — Photo: IDM Südtirol | Südtiroler Archäologiemuseum/foto-dpi.com



Assemblies (CCAs), which are groups of randomly selected citizens who deliberate on climate challenges, using an eco-social design approach. A comparative study of the South Tyrolean and Catalanian experiences aims to examine how these tools promote inclusion, climate justice and sustainable transitions. In South Tyrol, the Assembly comprises 50 adult citizens selected by ASTAT according to representative criteria such as gender, age, area of residence, linguistic and professional background, and six minors under 18. This structure is supported the Climate Stakeholder Forum, which brings together representatives from the labour, economic, social and environmental sectors. Both groups collaborate to analyse the Climate Plan 2040, focusing on mobility, energy, food, consumption and land use.



Through anthropological research methods and visual tools, unibz assesses the participatory processes and develops guidelines to make climate assemblies more effective and inclusive.

7.

South Tyrol Sustainability Label

In 2024, unibz (Prof. Erwin Rauch) finalised a sustainability assessment tool for SMEs (Small and Medium-sized Enterprises). The tool was developed for the European Enterprise Network (EEN) in collaboration with NOI Techpark Bolzano, the Agency for Regional Development of North Tyrol, the Business Promotion Agency of Upper Austria, the Economic Development Agency of Styria and the Austrian Research Promotion Agency. This assessment tool is currently used in South Tyrol and by various EEN partners in five European countries: Italy, Germany, Austria, Belgium and the United Kingdom. The model evaluates 23 sustainability criteria across economic, ecological, social and governance dimensions. The South Tyrol Sustainability Label allows SMEs to demonstrate their achievements and dedication to sustainability via a robust process tailored to their requirements. With its three-level, gradual approach, companies can progressively improve the implementation of sustainability concepts in their operations. Furthermore, unibz

and Fraunhofer Italia developed an innovative tool to assess circular economy practices and performance in manufacturing companies. The tool attracted the interest of the United Nations Development Programme in Bosnia and Herzegovina, which commissioned a research contract to customise it for local businesses. Under the PNRR iNEST project, the tool was also validated and is now freely available to companies.

07 — Erwin Rauch, Professor of Smart and Sustainable Manufacturing at the Faculty of Engineering. Photo: unibz | Alexander Erlacher

Cooperation and Internationalisation

The Free University of Bozen-Bolzano actively promotes the participation of its researchers in international and European research and innovation networks.



UnLiOn (Universities Informal Liaison Offices Network) is an informal network of 54 liaison offices based in Brussels, representing over 160 leading universities from Europe, Japan and Russia. unibz is part of the Extended Secretariat supporting the organisation of brokerage events and the annual meeting.



ERIAFF (European Regions for Innovations in Agriculture, Food and Forestry) is an informal network of regional authorities working on shared interests, involving regional stakeholders. The Autonomous Province of Bozen-Bolzano is a member of this network. Within ERIAFF, unibz researchers collaborate with different thematic working groups active in the fields of agriculture and food, including: the Agroecology Working Group (chaired by unibz, who is also part of the Agroecology Partnership), the High Tech Farming, the Plants Protein Working Group, the Food System Working Group and the Forested Region Working Group.



EIT FOOD is a pan-European organisation accelerating innovation to build a future-fit food system that produces healthy and sustainable food for everyone.



EUPHRESCO is a network of organisations that funds and coordinates national research in the phytosanitary area. Its main goal is to support cooperation in phytosanitary research and maintain a strong, long-term network of research stakeholders. Since 2022, unibz has been a member through its Competence Centre for Plant Health.



GIURI (Gruppo Informale di Uffici di Rappresentanza Italiani) is an informal platform that brings together liaison offices and interest representatives of Italian stakeholders active in Research and Innovation at the EU level.



ERRIN (European Regions Research and Innovation Network) aims to reinforce the regional and local dimension in EU research and innovation policies and programmes. unibz is one of the co-chairs of the Bioeconomy Working Group.



BIC (Bioeconomy Industry Consortium) is a non-profit organisation established in Brussels in 2013 to represent the private sector in a public-private partnership (PPP) with the European Commission, aimed at strengthening Europe's bio-based industries. unibz is an associate member.

