

Research Report 2022



Research Report 2022

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Preface

Im Jahr 2022 hat die Freie Universität Bozen ihr 25-jähriges Bestehen gefeiert. Mit Stolz können wir auf all das blicken, was in diesem Vierteljahrhundert entstanden ist: in der Lehre, in der Forschung und in der Dritten Mission. Die Universität bildet junge Leute aus in Bereichen, die für das Territorium von besonderer Wichtigkeit sind. Die Forschungsleistungen sind international sichtbar und anerkannt. Darüber hinaus konnte ein enger Kontakt zu vielen lokalen Betrieben und Institutionen etabliert werden. Das 25-jährige Jubiläum wurde in einer Reihe von kleineren Veranstaltungen im Lauf des Jahres gefeiert, die bewusst auch außerhalb von Bozen stattfanden, um die Rolle der Universität für die gesamte Provinz zu unterstreichen.

Ein zweites sehr wichtiges Thema 2022 war die Nachhaltigkeit. Die Freie Universität Bozen ist den Nachhaltigkeitszielen der Vereinten Nationen verpflichtet und hat eine Reihe von entsprechenden Maßnahmen umgesetzt. So wurde ein multidisziplinäres und fakultätsübergreifendes Kompetenzzentrum für ökonomische, ökologische und soziale Nachhaltigkeit eingerichtet und der Presse vorgestellt. Mit dabei war der Nobelpreisträger Prof. Robert Engle von der New York University, der auch Mitglied im wissenschaftlichen Beirat des Zentrums ist. Hauptziel des

Kompetenzzentrums ist es, die wirtschaftlichen, ökologischen und sozialen Aspekte für eine nachhaltige Entwicklung in Südtirol zu untersuchen und innovative Lösungen für deren Umsetzung zu entwickeln. Das Zentrum ist mit zwei extern finanzierten Stiftungsprofessuren ausgestattet, die von der Südtiroler Sparkasse, der Stiftung Südtiroler Sparkasse und Alperia finanziert werden, denen unser Dank gilt.

Im Rahmen der Nachhaltigkeitstage Südtirol 2022 wurde auch die Allianz der Forschung und Lehre für Nachhaltigkeit in Südtirol der Presse vorgestellt. Die Allianz wird von der Freien Universität Bozen koordiniert und umfasst alle Forschungseinrichtungen in Südtirol. Ihr Ziel ist es, Unternehmen und politische Entscheidungsträger bei der Umsetzung der Nachhaltigkeitsstrategie zu begleiten und zu unterstützen.



President — Prof. Ulrike Tappeiner

Anche nel 2022 i*le professori*esse e i*le ricercatori*trici delle cinque facoltà e dei sei centri di competenza hanno effettuato le loro ricerche con grande passione, intensità e ad un elevato livello di qualità.

Quest'ultima è testimoniata da numerose pubblicazioni in riviste e conferenze internazionali di altissimo profilo, ma anche dai numerosi riconoscimenti scientifici ottenuti da professori*esse e ricercatori*esse.

Per quanto riguarda l'acquisizione di fondi terzi – un aspetto sempre più importante per il sostegno degli atenei alla ricerca – il 2022 è fortemente caratterizzato dal Piano Nazionale di Ripresa e Resilienza (PNRR). La Libera Università di Bolzano è coinvolta come partner in tre progetti PNRR, per i quali riceve un finanziamento totale di 9.6 milioni di euro: INEST – Ecosistema territoriale dell'innovazione; ONFOODS – Rete di ricerca e innovazione per il cibo e la nutrizione; AGRITECH – Centro Nazionale per le Tecnologie Agrarie. I progetti presentati sono fortemente interdisciplinari e coinvolgono professori e professoresse di tutte le Facoltà.

Oltre a questi progetti del PNRR, sono stati avviati più di 100 nuovi progetti di ricerca, con un finanziamento esterno di 6.9 milioni di euro. Ciò corrisponde alla soglia di finanziamenti terzi raggiunta

negli ultimi anni. Di questi fondi la maggior parte arriva da bandi competitivi, incluso bandi europei, nazionali e progetti congiunti con SNF e DFG.

La qualità della ricerca ed i finanziamenti esterni rappresentano anche un fattore importante per il posizionamento delle università nei ranking, nazionali e internazionali. Nel 2022, nel ranking di CENSIS, unibz si classifica al primo posto tra le piccole università italiane non statali per la sesta volta consecutiva e, nel ranking internazionale di Times Higher Education, si posiziona tra le prime 500 università nel mondo.



Rector — Prof. Paolo Lugli

The University is committed to consolidating its links with the local area and the knowledge transfer from the university to the various stakeholders in the region are becoming increasingly important. To facilitate this transfer and foster excellence in research, unibz operates 13 state-of-the-art research

laboratories at the NOI Techpark in Bozen-Bolzano in different areas, such as food technologies, sensor technologies, robotics, and bioenergy, to name a few. Approximately 150 researchers from three different faculties work and teach in these labs.

The NOI Techpark will also host the new Faculty of Engineering. In March 2022 the foundation stone for the new building was officially laid. The relocation of the Faculty's work to this new campus in 2024 will be an important step towards benefiting from and contributing to the stimulating and vibrant environment in the NOI Techpark, which works closely with companies, start-ups and other research institutes.

In order to strengthen research in areas that are of particular relevance to the local economy and society, unibz features six Competence Centres, which are characterised by their interdisciplinary approach which brings together skills, expertise and researchers from different faculties. Their mission is to conduct application-oriented research addressing challenges that emerge from the region and to solve them in close collaboration with local stakeholders.

All the results described in this report have been achieved thanks to the great passion and

dedication to research shown by our professors, researchers, and PhD students, supported by expert and competent administration staff. We would like to express our sincere gratitude to the entire unibz community.



Vice Rector for Research — Prof. Johann Gamper

We hope you enjoy reading the Research Report 2022.

Ulrike Tappeiner, President
Paolo Lugli, Rector
Johann Gamper, Vice-Rector

Highlights 2022

1.

Flaggschiff der Zukunftsentwicklung – neue Fakultät für Ingenieurwesen

Am 23. März 2022 wurde am NOI Techpark in Bozen Süd der Grundstein für die Fakultät für Ingenieurwesen der Freien Universität Bozen gelegt. Neben den aktuell angesiedelten über

Millionen Euro. „Für unser Forschungssystem, die Stadt Bozen und das Land Südtirol ist NOI ein entscheidender Entwicklungstreiber und die neue Ingenieursfakultät der Universität das Flaggschiff unserer Zukunftsentwicklung“, so Landeshauptmann Arno Kompatscher.



80 Unternehmen und Start-ups sowie den Forschungseinrichtungen und Institutionen werden hier künftig rund 800 Studierende lernen, forschen und zu den Fachkräften von morgen heranwachsen. Das Gebäude der neuen Fakultät entsteht auf einer Fläche von 4.405 m² entlang der Bruno-Buozzi-Straße. Die Gesamtkosten für Planung und Bau belaufen sich auf 57,2

2.

Ricercatori si aggiudicano il Premio Nazionale Innovazione a L'Aquila

Alcune delle migliori promesse di innovazione in Italia arrivano da ricercatori e ricercatrici della Libera Università di Bolzano. A dicembre 2022, a L'Aquila si è



tenuta la 20^a edizione del Premio Nazionale Innovazione dell'Associazione Italiana degli Incubatori Universitari e delle Business Plan Competition. Il team della startup BiSTEMS (composto da ricercatori del Bioenergy & Biofuels Lab) e la ricercatrice Francesca Condorelli (Facoltà di Scienze della Formazione) si sono aggiudicati il primo premio, rispettivamente, nelle categorie "Industrial" e "ICT". Condorelli ha vinto inoltre la Coppa dei Campioni, ovvero il primo premio assoluto della competizione.

1 ← Foundation stone for the Faculty of Engineering © NOI Techpark | Daniele Fiorentino

2 ↑ Francesca Condorelli © Alex Ertlacher

3.

THE and CENSIS: unibz successful in rankings

Excellent research with a high citation rate lay at the basis of rankings. So, it is all the more gratifying when one of the best-known publishers of university rankings, Times Higher Education (THE), once again listed the

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Free University of Bozen-Bolzano in the 401–500 group of the best universities in the world. Thanks to its level of internationalisation, employability once studies have been completed, the services it

offers and a number of other aspects, is also ranked best in the national CENSIS ranking: For the sixth consecutive time unibz ranks first among small, non-state universities in Italy in the 2022–2023 edition.

4.

Ringvorlesung: 18 öffentliche Vorlesungen mit Fokus Nachhaltigkeit

Im Sommer 2022 haben sich verschiedene Südtiroler Forschungsinstitutionen zur Allianz der Lehre und Forschung für Nachhaltigkeit zusammengeschlossen, um wichtige Aspekte der Nachhaltigkeit zu diskutieren und vor allem um Lösungen für künftige Herausforderungen aufzuzeigen. Zu den Forschungsinstitutionen zählen die Freie Universität Bozen, Eurac

Research, die Philosophisch Theologische Hochschule, das Versuchszentrum Laimburg, das Naturmuseum Südtirol, Eco-Research, das Ökoinstitut und Fraunhofer Italia. Ein Partner ist auch IDM. Vorlesungen mit anschließenden Diskussionsrunden machten den Auftakt, um Forschung im Sinne einer nachhaltigen Zukunft zu kommunizieren.

3 ← Campus Bozen-Bolzano © Serena Osti
4 ↓ © IDM | Benjamin Pfitscher



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5.

Didattica della matematica. unibz organizza la conferenza internazionale

Dal 2 al 5 febbraio la Libera Università di Bolzano ha ospitato – online – CERME12, la dodicesima edizione del convegno biennale dell’associazione europea ERME

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(European Society for Research in Mathematics Education). La conferenza ha coinvolto oltre quasi 1000 partecipanti da 48 Paesi che, per quattro giorni, si sono confrontati sui più recenti risultati della ricerca nella

didattica della matematica. Molte presentazioni hanno tematizzato l’uso delle tecnologie digitali e le sfide che il mondo della scuola – e in particolare gli insegnanti di matematica – ha dovuto affrontare negli ultimi due anni di pandemia. Il prof. Giorgio Bolondi della Facoltà di Scienze della Formazione ha organizzato il convegno per unibz che nel 2025 tornerà in presenza al Campus di Bolzano.

6.

The new Competence Centre for Economic, Ecological and Social Sustainability presented

Sustainability stands for quality of life and future viability. With the creation of its own competence Centre, the Free University of Bozen-Bolzano

is focusing on three important pillars: ecological responsibility, social solidarity and economic performance. Therefore the Centre is structured as a multi-disciplinary and cross-faculty Centre of excellence, composed of professors and researchers from different faculties at unibz and other Italian and foreign universities. The new Competence Centre was presented on 7th September during a press conference attended also by Nobel Prize winner Robert F. Engle, who is member of the Centre’s scientific advisory board.

5 ← Prof. Giorgio Bolondi © Alex Erlacher
6 ↓ Left to right: Rector Paolo Lugli, Nobel Prize winner Robert Engle and President Ulrike Tappeiner



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7.

MultiLab. Europäische Kommission listet das pädagogische Labor in Brixen als eines von fünf Modellprojekten

Aus Brüssel erreichte die Fakultät für Bildungswissenschaften eine wichtige Anerkennung: Das MultiLab wurde zusammen mit vier anderen europäischen Bildungsprojekten als repräsentative Fallstudie im Bereich Bildung für den Übergang zu ökologischer Nachhaltigkeit ausgewählt. Von Prof. Liliana Dozza konzipiert und von Prof. Federico Corni weiterentwickelt, bezeichnet das MultiLab einen physischen und gestalterischen Ort, der aktives und partizipatives Lernen ermöglicht. Es bringt als interdisziplinäres Projekt Lehrpersonal und Forschende aus dem Bereich der allgemeinen Pädagogik, der Sozialpädagogik und der Fachdidaktik zusammen, um mit den Praktikumsverantwortlichen gemeinsame Projektwege in den Bereichen Mathematik und Naturwissenschaften, Geschichte und Geografie, Kinderliteratur und Sprachen, Kunst, Motorik, lebenslanges Lernen und Interkulturalität zu entwickeln.

8.

PNRR: progetto per un ecosistema territoriale dell'innovazione
INEST è la proposta progettuale per un ecosistema territoriale dell'innovazione, finanziato dal



PNRR, a cui unibz aderisce assieme ad altre Università del Nord-Est e vari enti di ricerca, poli tecnologici e aziende di elevato profilo. Le attività di ricerca e innovazione si concentrano su nove tematiche generali, ciascuna associata a uno spoke. unibz è la responsabile dello spoke 1, Ecosistemi di Innovazione per Contesti montani, che vede affiliate anche le Università di Padova, Udine, Verona, e Ca' Foscari, Eurac Research e Covision Lab. unibz è inoltre affiliata allo Spoke 3 (Transizione verde e digitale per la tecnologia manifatturiera avanzata) e allo Spoke 6 (Turismo, cultura e industrie creative). Il Centro di Competenza sugli Ecosistemi di Innovazione per Contesti montani di unibz gestirà i progetti in questo ambito. Il finanziamento per unibz è 5.645.210 euro.

7 ← Prof. Federico Corni © Alex Erlacher
8 ↓ Prof. Fabrizio Mazzetto © Alex Erlacher



9.

New at the NOI Techpark: the Human-Centred Technologies and Machine Intelligence Lab

The Human-Centered Technologies and Machine Intelligence Lab of the unibz at the NOI Techpark, led by Prof. Angelika Peer, was officially opened on 16th December. Research is being conducted in methods that will increasingly enable machines to work efficiently, fluidly and safely with humans to support them – everything is set up to develop new technologies of embodied artificial intelligence in order to make the interaction between humans and machines better and safer. "Essentially, our research is about breathing the necessary 'intelligence' into machines to be able to perform complex tasks in cooperation with

or in support of humans," says Prof. Angelika Peer. The application areas of research in the Human-Centered Technologies and Machine Intelligence Lab are extremely broad and range from rehabilitation and geriatrics to minimally invasive surgery, from industrial manufacturing to the construction industry and agriculture. The laboratory was financed by the European Regional Development Fund (ERDF) and the Autonomous Province of Bozen-Bolzano.

10.

Preis für Nachhaltigkeit

Die Stiftung Südtiroler Sparkasse hat im vergangenen Jahr gemeinsam mit der Sparkasse und der Freien Universität Bozen einen Nachhaltigkeitspreis ausgeschrieben und vergeben. Dieser wurde



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den zwei jungen Forscher:innen Isabel Schäufole Elbers von der Fakultät für Wirtschaftswissenschaften und Ariete Zanfei von der Fakultät für Naturwissenschaften und Technik zuerkannt. Schäufole Elbers befasst sich in ihrer Studie „Auf dem Weg zu einem nachhaltigen Lebensmittelkonsum: Wie lässt sich die Kluft zwischen Einstellung und Verhalten überbrücken?“ mit Nachhaltigkeit auf globaler wie lokaler Ebene. Ariete Zanfei rückt in seiner Studie „Nachhaltige Bewirtschaftung der Wasserversorgung“ ein grundlegende Thema in den Mittelpunkt und überzeugt dabei durch die Anwendung mathematischer Modelle für die Wasserwirtschaft.

11.

PNRR: avviato progetto per la sicurezza e qualità alimentare

unibz è uno dei 26 partner della Fondazione OnFoods, hub finanziato con i fondi del PNRR, che riunisce e coordina il lavoro di organizzazioni pubbliche e private, leader nella ricerca scientifica e nell'innovazione sostenibile dei sistemi alimentari. OnFoods funge da centro di coordinamento per sette Spoke tematici, ognuno dei quali si concentra su un aspetto specifico e cruciale del sistema alimentare, ma che lavorano insieme per raggiungere obiettivi comuni in materia di sicurezza e qualità alimentare, nutrizione e prevenzione della malnutrizione. In particolare, unibz ha ricevuto un finanziamento di 1.970.000 euro e, con le Facoltà di Scienze agrarie, ambientali e alimentari e di Ingegneria, è attiva negli Spoke 2 (Sistema alimentare e distribuzione intelligente e circolare), 3 (Sicurezza alimentare degli alimenti tradizionali e innovativi) e 4 (Qualità degli alimenti e nutrizione).

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as they were given the chance to communicate their projects to a wider audience in an engaging way. The three evenings took place at Eurac, NOI Techpark and at the Free University of Bozen-Bolzano (on 28 October 2022). The audience cheered for the slammers that had 10 minutes for their presentation. The evenings were a huge success and will be repeated in 2024 – science communication at its best.

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12.

The first Bolzano Science Slam rocked

In October, unibz, Eurac Research, NOI Techpark, with the support of the Stiftung Südtiroler Sparkasse, organised the first Bolzano Science Slam. The protagonists were the researchers themselves,

- 9 ← Human-centered Technologies and Machine Intelligence Lab © Daniele Fiorentino
- 10 ↑ Isabel Schäufele Elbers © Alex Erlacher
- 11 ↑ Micro4Food Lab © Ivo Corrà
- 12 → Third event of the Bolzano Science Slam at unibz

Faculty of Computer Science



© Eleonora Lunardoni

KEY DATA

PEOPLE

333 Students
60 PhD Students
21 Tenured Professors
45 Researchers
28 Contract Professors
10 Technical and
Administrative Staff

BACHELOR

+ Computer
Science
+ Informatics and
Management of
Digital Business

MASTER

+ Computational Data
Science
+ Software Engineering
for Information Systems

PHD

+ Computer Science



Research Areas



Dean — Prof. Claus Pahl

The Faculty of Computer Science is one of the most excellent computer science departments worldwide. It is ranked among the 201–250 best on an international level and in 2022 it was sixth in the Times Higher Education ranking list of the Italian universities.

The Faculty has an outstanding scientific reputation nationally and abroad in different scientific fields of computer science both in basic and in applied research, ranging from knowledge representation to human-computer interaction, artificial intelligence, and edge/cloud computing.

The research activities are carried out in synergy with small and medium enterprises in South Tyrol as well as in cooperation with large research centres (e.g., Fondazione Bruno Kessler) and companies globally operating in basic and applied research.

In the last three years the Faculty could count on good financial support for its research activities, with a total amount of €2 million

in external funding. The keywords of the projects mainly point to big data, intelligent systems, virtualisation, and knowledge representation.

In 2022 specifically, 5 new third-party funded research projects and 7 new research contracts with small and medium-sized enterprises for a total of €880.000 were started. During the year the Faculty activated the 38th cycle of its doctoral course in Computer Science. The three-year doctoral programme enables high scientific standards and improves the competitiveness of the doctoral students on an international level by covering topics such as artificial intelligence, data science, software engineering, and human-centric technologies focusing on the development of intelligent solutions for a higher usability of technology.

In 2022 the Faculty's research activities resulted in 129 new publications, including 59 conference proceedings articles and 65 journal articles. Members of the Faculty chaired 6 scientific events (conferences and workshops), of which three as general chair, and were invited to be part of a number of scientific committees on an international level.



Vice Dean for Research — Prof. Barbara Russo

The Faculty's research activities focus on the following three major areas.

KRDB – Knowledge and Data Coordinator: Enrico Franconi

The activities of this research area focus on four topics: Conceptual and Cognitive Modelling, Foundations of Database Technologies, Intelligent Integration and Access to Data, and Process-aware Information Systems Management.

The research is applied in areas such as planning, energy data analysis, robotics, management of historical data, or explainable AI, among many others.

SwSE – Software and Systems Engineering Coordinator: Claus Pahl

The research activities of SwSE are organised in four thematic areas: Architecture and Dynamic Systems, Software and Systems Verification and Reliability, Continuous Agile and Lean Process Innovation, and Software Engineering Training and Education.

IDSE – Information and Database Systems Engineering

Coordinator: Markus Zanker

The activities of this research area focus on five topics: Computational Mathematics, Computer Vision and Image Processing, Database Systems, Decision Support, Personalisation and Recommender Systems as well as Human-centered Computing.

Moreover, in 2022 new professors joined the Faculty and opened new research branches and activities.

Machine Learning and Data Science

Coordinator: Giuseppe Di Fatta

Research focuses on Machine Learning and Data Science algorithms, tools and applications with a particular interest in scalability aspects of distributed and parallel computing, such as distributed consensus problem and fully decentralised systems for communication and computation and applications in scientific and industrial domains, such as neuroscience, chemoinformatics, bioinformatics, digital marketing.

Smart Interactive Technologies and Education

Coordinator: Prof. Rosella Gennari

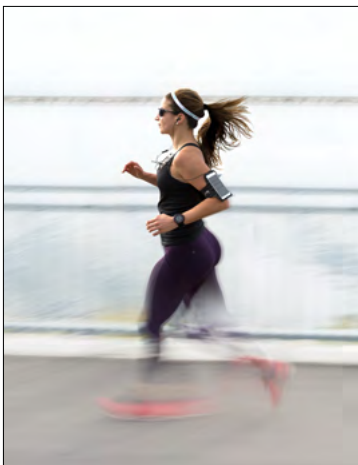
This research branch is concerning smart interactive technologies with a focus on education. The research takes place within the more general area of Human Computer/Machine Interaction. It concerns smart technologies in their interaction with humans in different contexts, with a focus on learning contexts. The goal is to bring humanistic values and making perspectives into their design and usage.



Research Projects

ePhyLi – Promoting Physical Literacy and a Healthy Lifestyle through Digital Materials for Undergraduate Students

Il progetto ePhyLi mira a promuovere l'attività fisica per la salute (*health-enhancing physical activity* – HEPA) e l'adozione di uno stile di vita sano, nonché di aumentarne la conoscenza e la comprensione negli studenti universitari e preparandoli in tal senso per la loro futura carriera di insegnamento. Per far ciò, ePhyLi utilizzerà un approccio di apprendimento digitale ludico, in inglese, *gamified*. Nella sua accezione più comune, "ludicizzazione" (in inglese, *gamification*) significa utilizzare elementi tipici della progettazione dei giochi in un'attività cosiddetta "seria", come per esempio un'attività di apprendimento, per promuovere il coinvolgimento degli interessati. L'attività viene quindi presentata come una missione di gioco da portare a termine con un obiettivo chiaro e significativo. In base alla loro



complessità, le missioni di gioco vengono suddivise in microunità gestibili ma non banali, le cosiddette sfide. Si possono utilizzare inoltre storie per creare un mondo popolato da personaggi. Per dare un senso tangibile di progressione fra le missioni e le sfide, le attività utilizzano barre di progressione e vari meccanismi di ricompensa, come un feedback tempestivo e continuo, promuovono un minimo di competizione e consentono a tutti di cooperare nell'affrontare le sfide. Per ludicizzare un'attività, si possono utilizzare diverse app e strumenti elettronici. In passato sono state create per esempio soluzioni tangibili interconnesse, che hanno aiutato a monitorare e guidare gli studenti. Ne sono un esempio i tangibili elettronici per la presa dei turni, fabbricati con legno e una fresa laser e potenziati con microcontrollori, sensori e attuatori; tracciando e comunicando i dati ad app sviluppate ad hoc, i tangibili informavano gli insegnanti in relazione alla progressione degli studenti e aiutavano l'insegnante a sostenere chi aveva più bisogno di aiuto per migliorare le proprie prestazioni. I risultati di ePhyLi possono anche essere utilizzati dagli istituti di istruzione superiore come parte della preparazione degli insegnanti. In questo contesto, il progetto ePhyLi persegue i seguenti obiettivi:

- + valutare la comprensione dell'alfabetizzazione motoria da parte degli studenti universitari e il modo in cui questa influisce sul loro impegno nell'attività fisica durante il percorso formativo;
- + sviluppare metodologie e stru-

INFO BOX

FUNDING TYPE
Erasmus+ Knowledge Alliances

DURATION
12/2022 — 11/2025

RESEARCH AREA
IDSE – Information and Database Systems Engineering

UNIBZ RESEARCH TEAM
Prof. Attilio Carraro (Principal Investigator, Faculty of Education), Prof. Rosella Gennari

PROJECT PARTNERS
University of Central Lancashire Cyprus (Lead Partner), GrantXpert Consulting Ltd, Infinity Design Labs, EUPEA

WEBSITE
www.ephyliproject.eu

SELECTED PUBLICATION
+ Gennari, R., Matera, M., Morra, D., Melonio, A., & Rizvi, M. (2023). Design for Social Digital Well-being with Young Generations: Engage Them and Make Them Reflect. *International Journal of Human-Computer Studies*, 173, 103006.

menti per la promozione dell'alfabetizzazione motoria all'interno dei curricula universitari e dei programmi di formazione attraverso un approccio di apprendimento digitale ludicizzato;

- + aumentare la conoscenza e la comprensione degli studenti universitari sull'alfabetizzazione motoria ed educarli a uno stile di vita sano;
- + contribuire alla trasformazione digitale dei programmi universitari e degli strumenti che possono essere utilizzati per la comprensione e l'adozione dell'alfabetizzazione motoria;
- + facilitare la diffusione e la sostenibilità dei risultati del progetto a livello internazionale.

← © Filip Mroz | Unsplash



Research Projects

PINPOINT – Explainable Knowledge-aware Process Intelligence

Process mining encompasses a wide range of runtime and offline analysis tasks, such as:

- + process discovery, to automatically learn a representative process model from collected event data;
- + conformance checking, to measure the deviation between the expected behaviours contained in a process model and the actual event data contained in a log;
- + predictive monitoring, to estimate how a running process will progress, based on partial observations on the current status.

The applicability of those techniques relies on the presence of high-quality, explicit event data that have to be harvested from the heterogeneous systems employed by the organisation, making the "garbage-in garbage-out" factor an actual risk.



Three crucial limitations hamper the process mining pipelines:

- + Data extraction and preparation is more an art than a scientific procedure, as it often consists of handcrafted operations without documentation or traceability, thereby making the provenance of process mining results obscure in terms of the data that originated them;
- + Process mining pipelines do not include background, domain knowledge, and cannot properly contextualise the produced results in the specific organisational setting, fully delegating this to the intuition of the domain expert;
- + Process mining techniques incorporate black-box components and handcrafted methods that are opaque and unable to explain why some results have been produced, or properly connect the outcome back to process models.

The project tackles these limitations by developing a full-fledged set of techniques towards explainable, knowledge-aware process intelligence. It does so by relying on recent advancements in artificial intelligence and declarative languages and techniques. In particular, PINPOINT employs declarative, multi-perspective formalisms combining time, data and uncertainty to express process knowledge, and targets end-to-end interpretable and explainable process mining pipelines through integrated learning and inference algorithms. Knowledge-awareness and explainability are essential to turn process

INFO BOX

FUNDING TYPE
PRIN 2020

DURATION
06/2022 — 05/2025

RESEARCH AREA
KRDB – Knowledge and Data

UNIBZ RESEARCH TEAM
Prof. Marco Montali (Principal Investigator), Alessandro Gianola, Dr. Sarah Winkler

PROJECT PARTNERS
Università degli Studi di Roma La Sapienza, Università degli Studi di Milano-Bicocca, Consiglio Nazionale delle Ricerche, Università della Calabria

WEBSITE
pinpoint.unibz.it

- SELECTED PUBLICATIONS
- + Alman, A., Maggi, F. M., Montali, M., & Peñaloza, R. (2022). Probabilistic declarative process mining. *Information Systems*, 109, 102033.
 - + Dumas, M., Fournier, F., Limonad, L., Marrella, A., Montali, M., Rehse, J., Accorsi, R., Calvanese, D., De Giacomo, G., Fahland, D., Gal, A., La Rosa, M., Völzer, H., & Weber, I. (2023). AI-augmented business process management systems: a research manifesto. *ACM Transactions on Management Information Systems*, 14(1), (pp. 1–19).
 - + Calvanese, D., Jans, M., Kalayci, T. E., & Montali, M. (2023). Extracting Event Data from Document-Driven Enterprise Systems. *In International Conference on Advanced Information Systems Engineering* (pp. 193–209).

mining from a powerful infrastructure to detect frictions of operational processes into a verifiable, accountable, trustworthy framework supporting corrective actions, a transition that is being advocated by academia and industry.

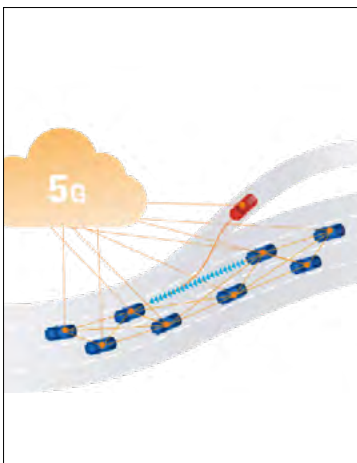
← © PINPOINT Project



Research Projects

5G-CARMEN – 5G für die vernetzte und automatisierte Fahrzeugmobilität in der Europäischen Union

Dank des technologischen Fortschritts im Verkehrsbereich werden Fahrzeuge immer vernetzter, automatisierter und intelligenter sein: Die Sicherheit der Autofahrer hat jedoch nach wie vor oberste Priorität. Dies bedeutet, dass erfolgreiche Koordinierungen der Fahrzeugmanöver auf mehreren Automatisierungsebenen erforderlich sind. In diesem Zusammenhang bietet das von der EU finanzierte Projekt 5G-CARMEN eine Plattform für kooperative, vernetzte und automatisierte Mobilität (Cooperative Connected Automated Mobility CCAM), die es den Fahrzeugen ermöglicht, Geschwindigkeit, Position, beabsichtigte Routen und Manöver auszutauschen, indem verschiedene Ansätze für kooperatives Fahren untersucht werden. Diese Plattform nutzt die neuesten 5G-Fortschritte und Grundlagentechnologien wie 5G New Radio, C-V2X



(Cellular vehicle to everything), sowie ein grenzüberschreitendes Service-Orchestrierungssystem. In diesem Projekt wurden auf dem Korridor von Bologna nach München umfangreiche Tests durchgeführt, wobei vier Standorte (München, Trient, am Brennerpass und bei Kufstein) mit 5G ausgestattet wurden. Außerdem wurden wichtige technische Eigenschaften entwickelt, um Latenzzeiten und Dienstunterbrechungen zu minimieren, die durch grenzüberschreitende Netzneuewahlverfahren verursacht werden. Die Ergebnisse von 5G-CARMEN und die neuesten Fortschritte in der 5G-Telekommunikation sollen durch die Bereitstellung einer Plattform den Automobilsektor dabei unterstützen, einen umweltfreundlicheren und intelligenteren Verkehr zu ermöglichen, mit dem letztendlichen Ziel, selbstfahrende Autos zu realisieren. Der Schwerpunkt der Demonstratoren lag auf kooperativem Manövrieren und Situationsbewusstsein, da diese Szenarien am anspruchsvollsten sind und Leistungssteigerungen gegenüber früherer Netzgenerationen erfordern. unibz hat ihre Expertise im Bereich Ressourcenmanagement und -optimierung im Cloud- und Edge-Computing im Bereich der intelligenten Verkehrssysteme eingebracht. Dabei stützt sich das Projekt auf die intensiven Partnerschaften mit der Telekommunikationsbranche. Außerdem hat unibz in zwei Bereichen zu den Technologien der Service-Orchestrierung beigetragen. Erstens wurden fortschrittliche Simulationsumgebungen entwickelt, um die Erprobung und Validierung

INFO BOX

FUNDING TYPE
Horizon 2020 ICT-2018-2020 – grant agreement 825012

DURATION
11/2018 — 08/2022

RESEARCH AREA
SwSE – Software and Systems Engineering

UNIBZ RESEARCH TEAM
Prof. Claus Pahl (Principal Investigator),
Dr. Nabil El Ioini, Dr. Ilenia Fronza,
Dr. Hamid R. Barzegar

PROJECT PARTNERS
25 partners from Austria, Belgium, Cyprus, France, Germany, Greece, Italy, Spain, The Netherlands, and United Kingdom with Fondazione Bruno Kessler as Lead Partner

WEBSITE
5gcarmen.eu

- SELECTED PUBLICATIONS**
- + El Ioini, N., Barzegar, H. R., & Pahl, C. (2022). Trust management for service migration in Multi-access Edge Computing environments. *Computer Communications*, 194, 167–179.
 - + Heider-Aviet, A., Ollik, D. R., Berlato, S., Ranise, S., Carbone, R., El Ioini, N., Pahl, C., & Barzegar, H. R. (2021, September). Blockchain based ran data sharing. *In 2021 IEEE International Conference on Smart Data Services (SMDS)* (pp. 152–161). IEEE.
 - + Van Le, T., Ioini, N. E., Pahl, C., & Barzegar, H. R. (2021). Edge computing simulation platforms: A technology survey. *In Advances in Service-Oriented and Cloud Computing: International Workshops of ESOC 2020, Heraklion, Crete, Greece, September 28–30, 2020, Revised Selected Papers 8* (pp. 18–28). Springer International Publishing.

zentraler Leistungseigenschaften zu ermöglichen. Zweitens wurden zur Optimierung des Managements begrenzter Ressourcen Vertrauensmanagementlösungen entwickelt, die die Qualität der angebotenen Dienste verbessern. Es wurden fortschrittliche Lösungen auf der Grundlage sicherer Plattformen wie der Blockchain-Technologie bereitgestellt.

← © 5G-CARMEN



Cooperation and Internationality

The faculty collaborates with national and international research organizations through jointly funded projects or agreements and as part of the doctoral program in Computer Science.

In 2022 agreements and projects saw major participations by the University of Nottingham, University of Bergen, University of Jyväskylä, University of Stuttgart, University of Innsbruck, Politecnico di Milano, GKN Sinter Metals, KTM, Covision Lab, Schaeffler, R3GIS, Alperia, and the city of Meran-Merano.

Cooperations at the regional, national and international levels have been strengthened through the following initiatives:

- + The PNRR Ecosistema Innovazione led by the University of Padua, iNEST – Interconnected North-East Innovation Ecosystem with the orientation of RT1A “Social Life in the Mountains: Developing Solutions for the Implementation of Smart Villages in Mountain Areas”.
- + The ePhyLi project (Erasmus+) promoting Physical Literacy and a healthy lifestyle through digital materials for undergraduate students related to gamification and smart systems.
- + The INFO-DIDA project, with collaborations with the CINI National Laboratory on the topic “Informatics and Schooling”.
- + The ASICASM project with collaborations with the University of São Paulo, USP and the Federal University of Itajubá, UNIFEI.
- + The project AlpineBits promoted by the NOI Techpark Bolzano for the Open Data Hub supporting well-founded semantic conceptualization based on so-called “knowledge graphs” to facilitate the exchange of data in the tourism sector.
- + The project “Integrazione Dati per l’Efficientamento Energetico – Idea” supported by the European Regional Development Fund aiming at making data on energy consumption and buildings more easily accessible to the public administration.
- + The eMotion project in which the Media Interaction Lab cooperates with KTM to develop new HMI concepts for drivers to interact with a dashboard information system.
- + The collaboration with Covision Lab, a consortium backed by seven multi-national technology companies of the region, which continued with the instalment of an endowed professorship in computer vision in 2021.
- + The agreement with Fondazione Bruno Kessler (FBK) in Trento for a jointly organised doctoral programme that continued and brought two sponsored fellowships.
- + The collaboration with SIAG – Südtiroler Informatik AG on topics of machine learning for IoT and blockchain-based applications, which continued through two funded PhD positions.
- + A collaboration with Schaeffler Group, a global supplier to the automotive and industrial sector, which brought a fully-sponsored PhD scholarship to bootstrap collaboration on the topics of Computer Vision and AI.
- + Finally, a collaboration of Prof. Ricci with RAI, which resulted in a book on Algorithms and Public Service (Algoritmi di Servizio Pubblico) published by RAI Ufficio Studi.



Research Events

27 — 29 aprile 2022

CLOSER 2022 – 12th International Conference on Cloud Computing and Services Science. La conferenza virtuale si è concentrata sui temi emergenti dei sistemi software basati sui servizi, mettendo al centro dell'attenzione le architetture cloud, edge e IoT.

27 giugno — 1 luglio 2022

13th International Conference on Computational Creativity – ICC2022. L'ICCC, ospitata dall'International Association of Computational Creativity (ACC), è considerata la conferenza internazionale più importante per l'intersezione tra informatica e creatività umana, con oltre 100 partecipanti da tutto il mondo. L'edizione 2022 in unibz è stata organizzata da Roberto Confalonieri e Oliver Kutz.

computationalcreativity.net/iccc22

4 — 6 luglio 2022

8th International School on Software Engineering ISE 2022. La scuola ISE è un progetto congiunto con la Facoltà di Informatica dell'Università di Innsbruck e si rivolge a dottorandi, ricercatori e professionisti. L'ottava edizione, organizzata da Barbara Russo e Michael Felder (UIBK), si è concentrata sulla sicurezza informatica e ha incluso esercitazioni di scienziati e professionisti di spicco nel campo dell'ingegneria del software

seschool-series.github.io/2022

26 — 29 settembre 2022

23rd International Conference on Knowledge Engineering and Knowledge Management – EKAW 2022. Dopo l'edizione online del 2020, questa importante conferenza internazionale sulla gestione della conoscenza, organizzata da Oliver Kutz e Nicolas Troquard, si tiene nuovamente in presenza in unibz. Il tema centrale della conferenza è l'importanza della conoscenza formalizzata nella società futura.

ekaw2022.inf.unibz.it

23 — 28 ottobre 2022

4th International Conference on Process Mining – ICPM 2022. Questa conferenza chiave ha esplorato la teoria e la pratica dei processi aziendali ed è stata un enorme successo con oltre 330 partecipanti (60% dal mondo accademico e 40% dall'industria). Sono stati raccolti oltre 95.000 euro di fondi per l'organizzazione della conferenza.

icpmconference.org/2022



8 — 10 novembre 2022

ICSOB 2022 – 13th International Conference on Software Business. Organizzata da Xiaofeng Wang, Eduardo Guerra e Jorge Melegati, Usman Rafiq e Dron Khanna, questa conferenza ha creato un ponte tra accademici e professionisti, ponendo l'accento tecnico

sul business ad alta intensità di software e promuovendo la digitalizzazione nelle imprese come tema comune. L'evento è stato organizzato in collaborazione con NOI Techpark.

icsob2022.github.io

Le varie conferenze del 2022 sono state integrate da scuole di dottorato in High Performance Computing, Ingegneria del software e altri eventi tematici che si rivolgono a un pubblico più mirato.

↑ Awards ceremony of the 4th International Conference on Process Mining – ICPM 2022

Faculty of Economics and Management



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KEY DATA

PEOPLE

1042 Students
32 PhD Students
38 Tenured Professors
37 Researchers
78 Contract Professors
16 Technical and Administrative Staff

BACHELOR

+ Economics and Management
+ Economics and Social Sciences
+ Informatics and Management of Digital Business
+ Tourism, Sport and Event Management

MASTER

+ Accounting and Finance
+ Entrepreneurship and Innovation
+ Public Policies and Administration

PHD

+ Management and Economics
+ Economics and Finance



Research Areas



Dean — Prof. Marjaana Gunkel

In 2022, the Faculty adopted new objectives for its research output. To better evaluate and monitor its research productivity the Faculty uses internationally recognised journal lists such as the Academic Journal Guide (AJG), which is widely recognised both in Italy and abroad as a measure of journal quality. Published each year by the Chartered Association of Business Schools, the AJG classifies 1,700 journals into five categories. In 2022, 100 of the articles published by the Faculty of Economics and Management were included in the AJG list. 14 were published in the highest quality categories (4* – world leader and 4 – top). A total of 51 articles were published in category 3 (highly regarded) or higher journals. This is a very good result that the faculty will nevertheless try to increase each year. In particular, the Faculty is proud that three articles were published in the world's leading journals (4* AJG and/or those included in the prestigious Financial Times 50 list). In addition to the published output, the Faculty disseminated its research results through participation in a large

number of important international conferences, invited seminars, and workshops. A large body of the Faculty's research was also featured in national and international media.

Nine externally funded research projects and research collaborations were initiated during the year. Among these projects one is funded by the European Union through its prestigious Cooperation in Science and Technology (COST) programme.

During the year the Faculty also started a close collaboration with the University in Trento concerning its two PhD programs. The goal of the two institutions is to offer joint PhD programmes starting from the academic year 2023/24.

While 2022 on the one hand saw the gradual return to normality of research activities as the pandemic subsided, politically, the year was on the other hand scared by the Russian invasion of Ukraine. In addition to our normal activities, we are happy that the Faculty could host three visiting female professors from Ukraine through the unibz "Stand with Ukraine" initiative.



Vice Dean for Research — Prof. Linus Siming

Entrepreneurship, Innovation and Management **Coordinator:** Alfredo De Massis

The research activities primarily deal with management and internationalisation within small- and medium-sized enterprises, institutional innovation, and cross-country differences in human resources management. Special attention is paid to both old and newly established family businesses, which are investigated from several angles, e.g., innovation and growth processes, generational change and succession, management, corporate entrepreneurship, business models and decision-making. The cluster played a key role in the establishment of the Competence Centre for the Management of Cooperatives, which began its activities in 2023.

Tourism, Marketing and Regional Development **Coordinator:** Federico Boffa

Tourism is a key sector in South Tyrol's economy since it accounts for about 12% of the local economy's total added value.

The research activities of this cluster revolve around tourism economics, managerial and innovative aspects of tourism-related businesses, environmental and energy studies, regional development and sustainable economic growth. The analytical tools used combine various methodological approaches involving managerial, economic, social, and legal perspectives.

Financial Markets and Regulation

Coordinator: Massimiliano Bonacchi

This research cluster combines theoretical and empirical methods into a thorough analysis of finance, accounting, and applied information systems. Its research agenda encompasses projects in the fields of corporate finance, banking, financial markets and institutions, trading and market microstructure, and accounting and capital market information quality. During the year, the cluster played a key role in the establishment of the Competence Centre for Economic, Ecological and Social Sustainability.

Law, Economics and Institutions

Coordinator: Roberto Farneti

Research in this cluster deals with both the comparative analysis of law and economics in the private and public sectors and the study of legal, ethical and political systems. A wide range of issues are covered: corporate law and financial market contracting;

European private law; democracy and citizenship; governance and policies in multilingual societies; human rights; political, philosophical, and aesthetical models of economics.

Quantitative Methods and Economic Modelling

Coordinator: Steven Stillman

This research cluster's agenda addresses issues at the core of the current scientific debate on society, individuals, institutions, and markets, thereby involving both experts in methodology and applied scientists. Its activities center on the theoretical foundation and the methodological aspects relevant for the empirical study of the economy. Activities cover a wide range of domains such as labor economics, industrial organisation and energy economics, decision theory, risk analysis, optimisation, statistical methods, and the evaluation of public policies.



Guerra, socialismo e l'ascesa del fascismo: Un'esplorazione empirica

I movimenti populistici di destra stanno minacciando le democrazie occidentali, dagli Stati Uniti alla Francia alla Germania e al Regno Unito. Cosa c'è dietro la loro ascesa? E quando hanno maggiori probabilità di rovesciare le istituzioni democratiche? Questa domanda è stata il punto di partenza di un progetto pluriennale condotto da diverse università con il coinvolgimento dell'Istituto per la Storia della Resistenza e della Società Contemporanea (ISTORECO) e della Biblioteca Nazionale Centrale di Firenze. Per rispondere alla domanda di ricerca è utile tracciare parallelismi tra i movimenti di destra di oggi e il fascismo tra le due guerre. In questo contesto, una famosa teoria, articolata da diversi storici, collega l'appello che questi partiti avevano per l'élite e le classi medie alla minaccia percepita del socialismo dopo la Prima Guerra Mondiale.



Utilizziamo diversi set di dati recentemente raccolti per esplorare il legame tra la minaccia percepita del socialismo dopo la Prima Guerra Mondiale e la successiva ascesa del fascismo in Italia.

L'unicità del dataset del progetto deriva dalla combinazione di informazioni raccolte manualmente e successivamente digitalizzate per 5.775 comuni italiani, relative a: dati elettorali; episodi di violenza politica; donazioni al Partito Fascista; caduti, sopravvissuti, veterani, e monumenti commemorativi relativi alla Prima Guerra Mondiale; eccesso di mortalità per influenza spagnola; siccità nel 1918-1919; specificità geografiche e demografiche; impianti produttivi legati alla guerra; scioperi agrari e industriali; crimini violenti e tassi di criminalità; proprietà terriera; ecc. I risultati empirici documentano una forte connessione tra la minaccia socialista, rappresentata dall'aumento della quota di voto socialista del 1919 guidata dalle vittime, e le nostre misure di sostegno fascista. Le nostre stime suggeriscono che ben il 15% dell'aumento della quota di voti del Partito Fascista dal 1919 al 1924 potrebbe essere dovuto al sostegno degli elettori conservatori e moderati di fronte alla percepita minaccia socialista.

Gli effetti sulla violenza fascista e la probabilità di avere una sezione locale del Partito Fascista nell'area sono altrettanto grandi, anche grazie al ruolo che le élite

INFO BOX

FUNDING TYPE
The C. and J. B. Morrell Trust

DURATION
01/2019 — 01/2022

RESEARCH AREA
Quantitative Methods and Economic Modelling

PRINCIPAL INVESTIGATOR
Prof. Giacomo De Luca

PROJECT PARTNERS
Massachusetts Institute of Technology, Pompeu Fabra University, University of Leicester

SELECTED PUBLICATION
+ Acemoglu D., De Feo, G., De Luca, G., & Russo, G. (2022). War, Socialism, and the Rise of Fascism: An Empirical Exploration, *The Quarterly Journal of Economics*, 137(2), 1233-1296.

locali, in particolare i grandi proprietari terrieri, hanno svolto nel promuovere l'attività e il sostegno fascista. Questo progetto ha messo in luce l'importante conclusione che per molti versi l'ascesa del fascismo italiano e del nazismo in Germania ha caratteristiche unicamente riconducibili al periodo successivo alla Prima Guerra Mondiale, in cui la società e la politica erano significativamente militarizzate e la minaccia di una rivoluzione socialista/comunista appariva reale a molti. Se così fosse, sarebbe improbabile che la recente impennata di popolarità dei partiti populistici di destra si trasformi in fascismo classico.

← 1920: factories garrisoned by Red Guards a work from *Storia de Fascismo* by Enzo Biagi



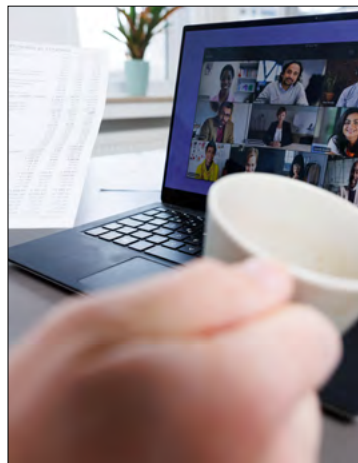
Smart Working @ SIAG & LEPIDA

Die COVID-19 Pandemie hat kurzfristig eine Welle von Smart Working ausgelöst. Dieses Phänomen, bei dem Arbeitnehmende und Unternehmen zeitlich und räumlich flexible Arbeitsregelungen fordern, wird auch zukünftig nicht mehr wegzu-denken sein. Dabei müssen beide Seiten Wege finden, sich mit dieser Situation zu arrangieren und gleichzeitig die Produktivität und das Engagement für das Unternehmen zu steigern. Letzteres ist besonders für jene Branchen und Regionen wichtig, die Schwierigkeiten haben, hochqualifiziertes und flexibles Personal zu finden. Beispielsweise können viele IT- und Informatikjobs von überall auf der Welt erledigt werden. Gleichsam gilt der Arbeitsmarkt für diese Fachkräfte als „leergefegt“. Entsprechend ist die Bindung des Personals für das Überleben eines IT-Unternehmens entscheidend. Smart Working erweitert in diesem Zusammenhang das Reservoir an potenziellen, weltweit ansässigen Arbeitskräften. Das Projekt bot die Gelegenheit, mit zwei zentralen Akteuren in Südtirol und der Emilia-Romagna zusammenzuarbeiten und gemeinsam an dem Phänomen zu forschen. Die bisher umgesetzten Smart Working-Maßnahmen wurden ebenso verglichen wie die Wahrnehmungen, Bedürfnissen und Anforderungen der angestellten Fachkräfte. Die Ergebnisse unterstützen die Unternehmen

bei der Ausarbeitung individueller Konzepte und der weiteren Entwicklung (hybrider) Smart Working-Strategien.

Die Forschung konzentrierte sich auf die drei Säulen des neuen Arbeitens – Bricks, Bytes und Behavior (organisatorisches Verhalten). Obwohl alle drei Bereiche miteinander interagieren und daher nicht ohne die gegenseitigen Einflüsse betrachtet werden können, fokussierte sich die Arbeit auf die Verhaltensdimension.

Es stellten sich folgende Fragen: Wie nehmen die Organisationsmitglieder die Smart-Working-Politik ihres Unternehmens wahr? Wissen sie diese zu schätzen? Setzen sie sich durch Smart Working zusätzlichem Stress aus? Muss etwas geändert werden, um das Engagement für das Unternehmen zu erhöhen? Das Projekt beschäftigte sich weiters mit den Auswirkungen von Smart Working auf die Passung Person-Job-Fit (PjF) und Person-Organisation-Fit (PoF) sowie auf den Austausch



INFO BOX

FUNDING TYPE
Research Contract

DURATION
06/2021 — 12/2022

RESEARCH AREA
Entrepreneurship, Innovation, and Management

UNIBZ RESEARCH TEAM
Prof. Marjaana Gunkel (Principal Investigator), Dr. Björn Schäfer, Dr. Dimitri Storai

PROJECT PARTNERS
SIAG – Südtiroler Informatik/Informatica Alto Adige, LEPIDA

SELECTED PUBLICATION
+ Schäfer, B., Koloch, L., Storai, D., Gunkel, M., & Kraus, S. (2023). Alternative workplace arrangements: Tearing down the walls of a conceptual labyrinth. *Journal of Innovation & Knowledge*, 8(2), 100352.

zwischen Führungskraft und Personal. Es hat sich gezeigt, dass Smart Working-Arrangements individuell an die Kunden, Prozesse und Kultur eines jeden Unternehmens angepasst werden müssen. Auf der Mesoebene hingegen bedarf es von Seiten der Führungskräfte einer stärkeren Übernahme von Verantwortung für ihre Teammitglieder und den Teamzusammenhalt. Während anfangs auch nach Smart Work-spezifischen Leistungsindikatoren gesucht wurde, offenbarten die geführten Interviews, dass sich bereits etablierte Key Performance Indikatoren immer noch am besten dazu eignen, Leistungsveränderungen über einen längeren Zeitraum zu vergleichen.

← © European Commission | Christophe Licoppe



Managers' Cultural Origin and Corporate Response to an Economic Shock

The Covid-19 pandemic had unprecedented effects on businesses across the world. In this project we use this unexpected shock to economic activity to analyse whether the cultural origin of the firms' managers can help explain how companies respond to an exogenous shock. Identifying the effect of management cultural origin on a company's response to the Covid-19 pandemic is problematic, because firms with managers of different cultural groups are usually headquartered in different countries that vary in terms of policies and regulatory measures adopted to face the pandemic. The project overcame this problem by exploiting cultural differences in a sample of firms from the Autonomous Province of South Tyrol, which hosts two main cultural groups: Germanic and Italian. From a linguistic perspective, weak (strong) future-time

reference languages such as German (Italian) have been associated with a stronger long-term (short-term) oriented behavior. Additionally, the German word for debt, Schuld, has a negative moral connotation (it can be translated into English as fault or guilt), while the Italian word for debt, debito, simply means to owe something. These differences between the two cultural groups helped to formulate a range of hypotheses on their relative behavior in response to the pandemic. Firms were classified into different cultural groups based on the well-established methodology of classifying origin by the managers' names. Compared to firms of the Germanic cultural group, firms from the Italian cultural group responded to the pandemic by resorting relatively more to debt, taking up more government guaranteed bank loans, building up their current assets more, recapitalizing less, and making fewer capital investments. The findings are consistent with

INFO BOX

DURATION
06/2021 — 04/2023

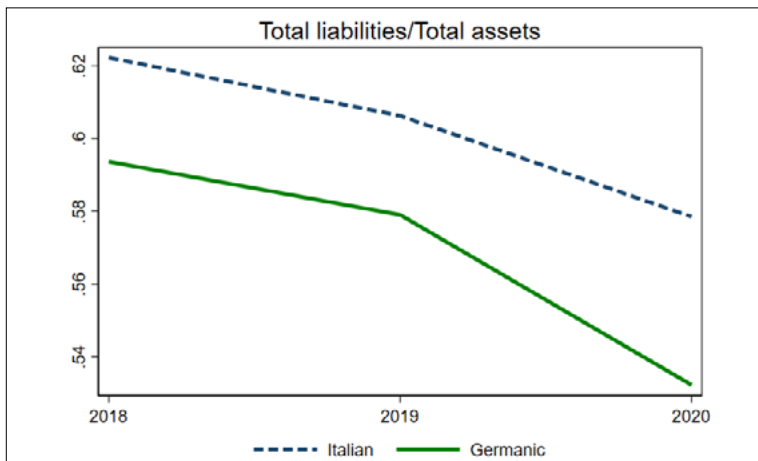
RESEARCH AREA
Financial Markets and Regulation

PRINCIPAL INVESTIGATOR
Prof. Linus Siming

PROJECT PARTNERS
Norges Bank, Università di Bologna, Universität Zürich

SELECTED PUBLICATION
+ Bedendo, M., Garcia-Appendini, E., & Siming, L. (2023). Managers' Cultural Origin and Corporate Response to an Economic Shock. *Journal of Corporate Finance*, 80, 102412.

a dislike of individuals of Germanic origin towards debt financing. Overall, the project results support the hypothesis that Germanic culture is more long-term oriented than Italian culture and that such cultural traits can affect real economic outcomes. As such, it shows that cultural differences across firms can have real effects on the economy, by impacting long-term investments in fixed assets and capital expenditures, as well as firm growth. While the results are specific to the bicultural context under study, they shed light on the role of culture in explaining cross-country differences in responses to economic shocks.



← Evolution of the level of debt among South Tyrolean companies before and during the pandemic © Produced by the authors



Cooperation and Internationality

The Faculty extensively collaborates with universities, private companies, research- and public institutions. These collaborations create value not only for the Faculty and our project partners, but also for the students through enhanced internship-, exchange- and training opportunities. Several new collaborations were started during 2022 involving the following organisations:

Partnership with Raiffeisenverband Südtirol for the training of board members and Raiffeisen Mutuality Fund for a study on alternative credit union governance models.

Research and teaching cooperation with Südtiroler Informatik AG and Lepida ScpA on smart working and with IDM for training on legal aspects of information technology.

Collaboration with EURICSE, the School of Innovation at the University of Trento, Studio Comune on Urban Play for SDGs-Agenda 2030, and the Network for Sustainability in South Tyrol for projects on social innovation and entrepreneurship.

Cooperation with Alperia SpA for a project on open innovation and corporate accelerators.

Collaboration with the Municipality of Bolzano for the attainment of the status as university city through membership in the European network EUniverCities and for intergenerational exchange activities, in collaboration with the National Association of Italian Municipalities and ArciRagazzi.



Cooperation with the Associazione Elisabetta Paolucci and Presidenza del Consiglio dei Ministri for the organisation of the event "Day of Europe".

Research and teaching cooperation for joint lectures and events with the Center for Autonomy Experience at Eurac Research, and Zentrum für Klassikstudien (University of Regensburg) and the Center for Advanced Studies on the Foundations of Law and Finance (Goethe-Universität Frankfurt).

In addition, several collaborations are still ongoing from previous years:

Collaboration with the Raiffeisenverband Südtirol on the strategic assessment of cooperative banks in Italy and Südtiroler Volksbank on bank sustainability.

Collaboration with the University of Szeged, Management Center Innsbruck, University of Vienna, Univations GmbH and Agentur Fundus regarding an Erasmus+ project on family business and with the Universities of Innsbruck and Trento regarding the Euregio mobility summer school project "Alexander Langer's Legacy" and the Euregio Platform on Human Dignity and Human Rights, together with Accademia di Merano.

Research and teaching cooperation with the Chamber of Commerce Bolzano, NOI Techpark, and the Province of Bozen-Bolzano for projects on succession, innovation, family business and SMEs.

Cooperation with the Ordine dei Dottori Commercialisti della Provincia di Bolzano and Scuola di Alta Formazione Triveneta for the international certification of Certified Management Accountants, and with the Employers' Association of the Province of Bolzano for coaching students to develop new businesses.

Research and teaching cooperation with Baruch College and NYU Stern, with Pensplan regarding Financial Literacy, and with Alperia Spa and the European Energy Exchange regarding energy markets.

Collaboration with the Italian Union of Journalists and Professional Association of Journalists regarding issues which straddle the boundary between economics and journalism.

Partner in the Alliance for Research on Wine and Hospitality Management which includes Cornell University, Kedge Business School Bordeaux, EHL Lausanne and Hong Kong Polytechnic University.

1 ↑ From left to right: Sabrina Michielli, Renzo Caramaschi, Ulrike Tappeiner and Stefania Baroncelli



Research Events

10. Februar 2022

Der Workshop **Crisi d'impresa: minaccia o opportunità?** wurde in Zusammenarbeit mit der Kammer der Wirtschaftsprüfer und Steuerberater der Provinz Bozen zum Thema der Auswirkungen bei Anwendung des neuen Kodex für Unternehmenskrisen und Insolvenzen veranstaltet.

www.unibz.it/it/events/139410-crisi-d-impresa-minaccia-o-opportunita

12. Mai 2022

Treffen mit dem deutschen Botschafter in Italien. Der deutsche Botschafter in Italien, Viktor Elbling, traf Studierende und Bürger*Innen von Bozen, um über Italien, Deutschland und Europa zu sprechen.

www.unibz.it/it/events/140216-incontro-con-l-ambasciatore-di-germania

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26. – 27. Mai 2022

Am **Euregio Economics Meeting Workshop** nahmen Forschende der drei Euregio-Universitäten – unibz, Universität Innsbruck, Università Trento – teil.

www.unibz.it/en/events/140306-euregio-economics-meeting

11. Juni 2022

Die Konferenz **50 Jahre Zweites Südtiroler Autonomiestatut** wurde zum Thema Südtiroler Autonomiestatut und 30 Jahre Streitbeilegung Österreich – Italien veranstaltet.

www.unibz.it/en/events/140425-50-anni-del-secondo-statuto-di-autonomia-del-trentino-alto-adige

4. – 8. Juli 2022

Die erste Auflage der **Tourism Research Methods Summer School** wurde mit Schwerpunkt auf visuelle Forschungsmethoden organisiert.

tourismresearchmethods.events.unibz.it

7. Oktober 2022

Der Workshop **Le tecniche contrattuali di finanziamento delle startup in Italia** wurde in Zusammenarbeit mit der Universität La Sapienza aus Rom zum Thema Finanzierung von Startups in Italien veranstaltet.

www.unibz.it/it/events/140945-le-tecniche-contrattuali-di-finanziamento-delle-startup-in-italia

26. Oktober 2022

Die Gemeinde Bozen, das Friedenszentrum und unibz organisierten gemeinsam die Informationsveranstaltung **Eine Stimme für die Frauen im Iran.**

www.unibz.it/de/news/141335-voci-per-le-donne-dell-iran

25. November 2022

Der Dialog zwischen Verwaltungsgericht und dem Gerichtshof der Europäischen Union war Thema des Workshops **I rapporti tra ordinamento interno e ordinamento europeo.**

www.unibz.it/it/events/141382-i-rapporti-tra-ordinamento-interno-e-ordinamento-europeo

12. – 13. Dezember 2022

Der **Workshop on Statistical Learning and Econometrics** wurde mit Schwerpunkt auf Methodische Fortschritte und deren Anwendungen organisiert.

www.unibz.it/it/events/141212-workshop-on-statistical-learning-and-econometrics

16. Dezember 2022

Beyond profit: sustainability as a competitive advantage. Konferenz zum Thema Nachhaltigkeit als Wettbewerbsfaktor mit einem Gastvortrag von Prof. George Serafeim der Harvard Business School.

www.unibz.it/it/events/141251-oltre-il-profitto-la-sostenibilita-come-vantaggio-competitivo

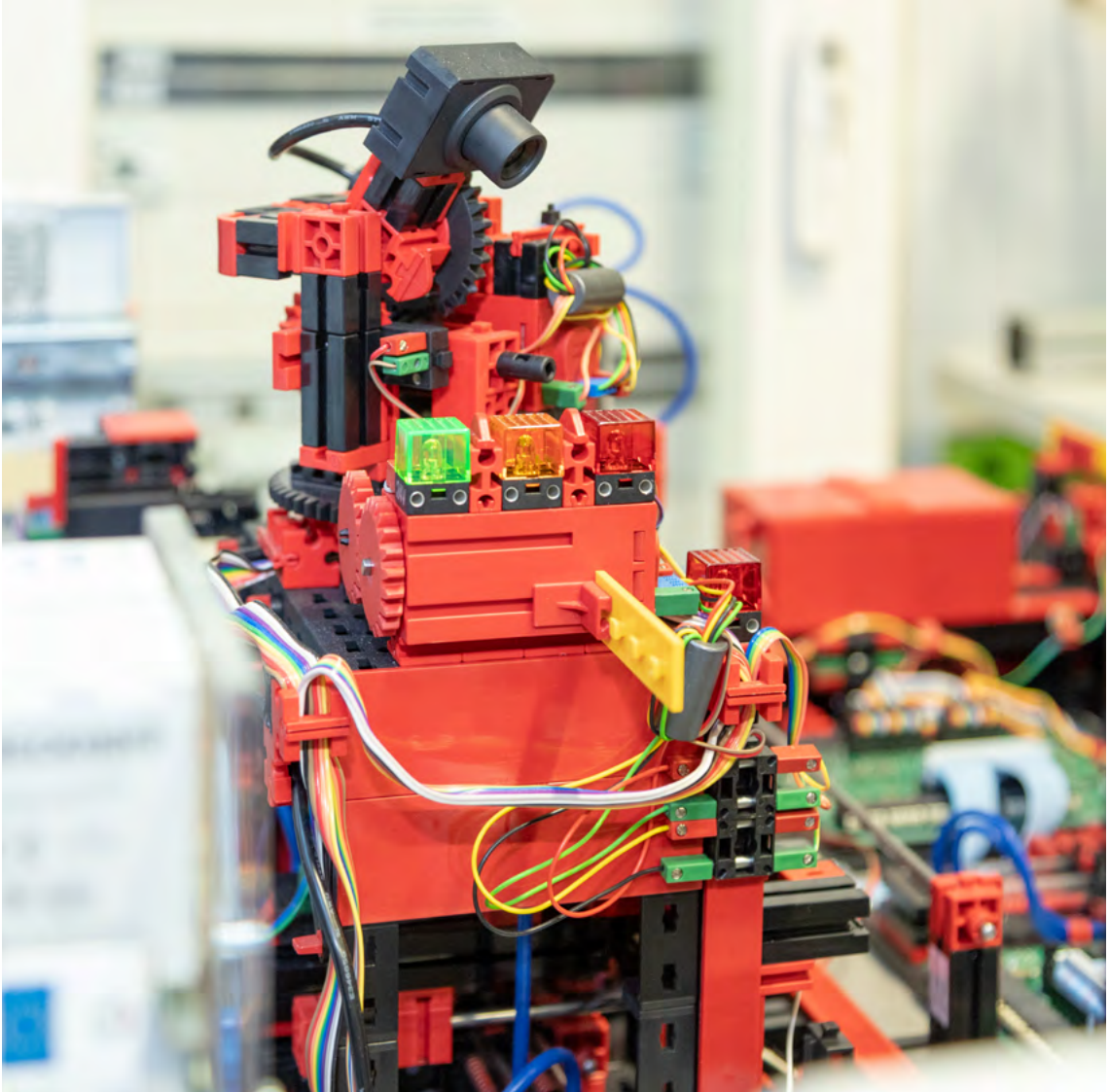
19. – 21. Dezember 2022

Der **Bolzano Joint Political Economy and Applied Micro-economics Workshop** brachte Spitzenwissenschaftler*innen des gesamten Alpenraums zusammen.

www.unibz.it/de/events/141203-bolzano-joint-political-economy-and-applied-micro-economics

2 ← From left to right: Günther Mathà, Viktor Elbling, Ulrike Tappeiner and Stefania Baroncelli

Faculty of Science and Technology



Lab NOI Techpark © Eleonora Lunardoni

KEY DATA

PEOPLE

670 Students
175 PhD Students
43 Tenured Professors
89 Researchers
59 Contract Professors
33 Technical and Administrative Staff

BACHELOR

+ Agricultural, Food and Mountain Environmental Sciences
+ Industrial and Mechanical Engineering
+ Wood Engineering

MASTER

+ Energy Engineering
+ Environmental Management of Mountain Areas
+ Food Sciences for Innovation and Authenticity
+ Horticultural Science
+ Industrial Mechanical Engineering
+ Viticulture, Enology and Wine Marketing

1ST CYCLE MASTER IN

+ Fire Safety Engineering

2ND CYCLE MASTER

+ Sustainable Management of Hydro-Geological Risk in Mountain environments

PHD

+ Advanced-Systems Engineering
+ Food Engineering and Biotechnology
+ Mountain Environment and Agriculture
+ Sustainable Energy and Technologies



Research Areas



Dean — Prof. Marco Gobetti

Teaching and research activities at the Faculty of Science and Technology mainly deal with agricultural sciences, environmental management, food sciences, mechanical and industrial engineering, energy and logistics, automation, and basic sciences.

Sustainability and interdisciplinarity mark out the approach of the Faculty's work. Innovation for industrial processes and products and an intense technology transfer are other distinguishing features, together with a focus on the mountain region.

With an outstanding number of scientific publications, the Faculty was ranked among the top 200 to 250 Universities in the 2022 Times Higher Education (THE) Engineering and Technology subject ranking.

In 2022, the 38th cycle of the PhD Program Mountain Environment and Agriculture, with two curricula, "Sustainable Agricultural Production Systems" and "Ecology, Environment and Protection of Mountain Areas" has started its activities.



Vice Dean for Research — Prof. Matthias Gauly

Agricultural Sciences

Coordinator: Massimo Tagliavini

Research aims at facing the challenge of producing healthy and sustainable food under climate change, decreasing natural resources, and growing pressure from new pests and pathogens. Studies mainly deal with the complexity of biological systems, the exchange of material and energy between the soil-plant systems and atmosphere, precision farming, livestock performance and welfare, the effects of climate change and economic system evaluations.

Food Sciences

Coordinator: Marco Gobetti

Food Sciences sensory, shelf life, functional and nutritional attributes of foods and beverages are the focus of this research area. The research activity aims at a multidisciplinary approach based on food processing, biotechnology, microbiology, and omics technologies; these are the most suitable tools to guarantee high quality standards for foods and beverages as well as the

bio recycling of food wastes according to the current concept of circular economy.

Management and Technologies for Mountain Environments

Coordinator: Camilla Wellstein

This research area aims to understand the local and global effects of natural and anthropogenic disturbances on the functioning of terrestrial and aquatic mountain ecosystems, in order to provide tools for a sustainable ecological management of the latter.

Industrial Engineering and Automation (IEA)

Coordinator: Dominik Matt

IEA deals with product development, manufacturing and assembly processes, design and management of production systems, operations, and supply chain management as well as mechanical and mechatronic design and robotics, automation, and digitisation techniques in the context of Industry 4.0, with a focus on the specific requirements of small and medium manufacturing, construction and agricultural businesses. The IEA team consists of more than 30 international professors, researchers and research fellows conducting their research in four research laboratories.

Energy Resources and Energy Efficiency

Coordinator: Marco Baratieri

This research area aims at broadening the existing research spectrum in the fields of energy generation and energy efficiency; here again, a multidisciplinary approach is fostered in covering topics such as Energy Efficiency in Buildings and Production Processes, High Efficiency Electrical Conversion and Management of Renewable Resources.

Smart Systems Technologies and Engineering

Coordinator: Niko Münzenrieder

The focus lies here on the development of innovative solutions for a digital society by bridging over the gap between humans, environment, and technology. The main goal is the realisation of sustainable systems with bespoke mechanical, electrical, optical, and biological properties based on biocompatible, recycled, and organic materials, as well as their equipment with embodied artificial intelligence. The resulting systems are individually optimised for application in production processes on the fields of healthcare, agriculture, construction, environmental monitoring, or Industry 4.0.

Fundamental Sciences for Innovative Applications

Coordinator: Maria Letizia Bertotti

In this area, research is carried out with the methods of the fundamental sciences: mathematics, physics, chemistry, and statistics. Specifically, novel general frameworks for mathematical models of complex systems are formulated, and dynamics and diffusion on complex networks are investigated, as also other specific problems falling within applied areas as engineering and welfare economics. Other issues under study concern bioorganic chemistry and protein crystallography.



MELANIE – Human-centered Technologies and Machine Intelligence Lab

Set up in the context of an ERDF-funded infrastructure project, the Human-centered Technologies and Machine Intelligence Laboratory aims at performing research on the next generation of embodied artificial intelligence with and without humans in the loop, supposed to be not only intelligent, but also trustworthy and ethical, and bridging between the fields of artificial intelligence, robotics, automation, and human-system interaction.

Embodied Artificial Intelligence not only enables to take intelligent decisions based on sensory information and context, but to also translate them into actions by means of a physical body, also in interaction and collaboration with humans. In South Tyrol, especially the areas of agriculture, care and assisted living, medicine, production and construction can benefit significantly from embodied artificial intelligence.

The laboratory has been equipped with systems for the tracking of human body and eye movements, the measurement of physiological signals like EEG, heart rate, skin conductance, and respiration rate as well as muscle activities. Further equipment include additional robotic systems such as a collaborative robot (cobot), a haptic device for the interaction with virtual and remote environments as well as components to

set up an active hip exoskeleton. Already existing platforms like a bimanual mobile robotic platform, an intelligent rollator, a MR-compatible haptic device and an Xsens tracking suit complement the hardware.

In the course of the project four different demonstrators were set up: The first demonstrator focuses on the teleoperation of the Tiago bimanual robotic platform via a Xsens full-body tracking suit and thus, allows to showcase experience in the field of teleoperation as needed e.g. for decommissioning of waste or minimally invasive surgery. The second one focuses on the recognition of emotions from physiological signals as recently transferred to a project where we aim for supporting neurofeedback therapies. A third demonstrator deals with the topic of safety in human-robot interaction and showcases algorithms for the control of energy flows between human and robot to enhance safety as required when for



INFO BOX

FUNDING TYPE
European Regional Development Fund (ERDF-FESR) 2014–2020

DURATION
10/2020 — 12/2022

RESEARCH AREA
Smart Systems Technologies and Engineering

UNIBZ RESEARCH TEAM
Prof. Angelika Peer (Principal Investigator), Dr. Marco Frego

WEBSITE
hct.projects.unibz.it

SELECTED PUBLICATIONS
+ Jatal, L., Peer, A. (2022). Emotion Recognition from Physiological Signals using Continuous Wavelet Transform and Deep Learning, *Lecture Notes in Computer Science* (LNCS), vol. 13519, pp. 88–99.
+ Van Horenbeke Echevarria, F.A., Peer, A. (2023). NILRNN: A Neocortex-Inspired Locally Recurrent Neural Network for Unsupervised Feature Learning in Sequential Data, *Cognitive Computation*.
+ MoradiMaryamnegari, H., Frego, M., Peer, A. (2022). Model Predictive Control-Based Reinforcement Learning Using Expected Sarsa, *IEEE Access*, vol. 10, pp. 81177–81191.

example using cobots in industrial settings. Finally, the fourth demonstrator illustrates the capability of estimating actions, plans and intentions from human movements and context as needed when aiming for a seamless interaction of humans and robots.

The laboratory was officially inaugurated in December 2022.

← Human-centered Technologies and Machine Intelligence Lab © NOI Techpark | Ivo Corrà



Tiny FOP MOB – A Real World Laboratory made of wood and hemp travelling tours the Venosta Valley

The project has pursued the overall goal of fostering innovative, socio-ecological transformation processes of companies and their economic processes. The testbed was featured by the design, development and testing of an energy self-sufficient real-world laboratory in the form of a tiny house, the so-called transdisciplinary TinyFOP. In this respect, the comprehensive analysis of the TinyFOP included a number of dimensions ranging from environmental and economic sustainability to Life Cycle Analysis, from metrics relevant to the Circular Economy to the perception of performances, from internal comfort to attractiveness. The whole development and testing process aimed to create awareness among the companies across South Tyrol of the need to change entrepreneurial actions towards



sustainability and thereby enable new economic cycles. The purpose is to impart and sensitize knowledge about sustainable business strategies and, more specifically, about sustainable construction through the CO2-neutral and energy self-sufficient TinyFOP.

Thus, on the one hand, the level of awareness was enhanced, and, on the other hand, the application of best practices was fostered. The real-life experiments conducted at TinyFOP were also intended to promote innovative change processes in the corporate, organisational and production culture of companies. Furthermore, a contribution was made to close the gap between the often undiscovered innovative approaches of the periphery and the scientific knowledge produced predominantly in the urban centers, in order to create new models of socio-ecological management starting with the building sector. In particular, the unibz team has contributed to the project by supporting and/or supervising:

- + the design phase of the tiny house,
- + the preparation of questionnaires and experimental materials to evaluate people's perception of the sustainability of the real-world laboratory,
- + the visit of the TinyFOP during its journey across Vinschgau-Val Venosta by the team's presence in place,
- + the study of the interaction between visitors and the tiny house (in both its physical

INFO BOX

FUNDING TYPE
European Regional Development Fund (EFRE-FESR) 2014–2020

DURATION
09/2020 — 06/2022

RESEARCH AREA
Industrial Engineering & Automation (IEA)

UNIBZ RESEARCH TEAM
Prof. Yuri Borgianni (Principal Investigator), Prof. Guido Orzes

PROJECT PARTNERS
EURAC Research (Lead Partner), Schönthaler Bausteinwerk GmbH, Habicher Holzbau GmbH

WEBSITE
www.eurac.edu/de/tiny-fop-mob

- SELECTED PUBLICATIONS**
- + Nezzi, C., Ruiz-Pastor, L., Altavilla, S., Berni, A., & Borgianni, Y. (2022). How Sustainability-Related Information Affects the Evaluation of Designs: A Case Study of a Locally Manufactured Mobile Tiny House. *Designs*, 6(3), 57.
 - + Berni, A., Altavilla, S., Ruiz-Pastor, L., Nezzi, C., & Borgianni, Y. (2022). An Eye-Tracking Study to Identify the Most Observed Features in a Physical Prototype of a Tiny House. *Proceedings of the Design Society*, 2, 841–850.
 - + Ruiz-Pastor, L., Altavilla, S., Nezzi, C., Borgianni, Y., & Orzes, G. (2022, September). Life Cycle Assessment of a Mobile Tiny House Made with Sustainable Materials and Design Implications. In *Advances on Mechanics, Design Engineering and Manufacturing IV: Proceedings of the International Joint Conference on Mechanics, Design Engineering & Advanced Manufacturing, JCM 2022, June 1–3, 2022, Ischia, Italy* (pp. 28–38). Cham: Springer International Publishing.

- and virtual version) including people's visual behavior,
- + the assessment of the TinyFOP in terms of sustainability (through the Life Cycle Assessment) and Circular Economy indicators,
- + the participation in meetings and workshops at and about the TinyFOP.

← Tiny FOP MOB at NOI Techpark © Eleonora Lunardonì



HealthFerm – Fermentazioni alimentari innovative a base di legumi e cereali per la salute umana e le diete sostenibili

Gli alimenti fermentati si sono guadagnati la reputazione di essere benefici per la salute. Tuttavia, ad eccezione dello yogurt e di altri pochi prodotti fermentati, esistono poche prove concrete degli effettivi benefici degli alimenti fermentati sulla salute. Pertanto, il progetto HealthFerm esegue diversi studi di intervento sull'uomo per comprendere meglio l'interazione tra i microbiomi della fermentazione alimentare, gli alimenti fermentati a base di cereali e il microbioma intestinale umano e il modo in cui questi supportano la salute umana.

In particolare, il progetto mira a studiare le fermentazioni alimentari innovative a base di legumi e cereali, nonché gli effetti sulla salute e la percezione dei consumatori dei nuovi alimenti fermentati.



HealthFerm ha l'ambizione di fornire alla società e al mondo industriale elementi scientifici volti a favorire una transizione dalle diete tradizionali a diete più sostenibili basate su alimenti vegetali fermentati e che offrano benefici per la salute dei consumatori fin dalla progettazione. Ciò si traduce in due obiettivi principali dello studio:

- + disvelare l'interazione tra i microbiomi della fermentazione alimentare, gli alimenti fermentati a base di cereali e il microbioma intestinale umano e le loro implicazioni per la salute umana;
- + utilizzare le conoscenze generate, le risorse microbiche e la tecnologia di fermentazione per sviluppare tali alimenti.

In termini di potenziali applicazioni, HealthFerm ottimizzerà i processi di fermentazione per le materie prime a base di cereali e legumi e svilupperà soluzioni applicabili per gli alimenti fermentati liquidi, semisolidi e solidi come alternative agli alimenti a base di latte e carne. Infine, il progetto può facilitare l'inclusione di alimenti fermentati di origine vegetale nella dieta dei consumatori europei.

INFO BOX

FUNDING TYPE
Horizon 2020 – RIA – FARM2FORK – grant agreement 101060247

DURATION
09/2022 – 08/2026

RESEARCH AREA
Food Science

UNIBZ RESEARCH TEAM
Prof. Marco Gobetti (Principal Investigator), Prof. Raffaella Di Cagno, Dr. Andrea Polo, Ali Tlais Zein Alabiden

PROJECT PARTNERS
23 partners from Belgium, Switzerland, Finland, Denmark, Italy, Romania, Sweden, Belgium, France, The Netherlands, with Katholieke Universiteit Leuven as Lead Partner

WEBSITE
www.healthferm.eu



ETN Skill-For.Action – Ein innovatives Konzept zur Durchsetzung einer kohlenstoffsensiblen Waldbewirtschaftung und Waldnutzung

Der globale Wandel und der Klimawandel beeinträchtigen die Waldressourcen auf unterschiedliche Weise. Dürrebedingte Verluste in der Wachstumseffizienz und die Zunahme der Intensität und Häufigkeit von Waldbränden, sowie biologischer Risiken, sind nur einige der spürbarsten Auswirkungen auf die Wälder.

Der globale Wandel schwächt die Effizienz der Kohlenstoffspeicherungsfähigkeit der Wälder und beeinträchtigt mittel- bis langfristig die Kohlenstoffbilanz der Wälder. Eine anpassungsfähige und integrative Waldbewirtschaftung spielt eine Schlüsselrolle, wenn es darum geht, die Wälder auf die Umweltveränderungen einzustellen und sowohl ihr hohes Kohlenstoffspeicherungspotenzial zu erhalten, als auch eine wirtschaftlich effiziente und ökologisch verträgliche Forstwirtschaft zu gewährleisten.



ETN Skill-For.Action integriert die Grundlagenforschung in der Waldökologie und die angewandte Wissenschaft der Forsttechnik. Diese Integration ist von grundlegender Bedeutung, um die Kohlenstoffdynamik in Wäldern in Bezug auf die Kohlenstoffbindung und -freisetzung zu verstehen. Als Teilprojekt werden zudem die Auswirkungen der Stickstoffdeposition auf den Kohlenstoffkreislauf von Bergwäldern ermittelt. Bei der Durchführung von Feldversuchen zur Stickstoffmanipulation in Buchen- und Traubeneichenwäldern wird ein erhöhter atmosphärischer Stickstoffeintrag simuliert, indem mineralischer Stickstoff entweder durch Düngung in den Baumkronen (NAB) oder im Boden (NBL) ausgebracht wird. An allen Standorten werden die Düngungsbehandlungen wiederholt und mit der aktuellen N-Deposition verglichen. Ein weiteres Teilprojekt, in Kooperation mit der Warschauer Naturwissenschaftlichen Universität, gilt der Erforschung der Klimareaktion der Weißtanne in Reinbeständen und in Mischbeständen mit Tanne, Fichte und Buche über einen europäischen Klimagradienten.

Übergeordnetes Ziel von ETN Skill-For.Action ist es, Nachwuchswissenschaftler*innen eine hochqualifizierte Ausbildung in adaptiver und integrativer Waldbewirtschaftung zu bieten, um ihnen eine erfolgreiche Karriere im Forstsektor und in der Bewirtschaftung natürlicher Ressourcen zu ermöglichen. Die wissenschaftliche Karriereentwicklungsstrategie der

👁️ INFO BOX

FUNDING TYPE
H2020 – MSCAITN – grant agreement 9556355

DURATION
01/2021 – 12/2024

RESEARCH AREA
Analysis and Management of Mountain Ecosystems

UNIBZ RESEARCH TEAM
Prof. Camilla Wellstein (Principal Investigator), Daniel Minikae

PROJECT PARTNERS
Università degli Studi di Padova (Lead Partner), Technische Universität München, Bern University of Applied Science, Stellenbosch University, National Institute for Agronomic Research Madrid, Warsaw University of Life Sciences, Universidad de Valladolid, Rheinisch Westfälische Technische Hochschule Aachen, Ministerium für Umwelt, Landwirtschaft, Natur- und Verbraucherschutz des Landes Nordrhein-Westfalen

WEBSITE
etnskillforaction.com

- SELECTED PUBLICATIONS**
- + Giberti, G. S., Wellstein, C., Giovannelli, A., Giammarchi, F., Bielak, K., Uhl, E., Tonon, G. (2022). Annual Carbon Sequestration Patterns in Trees: A Case Study from Scots Pine Monospecific Stands and Mixed Stands with Sessile Oak in Central Poland. *Forests*, 13(4), art. 582. DOI: 10.3390/f13040582.
 - + Grigolato, S., Uhl, E. (2021). Training a new generation of researchers for effective forest management strategies under the effect of global warming: The ETN Skill-For. Action. *Project Repository Journal*, 11, 92–95.

einzelnen ESRs wird von einer einzigartigen Kombination aus angewandter Forschung und Ausbildungsaktivitäten begleitet, indem sich Bildungserfahrung akademischer Betreuer mit dem praktischen Wissen von nicht-akademischen Partnern verbindet, um jedes individuelle Projekt durch eine klar definierte Betreuungsstrategie zu verwirklichen.

← © IDM Südtirol-Alto Adige/Henryk Berlet



Cooperation and Internationality

Nel 2022, la Facoltà di Scienze e Tecnologie ha visto una serie di rilevanti cooperazioni di ricerca a livello nazionale e internazionale. La selezione ne presenta le principali, suddivise per area di ricerca.

L'area di ricerca **Agricoltura** ha proseguito la collaborazione con importanti istituzioni locali, come la Fiera di Bolzano-Messe Bozen e l'Unione Agricoltori e Coltivatori Diretti Sudtirolesi – Südtiroler Bauernbund, così come con Bio-land Südtirol, Südtiroler Wein Konsortium – Consorzio Vini Alto Adige, l'Apfel Konsortium – Consorzio Mela Alto Adige, Assomela, e con istituti di ricerca locali come il Centro di Sperimentazione Laimburg ed Eurac Research, e internazionali, nel Regno Unito, in Germania, Austria e Francia.

L'area di ricerca **Management and Technologies for Mountain Environments** collabora con diversi attori regionali pubblici e privati, come il Dipartimento Forestale, la Ripartizione Natura, Paesaggio e Sviluppo del territorio, l'Agenzia di Protezione Civile e l'Agenzia di Protezione Ambientale della Provincia Autonoma di Bolzano, l'Autorità di Bacino delle Alpi Orientali, il Centro di Sperimentazione Laimburg, Eurac Research, Eco-Research e l'azienda sanitaria dell'Alto Adige. A livello internazionale sono in essere svariate cooperazioni con università e centri di ricerca, ad esempio con gli USA (Colorado State University), Sudafrica (Università di Stellenbosch), la Germania (TU München

e Università di Münster), la Spagna (Università di Valladolid, Lleida, e Oviedo), l'Austria (Accademia austriaca delle scienze e Università di Innsbruck), la Norvegia (Università di Oslo, OsloMet, Centro per la biosicurezza di Tromsø).

L'area di ricerca **Industrial Engineering and Automation (IEA)** si avvale di una stretta collaborazione con istituzioni locali come NOI TechPark, Automotive Excellence Cluster (AES), lvh-apa, Fraunhofer Italia ed Eurac Research, nonché con diverse aziende industriali locali (Durst Phototechnik, Alupress, Mader, VOG Products) e internazionali (Gruppo Schaeffler, Elvez) e con istituti di ricerca e università internazionali in Europa (ad esempio TU Graz, TU München, Università di Malta, Università del Lussemburgo) e in tutto il mondo (ad esempio Worcester Polytechnic Institute/USA, University of Sussex/UK, Chiang Mai University/Thailandia).

La collaborazione con istituti di ricerca e università internazionali nell'ambito dell'area di ricerca **Smart Systems Technologies and Engineering** è risultata in numerose pubblicazioni scientifiche e notevoli finanziamenti esterni alla ricerca. Esempi dei risultati ottenuti sono un Joint project con il Lussemburgo e il finanziamento di varie attività di ricerca per la fabbricazione di circuiti a film sottile per il progetto WISDOM II da parte di DFG (DE), per la realizzazione di misure di impedenza su patate

(con Pizzoli Spa) e per la realizzazione di modelli in vitro per la stimolazione optoelettronica di cellule (con Eurac Research). Le collaborazioni in corso vedono coinvolti il Politecnico Federale di Zurigo (CH), il centro Helmholtz di Dresden-Rossendorf (DE), il Karlsruher Institut für Technologie (DE), l'Istituto Italiano di Tecnologia, Eurac Research, il Centro di Sperimentazione Laimburg, la Fondazione Bruno Kessler, l'Università di Verona, la LMU München (DE), il Politecnico di Milano, il Politecnico di Torino, l'Istituto di Scienza e Tecnologia del Lussemburgo, le Università di Granada (ES), Oslo (NO), Surrey (UK), Nottingham Trent (UK), e Innsbruck (AT), oltre ad aziende quali Microgate Srl, Texmarket Srl, Microtec Srl, Thales Alenia, Empatica, Pizzoli Spa, Holz Pichler, Kerr Italia, Bidac GmbH, Pragmatic Ltd e GKN Sinter Metals. Per la realizzazione di dispositivi a film sottile, sono stati istituiti contratti di collaborazione con i laboratori FIRST (Frontiers in Research: Space and Time) e BRNC (Binnig and Rohrer Nanotechnology Center) presso l'ETH di Zurigo (CH). Inoltre, la macroarea fornisce la responsabile scientifica per la Smart Live Demo di Bolzano che è stata inaugurata ufficialmente nel 2022. Collaborazioni aggiuntive con l'Università di Pisa, UNIMORE, l'Università del Salento, l'Università di Lisbona (PT), e con l'Institut de Mines Saint-Etienne (FR), sono state formalizzate all'interno del progetto EIC Pathfinder RESORB (www.resorb-project.eu) in cui unibz è ora associate partner.

Nell'ambito del dottorato in "Food Engineering and Biotechnology" (FEB), l'area di ricerca **Food Sciences** collabora attivamente con molti gruppi internazionali, come l'Helsinki Institute of Sustainability Science (FI) e il Conycat Technology Park di Merida (MEX), nonché con l'University College of Cork (IE) e l'organizzazione intergovernativa CIHEAM (FR). La collaborazione è intensa anche con molti partner industriali del settore enologico, come Wineleven e Maselli Misure, e con aziende locali, nazionali e internazionali quali Evonik, Puratos, Cerelia, Dr. Schär, Loacker, VOG Products, Lavazza, Federazione Latterie Alto-Adige, Mila, Ferrero, Barilla, Bonomelli, Nestlé, Zuegg. Due delle aziende sopra citate hanno finanziato una posizione di RTD senior ed una posizione di dottorato per tre anni.

L'area di ricerca **Energy Resources and Energy Efficiency** promuove cooperazioni con l'Università tecnica di Vienna (AT) e con la Purdue University (USA), la Brno University of Technology (CZ), l'Université de Mons (FR), il BEST Competence Centre Graz (AT), la Technical University of Denmark e la Hiroshima University (JP). Tra i suoi stakeholder ci sono proHolz Tirol (AT), Röchling Automotive, Troyer AG, Agenzia Casaclima, Gemeinde Bozen – Comune di Bolzano, Alperia e CISMA.

L'area di ricerca **Fundamental Sciences for Innovative Applications** annovera tra le sue collaborazioni quella con Doppelmayr Italia a Lana: i ricercatori hanno studiato modelli matematici per la dinamica degli impianti a fune, durante i quali sono state effettuate misure di parametri fisici rilevanti in un impianto reale. Tra le altre collaborazioni, quella con Integrated Bioprocess Development and Biochemical Engineering dell'Università Tecnica di Vienna (AT): la collaborazione è iniziata nel 2019 e ha portato alla riconferma del finanziamento nell'ambito dell'accordo tra Austria e Provincia di Bolzano.



Research Events

19 – 21 May 2022

34th Plant Population Biology Conference "All Facets of Diversity"

International conference in presence focused on ecology, genetics, evolution, restoration, and conservation of plant populations. On these topics, 30 talks and 20 posters were presented in five sessions. The event was organised by Prof. Camilla Wellstein under the patronage of the Ecological Society of Germany, Austria and Switzerland and the Italian Botanical Society, aimed at the discussion of emergent issues and knowledge exchange at an international level encouraging collaborations between Italian and international researchers in the field of plant population biology.



1

20 – 23 June 2022

1st International Symposium on Industrial Engineering & Automation (ISIEA 2022)

With the research macroarea Industrial Engineering & Automation (IEA) and its focus on Industry 4.0 for small and medium-sized enterprises, unibz takes a pioneering role in an often-neglected niche. With the first International Symposium on Industrial Engineering & Automation, organised in June 2022 by unibz, the start was made

for a stronger international exchange in this research area.

14 – 15 July 2022

III CONVEGNO AISSA#UNDER40: la ricerca scientifica nel processo di transizione ecologica in agricoltura

More than 200 young researchers of all agricultural disciplines have joined the conference in order to discuss ecological transition in agricultural systems. The main features: 3 invited keynote lectures, 54 orals, more than 100 posters, special sessions on how to communicate the science and how to successfully apply to a EU project, and a round table with an EU parliament representative (Dr. Herbert Dorfmann) and several stakeholders.

30 September 2022

Inauguration Smact Live Demo of Bolzano

On the 30th September 2022, the Live Demo "Human to Machine" realised in cooperation with the SMACT Competence Centre and located at the NOI Techpark was inaugurated.

25 November 2022

ERDF Seminar on the "Opportunities and development of unconventional electronics" and Inauguration of the PhyLab laboratory

The workshop and seminar was attended by academic guests and representatives of local companies. The academic lectures dealt with the latest developments in unconventional and applied electronics. Speakers included Prof. Matteo Calandra (University of

Trento), Dr. Giuseppe Cantarella (University of Modena and Reggio Emilia), Dr. Denys Makarov (HZDR) and Prof. Manish Tiwari (University College London).



16 December 2022

Inauguration "Human-centered Technologies and Machine Intelligence Lab"

The inauguration event of the Human-Centred Technologies and Machine Intelligence Lab featured a workshop with two introductory keynote speeches (Prof. Andrea Zanchettin: Collaborative robotics: from safe robots to intelligent coworkers, Dr. Georgia Chalvatzaki: Shaping Robotic Assistance through Structured Robot Learning). The lab was then inaugurated by president Ulrike Tappeiner, director Günther Mathà, vice-rector for research Johann Gamper and NOI Techpark deputy CEO Hubert Hofer.



1 ← Group photo of 34th Plant Population Biology Conference participants

2 ↑ A shot inside the laboratory PhyLab

3 ↑ A shot during the Human-centered Technologies and Machine Intelligence Lab inauguration

Faculty of Education



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KEY DATA

PEOPLE

1635 Students
32 PhD Students
50 Tenured Professors
65 Researchers
178 Contract Professors
21 Technical and Administrative Staff

BACHELOR

+ Communication Sciences and Culture
+ Social Education
+ Social Work

MASTER

+ Primary Education
+ Applied Linguistics
+ Innovation and Research for Social Work and Social Education
+ Musicology

PHD

+ General Pedagogy, Social Pedagogy, General Didactics and Disciplinary Didactics
+ Linguistics

LIFELONG LEARNING

+ Training Course 24 CFU for Middle- and High-school Teachers
+ Antropolad: Further-Education Course in Ladin Language and in Culture and Alpine Anthropology



Research Areas



Dean — Prof. Paul Videsott

The Faculty of Education of the Free University of Bozen-Bolzano has taken up a unique role in academic teaching and research in various fields connected to education and social sciences on a national level. This is partly due to the specific historical, linguistic, and cultural reality of the Trentino-South Tyrol region, which helps frame the current state of research at the Faculty and to plan future developments. In particular, the Faculty has the ambition to be a:

- + Leading centre for teacher qualification at all levels, with a focus on the acquisition of theoretically reflected knowledge for action;
- + Leading centre for research on languages (predominantly minority languages), multilingualism and communication; and a
- + Leading centre for training of social professions, and related research.

The year 2022 was characterised by a Faculty's major evaluation, which took up almost the entire year and included also an evaluation of the research activities carried out over the five-year period

2014—2019, with an out-look up to 2022. On the whole, the result of the evaluation was very positive. The Faculty was attested a high degree of internationalisation, a good level of research and a solid interdisciplinarity.

The Faculty constantly places emphasis on research activities of a high quantitative and qualitative level. This was demonstrated in 2022, among other things, by the numerous very good VQR ratings obtained by publications by members of the Faculty. For the third year running, it was possible to increase the third-party funds acquired, which have now exceeded the 1.5 million mark. In particular, 18 new research projects and 9 Erasmus+ Knowledge Alliances projects contributed to this. It is in the latter area that the Faculty has acquired particular expertise in recent years, as shown by the steadily increasing share of third-party funding from such calls. 36 new projects with a total volume of € 2.1 million in internal and external fundings were initiated at the Faculty in 2022. The Faculty's research volume over the past three years has consolidated at approximately € 2 million/year. On average, 65% of this volume was financed by third-party funds, which is a very positive figure for a 'book faculty' such as the Faculty of Education is.



Vice Dean for Research — Prof. Giulia Cavrini

Research carried out in the faculty of Education focuses on seven main areas:

Permanent Education – Processes and Projects of Education and Development with a Focus on South Tyrol

Coordinator: Iris Nentwig Gesemann

This research area deals with the issues of training for the whole course of life (Lifelong Learning) starting at an early age. The research work considers the different contexts of training and experience (Lifewide Learning), in a deep sense, as regards affective-emotional and cognitive anchors and, values that belong in an intergenerational and cultural meaning (Lifedeeep Learning).

IN-IN Education: INnovative and INclusive Education

Coordinator: Simone Seitz

This research area focuses on developing meaningful, evidence-based and original approaches to teaching/learning skills and practices in all educational institutions, in keeping with

the global framework of values and policies of inclusive education. Specific research activities address educational spaces, teaching materials, inclusive teaching and learning practices for heterogeneous groups and students with Special Educational Needs.

Psychology and Wellbeing Promotion in Educational Contexts

Coordinator: Demis Basso

This research area focuses on the study of behaviour, the main psychological functions, and psychological processes related to education and counselling, extending over the whole life course. The research work includes the observation of developmental levels and the early detection of typical and atypical developmental markers, aiming to identify risk and protection factors.

Languages and Multilingualism in South Tyrol

Coordinator: Silvia Dal Negro

The research activities in this area focus on the study of languages and multilingualism in South Tyrol following three main lines of inquiry: investigation in the evolution of languages over time; description and documentation of language usage in different communicative and social contexts; analysis of the linguistic and educational policies with special attention for the processes of language acquisition and for the teaching of languages in schools.

Aesthetic Experiences and Communication

Coordinator: Attilio Carraro

Researchers investigate how and to what extent different forms of aesthetic expression (music, movement, visual art, etc.) appear in social, cultural and educational contexts, with a particular focus on the multicultural realities of South Tyrol. More specifically, research focuses on musical heritages and cultures handed down from different historical and social contexts; graphic and visual expression and communication from early childhood to adulthood; contemporary practices and innovative teaching methods for physical exercise and sport in primary schools and kindergartens.

Educational Contexts, Disciplines and their Teaching in the Nursery and Primary School

Coordinator: Giorgio Bolondi

This research area makes gathers contributions from sciences such as school disciplines and didactics to investigate into the development of skills in children at nursery and primary school. Emphasis is placed on education at the pre-primary level and on disciplinary subjects in primary school.

Socio-cultural Worlds: Institutions, Welfare, Social Professions, Environment and Population

Coordinator: Kolis Summerer

This research area merges perspectives and expertise from different disciplines such as sociology, social statistics, social anthropology, law, social policy, social pedagogy and social work. Researchers work on a variety of projects contributing to theoretical development, fundamental and applied research in scientific domains regarding the social world, diversity, population, institutions, values, environment and space, as well as cultural studies, cultural identities and memories, and cultural heritage.

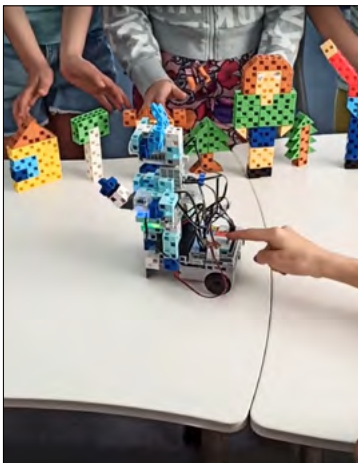


Research Projects

RIDE – Robotics for the Inclusive Development of Atypical and Typical Children

Scientific and technological innovation in the 21st century requires everyone to continuously adapt to the ongoing environment. Enhancement of STEM competence and literacy is central, and it requires schools to develop new methods to include innovations in teaching and learning. The challenge is extremely important otherwise the students gap with the society may increase as well as the risk of school leaving.

The collaboration between 7 organisations from Hungary, Spain, Romania, and Italy aimed to provide curricular materials for the development of computational and social skills. The target group consisted in a total of 220 typical and atypical development children (ADS) aged 7–14. A matrix of 10 modules was created consisting of five lessons based on regional fairy tales, coupling ArTeC



robotics with digital storytelling. Each module was equipped with several variations focusing on a different skill. Each module/lesson/variation is composed of: students task sheets, texts in 2 versions (original and simplified for impaired students), lesson plans, teacher's guides and sample robots with photos, videos, assembly instructions and sample programs.

Results showed significant developments mainly in reading accuracy, text comprehension and visuo-construction skills. Moreover, textual feedback from both students and teachers indicated that the intervention was highly appreciated because it fosters social interaction, self-efficacy and knowledge about other European countries.

All the materials developed during the project can be freely downloaded from the project website www.riderobotics.eu in English, Hungarian, Spanish, Italian and Romanian languages. It is foreseen that the more effective integration of a) ADS in mainstream education, and b) typical developing students in STEM disciplines, would reduce the risk of early school leaving, help their talent management and to obtain a better position in the labour market.

INFO BOX

FUNDING TYPE
Erasmus+ Knowledge Alliances – Grant Agreement 2019-1-HU01-KA201-061275

DURATION
09/2019 – 08/2022

RESEARCH AREA
Psychology and wellbeing promotion in educational contexts

UNIBZ RESEARCH TEAM
Prof. Demis Basso (Principal Investigator), Prof. Alessandro Colombi, Prof. Antonella Brighi, Dr. Barbara Caprara, Dr. Milvia Cottini

PROJECT PARTNERS
Abacusan Stúdió (Lead Partner), ELTE Bárczi Gusztáv Gyógypedagógiai Kar, Kardos István Általános Iskola Gimnázium és Szakgimnázium, Istituto Comprensivo di scuola primaria e secondaria di I grado Johannes Amos Comenius, Interonline Coop-eracion 2001, Scoala Gimnaziala Speciala SF NICOLAE

WEBSITE
www.riderobotics.eu

- SELECTED PUBLICATIONS**
- + Kálózi-Szabó, C., Mohai, K., & Cottini, M. (2022). Employing Robotics in Education to Enhance Cognitive Development – A Pilot Study. *Sustainability*, 14(23), 15951. DOI: [10.3390/su142315951](https://doi.org/10.3390/su142315951)
 - + Tovazzi, A., Basso, D., Caprara, B., & Colombi, A.E. (2021). Pequeños bloques para grandes avances: Un enfoque didáctico basado en la neurociencia. In: A. R. Bodoque-Osma & S. González-Villora (Eds.), *Neuroeducación: Desde la Psicología a la Motricidad. Editorial Morata, Madrid* (pp. 215–232). ISBN: 9788418381591.
 - + Moschella, M., & Basso, D. (2020). Computational Thinking, spatial and logical skills. An investigation at primary school. *Ricerche di Pedagogia e Didattica*, 15(2), 69–89. DOI: [10.6092/issn.1970-2221/11583](https://doi.org/10.6092/issn.1970-2221/11583)

← Photo taken at the IC Comenius school in Trento © Antonella Delama



Research Projects

FitBack – The European Network for the Support of Development of Systems for Monitoring Physical Fitness of Children and Adolescents

Physical fitness (PF) is a marker of health, associated with health-related quality of life. The systematic collection of fitness measures, the provision of appropriate feedback to people (and particularly to youth) and the adoption of strategies to counteract the secular decline in fitness are essential to actions aimed at improving individuals' wellbeing and physical and mental health.

FitBack is a project aiming at developing a web portal to support monitoring youth PF across Europe. The portal acts as a gateway to knowledge, data and resources, which support the development of PF monitoring and surveillance systems from a local, regional or national perspective. A second aim of the project is to develop



health-related fitness reference values for European children and adolescents aged 6-18 years, providing European fitness maps and country ranking for the main health-related fitness components. To this purpose, a total of 7.9 million test results from 34 countries were collected and used.

The study allowed to highlight the major implications of PF assessment in youth from a health, educational and sport perspective and to analyse how PF testing can be conducted in school and/or sport settings. Moreover, a great attention was paid on how PF results can be used by different users and how interpreted results (interpreted on the basis of the reference values) can be integrated in healthcare systems across Europe. A particularly innovative part of the study regarded the contribution that interactive digital technologies (e.g. web-based platform and mobile app) can offer to improve the usability and the attractiveness of monitoring and surveillance platforms and systems.

A second step of the FitBack project, called FitBack4Literacy (Monitoring physical fitness of physical literacy in children and adolescents) is currently underway.

INFO BOX

FUNDING TYPE
Erasmus+ Sport Collaborative Partnerships

DURATION
01/2020 — 12/2022

RESEARCH AREA
Aesthetic languages and communication

UNIBZ RESEARCH TEAM
Prof. Attilio Carraro (Principal Investigator), Dr. Giampaolo Santi

PROJECT PARTNERS
University of Ljubljana (Lead Partner), University of Zagreb, University of Tartu, LIKES Research Center for Physical Activity and Health, Hungarian School Sport Federation, European Physical Education Association Luxembourg, University of Lisbon, University of Belgrade, University of Granada

WEBSITE
www.fitbackeurope.eu

SELECTED PUBLICATIONS
+ Ortega F.B., Leskošek B., Blagus, R., GilCosano, J.J., Mäestu, J., Tomkinson, G., Ruiz, J.R., Mäestu, E., Starc, G., Milanovic, I., Tammelin, T.H., Sorić, M., Scheuer, C., Carraro, A., Kaj, M., Csányi, T., Sardinha, L.B., Lenoir, M., Emeljanovas, A., Mieziene, B., ... FitBack, HELENA and IDEFICS consortia (2023). European Fitness Landscape in Children and Adolescents: updated reference values, fitness maps, and country rankings based on nearly 8 million data points from 34 countries gathered by the FitBack network. *British Journal of Sport Medicine*, 57(5), pp. 299–310.
+ Carraro, A., Santi, G. Colangelo, A., Mäestu, J., Milošević, V., Morrison, S.A., Olvera, M., Podnar, H., & Jurak, G. (under review). Usability evaluation of the FitBack web portal for monitoring youth fitness. *International Journal of Human-Computer Studies*.



Research Projects

ASTRA – Applying Sustainability Transition Research in Social Work Tackling Major Societal Challenge of Social Inclusion

The Marie-Skłodowska-Curie Actions project ASTRA applies approaches of Transdisciplinary Sustainability Transition Research, policies, and practices in Social Work to tackle the major societal challenges of social inclusion. ASTRA research develops new sustainability-oriented methods of Social Work with a focus on the social inclusion of young people facing precariousness, people with a migration background, and vulnerable local communities.

The diversity of the partner organisations working on sustainability transition in practice deepens the transdisciplinary approach. Innovative practice-related solutions and fundamentally new types of research-based knowledge will have a long-term impact not only on

social work but on society and science at large. ASTRA offers the ESRs novel career perspectives in transdisciplinary research, cross-sectoral policy-making and new economic models at the local, national and European level.

The international PhD-programme of the project involves 15 Early-Stage Researchers coming from different European countries, Canada, Australia, Iran, the USA and Africa). The Free University of Bozen-Bolzano is leading one of the 15 subprojects of ASTRA titled "Eco-social Innovation and Solidarity Economy in Vulnerable Local Communities." Within this subproject, Michael Emru Tadesse, an Early-Stage Researcher from Ethiopia, is conducting his PhD research in the field of the Social and Solidarity Economy, exploring the economic self-organization structures of people of African descent in Europe, with special focus on Italy. Furthermore, unibz will host the third ASTRA summer school at its campus in Brixen-Bressanone in June 2023. In addition to the participation of early-stage researchers, their supervisors, and partner organisations, the event will welcome famous international scholars in the fields of postcolonialism, degrowth, peace, and sustainability transition research.



INFO BOX

FUNDING TYPE

Horizon 2020 – Marie Skłodowska-Curie Grant agreement 95551

DURATION

10/2020 — 09/2024

RESEARCH AREA

Socio cultural worlds: institutions, welfare, social professions, environment and population

UNIBZ RESEARCH TEAM

Prof. Susanne Elsen (Principal Investigator), Prof. Urban Nothdurfter, Michael Emru Tadesse

PROJECT PARTNERS

University of Jyväskylä (Lead Partner), Universität Bielefeld, University of Durham, University of Ljubljana, CIRIEC Section belge, Natural resources Institute LUKE

WEBSITE

www.jyu.fi/en/research/astra

SELECTED PUBLICATIONS

- + Tadesse, M. E., & Elsen, S. (2023). The Social Solidarity Economy and the Hull-House Tradition of Social Work: Keys for Unlocking the Potential of Social Work for Sustainable Social Development. *Social Sciences* 12(3), 189. doi.org/10.3390/socsci12030189
- + Tadesse, M.E., & Erdem, E. (2023). Post-Capitalist Imaginaries of Finance: A Diverse Economies Perspective on Equubs Within the Ethiopian Diaspora in Germany. *Rethinking Marxism*. 35(2). doi.org/10.1080/08935696.2023.2183694
- + Matthies, A. L., Hermans, K., & Leskošek, V. (2022). Applying transdisciplinary sustainability transitions research in international social work doctoral training. *Social Work Education*, 41(7), 1541–1559. doi.org/10.1080/02615479.2022.2105316



EECA2030 – Tu conti: educazione alla cittadinanza economica in accordo con l'Agenda 2030

L'alfabetizzazione finanziaria è definita come un insieme di conoscenze, abilità, atteggiamenti e comportamenti che consentono agli individui di prendere decisioni finanziarie efficaci in una serie di contesti finanziari. La sua rilevanza ha acquisito una crescente attenzione da parte dell'opinione pubblica a causa dei rapidi cambiamenti dei mercati finanziari e della complessità dei prodotti finanziari. In questo contesto complesso e incerto, gli individui sono sempre più responsabili del proprio benessere finanziario e, di conseguenza, è cresciuto l'interesse per i programmi che mirano a migliorare la loro alfabetizzazione finanziaria. Un'altra questione rilevante dell'alfabetizzazione finanziaria riguarda il persistente divario di genere. Questo fenomeno è particolarmente grave se si considera che le donne hanno minori

possibilità finanziarie rispetto agli uomini, creando così le condizioni "perfette" per generare precarietà finanziaria e povertà nelle donne, almeno dopo il pensionamento.

Questo progetto di ricerca contribuirà al dibattito scientifico internazionale sull'alfabetizzazione finanziaria dei giovani cittadini, compreso il divario di genere, nonché al dibattito politico internazionale (e locale) sulla promozione della responsabilità e della sostenibilità delle politiche e delle iniziative di educazione finanziaria. Inoltre, You Count è pienamente incentrato sul tema della sostenibilità, seguendo i 17 Obiettivi di Sviluppo Sostenibile adottati dalle Nazioni Unite (Nazioni Unite, 2015), con specifico riferimento all'Istruzione di Qualità (n°4: Garantire un'istruzione di qualità inclusiva ed equa e promuovere opportunità di apprendimento permanente per tutti) e all'Uguaglianza di Genere (n°5: Raggiungere l'uguaglianza di genere ed emancipare tutte le donne e le ragazze).

Gli obiettivi sono tre:

- + quantificare l'attuale livello di alfabetizzazione finanziaria dei giovani altoatesini;
- + indagare i canali di trasmissione dell'alfabetizzazione finanziaria all'interno delle scuole;
- + indagare come un programma di educazione finanziaria ben implementato possa essere di aiuto nell'affrontare il problema del divario di genere su questo tema.

INFO BOX

FUNDING TYPE
Internal Funding

DURATION
10/2022 — 09/2025

RESEARCH AREA
Permanent Education – Processes and Projects of Education and Development with a Focus on South Tyrol

UNIBZ RESEARCH TEAM
Prof. Monica Parricchi (Principal Investigator), Dr. Doris Kofler, Dr. Michele Cagol; Prof. Mirco Tonin, Prof. Federico Boffa, Prof. Claudia Curi (Faculty of Economics and Management)

PROJECT PARTNERS
Fondazione per l'Educazione Finanziaria e al Risparmio FEDUF, Banca d'Italia

SELECTED PUBLICATION
+ Parricchi, M. (2022). L'educazione economica per costruire comunità educanti, *Pedagogia e Vita*, n. 2 2022, pp. 79–91. ISSN 0031-3777.





NewScriptDesc – Sprachliche Variation im Mittelalter als System. Eine Neubegründung der skriptologischen Beschreibung des galloromanischen Sprachraums

Das sich mit der Entwicklung von Schriftsprache befassende Projekt setzt sich zum Ziel, die skriptologische Beschreibung des französischen und damit angelegt des galloromanischen Sprachraums in empirischer wie in methodischer Perspektive neu zu begründen. Damit einher entwickelt sich ein neuer Ansatz zur Sicht auf mittelalterliche Sprachdaten in der Romania und anderen Sprachfamilien. NewScriptDesc spannt einen Bogen von der „Schreibstätte“ („lieu d’écriture“), die die Ausprägung einer konkreten sprachlichen Form verantwortet, zum diasystematischen Raum, in dem die einzelnen Formen systemhaften Mustern entsprechen und als solche gewertet werden können. Die

sehr charakteristische Varianz der mittelalterlichen Schriftsprachen wird damit unmittelbar in ihrem Entstehungskontext und so letztlich in der Rede verortet. Zugleich wird sie als konstitutives Moment des Sprachsystems fassbar.

Zum einen impliziert das Projekt eine adäquate Aufbereitung der umfassenden, aktuell verfügbaren Datenbasis für die empirische skriptologische Analyse, d.h. des Corpus der französischen Originalurkunden „Documents linguistiques de la Galloromania“, zum anderen die Weiter- bzw. Neuentwicklung von Methodologien für die Bearbeitung dieser Daten und für ihre informatische sowie visuelle Darstellung (Visual Dialectometry). Das zu gestaltende Datenbanksystem ermöglicht dann einen neuen, sehr präzisen Zugriff auf das Phänomen der mittelalterlichen Varianz und den in ihr angelegten Sprachwandel. Der französische Sprachraum bietet ideale Voraussetzungen für die Erforschung mittelalterlicher Sprachstände: eine umfangreiche Literatur in der Volkssprache und insbesondere diatopisch wie diachron relativ dichte Urkundenreihen, die als Originale präzise datiert und lokalisierbar sind. Insofern nimmt dieser Beobachtungsräum innerhalb der romanistischen Sprachwissenschaft eine Vorreiterfunktion ein.

Die Interpretation der Daten verspricht relevante neue Erkenntnisse für die Bereiche Grapho-Phonetik, sprachliche Varianz, Sprachwandel, Sprachgeographie und

INFO BOX

FUNDING TYPE
Joint Projects – Swiss National Science Fund – South Tyrol / Alto Adige

DURATION
05/2021 – 04/2024

RESEARCH AREA
Languages and Multilingualism in South Tyrol

UNIBZ RESEARCH TEAM
Prof. Paul Videsott (Principal Investigator), Dr. Marco Robecchi, Dr. Cristina Dusio

PROJECT PARTNER
Romanisches Seminar der Universität Zürich

WEBSITE
www.rose.uzh.ch/docling

SELECTED PUBLICATIONS

- + Videsott, P., Dusio, C., & Robecchi, M., (2023, in press). Les documents français de la prévôté de Paris aux temps de Louis IX. Contexte historique, édition, analyse linguistique. *Bibliothèque de l'École des Chartes*, 178.
- + Robecchi, M. (2023). Scriptologie médiévale et dialectologie diachronique: le cas du 'é' dans la Galloromania et en poitevin. In: Corbella, D., Dorta, J. & Padrón, R. (eds.), *Perspectives en linguistique et philologie romanes*. Strasbourg, Éditions de Linguistique et de Philologie, *Bibliothèque de Linguistique Romane* (BiLiRo), vol. 2, pp. 863-874. DOI 10.46277/SLR.18.2023.863-874
- + Dusio, C., (2023). Les documents français de la prévôté de Paris. Bilan d'un an de travail sur le corpus. In Corbella, D., Dorta, J., & Padrón R. (eds.), *Perspectives en linguistique et philologie romanes*. Strasbourg, Éditions de Linguistique et de Philologie, *Bibliothèque de Linguistique Romane* (BiLiRo), vol. 2, pp. 991-1000. DOI 10.46277/SLR.18.2023.863-874

Standardisierungsgeschichte des Französischen und damit einer Weltsprache. Die Relevanz des Projektes geht aber weit über das Französische hinaus und erstreckt sich insbesondere auch auf moderne Sprachen, die aktuell auf dem Weg zur Standardisierung sind, wie etwa das Dolomitenladinische.

← © Département du Doubs – Archives départementales, 1B72, n° 1





Cooperation and Internationality

La Facoltà ha creato negli anni una ricca rete di collaborazioni a livello locale, nazionale e internazionale, che vedono coinvolte sia università ed enti di ricerca, sia istituzioni pubbliche.

In particolare, per l'area di ricerca **Educazione Permanente** si possono citare le collaborazioni con l'Intendenza Scolastica Italiana, il Department of Education dell'Università di Gothenburg (SE), la Fondazione Carano 4 Children, che promuove iniziative sui temi del cambiamento climatico e sulla parità di genere, rivolte ai bambini, e con il German speaking Innovative Learning Environment Network (ILE).

L'area di ricerca **IN-IN Education: Didattica innovativa e inclusiva**, pone molta attenzione sia alla cooperazione internazionale sia al contesto provinciale. Oltre alla partecipazione ai podcast e allo Studium Generale, il dialogo con le istituzioni scolastiche è stato rafforzato, tra l'altro, attraverso formati di consulenza accademica sullo sviluppo scolastico (Beate Weyland), e la cooperazione con le intendenze scolastiche.

Per l'area di ricerca **Psicologia e promozione del benessere nei contesti educativi**, si segnalano le attività del Joint Research Laboratory SWAPv-IT, in collaborazione con la Flinders University (AU) e l'Università di Bologna, sulla prevenzione del bullismo e del cyberbullismo, che collega 20 paesi nei cinque continenti.

Nell'ambito dell'area di ricerca **Lingue e plurilinguismo in Alto Adige** sono attive diverse collaborazioni, ad esempio con l'ente ufficiale del turismo dell'Alto Adige e con agenzie e operatori turistici locali. Inoltre, proseguono la collaborazione con il centro interuniversitario AIM (Analisi dell'Interazione e della Mediazione) e con l'Istituto ladino "Micurá de Rù" per il progetto relativo alla Grammatica normativa per il ladino della Val Badia.

L'area di ricerca **Esperienze e linguaggi estetici** evidenzia collaborazioni incentrate sull'insegnamento dell'educazione fisica e della musica, in particolare con le università di Grenoble (FR) e della Tessaglia (GR), con la Hacettepe University (TR) e con ricercatori dell'Università di Chieti; con l'Università del Lussemburgo (LU), la Dublin City University (IE), le Università di Lisbona e di Siviglia (ES) e di Trnava (SK); con la LMU-München (DE), l'Accademia Musicale di Oslo (NO), e con le Università di Bologna e Roma 3.

Nell'ambito dell'area di ricerca **Ambiti formativi, discipline e loro didattica nella scuola**, è significativa la cooperazione internazionale avviata con MedECC, una rete di scienziati al lavoro sui cambiamenti climatici e ambientali nel Mar Mediterraneo. Prosegue la collaborazione con l'Intendenza scolastica tedesca, in particolare modo nella realizzazione di una guida per aiutare gli insegnanti nel supportare allievi con gravi difficoltà di apprendimento.

All'interno dell'area di ricerca **Dinamiche socio-culturali** le collaborazioni più rilevanti sono avviate con l'Ufficio Servizi Sociali di Bolzano, il Netz-Network dei Centri Giovanili dell'Alto Adige, l'ufficio per la tutela dei bambini e dei giovani e l'inclusione sociale, e il Villaggio del Bambino dell'Alto Adige; con l'Università di Jyväskylä (FI), con le Università di Trento, Trieste e della Calabria e con la Scuola Claudiana e la locale Azienda Sanitaria; con la società per la ricerca archeologica Arc-team, la Società austriaca per la ricerca sulle fortificazioni, il Museo della guerra di Rovereto, l'Associazione Bellum Aquilarum di Sesto, l'Associazione Antropologica Alto Adige - EVAA e l'Associazione turistica di Sesto. È stata inoltre rafforzata la collaborazione con la Polizia Postale del Trentino-Alto Adige e la rete locale contro la violenza di genere (GEA).



Research Events

19 – 22 January 2022

The focus of the 2022 edition of the Developmental Neuropsychology Days (GNEE; **Giornate di Neuropsicologia dell'Età Evolutiva**) was on research in the field of diagnosis and rehabilitation of neuropsychiatric and neuropsychological disorders and on the application of innovations in clinical practice. Further discussion topics covered learning and hyperactivity disorders, digital therapies as well as building and maintaining well-being.

18 – 19 February 2022

The 10th **Cognitive Science Arena** conference welcomed many young scientists from European countries from the scenery of cognitive sciences. The Smart Talk was provided by prof. Davide Crepaldi on "Trying to run an open lab: tools, successes and failures". With a contribution of the ESCOP, online meetings on research methodology were held after the workshop.

13 – 16 September 2022

The Malinowski Forum for Ethnography and Anthropology held the 5th edition of its international symposium, Anthropological Talks in South Tyrol. The central event was the workshop **Decentering Anthropology by way of Malinowski**, supported by unibz and a generous grant from the Wenner-Gren Foundation for Anthropological Research (USA). The workshop was flanked by two events organised in collaboration with the South Tyrol Anthropological Association (EVAA): a public screening of *Savage Memory*, a documentary film about Bronislaw Malinowski

made by his great-grandson, and a celebration of the centenary of Malinowski's classic monograph *Argonauts of the Western Pacific*, which was promoted together with EVAA and the Italian Society for Cultural Anthropology (SIAC).

mfea.projects.unibz.it

28 – 30 September 2022

The Sport Pedagogy Team of the Faculty organised the Specialist Seminar **Motor Competence Assessment in Educational Settings** in collaboration with AIESEP and the Universities of Hamburg and Jyväskylä. Around fifty experts in motor skills and physical fitness assessment and monitoring met in Brixen-Bressanone to discuss on how to conduct, analyse, interpret, and use motor competence measures in school and in youth grassroots sport.

6 – 7 October 2022

The International Conference on **Verbalizzare la Musica per diffonderla meglio (ICVM)** aimed to discuss how to translate music into words from a pedagogical-didactic perspective that includes both teaching and dissemination. Several presentations, lectures and a round table discussion focused on the possibilities of accessing the inner meanings of music in a pedagogical context by listening to it, placing the composition in the context of its production and creation and discovering its functions and relations to other knowledge.

15 October 2022

BRIMA PRIMAR is a full-day further education event on early mathematics education for kindergarten and primary school teachers with several bilingual workshops and two main lectures by international experts (in 2022: Prof. Steinweg, University of Bamberg, and Prof. Robotti, University of Genova). The event is organised in cooperation with the Directorate of Education of South Tyrol and welcomed more than 400 participants.



24 – 25 November 2022

The International Conference **Prevention of Bullying and Cyberbullying & Promotion of Well-being in Educational Contexts** included a Think Tank, an opportunity for a stimulating meeting between international experts in the academic and tertiary sector and policy makers to discuss and deepen innovative research lines. Scientific results and proposals for intervention methodologies were presented to combat aggressive behaviours and to assure the protection of young people from this form of violence.

1 ← Photo taken in the Aula Magna during the Brimaprimar event

Faculty of Design and Art



© Eleonora Lunardoni

KEY DATA

PEOPLE

340 Students
15 Tenured Professors
14 Researchers
/ Contract Professors
26 Technical and
Administrative Staff

BACHELOR

+ Design and Art –
Major in Art
+ Design and Art –
Major in Design

MASTER

+ Eco-Social Design

2ND CYCLE MASTER

+ Design for Children



Research Areas



Dean — Prof. Nitzan Cohen

The Faculty of Design and Art conducts research in exploratory, evaluative, and participatory investigations that connect design and art to diverse knowledge fields and scientific disciplines, such as sociology, culture, philosophy, technology, environment, and ecology. Its ongoing goal is to develop and disseminate new ideas, methodologies, creative practices, and forms of knowledge production, by exploring new courses of action and combinations of practices, discourses, and critical reflections between creating, inventing, testing, and exhibiting as new forms of design and art-based research. The Faculty's research activities span from established forms of design and art, such as product design, communication design, and contemporary art practices, to emerging or established sub-fields like eco-social design and/or art, participatory design and art practices, and a wide range of experimental relations with issues related to anthropology, sociology, biology, artistic intelligence, and education. The Faculty promotes interdis-

iplinary collaboration, fostering synergies between practitioners, scientists from humanistic disciplines, artists, designers, and creative methods, and building an increasingly interdisciplinary network that links together various partners from industry, science and academia. The Faculty's international research network is continuously expanding, with research partners mainly from Austria, Germany, Switzerland, The Netherlands, Portugal, Spain, and the UK, and further extending to partners in Australia, Mexico, New Zealand, and the US.

In particular, in 2022, the newly established Competence Centre for Economic, Environmental and Social Sustainability in cooperation with other unibz faculties facilitates enhanced networking within and outside the university and joins a wide scope of new activities which started this year.



Vice Dean for Research — Prof. Eva Leitolf

The research of the Faculty of Design and Art transcends conventional disciplines, methods, media, and forms of publication, as the knowledge

generated by its investigations often involves practice, innovative concepts, and visual approaches. This research takes many forms, including exhibitions, participatory social interventions, investigations into methods of augmented reality visualisation, living spaces and forms of life, and experimental investigations into new materials and (bio) technological processes. The Faculty's three research clusters have their own distinct profiles, nevertheless the research groups often transgress the clusters to best profit from each other's specific knowledge and practices. In 2022 e.g., the i-NEST (Inter-connected North-East Innovation Ecosystem) project was launched at unibz. This interdisciplinary research project within the PNRR involves members of all clusters of the Faculty and allows to strengthen our interdisciplinary research especially with universities in the north-east of Italy.

MAKE: Exploring Innovative Approaches to the Ideation of Artefacts and Spaces

Coordinator: Gerhard Glüher

The research cluster MAKE investigates into alternative, unconventional ways of enhancing the intrinsic value of art and design works. This cluster includes the Design Friction Lab, coordinated by Prof. Nitzan Cohen, which explores sustainable innovative technologies and materials as well as do-it-yourself (DIY) processes. Furthermore, as the research field of "public space", which researches the possibilities

of 3D mapping and digital reconstructions of physical space. In addition to classical contexts of sharing research results, exhibiting, mediating, participating in and conducting discourses on future forms of architectural, artistic and design processes were again the focus of the cluster's activities in 2022. The results of the InnoCell project e.g., are part of the international traveling exhibition "Plastic – Remaking our World" by the Vitra Design Museum.

TRANS-FORM: Exploring Design, Art and Social Practices for Political and Eco-Social Transitions

Coordinator: Aart van Bezooijen

The TRANS-FORM cluster's research field closely connects to the Master in Eco-Social Design and its participatory design methods. In 2022, initiatives were launched as well as continued that put a special focus on interdisciplinary collaboration, citizen engagement and social change. Prof. Kris Krois and his team e.g., developed an international congress in the BASIS Vinschgau, which explored the topic of "Radical Care" through workshops, lectures and publications. With the "New European Bauhaus of the Mountains" project e.g., which aims to support the EU's "Green Deal", the faculty continued its collaboration with Eurac Research, the CasaClima agency and the regional administration in South Tyrol. The initiative is part of the NEB Lab and thus a flagship project of the European Commission.

ENABLE Design & Art Competences, Material Culture and Human Development

Coordinator: Andreas Metzner-Szigeth

The faculty's third research cluster ENABLE focuses on artistic processes, aesthetics, design, and art theory, as well as sociological and didactic issues and methods. It investigates interfaces, interaction, and the evolution of digital technologies, as well as "embodied knowledge" in artistic actions and innovative forms of visualization, graphic design and print media.

In 2022 the thematic focus lied on "Visual Communication and Societal Challenges". This main topic bundled important thematic priorities (scientific communication, political communication, communication on cultural heritage, educational communication), which were worked on in various ongoing and recently completed projects.

As part of a volume on "Science Communication" edited by Prof. Andreas Metzner-Szigeth, several contributions by members of the cluster were published. The publication "Shoot & Think: Negotiating Images", edited by Prof. Eva Leitolf and Dr. Giulia Cordin was honourably mentioned in the category "Innovative and Inclusive Teaching Models" in the competition for the XVI Premio Nazionale delle Arti 2022.



Research Projects

Sustainable Design Lab for Emerging Materials and Manufacturing

By working with residues from industry, post-consumer waste, local resources and bio-based leftovers makes it possible to explore new circular and bio-based material alternatives which can contribute to future applications for a circular economy (Cleries et al, 2021). Unlike a collection of existing materials, documenting recipe-based materials might also require a different approach. Due to the limited lifetime of biodegradable materials, it is important being able to reproduce samples for prototyping and testing materials over a long(er) time period. Documenting the recipes in an online platform such as Materiom library is a good example of a collaborative approach for interdisciplinary research and knowledge transfer.

This research project focuses on the application and further

development of bio-based and industrial waste(d) based materials as basis/ingredients for more sustainable design. One of the main topics is the application of thin-film electronics on biodegradable substrates in collaboration with the Faculty of Engineering (Prof. Niko Münzenrieder and team). The development of these new material driven applications are not only happening within a laboratory context but are shared and documented within a material library setting that is welcoming young designers to explore these new technologies allowing more sustainable design.

Material libraries play an important role in documenting new material and technology developments and have established themselves as innovative platforms to bridge the gap between material research, product applications and market introduction. Unlike traditional book libraries, material archives can be structured very differently according

INFO BOX

FUNDING TYPE
Next-GenerationEU – Project i-NEST (PNRR) – Interconnected North-East Innovation Ecosystem

DURATION
09/2022 – 08/2025

RESEARCH AREA
TRANS-FORM

UNIBZ RESEARCH TEAM
Prof. Fabrizio Mazzetto (Principal Investigator; Faculty of Agricultural, Environmental and Food Sciences), Prof. Aart van Bezooijen; Prof. Guido Orzes and Prof. Niko Münzenrieder (Faculty of Engineering)

PROJECT PARTNER
Università degli Studi di Udine

SELECTED PUBLICATION
+ van Bezooijen, A., (2016). *Material Collections. Form: The Making of Design*, 264, pp. 91–97.

to their focus and target groups such as being more commercial, academic, or public oriented (Van Bezooijen, 2016). In finding (future) applications these libraries play an important role. Advanced material archives often feature a digital/online interface making it possible to connect physical libraries that might be distributed within an institution and/or geographical locations such as the Material-Archiv network in Switzerland.



← Examples of bio-based DIY materials © María Eugenia González



Research Projects

TROM – Verso il mondo della materialità

Philip K. Dick è stato uno degli autori più brillanti del XX secolo: ha immaginato futuri possibili e realtà distopiche popolate da intelligenze umane e artificiali, ma non solo. L'universo dickiano è soprattutto uno spazio costruito e composto da dispositivi tecnologici, macchine e oggetti interamente ideati dalla penna di questo geniale scrittore. Come li ha immaginati Philip K. Dick e, attraverso di essi, come ha immaginato il futuro? E oggi, a distanza di decenni da Dick, come dovremmo immaginare questi strumenti? E, cosa ancora più interessante, come dovremmo decodificare e ricostruire il processo creativo che ha portato alla creazione e alla "materializzazione" di questi strumenti?

Inscritto in un quadro multidisciplinare, questo progetto di ricerca si proponeva di elaborare e dare forma a versioni alternative di alcuni dei dispositivi

tecnologici inesistenti descritti nell'opera di Philip K. Dick. Il progetto ha cercato infatti di comprendere meglio il processo creativo in grado di trasformare un concetto filosofico, o una preoccupazione sociale, in un dispositivo tecnologico progettato o in un oggetto inesistente. Nel corso del progetto, il gruppo di ricerca ha analizzato la natura, il ruolo e la rilevanza sociale dei dispositivi immaginati da Philip K. Dick per poi, dopo aver colto i concetti materializzati attraverso un dispositivo inesistente, progettare, produrre e combinare nuovi metodi e strumenti per materializzare i concetti, per materializzare l'affermazione attraverso un oggetto. La ricerca condotta permette inoltre di comprendere meglio una serie di fenomeni sociali che ci troveremo ad affrontare nel contesto tecnologico dell'Internet of Things.

Il progetto ha visto il coinvolgimento di studenti come Maria Calzolari che ha progettato un "Homeopape", un dispositivo

INFO BOX

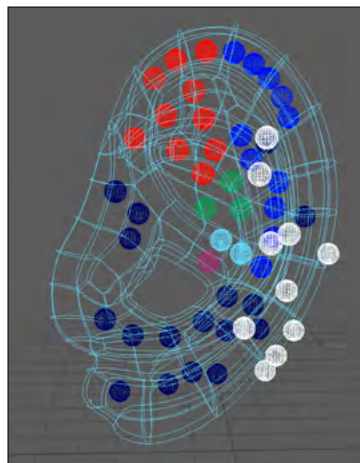
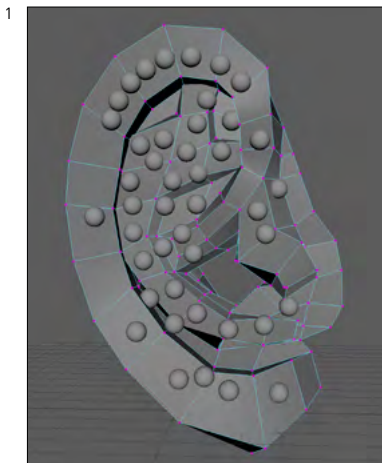
FUNDING TYPE
Internal Funding

DURATION
10/2019 — 03/2023

RESEARCH AREA
ENABLE

UNIBZ RESEARCH TEAM
Dr. German A. Duarte (Principal Investigator), Dr. Andrea Facchetti, Prof. Secil Ugur Yavuz

tecnologico inesistente immaginato da Philip K. Dick negli anni sessanta. Attraverso questo dispositivo, ha elaborato un'interessante analisi su alcuni fenomeni sociali contemporanei come la profilazione degli utenti e l'opinione pubblica.



1, 2 ← Images of the development of Maria Calzolari's project "The New Homeopape"
© Maria Calzolari



Research Projects

MANTRA – In-Between-Artifacts as a Resource for Tackling Complexities

In the frame of the MANTRA project, a community game designed to engage people and share their knowledge was developed. The game and the co-design of the game serve as a boundary object (Star and Griesemer, 1989) to create shared knowledge and help the community imagine its own future.

The project focuses on four small rural villages in the Deutschnonsberg/Alta Val di Non area, which have been grappling with population decline and the resulting strain on local resources and services, despite their rich cultural heritage and close-knit communities. In addressing these issues, the research project draws on theories of complexity (Edgar Morin), that highlight the interconnectedness and interdependence of social systems, emphasising the need for interdisciplinary approaches to understand

2



INFO BOX

FUNDING TYPE
Internal Funding

DURATION
09/2021 — 01/2024

RESEARCH AREA
ENABLE and TRANS-FORM

UNIBZ RESEARCH TEAM
Dr. Ingrid Kofler (Principal Investigator),
Prof. Secil Ugur Yavuz

PROJECT PARTNER
Schulsprengel Nonsberg

and tackle complex social problems. The community game, developed as an in-between artifact through participatory design processes, serves as a catalyst for social interaction and knowledge exchange. By engaging community members in the game's design and gameplay, the project team aims to foster a sense of ownership and empowerment among the participants, but also to create spaces for dialogue, reflection, and collective action. By leveraging the concept of boundary objects, the diverse perspectives and expertise of the community members, designers, and researchers involved are recognised. The game acts as a boundary object, facilitating the translation and negotiation of different knowledge systems and fostering a collaborative environment for co-designing and co-producing solutions.

community development strategies, policy-making, and regional planning initiatives in the region. Furthermore, the methodology and findings from this research can have broader implications for community development projects in other rural areas facing similar challenges. The interdisciplinary approach, combining sociology and design research, offers a new perspective on addressing complex social issues. The use of critical gaming (Lanagan, 2009) as a participatory tool for social change can be adapted and applied in various contexts to foster community engagement, knowledge sharing, and envisioning sustainable futures. Overall, this interdisciplinary research project in the Deutschnonsberg region demonstrates the power of collaboration, co-design, and the use of boundary objects to address social challenges, empower communities, and facilitate the creation of shared knowledge and alternative visions for the future.

1



The potential applications are manifold. The insights and knowledge generated through the participatory process can inform

1 ← Future Lab: Gemeinschaftsspiel "Le Piazze dei Saperi"; Future Lab Proveis 23.5.23 © Johanna Eger

2 ← Future Lab: Joker für die Zukunftsszenarien; Future Lab Proveis 23.5.23 © Johanna Eger



Research Projects

CARE – Klimakrise im Alpentourismus: Eine Mixed-Methods-Untersuchung durch visuelle soziale Medien

Das Projekt konzentriert sich auf die Interpretation visueller Artefakte, die von Menschen auf sozialen Plattformen generiert und geteilt werden (Visual User Generated Contents), dank gemischter Methoden, um den alpinen Klimawandel besser zu verstehen. Der gewählte Ansatz verwendet sowohl qualitative als auch quantitative Forschungsmethoden, wobei das Fachwissen des interdisziplinären Teams genutzt wird und somit positivistische und interpretivistische Ansätze zur Untersuchung von visuellen Inhalten kombiniert werden. Ein bemerkenswerter Aspekt dieses Projekts ist die Beteiligung der Bürger*innen und das transdisziplinäre Forschungsteam sowie die angewandten Methoden. Das Team unter der Leitung der Fakultät für Wirtschaftswissenschaften

setzt sich aus Forschenden zusammen, die in den Bereichen Tourismusmarketing, Tourismuswirtschaft, quantitative Methoden und visuelle Kommunikation und User-Experience-Design tätig sind.

Die Ziele dieser Studie sind:

- + Die Wahrnehmung der Touristen in Bezug auf die wichtigsten Klimakrisen in alpinen Gebieten zu verstehen, deren Bewältigungsstrategien angesichts der Auswirkungen des Klimawandels zu erforschen und analytisch die Stimmung zu interpretieren, die mit visuellen Darstellungen verbunden ist, die sich auf gefährdete alpine Tourismusdestinationen beziehen;
- + Einen theoretischen und methodischen Rahmen zu schaffen, der neuartige spezifische Methoden kombiniert, die geeignet sind, die Reaktion von Touristen zu untersuchen, die mit einer sich verändernden Erfahrung aufgrund von Klima-

INFO BOX

FUNDING TYPE
Internal Funding

DURATION
12/2022 – 11/2025

RESEARCH AREA
ENABLE; Tourism, Marketing and Regional Development (Faculty of Economics and Management)

UNIBZ RESEARCH TEAM
Prof. Serena Volo (Principal Investigator; Faculty of Economics and Management), Prof. Letizia Bollini

PROJECT PARTNER
University of Bologna Alma Mater Studiorum

- krisen konfrontiert sind;
- + Empirische Ergebnisse aus der Forschung im Alpenraum zu generieren, die den Tourismusakteuren wertvolle Informationen über das Verhalten, die Präferenzen und die Nachhaltigkeitseinstellungen der Touristen liefern und somit fundiertes Wissen für die Politik, die Abschwächungsstrategien und die Entscheidungsfindung bieten.



← Project CARE © Beatrice Citterio



Cooperation and Internationality

Im Jahr 2022 waren die Mitglieder der Fakultät für Design und Künste an zahlreichen Forschungsaktivitäten, internationalen Ausstellungen sowie Kunst- und Designmessen und Wettbewerben beteiligt. Vielfältige Zusammenarbeiten konnten auf lokaler wie nationaler und internationaler Ebene neu gebildet oder weitergeführt werden.

Im Rahmen des New European Bauhaus of the Mountains Lab (NEB-Lab), das den „Green Deal“ der EU unterstützen soll, wurde die Kooperation mit Eurac Research, der Klimahaus-Agentur und der regionalen Verwaltung in Südtirol fortgeführt.

Die Fakultät ist Teil einer internationalen Forschungsgruppe für das Projekt „Dinámicas contemporáneas en la comunicación de arte y arquitectura“, das von der Junta de Andalucía – FEDER funds finanziert und von der Universität Granada koordiniert wird. Das Projekt wurde mit dem Anliegen ins Leben gerufen, die gegenwärtige Dynamik der Kunst- und Architekturausgabe im zeitgenössischen digitalen Universum angesichts der Herausforderung, die die digitale Gesellschaft für die Geisteswissenschaften und insbesondere für die kreativen Berufe darstellt, zu entschlüsseln.

Prof. Christian Upmeier arbeitet mit regionalen Partnern wie dem WAAGhaus an der Gestaltung einer Publikationsreihe der Stiftung Südtiroler Sparkasse und entwickelt mit dem Filmclub Bozen ein Corporate Design. In Zusammenarbeit mit der Stiftung Klassik Weimar in Deutschland konzipierte er einen multisensorischen Museumsrundgangs am Beispiel des Museums „Haus am Horn“ in Weimar.

Für die Wanderausstellung „Plastic: Remaking our World“ arbeitet Prof. Nitzan Cohen mit dem Vitra Design Museum, der Queensland University of Technology, The Edge – State Library of Queensland und dem Designmuseum München zusammen.

Weitere Zusammenarbeiten erfolgten mit WAAG Bozen, MUSEION, BASIS Vinschgau, Studio Gisto Milano, Contemporary Architecture Centre at the Transport Museum of Budapest, U-FAB (rete italiana dei Fab Lab e makerspace universitari).



Research Events

26 March — 4 September 2022

The results of the project **InnoCell** – From food waste to bio-degradable products, exploring the innovative potential of microbial cellulose by Prof. Nitzan Cohen are part of the international travelling exhibition **Plastic: Remaking our World** by the Vitra Design Museum. It was exhibited in the Vitra Design Museum, the V&A Design Museum Dundee (29 December 2022 — 5 February 2023) and will further on travel in 2023 to other high-profile museums.

7 — 8 April 2022

Against the current system, which is an exploitation-fuelled high-speed train with no intention of stopping, Radical Care stands on the tracks, and hops on board, to slow this train down. The international conference **By Design or by Disaster: Radical Care – DoD 2022** was organised in Schlanders in an open space to start conversations across diverse disciplines about what Radical Care really means and what it can look like today.

designdisaster.unibz.it/2022



April — June 2022

The research platform Cultural Heritage and Cultural Production, in cooperation with the Academy Lifelong Learning Museion (Brita Köhler), organised the conference cycle **Das Heute ist das Gestern von Morgen. Gespräche und Exkursionen zum Kulturellen Erbe an der Schnittstelle der Zeit / Oggi è lo ieri di domani. Conversazioni e visite sul patrimonio culturale al crocevia del tempo**, coordinated by Dr. Waltraud Kofler Engl and Prof. Gerhard Glüher as part of the Studium Generale.

28 — 30 May 2022

6th International Architecture Model Festival organised by KÉK – Contemporary Architecture Centre at the Transport Museum of Budapest (Ungheria). Dr. Davide Ferrando curated the itinerant exhibition "Unfolding Pavilion: Rituals of Solitude" together with Daniel Tudor Munteanu at the Liberty Bridge, Budapest (Hungary).

10 — 11 June 2022

For the **New European Bauhaus of the Mountains Festival**

Kris Krois, Aart van Bezooijen and Mustapha El Moussaoui co-organised two public events at unibz and Klimahaus Südtirol.

mountainbauhaus.eu

August — September 2022

Within the framework of the research project WiL – Written in the Landscape, the research platform Cultural Heritage and Cultural Production organised the exhibition **In die Landschaft eingeschrieben / Scritto nel Paesaggio**, curated by Dr. Waltraud Kofler Engl and Dr. Elisabetta Rattalino, and the international conference **Written in the Landscape. Places, traces and memories of the World War I in the Sexten Dolomites** which also included a guided tour to the Three Peaks /Drei Zinnen.



23 September — 23 October 2022
Dr. Davide Ferrando has been invited curator in the organisation of the **4th Timișoara Architecture Biennial – Beta 2022**, promoted by the Romanian Chamber of Architects – OAR. Beta 2022 focused on The City as a Common Good, in an attempt to investigate the personal relationship that each of us has with the urban space in which we live and manifest.

29 — 31 October 2022
The project **BASTONI** by Prof. Kuno Prey was exhibited at the **GRASSIMESSE** in Leipzig, an international meeting place, art exhibition and sales fair for unique pieces, small series and exemplary product design from the fields of textiles, fashion, jewelry, ceramics, glass, furniture, metal, leather, paper and toys. The project was also exhibited at the **Munich Creative Business Week 2022**, Germany's largest design event (14 — 22 May 2022) as well as at the **23rd edition of SaloneSatellite – Salone Internazionale del Mobile Milano** (7 — 12 June 2022).

24 — 25 November 2022
As part of the Italian network of university Fab Labs and Maker-spaces U-FAB, the **U-Fab Meeting and Conference Do it yourself, do it together** took place at unibz and UniTrento. In experimental workshops, students were able to approach new techniques under the guidance of expert staff: smart textiles, 3D printing processes, coding and physical computing were mentioned.

12 December 2022
SUPERSOCIAL – A Public Event on Putting People First was organised in collaboration with WAAGhaus/Casa della Pesa, one of South Tyrol's most popular cultural spaces. At this first edition, special attention was given to the social aspects of design and business on the way to a more sustainable and more inclusive society where the role of everyone is valued. The development of a strong visual identity by a student of the Faculty of Design and Art received numerous and very positive responses.



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- 1 ← By Design or by Disaster 2022 © Eleonora Lunardoni
- 2 ← Guided hike to the Three Peaks Plateau within the international conference in Sesto-Sexten, September 2022 © Alexandra Budabin
- 3, 4 ← View of the exhibition "Written in the Landscape", Sesto-Sexten, August-September 2022 © Valentina Casalini
- 5 ← Velopodo of the project BASTONI © Prof. Kuno Prey

Competence Centre for Regional History



Director — Prof. Oswald Überegger

The Competence Centre for Regional History has historical scientific purposes, with activities on the research and mediation fields centring on the historical Tyrol and the Alpine region and aiming in particular at conducting basic historical research, intensifying scientific cooperation, and strengthening the network of regional historical research in the Alpine region. In the course of 2022, the said historical research and mediation activities were consolidated and expanded. Moreover, two new projects were launched: a quantitative project on First World War casualties and invalids in collaboration with the Faculty of Economics; the second project deals with the emotional history of South Tyrolean separatism under the label "Between Autonomy and Independence".

In the field of history communication, a series of lectures entitled "Modellfall Südtirol?, Regionalautonomien im europäischen Vergleich" (Model Case South Tyrol? Regional autonomies in European comparison) and an international conference entitled "WGroße Gefühle" were organised on the

occasion of the 50th anniversary of the entry into force of the Second Statute of Autonomy in South Tyrol.

The Competence Centre's research activities focus on the following three research areas.

Regional Contemporary History Coordinators: Oswald Überegger and Karlo Ruzicic Kessler

This research area analyses regional history during the 20th century, with a special focus on history after 1945 and on historical memory cultures. Coming to terms with the history of the 20th century is still difficult and controversial in South Tyrol: the end and the consequences of the First World War, fascism and National Socialism, Option and resettlement, the "bomb years" and finally the history of autonomy are not only object of scientific research, but also subject to controversial and often instrumentalised public debate. The aim of this research area is to objectify the discourses and to provide new impulses for coming to terms with regional contemporary history.

Regional History of the Modern Age Coordinator: Francesca Brunet

The "long" 19th century in the Tyrolean region is the focus of this research area. On a regional level, the 19th century can be described as an elementary development phase, a "laboratory of modernity" (E. Frie), which still can be taken as a framework for our understanding of Tyrol,

"Tirolizität" or "Trentinità", and the "Tyrolean region". This development process is closely interwoven with nationalisation, social differentiation, and medialisation. After 1800, a completely new sphere of action and perception emerged, which was generated by state-institutional practice, religious-ecclesiastical transformation, socio-economic change, cultural modernisation, and communicative consolidation and these peculiar regional-historical issue are dealt with by researchers adopting a basic heuristic approach.

Regional Women's and Gender History Coordinator: Siglinde Clementi

Within this research area, the category "gender" is given new significance in the analysis of regional history. Since the 1970s, a differentiated view on women's and gender history has begun to take hold and to call for "gender" to be considered as a relational category in all historical epochs. In regional history, women's and gender history is still strongly marginalised and underexposed. This research area aims to counteract these deficits and focuses in particular on the transition period from the 18th to the 19th centuries, when modernity was shaped, on the first half of the 20th century with Fascisms and the total wars, and on the transition period to postmodernism, in which the 1970s feminism stood out as a political and cultural driving force.



Frauenbiografien und Straßennamen. Leitfaden zur Benennung von Straßen und Plätzen in Südtirol

Straßennamen, die an historische Persönlichkeiten und Ereignisse erinnern, sind konstitutiver Teil des „kulturellen Gedächtnisses“. Sie visualisieren im öffentlichen Raum Ereignisse und Persönlichkeiten, die den individuellen Erfahrungshorizont überschreiten. Neben der symbolischen Funktion verfügen Straßennamen auch über eine praktische Anwendung: Sie dienen als Standortmarkierungen, führen dadurch in der Gesellschaft zu einer alltäglichen Interaktion mit Geschichte und sind maßgeblich an deren kulturellen Produktion beteiligt.

Eine geschichtswissenschaftliche Beschäftigung mit der regionalen Erinnerungskultur ist aus frauen- und geschlechtergeschichtlicher Perspektive noch ausständig. Das Projekt „Frauen-

biografien und Straßennamen“ zielt auf die Sichtbarmachung von Frauenpersönlichkeiten der inter/nationalen, regionalen und lokalen Geschichte ab. Mit dieser Zielsetzung wurden biographische Skizzen erarbeitet, die den Gemeinden der Provinz Bozen als Orientierungshilfe bei Benennungen von Straßen und Plätzen dienen sollen.

Es handelt sich um Kurzbiografien von 62 Frauenpersönlichkeiten auf inter/nationaler Ebene und 138 Frauenpersönlichkeiten auf Landes- und Gemeindeebene. Im Sinne einer Intersubjektivität der Auswahl wurden Kriterien definiert. Diese lehnen sich insbesondere an Studien über die „Belastung“ von Namensgut an. Verschiedenste Kurzbiografien der regional-lokalen Ebene wurden ex novo anhand von Oral-History-Interviews sowie Archivarbeit (insbesondere in den Stadtarchiven der Provinz und des Landesarchives) erarbeitet. Die Analyse der Südtiroler Dorfbücher sowie der Austausch mit Geschichtsforschenden und Chronist*innen der Provinz diente dazu, über Archivbestände hinaus gezielt Quellenmaterial zu sichten und Kontakt zu zeitbezeugenden Personen herzustellen.

Die biografische Herangehensweise bietet auch die Möglichkeit eine akteur*innenzentrierte Perspektive einzunehmen und verweist in einem regional-lokalen Kontext auf weibliche Handlungsspielräume. Die Kurzbiografien sind damit nicht nur

INFO BOX

FUNDING TYPE
Internal Funding, Autonomous Province of Bozen-Bolzano

DURATION
01/2021 — 08/2022

RESEARCH AREA
Regional Women's and Gender History

UNIBZ RESEARCH TEAM
Dr. Siglinde Clementi (Principal Investigator), Dr. Franziska Cont

SELECTED PUBLICATION
+ Clementi, S., (Hrsg.), Franziska, C., (Bearbeiterin), Frauenbiografien und Straßennamen. Leitfaden zur Benennung von Straßen und Plätzen in Südtirol. webservices.scientificnet.org/rest/entries/api/v1/blobs/204482

Benennungsvorschläge für die Politik (und damit Möglichkeit der Sichtbarmachung von Frauen in der Erinnerungskultur), sondern stellen einen wichtigen Beitrag zur regionalen Frauen- und Geschlechtergeschichte dar.



← Publication cover „Frauenbiografien und Straßennamen. Leitfaden zur Benennung von Straßen und Plätzen in Südtirol.“ © Kompetenzzentrum für Regionalgeschichte



Cooperation and Internationality

In 2022 the Competence Centre collaborated with various national and foreign partners.

The Centre of Competence is collaborating in **HISTOREGIO**, a large Euregio project that also involves the Universities of Bolzano, Innsbruck and Trento and includes a series of research and mediation initiatives, with the aim of strengthening international cooperation in the field of regional history, in a multilingual context.

Oswald Überegger is an associate member of the research group **Sexual Violence in the First World War: Military Court Records of the k.u.k. Army and Ego-Documents as Sources**, which involves several departments of the University of Wien (History, Contemporary History, Economic and Social History, Eastern Euro-pean History) and the Competence Centre for Regional History.

Siglinde Clementi is a member of the international advisory board of the research project **Noble Siblings: Wealth Arrangements and Social Configurations from the Sixteenth to the Eighteenth Centuries** initiated by the Department of Economic and Social History at the University of Wien and funded by the Austrian Science Fund FWF.

Siglinde Clementi is a member of the board of the Società Italiana delle Storiche, the Italian national association for women's and gender history.

Francesca Brunet is an associate member of the international and interdisciplinary research project **Milano and Ticino (1796 — 1848). Shaping the Spatiality of a European Capital**, funded by the Swiss National Science Foundation (SNSF) and carried out by the University of Lucerne, the University of Italian Switzerland – Archives of the Modern, and the Université Paris 1 – Panthéon Sorbonne, in collaboration with the University of Milano, the University Cattolica di Milano, the Politecnico di Milano, the University of Innsbruck and the Austrian Academy of Sciences.



Research Events

27 maggio 2022
Conferenza internazionale **Rebuilding Societies. Wohnbaupolitik nach 1945 im interregionalen Vergleich. La politica abitativa nel secondo dopoguerra. Un confronto interregionale.**



1

11 — 12 novembre 2022
Conferenza internazionale **'Grandi sentimenti' nella lotta per il 'proprio Stato'. Prospettive storico-emozionali sui movimenti indipendentisti regionali/ 'Big Emotions' in the Fight for a 'State of One's Own'. Regional Movements of Independence from the Perspective of the History of Emotions.**

1 — 3 dicembre 2022
Conferenza internazionale **Crossing the Border. Illicit crossings, controls, strategies (16th — 19th centuries) – Passare il confine. Attraversamenti illeciti, controlli, strategie (secoli XVI — XIX).**



2

- 1 ↑ Hermetische Grenzsperrre © Staatsbibliothek zu Berlin – Preußischer Kulturbesitz, Abteilung Historische Drucke Einbl. YB 14707 kl.
- 2 ↑ Model of a residential complex in Meltina/ South Tyrol in the early 1970s © Informations-schrift des Landtages und der Südtiroler Landesregierung, Heft 5/1972.

Competence Centre Tourism and Mobility



Director — Prof. Thomas Bausch

The year 2022 was characterised by focal points in the area of methods and theories of mobility research, destination development and business management research.

In the research area of **Methods and Theories** of mobility research, after the preparatory phase for research on bicycle mobility in the previous year, the technical prerequisites for data generation were created. A first test of data collection took place in late autumn in the Bruneck-Brunico area. In addition, the first data evaluation models were developed. In spring an international workshop was held discussing the future of urban mobility and impacts for rural tourism areas. A follow-up event in autumn was used to prepare potential future scenarios. The results served for a comprehensive project application in cooperation with the University of Innsbruck for the Research Südtirol/Alto Adige 2022 funding programme.

In the field of **Destination Development**, the focus of research is the perception of destinations by travellers. Analysis is made on the individual shaping of personal destination image and on the perception of photographs by potential holiday guests. A further sub-study considers the perceptions of sustainable tourism across different languages and cultures, in cooperation with the Faculty of Tourism at the University of Applied Sciences Munich. Finally, work is underway on developing a model to describe how elements of individual destination images are confirmed or changed through a vacation in a holiday region.

In the research area of **Network Strategies**, ahead of the winter season the Competence Centre conducted a field study in Italy and Germany to determine the outlook for the winter season 2022/23. The study evaluated the first post-Covid winter season and the potential effects of high inflation. Based on the data obtained, first results could be passed on to the stakeholders shortly before the end of the year 2022.

Many additional activities contributed to enhance visibility and networking with tourism stakeholders in South Tyrol in accordance with unibz's Third Mission. For instance, the Competence Centre carried out a survey of cyclists on the acceptance of the newly installed bicycle lanes for the municipality of Bruneck-Brunico.

A comprehensive survey on the quality of life of the South Tyrolean population was carried out as a supplement to and in-depth study of the Eurac Provincial Tourism Development Concept LTEK 2030+ (the results are now being incorporated into the further discussion of a sustainable tourism strategy). Furthermore, the Competence Centre participated in a number of events of local and regional stakeholder organizations such as IDM, HGV and STA and continued to present itself on the international research scene through various publications in leading scientific journals, contributions to anthologies and participations in conferences.



BikeMotion – Modelli di movimento dei ciclisti

Nell'ambito di questo progetto di ricerca, il Centro di competenza, in collaborazione con il Comune di Brunico, ha installato dei contatori radar mobili in punti rappresentativi selezionati lungo le piste ciclabili di Brunico. Questi dispositivi di conteggio, basati sulla tecnologia radar, registrano i ciclisti di passaggio e rilevano anche la direzione di marcia e la velocità della singola persona. I dati raccolti saranno utilizzati per studiare l'intensità di utilizzo delle piste ciclabili di Brunico, al fine di ottimizzare le reti ciclabili in futuro e adattare alle esigenze degli utenti. Le posizioni dei cinque dispositivi di conteggio utilizzati sono state cambiate a un ritmo che andava dalle due alle quattro settimane, in modo da poter raccogliere dati in 14 punti diversi lungo le piste ciclabili di Brunico. A causa delle temperature rigide, il rilevamento, iniziato ad agosto 2022, è stato interrotto a novembre e sarà ripreso all'inizio dell'estate 2023.

Inoltre, il centro di competenza ha adattato un'applicazione per un diario di percorso digitale insieme all'azienda motionTag alle esigenze di una località turistica. Con l'applicazione gratuita per smartphone "move-Ometer", i percorsi e le attività delle persone che partecipano volontariamente a uno studio sulla mobilità possono essere registrati automaticamente tramite GPS a scopo di ricerca. Per i ciclisti stessi, l'applicazione

fornisce una visione del loro comportamento di mobilità. Ad esempio, viene calcolata la ripartizione modale (modal split) personale, il tempo trascorso nel traffico ogni giorno e viene creato un bilancio di CO2 dei percorsi di trasporto. L'applicazione di tracciamento per smartphone è stata completata alla fine dell'estate 2022 e testata per la prima volta in ottobre per quindici giorni da un piccolo gruppo di prova. I dati dell'app forniscono le relazioni tra i percorsi e gli scopi dei percorsi che, in combinazione con i conteggi del traffico, costituiscono la base per una simulazione del sistema di piste ciclabili di Brunico.

Le conoscenze acquisite dai modelli di mobilità e dai volumi di traffico registrati possono essere incorporate nei processi di pianificazione, da un lato, e servire a sviluppare nuovi metodi di calcolo dei flussi di traffico ciclistico, dall'altro.



INFO BOX

DURATION
08/2022 — 02/2025

RESEARCH AREA
Methoden und Theorien

UNIBZ RESEARCH TEAM
Prof. Thomas Bausch (Principal Investigator), Dr. Nora Estgfäller

PROJECT PARTNERS
Stadtgemeinde Bruneck,
Green Mobility Südtirol

← Extracted movement patterns based of tracking data © BikeMotion



Cooperation and Internationality

Das Kompetenzzentrum hat die bestehende Zusammenarbeit mit Institutionen der Autonomen Provinz Bozen, den Gemeinden und den Stiftungseinrichtungen weitergeführt und ausgebaut. Einige Beispiele:

Zusammenarbeit auf Landesebene mit dem Ressort Landwirtschaft, Forstwirtschaft, Tourismus und Bevölkerungsschutz (Teilnahme runder Tisch Tourismus; Austausch zum Landestourismusentwicklungskonzept), dem Ressort Mobilität und Verkehr sowie der STA Südtiroler Transportstrukturen AG.

Kooperation mit Green Mobility Südtirol im Rahmen einer ergänzenden Datenauswertung der Mobilitätsbefragungsdaten.

Zusammenarbeit mit der Stadtgemeinde Bruneck und Green Mobility Südtirol zu einer Evaluationsbefragung zu Verbesserungsmaßnahmen für die Fahrradmobilität in der Gemeinde Bruneck.

Zusammenarbeit mit EURAC Research für eine Studie zur Lebensraumqualität Südtirol und Tourismus als Vertiefungsstudie zum Landestourismusentwicklungskonzept.

Mitarbeit an den Arbeitsgruppen der IDM Südtirol zur Tourismusvision 2030 sowie im Beirat für Umwelt und Nachhaltigkeit der Drei Zinnen Bergbahnen AG.

Neben der intensiveren Zusammenarbeit mit regionalen Stakeholdern sowie der angewandten Forschung mit Eurac wurden weitere Forschungsk Kooperationen etabliert bzw. neu aufgebaut:

Mit der Universität Innsbruck, Arbeitsbereich Intelligente Verkehrssysteme, in Bezug auf die Organisation von Workshops über die Zukunft der urbanen Mobilität und die Einreichung eines gemeinsamen Forschungsprojektantrags.

Mit der Wirtschaftsfakultät der Universität Salento bezüglich der Datenanalyse von Inflationseffekten.

Kooperation mit der Hochschule München – University of Applied Sciences, Fakultät für Tourismus im Bereich Forschung und Publikationen zu interkulturellen Aspekten des Nachhaltigkeitsverständnisses: Thomas Bausch, Tilman Schröder & Verena Tauber (2022): What is to be sustained? The polysemy of sustainability and sustainable tourism across languages and cultures, *Journal of Sustainable Tourism*.

[doi:10.1080/09669582.2022.2124260](https://doi.org/10.1080/09669582.2022.2124260)



Research Events

16 – 17 May and
14 November 2022

Workshop Future Urban Mobility (Zukunft urbane Mobilität)

Mobility in urban areas is facing radical change. Existing transport systems are often no longer able to cope with constantly growing demand. At the same time, pressure is growing to organise mobility in a CO₂-neutral and environmentally friendly manner.

In a workshop held on 16 and 17 May 2022 at the University of Innsbruck, experts from various scientific disciplines related to mobility and tourism discussed what urban mobility will look like in 2040 – 2050. The main drivers of change in mobility demand and mobility supply in cities were identified: climate crisis, social change, digitisation and technological progress.

The drivers were discussed in detail regarding their mutual influence and the direction of impact. Subsequently, the perspective was changed: first, rural areas in general were considered and the changes hypothesised for cities were projected in terms of their effect on these areas. Finally, specific Alpine tourist areas were considered.

In a second technical discussion, the experts from the first event were invited again to deepen and continue the results that had been elaborated and prepared in the meantime.

The exchange took place on 14 November 2022 at the unibz campus in Brixen. Based on the results of the first workshop, a methodology for scenario development was elaborated in this second part. This methodology was then incorporated into a joint project proposal by the Competence Centre Tourism and Mobility and the University of Innsbruck.



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1 ↑ Extract from the discussion of the first workshop © Competence Centre Tourism and Mobility

Competence Centre for School Inclusion



Director — Prof. Heidrun Demo

The Competence Centre for School Inclusion is active since March 2020 as a competence centre for research, networking and scientific communication in the area of inclusive education. It rests upon a broad idea of school inclusion as a constant developing of ways to tackle all students' diversities. Research in the field of inclusive education helps to grant to granting participation and achievement to all learners by identifying and removing barriers in the school culture and its policies and practices. This also means a responsibility towards the groups of children and students that are more at risk of experiencing exclusion and underachievement.

Research activities conducted at the Competence Centre aim at presenting and discussing research evidence from the Italian and South Tyrolean inclusive school system in international scientific networks and at developing inclusion in local kindergartens and schools through practice relevant research activities.

Research is organised in two main areas.

Professional development in the field of inclusive education for teachers and other educational profiles

The knowledge and the competences needed today in kindergartens and schools to face issues related to equity and inclusion in education are very complex. The Competence Centre develops, monitors and evaluates methodologies, tools and pre- and in-service training paths for teachers, school principals, educators as well as for other professional figures. It aims indeed at further developing the competences of the school staff and to contribute to the scientific discourse on the profile and the professional development of the inclusive teacher. Specifically, the following topics will be addressed: Teacher training in managing challenging behaviours, In service training for teachers without qualification in inclusive education.

Analysis and development of equity and inclusive education

Starting from a broad understanding of inclusion, as aimed at building up educational opportunities that foster everyone's participation and inclusion, the research of the Centre follows different directions. On one side, it analyses – also in a comparative perspective – the inclusive cultures, policies and practices developed in the Province of

Bolzano and in Italy, thus contributing to bridging the research gap in our territory and bringing the local experience into the international scientific discourse. On the other side, it fosters research experiences able to conjugate, like in the Education Design based Research, the development of cultures, practices and policies in local educational agencies with rigorous research methodologies, in order to produce knowledge that may be useful also for other contexts. In this area, the following specific topics will be addressed: Development of inclusive school policies and practices in the local context, Achievement and inclusion, All-day schooling and inclusion, Inclusive planning and instructional design, Inclusive early-childhood education.



DACHS – Diskurse über Leistung in der Schule: Eine international vergleichende Analyse zur Leistung in unterschiedlichen Kontexten in Italien und Deutschland

Im Alltagsverständnis wird Leistungsorientierung in der Schule oftmals als Gegenbegriff zu inklusiver Bildung verortet. Fachlich gesehen ist jedoch der Gedanke, dass jedes Kind mit Potenzialen ausgestattet ist und mit individualisierten hohen Erwartungen adressiert werden sollte, leitend für inklusive Bildungspraxis. Wie dies jedoch in einem inklusiven Bildungssystem realisiert werden kann, darüber ist international noch wenig bekannt. Es ist daher von besonderem Interesse herauszuarbeiten, wie Lehrpersonen in einem inklusiven Bildungssystem wie dem hiesigen über Leistung nachdenken und welche Überzeugungen ihr diesbezügliches Handeln leitet. Dies ist der Forschungsgegenstand im Projekt „DACHS“. Mit einem international verglei-

chenden Forschungsansatz (Italien-Deutschland) wird in diesem Projekt der Frage nachgegangen, welche handlungsweisenden Leistungsorientierungen das Handeln von Lehrkräften an (inklusiven) Grundschulen in unterschiedlichen Bildungssystemen beeinflussen. Außerdem wird der Frage nachgegangen, wie schulische Leistung in der Unterrichtspraxis diskursiv behandelt wird. Konkrete Ziele, welche das Projekt verfolgt:

- + genauere Kenntnisse darüber zu erhalten, wie Leistung im Unterricht unter unterschiedlichen Systembedingungen interaktiv hergestellt wird und welche Orientierungen den diesbezüglichen pädagogischen Praktiken der Lehrkräfte zugrunde liegen.
- + im internationalen Vergleich ein besseres Verständnis des Zusammenhangs zwischen Systembedingungen und dem leistungsbezogenen, professionellen Handeln von Lehrkräften unter inklusionsbezogenen Anforderungen am Beispiel von Südtirol (Italien) und Nordrhein-Westfalen (Deutschland) zu entwickeln.



INFO BOX

DURATION
01/2021 — 12/2023

RESEARCH AREA
Analysis and development of equity and inclusive education

UNIBZ RESEARCH TEAM
Prof. Simone Seitz (Principal Investigator), Dr. Petra Auer

PROJECT PARTNERS
Carl von Ossietzky Universität Oldenburg, Università degli studi di Torino

- SELECTED PUBLICATIONS**
- + Kaiser, M. & Seitz, S. (2023). Giftedness and Achievement within Discourses. In Seitz, S., Auer, P. & Bellacicco, R. (eds.), *International perspectives on inclusion – in the light of educational justice* (pp. 67–88). Opladen, New York: Budrich.
 - + Schwermann, A. & Seitz, S. (2023). Handlungsspielräume und Rollen von Eltern in der Begabungs- und Leistungsförderung. In Hoffmann, M. & Hoffmann, T. (Eds.), *RAUM.MACHT.INKLUSION. Inklusive Räume erforschen und entwickeln* (pp. 303–309). Bad Heilbrunn: Klinkhardt.
 - + Friedberger, V., Kaiser, M., Horst, L.-M., Schwermann, A. & Seitz, S. (2022). Professionelle pädagogische Haltung und Kasuistik. In Weigand, G., Fischer, C., Käpnick, F., Perleth, C., Preckel, F., Vock, M. & Wollersheim, W. (eds.), *Dimensionen der Begabungs- und Begabtenförderung in der Schule* (pp. 65–79). Bielefeld: wbv.
 - + Seitz, S., Kaiser, M., Auer, P., & Bellacicco, R. (2021). Achievement, Giftedness and Inclusion. In *SCUOLA DEMOCRATICA* [Eds.], *Book of Abstracts of the International Conference of the Journal Scuola Democratica* (pp. 232–233). Reinventing Education, Rome, Associazione "Per Scuola Democratica".
 - + Kaiser, M., Maier-Röseler, M., Seitz, S. & Weigand, G. (2020). Leitbildentwicklung und die Gestaltung einer potenzial- und leistungsfördernden Schulkultur. In Weigand, G., Vock, M., Preckel, F., Fischer, C., Perleth, C., Käpnick, F. & Wollersheim, W. [Ed.], *Leistung macht Schule. Förderung leistungsstarker und potenziell besonders leistungsfähiger Schülerinnen und Schüler* (pp. 43–53). Weinheim: Beltz.



Cooperation and Internationality

Sin dalla sua fondazione, nella primavera del 2020, la cooperazione con gli stakeholder locali e con esperte ed esperti a livello internazionale sono stati obiettivi importanti del Centro di Competenza.

I partner principali del Centro sono le agenzie formative locali, con una particolare attenzione alle scuole del territorio.

Nel 2022 si è quindi puntato ad un'intensificazione della collaborazione con le Direzioni Istruzione e Formazione della Provincia, specialmente attraverso percorsi di formazione e ricerca co-progettati. Un primo esempio in questo senso è il progetto **ChallengINSchool**, percorso di formazione finanziato con i Fondi Sociali Europei FSE, sul tema dei comportamenti sfidanti. In altri due casi, la coprogettazione ha generato due proposte di percorsi che coniugano sviluppo e ricerca che hanno portato alla partecipazione a bandi per fondi terzi. Anche la progettazione delle attività del Centro, appena rinnovata per il triennio 2023 – 2026, ha visto un fitto dialogo con le Direzioni Formazione ed Istruzione.

A livello locale, lo staff del Centro di Competenza è attivo anche in diversi gruppi di lavoro territoriali e organizzazioni: Heidrun Demo nel GLIP Gruppo di Lavoro Interistituzionale per l'Inclusione della Provincia di Bolzano e nell'Osservatorio per i Diritti delle Persone con Disabilità, Vanessa Macchia quale vicepresidente del Centro Servizi per il volontariato Alto

Adige. Quest'ultima ha anche collaborato al Piano d'azione per la parità di genere Alto Adige della Provincia Autonoma di Bolzano.

A livello internazionale, nel 2022 è continuato lo scambio regolare e proficuo con i membri del comitato scientifico del Centro di Competenza. Inoltre, l'organizzazione e la realizzazione della Research Week a Colonia nel mese di novembre hanno offerto momenti di networking particolarmente intensi.

All'interno di singoli progetti segnaliamo la collaborazione con:

Trinity College Dublin (IE) e Inland Norway University of Applied Sciences (NO) sul tema del finanziamento dell'inclusione nei diversi sistemi scolastici; Pädagogische Hochschule Steiermark (AT) sul tema della digitalizzazione e dell'inclusione; Universität Bremen (DE) sul tema della formazione degli insegnanti per l'inclusione; Universität Oldenburg (DE) sul tema della valutazione e dell'inclusione; Pädagogische Hochschule Bern (CH), Malmö University (SE) e Universität Duisburg-Essen (DE) sul tema del tempo pieno e dell'inclusione; Universität Bielefeld (DE), Pädagogische Hochschule Ludwigsburg (DE), Institut Unterstrass der Pädagogischen Hochschule Zürich (CH), Universität Leipzig (DE), Universität Autònoma de Barcelona (ES).



Research Events

Das Jahr 2022 sah die Planung und Realisierung von öffentlichkeitswirksamen Events für pädagogisches Fachpersonal mit dem Ziel, Forschungsergebnisse kommunizierbar zu machen und so zur Entwicklung einer forschungsbasierten Bildungspraxis beitragen zu können.

So etwa bot das Kompetenzzentrum erneut die Veranstaltungsreihe **Offene Dialoge** – einen Zyklus von hybriden Treffen für pädagogisches Fachpersonal der Region. Dieses spezifische Format eröffnet Raum für einen breiten Dialog zwischen Forschenden und pädagogischen Fachkräften. Im Einklang mit dem allgemeinen Ziel des Kompetenzzentrums, eine gemeinsame und von den Bildungsinstitutionen der unterschiedlichen Bildungssprachen unabhängige Inklusiv Kultur aufzubauen, wurden alle Treffen zweisprachig abgehalten. Die ersten beiden fanden am 25. Oktober und am 6. Dezember 2022 statt, das dritte und letzte Treffen Ende Januar 2023.

Zu den verschiedenen Aktivitäten des Kompetenzzentrums gehört auch der Empfang von Gruppen und Delegationen, die sich für das Modell der inklusiven Bildungspraxis in Italien und der Provinz Bozen interessieren. Nach Lockerung der pandemiebedingten Einschränkungen konnte das Kompetenzzentrum 2022 in Zusammenarbeit mit den Bildungsdirektionen eine Interessensgruppe aus Armenien und eine aus Deutschland willkommen heißen.

Für die interne Entwicklung des Teams wurde eine Research Week organisiert. Im Mittelpunkt der gemeinsamen Exkursion nach Köln (DE) stand der internationale Austausch zur inklusiven Schulentwicklung und zu Formaten wissenschaftlicher Begleitung von Grundschulen (Helios Universitätsschule Köln/ Universität Köln; Carl Richard Montag Stiftung/ Bildungslandschaft Altstadt Nord, Köln; Schule für Zirkuskinder, Köln).



Competence Centre for Plant Health



Director — Prof. Tanja Mimmo

Plants are a fundamental element of our environment and provide the basis for our food supply chain. The different microclimatic zones in South Tyrol allow the cultivation of a variety of different crops, with a cultivated area of almost 25,000 hectares, where mainly apple orchards and vineyards, but also several different special crops are grown. Healthy plants are a prerequisite for high-quality food and sustainable agricultural productivity. Yet, crop health is endangered by climate change and the consequent rise in extreme weather events and by warmer temperatures and the spreading of invasive and destructive pests. The main objective of the Competence Centre is to study abiotic and biotic stress drivers to understand their influence on plant health, investigate changes and foresee upcoming challenges, and develop novel technological approaches. Basic research in the plant-environment interconnections is coupled with practice-oriented research projects. This will enable researchers to reach a real-time assessment of the direct impacts and to develop

practical solutions, which in turn can be taken as an important basis for facing future challenges in South Tyrolean agriculture and forestry. The research results will therefore contribute significantly to a more sustainable agriculture in South Tyrol.

The research activities of the Competence Centre are divided into three research areas.

Abiotic factors

Coordinator: Tanja Mimmo

The ability of plants to adapt to their environment is crucial for their very survival. Various abiotic stress conditions, e. g. water, nutrient or heat stress often limit plant health and growth. This research area combines plant genetics and physiology with soil chemistry and microbiology to study the plant-soil-environment interactions, which are fundamental aspects for a sustainable agriculture. In particular, the research activities focus on a more in-depth study of the adaptation strategies developed in cases of soil with low nutrient availability, on the plant-microorganism interactions in the rhizosphere and on the effects of agronomic practices on soil health.

Biotic factors

Coordinator: Hannes Schuler

Biotic factors are an additional important factor impacting plant health. Pathogens and insects can cause plant damage with negative consequences on plant

health. Therefore, the protection of plants plays an essential role in the agricultural production: it calls for preventive measures and, above all, for a regulation of harmful organisms through direct control. The aim of this research area is therefore to investigate the biology, ecology and epidemiology of pathogens and pests and their interaction with the plant in order to develop solutions for an efficient and sustainable plant protection.

Technology and Management

Coordinator: Fabrizio Mazzetto

Researchers collect, process, and analyse a large amount of data and information to monitor plant health, recording significant environmental parameters relevant to the agricultural production and tracking each single work step for these data to be exploited. A second focus is the development and production of innovative mechatronic and robotic solutions for automatic plant protection and early detection of diseases. A third focus is on the development of rapid methods for evaluating primary and secondary drift phenomena in controlled environments; they are carried out on full-scale machines, and aim at assessing the environmental, social, and economic sustainability. In addition, synthetic smart materials and nanomaterials, as well as sensors will be integrated with plants to measure for plant health monitoring.



FOCUS SPRAYING – Precision spraying and canopy analysis

FOCUS SPRAYING is a research project between the research area Technology and Management of the Competence Centre for Plant Health and the start-up Spray Logics S.r.l. This company has developed an innovative optical sensor array able to collect a wide set of data on apple trees' and grapevines' canopies to optimise irrigation and agrochemical spraying. The use of this sensor can lead to a significant limitation in the use of agrochemicals, thus contributing to the targets set by the EU Green Deal.

Within a larger innovation project financed by the Autonomous Province of Trento, which also involves the Fondazione Edmund Mach, Enogis, and MPA Solutions as well as some end-users (i.e., farmers), Spray Logics has been assigned to an interdisciplinary team of the Competence Centre



the task to test and evaluate the optical sensor. The goals of this project are:

- + to assess the potential use of optical sensors in a controlled environment (greenhouse/ laboratories) for the identification of water, fertilizer (and/or pathogen) stresses.
- + to evaluate – based on data from the field registers of the experimental field provided by Spray Logics – the impact of the use of the sensor on a real production scale on the economic, environmental, and social sustainability of agricultural activities (savings of water, fertilizers, and pesticides).

The tests of the sensors (first goal) will be carried out in the Agroforestry Innovations Lab at the NOI Techpark. Different water and/or nutrition stress conditions will be induced in a few plants that will be placed (repeatedly) in different positions of an artificial row and then scanned with the sensor array installed in a robot/ platform. These tests will then be complemented by tests carried out in apple orchards and/or vineyards. Instead, the sustainability impact assessment (second goal) will be based on the analysis of the field registers of the experimental fields, in which the sensor array has been used on some control fields where it was not used.

INFO BOX

FUNDING TYPE
Research Contract

DURATION
12/2022 – 12/2024

RESEARCH AREA
Technology and Management

UNIBZ RESEARCH TEAM
Prof. Guido Orzes (Principal Investigator), Prof. Fabrizio Mazzetto, Prof. Tanja Mimmo, Prof. Emanuele Boselli, Prof. Stefano Cesco

PROJECT PARTNER
Spray Logics S.r.l.



Cooperation and Internationality

Nel 2022 il Centro di Competenza ha continuato a collaborare con il Dipartimento di Scienze della Terra e dell'Ambiente e la Kellogg Biological Station della Michigan State University (USA) e con il Dipartimento di Agronomia Animali Alimenti Risorse Naturali e Ambiente dell'Università di Padova per sviluppare un quadro concettuale per la smart agriculture e il digital twin e presentarne l'applicazione a un caso di studio sulla gestione della fertilizzazione con azoto in sistemi agricoli a seminativo.

Per quanto riguarda l'**area di ricerca abiotica**, il Centro di competenza ha continuato a collaborare con la School of Life Science, University of Dundee (Scozia, Regno Unito) per tutta la parte riguardante l'effetto allelopatico nell'orzo e il suo alcaloide gramina, e ha iniziato a collaborare con il Dipartimento di Biologia Molecolare Vegetale della Ludwig-Maximilians-Universität München (DE), per tutte le attività che riguardano l'uso di nanoparticelle nelle piante e la valutazione del loro impatto.

Per quanto riguarda l'**area di ricerca biotica**, è proseguita la collaborazione con l'Università di Scienze della Vita, BOKU di Vienna, per i progetti sui moscerini invasivi del ciliegio, per il progetto FIGHToplasma, per due progetti Interreg Dolomiti Live e per il progetto Controlips, recentemente finanziato, tutti incentrati sul coleottero europeo della corteccia di abete rosso. Per questi ultimi progetti è proseguita la collaborazione con l'Università di Padova ed è stata avviata una nuova collaborazione con l'Istituto per l'osservazione della Terra e il Centro per le soluzioni di rilevamento dell'EURAC.



1



2

1 ← Field trip © Eren Taskin
2 ↑ Field trip © Leander Geiger (Faculty of Design and Art)



Research Events

Im Einklang mit der Mission des Kompetenzzentrums für Pflanzengesundheit haben deren Mitglieder an mehreren Online-Seminaren, Workshops und Konferenzen teilgenommen.

14. Februar 2022

Digitale Bio-Obstbautagung 2022 mit einem Seminar von Tanja Mimmo zum Thema Auswirkungen von Kupfer auf die chemischen und biologischen Bodeneigenschaften.

19., 26. Februar und 5. März 2022

3-teilige Vorlesung im Rahmen der RadioUni auf Rai Südtirol zum Thema **Pflanzenschutz: Pflanzen schützen?** von Hannes Schuler.

27. Mai 2022

Ko-Organisation des **Ersten Südtiroler Bodensymposiums** im Raiffeisenhaus Terlan.

1



30. Juni 2022

Im Bildungshaus Lichtenburg in Nals wurden im Rahmen des Fortbildungskurses für Wirtschaftstechniker und Wirtschaftstechnikerinnen (**Bodenpraktiker Aufbaukurs 2020/21** für die „Arbeitsgemeinschaft für die biologisch-dynamische Wirtschaftsweise Bozen – Trient VFG und Bioland Südtirol“) von Tanja Mimmo zwei 4-stündige Seminare

mit dem Titel **Nährstoffdynamiken in der Rhizosphäre** im Rahmen des Moduls 3 „Mykorrhiza, Wurzeln & Wasserhaushalt im Agrarökosystem“ gehalten.

11. November 2022

Ko-Organisation mit dem Versuchszentrum Laimburg der öffentlichen wissenschaftlichen Veranstaltung **Grüne Gentechnik: Reden wir darüber! NOI Techpark**. Im Zuge dieser Veranstaltung hat Hannes Schuler in der Reihe „Series of Lectures“ am Versuchszentrum Laimburg zum Thema „Population genomics of factors influencing phytoplasma transmission“ einen Vortrag gehalten.



2

17. November 2022

Vortrag von Hannes Schuler über die „Bedeutung von Mikroorganismen in der Entwicklung und Verbreitung des Buchdruckers“ im Rahmen der unibz-Tagung **Der Borkenkäfer zwischen Ökologie und Praxis – vom Stand der Wissenschaft zur nachhaltigen Entwicklung**.

1 ↑ Round table discussion at the first South Tyrolean Soil Symposium © Research Centre Laimburg

2 ↑ Genome editing © iStock | pkujahe

Competence Centre for Social Work, Social Pedagogy and Social Policy



Director — Prof. Ulrike Loch

The Competence Centre aims at investigating research topics of great relevance for the territory in view of local, national, and international developments and of the research context, namely the strategic position of the University. The researchers' work emphasises particularly on participatory research, which includes a strong cooperation between local government, stakeholders of the Centre, the Social Department of the Autonomous Province of Bolzano, professionals, and professional representation. Among the stakeholders are the directors of the relevant organisations/cooperatives in the social and health sector. The cooperation with the stakeholders includes the development of research projects and their realisation together with practitioners.

The Competence Centre's activities revolve around three main research areas.

Child and Youth Welfare **Coordinator:** Ulrike Loch

This is a crucial research area in social work and social education, in which relevant research topics such as child protection, out-of-home care, outpatient help, and children's rights are investigated. Together with the stakeholders, the Centre is currently focusing on the themes of poverty and outpatient support and is exploring the question on how young people and their families can be strengthened. Rising poverty is a significant issue in Italy after the Covid-19 pandemic. In order to better understand the situation in South Tyrol, a representative quantitative survey was carried out for families with children up to the age of 15 to determine the living situation of children and young people in relation to education, health, habitation, and the financial situation of the family. Other research focused on deepening the children's perspective in relation to wellbeing and poverty, in line with the UN's first Sustainable Development Goal "No poverty". Being involved in the Provincial Social Advisory Council (Landes-sozialbeirat), the Centre provided know-how in order to support women with young children who have fled Ukraine and developed a training programme for professionals in open parent-child work together with La Strada – Der Weg Onlus and the Faculty of Education.

Ageing, Care, Diversity, Gender, and Migration

Coordinator: Dorothy Zinn

This research area deals with the effects of demographic change and the related challenges that significantly determine the development of social welfare. In 2022, activities focused on sustainable care security for elderly people and on strengthening integration and empowerment of young migrant-origin women (in collaboration with Donne Nissà Frauen and Ethical Software and financed by the European Social Fund).

Social Policy, Social Innovation, Social Protection and Participation

Coordinator: Ulrike Loch

This research area centres around a proactive design of social policy, social planning, and participation. Special attention is paid to socio-spatial approaches to action and to the promotion of civil society engagement. In 2022, research focused on digital communication and the opportunities offered by digital programmes and tools for the development of methods in social work and social pedagogy. In this context, particular emphasis was put on outreach social work in low-threshold settings.

La povertà come una delle conseguenze dello sviluppo sociale

La ricerca sulla povertà delle famiglie in Alto Adige è stata al centro di analisi sociale e politica in seguito al sensibile aumento di situazioni di disagio economico e sociale dovuti alla pandemia da COVID-19. La ricerca si presenta quale indagine rappresentativa per l'Alto Adige ed ha come obiettivo quello di individuare il rapporto fra la povertà e cinque importanti dimensioni: lavoro, istruzione, salute, reddito e condizione abitativa.

I dati elaborati in modo statistico-quantitativo fanno riferimento al periodo maggio/agosto 2022, periodo in cui è stata condotta l'indagine campionaria seguendo la logica del campionamento casuale. Al centro dell'indagine, non solo le famiglie e la qualità della vita ma soprattutto, il benessere e la povertà dei minori in Alto Adige. La povertà non è intesa come l'esclusiva conseguenza di



mancanza di reddito o di deprivazione materiale ma è un fenomeno che dipende dall'intersezione di numerosi fattori, fra cui la non partecipazione alla vita sociale, la bassa scolarizzazione e la mancanza di risorse e di strumenti culturali.

Sono state raccolte un totale di 487 interviste, svolte sia con genitori di bambini e bambine da 0 e 9 anni, che con genitori insieme ai figli e alle figlie fra i 9 e i 15 anni. Da qui sono emersi dei dati sui quali è importante riflettere: l'80% dei genitori che ha risposto all'intervista è di genere femminile, e circa il 20% delle persone interpellate dichiara di non essere soddisfatto del tenore di vita. Dalle interviste con i e le giovani fra i 9 e 15 anni sono emersi degli importanti risultati che fanno riflettere sulla condizione di benessere dei minori: quasi il 70% ha avuto esperienze di bullismo e un 22% circa di bambini e bambine manifesta malesseri psicosomatici come ansia, nervosismo o agitazione. Queste condizioni di disagio sono spesso collegate alle precarie condizioni socioeconomiche in cui vivono le loro famiglie; se consideriamo infatti le famiglie più vicine alla soglia della povertà, la probabilità che un bambino o una bambina siano esposti a fragilità emotive è sicuramente molto più elevata, inoltre aumenta anche il rischio di una bassa performance accademica.

Infine, la ricerca quantitativa condotta ha consentito di porre le basi per nuove attività di ricerca

INFO BOX

FUNDING TYPE
Research Contract

DURATION
12/2021 — 12/2023

RESEARCH AREA
Politiche sociali, innovazione nei servizi sociali, sicurezza sociale e partecipazione

UNIBZ RESEARCH TEAM
Prof. Dr. Ulrike Loch (Principal Investigator), Dr. Evan Tedeschi, Dr. Daria Forlenza, Dr. Sabine Tiefenthaler, Prof. Giulia Cavrini

di tipo qualitativo e con metodi di ricerca partecipativa al fine di capire le prospettive per bambini e adolescenti sul significato di benessere e povertà nel loro ambiente di vita.



Cooperation and Internationality

Partizipative Forschung im Bereich Soziale Arbeit und Sozialpolitik basiert auf der Zusammenarbeit von Wissenschaft und sozialen Akteuren und Akteurinnen. Von Beginn an wurde deshalb die Vernetzung mit Fachleuten und Interessensträger innerhalb des Territoriums im Bereich der Forschung gestärkt.

Das Kompetenzzentrum organisiert mindestens zweimal jährlich forschungsrelevante Arbeitstreffen mit den Stakeholdern. Hierzu gehören u.a. die Mitglieder der Arbeitsgruppe Sozialforschung der Freien Träger des Sozial- und Gesundheitsbereichs in Südtirol. Ferner nehmen hieran Verantwortliche des Sozial- und Gesundheitswesens wie des Betriebes für Sozialdienste Bozen, der Familienberatung, des Dachverbands für Soziales und Gesundheit, des Jugendringes, der Lebenshilfe, des SOS-Kinderdorfes und des Verbandes der Seniorenwohnheime Südtirols, teil.

Das Forschungsprojekt „Professionalisierung, Transitionen, und Autonomieentwicklung“, welches sich mit aufsuchender Familienarbeit beschäftigt, wurde beispielsweise im Rahmen eines solchen Treffens entwickelt.

2022 wurde die Zusammenarbeit mit der Berufskammer der Sozialassistentinnen und -assistenten (Ordine degli Assistenti Sociali Regione Trentino Alto Adige) intensiviert. Derzeit wird der nächste Fachtag für Soziale Arbeit und Sozialpolitik gemeinsam vorbereitet.

Ulrike Loch ist Mitherausgeberin der jährlich erscheinenden deutsch-/englischsprachigen Fachzeitschrift „Österreichisches Jahrbuch für Soziale Arbeit“ (Annual Review of Social Work and Social Pedagogy in Austria).



Research Events

Durante tutto il mese di maggio sono stati organizzati gli incontri "Dialoghi aperti – Dialoghi di pace", una possibilità di confronto sui compiti dell'educazione in questi momenti drammatici e di grande sconcerto causati dalla guerra in Ucraina. Il contributo delle ricercatrici Laura Trott e Sabine Tiefenthaler "Gioco e relazione per rafforzare bambini/e piccoli/e nella condizione da rifugiati!" esplora come bambini rifugiati e bambine rifugiate possano essere rafforzati/rafforzate attraverso il gioco e la costruzione di relazioni. Riconoscendo le risorse e promuovendole, il modulo vuole essere un'opportunità di scambio e di apprendimento di nuove prospettive e di avvicinamento alle attuali scoperte scientifiche in abito educativo.



In linea con il concetto del Centro di competenza, i membri hanno preso parte a diversi incontri, workshop e conferenze, tra cui la **III Conferenza italiana sulla ricerca dei servizi sociali** svoltasi in data 3 – 4 giugno 2022 nella città di Roma.

In data 8 giugno 2022 è stato organizzato il primo simposio del Centro di competenza dal titolo **Chi cura chi? Pflege, Sorge und soziale Unterstützung als gesellschaftliche Aufgabe.**

I simposi del Centro di competenza si considerano quale piattaforma per lo scambio di esperienze e come rete tra professionisti e dirigenti, studenti e studentesse, scienziati, stakeholders e partecipanti che sono interessate ai temi del simposio. Questa prima edizione, alla quale hanno partecipato più di sessanta persone, era incentrata sul concetto più ampio di cura, trattando vari temi come l'invecchiamento della popolazione, lo sviluppo demografico, l'assistenza medica e il sostegno sociale.

Competence Centre for Economic, Ecological and Social Sustainability



Director — Prof. Massimiliano Bonacchi

The Competence Centre was initiated with the main purpose of studying economic, environmental and social aspects of policies and actions aimed at sustainable development in South Tyrol in order to develop innovative approaches and solutions. The Centre aims interconnect various areas of expertise by working in partnership with individual businesses, public institutions and professional associations to support their sustainability ambitions. In particular, the Centre has the following objectives:

- + Foster the transformation of society towards sustainability through research projects and initiatives.
- + Promoting networking, exchange and cooperation in the areas of sustainability between research centres, unibz and external partners on a local, national and international level.
- + Creating education and awareness on sustainable development issues, both for unibz students and for entrepreneurs, managers and financial institutions.

+ Acting as a service point for public and private institutions to provide expertise supporting sustainable projects.

The Competence Centre's focal point is on three main research areas:

Economic Sustainability

Coordinator: Massimiliano Bonacchi

The creation of profit is no longer the ultimate goal of companies, but is becoming a condition for the realisation of a corporate project aimed at an enlarged audience of stakeholders (i.e. shareholders, but also employees, customers, suppliers and the community at large). For companies, the challenge is to develop a corporate culture by understanding the trade-offs involved in pursuing sustainability strategies and resolving them with innovative solutions. Within this framework, it is crucial for the dissemination of sustainability principles to provide companies with managerial tools and sustainability performance measures that can demonstrate to entrepreneurs the impact that corporate strategies have on all stakeholders.

Social Sustainability

Coordinator: Aart van Bezooijen

Sustainable development also comprises the achievement of decent working conditions, gender

equality, fair and decent pay and the eradication of discrimination and poverty. Some of the challenges also present in South Tyrol and to be studied in this macro-area will be the growing inequality between generations, steadily increasing care costs, labour shortage and diminishing social, health, economic and environmental opportunities and resources. Research in this macro-area aims to contribute to combining greener economic development policies capable of producing decent work, on a level playing field of gender equality and equality among workers wherever they come from.

Environmental Sustainability

Coordinator: Camilla Wellstein

Environmental sustainability is the responsibility to conserve natural resources and protect global ecosystems to sustain health and well-being. However, environmental sustainability often conflicts with the economics of production that consume natural resources. Therefore, it is important to devise strategies that put the two aspects in synergy and not in competition. Research in this macro-area aims to develop new models that on the one hand allow economic growth, but on the other hand try to reduce the consumption of environmental resources.



Research Projects

SUSTPLAN – Business Sustainability: Competitive and Financial Advantages

Environmental, Social and Governance (ESG) issues form the basis of a healthy corporate culture. Companies pursuing an ESG strategy can improve their competitive advantage and their financial performance. Further, ESG-oriented companies are more attractive for investors and lenders.

After the approval of the Corporate Sustainability Reporting Directive (CSRD) 2022/2464/EU, companies in the European Union are facing increased pressure to report on sustainability. The new rules will ensure that financial market participants and other stakeholders have access to the information they need to assess investment risks arising from climate change and other sustainability issues. In addition, the Directive will also contribute to create a culture of transparency about the impact



of companies on people and the environment. CSRD will apply to all large companies, as well as listed small and medium-sized enterprises (SMEs). Despite the scope of the rule, a notable aspect of CSRD reporting is the requirement for companies not only to report with respect to their own operations, but also their broader value chain. Thus, reporting companies will also report about sustainability practices of organizations with direct and indirect business relationships in the upstream and/or downstream value chain. Against this backdrop, to gain competitive and financial advantages, local companies will have to develop sustainable development strategies and adopt sustainability-oriented business models. The project aims to disseminate knowledge about business-related sustainability topics and support the transition of selected local companies towards a sustainability-oriented business model.

More in detail, the first part of the project will develop a tool to collect non-financial data and analyze the sustainability performance. Drawing from international frameworks and assessment tools adopted by major ESG-scores providers, the overall sustainability performance of the companies will be measured, as well as its breakdown by sustainability dimension. Based on the results and on the analysis of the industry context in which the companies operate, the second part will be focused on identifying

INFO BOX

FUNDING TYPE
Research Contract

DURATION
12/2022 – 12/2023

RESEARCH AREA
Economic Sustainability

UNIBZ RESEARCH TEAM
Dr. Nicola Dalla Via (Principal Investigator), Prof. Massimiliano Bonacchi, Prof. Paolo Perego

PROJECT PARTNERS
Confidi Alto Adige – Südtirol, Camera di Commercio di Bolzano – Handelskammer Bozen

critical business activities and improvement areas, as well as on developing a procedure to define sustainability goals and embed them in sustainability plans.

← © Unsplash | Mimi Thian



Cooperation and Internationality

In December 2022 the Competence Centre initiated a cooperation with Confidi Alto Adige and Camera di Commercio di Bolzano with the aim of disseminating knowledge about business-related sustainability topics and support the transition of selected local companies towards a sustainability-oriented business model.

In connection with the organisation of events the Centre collaborated with the Forestry Department of the Autonomous Province of Bolzano and Assoimprenditori Alto Adige – Unternehmerverband Südtirol.

Im Dezember 2022 initiierte das Kompetenzzentrum eine Kooperation mit Confidi Alto Adige und der Handelskammer Bozen mit dem Ziel, Wissen über unternehmensbezogene Nachhaltigkeitsthemen zu verbreiten und den Übergang ausgewählter lokaler Unternehmen zu einem nachhaltigkeitsorientierten Geschäftsmodell zu unterstützen.

Bei der Organisation von Veranstaltungen arbeitete das Zentrum mit dem Amt für Forstverwaltung der Autonomen Provinz Bozen und dem Unternehmerverband Südtirol zusammen.



Research Events

17 November 2022

The conference **Der Borkenkäfer zwischen Ökologie und Praxis – vom Stand der Wissenschaft zur nachhaltigen Entwicklung / Il bostrico tra ecologia e operatività – dallo stato della scienza allo sviluppo sostenibile** saw various presentations by speakers from Italy, Switzerland and Austria as well as speeches by the Coordinator of the national monitoring of the bark beetle and the directors of the Forestry Departments of the Autonomous Province of Bolzano, Autonomous Province of Trento and Land Tyrol. Amongst the 200 participants many were foresters and employees of other public offices in the Provinces of Bolzano and Trento. The event was organised in cooperation with the Competence Centre for Plant Health and the Forestry Department of the Province of Bolzano.

www.unibz.it/en/events/141480-borkenkaeferkonferenz-conferenza-sul-bostrico

1



16 December 2023

A **workshop with local stakeholders** (Südtiroler Bauernbund, Maschinenring Südtirol, sawmill entrepreneurs, etc.) organised in cooperation with the Forestry Department of the Autonomous Province of Bolzano led to the identification of problem areas in the sustainable management of bark beetle infested forests. Solution programmes will be developed for the most important sustainability issues.

12 December 2022

During the conference **SUPERSOCIAL – A Public Evening on Putting People First** special attention was given to the social aspects of design and business in moving towards a more sustainable and inclusive society where the role of each person is valued. The event took place at WAAG, one of South Tyrol's favourite cultural spaces, starting with a performance by Studio Gisto (Frantoio Sociale) and followed by lectures by Petra Janssen (Social Label), Rafal Kolodziej (Futures Thinking) and Bernhard Lenger (The Social Design Lobby).

www.unibz.it/en/events/141600-supersocial-a-public-evening-on-putting-people-first



2

16 December 2022

The conference **Oltre il profitto: La sostenibilità come vantaggio competitivo – Beyond profit: Sustainability as a competitive advantage** offered an interesting keynote speech by Prof. George Serafeim (Harvard Business School) that was followed by a panel discussion with five more speakers. During the conference Serafeim illustrated how the relationship between purpose and profit is evolving in a world increasingly attentive to environmental and social issues. Over 100 participants attended the event that was supported by Assoiemprenditori Alto Adige.

www.unibz.it/en/events/141251-oltre-il-profitto-la-sostenibilita-come-vantaggio-competitivo

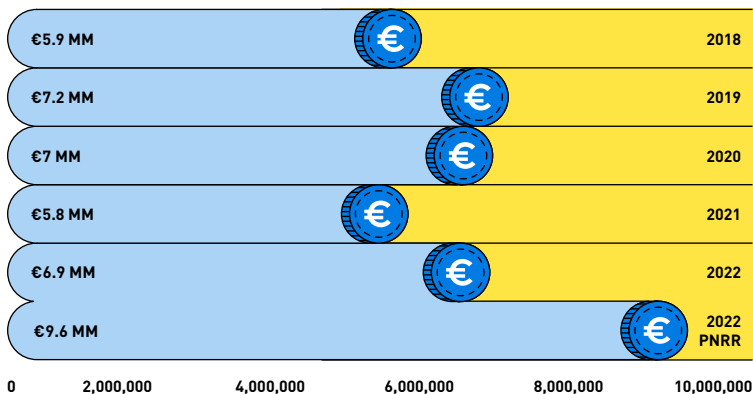
1 ↑ European spruce bark beetle © Donatello Vallotta

2 ↑ Conference image © CC for Economic, Ecological and Social Sustainability

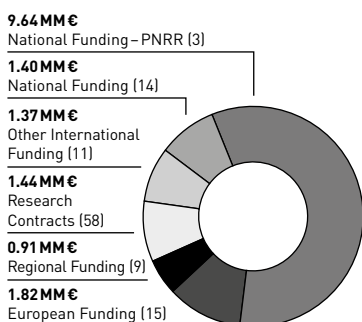
Figures on Research Projects and Funding 2022

In 2022, unibz completed 204 research projects. 142 new research projects were started, 110 of which were externally funded. 3 projects received funding from the National Recovery and Resilience Plan (PNRR) as part of the Next Generation EU programme, for a total value of 9.6 MM € and 107 projects from other external funding sources for a total value of 6.9 MM €.

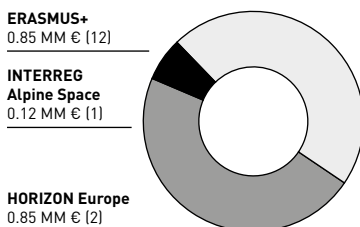
External Funding 2018—2022



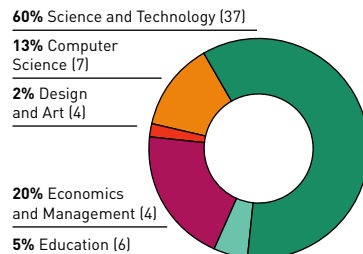
External Funding by Funding Source (and Number of Projects)



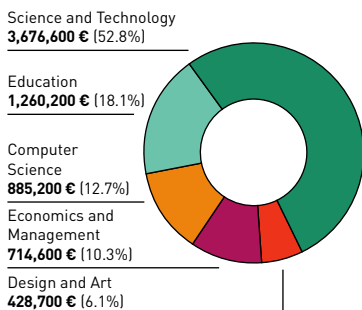
15 new EU-projects were started for a total value of 1.8 MM €
European Funding by Funding Programme (and Number of Projects)



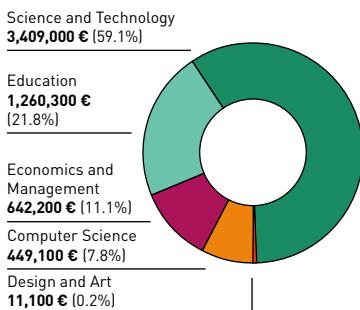
unibz signed 58 new research contracts with third parties for a total value of 1.4 MM €
Research Contract Funding by Faculty* (and Number of Contracts)



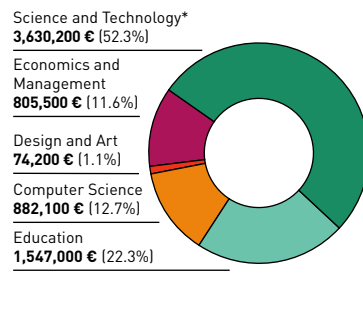
External Funding 2020



External Funding 2021



External Funding 2022

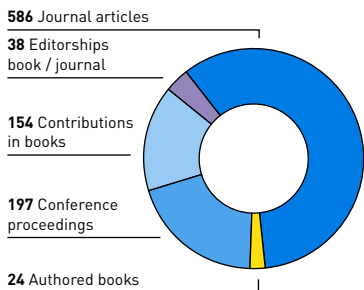


* related Competence Centres included

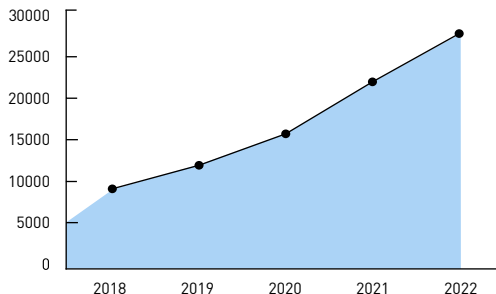
[Source: boris - unibz]

Figures on Peer-reviewed Publications in 2022

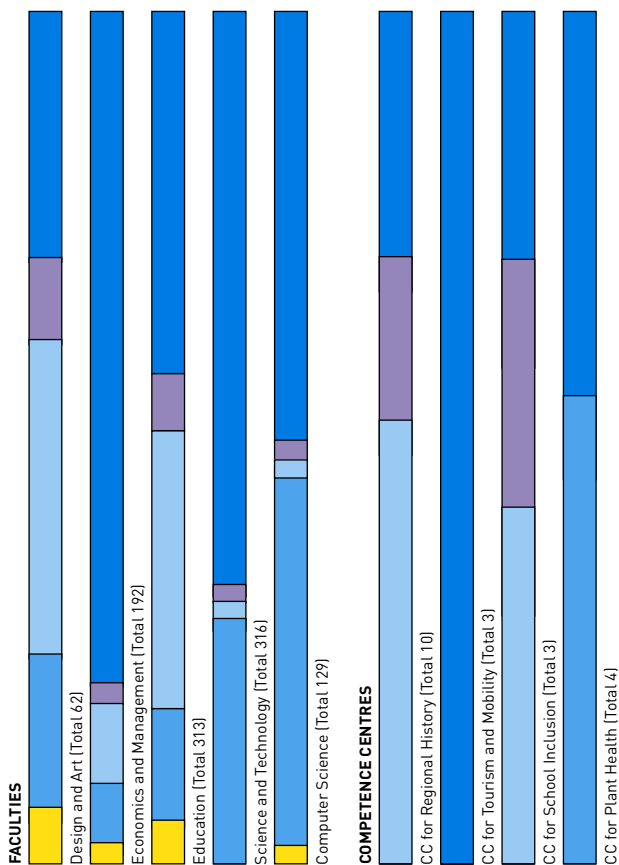
unibz Publications 2022 by Publication Type (Source: Boris)



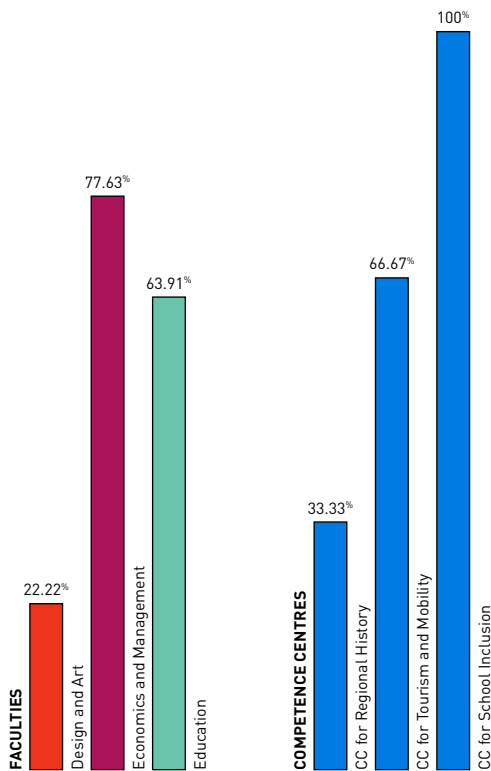
unibz Citations – Peer-reviewed publications from authors with unibz affiliation (Source: Scopus)



Publications by Faculty / Competence Centre and Publication Type (Source: Boris)



% of A-Class Academic Journal Articles* Compared to the total number of articles published in academic journals in the same year

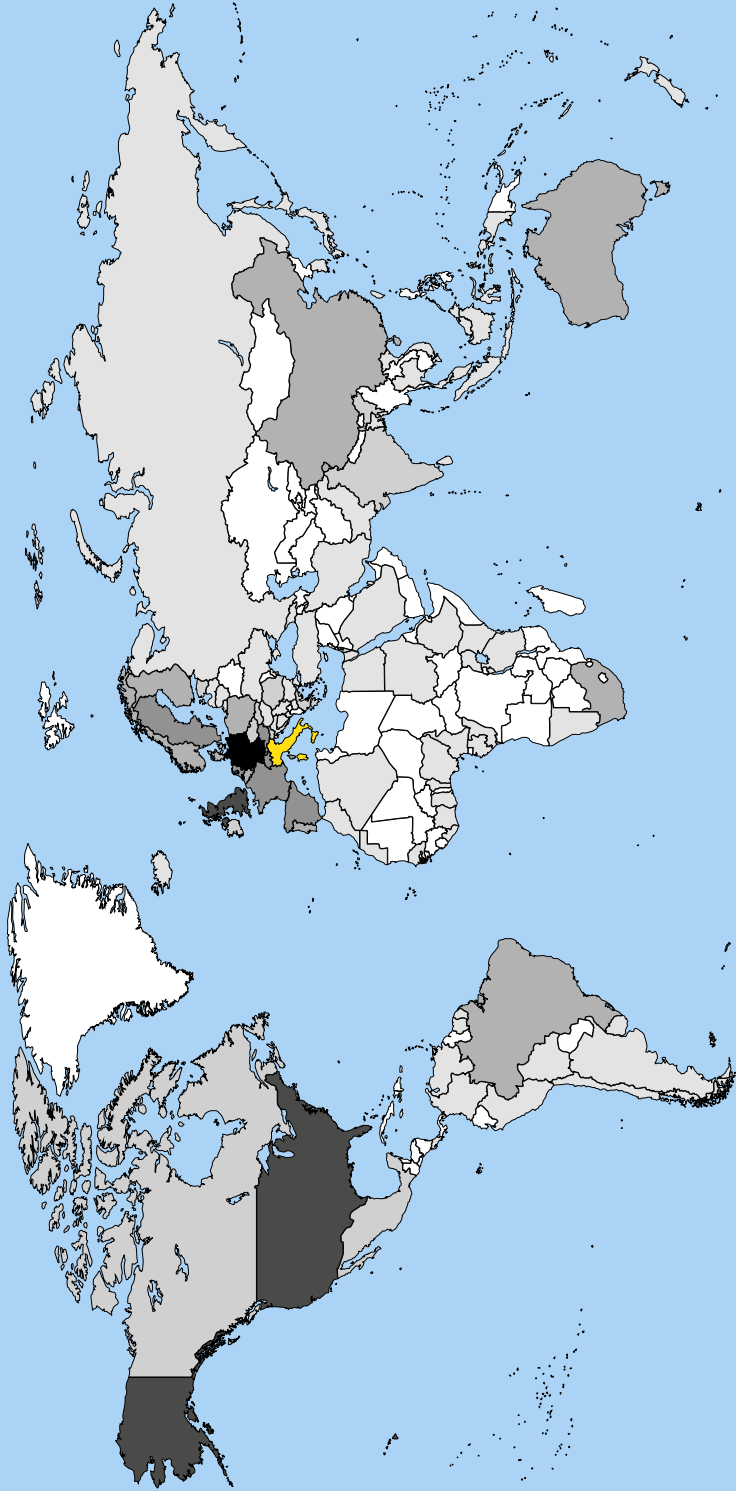


A-Class: Excellence journals in the non-bibliometric scientific areas (as rated by ANVUR). Not applicable to the Faculties of Computer Science and Science and Technology (STEM subjects). (Source: Boris)

● Journal articles ● Editorships (book / journal) ● Contributions in books ● Conference proceedings ● Authored books

2022 unibz Publications – Co-Authors Network

[Source: Scopus / Graphics: powered by Bing]



Number of Co-authored Publications
● >900 ● 101-150 ● 81-100 ● 61-80 ● 41-60 ● 21-40 ● 11-20 ● 1-10 ● 0



Industry and Society

Partner for Research and Education through PhD programmes

University and Industry cooperate at various levels, through research and development projects, internships or Dual study programmes. Another possibility is the funding of scholarships for doctoral studies through a convention with the university, where the call for applications can include specific research topics for these positions. In 2022, over 20 new PhD conventions between unibz and private companies and R&D institutions have been signed for a total amount of over 1 Mio €. The relevant PhD programmes are: Advanced-Systems Engineering, Computer Science, Food Engineering and Biotechnology, Mountain Environment and Agriculture, and Sustainable Energy and Technologies. Additional PhD positions have been funded directly by the Italian Ministry of University and Research MUR, including the PhD programme in General Pedagogy.

Verwertung von Forschungsergebnissen: Patente und Marken

Der Schutz und die Verwertung des geistigen Eigentums, auch in Kooperation mit Unternehmen, ist für jede Universität ein wichtiger Indikator für ihre Innovationskraft. Durch Patente werden Erfindungen geschützt und gleichzeitig der Öffentlichkeit zugänglich gemacht und tragen so zur Verbreitung von Wissen bei.

Die Universität unterstützt ihr Forschungspersonal bei Patent- und Markenmeldeverfahren und ist bemüht, ihr Portfolio stetig auszubauen. 2022 kann die unibz mit ihren Forschenden 22 gewährte Patente und 2 angemeldete Patente (in Prüfung) vorweisen; dazu kommen 5 registrierte Marken (Trademarks) und 3 angemeldete Marken.

Die Erfindungen wurden an 3 Fakultäten entwickelt und stammen aus den unterschiedlichsten Bereichen von Elektronik, IT, Benutzersystemen und Ingenieurbau über Mikrobiologie und Lebensmitteltechnologie bis hin zu neuen Designanwendungen.

European networks

unibz is actively promoting the collaboration of its researchers within a number of European research and innovation networks, together with the Research Center Laimburg and the Autonomous Province of Bozen-Bolzano and by means of a common liaison office in Brussels.

UnLiON – Universities Informal Liaison Offices Network is an informal network of 51 Brussels-based liaison offices representing 157 excellent universities in Europe, Japan and Russia. www.unilion.eu

GIURI – Gruppo Informale di Uffici di Rappresentanza Italiani is an informal platform bringing together the liaison offices and represen-

tatives of Italian stakeholders' interests at European institutions, and active in the field of Research & Innovation (universities, research centres, industries, trade associations, financial intermediaries, regions, and local authorities).

www.linkedin.com/company/giuriit

ERIAFF – European Regions for Innovations in Agriculture, Food and Forestry is an informal association of regional Authorities that works on themes of common interest, also involving regional stakeholders. The Autonomous Province of Bozen-Bolzano is member of this network and will host in 2023, together with unibz, Laimburg Research Centre and Eurac the ERAFF Annual Conference 2023 in Bozen-Bolzano.

www.eriaff.com

unibz researchers also cooperate with other thematically focused working groups that are active in the fields of Agriculture and Food:

Agroecology Working Group, High Tech Farming, Plants Protein Working Group, Food System Working Group and Forested Region Working Group.

s3platform.jrc.ec.europa.eu/

[high-tech-farming](#)

www.eriaff.com/?page_id=1306

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

www.eitfood.eu

EUPHRESCO is a network of organisations that fund research projects and coordinate national

research in the phytosanitary area. The overall goal of Euphresco is to support collaboration in phytosanitary research, and to maintain itself as a strong, long-term network of research stakeholders. In 2022, the University was confirmed as member of EUPHRESCO through its Competence Centre for Plant Health.

www.euphresco.net

In 2022 and for the second consecutive year, the Brussels liaison office together with the Career Service of unibz organised the initiative "Getting to know Europe" to inform students and researchers about the different workplace scenarios in Europe. For the second edition, the focus was put on Public Affairs, Diplomacy, Journalism, and International Cooperation. Speakers included Teresa Calvano, Director and member of the Management Team at Rud

Pedersen Public Affairs Brussels, H.E. Stefano Beltrame, Ambassador of Italy to Austria, Angelo Di Mambro, Free Lance journalist and Gloria Lorenzoni, EU Funding opportunities research officer at AVSI Foundation.

BITZ fablab

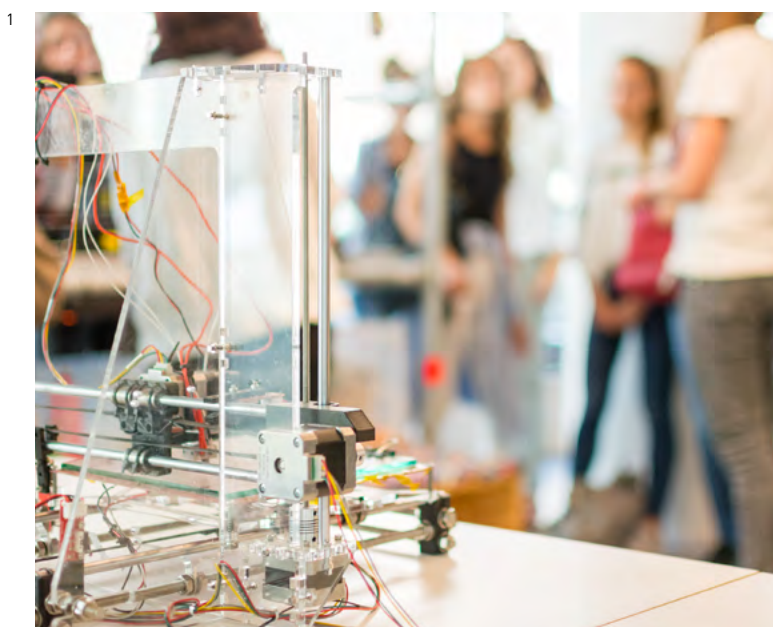
BITZ unibz fablab è il Digital Fabrication Lab della Libera Università di Bolzano, inaugurato nel 2018. Le attività organizzate e promosse dal BITZ sostengono e diffondono la cultura maker e la conoscenza della prototipazione con tecnologie di produzione digitale. Nel 2022 il Fablab ha potuto riprendere tutte le attività senza limitazioni dopo gli anni della pandemia: 244 nuovi utenti hanno frequentato il corso introduttivo e dall'apertura del 2018 si sono contate 1388 iscrizioni, con una quota del 58%

di donne. Oltre a numerosi incontri scientifici e workshop, il Fablab 2022 ha ospitato tre grandi eventi: Nell'aprile 2022 si è svolto il primo Hackathon "DUNG Game Jam", un concorso di idee per lo sviluppo di videogiochi. L'evento della durata di tre giorni è stato organizzato in collaborazione con il Servizio Giovani di Bolzano e Merano e l'Ufficio Lavoro Giovani della Provincia di Bolzano. Il secondo grande evento realizzato dal BITZ insieme alla Smart Mini Factory sono state le settimane di formazione finanziate dal FSE "Digital and Technology Summer Camp" per gli studenti e studentesse delle scuole superiori. Inoltre, nel novembre 2022 il Fablab è stato sede della conferenza annuale di tutti i Fablab universitari d'Italia "U-Fab conference" con numerose conferenze e workshop. Il BITZ è membro della rete internazionale dei Fablab.

bitzfablab.unibz.it

www.u-fab.it/

fablabs.io/labs/bitzunibzfablab



1 ← BITZ unibz fablab © Eleonora Lunardoni

2 → NOI Techpark Bolzano © Eleonora Lunardoni

3 ↑ NOI Techpark Bolzano © Eleonora Lunardoni

NOI Techpark

Forschung ist ein Grundpfeiler an den fünf Fakultäten der Freien Universität Bozen. Am NOI Techpark sind insgesamt 13 Labore angesiedelt, die vorwiegend angewandte Forschung in Kooperation mit Unternehmen und öffentlichen Körperschaften betreiben. Rund 150 Forschende und Technikerinnen und Techniker an drei Fakultäten widmen sich aktuellen Herausforderungen und gesellschaftlich relevanten Fragen wie der zunehmenden Wasserknappheit und damit verbundenen hydrologischen Innovationen, der Verarbeitung von Big Data, Ernährungsfragen mit Blick auf Entwicklung von Smart Food, Abfallbewirtschaftung oder technologischen Innovationen für die Landwirtschaft. Aktivitäten und Kompetenzen sind am NOI Techpark in den vier Forschungs-



feldern Lebensmittel, Energie, Digital, Automation & Mobilität gebündelt. Das Centre for Family Business Management widmet sich zudem den Fragen und Herausforderungen rund um familiengeführte Unternehmen. Im Jahr 2022 waren Forschende der unibz in 153 Forschungsprojekten mit 237 unterschied-

lichen Kooperationspartnern, davon 104 private Unternehmen und Industriepartner und insgesamt 52 Partnern aus Südtirol am NOI Techpark tätig. Die Gesamtsumme der Fördermittel an laufenden, extern finanzierten Forschungsprojekten betrug 5,3 Mio. €, welche einer durch Drittmittel finanzierten Quote von 80% entspricht. Die Daten beziehen sich auf alle 2022 in den unibz Research Areas im NOI Techpark laufenden Forschungsprojekte, ausgenommen die Ende 2022 angelaufenen PNRR-Projekte.

noi.bz.it/en/laboratories

Key projects 2022 at NOI Techpark

Sensortechnik für Datenerfassung, Berechnung und Speicherung

LAUFZEIT: 2022 — 2024

PROJEKTBUDET: 245.000 €

FINANZIERUNG: Joint Projects CH-Südtirol

PARTNERS: EPFL, CHUV

LABOR: Sensor System Technology

Intelligente Geräte, die fühlen, denken und kommunizieren? All diese Geräte basieren auf der Von-Neumann-Architektur, die wesentlich zum Fortschritt der Computertechnologien beigetragen hat. Trotz allem liegt einer der Nachteile darin, dass die kontinuierliche Datenübertragung zwischen Speicher und Prozessoren eine beträchtliche Menge an Verarbeitungszeit und -leistung erfordert und somit zu Engpässen führt. Das Projekt „In-Me“ möchte Daten im Randbereich

2



1



konzeptionell erfassen, berechnen und speichern. Dazu werden Simulationen auf der Grundlage von Ersatzschaltungen durchgeführt, um „In-Memory-Sensing und Computing“ zu demonstrieren; schlussendlich werden Sensoren und Biosensoren in biomedizinische Umgebungen integriert, da als Nachweis des Konzepts Prostata-Krebsmarker als Ziel-Analyten für den Speicher (In-Memory-Sensor) ausgewählt wurden.

How Do I Integrate Geodata?

DURATION: 2022 – 2024

PROJECT BUDGET: 293.000 €

FUNDING: : Joint project D-Südtirol

PARTNER: TU München

LAB: Smart Data Factory

Recently, the Knowledge Graph (KG) based approach for geospatial data integration has gained

popularity thanks to the flexibility of the graph data model and the possibility to define precise data semantics through ontologies. The Virtual Knowledge Graph (VKG) paradigm allows to “virtualise” existing data sources, e.g. relational databases. The project “D2G2” relies on this paradigm to integrate heterogeneous geospa-

2



tial data sources and combine them with Virtual Knowledge Graphs with geovisual analytics for effective geospatial data analysis. To achieve this goal, a set of methods and software tools will be developed to create densely and deeply linked geospatial Knowledge Graphs, and it will provide a set of intuitive visualisations and explainable analytical services over them.

Lebensmittelfermentation auf der Basis von Hülsenfrüchten

LAUFZEIT: 2022 – 2026

PROJEKT BUDGET: 545.000 €

FINANZIERUNG: EU Horizon 2020

PARTNERS: 21 Partner, koordiniert von der Katholieke Universiteit Leuven (NL)

LABOR: Micro4Food

Das Projekt „HealthFerm“ fokussiert auf innovative Lebensmittelfermentation auf der Basis von Hülsenfrüchten und Getreide. Im Fokus stehen Gesundheit und eine nachhaltige Ernährung mit dem Ziel, einen evidenzbasierten Übergang von traditionellen zu nachhaltig pflanzlichen fermentierten Lebensmitteln und Ernährungsweisen in Gesellschaft und Industrie zu ermöglichen. Daraus ergeben sich die zwei Hauptziele des Projektes: (I) die Entflechtung der Wechselwirkung zwischen Lebensmittelfermentationsmikrobiomen, fermentierten getreidebasierten Lebensmitteln und dem menschlichen Darmmikrobiom sowie deren Auswirkungen auf die menschliche Gesundheit und (II) die Nutzung des gewonnenen

3



Wissens, der mikrobiellen Ressourcen und der Fermentationstechnologie zur Entwicklung solcher Lebensmittel.

Aumentare la resilienza energetica nella regione alpina

DURATA: 2022 — 2024

BUDGET: 120.000 €

FINANZIAMENTO: Interreg Alpine Space

PARTNERS: 5 partner, coordinati dalla Camera di commercio e industria di Štajerska (SI)

LABORATORIO: Bioenergy & Biofuels

L'obiettivo generale del progetto "Alps4GreenC" è quello di studiare i percorsi di bioraffineria attualmente tecnologicamente decentrati in ciascuno dei Paesi partecipanti e di definire le corrispondenti catene di valore transnazionali nel campo dell'uso del biochar in agricoltura e nell'industria siderurgica.



L'intento è di aumentare la resilienza energetica delle Alpi tramite lo sviluppo di prodotti biobased. Pertanto, verrà effettuata un'analisi del contesto e delle lacune delle risorse esistenti, verrà creata una mappatura degli attori industriali e innovativi nei Paesi dei partner della ricerca e verranno condotti

test pratici sulla rilevanza di mercato del biochar nell'agricoltura e nell'industria siderurgica. Le azioni intraprese comprendono due attività pilota basate sui risultati di una campagna di crowd-sourcing. I nuovi partenariati di attuazione mirano a ridurre la dipendenza energetica delle Alpi e ad aprire la strada a un futuro a basse emissioni di carbonio.

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1 ← Sensor System Technology © Ivo Corrà
 2 ← Smart Data Factory © Serena Osti
 3 ↑ Micro4Food © Eleonora Lunardoni
 4 ↑ Bioenergy & Biofuels © Ivo Corrà

New Professorships

Computer Science



Di Fatta Giuseppe

POSITION: Full Professor of Information Processing Systems (ING-INF/05) / **FORMER POSITION:** Full Professor and Head of Department of Computer Science, University of Reading (UK)
RESEARCH FOCUS: Prof. Di Fatta's research interests and expertise are in Computer Science, and more specifically in the fields of Artificial Intelligence, Machine Learning, Data Science and data-driven multidisciplinary applications for scientific and industrial domains.



Rosella Gennari

POSITION: Associate Professor of Informatics (INF/01) / **FORMER POSITION:** Senior Researcher at unibz, Faculty of Computer Science
RESEARCH FOCUS: The research work of Prof. Gennari is within the broad area of Human Computer/

Machine Interaction; it concerns smart technologies in their interaction with humans in different contexts, with a focus on learning and inclusion. Her goal is to bring humanistic values and making perspectives into their (co-)design, end-user development and usage.

Economics and Management



Florian Kiesel

POSITION: Associate Professor of Corporate Finance (SECS-P/09) / **FORMER POSITION:** Assistant and Associate Professor at Grenoble Ecole de Management (FR), and Visiting Professor at the Zeppelin University in Friedrichshafen (DE)
RESEARCH FOCUS: Prof. Kiesel focuses his research in the area of corporate finance and empirical finance. Specifically, he is interested in examining how credit rating agencies and sustainable rating providers and their ratings affect the performance of firms in terms of productivity and environmental, social, and governance (ESG) outcome.



Christoph Stöckmann

POSITION: Full Professor of Management (SECS-P/08) / **FORMER POSITION:** Full professor of innovation and entrepreneurship, esp. digital business, at Seeburg Castle University, Seekirchen/Salzburg (AT). He also served as Rector of the University from 2019 to 2022
RESEARCH FOCUS: In his research and teaching, he focuses on individual, team and organizational level aspects of business creation and development, as well as the impact of digitalization on new and established companies and their business models.

Education



Andrea Abel

POSITION: Full Professor of German Linguistics (L-LIN/14) / **FORMER POSITION:** Advisory activity in the context of the revision of school framework guidelines

(project "Revisione delle Indicazioni provinciali del I e del II ciclo")
– Italian Department of Education of the Autonomous Province of Bozen-Bolzano.

RESEARCH FOCUS: Prof. Abel main research areas are German as a first and second language, including assessment and modelling of language competences, variation/variety linguistics and corpus linguistics, with focus on computer-assisted analysis of learner data. Further, she is occupied in pedagogical and computational lexicography.



Andrea Di Michele

POSITION: Associate Professor of Contemporary History (M-STO/04)/
FORMER POSITION: Prof. Di Michele worked for many years as an archivist and historian at the Provincial archives in Bozen-Bolzano and at the Competence Centre for Regional History of unibz, as well as an adjunct lecturer at the University of Trento

RESEARCH FOCUS: Prof. Di Michele deals with 20th century history, with a focus on Italy during World War I and II, and its relations with border areas.



Benjamin Niederkofler

POSITION: Associate Professor of Sport Pedagogy and Sport Didactics (M-EDF/01)/**FORMER POSITION:** Associate Professor of Primary Physical Education at the Salzburg University of Teacher Education (AT) and Visiting Professor of Sport Pedagogy at the University of Vienna (AT)

RESEARCH FOCUS: Prof. Niederkofler is mainly engaged in research on the quality, effects, and operating principles of movement and sport in primary and secondary physical education.



Robert Philipp Wagensommer

POSITION: Associate Professor of General Botany (BIO/01)/**FORMER POSITION:** Senior researcher at the University of Bari "Aldo Moro" in Plant Systematics (BIO/02)

RESEARCH FOCUS: Prof. Wagensommer does research on flora, plant taxonomy and systematics, threatened plant species and

red listing, vegetation and STEM education. He analyses morphological and ecological data, as well as the distribution of plant species, with evaluation of their conservation status.

Science and Technology



Yuri Borgianni

POSITION: Associate Professor of Design Methods for Industrial Engineering (ING-IND/15)/**FORMER POSITION:** Senior Researcher at unibz, Faculty of Science and Technology

RESEARCH FOCUS: Prof. Borgianni's research addresses engineering design and designing, with a particular attention on how those are affected by societal changes and technology innovation. The focus is on sustainable design, inspiration for the creative development of new products, human-product interaction and user experience, design for additive manufacturing.



Franco Cacialli

POSITION: Full Professor of Experimental Physics (FIS/01)/**FORMER**

POSITION: Professor of Physics at the Department of Physics and Astronomy at UCL and the London Centre for Nanotechnology (UK). Previously, he has been a Royal Society University Research Fellow in the period 1996–2004, first at Cambridge, then at UCL, where he became Professor in 2005.

RESEARCH FOCUS: Physics and application of advanced functional materials (primarily organic semiconductors – OS) to photovoltaic and light-emitting diodes, as well as to field-effect transistors, with particular attention to the properties of the electrode-semiconductors interface. Research interests also include supramolecular architectures for the control and tailoring of intermolecular interactions, and thus of OS photophysics.



Franco Concli

POSITION: Associate professor of Mechanical Design and Construction (ING-IND/14)/**FORMER**

POSITION: Senior researcher at unibz, Faculty of Science and Technology.

RESEARCH FOCUS: Prof. Concli research focus is on tribology, gears, material characterisation and numerical simulations. His research fields include the development of CFD tools for the prediction of power losses, thermal regimes and efficiency of gearboxes and FEM modeling.



Patrick Dallasega

POSITION: Associate Professor of Factory and Plant Planning (ING-IND/17)/**FORMER POSITION:** Senior Researcher at unibz, Faculty of Science and Technology

RESEARCH FOCUS: Research is focused on Industry 4.0 technologies and concepts applied to specific contexts and settings,

Digital Factory Planning as well as digitalisation in ETO companies and the Digitalisation of the construction execution process. Further interests focus on Worker-Assistance Systems, Distributed and Sustainable Manufacturing as well as Advancing Engineering Education.



Francesco Patuzzi

POSITION: Associate professor of Thermal Engineering and Industrial Energy Systems (ING-IND/10)/

FORMER POSITION: Senior researcher at unibz, Faculty of Science and Technology

RESEARCH FOCUS: The main research interests deal with the thermochemical conversion processes applied to biomass, with particular attention to the aspects related to the use of these processes for combined heat and power (CHP) and biofuels production. The applied methods range from the thermal and analytical characterization of materials – in particular of organic matter – to the analysis of their thermochemical conversion.



Erwin Rauch

POSITION: Associate Professor of Manufacturing Systems and Technologies (ING-IND/16) / **FORMER**

POSITION: Senior Researcher at unibz, Faculty of Science and Technology

RESEARCH FOCUS: The research focus is on Industry 4.0/5.0, Smart and Sustainable Manufacturing, Human-Robot Collaboration in Assembly, Assistance Systems and Human-Centred Manufacturing, Digital Twin and Simulation, Engineering Education and Learning Factories as well as Design of Complex Systems.

Awards and Distinctions

Science and Technology

27 May 2022

Research Award for Young Researchers 2022 of the Stiftung Südtiroler Sparkasse for **Guido Orzes** for the following products of his research: "Industry 4.0 and sustainability: Towards conceptualization and theory", "Exploring the impact of Industry 4.0 technologies on social sustainability through a circular economy approach" and "From forest to finished products: The contribution of Industry 4.0 technologies to the wood sector".

16 – 17 June 2022

At the 11th AIEAA Congress on "CAP, Farm to Fork and Green Deal: policy coherence, governance and future challenges" in Viterbo (Italy) **Giovanni Sacchi** received the 2022 Edition of the *Best Paper* in Bio-based and Applied Economics – BAE for the paper: Iannucci, G., & Sacchi, G. (2021). The evolution of organic market between third-party certification and participatory guarantee systems. *Bio-based and Applied Economics*, 10(3), 239–251.

14 – 20 August 2022

At the International Horticultural Congress (IHC 2022) in Angers, the PhD student of the PhD Program MEA **Cameron Cullinan** received the *Young Minds Award* for his poster presentation.

Franco Cacialli has been invited to be a member of the newly established Scientific Council of the European Materials Research Council.

7 September 2022

PhD student **Antonio Orlando** won the *Best Poster Presentation Award* at the 16th International Summer Schools on Nanotechnologies, Organic Electronics & Nanomedicine (ISSON22).

16 September 2022

Dianne Corsino won the *Best Poster Presentation Award* at the 17th International Thin-Film Transistor Conference.

Computer Science

20. Juni 2022

Bei den IEEE/CVF 2022 Computer Vision and Pattern Recognition (CVPR) *EPIC-Kitchens Challenges* haben **Oswald Lanz** und sein Team den *1. Platz* im Wettbewerb Multi-Instance Video Retrieval und den *2. Platz* im Wettbewerb Video Action Anticipation gewonnen.

23. – 29. Juli 2022

Nicolas Troquard wurde auf der 31st International Joint Conference on Artificial Intelligence and 25th European Conference on Artificial Intelligence (IJCAI-ECAI 2022) als *Distinguished Program Committee Member* (top 3%) ausgezeichnet.

31. August – 2. September 2022

Roberto Confalonieri, Pietro Galliani, Oliver Kutz, Guendalina Righetti, Nicolas Troquard erhielten den *Best Paper Award* auf der 21st EPIA Conference on Artificial Intelligence für ihr Paper "Almost certain termination for ALC weakening".

5. – 8. September 2022

Christina Khnaisser, Hind Hamrouni, David B. Blumenthal, Anton Dignös und **Johann Gamper** wurden für ihren Beitrag "Querying Temporal Anomalies in Healthcare Information Systems and Beyond" mit dem *Best Paper Award* auf der 26th European Conference on Advances in Databases and Information Systems, ADBIS 2022, ausgezeichnet.

11. – 16. September 2022

Fabrizio Maria Maggi und **Marco Montali** gewannen den *Best Paper Award* auf der 20th International Conference on Business Process Management, BPM 2022 mit ihrem Beitrag "Reasoning on Labelled Petri Nets and Their Dynamics in a Stochastic Setting".

November 2022

Xiaofeng Wang wurde vom Information and Software Technology (IST) Journal mit dem *Top Reviewer 2021* ausgezeichnet.

5. – 7. Dezember 2022

Daniela D'Auria erhielt den *IEEE Best Leadership Award* für ihre Bemühungen und ihr Engagement bei der Organisation der 6. Ausgabe der IEEE Robotic Computing Konferenz.

Education

20. Februar 2022

Für ihre Arbeit zum Thema „The New Normal of Museum Communication in the Age of COVID“ wurde **Cecilia Lazzeretti** mit dem *2022 Emerging Scholar Award* ausgezeichnet, der von The Inclusive Museum Research Network, Common Ground Research Networks, University of Illinois (USA) vergeben wird.

10. März 2022

Paul Videsott wurde zum neuen *Präsidenten der Kulturkommission* (wissenschaftlicher Beirat) des Ladinischen Kulturinstituts „Majon di Fascegn“ in Vich/Vigo di Fassa gewählt.

20. Mai 2022

Maria Teresa Trisciuzzi hat mit der Monografie „Ritratti di famiglia. Immagini e rappresentazioni nella storia della letteratura per l'infanzia“ (Edizioni ETS) den *Premio internazionale Elisa Frauenfelder* in der Sektion „Pädagogische Wissenschaften“ gewonnen.

10. Juni 2022

Daniele Morselli erhielt für seinen Artikel „Testing the model of double stimulation in a Change Laboratory. Teaching and Teacher Education“ den *Premio "Aldo Visalberghi"*. Der Preis der Società Italiana di Ricerca Didattica honoriert Arbeiten, die in italienischen und internationalen Fachzeitschriften über Methoden, Techniken und Erfahrungen in der Lehre veröffentlicht werden.

7. Juli 2022

Paul Videsott wurde für eine zweite sechsjährige Amtszeit als *Secrétaire adjoint* (stellvertreter Sekretär) der Société de Linguistique Romane, dem Weltverband der Romanisten und Philologen, wiedergewählt.

Oktober 2022

Francesca Condorelli hat den *StartCup Lombardia – ICT & Services Award* gewonnen. Der Startcup Lombardia ist ein Wettbewerb, der von den Universitäten und universitären Gründerzentren in der Lombardei organisiert und von der Region Lombardei gefördert wird. Er trägt dazu bei, die Innovationskultur im universitären Umfeld zu verbreiten, die Gründung und Entwicklung neuer Unternehmen zu fördern und zu unterstützen, um die wirtschaftliche Entwicklung der italienischen Region zu fördern.

Dezember 2022

Francesca Condorelli war die Gesamtsiegerin des PNICube Nationalen ICT-Innovationspreises, womit sie in die Liste der *TOP100 Best Italians Innovators* eingefügt wurde. PNICube ist der Verband, der italienische akademische Inkubatoren und Businessplan-Wettbewerbe (bekannt als StartCups) zusammenbringt. Diese wurden mit dem Ziel gegründet, die Gründung neuer wissenschaftlicher Unternehmen universitären Ursprungs zu fördern und sie auf den Markt zu begleiten.

Economics and Management

23 febbraio — 30 dicembre 2022

Alfredo De Massis è stato inserito negli elenchi *Top 100 Family Business Influencers*, *Family Business Hall of Fame*, *Stanford University list of Top 1% scientists in the world* e *Top 200 Wealth Advisors*.

9 maggio 2022

L'evento "United for Europe. The EU of young people" organizzato da un team guidato da **Stefania Baroncelli** che includeva **Monica Rosini**, **Hannes Hofmeister**, e **Roberto Farneti** ha vinto il premio *University 4 EU. Il tuo futuro, la nostra Europa* della Presidenza del Consiglio dei Ministri.

15 giugno 2022

Marco Mismetti, Cristina Bettinelli e **Alfredo De Massis** hanno ricevuto il *Family Firm Institute 2022 Best Unpublished Paper Award* per l'articolo "Conflict Origin and Management Mechanisms in Family Firms".

16 giugno e 7 ottobre 2022

Alfredo De Massis ha vinto premi *Best Paper* alle conferenze European Academy of Management per l'articolo "Family or Growth: The interplay between strategy and family business identity during the exogenous shock" (coautorato con Bingbing Ge e Rebecca V. A. Kleine) e 17th EIASM Workshop on Family Firm Management Research per l'articolo "Family leadership and radical innovation" (coautorato con **Ivan Miroshnychenko**, Lorenzo Ardito e Antonio Messeni Petruzzelli).

24 giugno 2022

Wunnam Basit Issah, Muhammad Anwar, Thomas Clauss, e **Sascha Kraus** hanno vinto il *IFERA 2022 STEP Pro-ject Global Consortium Best Paper* on Conference Theme per l'articolo "Managerial Capabilities and Strategic Renewal during the COVID-19 Crisis: A Generational View".

26 luglio 2022

Sara Longo ha ricevuto il Excellence in *International Accounting Reviewing Award* dall' American Accounting Association.

13 novembre 2022

Stefania Baroncelli ha ricevuto una *laurea Master Honoris Causa* dalla Società Italiana di Intervento sulle Patologie Compulsive "per la profonda umanità e disponibilità nel campo universitario nei confronti degli studenti e dei giovani, sia nell'insegnamento che nella promozione della tutela dei loro diritti".

15 dicembre 2022

Sascha Kraus è classificato al secondo posto nella *classifica dei migliori economisti d'impresa* stilata ogni due anni dalla rivista economica tedesca "Wirtschaftswoche".

20 dicembre 2022

Alfredo De Massis ha vinto il *Premio scientifico Alto Adige* per i risultati di spicco nella ricerca scientifica.

30 dicembre 2022

Alfredo De Massis è stato premiato *Top Cited Article* dalla rivista *Journal of Management Studies*.

Sascha Kraus ha ricevuto *Top Cited Article Awards* dalle riviste/organizzazioni "Contemporary Accounting Research", "European Management Review", "Business Strategy and the Environment", "R&D Management" e "Clarivate".

Paola Rovelli è stata premiata *Top Cited Article* dalla rivista *Strategic Entrepreneurship Journal* e *Journal of Management Studies*.

Design and Art

The publication "Shoot & Think: Negotiating Images", edited by **Eva Leitolf** and **Giulia Cordin**, received an *honourable mention* in the category "Innovative and Inclusive Teaching Models" in the competition for the XVI Premio Nazionale delle Arti 2022, launched by MIUR.

14 – 22 May 2022

The "BASTONI" project by **Kuno Prey** and his team were awarded *Universal Design-Expert Winner 2022* – and *Universal Design Gold Winner 2022* at the MCBW – Munich Creative Business Week. In parallel, the student project "stAbil" by **Samuel Simoni** received the *Audience Award Universal Design Consumer Award*.

Competence Centre for School Inclusion


28 marzo 2022

Per il progetto di inclusione "Quaranteland" dell'unibz e del Centro Servizi per il Volontariato Alto Adige OdV, l'Università di Macerata ha conferito a Vanessa Macchia il *Premio Nazionale per l'Inclusione 3.0*. Il premio è stato consegnato in occasione della Giornata Internazionale della Consapevolezza sull'Autismo e a conclusione della Settimana dell'Inclusione dell'Università di Macerata, nell'ambito di una cerimonia, trasmessa sulla radio web dell'Ateneo.

Competence Centre for Social Work, Social Pedagogy and Social Policy

10 October 2022

In correspondence to the annual World Girls' Day, the Provincial Advisory Council for Equal Opportunity in South Tyrol awarded three final theses that address equal opportunities and gender issues. **Sabine Tiefenthaler**, researcher at the Competence Centre received the *Research Prize* for her doctoral thesis with the title "Picturing Resilience. Eine feministisch ethnographisch-partizipative Studie über Resilienzprozesse von Frauen mit Fluchtbioografien in italienischen Notaufnahmезentren." The aim of her feminist ethnographic participatory study was to explore resilience processes of female asylum seekers in Italian emergency



centres in the context of institutional power relations. On one hand, the central dimensions of resilience processes of female asylum seekers were identified, and on the other hand, an epistemological question of how visual participatory methods can contribute to examine resilience was addressed.

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Universitätsplatz 1
Piazza Università 1
39100 Bozen-Bolzano · IT
+39 0471 011 000
info@unibz.it
www.unibz.it

Academic Supervision

Johann Gamper, Vice-Rector
for Research

Coordination

Karin Plank, Rectorate

Support

Press Office, Quality and Strategy
Development Office, Research and
Innovation Service

Steering Group

Johann Gamper, Daniela Kohlhuber,
Vicky Rabensteiner, Karin Plank,
Claudia Steger

Texts

Demis Basso, Thomas Bausch,
Massimiliano Bonacchi, Yuri Borgianni,
Attilio Carraro, Giulia Cavrini, Siglinde
Clementi, Nitzan Cohen, Nicola
Dalla Via, Giacomo De Luca, Heidrun
Demo, German A. Duarte, Susanne
Elsen, Daria Follenza, Matthias Gauly,
Gerhard Glüher, Marco Gobbetti,
Marjaana Gunkel, Ingrid Kofler,
Daniela Kohlhuber, Eva Leitolf, Ulrike
Loch, Fabrizio Mazzetto, Tanja Mimmo,
Marco Montali, Guido Orzes, Claus Pahl,
Angelika Peer, Vicky Rabensteiner,
Barbara Russo, Simone Seitz, Per
Linus Siming, Claudia Steger, Oswald
Überegger, Paul Videsott, Serena Volo,
Camilla Wellstein.

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Oswald Überegger

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Contacts

Rectorate
Franz-Innerhofer-Platz 8
Piazzetta Franz Innerhofer, 8
39100 Bozen-Bolzano · IT
+39 0471 010 200
rectorate@unibz.it

