

PHD PROGRAMME IN ENVIRONMENTAL SUSTAINABILITY AND WELLBEING

UNIVERSITY OF FERRARA

JOINT PHD WITH WESTERN SYDNEY UNIVERSITY

- <http://www.unife.it/studenti/dottorato/it/corsi/riforma/environmental-sustainability-and-wellbeing>
- **Duration:** 3 years
- **Admission:** academic qualifications and interview
- **Coordinator:** Prof. Paola Spinozzi
- **Head office:** Ferrara
- **Internationalisation:** Agreement between Università di Ferrara and Western Sydney University (Australia) for an International Joint PhD programme
- **Final Ph.D. title:** Ph.D. in Environmental Sustainability and Wellbeing
A double degree is awarded to students enrolled in the Joint PhD Programme between Università di Ferrara and Western Sydney University
- **Managing Department:** Studi Umanistici
- **Study abroad:** at least 6 months over the 3-year Ph.D. programme

METHODS, CONTENTS, GOALS

The innovative PhD programme in Environmental Sustainability and Wellbeing is interdisciplinary, intersectoral and international. Sustainability has been studied with diverse methods in various disciplines. The objective of this PhD programme is to train researchers who, starting from their specific background, will acquire interdisciplinary and integrated methodologies allowing them to understand, manage and enhance the sustainability of the environment in relation to the wellbeing of living organisms.

The training is based on the synergy among four macro-areas: 1. THE HUMANITIES AND THE SOCIAL SCIENCES; 2. ECONOMICS AND LAW; 3. ARCHITECTURE, URBAN PLANNING AND ENGINEERING; 4. LIFE, CHEMICAL AND BIOMEDICAL SCIENCES.

Socio-humanistic competences focus on the Ecological Humanities, Ecocriticism and Ecolinguistics; the management of cultural heritage; urban metabolism and waste prevention; inequality and energy transition; decision-making processes and participatory modelling; practices of social, educational and community theatre; pedagogical and psychosocial programmes of education to environmental and

cultural sustainability, ecological thought and healthy lifestyles, including subjects with disabilities or special needs.

Competences in environmental and innovation economics, econometrics and law focus on green, circular, and sharing economy applied to productive systems, labour market, smart mobility, green energy and finance, green and digital transformation, green policy evaluation and climate change.

Competences in architecture, urban planning and engineering focus on energy systems and machines; resilience and transition; GIScience and climate proof planning; renewable energy; energy and environmental management of houses, cities, and industries.

Competences in the life, chemical and biomedical sciences focus on ecological and genetic diversity; evolutionary potential of the species; assessment, monitoring and mitigation of effects deriving from anthropogenic activities and climate-changing, toxic substances; plastic adaptation of the human organism to different stages of health in relation to healthy lifestyles.

Researchers will be able to manage heritage, energy resources and productive activities in fragile habitats, situating the environment and wellbeing in a perspective of biological and cultural sustainability.

CAREER FIELDS

These skills will be appreciated in traditional and innovative sectors, at national and international level: 1. State, regional, local institutions in charge of the management and valorisation of the territory, biodiversity, cultural heritage; archaeological museums, parks, and zoos; research institutes such as ISPRA, EEA; non-profit organisms and NGOs such as WWF, Greenpeace, OIE, FAO, FWW, Oxfam; health agencies such as OMS, ECDC, OCSE; development agencies such as UNDP, UNIDO, UNEP, World Bank; 2. Industries, enterprises and law firms specialized in the management of renewable resources and building materials; reuse of secondary raw materials and reduction of processing wastes; reuse of consumer goods; 3. Agri-environmental sector, with reference to the assessment and prevention of administrative offences and environmental crimes; 4. Research centres and

laboratories for the prevention of disease and promotion of health and psycho-physical wellbeing.

Interdisciplinary and integrated skills acquired during the PhD programme can be employed in numerous professions, such as: researcher, teacher, populariser of cultures of sustainability and wellbeing from a holistic perspective; manager of educational institutions and services; designer and evaluator of programmes for the promotion of ecological behaviours in workplaces; manager of sustainable firms, museums, and archaeological sites; policy maker and legal expert in green, circular and sharing economy; expert in environmental planning in the construction process; planner and city manager for institutions and agencies for land management; energy manager; production manager; environmental toxicologist; certifier of sustainable and biological agriculture; expert in planning and application of services based on physical exercise for the wellbeing and life quality of communities and workplaces.

RESEARCH PROJECTS AND TEACHING ACTIVITIES

The interdisciplinary framework of the PhD programme in Environmental Sustainability and Wellbeing requires that each research project connects at least two among these four macro-areas: 1. THE HUMANITIES AND THE SOCIAL SCIENCES; 2. ECONOMICS AND LAW; 3. ARCHITECTURE, URBAN PLANNING AND ENGINEERING; 4. LIFE, CHEMICAL AND BIOMEDICAL SCIENCES.

The programme offers specific activities for each student and activities for all students. Specific activities for each student are defined by two supervisors, who represent the different macro-areas relevant to the research project and are chosen among all the members of the teaching staff. The supervisors constantly interact with each other and the student.

Activities for all students are characterized by the participation of national and international scholars and scientists, who are members as well as guests of the programme, and include: A. an intensive cycle of seminars, workshops and lectures at the beginning of the programme, in the month of November; B. a series of seminars and workshops from December to May; C. a one-week intensive module on multimedia communication skills.

The cycle of seminars and workshops in the month of November revolves around disciplinary and interdisciplinary research methods and topics.

The one-week intensive module aimed at teaching multimedia communication skills is organized at Se@Unife, <http://sea.unife.it/>.

Seminars and workshops from December to May are held by scholars and scientists from at least two different macroareas and consist of a series of meetings spanning the whole month.

The members of the Scientific Board work in the following fields:

	Surname	Name	University	Department	Academic Role	Sector	Macroareas	Scientific Sector
I. HUMANITIES AND SOCIAL SCIENCES – MACROAREA								
I.1. HUMANITIES								
1	SPINOZZI	Paola	Università di Ferrara, Italy	Dipartimento di Studi umanistici	Professore ordinario	10/L1	10	L-LIN/10 - English Literature
RESEARCH AREAS: 1. Literature and the visual arts, theories and methodologies of verbal-visual studies; 2. Literature and Science, science writing, narrativization of scientific theories; 3. Utopian Studies, with a focus on art and aesthetics, imperialism, racism, evolutionism; 4. The Ecological Humanities, Ecocriticism, and Sustainability Studies. Current theoretical research revolves around ecological thought in literature that can propel action for a sustainable environment. Utopian, post/apocalyptic and climate change fiction, ecopoetry and ecotheatre are studied to understand the interactions between humans and the environment, the impact of anthropogenic phenomena, post/apocalyptic visions, forms of resilience, adaptation, and regeneration.								
2	VIEIRA	Fátima	Universidade do Porto, Portugal	Departamento de Estudos Anglo-Americanos	Associate Professor	10/L1	10	L-LIN/10 - English Literature
RESEARCH AREAS: Utopian Studies with a focus on representations and visions of the future that have contributed to the construction of a better society. Her background in Literature and Culture, her methodology is based on Spatiality Studies and Digital Humanities (big data, spatial visualisation, distant reading). She has worked in the field of Food Studies and coordinated the ALIMENTOPIA - UTOPIAN FOODWAYS project, http://web3.letras.up.pt/alimentopia/ , investigating gender and social issues (Who prepares the food and for whom? Who cleans after the meals?) as well as sustainability issues (How is food produced? How is it distributed? What happens to the leftovers?). Currently she is working on how collective imagination may drive a real change, mainly as regards the construction of post-COVID-19 societies.								
3	CHAPMAN	Richard Stephen	Università di Ferrara, Italy	Dipartimento di Studi umanistici	Senior Lecturer	10/L1	10	L-LIN/12 English Language
RESEARCH AREAS: English language with a cultural and anthropological focus, using a methodology informed by teacher training. Publications include course-books for English language learners and studies reflecting interest in developments in the language from a sociolinguistic, textual, and pragmatic point of view. Language testing is another area of interest, involving participation in the development of regional examinations for the certification of language teachers in Italy, and the theoretical and practical evaluation of current language tests. Recent publications include work on computer-assisted language testing, corpus linguistics and the possible roles of English as a Lingua Franca and as a language of social division.								

4	FEDERICI	Eleonora	Università di Ferrara, Italy	Dipartimento di Studi umanistici	Associate Professor	10/L1	10	L-LIN/12 English Language
RESEARCH AREAS: Translation Studies, LSP - Languages for Special Purposes – specifically tourism and advertising, English language varieties, Gender Studies, Utopian and Science Fiction Studies. She has coordinated European projects on translation and memory. Currently she is working on Ecofeminism, eco-linguistics (specifically Critical Discourse Analysis) and translation of texts dealing with environmental sustainability and ecocriticism.								
5	SBONIAS	Konstantinos	IONIO – Ionian University, Corfu, Greece	Department of History	Associate Professor			L-ANT/01 Prehistory and Early History
RESEARCH AREAS: Landscape Archaeology and Aegean Prehistory. He is involved in numerous projects in the Cyclades, Crete, the Ionian Islands, and mainland Greece, focusing on landscape history and archaeology in a diachronic and interdisciplinary perspective. Research interests also include public archaeology, archaeological theory, and the application of GIS in the analysis of Mediterranean landscapes. He is currently taking part in two projects on cultural heritage and sustainable planning, involving local communities in the participatory planning, at Therasia Island and at the Ecomuseum of Southern Corfu.								
6	DUBBINI	Rachele	Università di Ferrara, Italy	Dipartimento di Studi umanistici	Lecturer	10/A1	10	L-ANT/07 Classical Archaeology
RESEARCH AREAS: Greek and Roman archaeology, landscape archaeology, history of Italian archaeology, anthropology and history of religions of the ancient world. In particular: 1. Study of the ancient world with a cultural and holistic approach and a focus on the construction of local identities in relation to landscapes and memories. 2. Public archaeology with a focus on the role of archaeology in contemporary Europe and the relationship between archaeology and the construction of national and local identities. 3. Sustainable management of cultural heritage.								
7	STEVENS	Saskia	Utrecht University, The Netherlands	Department of History and Art History	Associate Professor	10/A1	10	L-ANT/07 Classical Archaeology
RESEARCH AREAS: History and archaeology of the Roman Period. Her research focuses on the impact and significance of borders, and the dynamics of borderlandscapes in the Roman Empire. She is currently starting up a new project on the Roman frontier (<i>limes</i>) in the Netherlands: <i>Constructing the Limes</i> , https://limes.sites.uu.nl/ . She is also interested in Roman urbanism and city planning, domestic architecture and urban living conditions, and has done research and fieldwork in Rome, Ostia and Pompeii.								
8	THUN HOHENSTEIN	Ursula	Università di Ferrara, Italy	Dipartimento di Studi umanistici	Associate Professor	10/A1	10	L-ANT/10 Methods of Archaeological Research
RESEARCH AREAS: 1. Archeozoological and taphonomic analysis aimed at reconstructing the environment and food habits in paleontological, prehistoric, and protohistoric contexts; 2. Analysis of subsistence strategies in order to define the paleo-economic framework; 3. Analysis of strategies for the exploitation and sustainable use of resources in relation to the environment and climate change; 4. Reconstruction of artisanal manufacture of hard animal materials and amber; 5. Valorization of museum heritage and development of new digital solutions for disseminating scientific and humanistic culture and raising awareness about the cycles of nature and the anthropic impact on the environment over time.								
9	LIPANI	Giuseppe Domenico	Università di Ferrara, Italy	Dipartimento di Studi umanistici	Lecturer	10/C1	10	L-ART/05 Performing Arts
RESEARCH AREAS: 1. Italian Renaissance theatre, with a focus on sacred representations in the late Quattrocento and connections with courtly patronage and material culture practices; 2. Anthropology of performance, especially folk drama in Southern Italy, examined in its performative dimensions and used as a framework to understand society, its values and identity; 3. Applied theatre, in particular theatre and active citizenship, people's empowerment								

through the performing arts, theatre and the medical humanities, theatre in prison. He is the Director of Centro Teatro Universitario di Ferrara (University Theatre).

10	BERNARDELLI	Andrea	Università di Perugia, Italy	Dipartimento di Filosofia, Scienze sociali, umane e della formazione	Senior Lecturer	11/C4	11	M-FIL/05 Philosophy and Theory of Language
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RESEARCH AREAS: 1. Semiotics of text and textual pragmatics; 2. Narratology and narrative theory in literature and audiovisuals, with a focus on ethics and the representation of fictional characters such as villains and antiheroes in literature, cinema, and tv series; 3. Semiotic analysis of advertising and marketing communication, specifically the study of persuasive mechanisms in print and audiovisual advertising; 4. Representation of climate change in different media, in particular television fiction and docu-fiction; media representations of environmental sustainability.

I.2. SOCIAL SCIENCES

11	ALIETTI	Alfredo	Università di Ferrara, Italy	Dipartimento di Studi umanistici	Associate Professor	14/C1	14	SPS/07 General Sociology
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RESEARCH AREAS: Racism, discrimination, Islamophobia, Antisemitism, interethnic relations in urban setting, socio-spatial segregation, urban and housing policies, urban requalification of deprived areas. More recently he has worked on environmental justice, environmental racism, and social resilience. He serves as a member of the Scientific Board of *THEOMAI. Society, Nature and Development Studies Network* and *Culture della Sostenibilità - Cultures of Sustainability. International Journal of Political Ecology and Environment Culture*.

12	JAMES	Paul	Western Sydney University, Australia	Institute for Culture and Society	Professor	14/C1	14	SPS/07 General Sociology
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RESEARCH AREAS: 1. Globalization and its impact upon social relations from national community to local community. 2. Social change and the human condition, including the impact of modernization on customary and traditional ways of being. 3. Sustainability with an emphasis on sustainable urbanization. These areas of *engaged theory* encompass questions of social formation, social integration and ontological tension. Legislation passed by the parliament of Papua New Guinea in 2007 was based on his project on community resilience involving a study of 50 locales in Papua New Guinea, and he was invited to draft the accompanying documentation. His ongoing work on urban sustainability began with the UN Global Compact Cities Program, and extended to UN-Habitat, Metropolis, and United Cities and Local Governments (UCLG), to develop an alternative model of urban development called 'Circles of Sustainability', now used by cities around the world. Since 2014 he has worked as Scientific Advisor to the Senate Department for Urban Development and the Environment, Berlin.

13	SALAZAR	Juan Francisco	Western Sydney University, Australia	Institute for Culture and Society	Associate Professor	14/D1	14	SPS/10 Urban and Environmental Sociology
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RESEARCH AREAS: Social ecological change, anthropology of futures, scientific practices in extreme environments, environmental justice in community-based adaptation to climate change, social studies of outer space. He is an anthropologist and documentary filmmaker with a background in communication and media and anthropology. Since 2011 he has developed pioneering ethnographic work in Antarctica. Since 2016 he has been a University Research Theme Champion (Environment and Sustainability) and since 2020 an Australian Research Council Future Fellow. His work on Indigenous media in Latin America was widely recognised for its novel focus on the poetics of Indigenous video practices and for bringing together Latin American film theory and communication theory with media anthropology. Among his most known films as director are *De la Tierra a la Pantalla* (2004); *Nightfall on Gaia* (2015) and *The Bamboo Bridge* (2019).

14	MARESCOTTI	Elena	Università di Ferrara, Italy	Dipartimento di Studi Umanistici	Associate Professor	11/D1	11	M-PED/01 Theories and Science of Education and Social Education
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RESEARCH AREAS: Adult education in a theoretical, historical and pedagogical perspective and with a focus on contemporary adult identity and emerging educational needs; maturity / immaturity dialectic; consolidation of autonomy and awareness, assumption of responsibility; adult education in formal, non-formal, informal contexts and related policies and practices. She is currently conducting research on: environmental education of adults, a topic to which UNESCO, the United Nations, and the Council of Europe have started to devote attention; the role and responsibility of adults in the political choices that govern environmental sustainability; intergenerational dynamics that define behavioural models focused on the protection, management and preservation of environmental heritage, broadly understood as oikos.

15	ZAPPATERRA	Tamara	Università di Ferrara, Italy	Dipartimento di Studi Umanistici	Associate Professor	11/D2	11	M-PED/03 Methodologies of Teaching and Special Education
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RESEARCH AREAS: Theories and methodologies in educational processes, with particular relevance to the inclusion of people with disabilities and the training of educational professionals (teachers and educators). In particular she studies the evolution of handicap conceptualization and its influence on the culture of inclusion; learning environments, particularly schools, that can enhance the inclusion of people with special educational needs; higher educational contexts that address the inclusion of people with specific learning disorders (Dyslexia and others); psychoeducational and didactic approaches to autism spectrum disorders; adulthood of people with intellectual disabilities and their independent living opportunities through employment; body and sport activities as an educational medium in disability; pre-service and in-service teacher training addressed to equity and inclusion.

16	SCANDURRA	Giuseppe	Università di Ferrara, Italy	Dipartimento di Studi Umanistici	Associate Professor	11/A05	11	M-DEA/01 Demology, Ethnology and Anthropology
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RESEARCH AREAS: Urban Studies, Anthropology of Social Exclusion, Visual Anthropology and Anthropology of Literature. He is currently conducting research on the relationship between anthropology, literature, and territory. He serves as a member of the Scientific Committee of the Gramsci Institute Emilia-Romagna and of the trans-disciplinary research group *Urban Traces*. He is Co-Director with A. Alietti of the Laboratory of Urban Studies at the University of Ferrara and Co-Director with C. Cellamare of the *Italian Journal of Urban Studies*.

17	VISINTIN	Emilio Paolo	Università di Ferrara, Italy	Dipartimento di Studi Umanistici	Lecturer	11/E3	11	M-PSI/05 Social Psychology
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RESEARCH AREAS: 1. Theoretical and methodological skills of applied social psychology; 2. Social psychology of intergroup relations with a focus on prejudice and discrimination, intergroup contact, and cooperative learning; 3. Social identities, social norms, cultural and ethnic diversity. His quantitative research based on surveys and experiments is applied to socio-psychological phenomena in contexts such as schools, organizations, public offices. Currently his study focuses on the utilization, monitoring and evaluation of psychosocial programmes aimed at increasing pro-environmental attitudes and behaviours as well as environmental education in schools and universities, public and private workplaces.

18	CRABTREE	Louise	Western Sydney University, Australia	Institute for Culture and Society	Associate Professor	11/B1	11b	M-GGR/02 Economic and political geography
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RESEARCH AREAS: Social, ecological, and economic sustainability of community-driven housing developments in Australia; the uptake of housing innovation in practice and policy; complex adaptive systems theory in urban contexts; the interfaces between sustainability, property rights, institutional design, and democracy. Her work is underpinning the emergence of forms of permanently affordable and community-led housing in Australia, such as housing cooperatives and community land trusts, on which she is Australia's leading expert.

II. ECONOMICS AND LAW – MACROAREA

II.1. ECONOMICS

19	ANTONIOLI	Davide	Università di Ferrara, Italy	Dipartimento di Economia e Management	Associate Professor	13/A1	13	SECS-P/01 Economics
<p>RESEARCH AREAS: 1. Applied analysis through microdata of the relationships between environmental innovations and labour market characteristics, with a focus on industrial relations and worker training; 2. Circular economy and ‘Industry4.0 technologies’ at the firm level; 3. Credit restrictions, green finance and relationships with environmental innovations and the economic performance of the firm; 4. Technological innovation and organizational change, including the changes in the working conditions of employees; 5. Innovative activity of firms even in periods of economic recession; 6. Vertical integration between manufacturing and services; 7. Evaluation of public policies, in particular regional ones, in support of firms innovation.</p>								
20	MAZZANTI	Massimiliano	Università di Ferrara, Italy	Dipartimento di Economia e Management	Professor	13/A2	13	SECS-P/02 Economic Policy
<p>RESEARCH AREAS: Applied environmental economics related to sustainable development, climate change policies, environmental innovation, environmental policy design and assessment, waste management and policy, economic valuation of the environment, beyond GDP - green accounting issues. Inter- and multi-disciplinary perspectives encompass cultural heritage and policy, evaluation and management of marine resources and ecosystem services, bioeconomy and circular economy interlinkages, technological development in bio-based industries, behavioural change and cultural aspects of innovation adoption in low income communities.</p>								
21	NICOLI	Francesco	Università di Ferrara, Italy	Dipartimento di Economia e Management	Lecturer	13/A2	13	SECS-P/02 Economic Policy
<p>RESEARCH AREAS: 1. Applied analysis through macro- and micro-data of green technological change in the energy sector with a focus on renewable sources; 2. Circular economy and “Industry4.0 technologies” at the firm level; 3. Green technologies and their impact on firms’ competitiveness; 4. Evaluation of public policies, in particular national ones, in support of firms’ innovation; 5. nonmarket valuation techniques in the fields of environment (air, water, waste); endangered species; cultural heritage.</p>								
22	MUSOLESI	Antonio	Università di Ferrara, Italy	Dipartimento di Economia e Management	Associate Professor	13/A5	13	SECS-P/05 Econometrics
<p>RESEARCH AREAS: Climate econometrics, econometric policy modelling and the understanding of the process of generation of new knowledge and its effects on economic performances. Given the nonlinearity and complexity of most of the economic, social, and environmental processes, his focus is on non-semiparametric econometric methods, which reconsider simplistic assumptions and avoid possible functional misspecification of standard parametric models. Moreover, the increasing process of globalization and interactions across statistical units (such as country, firms, individuals) require reconsidering the assumption of independence across such units. In such a perspective, panel data econometric models are an extremely powerful tool as they allow to introduce cross-sectional dependence into the model.</p>								
23	VALDIVIESO GATICA	Gonzalo	Pontificia Universidad Católica de Chile	Campus Villarrica	Associate Professor	13/A4	13	SECS-P/06 Applied Economics
<p>RESEARCH AREAS: Local Development, Decentralization Process, Local Administration, Small and Medium Size Cities Development, Local Economy and Sharing Economy. His background is in Economics and Management of Innovation and Sustainability. He is involved in research projects on: Intercultural Relationships at local level, Ethno-tourism and Sustainable Tourism; education for sustainable development and mathematics in primary school. He is Director of the Campus Villarrica, Pontificia Universidad Católica de Chile, Araucanía Region, and a member of its Local Development Centre.</p>								
24	MOLDEREZ	Ingrid	Katholieke Universiteit Leuven, Belgium	Faculty of Economics and Business	Associate Professor	13/B2	13	SECS-P/08 Management

<p>RESEARCH AREAS: 1. Corporate social responsibility, social entrepreneurship, and grass root organisations, more specifically the sustainable transition process of an organisation, group, sector and the role of pioneers, incumbents, NGO's and/or the government in this process.; 2. Competences for sustainable development in higher education, i.e. different approaches of pedagogy to foster competencies for sustainable development such as service learning, serious games. The preferred research methods for both areas are case-study research, literature review and action research. Being an economist in the sense of Aristotle's 'oikonomia', i.e., taking care of the other, her focus is on how connections between system and the environment are or can be made. Her transdisciplinary approach involves organization theory, social theory, philosophy, economics, art, and literature. She coordinates macroeconomics for the bridging BA programme in Business Administration and corporate social responsibility.</p>								
25	DE FRANCESCHI	Alberto	Università di Ferrara, Italy	Dipartimento di Economia e Management	Associate Professor	12/A1	12	IUS/01 Private Law
<p>RESEARCH AREAS: 1. Private Law, Environmental Law, Intellectual Property Rights; 2. Italian and European Law of Obligation and Contracts, with a focus on the regulation of Digital Economy and Environmental Sustainability. He is a member of the National University Council. Since October 2015 he has been the Coordinator of the Digital Law Special Interest Group at the European Law Institute in Vienna and in 2020 he founded the Environmental Law Special Interest Group at the European Law Institute. He is Co-Editor of the <i>Journal of European Consumer and Market Law</i> and <i>The Italian Law Journal</i>.</p>								
26	MALOMO	Anna	Università di Salerno, Italy	Dipartimento di Scienze giuridiche - Scuola di Giurisprudenza	Associate Professor	12/A1	12	IUS/01 Private Law
<p>RESEARCH AREAS: Civil Law, Fundamental Rights and Bio-law, IT Law. More specifically, she studies issues of pathology and remedies in contract, monetary obligations, and civil liability. More recently she has worked on bioethics and environmental protection issues such as energy, environmental and climate change law and real estate, environmental torts, and civil liability.</p>								
27	LAZZARELLI	Federica	Università di Salerno, Italy	Dipartimento di Scienze giuridiche - Scuola di Giurisprudenza	Associate Professor	12/A1	12	IUS/01 Private Law
<p>RESEARCH AREAS: Contract law and IT law, with particular attention to telematic contracts and the identification of protections for the weak contractor, not attributable to the legislative category of "consumer", as well as the profile of the abuse of technological dependence, as a cause of contractual imbalance. The abuse of rights has been addressed also in relation to the regulation of obligations, with a focus on the conservation of the creditor's patrimonial guarantee. Further research interests are testamentary succession and real rights, in particular the condominium of buildings.</p>								
28	TERRYN	Evelyne	Katholieke Universiteit Leuven, Belgium	Faculty of Law	Professor	12/A1	12	IUS/01 Private Law
<p>RESEARCH AREAS: (European) consumer law, European contract law and the environmental aspects of Private Law, with a focus on the legal aspects of circular economy and sustainable consumption. She is the Co-Editor-in-Chief of <i>Tijdschrift voor Consumentenrecht</i> and a member of the Editorial Board of the Dutch <i>Toekomstbeelden voor Consumenten (Future Pictures for Consumers)</i>. She was a member of the Acquis group, the European Consumer Law Group, and the Consumer Law Enforcement Forum. She is Co-Editor (with J. Stuyck, H. W. Micklitz and D. Droshout) of the <i>Ius Commune Casebook on Consumer Law</i> (Hart, Oxford).</p>								
29	RUSSO	Luigi	Sapienza Università di Roma, Italy	Dipartimento di Scienze Giuridiche	Associate Professor	12/E3	12	IUS/03 Agricultural Law
<p>RESEARCH AREAS: European Union agricultural law and Common Agricultural Policy, with a focus on incentive law and regulatory law. With regard to the latter, he has studied the market of agri-food products, the application of antitrust law and legislation to protect the different bargaining power of agricultural producers on one side and huge operators in the retail sector and food processing industry on the other. His current research revolves around the impact of agricultural activity on biodiversity and the environment, as the recent Green Deal strategy developed by the Von Der Leyen Commission to support sustainable agriculture will lead to the adoption of new and</p>								

numerous regulatory acts aimed at ensuring food security for European citizens while respecting the environment and non-renewable resources.

30	MONGILLO	Roberta	Università del Sannio di Benevento, Italy	Dipartimento di Diritto, Economia, Management e Metodi quantitativi	Lecturer	12/B1	12	IUS/04 Business Law
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RESEARCH AREAS: 1. Consumer contracts regulation and intellectual property rights, with a focus on trademarks, industrial models, and copyright law, also in consideration of technology developments and in a comparative perspective; 2. Intellectual property rights, technological development, and environmental sustainability. With regards to International Treaties and Conventions on Intellectual Property and the Environment, she studies the impact of intellectual property rights on the management and mitigation of climate change, encouraging models based on the protection of fundamental human rights.

31	MICKLITZ	Hans Wolfgang	University of Helsinki, Finland	Faculty of Law	Professor	12/E3	12	IUS/05 Economics Law
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RESEARCH AREAS: European Private Law, European Consumer Law and regulatory aspects of sustainable development, with a focus on the legal aspects of circular economy. He is Finland Distinguished Professor of the Academy of Science at the Faculty of Law of the University of Helsinki. From 2007 to 2019 he was Professor at the Law Department of the European University Institute (EUI), Florence. Since 2015 he has been Head of the Advisory Board of the Max Planck Institute for Innovation and Competition, Munich. Since 1994 he has been Head of the Institute of European and Consumer Law (VIEW), Bamberg. In 2010 he received an ERC Advanced Grant in “European Regulatory Private Law” (2011-2016). He is Co-Editor of the *Journal of Consumer Policy*.

III. ARCHITECTURE, URBAN PLANNING, ENGINEERING – MACROAREA

III.1. ARCHITECTURE AND URBAN PLANNING

32	DAVOLI	Pietromaria	Università di Ferrara, Italy	Dipartimento di Architettura	Professor	08/C1	08a	ICAR/12 Architectural Technology
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RESEARCH AREAS: Interdisciplinary sustainable processes in architecture and the green built environment, especially at an energy-environmental level, aimed at mitigating climate change and saving non-renewable resources. Another interest is the refurbishment and sustainable retrofit of existing building heritage, especially homogeneous building stocks, urban aggregates and outdoor spaces. He participated in the international Solar Decathlon Middle East competition (Dubai, 2018) in the field of the new construction research with the design and construction of an innovative and energy-self-sufficient building prototype. He is the Director of the “Architettura>Energia” Research Centre.

33	CALZOLARI	Marta	Università di Parma, Italy	Dipartimento di Ingegneria e Architettura	Lecturer	08/C1	08a	ICAR/12 Architectural Technology
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RESEARCH AREAS: As a member of “Architettura>Energia” Research Centre she is interested in sustainable and interdisciplinary processes in architecture and the green built environment, especially at an energy-environmental level and with a focus on the historic cultural heritage. Over the years she has developed “simplified” tools and methods for the preliminary energy analysis and the elaboration of intervention scenarios on large building stocks, from social housing, to historic villages, and public buildings. Her research activity has been characterized by a strong interdisciplinary approach encompassing technological disciplines of the architectural project, technical-economic evaluation, and applied physics. She participated with the KnowHow-se team at Solar Decathlon ME, Dubai, 2018.

34	BOARIN	Paola	University of Auckland, New Zealand	School of Architecture and Planning	Lecturer	08/C1	08a	ICAR/12 Architectural Technology
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<p>RESEARCH AREAS: Sustainable conservation, retrofit and adaptation of existing and heritage buildings, regenerative design, post-occupancy evaluation (POE) and environmental sustainability assessment methods. She has collaborated with the Green Building Council of Italy since 2011 by leading the development of sustainability rating systems. This collaboration resulted in the development and publication of GBC Historic Building® (2015), the first rating tool assessing the level of sustainability of conservation-related interventions on historic and character buildings. She is involved in two research projects: “Bridging the gap between environmental sustainability and heritage conservation in New Zealand” (2017-2020) and “Learning from Trees: transforming timber culture in Aotearoa”, a design and fabrication project that will be exhibited at the 17th Venice Architecture Biennale, Italy.</p>								
35	BELPOLITI	Vittorino	University of Sharjah, United Arab Emirates	Department of Architectural Engineering, College of Engineering	Associate Professor	08/C1	08a	ICAR/12 Architectural Technology
<p>RESEARCH AREAS: Environmental design, energy retrofit, and building-integrated energy technologies, with the specific objective of merging the gap between academia and industry through R&D and cooperation with the productive/construction sector. His latest activity has mostly shifted to new construction, from the architectural scale to the detail of building-integrated systems, aiming for the improvement and marketability of green building technologies in cooperation with local and international industrial partners. The management and coordination of the projects participating to the Solar Decathlon Middle East 2018 and 2020 have enhanced the networking and partnership with numerous industrial partners and fostered several macro- and micro-researches. Comprehensive feasibility studies have resulted in guidelines for the energy/environmental refurbishment, upgrade, and valorisation of existing and heritage buildings, with regard to extensive mapping of the UAE educational buildings and of traditional Emiratis remote villages.</p>								
36	FRANZ	Gianfranco	Università di Ferrara, Italy	Dipartimento di Economia e Management	Associate Professor	08/F1	08a	ICAR/20 Urban and Regional Planning
<p>RESEARCH AREAS: City planning and management, regeneration and urban creativity, policies and tools for sustainability, smart and circular cities and territories. In the 90s urban planning was his major focus of interest, from 2003 to 2015 he coordinated the first international and interdisciplinary MA programme in <i>EcoPolis - Policies for Sustainability and Local Development</i> at the University of Ferrara. Since 2006 he has been involved in strategic planning practices in Italy and Brazil, has worked on urban regeneration and creativity, has developed policies and tools for smart cities and, recently, for circular cities and regions. Since 2017 he has elaborated theoretical views on cultures of sustainability, the Anthropocene, and Ecological Footprints, encompassing a humanistic, social, and economic perspective. At present ecological thinking and cross-disciplinary methodologies are at the core of his research.</p>								
37	MAGNI	Filippo	Università IUAV di Venezia, Italy	Dipartimento di Culture del Progetto	Lecturer	08/F1	08	ICAR/20 Urban and Regional Planning
<p>RESEARCH AREAS: Construction of management policies and planning tools for urban adaptation aimed at shifting the focus from an emergency approach to an ex ante and structural one. This method is based on the study of local governance systems, the barriers that still hinder climate proof planning processes, and the implications of innovative urban planning tools on social equity and economic development. He has combined theory and practice in three European projects: INTERREG-Med COEVOLVE; LIFE MASTER-ADAPT - MAInSTreaming Experiences at Regional and Local Level for ADAPTation to Climate Change; INTERREG Italy-Croatia ADRIADAPT, in which he is the coordinator of the technical unit.</p>								
38	MARAGNO	Denis	Università IUAV di Venezia, Italy	Dipartimento di Culture del progetto	Lecturer	08/F1	08	ICAR/20 Urban and Regional Planning
<p>RESEARCH AREAS: Environmental and urban assessment, remote sensing analysis, geostatistics, climate impact prediction and climate proof planning. His background is in Geography and Information and Communication Technologies for Urban and Environmental Planning. At present he is working on the assessment of risk and vulnerability of cities and coast caused by climate change and on the design of adaptation solutions. Since 2013 he</p>								

has been involved in three EU funded projects on maritime spatial planning and experimentation of climate change adaptation: ADRIPLAN - ADRIatic Ionian Maritime Spatial PLANning (2013-2105); SUPREME - Supporting Maritime Spatial Planning in the Eastern Mediterranean (2016-2018), SIMWESTMED - Supporting Maritime Spatial Planning in the Western Mediterranean Region (2016-2018).

39	MARI Marco	Marco	GBC - Green Building Council, Italy	Comitato direttivo	Vicepresident	08/F1	08	ICAR/21 Urban and Landscape Planning
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RESEARCH AREAS: Green buildings and products, urban regeneration, sustainable communities. A lifelong sustainability advocate with over 20 years of experience in buildings and products, green rating tools and process certification schemes. He has led multinational firms, worked on the definition of the main assessment schemes for sustainable construction and urban regeneration, and taken part in the regionalization process of LEED - Leadership in Energy and Environmental Design protocols for Italy and Europe. Since 2012 he has contributed to the definition of the main national green building rating systems, such as GBC Home (for residential and hotel buildings), GBC Quartieri (for neighbourhoods design and regeneration), GBC Condomini (for Condominiums refurbishment), GBC Historic Building (for heritage buildings restoration), ARCA (for new wooden buildings). Since 2014 he has taken part in the development and launch of the first international platform dedicated to Sustainable Projects, People and Products (ongreening.com). Since 2016 he has worked with the Italian Ministry of the Environment on the definition of the minimum environmental criteria for buildings and roads, related to Green Public Procurement (GPP).

40	BUILES VÉLEZ	Ana Elena	Universidad Pontificia Bolivariana - Medellín, Colombia	Escuela de Arquitectura y Diseño - Facultad de Diseño de Vestuario	Associate Professor	08/F1	08	ICAR/21 Urban and Landscape Planning
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RESEARCH AREAS: 1. Urban and Fashion Studies, with a focus on sustainable economic processes, such as the production and consumption of fashion and its impact on the city; design, innovation and creative districts in cities; 2. Urban sustainability and wellbeing related to urban transformation, social innovation and creative process with communities, collaborative and participatory process for urban transformation and renovation. 3. Eco-design, Product Life Cycle, and their impact on the urban configuration. 4. Caribbean Studies, with a focus on landscape, sustainability, migrations, and decolonization processes in Colombian Caribbean Literature.

III.2. ENGINEERING

41	PINELLI	Michele	Università di Ferrara, Italy	Dipartimento di Ingegneria	Associate Professor	09/C1	09	ING-IND/08 Fluid Machinery
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RESEARCH AREAS: His activity in the field of Fluid Machinery mainly deals with the development of techniques for the numerical estimation of turbine and compressor behaviour in deteriorated conditions, the development of a small scale compressor test rig for the analysis of transient behaviour, water and dust ingestion, stall and surge conditions of small scale compressors. He is also involved in Energy and Environment related issues such as the study of innovative energy systems in micro-cogeneration applications, with particular attention to waste heat utilisation in ORC systems, and the study of the utilisation of biomass for the production of syngas.

IV. LIFE, CHEMICAL AND BIOMEDICAL SCIENCES – MACROAREA

IV.1. LIFE SCIENCES

42	BERNARDI	Massimo	MUSE - Museo delle Scienze, Trento, Italy	Sezione di Geologia e Paleontologia	Curator		04	GEO/01 Paleontology and Paleocology
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RESEARCH AREAS: Mass extinction in the past; preservation and enhancement of paleontological heritage and cultural heritage; the concept of Anthropocene in a multidisciplinary perspective; scientific museology. Since 2013

he has been palaeontology curator at MUSE - Science Museum in Trento, <https://www.muse.it/en/Pages/>; since 2017 he has been Head of the Research and Collections area. He is currently working on narratives, perceptions, and factual data regarding the great ecosystem crises such as extinctions in the geological past and in the present, exploring synergies between conservation paleobiology, the philosophy of the Anthropocene, and science communication.

43	HAUFFE	Heidi Christine	Fondazione Edmund MACH, Italy	Dipartimento di Biodiversità ed Ecologia Molecolare	Senior Lecturer		05	BIO/05 Zoology
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RESEARCH AREAS: She leads the Conservation Genetics Research Unit at the Department of Biodiversity and Molecular Ecology, FEM - Fondazione Edmund Mach in Trento, <https://www.fmach.it/eng>. The main goal of this research group is to provide the scientific basis for interventions aimed at halting animal population decline. More specifically, we investigate the role of genomic diversity in population dynamics of charismatic alpine vertebrates, microbiota in the conservation status of endangered species, and hybrid zones in speciation. We also develop and apply genomic and metagenomic tools to specific animal conservation issues, from amphibians and fish to game birds and large carnivores, and are particularly specialized in the analysis of non-invasive samples, such as feathers and faecal pellets, with dedicated laboratories for the analysis of modern, environmental and ancient animal DNA.

44	MISTRI	Michele	Università di Ferrara, Italy	Dipartimento di Scienze chimiche e farmaceutiche	Associate Professor	05/C1	05	BIO/07 Ecology
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RESEARCH AREAS: Plastic pollution at sea and aquaculture at the Delta of the Po River. As regards the first area, he studies methods for the separation and recognition of micro and nanoplastics in environmental and biological matrices, monitors plastics in continental, marine-coastal and offshore water bodies (water column and sediments), and studies the accumulation of micro and nanoplastics in the marine trophic network (invertebrates and vertebrates) with a focus on species of commercial interest. As regards the second area, he works on the optimization of mollusc aquaculture production and reduction of waste in a circular economy perspective; on innovative strategies for the recovery of waste in aquaculture; on the environmental footprint of aquaculture products and activities.

45	MUNARI	Cristina	Università di Ferrara, Italy	Dipartimento di Scienze chimiche e farmaceutiche	Associate Professor	05/C1	05	BIO/07 Ecology
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RESEARCH AREAS: Biodiversity and aliens and long-term ecological research. As regards the first area, activities concern the implementation of knowledge related to the composition of benthic invertebrate communities in aquatic environments; the analysis of the presence and spread of alien species as well as their effect on indigenous biodiversity, especially in transition environments and commercial and tourist ports in the northern Adriatic Sea. As regards the second area, long-term ecological research is fundamental to understand patterns and processes underlying aquatic ecosystem dynamics: coastal lagoons are also considered to be one of the most vulnerable marine environments in the face of climate change and its effects, in particular large-scale impacts, such as increased temperatures, storminess, and changes in sediment dynamics. The aim is thus to provide information on ecological responses in transitional ecosystems.

46	BURNS	Jorge Sans	Politehnica of Bucharest, Romania	Faculty of Medical Engineering	Professor	05/F1	05	BIO/13 Experimental Biology
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RESEARCH AREAS: A health scientist today needs to embrace many aspects involved in understanding disease processes at a cellular level. The past decades have revolutionised the pace of technology, communication and scientific understanding. My predominantly cell-based experience has focused on maladies prevalent in ageing populations, namely cancer and bone morbidities. Disparate research fields have found greater harmony, combining genomes and proteomes. Chemical approaches to medicine have evolved to those recruiting our immune system plus a quest to exploit the regenerative potential of stem cells. Just as stone, bronze and iron ages defined human progress, new nanomaterials allow the development of potent biosensors to enhance diagnosis and therapy. The broadening qualities of medical research beckon an increasingly multidisciplinary approach for effective benefit to society.

47	BERTORELLE	Giorgio	Università di Ferrara, Italy	Dipartimento di Scienze della vita e biotecnologie	Associate Professor	05/11	05	BIO/18 Genetics
<p>RESEARCH AREAS: He is a population geneticist interested in the evolution and conservation of several species (e.g., Apennine brown bear, Hermann's tortoise, the yellow-bellied toad). With his Population Genetics and Genomics group, is.gd/popgg, he explores the patterns of genomic variation to reconstruct demographic and selection processes, with a focus on the impact (e.g., genetic load, genetic fragmentation, evolution of new traits) of recent human activities (e.g., habitat degradation, overhunting, domestication). He is interested in the application of population genomics analyses to help planning more responsible and efficient strategies to prevent biodiversity loss and to foster environmentally sustainable development.</p>								
48	MONA	Stefano	École Pratique des Hautes Études, France	Muséum national d'Histoire naturelle	Maître de Conférences	05/11	05	BIO/18 Genetics
<p>RESEARCH AREAS: Theoretical and empirical population genetics, conservation genetics, evolution of sharks and bony fishes, connectivity in the Indo-Pacific, and urbanization. The common theme linking these fields is the reconstruction of the demographic history of populations and species in space and time. His focus is on the properties and limits of inferential framework currently used in population genetics, particularly when spatial structure is present. This is crucial to interpret the observed demographic variation in response to climate changes and/or human modification of the environment, with practical consequences on the management of (threatened) species. Two research topics particularly relevant to the PhD programme are: 1) The study of the behaviour of extant species in the next future, based on the variation of genetic diversity through time 2) The use of sequencing approaches to detect and quantify the genomic footprints left by species adapted to live in sympatry with humans in urban environments.</p>								
IV.2. CHEMICAL SCIENCES								
49	PASTI	Luisa	Università di Ferrara, Italy	Dipartimento di Scienze chimiche e farmaceutiche	Professor	03/A1	03	CHIM/01 Analytical Chemistry
<p>RESEARCH AREAS: The health of lagoons and enclosed sea bays depends on the management of pollutant loads. It is therefore important to evaluate and understand the dynamics of the generation, transportation, and transformation processes of pollutants. To assess the impact on ecosystems, it is also necessary to evaluate the contamination in biotic and abiotic samples. Monitoring and detailed process studies of multiple sites in the Adriatic Sea involve a multidisciplinary team of biologists and economists who evaluate the socioeconomic impact of pollution. The aims are: to develop and apply targeted quantitative methods for the analysis of contaminants in biotic and abiotic samples; to develop and apply chemometrics tools to evaluate data (temporal and spatial variation) and examine possible correlations; to collaborate with multidisciplinary teams to integrate the data in a socioeconomic context.</p>								
50	PIETROGRANDE	Maria Chiara	Università di Ferrara, Italy	Dipartimento di Scienze chimiche e farmaceutiche	Associate Professor	03/A1	03	CHIM/01 Analytical Chemistry
<p>RESEARCH AREAS: Chemical and toxicological characterization of atmospheric particulate matter. 1. Environmental analytical chemistry, in particular the development and application of analytical methods for chemical characterization of complex environmental samples; 2. Air quality monitoring through quantitative analysis of constituents of airborne particulate matter, mainly chemical markers to assess primary emission sources and secondary atmospheric processes; source apportionment studies; 3. Study of Oxidative Potential of atmospheric PM and development and application of cell-free assays for OP measurement; 4. Use of OP assays for assessing PM toxicity, with a focus on the importance of the chemical and physical properties of PM on toxic effects caused by exposure.</p>								
51	DECESARI	Stefano	CNR, Bologna, Italy	ISAC-CNR	Lecturer	03/A1	03	CHIM/01 Analytical Chemistry
<p>RESEARCH AREAS: As a senior researcher at the Institute of Atmospheric Sciences and Climate (ISAC) of the National Research Council of Italy (CNR) he observes atmospheric composition changes and investigates air</p>								

pollution and climate interactions. Questions at the core of his research are: What are the feedbacks of climate change on the emissions and lifecycle of air pollutants? To what extent have past air quality policies inadvertently affected the atmospheric levels of climate forcing agents? Can we measure such perturbations above natural variability? What strategies should be prioritized to improve air quality in our cities and achieve fast decarbonization?

IV.3. BIOMEDICAL SCIENCES

52	HURWITZ	Brian	King's College London, United Kingdom	Centre for the Humanities and Health	Professor	06/B1	06	MED/09 Internal Medicine
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RESEARCH AREAS: Strong interdisciplinary orientations stemming from interests in philosophy, law, and the history of ideas as well as in clinical medicine. His research in medical humanities has produced empirical studies of the sources of ethical perplexity experienced by clinicians; the value of oaths, codes of conduct, the ethical case history in medical education, patients' attitudes to whole body donation; GPs' reactions to their ever-growing list of dead patients; the role of narrative thinking in medical practice. His study of medico-legal issues has focused on defining the legal status of clinical guidelines and medical advisory statements (by analysis of evolving UK case law in medical negligence actions), medical error, medico-legal issues in primary health care. Evaluating new and effective care strategies in general practice, he has been a lead researcher on randomised controlled trials, systematic reviews, and meta-analyses. He has directed cross-disciplinary research in the Medical Humanities within the Centre for the Humanities and Health at King's College London.

53	GRAZZI	Giovanni	Università di Ferrara, Italy	Dipartimento di Scienze biomediche e chirurgico specialistiche	Associate Professor	06/N2	06	M-EDF/01 Methods and Teaching of Motor Activities
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RESEARCH AREAS: Exercise Physiology; Exercise Testing in health- and performance-related fitness domains; Epidemiology and cardiovascular health profile. He has developed and validated protocols for exercise testing and prescription in the prevention and treatment of non-communicable, mainly cardiovascular chronic diseases, but also in chronic degenerative neurological disorders as well as colon cancer. Knowledge and skills acquired during the scientific activity have been transferred to programmes of public health in the promotion of active lifestyle for persons with non-communicable chronic diseases.

54	MANFREDINI	Fabio	Università di Ferrara, Italy	Dipartimento di Scienze biomediche e chirurgico specialistiche	Associate Professor	06/N2	06	M-EDF/01 Methods and Teaching of Motor Activities
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RESEARCH AREAS: Development of original and effective programmes of physical activity and exercise to improve health and wellbeing, social participation, and autonomy of healthy or sick people. In particular: 1. Development of sustainable interventions with exercise, to overcome hypomobility, disability, social isolation, risk of amputation of a limb and death in frail or sick subjects; 2. Identification of circulating or technological biomarkers useful for exercise prescription and evaluation of the physiological effects. Research is based on the application of sustainable doses of physical exercise, the identification of circulating or technological biomarkers to personalize the interventions and evaluate or predict the effects, the study and application of devices facilitating adaptive responses. Outcomes concern life quality, psychological status, functional capacity, reduction of disability, better or greater survival. Students will participate in: 1. qualitative studies on preferences and barriers (physical, cultural, linguistic, gender-related) to physical activity; 2. studies of physical activity and the environment (home, hospital, community, nature, virtual reality); 3. design and validation of questionnaires, devices or multimedia tools; 4. analysis of cost-effectiveness of interventions.

55.	LAMBERTI	Nicola	Università di Ferrara, Italy	Dipartimento di Scienze biomediche e chirurgico specialistiche	Lecturer	06/N2	06	M-EDF/01 Methods and Teaching of Motor Activities
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RESEARCH AREAS: Development of original and effective programmes of physical activity and exercise to improve health and wellbeing, social participation, and autonomy of healthy or sick people. In particular: Evaluation of effectiveness (functioning, quality of life, clinical outcomes) and cost-effectiveness of the interventions in special populations. Creation, testing and validation of new solutions in terms of training tools and machines for frail populations.								
565	MAZZONI	Gianni	Università di Ferrara, Italy	Dipartimento di Scienze biomediche e chirurgico specialistiche	Associate Professor	06/N2	06	M-EDF/01 Methods and Teaching of Motor Activities
RESEARCH AREAS: Relationship between physical inactivity and non-transmissible (metabolic, cardiovascular, and neoplastic) diseases. He has directed projects of medical assistance (including physical activity) for patients with diabetes, obesity, hypertension and reduced cardiovascular function. These projects have been included in the health programmes of the Emilia-Romagna Region. He has been the coordinator of physiological training programmes and medical assistance for athletes at international level (especially canoeists). He is a member of the Technical Committee of the Italian Ministry of Health.								
57	ZACCAGNI	Luciana	Università di Ferrara, Italy	Dipartimento di Scienze biomediche e chirurgico specialistiche	Lecturer	06/N2	06	M-EDF/02 Methods and Teaching of Sports Activities
RESEARCH AREAS: Relationships between anthropometric characteristics and physical activity at different ages (childhood, adolescence and adulthood); body composition assessment and body image perception; weight status, fat status and healthy lifestyle; relationship between sports performance and anthropometry; anthropometry, physical activity and immigrant status; application of video analysis to analyse and improve sports performance.								

RESEARCH COLLABORATIONS WITH NATIONAL AND INTERNATIONAL INSTITUTIONS

Activities include research collaborations with national and international institutions: Western Sydney University - WSU; Istituto Superiore per la Protezione e la Ricerca Ambientale - ISPRA; Fondazione Edmund Mach - FEM; TECNALIA Research and Innovation; Centre for the Humanities and Health - CHH, King's College London; Katholieke Universiteit Leuven; Pontificia Universidade Católica de Chile, Santiago and Villarrica - PUC; Pontificia Universidade Católica do Paraná, Curitiba, Brazil - PUCPR.

Research on theories, policies, and good practices of sustainability is at the core of the Joint PhD with WSU. UniFe and WSU work within the *Routes towards Sustainability University Network*, <https://www.routesnetwork.net/>, founded in 2012, coordinated by UniFe and formed by universities from all continents, working together to promote innovative research and teaching on environmental economic, social and cultural sustainability. Paul James, Professor of Globalization and Cultural Diversity, is the

Coordinator of the PhD in Sustainability and Director of the Institute for Culture and Society - ICS, <https://www.westernsydney.edu.au/ics>, internationally renowned for interdisciplinary and innovative research on environmental crises, global civilization, technological transformations, economic instability, geopolitical changes, transnational mobility and urbanization. The ICS, with its series of seminars and annual Knowledge/Culture symposia attracting world-renowned scholars, provides an excellent research environment.

The Istituto Superiore per la Protezione e la Ricerca Ambientale – ISPRA (Italian Institute for Environmental Protection and Research) takes part in the programme by providing scientific, technological, cultural methods and tools to monitor sources and factors of pollution, enhance health care, acquire skills in environmental law and economy.

The Fondazione Edmund Mach – FEM provides opportunities for conducting research in labs specialised in the characterization of genomic diversity and for interacting with experts in molecular ecology, sustainable ecosystems and food quality.

TECNALIA Research and Innovation, based in Bilbao and Valencia, is a member of the *Green.eu* Horizon 2020 project and *Inno4sd.net - Innovation for Sustainable Development Network*, www.inno4sd.net, managed by the Department of Economics and Management. The facilities in Spain will be available for students who want to investigate green and circular economy as well as the design and analysis of environmental innovations in regional contexts.

Collaboration with the Centre for the Humanities and Health – CHH directed by Prof. Brian Hurwitz at King’s College London started in 2006 within the *Interfacing Science, Literature and the Humanities* Socrates-Erasmus European Thematic Network. Students will have the opportunity to spend research periods at CHH, a world-leading institution in the Medical Humanities.

Katholieke Universiteit Leuven hosts the research group on *Consumer Protection in a Circular Economy*, coordinated by Prof. Evelyne Terryn and formed by economists, engineers, philosophers, and lawyers. Interacting with them, students will be able to acquire interdisciplinary knowledge on circular economy in productive processes and the use of resources.

Collaboration with Pontificia Universidade Católica de Chile in Santiago and Villarrica - PUC and Pontificia Universidade Católica do Paraná, Curitiba, Brazil - PUCPR began in 2012 with the foundation of the *Routes towards Sustainability* University Network. Students will be able to contribute to research teams working on local and regional sustainability at PUC and sustainable architecture and design at PUCPR.

SYNTHESIS

The central theme is sustainability as a complex system based on the interdependence between natural and anthropic ecosystems and the material and immaterial wellbeing of the organisms that live in it. The synergy of the sectors will support innovative methodologies aimed at developing the cultural and scientific competences needed to understand that the renewal of natural resources, management of cultural heritage, and quality of human and non-human life are deeply interconnected.

ERC SECTORS

The study of environmental sustainability and wellbeing encompasses various ERC sectors:

SOCIAL SCIENCES AND HUMANITIES

SH1 Individuals, Institutions and Markets: Economics, finance and management

SH2 Institutions, Values, Beliefs and Behaviour: Sociology, social anthropology, political science, law, communication, social studies of science and technology

SH3 Environment, Space and Population: Environmental studies, geography, demography, migration, regional and urban studies

SH4 The Human Mind and Its Complexity: Cognitive science, psychology, linguistics, education

SH5 Cultures and Cultural Production: Literature and philosophy, visual and performing arts, music, cultural and comparative studies

SH6 The Study of the Human Past: Archaeology, history and memory

PHYSICAL SCIENCES AND ENGINEERING

PE4 Physical and Analytical Chemical Sciences: Analytical chemistry, chemical theory, physical chemistry/chemical physics

PE8 Products and Processes Engineering: Product design, process design and control, construction methods, civil engineering, energy systems, material engineering

PE10 Earth System Science: Physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, ecology, global environmental change, biogeochemical cycles, natural resources management

LIFE SCIENCES

LS2 Genetics, Genomics, Bioinformatics and Systems Biology: Molecular and population genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology, genetic epidemiology disorder)

LS6 Immunity and Infection: The immune system and related disorders, infectious agents and diseases, prevention and treatment of infection

LS7 Diagnostic Tools, Therapies and Public Health: Aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics

LS8 Evolutionary, Population and Environmental Biology: Evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, ecotoxicology, microbial ecology.