

Project title	Disciplines	Supervisor	Abroad attendant	Subsidiary supervisor
Faculty of Biology and Environment Protection				
Root microbiomes as controls of P use efficiency in woody crops	biology, chemistry	Dr hab. Katarzyna Hryniewicz, prof. NCU	Dr. hab. Christel Baum, University of Rostock, Germany	Dr Małgorzata Szultka-Młyńska
Phosphodiesterases in higher plants - the missing element in cyclic nucleotide signal transduction in plants	biology, chemistry	Dr hab. Krzysztof Jaworski	Prof. Christoph Andreas Gehring, Univeristy of Perugia, Italy	dr Anna Kozakiewicz
Climate changes and xylem plasticity of gymnosperms tree species as an adaptation to droughts in Europe	biology, geography	Dr hab. Marcin Koprowski	Dr Jozica Gricar, Slovenian Forestry Institute Ljubljana, Słowenia	Dr Aleksandra Pospieszńska
Effects of extremely low-frequency magnetic field in the brain of rats	biology, physics	Dr hab. Justyna Rogalska, prof. NCU	Prof. Jonathan Seckl, The University of Edinburgh, UK	
Novel plant adenylyl cyclases and their functions in signal transduction and plant responses to the environment	biology, chemistry	Dr hab. Adriana Szmidt-Jaworska, prof. NCU	Prof. Christoph Andreas Gehring, Univeristy of Perugia, Italy	dr Anna Kozakiewicz
Immunomodulation and antidepressant properties of Whole Body Hyperthermia	biology, social sciences (behavioral sciences, psychology)	Dr hab. Sylwia Wrotek	Dr. rer. nat. Alexander von Ardenne, Von Ardenne Institute of Applied Medical Research, Germany	Dr. Małgorzata Rębiałkowska-Stankiewicz, Kazimierz Wielki University in Bydgoszcz
Possibilities of using new natural and synthetic biocides to obtain copolymers with biocidal properties	biology, polymer and biopolymer chemistry	Dr hab. Maciej Walczak	Dr hab. Marcela Pejchalova, Uniwersytet w Pardubicach, Republika Czeska	Dr Dagmara Bajer

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Role of selected ligands in structural changes and activity of GPCR receptors	physics, biophysics, biology (neurobiology)	Prof. dr hab. Wiesław Nowak	Prof. Bruno Lapied, University of Angers, France	Dr Karolina Mikulska-Rumińska
MicroRNA expression analysis during oocyte maturation and fertilization in Polish HF and Polish Red cattle	agriculture science (specialization: zootechnic, animal genetics), veterinary science (reproductive biology, animal genetics)	Prof. dr hab Chandra S. Pareek	Prof. Haja Kadarmideen, Technical University of Denmark	dr Kacper Żukowski
Faculty of Chemistry				
Microbiological degradation of nano- and microplastics in the environment	chemical sciences, biological sciences	Dr hab. Tomasz Kowalkowski, prof. NCU	Hlanganani Tutu, Ph.D., Associate Professor, WITS University, Republic of South Africa	Dr Sonia Szymańska
Aromaticity in fluorescent compounds	chemical sciences, physical sciences	Dr hab. inż. Borys Ośmiałowski, prof. NCU	Prof. Denis Jacquemin University of Nantes, France	Dr Paweł Tecmer
Ruthenium(II) complexes with flavonoid derivatives. Cytotoxic activity and mechanistic insight in biological studies	chemical sciences, biological sciences	Dr hab. Joanna Wiśniewska	Dr hab. Ralph Puchta	Dr Ewa Maj, Polish Academy of Sciences, Wrocław
Implementation of nanomaterials in the conservation of damaged paintings and destroyed paper objects	chemical sciences, arts, art conservation and restoration	Prof. dr hab. Wojciech Kujawski	Prof. Carmen Garcia Payo, University Complutense of Madrid, Spain	Dr Barbara Wagner, University of Warsaw

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Faculty of Languages				
Pointing and language acquisition: an eye-tracking and EGG study of infants and toddlers (8-18 month-olds).	linguistics; cognitive science	Prof. dr hab. Włodzisław Duch	Prof. Jordan Zlatev, Lund University, Sweden	
Towards a New Poetics of Space: Intersections of the Feminine and the Environmental in North American Indigenous Fiction in English	languages and literature: literary studies; social sciences: social and economic geography	Dr hab. Anna Branach-Kallas, prof. NCU	Dr Mark Jackson, University of Bristol, UK	
Faculty of Physics, Astronomy and Informatics				
Breaking the curse of dimension in computational many-body physics and chemistry: simplified and inexpensive Coupled-Cluster-type methods to provide an efficient and robust computational model for the electronic structure of complex molecular systems	physics, chemistry	Prof. dr hab. Ireneusz Grabowski	Prof. dr Örs Legeza, Wigner Research Center for Physics, Hungary	Dr Katharina Boguslawski
Printed plasmonics for efficient biosensing	biophysics, chemistry	Prof. dr hab. Sebastian Mackowski	Sabine Szunerits Université de Lille, France	Dr Joanna Niedziolka-Jonsson
Few- and many-body physics of distinguishable fermions: from interactions in ensembles of fermionic atoms to biomolecules	physics, chemistry	Dr hab. Piotr Żuchowski	Prof. Konrad Patkowski, Auburn University, USA	Dr Dariusz Kędziera
A new formation mechanism for low surface-brightness galaxies and implications for dark matter (astronomy, atomic physics)	astronomy, physics	Dr hab. Boudewijn Roukema, prof. NCU	Dr hab. Krzysztof Bolejko, University of Sydney, Australia	Dr Sławomir Bilicki

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Statistics of null geodesics of photons on cosmological scales (astronomy, atomic physics)	astronomy, physic	Dr hab. Boudewijn Roukema, prof. NCU	Dr hab. Krzysztof Bolejko, University of Sydney	Dr Sławomir Bilicki
Atomistic calculations of nanostructures: from semi-empirical to ab-initio approaches	physics, chemistry	Dr hab. Michał Zieliński, prof. NCU	Val Zwiller, KTH, Szwecja	Dr Mariusz Pawlak
Preparation of mixed crystals of All-BVI compounds with selected rare earth elements and transition metals, and their characterization for optoelectronic applications	physics, chemistry	Dr hab. Beata Derkowska-Zielińska	Dr Detlef Rogalla, Ruhr-Universität Bochum, Germany	Dr Robert Szczęsny
Faculty of Mathematics and Computer Science				
Dynamic aspects of combinatorial algorithms and of the asymptotic representation theory.	mathematics, computer science	Prof. dr hab. Piotr Śniady	Benoit Collins, associate professor, Kyoto University, Japan	dr Kamila Barylska
Faculty of Economic Sciences and Management				
People in Organizations	management and public policy studies	Prof. dr hab. Aldona Glińska-Noweś	Prof. dr hab. Miguel Pereira Lopes, University of Lisbon, Portugal	
Application of Data Mining, Artificial Intelligence and Analytics in Decision Support	economics, computer science	Dr hab. Sylwester Bejger	Prof. Dr. Mathias Moersch, Hochschule Heilbronn, Germany	Dr Krzysztof Rykaczewski
Faculty of History				
Religious foundations in medieval Stockholm	history, ethnology	Dr hab. Piotr Oliński, prof. UMK	Prof. Kurt Jensen, Stockholm University, Sweden	Dr Rafał Kleśta-Nawrocki

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Faculty of Earth Sciences				
Reconstruction of air temperature and atmospheric precipitation in Chelmińsko-Dobrzyńskie Lakeland from the 13th century to present using stable carbon and oxygen isotopes from tree rings	geography, biology	Prof. dr hab. Rajmund Przybylak	Dr Iain Robertson, Swansea University, Great Britain	Dr Radosław Puchałka
Late Weichselian glacial megafloods at the southern sector of the Scandinavian ice sheet: geomorphic records and palaeogeographic implications	geography, geology	Dr hab. Piotr Weckwerth, prof. UMK	Prof. dr hab. Jan Piotrowski, Aarhus University, Denmark	Dr Robert Sokołowski, University of Gdańsk
Light pollution of the night sky in Toruń	geography, physics	dr hab. Mieczysław Kunz	Prof. Zoltán Kolláth, Eötvös Loránd University, Hungary	dr inż. Krystian Erwiński
Faculty of Educational Sciences				
Empowerment and Disability	education, sociology	Dr hab. Beata Borowska-Beszta, prof. NCU	Professor Mark Sherry, University Toledo (OH), USA	dr Tomasz Leszniewski

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Communication strategies and motivations as innovation in the learning process in education within new technologies	media in education, media pedagogy, online education, sociology of education, learning process, education with new technologies (for the regular and for the students with special needs), intercultural communication; additional disciplines: psychology, social media studies	Dr hab. Dorota Siemieniecka, prof. NCU	Prof. Sabahudin Hadžialić, International University Travnik, Travnik, Bosnia and Herzegovina; UNINETTUNO University, Rome, Italy; Vilnius University, Kaunas, Lithuania	
Support at the end of human life in local communities and assistance after loss - an interdisciplinary approach	educational sciences, social work	Ks. dr hab. Piotr Krakowiak, prof. NCU	Prof. Allan Kellehear, University of Bradford, Bradford, UK; Dr Ros Scott, University of Dundee, UK	dr Leszek Pawłowski, Medical University of Gdansk
Faculty of Fine Arts				
Synthetic materials as a matter of contemporary works of art in process of conservation	conservation and restoration of works of art; chemistry	Prof. zw. dr hab. Dariusz Markowski	Ph.D. Yvonne Shashoua, National Museum of Denmark	Dr Joanna Kujawa

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State of danger. Artistic and curatorial strategies in the conditions of hybrid war in Ukraine (2014-2018)	art studies (history of art), political science	Prof. dr hab. Jerzy Malinowski	Prof. dr hab. Lubow Żwanko, O.M. Beketov National University of Urban Economy in Kharkiv, Ukraine	
The use of modern technologies to create new types of matrix in artistic graphic and building interdisciplinary graphic forms	art studies, technical sciences	Dr hab. Tomasz Barczyk	Prof. Paul Coldwell, University of the Arts, London, UK	
Faculty of Theology				
Science and Religion in contemporary theology	philosophy of science, systematic theology, history of theology; anthropology	Ks. dr hab. Piotr Roszak, prof. UMK	Javier Sanchez-Canizares/Rube Herce, University of Navarra in Pamplona, Spain	Ks. dr Tomasz Huzarek