

Project title	Disciplines	Supervisor	Foreign scientific advisor	Subsidiary supervisor
Faculty of Biological and Veterinary Sciences				
Root microbiomes as controls of P use efficiency in woody crops	biology, chemistry	Prof. Katarzyna Hryniewicz	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
Exploring wood anatomy, chemistry and climate through the world's longest living organisms, North American Bristlecone Pine	biology, earth sciences	Dr hab. Marcin Koprowski	Dr Charlotte Pearson, Laboratory of Tree-Ring Research at the University of Arizona in Tucson	Dr Maciej Markiewicz
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	Dr Łukasz Peplowski
Novel plant adenyl 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, Uniwerytet w Pardubicach, Republika Czeska	Dr Dagmara Bajer
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	biology, 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

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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
Novel carbon nanomaterials (with special attention to nanohorns) in biomedical applications	chemistry, biology	Prof. dr hab. Artur Terzyk	Prof. Marcia Wink, Universidade Federal de Ciencias da Saude de Porto Alegre, Brasil	Dr Joanna Czarnecka
Carbon nanomaterials-based surfaces with controlled toxicity	chemistry, biology	Prof. dr hab. Artur Terzyk	Prof. Marcia Wink, Universidade Federal de Ciencias da Saude de Porto Alegre, Brasil	Dr Joanna Czarnecka
Faculty of Humanities				
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	dr Sławomir Waciewicz
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	dr Nelly Strehlau
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	Dr hab. Katharina Boguslawski	Prof. dr Örs Legeza, Wigner Research Center for Physics, Hungary	Dr Dariusz Kędziera
Printed plasmonics for efficient biosensing	biophysics, chemistry	Prof. dr hab. Sebastian Maćkowski	Sabine Szunerits, Université de Lille, France	dr Katarzyna Szot-Karpińska, Institute of Physical Chemistry, Polish Academy of Sciences
A new formation mechanism for low surface-brightness galaxies and implications for dark matter (astronomy, atomic physics)	astronomy, physics	Prof. dr hab. Boudewijn Roukema	Dr hab. Krzysztof Bolejko, School of Natural Sciences, University of Tasmania, Australia	Dr Sławomir Bilicki
Statistics of null geodesics of photons on cosmological scales (astronomy, atomic physics)	astronomy, physics	Prof. dr hab. Boudewijn Roukema	Dr hab. Krzysztof Bolejko, School of Natural Sciences, University of Tasmania, Australia	Dr Sławomir Bilicki

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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
Optical properties of mixed thin layers ZnO/Alq3/ZnO	physics, chemistry	Dr hab. Beata Derkowska-Zielińska	Dr Aleksandra Apostoluk, Institut des Nanotechnologies de Lyon, France	Dr Robert Szczesny
Preparation of mixed crystals of AII-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 Szczesny
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 (PAN)	Benoit Collins, associate professor, Kyoto University, Japan	dr Kamila Barylska
Faculty of Economic Sciences and Management				
People in Organizations. Development of the reference model of age diversity management on the diversity charter basis	management and public policy studies	Prof. dr hab. Aldona Glińska-Noweś	Prof. dr hab. Miguel Pereira Lopes, University of Lisbon, Portugal	
People in Organizations. The dynamics of moral behavior by the example of the possibility of an unpunished crime	management and public policy studies	Prof. dr hab. Aldona Glińska-Noweś	dr Andre Soares, Coventry University, UK	Dr Tomasz Jarmakowski-Kostrzanowski
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
Faculty of Earth Sciences and Spatial Management				
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

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Faculty of Philosophy and Social Sciences				
Empowerment and Disability	education, sociology	Dr hab. Beata Borowska-Beszta, prof. NCU	Professor Mark Sherry, University Toledo (OH), USA	dr Tomasz Leszniewski
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 Pawlowski, 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
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	dr Filip Pręgowski
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