

COPERNICUS CENTER FOR INTERDISCIPLINARY STUDIES



Major studies and research projects

The Copernicus Center for Interdisciplinary Studies was established as a joint-venture between the Jagiellonian University and the Pontifical University of John Paul II in Kraków. It was created on the initiative of Rev. Prof. Michał Heller, a renowned philosopher and cosmologist.

The Center supports and encourages scholars to conduct studies at the intersections of different scientific disciplines. These studies are carried out within the following research groups: "Biological Foundations of Law and Ethics," "History of Science and Philosophy of Nature," "Analytical Metaphysics," "Neuroscience," "History of Mathematics: People – Ideas – Philosophical Aspects," "Mathematical Structures of Universe," "Philosophy of Physics and Cosmology," "Science and Religion," "Copernican Group," and "Philosophy in Computer Science." The scope of research of these groups can be found at the Copernicus Center website: www.copernicuscenter.edu.pl.

Two research grants were conducted in the Copernicus Center:

- **"Philosophy of Science in European Perspective."** A research grant completed under the direction of Prof. Tomasz Placek. The project was devoted to several issues related to the modern philosophy of science: Are the world and our theories of it deterministic? Is the distinction between past, present and future (distinction between tenses) objective? How should quantum nonlocality that appears in Bell's inequality be interpreted?

- **"The Limits of Scientific Explanation."** A grant awarded by the Templeton Foundation and conducted by three research groups: "Physics and Cosmology," "Philosophy and Theology," and "Mind and Normativity." The objective of the studies carried out in these groups is to discuss the methodological opportunities and limitations in various scientific disciplines. In addition to the research, the groups are also involved in educational activities and undertakings popularizing science.

Collaboration

The Copernicus Center, as a joint-venture between the Jagiellonian University and the Pontifical University of John Paul II, associates not only eminent scientists from both universities, but scholars from other scientific institutions in Poland (e.g. the Polish Academy of Sciences, the Polish Academy of Arts and Science, AGH University of Science and Technology, the University of Social Sciences and Humanities, and Warsaw University of Technology), and abroad (the University of Michigan, the University of Bologna, Catholic University of Leuven, and the University of Namur).



Scholars

Rev. Prof. Michał Heller – the initiator, founder and director of the Copernicus Center for Interdisciplinary Studies. The author of more than 800 scientific and popular science publications about the philosophy and history of science, physics and cosmology, as well as interdisciplinary publications about science and theology. He is the creator of a cosmological model that uses noncommutative geometry to describe phenomena that probably occurred in the initial phases of the universe's evolution. He suggested the research programme of philosophy in science, i.e. philosophical reflection conducted in the strict context of scientific theories. Rev. Prof. Heller was also awarded the Templeton Prize.

Prof. Jerzy Stelmach – a philosopher and a lawyer. He received honorary doctorates from Heidelberg University and the University of Augsburg. He is the Head of the Department of the Philosophy of Law and Legal Ethics at the Jagiellonian University. His scientific interests are legal philosophy and theory of law. He is also the director of the research project "Naturalisation of Law" awarded by the National Science Centre within the MAESTRO programme.

Prof. Bartosz Brożek – a cognitivist and a philosopher, deputy-director of the Copernicus Center for Interdisciplinary Studies. He works at the Department of Philosophy of Law and Legal Ethics at the Jagiellonian University. He has received many prizes and scholarships, including scholarships from the President of the Council of Ministers, the Minister of Science and Higher Education, the Humboldt Foundation, and *Polityka* magazine. He has written numerous books and papers on the philosophy of law, ethics, the philosophy of science, the philosophy of logic, and cognitive science. He is the Head of the "Biological Foundations of Ethics and Law" research team.

• **Interdisciplinary Studies at the intersection of the Natural and Social Sciences, and the Humanities**

Achievements

The most significant scientific achievements of the Copernicus Center are connected with conducting "The Limits of Scientific Explanation" grant. Under this project, the problems of the limits of the scientific method were analysed from both the "internal" perspective (how it functions within specific scientific disciplines such as physics, cosmology, psychology, and neuroscience) and the "external" perspective (metascientific, philosophical and theological). The extensive research results include: the development of noncommutative models that unify the general relativity theory and quantum physics as well as the development of the structural approach to the philosophy of cosmology. It should also be noted that these analyses contributed to establishing the limits of modern logic in the context of theological problems, determining conceptual relations between empirical science and theology, determining the methodological and ontological limits of scientific explanation of normative phenomena, and developing the methodology for philosophy in science.

The Center runs the popular science portal GraniceNauki.pl (Limits of Science) and invites scholars from different disciplines to give weekly popular science lectures. The Center's youtube.pl web portal, where lecture recordings, discussions and interviews are uploaded, is also an important part of its activity. Since September 2013, the Copernicus Center Foundation has been running the De Revolutionibus Book & Cafe, a meeting venue for the scientific community. In May 2014, the Center, the *Tygodnik Powszechny* weekly, and the city of Kraków organised the first edition of the Copernicus Festival which emphasised the place of science in culture.