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New Anthropology building provides potential for broad research

New building near the Botanic Garden creates the ideal environment for innovative research on the development of human beings

Mainz is one of the few locations in Germany supporting anthropological research on a broad basis. A highly innovative orientation of subject matter is combined with ongoing treatment of more conventional anthropological topics. Already today a considerable focus is being placed on genetic research methods and it is likely that their importance will continue to grow in the coming years. The Institute of Anthropology at Mainz University is incorporated in the Faculty of Biology and is thus able to collaborate closely with the related disciplines of Medicine, Bioinformatics, and Biochemistry. There are numerous crossovers with the fields of Cultural Studies and Geosciences as well. The biological anthropological research being conducted in Mainz looks at the development and diversity of humans, their ancestors, and other closely related species. Evolution and diversity among primates are thus core elements of research and teaching at Mainz. Focal points are Primatology (research into primates), Palaeoanthropology and Prehistorical Anthropology (study of the fossil ancestors of mankind), and Population Genetics (research into hereditary processes within biological populations). The Institute of Anthropology in Mainz is currently in a state of transition, with three professors active in a two-position employment plan.

The main field of study of Professor Hans Zischler is the evolution of humans and non-human primates. Comparisons within and between different species are used to search for evolutionary patterns, such as the distribution and control of 'jumping genes' in primate genomes. This could potentially explain why it is that today's representatives of the primate family have gone their separate ways and developed independently. Mainz researchers have shown, for example, that tarsiers from the Indonesian island of Sulawesi demonstrate the greatest levels of genetic differences, which can be attributed to the geological history of the island and changes to sea level over the course of the last 1.6 million years. Work in this field of research is based on field studies, lab experiments, and bioinformatic analyses. The Molecular Evolution and Phylogenetics team under Dr. Holger Herlyn also works in

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Faculty 10: Biology

Institute of Anthropology

this field. It examines the molecular evolution of proteins involved in reproduction and is particularly interested in exploring the mysteries of sexual selection.

The Palaeogenetics division headed by Professor Joachim Burger is primarily interested in aspects of population history, such as the origin of the Europeans or of domestic cattle. This involves extracting the DNA from ancient human and animal remains discovered at archaeological sites. In the palaeogenetic trace analytical laboratory, ancient DNA (aDNA) from bones or teeth can be processed without contamination. The laboratory in the institute's new building is one of the foremost of its kind anywhere in the world in terms of conception and infrastructure. Information from aDNA provides direct insights into the genetic composition of prehistoric populations and makes it possible to reconstruct processes that occurred in the past. Also working in this field is Dr. Barbara Bramanti, who for the past few years has been conducting research in Mainz under the auspices of a project run by the German Research Foundation (DFG) and is currently involved in a joint research project studying the great plagues in Europe, financially supported by way of an ERC Advanced Grant. Her focus is on the medieval plagues and their consequences in terms of selection and evolution.

The Historical Anthropology and Bioarcheometry division of Professor Kurt Alt explores, among other aspects, the structures and dynamics of prehistorical and historical population migration, examines the settlement history of Europe, and looks at familial relationships and mobility during the Iron Age and early Medieval period. It was with the help of this team, for example, that the remains in a casket discovered in 2008 in Magdeburg Cathedral were identified as those of Queen Editha, who died in 946.

Research-based Master's degree program in Anthropology

Mainz University began offering a research-based Master's degree program in Anthropology in the winter semester of 2011/2012. The core subjects, i.e., Evolution and Divergence, not only involve study of the divergence of all the primates, but also clinically relevant research into diversity among humans, conducted in cooperation with the Mainz University Medical Center. The Anthropology degree program is characterized by its close ties with the fields of Human Genetics, Genome Research, Bioinformatics, Ecology, Population Biology, Palaeontology, and Prehistoric Archaeology. The main focus of courses is thus on Human Genetics / Molecular Genetics, Prehistoric Anthropology, Pharmacogenetics, Paleopopulation Genetics, and Bioarchaeometry. Students are instructed in the theory and practice of current molecular genetic and biostatistical procedures as well as archaeometric analysis techniques and scientific archaeological methodologies. The processing of historical sources is also covered. The discipline-specific content is supplemented by an additional module from JGU's General Studies program, which provides students with the opportunity to acquire additional qualifications, for example in the fields of Scientific History and Ethics.

The Institute of Pharmacology and the Institute of Human Genetics of the Mainz University Medical Center are also involved in the Master's degree program. The Institute of Anthropology also collaborates within the Biology M.Sc., M.Ed., B.Sc., and B.Ed. degree programs and contributes to the course of studies in related fields, including the M.Sc. in Biomedicine and Applied Bioinformatics.

Images

http://www.uni-mainz.de/bilder_presse/10_anthropologie_forschung_01.jpg

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photo: Thomas Hartmann

http://www.uni-mainz.de/bilder_presse/10_anthropologie_forschung_02.jpg

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Further information:

Professor Hans Zischler

Managing Director

Institute of Anthropology

Faculty 10: Biology

Johannes Gutenberg University Mainz

D 55099 Mainz, GERMANY

phone +49 6131 39-24354

fax +49 6131 39-23799

e-mail: zischler@uni-mainz.de

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