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Data against dogma

Biologist from Konstanz, Professor Axel Meyer, receives the Luigi-Tartufari International Prize from the Italian National Academy

He has just returned to Konstanz from a sabbatical spent at the Radcliffe Institute for Advanced Study at Harvard University. Now, on 22 June 2018, the professor of zoology and evolutionary biology, Axel Meyer, is awarded the Luigi-Tartufari International Prize from the Italian Accademia Nazionale dei Lincei in Rome. One of the first illustrious members of this academy was the Italian polymath Galileo Galilei. Axel Meyer receives the award for his research in the areas of molecular, cell and evolutionary biology. The Italian National Academy honours the biologist from Konstanz for his scientific life's work, for which he already received numerous awards.

Axel Meyer is one of the world's leading and most widely cited experts in the field of evolutionary biology. He disproved textbook dogmas that had been thought to be valid for several decades and was one of the pioneers in using genetic data in evolutionary biology. By collecting empirical data, Axel Meyer's laboratory team questioned the doctrine that geographical barriers are the prerequisite for the origin of new species. Carrying out research in the crater lakes in Nicaragua, he was also able to demonstrate that the evolution in certain types of fish repeated itself independently from each other. For this research project Axel Meyer received an ERC Advanced Grant from the European Research Council (ERC) amounting to funding of 2.5 million euros.

Using genetic data in evolutionary biology made comparative analyses possible with trailblazing results. Axel Meyer used genomic data to prove, for example, that the entire genome duplicated in the ancestors of all fish, and thus fish initially had twice as many genes as the ancestor of tetrapods – vertebrates such as amphibians, birds, reptiles and mammals, including humans. With the help of the biggest and most information-rich data-set that was ever analysed he recently contributed to solving the puzzle of evolutionary relationships between vertebrates. The researchers showed, for example, that lungfish are more closely related to us than the coelacanth, or that turtles are more closely related to birds and crocodiles than lizards and snakes are. Currently Axel Meyer's research team is studying how the outer appearance of species is connected to their genome so as to better understand which genetic differences are the reason for adaptations and differences between species.

Axel Meyer studied in Marburg, Kiel, Miami, Berkeley and Harvard and, at the age of 28, was appointed as assistant professor at the State University in New York, where he became an associate professor with Tenure-Track at the age of 33. He received appointment offers from several internationally leading universities before, at the age of 36, accepting the professorship in Konstanz as successor to Hubert Markl. He received numerous awards for his scientific work, including the Carus Medal from the German National Academy of Sciences Leopoldina (2009), the Academy Prize from the Berlin-Brandenburg Academy of Sciences and Humanities (2000) and a Guggenheim Fellowship (1996). For his continuous endeavour to convey complex scientific topics

to the general public in an accessible and thought-provoking manner he was awarded the EMBO Award for Communication in the Life Sciences (2007). Axel Meyer is a member of all the three scientific organisations mentioned. The magazine Cicero included him in its lists of the 500 most important intellectuals in Germany.

The Accademia dei Lincei was founded in Rome in 1603. With its dedication to the study of the natural sciences and its approach to science based on the new experimental methods, the Accademia dei Lincei became the first scientific academy worldwide. The Academy awards “Prof. Luigi Tartufari” Prizes to Italian or international scholars in the four disciplines mathematics, astronomy, physics and chemistry, as well as molecular, cellular and evolutionary biology. The Italian National Academy is Italy's most important cultural institution and is the official scientific and cultural advisor of the Italian president.

Facts:

- Luigi-Tartufari International Prize for evolutionary biologist from Konstanz, Professor Axel Meyer
- Research prize from the Italian Accademia Nazionale dei Lincei honours life work of the biologist from Konstanz.
- Pioneering work through the use of genetic and genomic data.

Note to editors:

You can download photos here:

<https://cms.uni-konstanz.de/fileadmin/pi/filesserver/2018/Bilder/Meyer%20Axel.jpg>

Caption:

Professor Axel Meyer

Photo: Marco Schilling

https://cms.uni-konstanz.de/fileadmin/pi/filesserver/2018/Bilder/Mit_Daten_gegen_Dogmen.jpg

Caption: (from the left) Andreas Härer, Dr. Julián Torres-Dowdall, Professor Axel Meyer und Dr. Melisa Olave.

Photo: Ricardo Rayo

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