



## Laudation for Dr. Alicia Michael

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### **Finalist of the Eppendorf Award for Young European Investigators 2023**

by Prof. Ben Lehner, Wellcome Sanger Institute, Cambridge, UK  
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Member of the independent Eppendorf Award Jury

It is a great pleasure to introduce Alicia Michael, one of two finalists of the 2023 Eppendorf Award for Young European Investigators. Alicia has been recognised for her groundbreaking work on transcription factors, the key regulatory proteins that switch genes on and off.

Alicia has revealed how transcription factors bind to DNA not as it exists in a test tube but as it exists inside our cells, tightly packed into structures called nucleosomes. At the Friedrich Miescher Institute in Basel, Alicia developed methods that show exactly where transcription factors are bound and she went on to determine the first structures of transcription factors bound to nucleosomes. This breakthrough work was published in a paper in *Science* in 2020 and she is about to reveal a whole series of new structures to the world in a paper that will shortly be published in *Nature*. Understanding how transcription factors find their target DNA in nucleosomes has been a major goal of one of the most competitive fields in biology for many years. Alicia's work is a huge step forward.

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Alicia was born in Washington State in the USA and grew up in Montana. Indeed she is currently on a family fishing trip in Montana, which is why she cannot be here in person today. She completed her undergraduate studies in Chemistry at Western Washington University, right on the US border with Canada, with a final year honours degree project in organometallic synthesis.

After more than 20 years living in the north west of the USA, she then made a more radical move and spent a year working at a hospital in Spain, which she described as really opening her eyes to Europe. She then returned to the US to start a PhD at the University of California at Santa Cruz where she worked in the laboratory of Carrie Partch on circadian clocks, the amazing molecular machinery that allows all our cells to know what time of day it is. Alicia was the first PhD student in Carrie's lab and when I asked her about this time her enthusiasm and gratitude was infectious to hear.

During this time she revealed how one of the core components of the mammalian circadian clock, CRY1, blocks the activity of the core transcription factor CLOCK-BMAL1, to establish daily transcriptional rhythms. It is no coincidence that six years later she is about to publish the structure of CLOCK-BMAL1 bound to nucleosomes.

After her PhD Alicia moved to the lab of Nico Thoma at the Friedrich Miescher Institute in Basel, where she pioneered a new direction for the lab working on transcription factors resulting in the body of work for which she is being recognised today.

At the end of last year, however, Alicia crossed the Rhine in Basel to join the lab of Ben Engels at the Biozentrum, where she is adding cryo-electron tomography to her tool kit and starting a new very ambitious research direction to determine the structures of protein complexes in situ inside the nuclei of cells. I can also reveal that Alicia is about to leave the Biozentrum to start her own lab but I can't yet tell you where that will be, other than reassuring you that it is one of the very best institutes in Europe.