



From Chromatin to Brain Evolution: A Scientific Journey Across Scales

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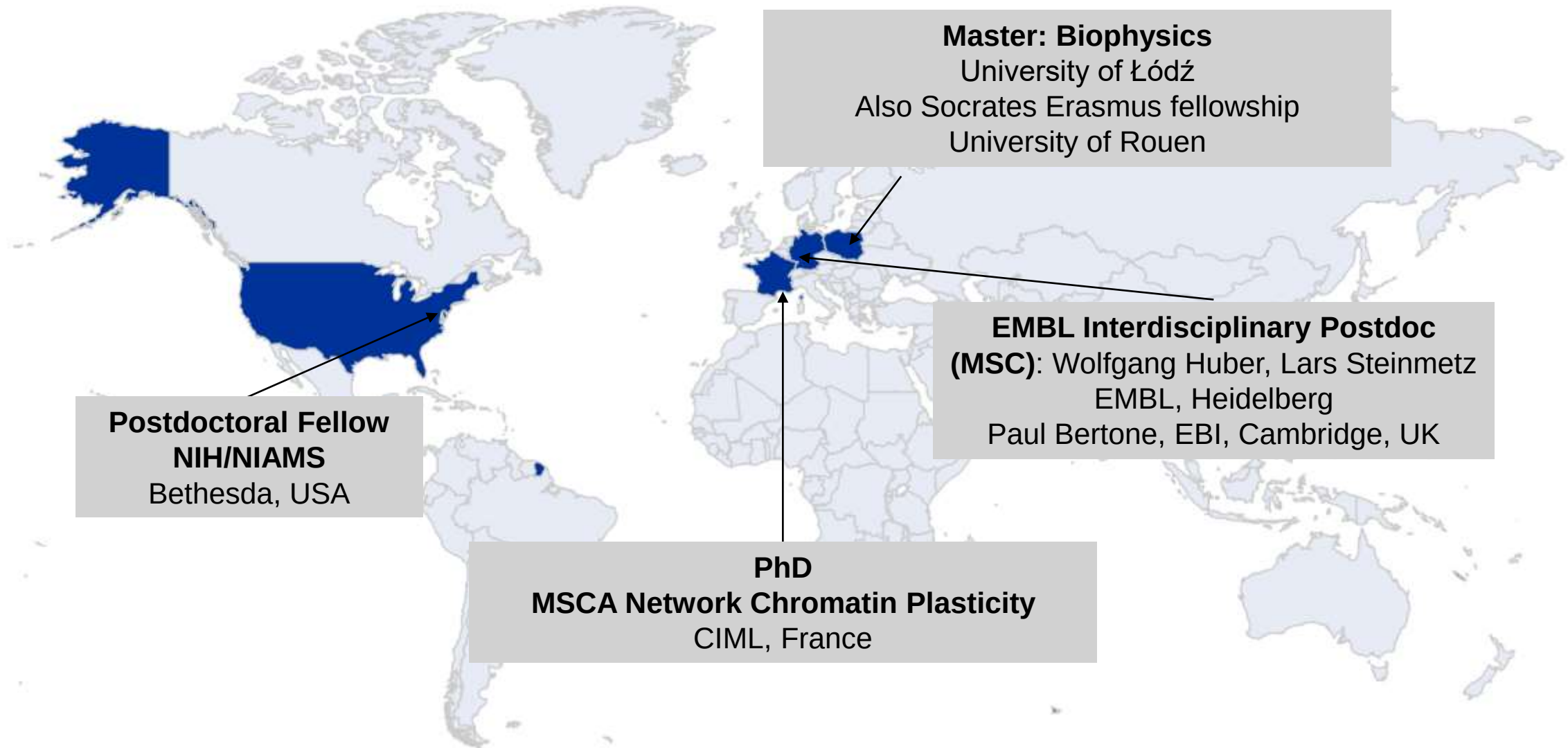
Director's Representative for Strategic Scientific Initiatives

**European Excellence Initiative | workshop
22 September 2026, Brussels**

DIOSCURI
CENTRE FOR CHROMATIN BIOLOGY
AND EPIGENOMICS



How do cells „know who they are”?



What helps secure cell identity gene expression?



Salvatore Spicuglia



**Open your eyes to
the unexpected**



Jean Christophe Andrau

Computational tools and cutting-edge genomics for fundamental biology



Wolfgang Huber



**Interdisciplinary
work to push the
boundaries in life
sciences**

Genome Regulation in Space and Time



Rafael Casellas



**Give yourself the
opportunity to
succeed
Think bold and have
the freedom to try**

Unexpected roles of RNA in driving chromatin 3D maturation in development

nature cell biology



NARODOWE
CENTRUM
NAUKI



Article

<https://doi.org/10.1038/s41556-025-01735-5>

RNA-binding proteins mediate the maturation of chromatin topology during differentiation

Received: 14 February 2024

Accepted: 10 July 2025

Published online: 8 September 2025

Check for updates

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Large network of scientific friends and a project that takes full advantage of cutting-edge interdisciplinary work

Friends from EMBL, NIH, Poland

My current ties to France

CisCODE



Salvatore Spicuglia



Chrom_rare



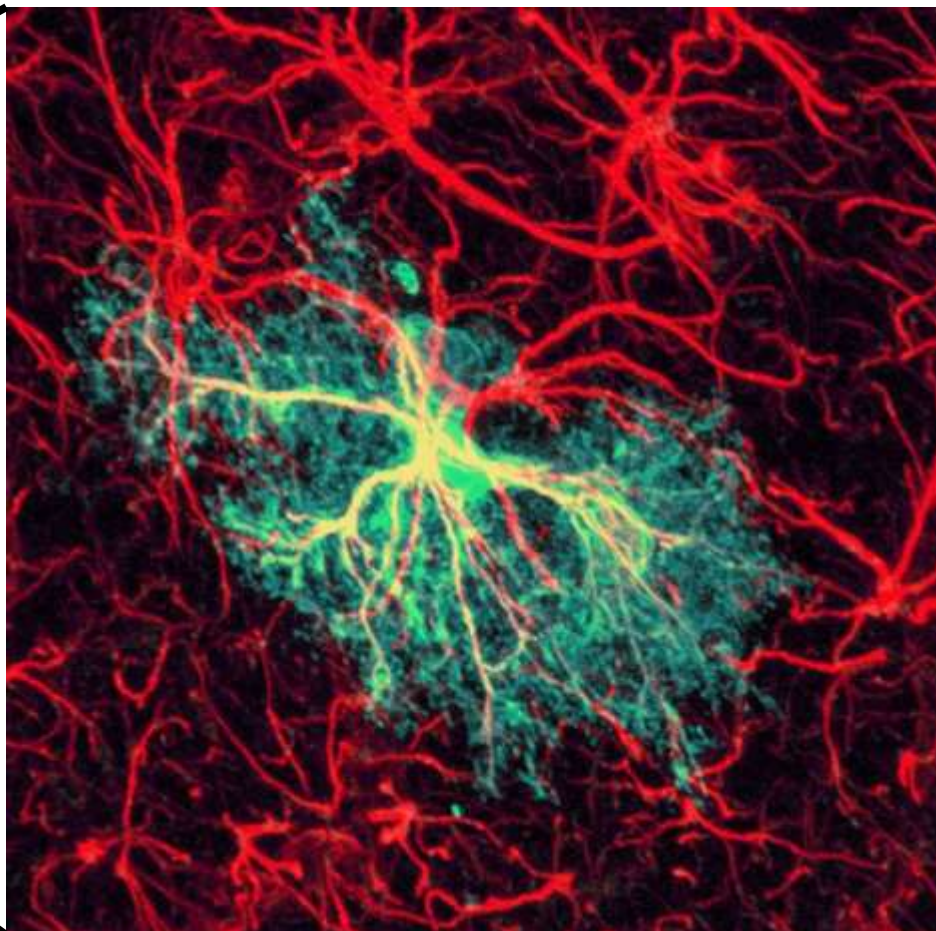
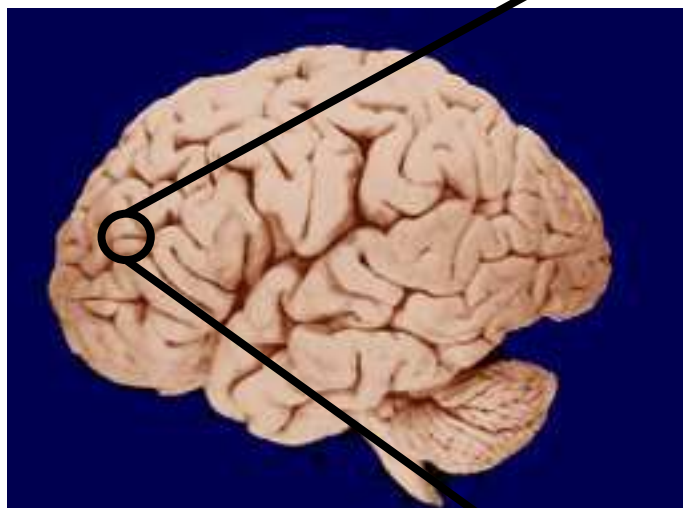
Jean Christophe Andrau



- **Methods/tool exchanges**
- **Training of PhD students**

Human brain evolution





Neurons

Astrocytes



How? What's the role?



One of the fastest evolving cell types in the brain

Oberheim et al, 2006
Trends in Neuroscience



Building a complex research programme

- Expertise
- Network
- Time and continuity
- Freedom to take risks
- Resources at the scale of the question
- An outstanding Host Institution



Nencki Institute

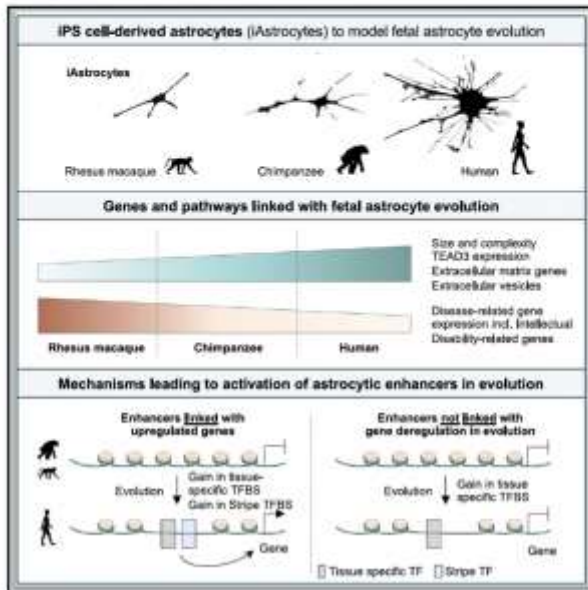
Dioscuri is a program initiated by the Max Planck Society, managed jointly with the National Science Centre (Poland) and mutually funded by the Polish Ministry of Science and Higher Education and the German Federal Ministry of Education and Research

Astrocyte evolution and diseases of the human mind

Cell Stem Cell

Molecular signature of primate astrocytes reveals pathways and regulatory changes contributing to human brain evolution

Graphical abstract



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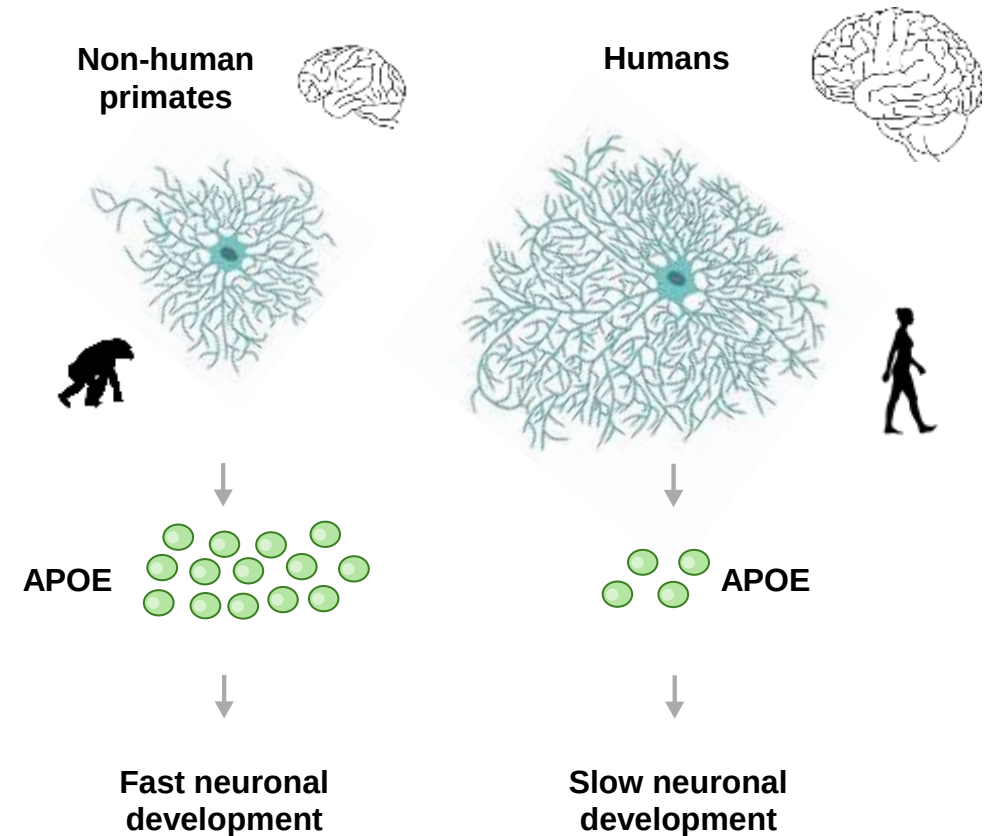
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In brief

Pękowska and colleagues model primate astrocyte evolution in the dish and find that human cells are bigger and more complex than their chimpanzee and macaque counterparts. Human astrocytes activate long-range intercellular communication but downregulate neurological disorder-related genes. Gain of binding sites for universal transcription factors activates enhancers in evolution.

Article



July 2022

Interim balance after five years (



Meeting of leaders of the first Polish Dioscuri Centres with President Stratmann (v.l.n.r.):

Grzegorz Sumara, Gracjan... [\[more\]](#)

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Latest



[Strengthening the European Research Area](#)

MAY 17, 2024



Dioscuri Centres of Scientific Excellence

A program initiated by the Max Planck Society to support scientific excellence in Central and Eastern Europe



Dioscuri aims to establish internationally competitive research groups at Central and Eastern Europe institutions with the support of partners from Germany. The person-centered program was initiated by the Max Planck Society and is funded by the German Federal government as well as the government of the respective country.

Scientific excellence isn't confined to traditional European hubs.

What differs across Europe is often not the quality of ideas, but the density of networks, infrastructure and opportunities around them.

From projects to shared scientific programmes and durable ecosystems

- Bottom-up
- Long-term
- Cross-border
- Dynamic
- Complementary
- Critical mass



Nencki Institute

Acknowledgments

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Katarzyna Ciuba
Bondita Dehingia
Misbah Abbas
Keyvan Hemmatvand
Anna Stroynowska-Czerwinska
Sajjad Iqbal
Nabodit Bhattacharya
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Paweł Dłotko (IMPAN)

Project financed under Dioscuri, a program initiated by Max Planck Society, jointly managed with the National Science Centre in Poland, and mutually funded by Polish Ministry of Science and Higher Education and German Federal Ministry of Education and Research.