

# STUDENTS AND THE DEPARTMENT OF COGNITIVE SCIENCE INVITES FOR A GUEST LECTURE



DECEMBER 5

11:00-12:30

INSTITUTE OF PSYCHOLOGY

A.103



INSTYTUT GENETYKI  
I BIOTECHNOLOGII ZWIERZĄT  
Polskiej Akademii Nauk  
INSTITUTE OF GENETICS  
AND ANIMAL BIOTECHNOLOGY  
of the Polish Academy of Sciences



HR EXCELLENCE  
IN RESEARCH

## ***Genetic and environmental influences on neurodevelopment: from the preimplantation embryo to the brain and its postnatal functions***

The brain is a complex system of neuronal networks, opportunely connected for favoring the emergence of mental states, emotions, and behaviors. The interactions between multiple levels of genetic and environmental factors affect the organism in toto and its individual neurons, in turn, influencing brain functions and psychological/behavioral health.

Recent studies have shown that intrinsic (genetic) and external (environmental) individual factors influence neurodevelopmental trajectories since early life windows, during the prenatal life of the developing organism, and before conception of the embryo itself. Maternal and placental functions play a fundamental role in orchestrating fetal brain development and postnatal brain functions, as well as the predisposition to psychiatric diseases.

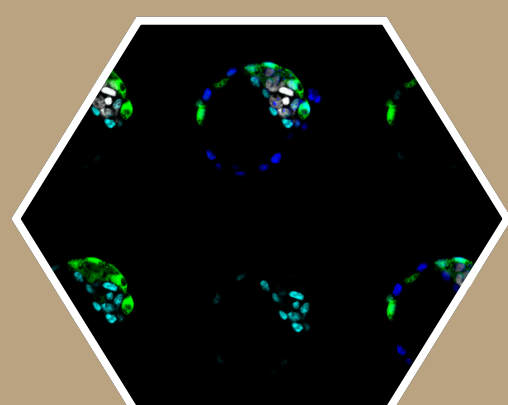
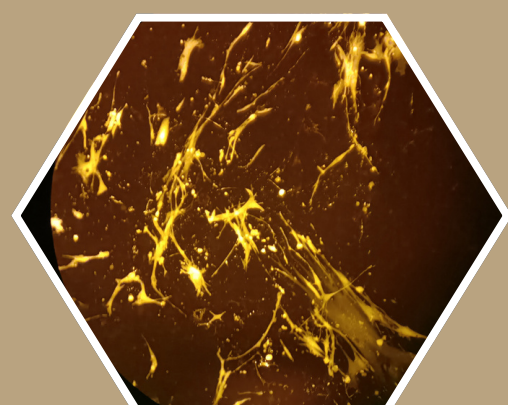
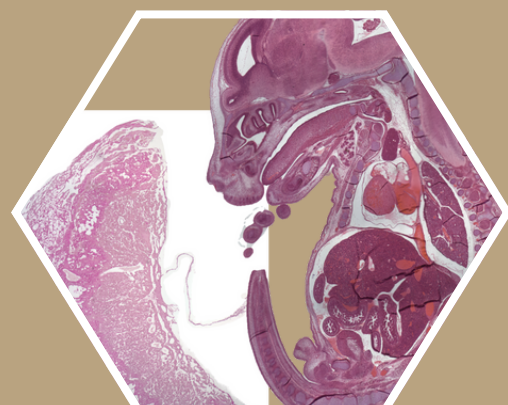
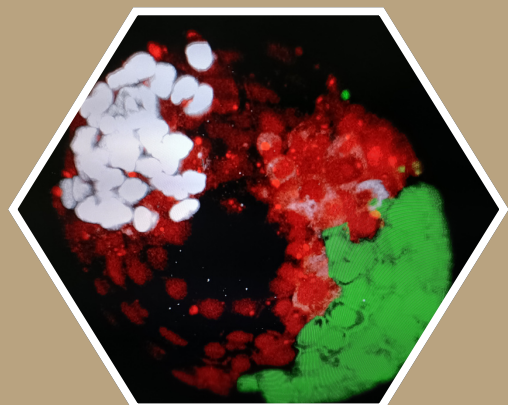
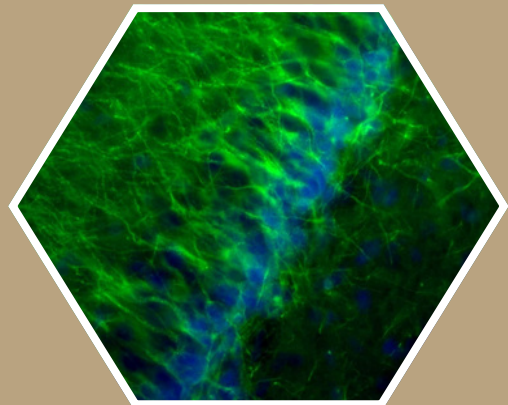
Our research investigates the etiology and pathogenesis of neurodevelopmental disorders, by studying basic biological mechanisms regulating brain ontogenesis through the use of animal models. At the meeting, we will discuss the role of the mother and the placenta in shaping neuronal development and in turn postnatal behavior in mouse models of neurodevelopmental disorders. In particular, we will present some of our previous studies concerning the effects of advanced maternal age on the behavior of mouse offspring, as well as our current experiments investigating the embryonic basis of autism spectrum disorders in the BTBR mouse model. To this end, chimeric mice are constructed by the combination of two different embryos or embryonic stem cells of the “autistic” and the “normal” mouse strains. The importance of chimeric mice for basic research and the methods employed for the generation of chimeras will be described thoroughly.

### ***Team of Neurodevelopmental Embryology***

*Department of Experimental Embryology*

*Institute of Genetics and Animal Biotechnology of the Polish Academy of Sciences*

***Dr Silvestre Sampino, mgr inż Joanna Czyrska, mgr inż Dominika Żbikowska***



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