

Quantitative and molecular behavior genetics

Aim of the course

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Lectures will cover theoretical framework and methods in Quantitative Molecular Behavior Genetics and provide insight to intriguing current results from various research fields. The course will address questions such as: How much do genes influence behavior? How do genes influence behavior? How do scientists identify genes involved in behavior? Studies on inherited components of human characteristics will help students develop a scientific approach towards the “causes” of various human behaviors.

Learning outcome, competences

knowledge: new insights from the field of behavioral genetics

attitude: an open mind and critical evaluation of new scientific results

skills: integration of two scientific fields: behavioral genetics and psychology

Content of the course

Topics of the course

- Variability of behaviour, individual and group differences. Genes and behaviour.
- Concepts and principles of the quantitative genetic approach.
- Methodology of studying the inheritance of animal and human behaviour.
- Estimating heritability in twin and adoptive designs.
- Links between genes and environment (interaction, correlation).
- Molecular mechanisms of inheritance.
- Human Genome Project. Genome Projects of other species.
- Identifying gene effects: candidate genes, whole genome scanning.
- State-of-the-art molecular genetic studies on intelligence, temperament – personality, psychopathologies, cognitive abilities, substance use, etc...

Learning activities, learning methods

Lecture and student-presentations

Evaluation of outcomes

Learning requirements, mode of evaluation, criteria of evaluation:

Written exam.

Reading list

Compulsory reading list

- Selected chapters from the course handbook: *Plomin, R., DeFries, J. C., McClearn, G. E., McGuffin, P. (2001) Behavioral Genetics, 4th Edition. Worth Publishers, NY.*
- Selected chapters from further handbooks and articles on various topics discussed in class (see in the lecture outlines below)...

Full texts will be provided via link in Neptun mail.

Recommended reading list