Graduate Training Centre of Neuroscience

Integrating Neuroscience Education
The University of Tübingen

Since 2012: 1 of 11 German Universities of Excellence

Winter semester 2019/20

<table>
<thead>
<tr>
<th>All students</th>
<th>27,197</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>15,988</td>
</tr>
<tr>
<td>New enrollments</td>
<td>5,219</td>
</tr>
<tr>
<td>International students</td>
<td>3,869</td>
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</tbody>
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Tübingen Campuses
University of Tübingen Core Research

Neuroscience
Artificial Intelligence and Machine Learning
Plant Molecular Biology
Translational Immunology and Cancer Research
Microbiology and Infection Research
Human Evolution and Archaeology
Language and Cognition
Education and Media
Geoscience and Environmental Science
### University of Tübingen Core Research - Neuroscience

#### 2008 - 2020

- 24 ERC Starting Grants
- 6 ERC Consolidator Grants
- 7 ERC Advanced Grants
- 2 ERC Proof of Concept
- 2 ERC Synergy Grant

#### In 2019/20

- 1/5 ERC Starting Grants  
  Dr. Christina Schwarz
- 1/4 ERC Consolidator Grants  
  Prof. Dr. Markus Siegel
- 1/2 ERC Advanced Grants  
  Prof. Dr. Klaus Scheffler
- 2/2 ERC Synergy Grants  
  Prof. Dr. Martin Giese  
  Prof. Dr. Ulf Ziemann
TübingenNeuroCampus - TNC
The Neurosciences in Tübingen with more than 100 active research groups have the potential to rank among the most successful neuroscientific sites in Europe. Scientists in Tübingen pursue theoretical, systems-level, molecular and clinical research approaches in their entire breadth with a wide range of methods. The newly founded Tübingen Neuro Campus wants to ensure the optimal use of Tübingen's potential with respect to research, education and application.
Understanding How the Brain Generates Function

The Werner Reichardt Centre for Neuroscience is a Cluster of Excellence focusing upon neurosciences, established at the University of Tübingen in the framework of the Excellence Initiatives funded by the German federal and state governments.

About Us

The Werner Reichardt Centre for Integrative Neuroscience (CIN) is the common platform of systems-oriented neuroscience at the Eberhard Karls University of Tübingen, and one of the biggest and most prolific centres of neuroscience currently to be found in Europe.

Latest News

Sensory Perception Is Not a One-Way Street
Understanding Thought Processes

The aim of the Max Planck Institute for Biological Cybernetics is to understand information processing in the brains of humans and animals. We use experimental, theoretical and computational methods to elucidate the characteristics and implementations of the cascades of plastic and recurrent interactions that transform sensory data into perceptions, memories, appropriate choices of actions, and motor output.
Neurodegenerative Erkrankungen verstehen, Ursachen entschlüsseln, Therapien entwickeln
Applied Research and Development at the Interface of Life Sciences and Materials Sciences
Center for Mental Health

Center  Clinical care  Research  Teaching

Calwerstraße 14
72076 Tübingen

Approach
<table>
<thead>
<tr>
<th>Group</th>
<th>Topic</th>
<th>Scientists</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cognitive Neuroscience</strong></td>
<td>Spatial cognition</td>
<td>Prof. H. Mallot</td>
</tr>
<tr>
<td>(Prof. H. Mallot)</td>
<td>Visual cognition</td>
<td>Dr. G. Hardless</td>
</tr>
<tr>
<td></td>
<td>Motion perception</td>
<td>Dr. H.J. Dahmen</td>
</tr>
<tr>
<td><strong>Animal Physiology</strong></td>
<td>Neural basis of cognitive control</td>
<td>Prof. A. Nieder</td>
</tr>
<tr>
<td>(Prof. A. Nieder)</td>
<td>Vocal communication</td>
<td>Dr. S. Westendorff</td>
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<tr>
<td></td>
<td>Behavioral control in rodents</td>
<td>Prof. P. Pilz</td>
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<tr>
<td></td>
<td>Auditory physiology</td>
<td>Prof. J. Ostwald</td>
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<tr>
<td></td>
<td>Bioacoustic and Echolocation</td>
<td>Prof. H.-U. Schnitzler /</td>
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<td></td>
<td></td>
<td>Dr. A. Denzinger</td>
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<tr>
<td><strong>Neuroethology</strong></td>
<td>Electrocommunication in weakly electric fish</td>
<td>Prof. Dr. Jan Benda</td>
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<tr>
<td>(Prof. J. Benda)</td>
<td>Neurophysiology of sensory systems</td>
<td>Dr. Jan Grewe</td>
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<tr>
<td></td>
<td>Computational Neuroscience</td>
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<tr>
<td><strong>Systemic Neurobiology</strong></td>
<td>Oculomotor system</td>
<td>Prof. Aristides Arrenberg</td>
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<tr>
<td>(Prof. A. Arrenberg)</td>
<td>Visual system</td>
<td></td>
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<tr>
<td></td>
<td>Zebrafish circuits</td>
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<tr>
<td><strong>Neural Circuits and Behavior</strong></td>
<td>Neural Circuits</td>
<td>Prof. Andrea Burgalossi</td>
</tr>
<tr>
<td>(Prof. A. Burgalossi)</td>
<td>Hippocampus, Memory</td>
<td>Dr. Patricia Preston-Ferrr</td>
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<td></td>
<td>Spatial Navigation</td>
<td></td>
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<tr>
<td><strong>Neurobiology of Vocal Communication</strong></td>
<td>Vocal communication and learning</td>
<td>Jun. Prof. Lena Veit</td>
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<tr>
<td>(Jun. Prof. L. Veit)</td>
<td>Neural basis of birdsong sequencing</td>
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<td></td>
<td>Flexible control of skilled behavior</td>
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The Graduate Training Centre – Master’s programs

1999

Neural & Behavioural Sciences
systems & cognitive neuroscience, neurophysiology, neuropsychology, sleep and learning & memory, brain imaging: fMRI, MEG, EEG, TMS

2008

Cellular & Molecular Neuroscience
genetic, molecular and cellular processes of neurodegeneration, stem cells, genetic mouse models, molecular imaging techniques

2011

Neural Information Processing
computational vision, machine learning, computational motor control, robotics modelling of neuronal processes, BCI & neuroprosthetics
The Graduate Training Centre of Neuroscience

Graduate School of Cellular & Molecular Neuroscience
Graduate School of Neural & Behavioural Sciences
Graduate School of Neural Information Processing

International Max Planck Research School
The Graduate Training Centre

<table>
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<tr>
<th>Master</th>
<th>Internationals</th>
<th>Graduations (2009-2020)</th>
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<tbody>
<tr>
<td>86</td>
<td>58%</td>
<td>386</td>
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<tr>
<td>PhD</td>
<td>223</td>
<td>53%</td>
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**M.Sc. / Year**
- NB
- CM
- NIP

**Ph.D. / Year**
- NB
- NIP
- CM
Doctoral Program 3-4 years

- Master thesis 6 months
- 2nd Laboratory rotation 10 weeks
- 1st Laboratory Rotation 10 weeks
- SS - Lectures / theoretical training
- WS - Lectures / theoretical training

Laboratory rotation
- small research projects – different topics / labs
- acquire practical skills in a wide range of methods
- get to know current scientific questions

Course requirements
- seminar presentation + lab report

Course types
- lectures – exercises – tutorials – seminars
- laboratory visits - retreat

Course requirements
- written exams (mid term / end term)
- problem sheets, essays
- oral presentations
Annual MSc Retreat

The master students of the three Graduate Schools jointly attend a 3-day retreat where they present and discuss topics that are generally not part of their curricular course program, e.g. in 2019:

1) Neuroprosthetics
2) Spatial Cognition
3) Learning and Memory: Neuroscience of Reflex Conditioning