

## Interdisciplinary projects at the Research Focus Cognitive Sciences at the University of Potsdam

The cognitive sciences in Potsdam have a long and successful tradition of competitively funded research. Next to individual research projects, such as the Humboldt Professorship for Prof. Harald Clahsen and the ERC Advanced Grant for Prof. Adamantios Gafos, here are some highlights for large-scale joint projects:

**Collaborative Research Centre (DFG-SFB 632) “Information structure: the linguistic means for structuring utterances, sentences and texts”** The Collaborative Research Centre “Information structure” was the first CRC funded by the German Research Foundation at the University of Potsdam and the whole state of Brandenburg. It brought together linguists and psychologists from the University of Potsdam, HU Berlin, and FU Berlin. Their common scientific goals were integrative models of information structure, the in-depth study of information structure in the various disciplines of linguistics and psychology as well as practical applications for their findings.  
[www.sfb632.uni-potsdam.de](http://www.sfb632.uni-potsdam.de)

**Research Unit (DFG-FOR 2253) “Crossing the borders: The interplay of language, cognition, and the brain in early human development”** In the recently established Research Unit, linguists and psychologists from several German universities and research institutes work together to investigate human development during the first five years of life. Four of the seven research projects are located at the University of Potsdam. In an interdisciplinary approach, the Research Unit aims at discovering the cognitive and neural mechanisms underlying early development of language and social cognition, and the interactions between these two domains.  
[www.crossing-project.de](http://www.crossing-project.de)

**MARIE SKŁODOWSKA-CURIE ACTIONS European Training Network “Understanding and predicting developmental language abilities and disorders in multilingual Europe” (PredictAble)** PredictAble aims to train a new generation of young scientists at the crossroads between academic research, technological development in the private sector and clinical practice. The research program will enhance the understanding of the cognitive mechanisms that underlie developmental disorders of spoken and written language with an interdisciplinary approach.  
[www.predictable.eu](http://www.predictable.eu)

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[www.uni-potsdam.de/cognitive-sciences](http://www.uni-potsdam.de/cognitive-sciences)

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Research Focus

# Cognitive Sciences

[www.uni-potsdam.de/cognitive-sciences](http://www.uni-potsdam.de/cognitive-sciences)

# Models of Thinking

We all know how to tell our friends what we think. We also know how to listen to them and to remember what they thought and said. We know that we form intentions after those conversations and that we translate them into specific motor behavior and actions.

Yet, we still know little about the cognitive processes that take place in our brains and our minds when we perform these seemingly easy activities. At the interdisciplinary Research Focus Cognitive Sciences at the University of Potsdam, various disciplines work together to develop theoretical and mathematical models of human thinking, language, and motion sequences. The Research Focus Cognitive Sciences constitutes a central topic at the University of Potsdam and is widely recognized as one of the leading cognitive science institutes in Germany. Psychologists work together with mathematicians, linguists with computer scientists, and sport/movement scientists with cognitive scientists. They do this using a wide array of experimental techniques, such as EEG, TMS, NIRS, eye tracking, motion capture, and gait analysis.



To name just a few concrete topics, pathologists in the Research Focus develop improved methods that increase the efficiency of treatments for children with speech impediments and for stroke patients with impaired language abilities. Cognitive psychologists and movement scientists work together in studying how mind and body interact. For example, they measure the acquisition of complex motor sequences and how such expertise then influences intellectual skills. Developmental psychologists focus on the development of these capabilities during childhood – which are then cognitively and mathematically modeled by biological psychologists. The Potsdam Research Institute for

## International MSc and PhD Programs

**IECL International MSc/PhD Program**  
“Experimental and Clinical Linguistics”  
[www.iecl.uni-potsdam.de](http://www.iecl.uni-potsdam.de)

**CES International MSc/PhD Program “Clinical Exercise Science”**  
[www.ces.uni-potsdam.de](http://www.ces.uni-potsdam.de)

**IDEALAB International Doctorate in Experimental Approaches to Language and Brain**  
Erasmus Mundus, joint international program  
[www.em-idealab.com](http://www.em-idealab.com)

**International MSc Program**  
“Integrative Sports, movement and Health Sciences”  
<http://www.uni-potsdam.de/studium/studienangebot/masterstudium/master-a-z/isbgw.html>

**International MSc Program**  
“Cognitive Systems: Language, Learning, and Reasoning”  
[www.cogsys.uni-potsdam.de](http://www.cogsys.uni-potsdam.de)

**Integrated MSc/PhD-Program**  
“Cognitive Science – Embodied Cognition” (starts 2016)

*“In the Cognitive Sciences at the University of Potsdam, we focus on nothing less than the basis of human communication and other complex mental and motor abilities.”*

**Prof. Martin Fischer, PhD Director of the Research Focus Cognitive Sciences**



Multilingualism examines how the human mind and brain copes with more than one language by studying language processing in a range of different bilingual and multilingual children and adults. Furthermore, several linguistic projects investigate multilingual communities in urban Germany. They discover complex rules in new urban dialects like Kiezdeutsch and new developments in the Turkish spoken and written in Germany. Finally, computational linguists look at the dialogue between humans and machines. They tackle one of the ultimate challenges in computer science: making machines speak our language.

## Participating faculties and departments:

<b>Faculty of Arts</b>	Department of German Studies Department of Philosophy
<b>Faculty of Human Sciences</b>	Department of Linguistics Department of Psychology Department of Sports and Health Sciences Department of Teacher Education
<b>Faculty of Science</b>	Department of Computer Science Department of Mathematics

## Development of the Research Focus Cognitive Sciences at the University of Potsdam

