

Interdisciplinary projects of 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, here are some highlights for large-scale joint projects:

Collaborative Research Centre (DFG-SFB 1287) “Limits of Variability in Language: Cognitive, Grammatical, and Social Aspects” The Collaborative Research Centre „Limits of Variability in Language“ at the University of Potsdam brings together Germanists, linguists and psychologists. By exploring the systematicity and limits of variability in linguistic behaviors, the main focus of the CRC is on identifying constraints of the underlying linguistic system. The CRC characterizes variability in language as the range of different possible linguistic behaviors that are available to a language user, a language community, or in specific languages at any linguistic level.

www.uni-potsdam.de/sfb1287

Research Unit (DFG-FOR 2253) “Crossing the borders: The interplay of language, cognition, and the brain in early human development” In this recently established Research Unit linguists and psychologists work together to investigate human development during the first five years of life. Ten scientists from several German universities and the Max-Planck-Institute for Cognitive and Brain Sciences participate in the Research Unit, with four of seven research projects located at the University of Potsdam. In an interdisciplinary approach, the Research Unit aims at discovering the cognitive and neuronal mechanisms underlying early development of language and social cognition, with special emphasis on interactions between development in different domains.

www.crossing-project.de

MARIE SKŁODOWSKA-CURIE ACTIONS European Training Network “Understanding and predicting developmental language abilities and disorders in multilingual Europe” (PredictAble) PredictAble trains a new generation of young scientists at the crossroads between academic research, technological development in the private sector and clinical practice to pioneer an interdisciplinary approach to language-related developmental disorders, such as specific language impairment and developmental dyslexia. The research program will enhance the understanding of the cognitive mechanisms that underlie developmental disorders of spoken and written language by pooling international experts from academia and the private sector.

www.predictable.eu

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Research Focus Cognitive Sciences
www.uni-potsdam.de/cognitive-sciences

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Research Focus

Cognitive Sciences

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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

Interdisciplinary MSc and PhD Programs

IECL International MSc/PhD Program
“Experimental and Clinical Linguistics”
www.iecl.uni-potsdam.de

CES International MSc/PhD Program “Clinical Exercise Science”
www.ces.uni-potsdam.de

IDEALAB International Doctorate in Experimental Approaches to Language and Brain
 Erasmus Mundus, joint international program
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

Integrated MSc/PhD-Program
“Cognitive Science – Embodied Cognition”
<https://www.uni-potsdam.de/en/studium/what-to-study/masterstudium/master-a-z/cognitive-science.html>

“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 cope with more than one language by studying language processing in a range of bilingual and multilingual children and adults. Furthermore, several linguistic projects investigate multilingual communities in urban Germany. They discover complex rules in urban dialects like “Kiezdeutsch” and new developments in the Turkish language, as spoken and written in today’s 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:

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| Faculty of Arts | Department of German Studies
Department of Philosophy |
| Faculty of Human Sciences | Department of Linguistics
Department of Psychology
Department of Sports and Health Sciences
Department of Teacher Education |
| Faculty of Science | Department of Computer Science
Department of Mathematics |

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

