## Daniel Baldauf, Ph.D.

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## Curriculum Vitae

## EDUCATION and ACADEMIC TRAINING:

2019 – present	Associate Professor at the Center for Mind/Brain Sciences (CIMeC), University of Trento, Italy.
2017	Habilitation for Associate Professor at the Italian Ministry of Science (in academic sector $11/E1$ )
2016 – 2019	Assistant Professor at the <b>Center for Mind/Brain Sciences (CIMeC), University of Trento</b> , Italy.
2016 – present	Director of the MEG facility at the <b>Center for Mind/Brain Sciences (CIMeC), University of Trento</b> , Italy.
2014 – 2018	Research Scientist at the <b>Massachusetts Institute of Technology (MIT)</b> , McGovern Institute for Brain Research.
2009 – 2014	Postdoctoral Scholar at the <b>Massachusetts Institute of Technology (MIT)</b> , McGovern Institute for Brain Research, under supervision of Dr. Robert Desimone.
2008 – 2009	Postdoctoral Scholar in the EU-project "Grasp" with Dr. Heiner Deubel and Junior Lecturer in the Master program "Neuro-Cognitive Psychology", Ludwig-Maximilians-University Munich, Germany.
2006 – 2007	Research as Fulbright fellow at the <b>California Institute of Technology (Caltech)</b> , under supervision of Dr. Richard Andersen.
2005 – 2008	DFG-Graduate School "Orientation and Motion in Space" and dissertation under supervision of Dr. Heiner Deubel, <b>Ludwig-Maximilians-University</b> , Munich, Germany. Thesis: 'Visual selection of multiple movement goals'.
2005	Diploma in Psychology, Ludwig-Maximilians-University, Munich, Germany.
2004 – 2005	Research Assistant of Dr. Marc Wittman and Dr. Ernst Poeppel at the Centre for Human- Machine-Interaction of the Generation Research Program, Germany.
2001 – 2005	Research Assistant of Dr. Heiner Deubel, Ludwig-Maximilians-University, Munich, Germany.

2000 – 2005 Undergraduate and graduate studies of Psychology and Neurobiology (minor), Ludwig-Maximilians-University, Germany.

### GRANTS, FELLOWSHIPS & AWARDS

- Fellowship by the German Research Council (DFG) for a two-year postdoc position in my lab at CIMeC (Dr. Philipp Schwedhelm), 2017-2019. "Mapping out prefrontal control during feature-based attention".
- Fellowship by the Società Scienze Mente Cervello (SMC) for a two-year postdoc position in my lab at CIMeC (Dr. Zachary Langford), 2017-2019. "Neural mechanisms of high-level attentional control in humans (MEG/EEG)"
- Fellowship for Doctoral studies of the German Research Council (DFG), 2005-2008.
- Fellowship of the German Academic Exchange Service (DAAD) for one year of study abroad, 2006-2007.
- Fulbright Commission Travel Fellowship, 2006-2007.
- Student Investigator Award of the Vision Science Society, 2007.

### REFEREES

Dr. Robert Desimone, Director of the McGovern Institute for Brain Research, Professor, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, <u>desimone@mit.edu</u>, +1-617-324-2077.

Dr. Richard A. Andersen, Professor, Division of Biology, California Institute of Technology, <u>andersen@vis.caltech.edu</u>, +1-626-395-8336.

### PROFESSIONAL ACTIVITIES

Professional Memberships: Society for Neuroscience, Vision Science Society.

**Review Board Member:** Science, PNAS, Neuron, Journal of Neuroscience, Cerebral Cortex, Journal of Neurophysiology, Neuropsychologia, Philosophical Transaction of the Royal Society, Journal of Cognitive Neuroscience, Attention, Perception & Performance, Brain & Cognition, Cognitive Neuroscience, Experimental Brain Research, Human Factors, International Journal of Psychophysiology, International Journal of Social Robotics, Journal of Experimental Psychology: Human Perception & Performance, Journal of Vision, Vision Research.

### Editorial Board Member: Nature Scientific Reports

**Conference Organization Committees:** Rovereto Attention Workshop (RAW), 2019; Organization Committee for the CIMeC Colloquiums series 2017-2019

Open Science Committees: CIMeC (University of Trento) Open Science Committee.

## **Research Activities:**

My current research at the Center for Mind/Brain Sciences (CIMeC, University of Trento) investigates the general principles by which the directed communication between different brain areas may help orchestrate perception and sensorimotor control. Hereby we focus on fundamental psychological functions, such as

- (1) Selective Visual and Auditory Attention processes,
- (2) Working Memory
- (3) Executive Control functions
- (4) Alertness, Wakefulness, and Sleep.

To investigate these functions, we use a multi-modal neuroimaging approach in the lab, which involves classical psychological research methods such as behavioral task performance measures (testing reaction times, discrimination accuracy) and eye-tracking, but also magnetoencephalography (MEG), electroencephalography (EEG), and functional magnetic resonance imaging (fMRI). Often, we combine these tools within the same experimental subjects to complement spatial (e.g., fMRI) and temporal resolution (as in MEG), or to confirm measures of functional connectivity (i.e., coherent neural oscillations in two or more areas) with the subject's individual anatomical connectivity by means of diffusion tractography (DTI).

Our analyses focus on the communication between distant brain areas and the information flow between, which is one of the most urgent questions of modern neuroscience. We use this combination of various human brain imaging techniques to study the communication between brain areas by means of neural oscillations and synchrony. In particular, the magnetoencephalography (MEG/EEG) allows us to capture the highly dynamic interactions in large-scale networks with millisecond precision.

Since 2016 I've been appointed as the director of CIMeC's MEG facility and head of the 'Attention Network Group' (for more information see: <u>https://www.cimec.unitn.it/541/attention-network-group</u>). Our current research activities are structured in the following five main research projects:

## 1. Top-down mechanisms of visual and auditory attention

In this project, we use magnetoencephalography (MEG) recordings to investigate top-down mechanisms of visual attention. The superb temporal resolution and the whole-head coverage of MEG allows us to study interactions of wide-spread neural networks by means of neural oscillations and synchrony. In particular, we became interested in mechanisms subserving non-spatial attention, e.g. when searching for a certain color (see Marinato & Baldauf, 2019; Baldauf, 2018; Schwedhelm et al., 2017; Baldauf & Desimone, in rev.; Baldauf & Desimone, 2014).

## 2. Frequency tagging functionally specialized brain areas

In MEG and EEG recording we often use frequency-tagged stimuli, i.e. different aspects of a visual scene are updated periodically at slightly different presentation rhythms. After Fourier-transforming the whole brain activity, we can identify areas that picked up the stimulus' oscillation patterns and study their role in processing certain aspects of the layout. In this project, we also developed a 2D-Fourier based frequency-tagging approach that allows tagging different aspects of a scene simultaneously and retrieving phase-locking values and information about the relative phase-lags ('latencies') for various functional compartmentalizations in high-level visual cortex (see DeVries & Baldauf, in rev.) and auditory cortex (Marinato & Baldauf, 2019; Baldauf & Desimone, in rev.; Baldauf & Desimone, 2014).

## 3. Functional and anatomical connectivity

When we study patterns of functional connectivity, e.g. in terms of coherent oscillatory activity in two brain regions, we also try to pinpoint the anatomical basis of these functional connectivities. To do so we analyze DTI scans in our participants and reconstruct fiber bundles in the white matter that connect the respective sites of activation. This project is an ongoing collaboration with the Neuroinformatics group at *Fondazione Bruno Kessler*.

### 4. Visual attention during the preparation of sequential behavior

Much of human intelligent and complex behavior is based on the skillful combination of motor primitives and sequential organization. In this line of experiment human participants are asked to prepare for behavioral sequences. We observe that attention processes play an important role in the preparation and planning of such sequences. For example, attention splits into multiple foci as to cover several (up to three) subsequent goal positions in parallel (see Baldauf, 2018; Baldauf, 2011; Baldauf & Deubel, 2010; Baldauf et al., 2008a, 2008b).

### 5. Changes to the patterns of functional connectivity in various states of resting wakefulness and sleep.

In this project, we explore with high-resolving magnetoencephalography signals the dynamic changes in brain communication as the human participants are in various states of resting wakefulness or as they undergo cycles of various sleep stages (see Brancaccio et al., in rev.).

**Grant activities:** As part of my research activity, I applied for the following national and international grants over the course of the last two years:

- PRIN Novel methods of phase synchronization (with V. Pizzella, Chieti University, under consideration);
- *New Frontiers in Research Fund* (NFRF, 'A novel approach to unveil the brain signatures of motor control', with S. Monaco, 2019);
- German Research Foundation (DFG, Program for Postdoctoral fellowships abroad, awarded 2017-2019);
- Rubincon Foundation (Netherlands, 2018);
- *ERC-Synergy Grants* ('Understanding motor networks', with C. Miniussi, 2018);
- H2020 Marie-Skodowska-Curie Actions (H2020-MSCA-IF program for Postdoctoral fellowships abroad, 2017);
- *NSF-PIRE:* Towards understanding the network of human general attention (with G. Zelinsky, 2017);
- Action on hearing loss- International project grant (with F. Pavani, 2017);
- BRANDY: Brain Network Dynamics (awarded 2017);
- MIUR PON ('Approcio multimodale MEG digital PET per lo studio delle malattie neurodegenerative MePemade', with C. Miniussi & G. Sorentini, budget 414114 €, 2017).
- *Human Frontier Science Program* (HSFP: LIP000/260 Towards understanding the brain network of attention control, with M. Vo & G. Zelinsky, 2017);
- NSF Next Generation Networks for Neuroscience (NSF-Neuronex, with G. Zelinsky & McPeek, 2016);
- *National Institute of Health (NIH)* ('Prevalence effects in visual search: Theoretical and practical implications, with J.M. Wolfe & G. Kreiman, Harvard University, 2016);
- National Science Foundation (NSF)- Integrative Strategies for Understanding Neural and Cognitive Systems (NSF-NCS, with G. Zelinsky, 2016)

### Ongoing collaborations:

- University of Glasgow, United Kingdom, (prof. Gross, Dr.Keitel)
- University of Muenster, Germany, (prof. Gross)
- McGovern Institute for Brain Research (MIT), U.S.A. (prof. Desimone)
- Department of Psychology, Stony Brook University, New York (prof. Zelinsky)
- University Trento, Physics department (prof. Ricci)
- University of Chieti, (prof. Pizzella)
- Italian Institute of Technology (IIT, prof. Panzeri, Dr. Becchio)
- Fondazione Bruno Kessler (prof. Avesani)

# Teaching Activities:

My past and current teaching activities within CIMeC's MA- and PhD-programs cover a wide range of topics within the cognitive-neuroscience curriculum, such as attention, perception, motor control, statistical analyses, research design, analysis of EEG/MEG data, and the analysis of behavioral and MEG/EEG responses. In particular I've recently taught the following courses:

- University of Trento, CIMeC, MA-program: *'Research Design and Statistics'* (2016-2018), in which students learn the proper conceptualization and design of research studies in the fields of psychology and cognitive sciences, as well as an introduction to the statistical analyses used to analyze different types of data (behavioral responses, EEG recordings etc.)
- University of Trento, CIMeC, MA-program: *'MEG Hands-on methods'* (2016-present), a hands-on introduction in the analysis of MEG data covering classical evoked responses and frequency analyses of brain responses.
- University of Trento, CIMeC, MA-program: *'Computational Skills and Programming'* (2016-present), in which students learn computational tools to program their own experimental psychological tests and analyze recorded data (e.g., using MATLAB).
- University of Trento, CIMeC, MA-program: *'Brain Connectivity class* (2017-present), a seminar introducing concepts and experimental studies of brain connectivity.
- University of Trento, CIMeC, MA-program: *'Foundations of Brain Imaging'* (2018-present), a lecture introducing concepts, methods and analyses of concurrent functional brain imaging techniques (fMRI, EEG/MEG, and transcranial brain stimulation).
- University of Trento, CIMeC, PhD-program: *'Code of conduct of science'* (2017-present), a lecture introducing related concepts in the light of psychological / cognitive sciences research.
- University of Trento, CIMeC, PhD-program: '*MEG Hands-on methods*' (2016-present), a hands-on introduction in the analysis of MEG data covering classical evoked responses and frequency analyses of brain responses.
- Massachusetts Institute of Technology (MIT), Department of Brain and Cognitive Sciences, course 9.S915 together with Dr. Tomaso Poggio, Dr. Ellen Hildreth, and Dr. Robert Desimone: 'Aspects of a computational theory of intelligence' (2014-2015).
- Ludwig-Maximilians University (Munich, Germany), Department of Psychology, BA-program: *Quantitative methods and statistics for psychologists*' (2008 2009).
- Ludwig-Maximilians University (Munich, Germany), Department of Psychology, BA-program: *Psychological representations of time and space*' (2008 2009).
- Ludwig-Maximilians University (Munich, Germany), Department of Psychology, MA-program: '*Visual perception in action and sensory-motor control*' (2005 2006).
- Ludwig-Maximilians University (Munich, Germany), Department of Psychology, MA-program: '*Visual perception, attention, and memory*' (2005 2006).
- Ludwig-Maximilians University (Munich, Germany), Department of Psychology, MA-program: '*Motor functions*' (2005-2007).

In addition to my concurrent teaching activities in the MA- and PhD-programs of CIMeC, I currently supervise 3 PhD students in my lab at CIMeC:

- 2018-present: Arianna Brancaccio (PhD school of CIMeC, University of Trento)
- 2018-present: Marco Bedini (PhD school of CIMeC, University of Trento)

• 2016-present: Giorgio Marinato (PhD school of CIMeC, University of Trento)

In my lab at CIMeC, I supervised the following MA students during their Master theses:

- 2018-2019: Melis Ince, Supervision of Master Thesis (MA-Program of CIMeC, University of Trento)
- 2018-2019: Paolo Cordone, Supervision of Master Thesis (MA-Program of CIMeC, University of Trento)
- 2018-2019: Aimee Arely Flores Sandoval, Supervision of Master Thesis (MA-Program of CIMeC, University of Trento)
- 2017-2018: Mattia Zanzi, Supervision of Master Thesis (MA-Program of CIMeC, University of Trento)
- 2017-2018: Arianna Brancaccio, Supervision of Master Thesis (MA-Program of CIMeC, University of Trento)
- 2017-2018: Greg Ginnan, Supervision of Master Thesis (MA-Program of CIMeC, University of Trento)
- 2017-2018: Marco Bigica, Supervision of Master Thesis (MA-Program of CIMeC, University of Trento)
- 2016-2017: Eelke deVries, Supervision of Master Thesis (MA-Program of CIMeC, University of Trento)

In the past, I have also been strongly involved in graduate and undergraduate research supervision in BA/MA or Ph.D. projects:

- 2013-present: Yasaman Bioki, visiting PhD student at MIT (USA)
- 2013-present: Ben Lu, visiting PhD student at MIT (USA)
- 2014-present: Anming Hu, visiting PhD student at MIT (USA)
- 2012-2013: Min Xu, visiting PhD student at MIT (USA)
- 2008-2010: Tristan Nakagawa, MA student at the Ludwig-Maximilians University (Munich, Germany)
- 2006-2008: Georgiana Juravle, MA student at the Ludwig-Maximilians University (Munich, Germany)
- 2012-2013: Katharine Xiao, undergraduate student at MIT (USA)
- 2010-2012: Andy Jiahao Liang, undergraduate student at MIT (USA)
- 2010-2012: Camela Lao, undergraduate student at MIT (USA)
- 2009-2010: Christopher Luna, undergraduate student at MIT (USA)

## List of Publications:

1. INTERNATIONAL PEER-REVIEWED JOURNAL ARTICLES:

Brancaccio, A., Bigica, M., Tabarelli, D., & **Baldauf, D.** (in revision). Cortical Source Reconstructions of Sleep-stage Specific Oscillatory Patterns. *Nature Scientific Reports*.

**Baldauf, D.**, Grossman, N., Hu, A.M., Boyden, E. & Desimone, R. (in revision). Transcranial alternating current stimulation reveals causal role of brain oscillations in visual attention.

**Baldauf, D.**, & Desimone, R. (in revision). Top-down biasing signals of non-spatial, object-based attention. *Nature Communications*.

Bagherzadeh, Y., **Baldauf, D.**, Pantazis, D., & Desimone, R. (2020). Alpha Synchrony and the Neurofeedback Control of Spatial Attention. *Neuron*, *105*(3), 577-587.

Tabarelli, D., Keitel, C., Gross, J., & **Baldauf, D.** (2020). Spatial attention enhances cortical tracking of quasirhythmic visual stimuli. *NeuroImage*, *208*, 116444.

DeVries, E., & **Baldauf, D.**, (2019). Attentional Weighting in the Face Processing Network: An MRI-guided MEG Study using multiple cyclic entrainments. *Journal of Cognitive Neuroscience*, *31*(10), 1573-1588.

Marinato, G., & **Baldauf, D.**, (2019). Object-based attention in complex, naturalistic auditory streams. *Nature Scientific Reports*, 10, 22311.

**Baldauf, D.** (2018). Visual selection of the future reach path in obstacle avoidance. *Journal of Cognitive Neuroscience*, 30(12), 1846-1857.

Schwedhelm, P., **Baldauf, D.**, Treue, S. (2017). Electrical stimulation of macaque lateral prefrontal cortex modulates oculomotor behavior indicative of a disruption of top-down attention. *Nature Scientific Reports*, 7, 17715.

Xu, M., **Baldauf, D.**, Desimone, R., Chang, C.Q., & Tan, L.H. (2017). Distinct neural patterns for different languages in bilinguals. *Science Advances*, 344.

Baldauf, D., & Desimone, R. (2014). Neural mechanisms of object-based attention. Science, 344, 424-427.

**Baldauf, D.** (2011). Chunking movements into sequence: The visual pre-selection of subsequent goals. *Neuropsychologia*, 49(5), 1383-1387.

Baldauf, D., & Deubel. H. (2010). Attentional landscapes in reaching and grasping. Vision Research, 50, 999-1013.

**Baldauf, D.**, & Deubel, H. (2009). Attentional selection of multiple movement goal positions before rapid hand movement sequences: an ERP study. *Journal of Cognitive Neuroscience*, 21(1), 18-29.

**Baldauf, D.**, Burgard, E., & Wittmann, M. (2009). Time perception as a workload measure in simulated car driving. *Applied Ergonomics*, 40(5), 929-935.

**Baldauf, D.**, Cui, H., & Andersen, R.A. (2008). The posterior parietal cortex encodes in parallel both goals for double-reach sequences. *Journal of Neuroscience*, 28(40):10081-10089.

**Baldauf, D.**, & Deubel, H. (2008). Visual attention during the preparation of bimanual movements. *Vision Research*, 48, 549-563.

**Baldauf, D.**, & Deubel, H. (2008). Properties of attentional selection during the preparation of sequential saccades. *Experimental Brain Research*, 184, 411-425.

**Baldauf, D.**, Wolf, M., & Deubel, H. (2006). Deployment of visual attention before sequences of goal-directed hand movements. *Vision Research*, 46, 4355-4374.

### 2. CONFERENCE PROCEEDINGS AND ABSTRACTS

**Baldauf, D.**, (2018). Mechanisms of functional connectivity in attention. International Organization for Psychophysiology meeting (IOP), Lucca, Italy.

**Baldauf, D.**, (2018). Functional connectivity mechanisms of attention. International Symposium: Visual Search and Selective Attention (VSSA4). Munich/Ammersee.

**Baldauf, D.**, & DeVries, E. (2018). Top-down Attention in the Face-Processing Network: an MRI-guided MEG Study using Multiple Simultaneous Frequency Tags. Journal of Vision, 18 (9), 385-385

Baldauf, D., (2017). Neural synchrony and functional connectivity mechanisms of attention. SIPF, Rome.

Bagherzadeh, Y., **Baldauf, D.**, Lu, B., Pantazis, D., & Desimone, R. (2017). Alpha and gamma neurofeedback reinforce control of spatial attention. Journal of Vision 17 (10), 385-385.

**Baldauf, D.**, Grossman, N., Hu, A.M., Boyden, E. & Desimone, R. (2016). Transcranial alternating current stimulation (tACS) reveals causal role of brain oscillations in visual attention. Journal of Vision 16 (12), 937-937

**Baldauf, D.**, & Desimone, R. (2016). Mechanisms of spatial versus non-spatial, modality-based attention. Human Brain Mapping. Geneve.

**Baldauf, D.**, & Desimone, R. (2016). Mechanisms of spatial versus non-spatial, modality-based attention. Annual meeting of the Society for Neuroscience, 2016. Program no. 531.27. San Diego.

**Baldauf, D.** (2015). Top-down biasing signals of non-spatial, object-based attention. Journal of Vision, 15(12), 1395-1395.

**Baldauf, D.**, & Desimone, R. (2014). Phase-slope analysis reveals top-down directionality of fronto-temporal coherence in object-based attention. Hot topic talk at the 19<sup>th</sup> International Conference on Biomagnetism (Biomag), Halifax, 2014.

Baldauf, D., & Desimone, R. (2014). Neural mechanisms of object-based attention. Vision Science Society, St.Pete, 2014.

Baldauf, D., & Desimone, R. (2013). Neural mechanisms of object-based attention. Annual Meeting of the Society for Neuroscience, San Diego, 2013.

Baldauf, D., & Desimone, R. (2012). Neural mechanisms of feature attention in MEG. Annual Meeting of the Society for Neuroscience, New Orleans, 2012.

Baldauf, D., & Desimone, R. (2012). Neural mechanisms of feature attention in MEG. European Conference on Visual Perception (ECVP), Sardinia, Italy, 2012.

Baldauf, D., & Desimone, R. (2012). Neural mechanisms of feature attention. BIOMAG, Paris, France, 2012.

**Baldauf, D.** (2011). Gamma-band activity reflects differential selection-for-action before single- and double-saccades. Annual Meeting of the Vision Sciences Society (VSS), Naples, (USA).

**Baldauf, D.** (2009). Binding into sequence: temporal dynamics of sequential movements modulate the attentional pre-selection of subsequent goals. Annual Meeting of the Vision Sciences Society (VSS), Naples, (USA).

**Baldauf, D.,** & Deubel, H. (2008). Splitting spatial attention: The selection of multiple subsequent movement goals. 2nd International symposium on visual search and selective attention, Fribourg, Switzerland.

**Baldauf, D.**, Cui, H., & Andersen, R.A. (2007). The posterior parietal cortex encodes the first and second goal in sequential reaching arm movements (abstract). Annual Meeting of the Society for Neuroscience, San Diego, 2007.

**Baldauf, D.,** & Deubel, H. (2007). Visual selection of multiple goal positions before rapid hand movement sequences. Journal of Vision 7 (9): p. 115

**Baldauf, D.,** & Deubel, H. (2006). Attentional Deployment Prior to the Execution of Hand and Eye Movement Sequences. Journal of Vision 6 (6): p. 947

Deubel, H., & **Baldauf, D.** (2006). Behavioural and electrophysiological evidence for selective visual processing during the preparation of saccade sequences. European Conference for Visual Perception, ECVP.

Deubel, H., & **Baldauf, D.** (2005), Attentional deployment before sequences of eye and hand movements, European Conference on Eye Movements, Bern.

Deubel, H., & **Baldauf, D.**, & Wolf, M. (2004), Attentional selection prior to the execution of goal directed sequential eye and hand movements. ECVP, Budapest.

### 3. INVITED TALKS

**Baldauf, D.** (2018). Mechanisms of functional connectivity in attention. International Organization for Psychophysiology meeting (IOP), Lucca, Italy.

**Baldauf, D.** (2018). Functional connectivity mechanisms of attention. International Symposium: Visual Search and Selective Attention (VSSA4). Munich/Ammersee.

Baldauf, D. (2017). Neural synchrony and functional connectivity mechanisms of attention. SIPF, Rome.

Baldauf, D. (2017). Cortical Mechanisms of Attention. Descartes University, PARIS

Baldauf, D. (2017). Mechanisms of Attention. Goethe University, Frankfurt.

**Baldauf, D.** (2014). Neural Mechanisms of object-based attention. Massachusetts General Hospital, Department of Radiology. Harvard Medical School, Charlestown, USA.

**Baldauf, D.** (2014). Neural Mechanisms of object-based attention. The Children's Hospital of Harvard University, Harvard, USA.

Baldauf, D. (2013). Neural Mechanisms of feature-based attention. CEA, NeuroSpin (INSERM), Paris, France.

**Baldauf, D.** (2012). Mechanisms of non-spatial, object-based attention. Wolfe laboratory, Medical school, Harvard University, USA.

**Baldauf, D.** (2009). Visual selection during the preparation of movement sequences. Department of Psychology, Stanford University, USA.

Baldauf, D. (2008). Attentional selection of multiple movement goals. University of Hamburg, Germany.

**Baldauf, D.** (2008). Attentional selection of multiple movement goals: Neural and behavioral studies. University of Bielefeld, Germany.

**Baldauf, D.** (2008). Splitting spatial attention: The selection of multiple subsequent saccade goals. Symposium of Eye movement in cognitive research. 9. Fachtagung der Gesellschaft fuer Kognitionswissenschaft. Dresden, Germany.

**Baldauf, D.** (2008). Visual selection during the preparation of movement sequences. McGovern Institute, MIT, Boston, USA.

**Baldauf, D.** (2008). Target selection during the preparation of movement sequences. Institute of Movement Neuroscience, University College London (UCL), London, UK.

**Baldauf, D.** (2007). Selective vision during the preparation of eye- and hand-movement sequences. The Rank Prize Funds Mini-Symposium on Representations of the Visual World in the Brain. Grasmere, UK.

Baldauf, D., Wolf, M., & Deubel, H. (2003), First Visual Search Symposium, Munich, Germany

#### 4. DOCTORAL THESIS

Baldauf, D. (2007). Visual selection of multiple movement goals.

#### 5. DIPLOMA THESIS

Baldauf, D. (2005). Allocation of attention before sequential hand movements.