



NETZWERK  
ALTERNS-  
FORSCHUNG



UNIVERSITÄT  
HEIDELBERG  
ZUKUNFT  
SEIT 1386

## **PhD Scholarship in Psychology, Neuroscience or Neurolinguistics in the NAR Kolleg at the Network Aging Research, Heidelberg University**

The Network Aging Research is pleased to offer a PhD Scholarship “**The Effect of Bilingualism on the Age of the Onset of Dementia**” (Fellows: Prof. Dr. Patric Meyer, Dr. Birgit Teichmann) and tenable from January 1, 2017. The scholarship is for a three year period with Euro 1,500 per month. Generally, the research scholarship is exempt from tax.

Interdisciplinary research at the NAR of Heidelberg University concentrates on different aspects of aging. In the NAR Kolleg Graduate Program, funded by the Klaus Tschira Foundation ([www.nar.uni-heidelberg.de/juniorforscher/kolleg/](http://www.nar.uni-heidelberg.de/juniorforscher/kolleg/)), a total of six doctoral students are currently conducting research – with regard to the new technologies – on the impact of living conditions such as physical activity and bilingualism that can help reduce the limitations of old age.

### **Bilingualism, Plasticity, and Dementia**

Individuals are considered bilingual when they have learned two languages by the age of seven. Being bilingual means having both languages constantly active, even when in a monolingual environment (Kroll et. al. 2012). This means that bilinguals constantly differentiate between important and unimportant information, thus suppressing the language that is not needed. This requires an acute level of attention from the bilingual as well as skills including managing inhibition, planning, and switching which represent the components of executive functioning. The benefits associated with a bilingual experience seem to result from the executive function training in early childhood which enables bilinguals to surpass monolinguals in dual-task situations, i.e. to successfully fulfil two tasks simultaneously. Studies that examined dual-task performance have demonstrated that the ability to inhibit can especially be conceived as essential in these situations (Brown et. al. 2013). In particular, patients with mild cognitive impairment (MCI) benefit from undertaking dual-task training. Likewise, the studies on the effects of bilingualism have shown that bilinguals experienced onset symptoms of Alzheimer’s dementia or mild cognitive impairment up to six years later than monolinguals. Furthermore, it is currently being discussed whether improved ability to inhibit may also play a role. (Craik et. al., 2010, Alladi et. al. 2013).

### **Requirements:**

The successful applicant will conduct the dissertation project focused on the questions: What type of bilingualism (early vs. late learning) has the most positive effect on the delay of the onset of dementia and what is the impact of both bilingualism and monolingualism on motor-cognitive dual task performance (Dual Tasking).

- The successful candidate will join a vibrant scientific community at the Network Aging Research of the Heidelberg University with strong links to national and international interdisciplinary research institutes and collaborate actively in the existing cooperation projects. The successful applicant is expected to systematically research and review the

theoretical literature, to help organize the survey, including the recruitment of participants, to collect and utilize data sets for statistical analysis as well as prepare scientific papers for publication.

**Qualification and Personal Qualities:**

- Master Degree in Psychology, Neuroscience or Neurolinguistics
- Affinity with topics related to learning, bilingualism, and the research on aging
- Preferably knowledge of both cognitive and functional performance in the elderly
- Commitment to both reviewing and writing scientific papers (in English)
- Team player skills and ability to work independently
- Flexibility and strong commitment to the field of research
- Good communication and organizational skills
- Knowledge of, and experience with the current MS-Office software
- Strong experience with experimental research methods and statistics, including SPSS
- Excellent programming and data analysis skills, including Matlab, Eprime, and VisionAnalyser)
- Excellent command of the English language

The University of Heidelberg is an equal employment opportunity workplace, which strongly supports the scientific career of women. Qualified women are therefore especially encouraged to apply. Disabled applicants with equal qualifications and competence will be given preference.

Applications (in one pdf) should be submitted to Dr. Birgit Teichmann at [teichmann@nar.uni-heidelberg.de](mailto:teichmann@nar.uni-heidelberg.de) by January 6, 2017.