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Prof. Dr. Michaela Maier Fortstraße 7; K 5.26 76829 Landau

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MY MOTIVATION TO BECOME A SMIP-ASSOCIATE

Sehr geehrte Frau Prof. Dr. Maier,

"Most published research is false!", John Ioannidis stated in 2005. Meanwhile, luminaries like Brian Nosek suggest that one driving force towards improving science could be a profound statistical (re-)education. SMiP fosters this cultural transformation. The program stands right in the middle, providing (a) a coherent research network, (b) a cognitively stimulating environment, and, most importantly, the proficient staff to guide the next generation of research aspirants. I want to be part of it. Why? Because I want to develop at my own best. The structured Ph.D. program will help me to do so. For example, the "foundations" will aid in developing essential soft and hard skills for my scientific career, like proficiency in scientific writing and in-depth know-how on quantitative methods. The "extensions" will put the finishing touch on my methodological training. However, they will also allow me to sharpen my profile, which I'll explain next.

Metascience Thinking outside the box has always been prior for me. So despite the main scope of my schedule, like social psychology (emphasis: stereotypes, racism & discrimination) and empirical research methods (emphasis: multivariate analysis methods), I attended additional courses in philosophy (emphasis: logic & philosophy of science). The cross-disciplinary toolkit now intertwines with my doctoral studies on metascience. In October 2021, Prof. Dr. Eunike Wetzel recruited me for her team in the DFG Priority Program META-REP *LINK*. Now, I do meta-research at her lab on the role of measurement in the replicability of empirical findings. Next summer, for example, we will conduct a cross-disciplinary, multisample replication project. Combining it with an experiment on the influence of measurement on replicability and effect size heterogeneity abstracts one of our three projects. My team member, Caroline Boehm, told me that Prof. Dr. Beatrice Kuhlmann is also passionate about metascience. She might be interested in becoming my secondary supervisor.

Quantitative Methods As an undergraduate student, I became passionate about quantitative methods. Besides introductory courses on data collection, descriptive statistics, and multivariate analysis, I acquired advanced skills in self-studies. For example, I trained myself in Bayesian Data Analysis and started lately with probabilistic machine learning. My methodological skill set did pay off in 2020 during my research internship at the Center for (ZEPF). Dr. Inga Wagner invited me to join her team, elucidating mode effects in comparative studies (VERA). Our efforts finally led to an article we could publish in the European Journal of Psychology of Education in 2021. All SMiP courses offered will support me going forward in my modeling. But as a committed Bayesian, I am curious about working with Prof. Dr. Jeffrey N. Rouder. He might also be interested in becoming my third supervisor.

Computer Science Data science In Mannheim, I first enthusiastically learned how to use SPSS and Stata; in the meantime, however, more complex estimation and data problems in my work at the zepf also require the experienced use of the statistical software R (e.g., in dealing with multilevel models). Furthermore, I already learned to program in this language in Bamberg. An interesting project in this context was the development of elisr. "Exploratory Likert Scaling in R" is an R package for exploratory dimensional analysis in the social sciences, which I was recently able to publish on CRAN. In my master's thesis ("Exploratory Dimensionality Analysis in the Social Sciences"), I am currently investigating the advantages of this method in finding latent variables in complex data sets (e.g., in comparison with exploratory factor analysis)

for your interest in a structured Ph.D. program at the Research Training Group SMiP. Elaborate on your study plans and your research interests. It is very important to show that your research interests meet closely with the current research of the respective faculty member(s) you would be interested in working with. The motivation letter should be in English and not exceed two pages (not more than 700 words).

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