

Announcement of 12 PhD Positions

The newly formed interdisciplinary Research Training Group "**Critical Infrastructures: Construction, Functional Failures, and Protection in Cities**" at the Darmstadt University of Technology, Germany (close to Frankfurt), announces **twelve PhD positions (3 years)** scheduled to begin 1 October 2016. The Research Training Group is funded by the German Research Council, and analyzes critical infrastructures in cities—the networked systems which supply urban conglomerations with energy, water, communication facilities, and transportation services, and which treat and dispose of waste- and stormwater. Those infrastructures have become the nervous systems of modern cities, and their failure can trigger dramatic crises. In recent years, the growing vulnerability that seem to accompany the increased dependency on infrastructural networks has been a controversial topic. That controversy is due not only to multiple external threats such as natural disasters, terrorist and cyber attacks, but also to the growing complexity and increasing interdependencies of infrastructure systems.

The basic assumption of the Research Training Group is that critical infrastructures are highly context dependent both in temporal and spatial terms, and that they also manifest multiple spatial and temporal relations. The group's aim is to understand and to explain these complex systems in their spatiality and temporality, and to explore urban practices of planning, of preventing interruptions and of preparing for them. Its research is inspired by urban studies and science and technology studies and takes place in three specific areas.

- (1.) First, we intend to identify the critical aspects of constructing technical infrastructures in light of their historical and spatial contexts, and we attempt to uncover those infrastructures' social and political aspects, in addition to their technical and functional needs.
- (2.) Second, we assume that complex spatial and temporal arrangements are particularly visible in cases of infrastructural dysfunction. We investigate failures and functional crises of urban infrastructures, including the spatially and temporally complex conditions of those infrastructures' vulnerability and resilience.
- (3.) Third, we ask how prevention of and preparedness for urban infrastructure failures are, or can be, organized and which spatial and temporal aspects play a role in the protection of critical infrastructures.

The Research Training Group is truly interdisciplinary and is made up of representatives of the following subjects: Spatial and Infrastructure Planning, Modern History, History of Technology, Medieval History, Philosophy of Technology, Comparative Analysis of Political Systems, Ubiquitous Knowledge Processing, Design and Urban Development, Rail Systems, and Informatics in Construction Science. More information about the scientific program, the professors participating in the Research Training Group and about exemplary dissertation topics can be found at our website: www.kritis.tu-darmstadt.de (to be functional shortly). Before submitting your application, we recommend to contact one of the professors for advice on possible research topics/ designs or for any other questions you might have, and to request the summary of the research program.

Within this program we are currently inviting applications for two Ph.D. positions (full-time) in the field of **Spatial and Infrastructure Planning** (www.raumplanung.tu-darmstadt.de). Candidates applying in this field of are expected to examine the governance of resilient cities and infrastructures in an international perspective. Especially welcome are PhD proposals with a focus on the interconnectivity and coordination of various infrastructure sectors, spatial dimensions of cascading infrastructure failures and the planning challenges of urban crisis prevention and management. Sample thesis topics include:

- * Networked Vulnerabilities? Smart Infrastructures in Urban Crisis Prevention and Management
- * The Governance of Urban Resilience: Preparedness and Prevention Strategies through Utilities, Technical Agencies, and Local Civil Protection
- * The Making of Urban Security? Urban Infrastructure Governance and the War on Terrorism
- * Territoriality and Networked Space: New Geographies in the Protection of Critical Infrastructures
- * Planning for Daily Interruptions: The Making of Urban and Infrastructural Resilience in Africa

These are just sample themes—you are encouraged to develop your own. Please contact Professor Jochen Monstadt (monstadt@kritis.tu-darmstadt.de) for advice on possible research topics/designs.

Tasks: the Graduate Fellows must complete a dissertation within three years in their respective fields with a focus on one (or more) of the above-mentioned three research areas. The rationale of the Research Training Group is to support interdisciplinary cooperation among the Fellows, and all members are expected to participate in mandatory seminars, symposia, and workshops. Since course work and seminars are carried out in both German and English, it is expected that applicants are willing to participate in German courses offered by the university and to learn to read and understand spoken German. Fellows are also expected to work together in our common office downtown Darmstadt and thus need to take up their residence in the city or in the Frankfurt/Rhine-Main region.

Terms and conditions: The Research Training Group offers an excellent research infrastructure for PhD candidates who would like to complete their dissertations in an innovative, internationally networked program. The Fellows will work in common areas with dedicated office space, will have the support of participating professors, and can use all university facilities to support their work. The special opportunities of this structured training program include the possibility of working together with renowned colleagues for several months at one of our four collaborating European universities. We also are working with various partners in private companies and civil services offering internships to our Fellows.

Salaries depend on each Fellow's qualifications and experience, and will be calculated according to the collective agreement of TU Darmstadt (TV-TU Darmstadt). The positions are limited to three

years and include, depending on the Fellow's home faculty, a salary at 65%–100% of full-time employment (monthly salaries range from ca. € 1,500 to € 2,100 after tax and include health insurance and social security). Half-time employment is also possible.

Your application: TU Darmstadt intends to increase the number of women scientists and encourages them to apply. Candidates who have a degree of disability of at least 50% are given preferred treatment if equally qualified. Please submit your application by 10 July 2016 in English or German to one of the professors in your research field and to info@kritis.tu-darmstadt.de (as one pdf file, max. 6 MB). You must enclose (1) a CV with information on academic qualifications, language skills and international experience, (2) scanned copies of academic credentials, and (3) a dissertation proposal of up to five pages. Before submitting your application, we strongly recommend to contact one of the professors named on our website for advice on possible research topics/designs or for any other questions you might have, and to request the summary of the research program.

We look forward to your application!