Geophysical Research Abstracts
Vol. 12, EGU2010-1802, 2010
EGU General Assembly 2010

Promoting Interdisciplinary Education: The Vienna Doctoral Programme on Water Resource Systems

Günter Blöschl, Christian Bucher, Gemma Carr, Andreas Farnleitner, Helmut Rechberger, Wolfgang Wagner, and Matthias Zessner

Centre for Water Resource Systems, Vienna University of Technology, Vienna, Austria (office@waterresources.at / +43-1-58801-22399)

An interdisciplinary approach is often described as a valuable strategy to assist in overcoming the existing and emerging challenges to water resource management. The development of educational approaches to instil a culture of interdisciplinarity in the future generation of water resource professionals will help to meet this strategic need. The Vienna Doctoral Programme on Water Resource Systems demonstrates how the adoption of an interdisciplinary education framework has been applied to a graduate programme in the water sciences.

The interdisciplinary approach aims to provide doctoral research students with an understanding of the wide spectrum of processes relevant to water resource systems. This will enable them to bring together a range of ideas, strategies and methods to their current research and future careers. The education programme also aims to teach the softer skills required for successful interdisciplinary work such as the ability to communicate clearly with non-specialist professionals and the capacity to listen to and accommodate suggestions from experts in different disciplines, which have often not traditionally been grouped together.

The Vienna Doctoral Programme achieves these aims through teaching an appreciation for a wide variety of approaches including laboratory analysis, field studies and numerical methods across the fields of hydrology, remote sensing, hydrogeology, structural mechanics, microbiology, water quality and resource management. Teaching takes the form of a detailed study programme on topics such as socio-economic concepts, resource and river basin management, modelling and simulation methods, health related water quality targets, urban water management, spatial data from remote sensing and basics for stochastic mechanics. Courses are also held by internationally recognised top scientists, and a guest scientist seminar series allows doctoral researchers to profit from the expertise of senior researchers from around the world. Through a structured one-on-one mentoring programme close interaction is ensured between the students and the internationally reputed staff of the programme. This gives the opportunity for the encouragement of interdisciplinary thinking at the individual level.

Interdisciplinarity also evolves passively through interactions between the doctoral students in their daily research work, during journal clubs, meetings, workshops and courses. A total of 22 doctoral students are enrolled in the programme at any time which allows for cross-fertilisation across the wide range of research projects.

Finally, the programme is holistic, incorporating all aspects of the hydrological system at the catchment and multi-catchment scale. The ultimate aim is to provide an education programme which not only equips the students with an understanding of the need for interdisciplinarity, but also with the skills required to deliver interdisciplinary work in keeping with the holistic catchment management paradigm adopted by the hydrological science community.