



## **The Vienna Doctoral Programme on Water Resource Systems: Achievements and challenges of an interdisciplinary research and education programme**

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An interdisciplinary education is one of the cornerstones of the Doctoral Programme on Water Resource Systems running at Vienna University of Technology. This is being achieved through a structured education programme comprising of compulsory and optional courses provided in hydrology, geographical information, structural mechanics, microbiology, water quality and resource management. Simultaneously, the doctoral students undertake individual research in close collaboration with a small supervisory panel. This gives students both solid knowledge in a chosen specialisation, and proven competence in a diverse range of fields. Several achievements and challenges have been encountered since the programme started, just over one year ago. These were highlighted during our first Annual Symposium where all 23 students, 6 professors and 3 post-doctoral researchers gathered to exchange ideas and identify research collaborations.

The benefits of the programme in terms of scientific contributions are starting to emerge and are noticeable through the wide range of interdisciplinary collaborations that are leading to new, and cutting edge research. While many of these collaborations evolve easily (for example, those across hydrogeology and micro-biology), other areas present greater challenges (such as, water quality and mechanics of structures). Our strategy to achieve collaborations across traditionally distinct disciplines is to offer sufficient space for discussion, dialogue and joint learning through regular research cluster meetings and symposia. Our Annual Symposium provides such a forum and our experiences offer several lessons for those endeavouring to facilitate interdisciplinary research. For us, a focus on discussion rather than individual presentations is viewed to be most effective. The symposium was therefore structured around short introductory presentations followed by group discussion, then poster sessions focussed on research themes, rather than disciplines. However, the extended discussion sessions were recognised to come at the cost of sufficient information provision to participants from some disciplines, which could inhibit potential discussion. Future symposia need to include an encompassing introduction to alert all participants to key concepts, terms and the state of the art.

Regular meetings to maintain and develop research bonds are essential and for this reason, we elected to hold a symposium every six months, rather than annually. It is anticipated that the extra time demands over the short term will be offset through the effectiveness of the collaborations developed through the long-term. The demands on time remain one of the greatest challenges of the programme. Motivation is high among the students to maximise personal research achievements. Educational activities which are seen to offer little direct contribution to current research work can be viewed negatively. Similar to many natural resource challenges, we need to demonstrate that investments, which perhaps offer little return over the short term, have the capacity for large returns in the future.