

# PhD in Natural Resources with Emphasis in Water Resources

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The Water Resources emphasis area is an interdisciplinary graduate degree program within the School of Natural Resources. It encompasses all fields of natural sciences represented in the School and, through collaboration, involves related expertise from throughout the University of Missouri and beyond. Participating faculty in the Water Resources emphasis area are engaged in both the scientific understanding of water resources (biological, chemical and physical) and its management, and the decision-making processes used to address competing societal values (social, economic and legal). The program has no geographic boundaries but the location of MU suggests most research will be directed to better understanding of water movement, biogeochemical cycling and biological processes of forested- agricultural and urban landscapes of the midcontinent. The lakes, rivers, streams, wetlands and subsurface waters of the region are prime areas for basic and applied research. One of the program's major global impacts is the training of highly qualified graduate professionals that are equipped to address many of the complex contemporary water resource problems around the world.

The Water Resources graduate emphasis area offers Ph.D. degree programs specializing in (but not limited to) the occurrence, circulation, distribution, chemical and physical properties, and environmental interaction of surface and subsurface waters, including groundwater. Specific areas of investigation could include lakes and reservoirs, floods and droughts, groundwater aquifers, water use, water quality, water contamination, plant water use, measurement methods, hydrologic modeling and international water resources.

Participating faculty in the Water Resources emphasis area are engaged in both scientific understanding of water resources (biological, chemical and physical) and its management, and the decision-making processes used to address competing societal values (social, economic and legal). The program has no geographic boundaries but benefits from a distinct midcontinent climate, and physiography. Multi-use watersheds (e.g., forest, agriculture, urban), streams, lakes, rivers, wetlands and subsurface waters are ideal areas for basic and applied research that is easily transferable to other regions. One of the program's major global impacts is the training of highly qualified graduate professionals that are equipped to address many of the complex contemporary water resource problems around the world.

Upon successful completion of the School of Natural Resources Water Resources graduate program, students will possess strong technical skills in water resources and related sub-disciplines. Graduates will have developed a holistic understanding of the hydrologic cycle related to ecosystem processes as and the interdisciplinary background necessary to understand and address contemporary water resources problems. Graduates will have an appreciation of the complex interactions of biophysical processes and tightly coupled socioeconomic interactions necessary to implement water resource policy.

## Degree Requirements

Please see the PhD in Natural Resources (<https://catalog.missouri.edu/collegeofagriculturefoodandnaturalresources/naturalresources/phd-natural-resources/>) page for major program requirements including information on qualifying and comprehensive examinations. The only required course is the Water Resources Graduate Seminar, NAT\_R 9087.

## Admissions

Water Resources program applicants must meet the general requirements set forth by the University of Missouri Office of Graduate School for the Ph.D. degree, and meet any additional application criteria of the Water Resources graduate emphasis area. Students often self-fund, apply for teaching assistantships, or are supported by grant-funded research assistantships. Other opportunities may be available to eligible students. **Applicants should contact specific faculty to determine the availability of position(s) in the potential advisor's research program and assistantships or scholarships prior to applying.** If encouraged to apply by Water Resources faculty, please apply through the University of Missouri's online application program.

## Director of Graduate Studies

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