AG RESEARCH
SPOTLIGHT

KEITH CHERKAUER

"I study water quantity—where it is and when it's changing, which brings me to questions of floods and droughts."
- Keith Cherkauer, Associate Professor of Agricultural & Biological Engineering

The Ag Research Spotlight shines each month on an individual whose work reflects our commitment to the six strategic themes that guide Agricultural Research at Purdue. Our spotlight for February 2013 underscores the theme, "Strengthening ecological and environmental integrity in agricultural landscapes."

THE RESEARCHER: Keith Cherkauer grew up near Milwaukee, a third-generation academician in a family well represented in the STEM fields. His grandfather was a professor of math; his father and great-uncle, professors of geology. Cherkauer chose physics at Augustana College in Illinois, followed by a master's degree in aerospace engineering with a focus on environmental remote sensing at the University of Colorado. He earned a doctorate in civil and environmental engineering from the University of Washington and worked as a research scientist there for two years. He joined the Purdue faculty in 2004 and is part of its Hydrologic Impacts Group. Like his hydrogeologist father, Cherkauer studies water, but as an engineer, he studies surface water rather than groundwater.

THE RESEARCH: Cherkauer's research addresses concerns related to environmental change, and improves understanding of land-atmosphere interactions and the hydrologic cycle. His tools, which include sensors in the field and remote sensing from satellites and aircraft, provide data that he uses to build algorithms for numerical models that answer certain questions: "The questions I study are specifically about how changes in land use and changes in climate affect that distribution of water."

ON THE BANKS OF THE WABASH: Cherkauer drives to campus along North River Road, where he is able to observe the river nearly every day. "I love living by the Wabash—it's very dynamic," he says. He finds water "fascinating"—even Water Day at his son's elementary school, where he and his wife, a member of the agronomy faculty, helped third-graders build dams and study the water cycle.

A NEW LANGUAGE: Before coming to Purdue, Cherkauer had never been associated with a land-grant institution. "I didn't really know what was encompassed in a College of Agriculture, so it opened a new set of opportunities and problems that I hadn't considered before," he says. "I'm still learning the 'language' of agriculture."

BRIDGING COMMUNICATION: Cherkauer's research frequently involves multidisciplinary collaboration, which he says can be rewarding but frustrating when terminology is a barrier among scientists. "Oftentimes you're talking about the same thing, and yet using different words for it," he says. Part of his role is to bridge these diverse researchers. "It's a challenge, but that's one of exciting things about working across disciplines. When it works, you come up not only with new answers, but also new questions."