



# INSPIRED DISCOVERIES

RESEARCH REPORT | 2016

University of Idaho



# IDEAS THAT MATTER



The University of Idaho has long been a leader in pursuing ideas that matter in research, scholarly activity and creative work. Faculty members, staff and students all contribute to a tradition of forward-looking work at our state's land-grant university.

An emphasis on transcending traditional disciplines and collaboration continues to guide our approach. As one example, we have made an internal investment in collaboration with the advent of the Vandal Ideas Project. The VIP initiative puts \$300,000 of competitively awarded internal funding toward interdisciplinary projects that address issues important to Idaho and the Northwest and have national and global relevance. This initiative expresses faith in the imagination and diligence of our talented researchers, scholars and creators.

In the heart of campus, the soon-to-be-completed Integrated Research and Innovation Center (IRIC) will be a thoroughly modern home for interdisciplinary research, and an example of our confidence in the future of research at UI. This striking addition to the campus skyline features flexible spaces that invite collaboration, up-to-date laboratories that are highly adaptable, and specialized equipment unique to the center.

While many UI research endeavors have national and global impact, our work plays an especially important role in the state of Idaho's economy, as you'll discover in several of this report's stories. Our fire science research seeks to protect Idaho people, communities and resources. Our partnerships with Idaho's agriculture and timber industries lead to more efficient practices and stronger outlooks for the future. Other projects support our aquaculture industry, bolster the Idaho National Laboratory and help economic development districts across the state.

We continue to strengthen valuable partnerships with Idaho's critical industries and organizations through our statewide network of research and Extension centers. UI plays an important role in every corner of our state — from research in our northern watersheds, to developing new understandings of agricultural pests, to leading an effort to bring Native American natural resource professionals from across the country to Idaho to study climate change.

The commitment to innovate and engage will remain in the foreground of our mission. Those principles are how ideas that matter become tangible results for our communities, our state and our world. They are how UI exercises its unmatched excellence to create a future filled with possibility and opportunity.

*Chuck Staben*

**CHUCK STABEN**  
President

*John K. McIver*

**JOHN K. MCIVER**  
Vice President for Research and  
Economic Development

## On the cover:

Firefighting crews work on the Little Queens Fire near Atlanta, Idaho, in 2013. Another view of the fire is shown on page 2.

Photos by Kari Greer,  
[www.wildland-fires.smugmug.com](http://www.wildland-fires.smugmug.com).

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[www.uidaho.edu/research2016](http://www.uidaho.edu/research2016)

# THRIVING IN WILDFIRE COUNTRY

Fire in Idaho is complicated. It's devastating, inevitable and necessary.

"Fire is tied to everything," says Crystal Kolden, an assistant professor of geography in the University of Idaho College of Science.

Idaho's forests and rangelands have adapted for millennia to life with natural fire, and Idaho's people rely on timber, water, space for recreation and other benefits from these ecosystems.

But Idaho also has a long history of large fires that destroy homes, debilitate towns and take lives. And, Kolden says, the threat of wildfire is never going to go away.

"The vast majority of the time, with large fires, the kind that burn down houses and that make the news, we can't stop those fires until the weather changes," she says. "For me, the reality of not being able to stop the fires is juxtaposed with the need for fire."

To help Idaho and other Western states maintain a careful balance of healthy landscapes and safe communities, Kolden and an interdisciplinary team of researchers from UI and Washington State University have launched a project that will identify where wildfires are most likely to strike and help communities better prepare for and recover from fire.

## Framing the Problem

The \$2.8 million National Science Foundation-funded project began in October 2015. The team's first task is developing FireEarth, an interactive modeling system based on a WSU project.

Kolden says the model will allow the team to analyze how fires in the Northwest act and whether they're in the normal range of severity or potentially detrimental to ecosystems. The team also will use the model to spot the human communities that are most vulnerable to fire for physical, economic and social reasons.

"We're trying to identify among these rural communities which ones have the most to lose and the least ability to adapt," Kolden says.

## Listening to Communities

Travis Paveglio, an assistant professor in the UI College of Natural Resources, will study how communities and land managers address fire-related problems, whether the solutions work and whether people support them.

"To me, a lot of the work that we do is working with those communities," Paveglio says. "It's our job to help carry the messages about what's important to them."

The results will help people use their circumstances and strengths in the face of fire.

"We've come to understand that a lot of the policies are one-size-fits-all, but they should be uniquely tailored to people's relationships to the landscape," Paveglio says.

## Changing the Landscape

As the UI researchers and their partners draw conclusions and potential solutions from their data, they will work closely with a group of government, industry and organizational stakeholders who will help bring the science to the people on the ground.

This research has the ability to help protect people's homes and livelihoods, Kolden says, but above all it can protect their lives and the lives of firefighters.

"As a former firefighter, I still have a lot of friends that are on the lines. Every time I hear a news report of firefighter fatalities, I ask myself 'Did those people really need to die?'" she says. "The vast majority occur when someone's trying to save a house – not a human life."

Ultimately, Paveglio says, the team's goal is to help people in the Northwest live with fire. The researchers at the University of Idaho, along with their partners, bring the array of perspectives, methods and expertise needed to reach this goal.

"We're trying to deal with it not by breaking it down, but by embracing the complexity of it," he says. "I think we're one of the few places that can do that."





Vivek Utgikar

## EXPANDING NUCLEAR ENERGY RESEARCH

The need for skilled new engineers at the Idaho National Laboratory — combined with an ever-growing demand for clean energy — has led the UI College of Engineering to increase its investment in nuclear engineering research and education.

“The real need is for the country’s primary energy source to be environmentally friendly,” says Vivek Utgikar, the college’s associate dean for research and economic development. “Nuclear is obviously one of the big contributing players that can satisfy whatever constraints are placed on new energy sources.”

The college’s Nuclear Engineering Program has components at UI’s Moscow campus and is a cornerstone of UI Idaho Falls, where it is housed in the Center for Advanced Energy Studies, a collaboration among Idaho’s public universities, the University of Wyoming and the Idaho National Laboratory (INL).

The majority of UI nuclear engineering research is conducted in partnership with INL and funded by the U.S. Department of Energy. The research falls across a broad spectrum, including control and safety systems for nuclear power plants, designing secure nuclear facilities and treating nuclear waste.

The college also has expanded its faculty: In 2015, several new faculty members joined the Nuclear Engineering Program, including director Richard Christensen, a heat-transfer expert who formerly worked at The Ohio State University. Also in 2015, the Nuclear Regulatory Commission awarded UI a three-year, \$434,000 grant for faculty development.

Utgikar and Christensen emphasize that UI is striving to develop broader and deeper research partnerships among UI researchers, with INL and beyond.

“Engineering is not a silo where you go sit in a corner and do it by yourself,” Christensen says. “Part of the objective is to go to your customer and say, ‘What do you need?’”

## UNITING ART AND ENVIRONMENT

Along a creek overlooking UI’s Taylor Wilderness Research Station, a group of students leaned against beaver-felled cottonwood logs, discussing an essay they’d read about environmental activism. When blackflies began to bite, they hardly noticed.

“I’d rather have flies swarm me than sit in a boxed-in, impersonal, ‘normal’ classroom,” says Chrissy Webb, remembering her time as a Semester in the Wild student at Taylor. “Environmental writing in a classroom is drinking from a glass; Semester in the Wild’s environmental writing is slurping straight from the creek.”

Webb’s professor that day was Scott

Slovic, chair of the UI Department of English within the College of Letters, Arts and Social Sciences. Slovic immerses his students in the landscape around the ranch. As they experience the environment, they observe it, describe it and learn to think about it in new ways.

Slovic is one of four English faculty members who specialize in ecocriticism. As he defines it, this is “a field of literary and cultural studies that tries to understand how we think and communicate about our various relationships with physical environments and with other species.”

At Taylor, he partners with professors in disciplines such as rangeland ecology and

outdoor leadership to introduce students to complex, multidisciplinary ways of approaching and writing about the natural world.

Ecocriticism isn’t purely theoretical, Slovic says, but rather addresses practical ideas that are relevant to any discussion about sustainability and the environment.

“To me, human cultural expression and the scholarship that explains it aren’t decorative,” he says. “I believe understanding the way we tell our stories and respond to other people’s stories will allow us to understand ourselves better and make better decisions as a species for ourselves and for the planet.”

## GROWING CLIMATE RESILIENCE FOR WHEAT

Eric Odberg grows wheat and other crops near Genesee. He believes the University of Idaho's largest-ever research grant brings growers new tools to face a future with climate change.

The \$20 million, five-year Regional Approaches to Climate Change in Pacific Northwest Agriculture (REACCH) project, funded in February 2011 by the U.S. Department of Agriculture's National Institute of Food and Agriculture, focused on wheat, one of the world's most important grains.

Odberg is a longtime advocate of agricultural innovations. Much of what he did before becoming involved with REACCH was based on educated guesses, and REACCH offered the chance to verify that he was on the right track and to adjust to changes in growing conditions related to climate.

"Just think about all of the farmers in the '30s in the Dust Bowl if they had had a project like this going on in the '20s preparing them for what was going to happen," Odberg said. "And now we just have so much more technology on our side to do that for us. I think that is what the greatest value of this whole grant has been."

REACCH drew together nearly 200 researchers across Idaho, Washington and Oregon. They explored future climate impacts, found ways to mitigate them through agricultural practices and developed curricula to include climate science in classrooms from kindergarten to college.

Sanford Eigenbrode, a UI Distinguished Professor in the College of Agricultural and Life Sciences, entomologist and REACCH director, hopes the project will continue to serve Idaho farmers like Odberg, agriculture as a whole and society after it winds down beginning in February 2016.



## TRANSFORMING DEAD TREES INTO FUEL

Millions of acres of Western forests have been destroyed by beetles. The tinder-dry dead trees are the perfect host for wildfire.

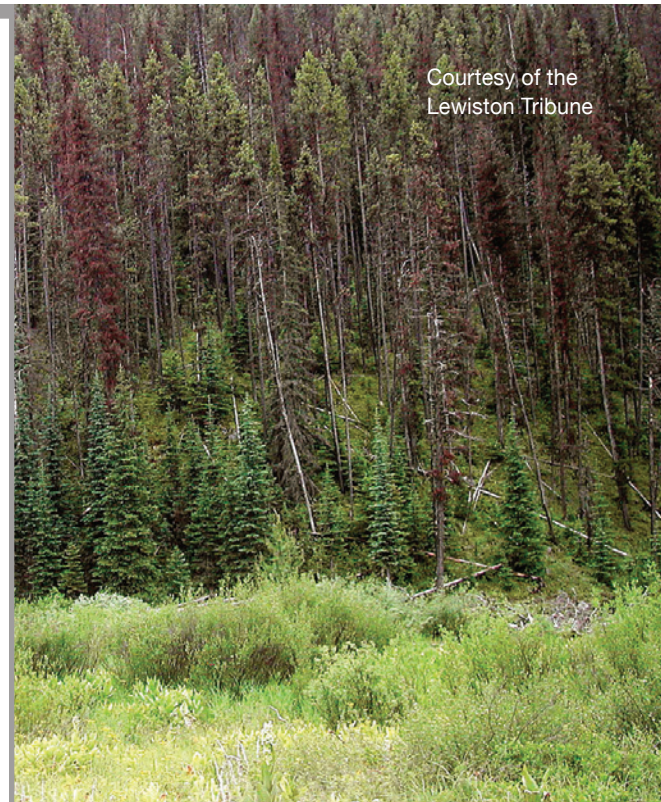
To reduce fire threat, increase economic revenue from otherwise useless timber and create a clean, renewable fuel source, the Bioenergy Alliance of the Rockies is investigating ways to use beetle-killed trees as biofuel.

The alliance, known as BANR, is funded by a \$10 million grant from the USDA's National Institute of Food and Agriculture. Led by Colorado State University, it brings together UI, University of Montana, University of Washington, Montana State University and industry partner Cool Planet Energy Systems.

UI is involved in all four aspects of the research: social science, Extension, forest operations and long-term sustainability.

This year, UI researchers will begin study methods for logging beetle-killed trees on a stand of timber in Idaho County, comparing traditional manual felling with a new technology that cuts and gathers with little human contact. Logger safety is an important factor in this project.

"Logging is already the most dangerous profession in the country," said Rob Keefe, the project's primary investigator and an assistant professor of forest operations in UI's College of Natural Resources. "Dry, dead stands of trees increase the risk."



Courtesy of the Lewiston Tribune

## EXPLORING GEOTHERMAL OPPORTUNITIES

Idaho has great potential to produce geothermal energy. But right now, it's only home to one geothermal plant.

The University of Idaho and the the Idaho National Laboratory (INL) — along with partners across the West — are looking to change that in a big way.

“We see an opportunity for a number of these plants to be built in eastern Idaho to create an industry, to create an economic base and to create career opportunities for our students,” says Tom Wood, UI’s associate director for the Center for Advanced Energy Studies, or CAES.

CAES — an Idaho Falls-based collaboration among INL, Idaho’s public universities and the University of Wyoming — is a partner in the Snake River Geothermal Consortium, one of five teams selected by the U.S. Department of Energy to participate in Phase 1 of the Frontier Observatory for Research in Geothermal Energy, or FORGE, initiative.

At the end of its selection process, FORGE’s goal is to create a single test site for evaluating new technologies and methods to expand geothermal energy production through enhanced geothermal systems. The CAES team believes southeastern Idaho, with its subsurface influenced by the Yellowstone Hot Spot, is the perfect location for such a site.

The Geothermal Consortium will learn in late summer 2016 whether they’ve made it to Phase 2 of the competition, and the Department of Energy will select a final site in 2019, says Rob Podgorney, a senior scientist at INL, UI alumnus and director of the Snake River Geothermal Consortium.

“If we can prove this technology, it could be a game changer not just for renewable energy, but energy overall for the country,” Podgorney says.



## REDUCING FISH WASTE WORLDWIDE

When ocean fishing boats worldwide cast their nets, they often bring in sea life they didn’t aim to catch. In some cases, as much as 40 percent is thrown overboard.

University of Idaho law professor Anastasia Telesetsky is working to combat that incredible waste of food, fish oil and economic resources through smart policy.

Laws can help reduce this waste, but they have to be strategic. Through a fellowship from the New Zealand government, Telesetsky is taking her knowledge of international environmental law and ocean health to New Zealand’s Ministry of Primary Industries to study how the country could put the best possible policies in place.

“For many, many people in the world, fish is their primary source of protein, so this is an area that I think we need to carefully manage,” she says.

For seven months in 2016, Telesetsky will study existing policies and gather information from fishing industry representatives, government and enforcement officials, and community members. This research will give her an idea of what kind of policies might be effective and what may be impossible to achieve.

“It’s great to pass laws, but if nobody abides by it, it’s not an effective law,” she says.

Telesetsky says her research could aid Idaho as well, because the state’s aquaculture and agriculture industries also have to find ways to eliminate waste and create policies that work.

“If different stakeholders have different perspectives, how do you pass laws that are actually effective?” Telesetsky says. “That’s where I see the value in this sort of research.”



Wiki Commons

## SECURING WATER IN NORTH IDAHO

The Rathdrum Prairie Aquifer is the sole source of water for 150,000 people in North Idaho.

The University of Idaho's Idaho Water Resources Research Institute, or IWRRI, is helping the cities on the prairie maintain their water access as they grow.

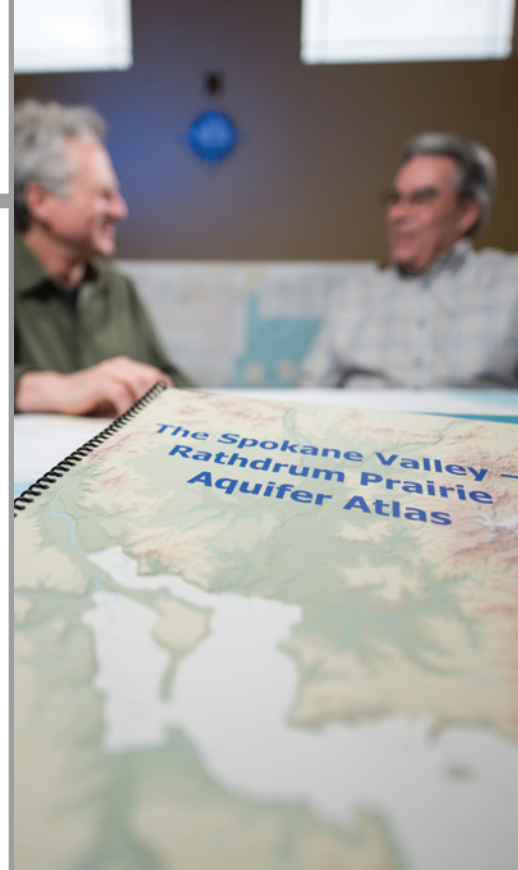
The aquifer spans Idaho and Washington, with water flowing east to west and affecting the Spokane River. Both states rely on it for drinking water, irrigation, industrial uses and more. In March 2014, municipal water providers on the Idaho side asked IWRRI for help: The state of Washington was moving toward adopting flow rules for the Spokane River, and the water providers wanted to make sure it wouldn't hurt their ability to deliver water to Idaho's second largest metro area in the future.

IWRRI interim director Mark Solomon estimated the area's water demand for the next 30 years by examining current water demand and population and economic projections. With this data, the districts applied to the Idaho Water Resource Board for a future need water right.

If they receive the right, providers will be able to protect their water access "should it ever come to competition instead of cooperation between the states," Solomon says.

Mike Galante, district manager for the North Kootenai Water and Sewer District, says he's pleased with the study's usefulness not only for securing water rights, but also for planning for growth.

Solomon says the project exemplifies IWRRI's goals. "IWRRI takes the knowledge of the university and applies it to real-world water resource problems, and also provides the trusted, neutral party to negotiate tough agreements between interests that may be in conflict."



## CONNECTING FOR CLIMATE ADAPTABILITY



The days Jonalee Squeochs spent studying among the waterways and forests of central Idaho at the Northwest Climate Science Center's Climate Boot Camp in 2013 reiterated her environmental science education and invigorated her desire to help the Yakama Nation prepare for the future.

Squeochs, an environmental coordinator with Yakama Nation Fisheries, is one of several Yakama tribal member employees to attend climate camps in recent years. In June 2016, members of tribes from across the United States will convene in McCall for the inaugural Tribal Climate Camp.

Squeochs says tribal people are pushing the forefront of climate change action nationwide.

"We've been through so much in our history that we don't want to sleep on this," she says. "This is something we want to push forward and be ready for as much as we can, so we don't lose our critical information or resources."

UI is a partner in the Northwest Climate Science Center, which has run its Climate Boot Camp programs for six years. The center now is working with the Affiliated Tribes of Northwest Indians, the United South and Eastern Tribes, and the Bureau of Indian Affairs to develop the new camp.

Steven Daley-Laursen, Tribal Climate Camp director and a faculty member in the UI College of Natural Resources, says the camp will focus on vital issues tribes must address to adapt to climate change. Students will learn about topics such as science communication skills, integration of indigenous and empirical knowledge, and organizational leadership.

"The people we're bringing in all want to use new knowledge, data and leadership skills to lead within their tribal cultures, to make good management decisions, and to apply science to management and policy development," Daley-Laursen says.

## PROTECTING POTATOES WITH TECHNOLOGY

An international effort to control a microscopic worm that poses a serious threat to potato production and export markets relies on University of Idaho expertise and bio-secure laboratory facilities.

The pale cyst nematode was discovered in Idaho in 2006, resulting in stringent regulations governing potato production within a 7.5-mile radius of infected fields in Bingham and Bonneville counties. Damage caused by the pest to potato plants' roots can reduce yields by 80 percent.

In the nine years since the discovery, success in characterizing and responding to the threat posed by the invasive species allowed potato production to resume in some of the fields subject to close monitoring.

UI College of Agricultural and Life Sciences professor Louise-Marie Dandurand is directing a \$3.2 million grant from the U.S. Department of Agriculture Food Security Challenge Area. She has led UI research on the pest since 2011. She is in charge of researchers to reduce the threat of invasive nematodes, develop resistant potato varieties, employ molecular genetics to better understand the pest and enlist farmers' support.

UI efforts to understand the pale cyst nematode's basic biology have made it the national center for work on the species.

"Understanding the factors that contribute to the risk of this invasive pest, and development of resistant cultivars that are suitable for U.S. markets, will better equip the potato industry and regulatory agencies to deal with current infestations, and minimize impacts of possible future introductions," Dandurand says.



## MULTIPLYING MATH TEACHER SUCCESS

A dedicated group of teachers in north Idaho are committed to helping kids grasp math. They are supported by the Idaho Region I Math Center at University of Idaho Coeur d'Alene, led by Julie Amador, an assistant professor in the UI College of Education.

At the Math Center, researchers like Amador explore ways education instructors can help K-12 teachers to be more effective. And they share what they've discovered with current and future educators.

Kathy Prummer, an award-winning math teacher at Sandpoint Middle School, says the Math Center has created a network of teachers who work together and put research into action in their classrooms.

"I know it's contributed to increasing students' mathematical thinking and higher student scores on last spring's Idaho Standards Achievement Test, as compared to other seventh graders in Idaho with similar demographics," Prummer says. "This group pushes me to a higher level of excellence."

The Math Center's many activities include hosting classes at local schools, bringing together teachers for regional conferences, and conducting research into math instruction and the ways students learn and understand mathematical concepts.

Amador and her colleagues recently gathered a group of education students, student-teachers and practicing teachers for a book group, then studied the results of their interactions. They found that the experience not only built relationships among the teachers, but also helped them in their classrooms.

"Bringing together educators with varying backgrounds and experience strengthened teaching understanding, content knowledge and how to better understand students," Amador says.



## PLANNING FOR IDAHO'S FUTURE

In some parts of Idaho, land use includes mills and mines, farms and feed lots. In others, it's bustling suburbs and urban growth. It might include tribal lands, wildlands or federal lands. And as Idaho's population expands, so does the complexity of planning for this multitude of uses.

The University of Idaho's interdisciplinary Bioregional Planning and Community Design Program, housed in the College of Art and Architecture at the University of Idaho Boise, can help the people who navigate land-use planning in Idaho today — and those who will in the future — make decisions to guide the state as it grows while preserving its character, says Jaap Vos, who was appointed director in 2015.

"How do we serve everybody in Idaho, not just Boise, not just the metropolitan area, not just rural Idaho, but everybody?" Vos asks.

The program is unique in the state, and Vos' goal is to create a curriculum that combines community-based research with classes that serve full-time traditional students and current planners who want to expand their knowledge. The program launched its first online course in January.

The research aspect of the program takes students into regional towns to collaborate with and learn from city leaders on real-world projects.

Student Brock Cherry of Rigby worked on a recent zoning ordinance review in Colfax, Washington, which opened his eyes to the intricacy of planning in a rural area.

"I want to give back to my state," he says. "Idaho is growing at an amazing rate, and we have the opportunity to learn from all the mistakes from areas that have already grown significantly. We get to plan the right way."



## EXAMINING A NEW KIND OF TROUT

On the outside, the fish at UI's Fish Culture Experiment Station in Hagerman look like typical rainbow trout. But on the inside, they're different — from the food they can digest to the bacteria that flourish in their guts.

This selectively bred, one-of-a-kind strain of trout is the pinnacle of years of collaborative research among the UI Aquaculture Research Institute (ARI), the USDA's Agriculture Research Service and Idaho's aquaculture industry. Soon, the majority of the nation's farmed trout could be descended from the strain.

Unlike typical farmed trout, which eat a diet made primarily from other fish, these trout can eat a less expensive, more sustainable soy-based diet. Now that the researchers have successfully developed this long sought-after trait, they've shifted their focus to understanding exactly why the strain thrives.

One surprising difference in the vegetarian trout is the population of bacteria that grow inside them, or their "gut microbiome."

Normal trout develop intestinal irritation when fed soy, but the selected trout do not, says ARI director Ron Hardy. Recent research shows that gut bacteria vary

comes out, not what stays. We're now really thinking about what happens in the gut."

Understanding how differences in food, physiology and genetics affect fish



between the two strains of fish, and between fish that eat different types of feed.

"There are very few studies showing in any animal that the strain affects the microbial population," Hardy says. "We've always looked at feed as what goes in and

intestinal health can help not only the aquaculture industry, but also humans, Hardy says.

"I don't see why some of what we're finding in trout can't someday help with intestinal issues in people," he says.



## REIMAGINING WASTEWATER

Over nine months, University of Idaho professor Greg Möller transformed a thought experiment into a highly sophisticated trailer-mounted water treatment plant capable of producing sparkling clear, sanitized drinking water from Moscow's wastewater treatment facility.

This treatment plant demonstrates Möller's latest invention, N-E-W Tech™. The N-E-W Tech system uses biochar, a charcoal-like activated carbon, to expand the capabilities of Möller's past discoveries in water treatment. It promises to remove organic and mineral contaminants in wastewater with high efficiency and generate energy while using the minerals it strips from water to produce fertilizer.

Möller is a professor of environmental chemistry and toxicology in the School of Food Science, which is operated jointly by the UI College of Agricultural and Life Sciences and Washington State University. In March, the Idaho Global Entrepreneurial Mission (IGEM) governing council awarded Möller and his team \$427,000 for a one-year project to demonstrate N-E-W Tech's feasibility — leading to the pilot-scale plant.

Möller's project advanced rapidly based on the IGEM grant's tight timeline. With a design and fabrication crew led by U.S. military veterans Martin Baker and Gene Staggs, the trailer was operational for testing within four months. The UI team displayed the system at the Intermountain Energy Summit in Idaho Falls in mid-August 2015.

Möller hopes that with technology like his, wastewater treatment facilities will someday be rechristened as resource recovery centers.

"With N-E-W Tech we questioned the status quo and found that small ideas can translate to big solutions with creativity and hard work," Möller says.

## PREPARING FOR ECONOMIC PROSPERITY

For years, Idaho's regional economic development districts built their plans using different formats — leaving them comparing apples and oranges when they needed to communicate and coordinate.

The Pathways to Accelerate Idaho project has changed that, providing the districts and the state of Idaho with a united vision and shared way of identifying economic opportunities and strengths.

"We focused on different issues, we focused on different kinds of numbers," says Joe Herring, president of the Region IV Development Association based in Twin Falls. "Now with the Pathways project, we're all focusing in the same ways with the same type of information."

The University of Idaho's role in the Pathways project began in 2012. Working with the Idaho Department of Commerce and regional agencies, the UI Office of Economic Development and UI researchers gathered information across the state, developed tools to help make sense of the data and brought stakeholders together at economic development summits.

The project created three goals around which the state and district plans revolve: advancing individuals, strengthening communities and elevating industries.

The regional districts began using the Pathways format to update their Comprehensive Economic Development Strategies (CEDS) in 2014. Herring says his district's CEDS allows the public to understand their priorities and actions, and is also a tool for people preparing state and federal grant applications.

In August 2015, UI handed the project off to the Idaho Department of Commerce, which will continue supporting Pathways and assist regional groups to meet their goals, says Chrissy Bowers, chief economic development officer for Idaho Commerce.

# BUILDING INTERDISCIPLINARY RESEARCH

The University of Idaho's dedication to significant, interdisciplinary research is evident in the prominent new addition to the Moscow campus: the Integrated Research and Innovation Center, or IRIC.

The building will support researchers in all disciplines by providing new, state-of-the-art laboratories and research, meeting and other spaces constructed with maximum flexibility to allow for changing needs over the next 25 to 50 years.

"Scholarly activity in IRIC will address problems that affect people in Idaho and the Northwest and have national and international importance," says Jack McIver, UI Vice President for Research and Economic Development.

IRIC is designed as an open and shared facility available to all faculty members across all colleges and activities. IRIC will host discovery-based, interdisciplinary research across a broad spectrum of fields.

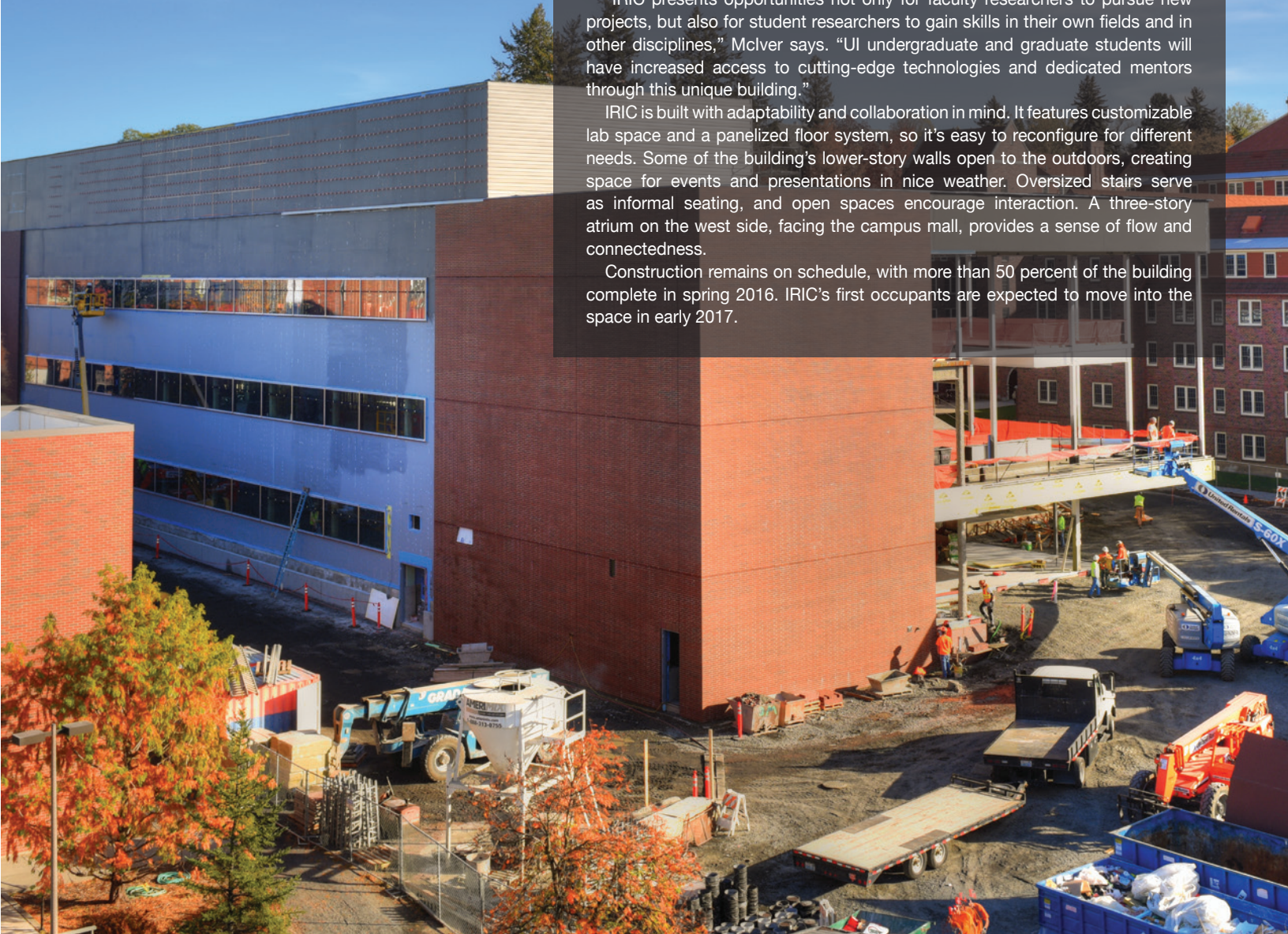
Its features include flexible laboratories to accommodate everything from molecular biology to urban design; a visualization space allowing researchers to transform data into accessible, dynamic images; and spaces for shared advanced analytical and computing tools.

UI has formed an IRIC Facility Committee — composed of university faculty and staff and reporting to the vice president for Research and Economic Development — to assign research programs and project space in the IRIC. The committee plans to make initial space assignments in summer 2016.

"IRIC presents opportunities not only for faculty researchers to pursue new projects, but also for student researchers to gain skills in their own fields and in other disciplines," McIver says. "UI undergraduate and graduate students will have increased access to cutting-edge technologies and dedicated mentors through this unique building."

IRIC is built with adaptability and collaboration in mind. It features customizable lab space and a panelized floor system, so it's easy to reconfigure for different needs. Some of the building's lower-story walls open to the outdoors, creating space for events and presentations in nice weather. Oversized stairs serve as informal seating, and open spaces encourage interaction. A three-story atrium on the west side, facing the campus mall, provides a sense of flow and connectedness.

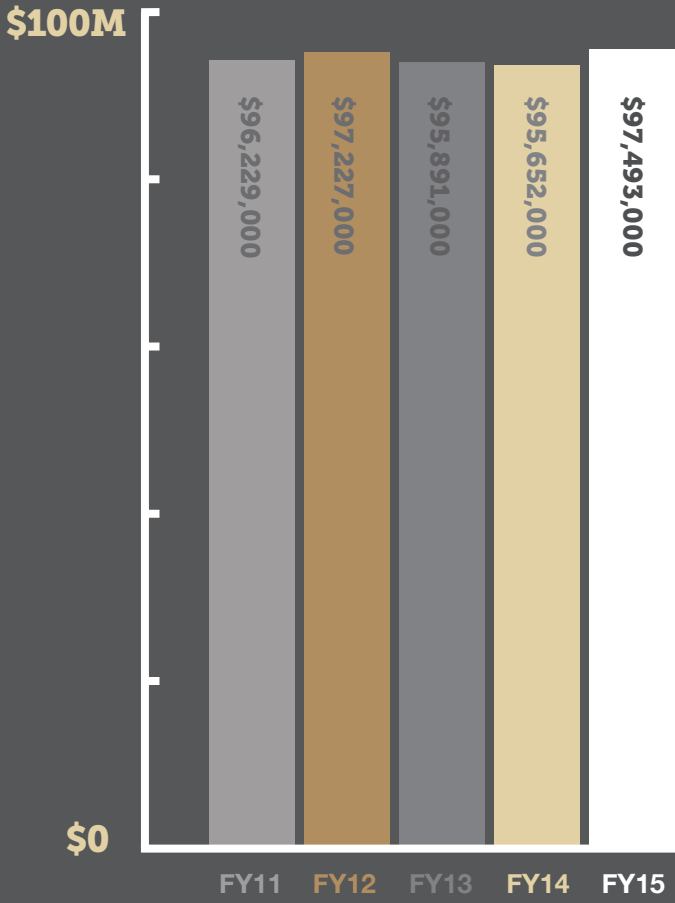
Construction remains on schedule, with more than 50 percent of the building complete in spring 2016. IRIC's first occupants are expected to move into the space in early 2017.



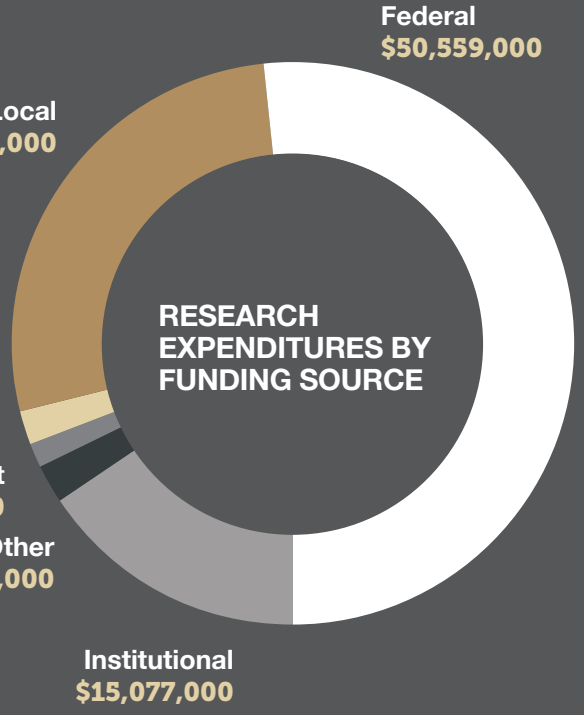
# 2015

## FISCAL YEAR SUMMARY

### RESEARCH EXPENDITURES



Research Expenditures as reported to the National Science Foundation HERD



### SPONSORED PROJECT EXPENDITURES BY UNIT

SPONSORED PROJECTS	NUMBER	TOTAL
COLLEGE OF AGRICULTURAL AND LIFE SCIENCES	552	\$16,535,798.09
COLLEGE OF LETTERS, ARTS AND SOCIAL SCIENCES	22	\$284,922.69
COLLEGE OF ART AND ARCHITECTURE	39	\$1,459,388.75
COLLEGE OF BUSINESS AND ECONOMICS	3	\$48,627.16
COLLEGE OF EDUCATION	64	\$11,258,741.49
COLLEGE OF ENGINEERING	139	\$7,752,766.15
COLLEGE OF GRADUATE STUDIES	2	\$214,010.54
COLLEGE OF LAW	6	\$71,266.31
COLLEGE OF NATURAL RESOURCES	277	\$11,513,399.48
COLLEGE OF SCIENCE	144	\$9,682,607.41
DIVERSITY AND HUMAN RIGHTS	3	\$430,641.62
GENERAL LIBRARY	5	\$21,403.99
PROVOST/EXECUTIVE VP AREA	1	\$17,820.90
STUDENT AFFAIRS AND ENROLLMENT MANAGEMENT	5	\$532,478.35
UNIVERSITY OUTREACH - IDAHO FALLS	26	\$2,496,768.12
UNIVERSITY OUTREACH - NORTHERN IDAHO	5	\$687,804.36
UNIVERSITY RESEARCH OFFICE	132	\$11,289,870.20
VICE PROVOST FOR ACADEMIC AFFAIRS	5	\$98,907.73
WI-REGIONAL PROGRAM IN VETERINARY MEDICINE	6	\$131,041.88
WWAMI MEDICAL EDUCATION PROGRAM	2	\$227.12
<b>TOTAL</b>	<b>1438</b>	<b>\$74,528,492.34</b>

Expenditures represent externally funded grants and contracts only. Additional activity is funded through other mechanisms.

### TECHNOLOGY COMMERCIALIZATION:

- 14** Invention Disclosures
- 7** Patent Applications
- 7** Issued Patents
- 8** Licenses

