



Annual Report 2012

Letter from Mark McLellan



It has been another banner year for Utah State faculty as we again reached over \$200 million in new grants and contracts and outpaced many of our peers in research growth. I was invited to come here to Utah State by President Stan Albrecht to join a dynamic, hungry university -- full of excitement, pride of accomplishment and vision for the future. I have not been disappointed in my choice!

When I made the move from a very large SEC school to USU, I wondered what my future held. I can tell you that riding this big blue bull has been a whirlwind – not without its challenges but full of joy and achievement. And Aggie football – as good as it gets! In my first year, I have seen our USU faculty bring home significant grants and contracts and setting a leadership pace for the state. As lead on the \$20 million State of Utah EPSCoR grant from the National Science Foundation, our faculty are rallying fellow researchers and teachers across the state. Our partners include the University of Utah, Utah Valley University, Weber State University, Salt Lake Community College and others to shed light on the growing challenge of water management up and down the dry Wasatch front. We also welcomed a new \$15 million Dept. of Education grant in early childhood development.

Utah State University is on track for a major initiative to increase our graduate training to produce more highly trained students ready to serve Utah's growing information and high-tech economy. This effort means new commitments by our faculty to seek external support and an expanded effort from administration for doctoral program support. Additionally, USU has recently launched the USU Presidential Doctoral Research Fellows program. These four-year fellowships offer competitive funding and training to attract the best graduates in the country and the world to USU!

As we celebrate the end of our first capital campaign, attracting over a half billion dollars in donations and support, our future as a world-class research institution is well positioned. And as Utah's land grant university, we are intent on bringing this world-class experience to our regional campuses in Brigham City, Price and Vernal, as well as every county of Utah.

This has been a year of success and growth ... fully a year of "wow"! Thank you for welcoming us to this great state and allowing me to be a part of a vibrant place of teaching, a world-class place of research, and a citizen's university dedicated to making a difference in Utah --- city by city, county by county and student by student.

Mark R. McLellan
Vice President for Research and
Dean of the School of Graduate Studies
Utah State University

About Utah State University



FYI: **Location:** Logan, Utah
Regional Campuses: 4
Comprehensive Regional College: 1 (USU-Eastern)
Undergraduate Degrees: 168
Graduate Degrees: 142

USU is...

a land-grant university

established in 1888

RU/H

*Research university
(high research activity), according
to the Carnegie Foundation*

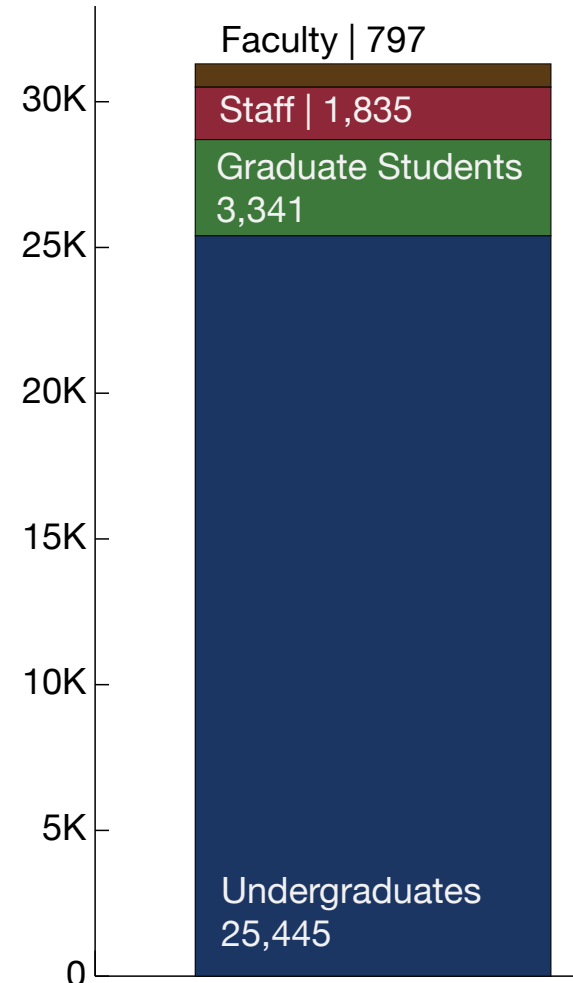
the 2nd oldest

*undergraduate research
program in the nation.*

in the Top Ten

*Research funding for Western
land-grant institutions.*

USU has...



Sponsored Programs

Sponsored Programs facilitates university research by processing proposals, conducting negotiations, helping researchers find and obtain funding and playing an important role in contract administration.

Kevin Peterson
Executive director of sponsored programs



1,302

49 over 2011



New and continuing awards

1,565

88 over 2011



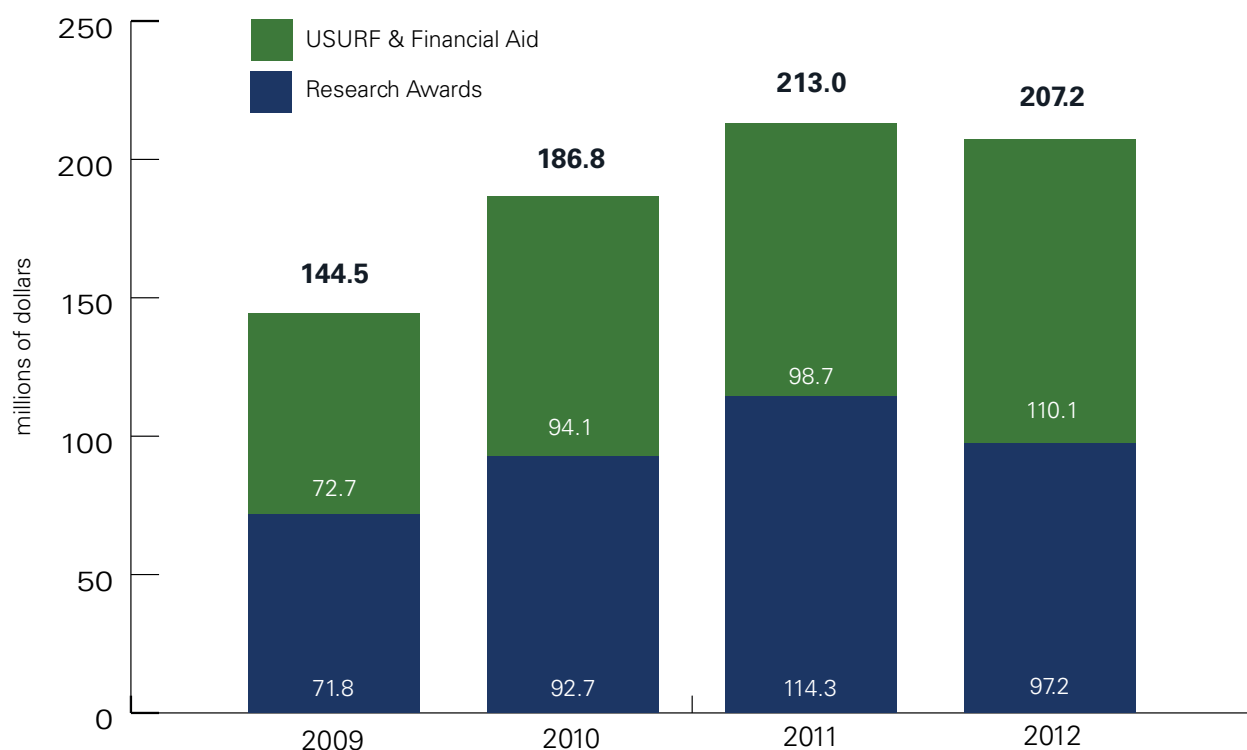
Proposals submitted

174

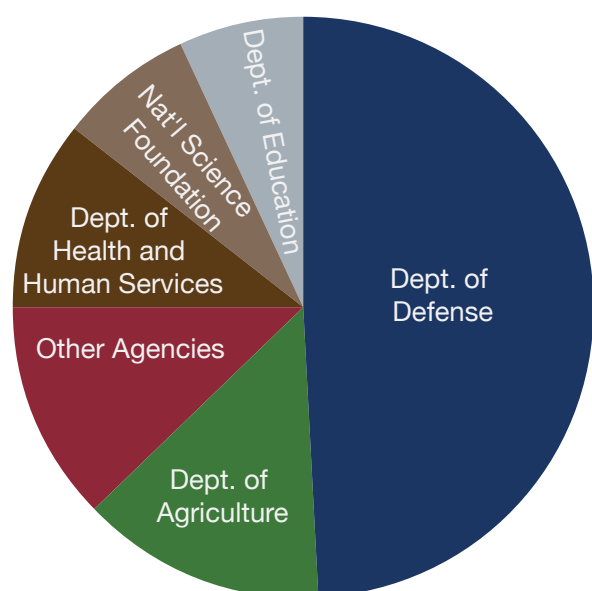
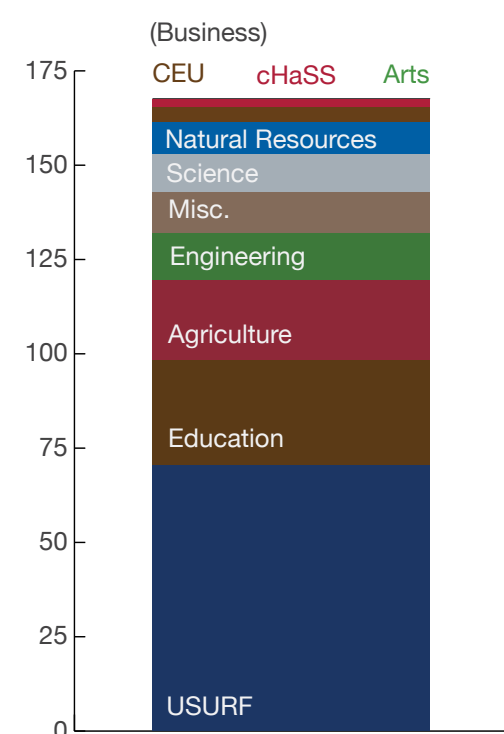
read more interesting facts

Proposals reviewed by each administrator (appx.)

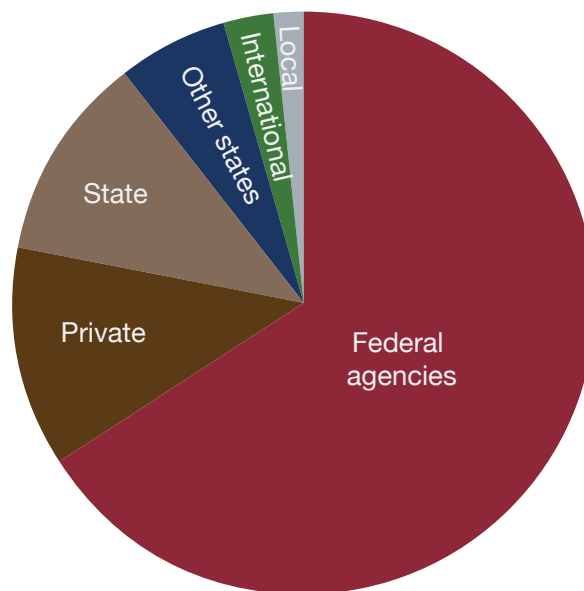
External awards



College awards



Awards received by federal agency, FY 2012



Awards received by source, FY 2012

Departments with most funding growth this year

Psychology	▲ \$2.6M
Biology	▲ \$2.0M
Sociology, Social Work and Anthropology	▲ \$1.7M
Family, Consumer and Human Development	▲ \$1.7M
Plants, Soils and Climate	▲ \$1.7M
Mechanical and Aerospace Engineering	▲ \$1.4 M
Center for Atmospheric and Space Sciences	▲ \$1.1M
Utah Water Research Laboratory	▲ \$1.1M

* since FY 2011

Proposal Development

Proposal Development is dedicated to expanding externally funded research at Utah State University through management of the proposal development process on strategically important submissions.

Jerilyn Hansen
Director of Proposal Development



Projects and awards

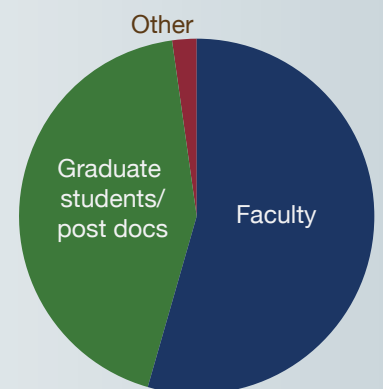
#	Amount
83	\$124.7M
<i>Assisted proposals</i>	
21	\$24.1M
<i>Assisted awards</i>	

Grant and proposal training







Proposal Development began hosting day-long seminars to assist faculty and graduate students with grant writing skills.



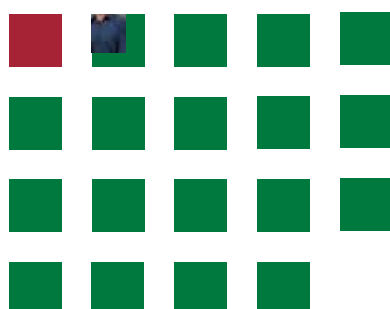
Attendee groups



College staffing

 Education & Human Services Nancy Sassano	 Agriculture Pam Garcia
 School of Business Brian Steed	 Wildland Resources/ Biology/ Ecology Center Holly Strand

Seed grant funding

	5 GEM awards
	6 SPARC awards
	18 RC awards

The three pictured researchers received external funding following their seed grants.



Matt Omasta (THEA)
Theater education in high school



Robert Ward (NDFS)
Dietary fat's role in progressing fatty liver disease



Koushik Chakraborty (ECE)
Techniques for building reliable low energy multicore systems

Also: The Proposal Writing Institute completed training its fourth cohort. PWI participants put forward 17 proposals, valued at \$9.5 million. In addition, PWI participants received 5 awards, valued at \$1.5 million in FY 2012.

Research Development

Research Development was created this year to enhance USU's research portfolio by taking a proactive approach to strategically develop research strengths and faculty teams.

Rita Teutonico
*Director of Research
Development*



About the division

Watch Rita Teutonico's explanation about the mission and functions of Research Development:



Getting started



EPSCoR is the first large-scale strategic initiative assisted by Research Development. The proposal process yielded a \$20M grant for the state over the next 4 years for water-related research.



Goals for 2013

- *NSF Integrative Graduate Education and Research Traineeship (IGERT) workshop*
- *Restructure new faculty research training to provide year-round contact.*
- *Initiate involvement with NSF's Science and Technology Centers program.*
- *Create institutional boilerplate resource for grant proposals.*

School of Graduate Studies

The School of Graduate Studies serves as the central administrative body that promotes, supports, and reviews graduate education at Utah State University to ensure consistency and excellence in all graduate degree programs.



Jeff Broadbent and Shelley Lindauer
Associate Deans of Graduate Studies,
Associate Vice Presidents for Research

Matriculated graduate student enrollment (system-wide)

2,674

Enrolled graduate student headcount

11%

Percentage graduate students of all matriculated USU students

644

24% of all graduate students
Enrolled doctoral student headcount

Graduate degrees conferred (system-wide)

1,089

Graduate degrees conferred

20%

Percentage graduate degrees of all USU degrees

99

9% of all graduate degrees
Doctoral degrees conferred

Master's students

Of 2012 master's degrees awarded...

Master's type	Percentage	Headcount
MA, MS	50%	494
Professional	50%	496

Theses and dissertations



Graduate program review

This year, USU launched a year-long process that culminated in individualized five-year plans to ensure the vitality of graduate programs in each university department.

Selected best practices [See the full report](#)

- Recruiting:** website, social media, targeted universities, messaging
- Management:** faculty involvement, internship programs, survey data
- Mentoring:** orientations, focus groups, career-based curricula, tracking
- Funding:** graduate training grants, grad instruction, external funding

A sampling of approved theses and dissertations:

- Effects of single panel replacement of concrete bridge deck system
- Late adolescents' perceptions of a digital generation gap
- Integrating remote sensing and ecosystem models for terrestrial vegetation analysis
- Developing global communication skills for technical communicators in the 21st century
- Sustainable ski resorts in the state of Utah
- Homesickness and the location of home
- Implications for brown trout invasion success

[Click here for a full list of thesis and dissertation public abstracts.](#)

FYI

In FY2012, graduate students received graduate assistantships totaling \$12,802,024, an increase of 4.3% over FY2011.



Graduate Student Admissions

2,946 up 10% from 2011

Applications received last year

1,134 53% acceptance rate

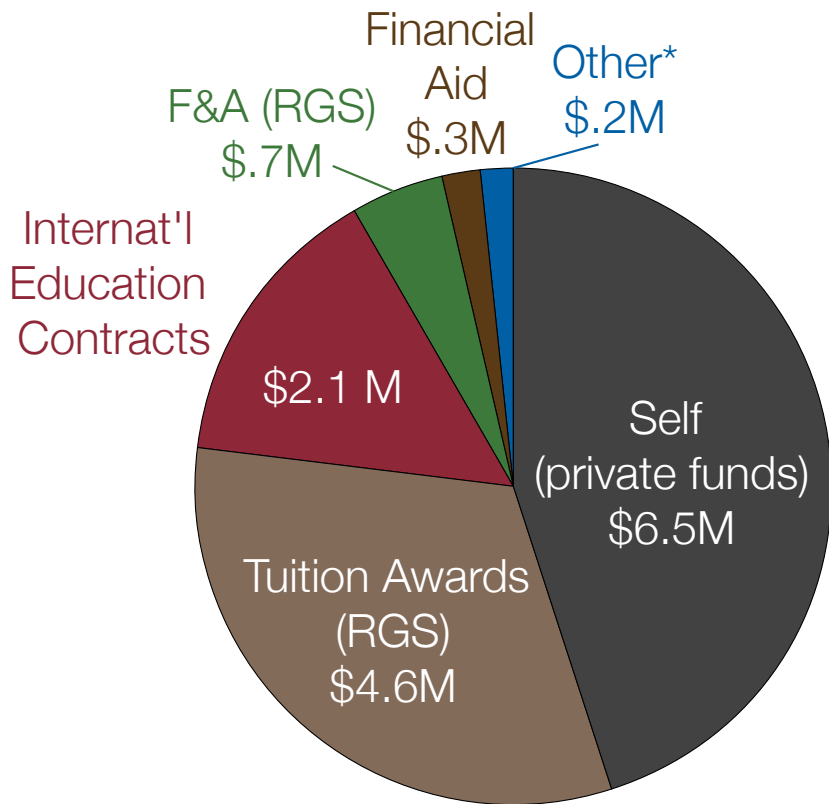
Graduate students accepted to USU

826 73% yield rate

Newly enrolled graduate students



Sources of Funding



* E&G (college/department), Sponsored programs (faculty), other (college/departments), F&A (college/department), RCDE



Graduate mentor of the year



Professor Tim Gilbertson (Biology) was selected as this year's Graduate Mentor of the Year. He was recognized at USU's Research Gala, held during Research Week.

Graduate and Undergraduate Research

USU's Graduate and Undergraduate Research programs are designed to increase student engagement in research projects, funding and presentation opportunities.

Scott Bates
Associate Vice President
for Graduate and
Undergraduate Research



New programs

Presidential Doctoral Research Fellows

[Learn about the fellows](#)

USU's fellowship program was restructured to focus on attracting top-flight researching doctoral students to campus. Ten students were selected for this year's cohort.



Summer Undergraduate Research and Creative Opportunities

A summer research grant program was launched in April 2012 to an unprecedented response from undergraduates.



Undergraduate
Research Fellows

22

2012 new cohort

214

Total fellows
since 2004



FYI

Graduate and Undergraduate Research was expanded this year from the former undergraduate research program.

70

record



URCO grants awarded

33

record



Research on Capitol Hill
participants

150

record



Student Showcase
participants

58

record



National Conference on
Undergraduate Research
participants

Environmental Health and Safety

Environmental Health and Safety strives to prevent injury, illnesses, and environmental damage through the recognition, evaluation, and control of potential hazards arising from university activities.

Steve Bilbao
Director, Environmental
Health and Safety



Waste

4,893 | biological waste

41,062 lbs.
hazardous materials (recycled)

125,793 lbs.
hazardous waste

162 lbs.

*reduction in radioactive
waste shipped off-site*

776

faculty and staff trained

258

*specialty GIS emergency
building maps created*



Don't Learn Safety By Accident



Major Projects

Agriculture Building transition



EHS assisted in the transport of thousands of chemicals to the new Ag building in spring 2012.

Brigham City campus prep



EHS assisted in clean up and demolition of buildings on the new proposed site of USU-Brigham City.

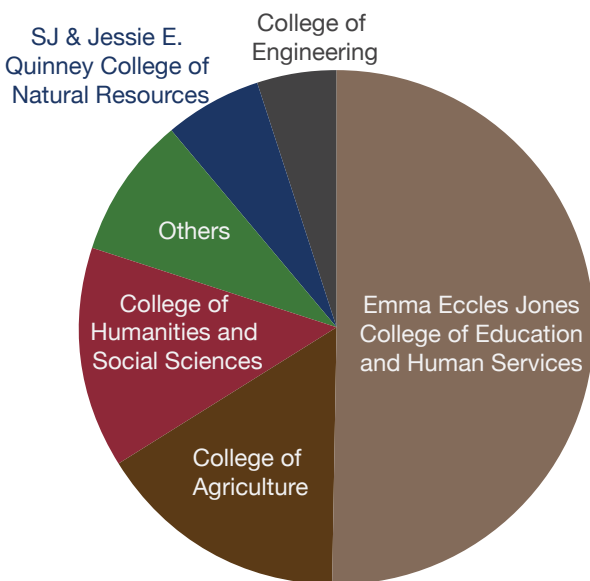
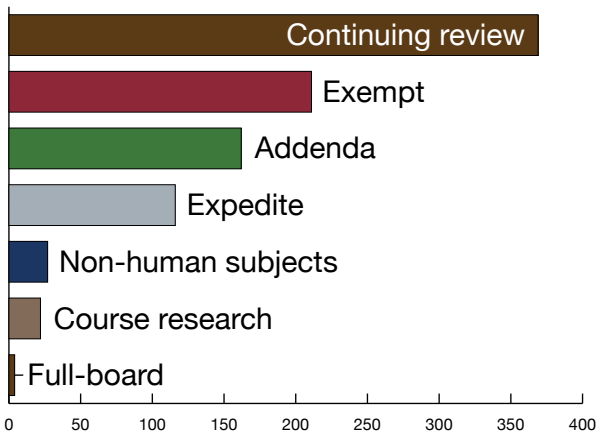
Institutional Review Board

The Institutional Review Board reviews proposed research involving human participants, educates the university community about human participants research, and oversees compliance issues.

True Rubal
IRB Administrator



Protocols



Projects

Special Education: an evaluation of plyometric training for improving motor abilities of children with cerebral palsy.

Landscape Architecture and Environmental Planning: an experimental study on pedestrian and evacuation procedures of people with disabilities.

Natural Resources-Environment and Society: an ethnographic/qualitative study examining the role of grassroots actors in facilitating or challenging institutions and networks through which conflict occurs, violence is perpetrated and insecurity is sustained in the Democratic Republic of Congo.

Psychology: a study of sexual education histories, knowledge, attitudes and behaviors of college students, including an intervention designed to improve and increase knowledge, integrate values with attitudes and behaviors, and increase college student efficacy in establishing healthy, value-congruent sexual patterns.



FYI

In FY2012 the board consisted of:

- 3 staff members
- 12 education/human services faculty
- 2 agriculture faculty
- 1 humanities/social sciences faculty
- 1 business faculty
- 2 community members
- 1 graduate student representative



online protocol system launched in 2011.

Compliance Assistance

The goal of Compliance Assistance is to enhance USU's culture of research excellence in the areas of compliance, regulatory awareness and research integrity.

Russ Price
Federal Compliance
Manager



Also: OCA assisted with certifications and accreditations for human subjects research.

10

Fiscal officers receiving advanced training and certification in SPO admin



Major Projects

Research Scholars Certification



The program is designed to introduce students and postdoctoral fellows to the responsible conduct and reporting of research.

238

Students and postdocs trained in Research Scholar programs

New process for DHHS in place



OCA helped implement conflict of interest disclosure procedures responsive to recent regulations from the Dept. of Health and Human Services.

66

Researchers in 14 depts. supported in complying with DHHS COI regulation.

Research Computing

The Division of Research Computing provides high performance computing hardware and software resources to faculty and students at no cost to them.

John Hanks
Research Computing
System Administrator



Computing capacity



? Research questions



Alexander Boldyrev asks:

- How does chemical bonding occur in coronene, isocoronene, and circumcoronene?



Jiming Jin asks:

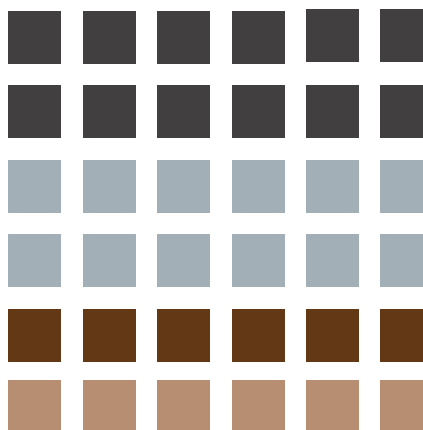
- What's an optimal scheme of crop planning for sustainable development and soil utilization?



Robert Spall asks:

- How do fluids flow through a confined bank of cylinders?

☑ Computing users



Agriculture
(Plants, Soils and Climate)

Science
(Chemistry and Biochemistry)

Engineering

Other

FYI

The Division of Research Computing changed its name from High Performance Computing this year and restructured its leadership to have a dedicated system administrator.

Animal Care and Use

The Institutional Animal Care and Use Committee (IACUC) is charged with the responsibility of ensuring that the Animal Welfare Act policies and procedures are followed.

Aaron Olsen
*Director, Laboratory Animal
Research Center and
Institutional Animal Care and
Use Committee*



Protocols

▲ 29% since 2011

154

new

241

total



Top Stories

West Nile virus
research--
insights into
treatment



Assisting with
BSL-3 lab at
Innovation
Campus



Increasing
oversight for new
Veterinary School



Launching
Protis, online
submission for
protocols



Communications

The communications team assists with internal and external information and marketing needs for all RGS divisions to assist and support their core functions.

Anna McEntire
Director of
Communications



Most-watched video



Most-active album



Twitter story of the year

Nutritional supplement to combat lung irritation caused by smog? USANA collaborating with USU USTAR research team

Favorite picture



Top stories in the news

- Could Divorce Lead to Dementia (Men's Health, August 2, 2011)
- Utah State University Researcher Spins Spider Silk from Goat Milk (The Republic, July 10, 2011)
- Long Live the Fat American (The Economist, June 30, 2011)
- How Couples Sabotage Their Finances (MSNBC, June 13, 2012)
- 15-Year Study Shows Positive Connection Between How Parents Play with Toddlers and Their Children's Academic Success (Wall Street Select, March 6, 2012)
- Goat-hair Silk May Help Heal Wounds (Modern Medicine, National, Online, 08/31/2011)
- Small Satellites Prompt Big Ideas for Next 25 Years (MSNBC, Oct. 18, 2011)
- USDA Awards Organix NIFA Grant for Scalable, Integrated Anaerobic Digester & Fiber Processing Unit – Yahoo!

Top website stories



- Research Gala recognized outstanding Utah State University researchers
- Record turnout at USU Student Showcase yields an extra crop of poster winners
- USU-Physics wins national Award for Improving Undergraduate Physics Education

Projects and Events



New website template



Research Week 2012



Sunrise Sessions