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
# 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.*

---

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

---

**USU has...**

<table>
<thead>
<tr>
<th>Faculty</th>
<th>797</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff</td>
<td>1,835</td>
</tr>
<tr>
<td>Graduate Students</td>
<td>3,341</td>
</tr>
<tr>
<td>Undergraduates</td>
<td>25,445</td>
</tr>
</tbody>
</table>
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

New and continuing awards

1,302
49 over 2011

Proposals submitted

1,565
88 over 2011

Proposals reviewed by each administrator (appx.)

174

External awards

<table>
<thead>
<tr>
<th>Year</th>
<th>USURF &amp; Financial Aid</th>
<th>Research Awards</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>718</td>
<td>72.7</td>
</tr>
<tr>
<td>2010</td>
<td>92.7</td>
<td>94.1</td>
</tr>
<tr>
<td>2011</td>
<td>114.3</td>
<td>98.7</td>
</tr>
<tr>
<td>2012</td>
<td>972</td>
<td>207.2</td>
</tr>
</tbody>
</table>

College awards

<table>
<thead>
<tr>
<th>Source</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>USURF</td>
<td>207.2</td>
</tr>
<tr>
<td>Natural Resources</td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
</tr>
<tr>
<td>Misc.</td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
</tbody>
</table>

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: ▲ $1.4M
- 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.

Projects and awards

<table>
<thead>
<tr>
<th>#</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>83</td>
<td>$124.7M</td>
</tr>
<tr>
<td>21</td>
<td>$24.1M</td>
</tr>
</tbody>
</table>

Assisted proposals

Assisted awards

Grant and proposal training

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

Credit

College staffing

Education & Human Services  
Nancy Sassano

Agriculture  
Pam Garcia

School of Business  
Brian Steed

Wildland Resources/Biology/Ecology Center  
Holly Strand

Attendee groups

Graduate students/post docs

Faculty

Other

Seed grant funding

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.

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
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.

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.

Matriculated graduate student enrollment (system-wide)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2,674</td>
<td>11%</td>
<td>644</td>
</tr>
<tr>
<td>Enrolled graduate student headcount</td>
<td>Percentage graduate students of all matriculated USU students</td>
<td>Enrolled doctoral student headcount</td>
</tr>
</tbody>
</table>

Graduate degrees conferred (system-wide)

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1,089</td>
<td>20%</td>
<td>99</td>
</tr>
<tr>
<td>Graduate degrees conferred</td>
<td>Percentage graduate degrees of all USU degrees</td>
<td>Doctoral degrees conferred</td>
</tr>
</tbody>
</table>

Master’s students

Of 2012 master's degrees awarded...

<table>
<thead>
<tr>
<th>Master's type</th>
<th>Percentage</th>
<th>Headcount</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA, MS</td>
<td>50%</td>
<td>494</td>
</tr>
<tr>
<td>Professional</td>
<td>50%</td>
<td>496</td>
</tr>
</tbody>
</table>

Theses and dissertations

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.

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
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.

Sources of Funding

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internat’l Education Contracts</td>
<td>$2.1 M</td>
</tr>
<tr>
<td>Tuition Awards (RGS)</td>
<td>$4.6 M</td>
</tr>
<tr>
<td>F&amp;A (RGS)</td>
<td>$.7 M</td>
</tr>
<tr>
<td>Other*</td>
<td>$.2 M</td>
</tr>
<tr>
<td>Financial Aid</td>
<td>$.3 M</td>
</tr>
<tr>
<td>Self (private funds)</td>
<td>$6.5 M</td>
</tr>
</tbody>
</table>

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

Graduate Student Admissions

- Applications received last year: 2,946 (up 10% from 2011)
- Graduate students accepted to USU: 1,134 (53% acceptance rate)
- Newly enrolled graduate students: 826 (73% yield rate)

In FY2012, graduate students received graduate assistantships totaling $12,802,024, an increase of 4.3% over FY2011.
USU’s Graduate and Undergraduate Research programs are designed to increase student engagement in research projects, funding and presentation opportunities.

New programs

**Presidental Doctoral Research 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.

**NEW**

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

**URCO grants awarded** 70

**Research on Capitol Hill participants** 33

**Student Showcase participants** 150

**National Conference on Undergraduate Research participants** 58
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.

### 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.

### Waste

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological waste</td>
<td>4,893 lbs.</td>
</tr>
<tr>
<td>Hazardous materials (recycled)</td>
<td>41,062 lbs.</td>
</tr>
<tr>
<td>Hazardous waste</td>
<td>125,793 lbs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Faculty and Staff trained</th>
<th>776</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specialty GIS emergency building maps created</td>
<td>258</td>
</tr>
</tbody>
</table>

Don't Learn Safety By Accident
The Institutional Review Board reviews proposed research involving human participants, educates the university community about human participants research, and oversees compliance issues.

Protocols

- Continuing review
- Exempt
- Addenda
- Expedite
- Non-human subjects
- Course research
- Full-board

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.

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
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.

Major Projects

Research Scholars Certification

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

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.

Also:

OCA assisted with certifications and accreditations for human subjects research.

Also:

10 Fiscal officers receiving advanced training and certification in SPO admin

238 Students and postdocs trained in Research Scholar programs

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.

### Computing capacity

<table>
<thead>
<tr>
<th></th>
<th>Cores</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>512 Wasatch</td>
<td>4 years old</td>
<td></td>
</tr>
<tr>
<td>96 Interactive</td>
<td>1 year old</td>
<td></td>
</tr>
<tr>
<td>768 Sawtooth</td>
<td>1 year old</td>
<td></td>
</tr>
<tr>
<td>48 Workstation</td>
<td>2 years old</td>
<td></td>
</tr>
<tr>
<td>2 Tesla 2050</td>
<td>2 years old</td>
<td></td>
</tr>
<tr>
<td>512 Navier</td>
<td>under construction</td>
<td></td>
</tr>
</tbody>
</table>

### 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.
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.

Top Stories

West Nile virus research--insights into treatment

Increasing oversight for new Veterinary School

Assisting with BSL-3 lab at Innovation Campus

Launching Protis, online submission for protocols

Protocols

29% since 2011

154 new

241 total
Communications

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

Most-watched video

Most-active album

Twitter story of the year

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