

OFFICE OF THE VICE PRESIDENT FOR RESEARCH

ANNUAL REPORT

JULY 1, 2009 TO JUNE 30, 2010

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INTRODUCTION

Utah State is a research-intensive land-grant university that supports faculty and student researchers, solves problems, and contributes to the economy. University research is fostered through improving campus research services and support, and through building multidisciplinary research programs and partnerships, thereby enhancing the university's capacity for research excellence.

Research Office Mission Statement

It is the mission of the Research Office at USU to facilitate and stimulate research, scholarship, and creative activities by:

- Providing resources to recruit, retain, and recognize outstanding faculty and student researchers.
- Providing research support services that are highly responsive and efficient.
- Providing leadership to identify and pursue promising research opportunities and to grow external research funding.
- Fostering a culture of academic research integrity and promoting the responsible conduct of research.
- Fostering the creation of intellectual property and supporting appropriate technology commercialization.
- Fostering the expansion of international research projects and programs.
- Communicating the value of USU research throughout the state, nation, and the world.

Core campus constituencies of the Research Office are faculty, research professionals, students, and unit administrators. The VPR chairs the University Research Council, which consists of deans, major center directors, and student and faculty representatives. Because deans, center directors, and department heads are appropriately most concerned with their respective units, the VPR must take a broader, campus-wide perspective.

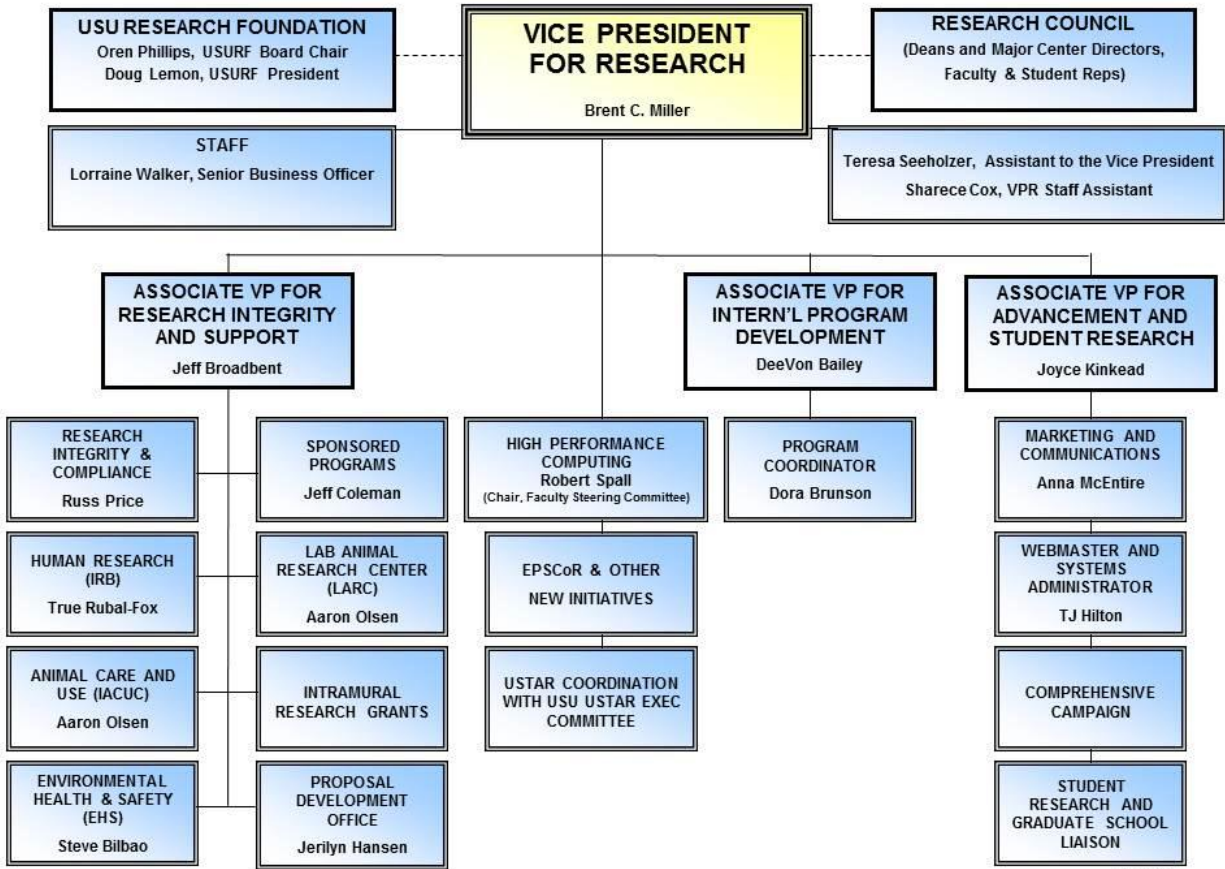
The VPR needs to be actively engaged in professional networks and with societies that have the advancement of research as their mission. The VPR also must be engaged with external constituencies, including local and state elected officials, as well as federal and industry funding sponsors to advance university research.

ANNUAL REPORT

This annual report to the Faculty Senate covers the major activities of the Research Office and the Research Council from July 1, 2009 through June 30, 2010. It is a summary of all units for which the VPR has responsibility. This report is organized in five parts:

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Utah State University
Vice President for Research Organization



Updated
10/20/2010

1. OVERVIEW OF VPR AND RELATED SERVICE UNITS

The VPR was responsible for the units shown above during fiscal year 2009-2010. The USU Research Foundation (USURF) is a wholly-owned subsidiary of the university. It is a major organization with large-scale research programs, most notably the Space Dynamics Laboratory (SDL). A cooperative working relationship with the Research Foundation is essential for accomplishing the research mission of the university. The USU Research Council advises the VPR, providing a forum for considering major research issues; its activities are detailed in section 2.

A) Sponsored Programs Office (SPO)

The USU Sponsored Programs Office (SPO) is responsible for supporting and protecting the university and individual researchers as they propose, submit, and administer externally funded sponsored research projects. This role puts SPO in a unique situation to interact with virtually every college, department, research center, and administrative unit at USU. Further, the interdependent nature of contracting requires strong accountability if research endeavors are to be successful. Therefore, SPO makes every effort to provide excellent service,

effective resources, timely responsiveness, and accountability necessary to not only promote a successful research environment, but also to build strong relationships necessary to promote continued research growth.

Some of the specific responsibilities of SPO include providing training and workshops, budgeting and proposal development assistance, assisting in the completion of mandatory internal and external forms, communicating and negotiating with sponsors to develop mutually advantageous agreements that protect the researchers as well as the university, and administering awards. Consequently, SPO has offered and will continue to offer workshops for locating funding opportunities, industry contracting, and electronic research administration. SPO also offers formal and informal training to communicate university, federal and state regulations, policies and procedures to promote compliance and consistency throughout the university.

SPO fosters research at the university by helping researchers to develop and submit proposals that have the highest likelihood for success. To accomplish this, SPO provides the following services: budget development, interpreting contractual terms and conditions, completing required forms, tracking pending proposals, notifying researchers upon award, and negotiating award terms and conditions with sponsors to protect the researcher and university. SPO also works closely with the Controller's Office to ensure that accounts are set up properly and that USU is compliant with federal and state regulations, sponsor-specific terms and conditions, as well as University policies.

A single point of contact approach allows researchers to easily identify their assigned SPO administrator. Further, this approach allows each SPO administrator to become more familiar with sponsor-specific regulations as well as to familiarize themselves with individual researchers and their unique needs. SPO has also developed a strong working relationship with the Controller's Office creating a team approach for pre- and post-award functions that further supports research efforts.

SPO continues to update its website (<http://spo.usu.edu>) to enhance proposal development, provide more user-friendly interfaces, and make information more accessible and easier to locate. SPO policies and procedures are posted on the web and additional policies and procedures continue to be developed and published. Some new features and information available on the website include: guidelines for industry contracting; distinguishing between gifts, grants and contracts; export control; and resources for graduate/undergraduate students. SPO provides monthly reports to the VPR regarding the status of research proposals and awards by college at Utah State University. Appendix A provides a summary of Sponsored Program Awards, FY2006 through FY2010. Appendix B compares awards by month and type of award for FY2009 and FY2010. Appendix C provides a summary of Sponsored Program Awards by Awarding Agency, FY2006 through FY2010; and Appendix D provides a summary of Sponsored Program Awards by Research Center, FY2006 through FY2010.

B) Office of Proposal Development (OPD)

The USU Office of Proposal Development was created to expand external research funding at USU by training researchers on proposal development; providing services to enhance success in obtaining funding; managing proposal development for strategically important submissions; and fostering interdisciplinary collaborations. With a staff of experienced proposal development specialists located in major research units across campus (colleges/departments/research centers), the OPD assists researchers in the development of strong, competitive, and compliant proposals for submission to external funding agencies.

FY 2010 was the first full year of OPD operations. During this time, OPD outreach and involvement in proposal submissions increased due to efforts to educate researchers on the availability of OPD services and successful word-of-mouth publicity. As a result, OPD network staff assisted with the development and submission of 96 proposals, valued at \$100.1 million, representing an increase of 80 proposals and \$86.9 million over FY 2009. The OPD project portfolio includes several especially strategic proposals for USU, including two NIH-NIAID proposals that could elevate one of USU's most successful research centers (the Institute for Antiviral Research), three NIH facilities proposals to enhance USU infrastructure, a \$12 million STEM-related grant that would bridge the colleges of Education and Science, a \$9.5 million renewal of the National Center for Hearing Assessment and Management (NCHAM) grant, and a \$2 million USGS proposal to host the Southwest Regional Climate Science Center at USU. To date, one NIH facilities proposal to enhance the LARC infrastructure, one NIH-NIAID proposal, and the NCHAM renewal have been awarded, and many other applications are still pending. Appendix E details the awards received in FY 2010 that involved OPD assistance.

The OPD network of proposal development specialists are valued allies to researchers whose services include assisting with matching research ideas to appropriate funding agencies and solicitations; developing proposal timelines to enable timely submissions; ensuring compliance with agency and solicitation requirements; editing/proofreading proposals, including proper formatting according to requirements; and assistance with the submission process, including working with the Sponsored Programs Office. These services offered by OPD network staff frees researchers from the logistics of proposal development to enable them to focus on making the technical aspects of the proposal as strong as possible. In addition to the unit-level assistance provided by the OPD network staff, the services of the entire OPD group can be provided, as available, to any academic or research unit that seeks to prepare a large, institutionally strategic proposal.

In an ongoing effort to encourage participation in the OPD network, the Research Office maintains its commitment to provide a 50% salary contribution for the first year, and 10% each year thereafter, to academic or research units who employ a proposal development specialist. The OPD manager works with these units to identify and recruit specialists who can provide proposal development services to that unit's researchers. Services provided by a proposal developer to his/her unit are under the direction of the dean/department head/center director. Unit proposal developers are expected to contribute effort, as needed, toward large institutionally strategic proposals as directed by the OPD Manager. All proposal developers

are expected to assist with the annual Proposal Writing Institute. In FY 2010, the following individuals comprised the OPD network (date of hire in parentheses):

Vice President for Research	Jerilyn Hansen, OPD Manager (October 2008)
Humanities & Social Sciences	Elaine Thatcher (February 2009)
Education & Human Services	Nancy Sassano (April 2009)
Agriculture	Pam Garcia (July 2009)

In the upcoming fiscal year, the OPD is poised to double in size through research unit commitments to add three new proposal development specialists to the network.

The OPD continues to offer its main training opportunity – the Proposal Writing Institute (PWI) – to researchers annually. The second annual PWI was offered in May/June 2010. The PWI is an intensive training experience in proposal development that culminates with the submission of a major external grant by each participant. The main feature of the PWI is its structure around small group work, which allows for individualized attention and positive interactions among participants and staff. Participation in the PWI is based on a competitive application process that requires nomination by a researcher’s department head and dean or center director. Academic college deans select and rank up to three applicants for participation in the Institute. The top applicant from each academic college is automatically admitted to the Institute and the remaining participants are selected by OPD staff through a competitive review of application packets. Participants and OPD personnel meet for six full days, collectively and in small groups, while each participant prepares an original external proposal. Appendix F provides an update on the first PWI cohort from 2009. Appendix G provides information on the 2010 PWI cohort. At the end of FY2010, PWI participants (FY2009 and FY2010) had submitted 12 proposals, valued at \$5.98 million, with upcoming submission dates for the remaining participants.

C) Institutional Review Board (IRB)

The IRB is charged with protecting the rights and welfare of human research participants. All research involving human participants, including unfunded research, must be reviewed in accordance with the Code of Federal Regulations. USU has a Federal Wide Assurance with the Office of Human Research Protections that commits USU to comply with federal regulations governing human participants in research and which is required for Department of Health and Human Services-funded research. This Assurance is renewed every five years.

In March 2009, the IRB received full accreditation from the Association for the Accreditation of Human Research Protection Programs (AAHRPP). This accreditation strengthens the Human Research Protection Program (HRPP) through effective practices by means of sound policies and procedures, continually raising the highest ethical standards in human subject research, and documenting practices to assure a commitment to quality improvement and protection for research participants. An extensive evaluation process was performed internally by the IRB Office and the Office of Compliance Assistance. Through these reviews the HRPP and associated IRB processes were assessed, and extensive changes were implemented. Some of the most significant changes made as a result of the AAHRPP accreditation include:

1. Implementation of increased monitoring and measurement of HRPP activities and outcomes to provide for continuous improvement of IRB and other university processes.
2. Implementation of a more rigorous scientific validity review process in the departments and colleges.
3. Increased attention to non-compliance and unanticipated problems associated with human research.
4. Increased emphasis on documentation of the IRB review process, discussions and decisions.
5. Bifurcation of the Standard Operating Procedures into two publications – one focused on IRB procedures (the SOPs) and the other on information pertinent to investigators (the Investigator Handbook).
6. Increase staff FTE by 30%. This has provided additional assistance to the IRB Office in reviewing new applications, protocol status reports (continuing reviews), and amendment requests, resulting in improved turn-around time. In addition, the increased staff effort has enabled the IRB office to refine existing forms and documents and to develop some new documents to assist faculty in understanding the IRB's processes and procedures.

The IRB (Board) is an administrative body of volunteer members with diverse experience to provide an adequate and comprehensive review of USU human research activities. Regulations require that an IRB have at least one scientist, one non-scientist, and one member not affiliated with the institution; terms of service are three years and can be renewed. A larger number of IRB members is needed to make the review workload more manageable. USU IRB Board members for the 2009-2010 fiscal year included:

Kim Corbin-Lewis (Chair) – Department of Communication Disorders and Deaf Education
 Thorana Nelson (Vice-Chair) - Department of Family, Consumer, and Human Development
 True Fox – IRB Administrator
 Eadric Bressel – Department of Health, Physical Education and Recreation
 Richard Albiston - Prisoner Advocate
 Melanie Domenech-Rodriguez - Department of Psychology
 Chris Fawson (alternate) - Department of Economics
 Donna Gilbertson – Department of Psychology
 Richard Gordin - Department of Health, Physical Education and Recreation
 Stuart Howell - Community Representative
 Mike Monson (alternate) – Community Representative
 Bob Morgan - Department of Special Education and Rehabilitation
 Ron Munger - Department of Nutrition, Dietetics, and Food Sciences
 Gretchen Peacock - Department of Psychology
 Russ Price (ex officio) – Federal Compliance Assistance
 Noreen Schvaneveldt - Department of Nutrition, Dietetics, and Food Sciences
 Tim Slocum (alternate) - Department of Special Education and Rehabilitation
 Nancy Sassano – IRB Coordinator

The IRB is scheduled to meet monthly and meets at least quarterly, depending on the need for full board review of protocol applications. Certain research protocols do not require full board review and can be reviewed under Exempt or Expedite procedures. These reviews occur on an ongoing basis as they are submitted to the office. All reviews follow criteria outlined in the federal regulations. All on-going research projects are reviewed annually; however, if there is more than minimal risk to human participants, the continuing reviews may be more frequent. Any proposed change or revision to a currently approved study that affects human participants

must be reviewed and approved by the IRB prior to implementation of that change. A special amendment/modification document is required from the PI.

The IRB Office documents compliance with federal regulations by maintaining a database of all research protocols submitted and of actions taken by the Board. The Vice President for Research Office has entered into a service agreement with USU's software development team to create a web-based interactive protocol submission and management system that will enhance the IRB's ability to track protocols and communicate with investigators involved in human subject research. This software is in development with projected use to begin in the Fall of 2011.

Written policies and procedures established by the university and congruent with federal guidelines have been instituted to address procedures such as yearly continuing review, reporting of unanticipated problems, changes in research methods and objectives, and researchers' conflict of interest. A complete copy of the USU IRB Handbook is posted on the VPR Web site at <http://irb.usu.edu/>.

The IRB Administrator is actively involved in implementing revised federal procedures and updating USU procedures; providing continuing education for faculty, students, and board; and helping to coordinate ethics-in-research training for researchers and IRB members. Appendix H illustrates the number of IRB research applications by types of review categories from 2006 through 2010.

D) Laboratory Animal Research Center (LARC)

The primary mission of the LARC is to support university animal research, testing, and teaching by providing resources for animal procurement, housing, husbandry and care, health care, and disposal. Space is also provided for researchers to conduct short- and long-term research. The LARC staff is also a resource for expert information on the use of live animals in research and teaching. The LARC is accredited by the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) International, is Public Health Service (PHS) assured, and is a United States Department of Agriculture (USDA) registered animal research center. The permanent LARC staff consists of the following: A director (A. Olsen), a Utah-licensed and USDA-accredited veterinarian and member of the American Society of Laboratory Animal Practitioners and the American Association for Laboratory Animal Science; a full-time supervisor (K. Udy), who is a certified Registered Laboratory Animal Technologist by the American Association of Laboratory Animal Science; a full-time secretary (J. Daniels); one full-time animal caretaker (T. Lauritzen); one part-time animal caretaker (L. Potter), and one part-time cage wash technician (J. Abbot). There are also part-time students employed who work in the washroom and provide basic animal care. In exceptional cases, researchers provide part or all of their own animal care. The Director (Olsen), full-time supervisor (Udy) and secretary (Daniels) have shared assignments with the Institutional Animal Care and Use Committee (IACUC).

Major accomplishments for FY2010:

- The USDA inspector found the LARC to be in full compliance during the annual facility inspection.

- AAALAC International performed a site visit in March and the LARC was notified in July that Full Accreditation status will continue.
- All available animal space is occupied.
- The LARC was awarded a Facilities Improvement grant from the NIH totaling \$454,000 for the purchase of capital equipment, caging and support diagnostic equipment. Funding began in FY2009 and continues into FY2010
- Remodeling of the surgery suite was completed to provide space to accommodate a Animal Behavior lab in order to meet the needs of a new faculty member.

Construction of the 650 Bio-Innovation Building (aka USTAR Building #2) is essentially complete. The building includes a substantial vivarium and biosafety containment suite. This vivarium will dramatically increase animal holding capacity and research capabilities. We expect to occupy the building and begin housing animals in the vivarium in the first quarter of 2011.

E) Environmental Health and Safety Office (EH&S)

The EH&S Office provides expertise and guidance for compliance with federal, state, and local safety and health regulations, as well as current professional practices and guidelines. Its goal is to prevent injuries, illnesses, and environmental damage through the recognition, evaluation, and control of potential hazards arising from university activities. This is accomplished through services that ensure a safe and healthy environment for all students, faculty, and staff at USU and the surrounding community. Services include assisting in compliance with regulations and training university personnel and students in appropriate safety measures. General areas of focus include biological, radiological, occupational, and chemical health and safety.

The EH&S Office interacts with many governmental regulators in the course of normal business, including: Environmental Protection Agency (EPA), State of Utah-Department of Environmental Quality (DEQ), Division of Radiation Control (DRC), Occupational Safety and Health Administration (OSHA), Centers for Disease Control (CDC), and the National Institutes of Health (NIH). Many of these entities perform routine and unannounced inspections and require written programs, documented training, permits, and numerous reports of differing types that the EH&S Office completes on behalf of the university. Responsibilities of the EH&S program cross many traditional aspects of the campus community.

In FY2010, EH&S accomplished the following:

- Transported, managed and disposed of approximately 65,350 lbs. of hazardous waste, 752 lbs. of biological waste, 1,535 lbs. of radiation waste, and recycled 86,415 lbs. of hazardous materials.
- Continued application of the radioactive waste volume reduction plan resulted in cost savings by reducing the amount of waste shipped off-site for disposal by 295 pounds.
- Provided safety training to approximately 775 faculty, staff, and students in 36 courses.
- Provided Logan City Fire Department with 57 new or updated pre-incident plans for campus buildings. Provided 5 new Emergency Response Map Books and 35 new building evacuation plans. Created 85 specialty maps (i.e. rad decon floor plans, asbestos abatement floor plans, etc.) for in office and campus use. Commenced updating campus emergency utilities maps.

- Managed approximately 20 asbestos abatement projects for various construction and renovation projects.
- Provided ongoing oversight to the Universities select agent and biosafety programs, including training, incident response exercise, inspections and protocol reviews and approvals.

F) Office of Global Engagement (OGE) – International Research)

OGE was actively involved in a variety of faculty-led international projects and activities during the last fiscal year. Among them are:

Active International Research and Technical Assistance Projects:

- Iraq Agricultural Extension Revitalization (IAER) - Texas A&M University is the lead institution on this project. USU's portion is related irrigation and has resulted in a two year extension (~ \$500,000 to USU) with training to take place in Amman, Jordan. Jagath Kaluarachchi (CEE), Wynn Walker (CEE), Mac McKee (UWRL).
- Global Livestock-Climate Change Collaborative Research Support Program (GL-CRSP) - Project centered in Ethiopia and Kenya and is designed to help pastoralist communities to mitigate climate-related risk through income diversification. This is the last year of funding after eleven years (\$200,000 this year (FY 2008-09) compared to \$600,000 in previous year). Layne Coppock, (ENS). – Approximately \$4 million over 11 years.
- Strengthening Early Childhood Education in Jordan - The objectives of the partnership are to improve the undergraduate degree program to reflect best practices in early childhood education, enhance the theoretical and assessment backgrounds in undergraduate classes, and increase the links between theory and classroom practice to augment the student teaching experience available to students. Vonda Jump, (CPD). - \$450,000 over three years.
- Senegal River OMVS Modeling Project – West Africa - This project represents the culmination of a series of projects that UWRL has conducted for OMVS, dating back to the 1970's. It is designed to update the modeling process measuring costs incurred by the countries drawing water resources from the Senegal River. Mac McKee (UWRL) and John Keith (APEC). - \$600,000
- Litani River Basin Management Support – Lebanon - This proposal was solicited by IRG under the Water IQC. The purpose of this activity is to set the groundwork for improved, more efficient and sustainable basin management at the Litani river Basin (Bekaa Valley) through provision of technical support to the Litani River Authority and implementation of limited small scale infrastructure activities. Bob Hill (CEE), Gary Merkley (CEE), Grant Cardon (PSC). - \$600,000
- Village Wells and Water Supply Program – Armenia - This cooperative agreement with USDA continued a previous agreement that began in 2001. USU provided expert service in helping Armenian farmers improve on-farm water management and helped train Armenians to drill wells and monitor for compliance with environmental standards. Bob Hill, (CEE). - \$200,000

- Irrigation Assessments for Millennium Challenge Corporation – Armenia, Moldova, and Burkina Faso - This project strengthened public and private irrigation organizations to manage irrigation systems and water resources and will help farmers to operate and maintain their systems. Bob Hill (CEE) and Gary Merkley (CEE) partnered with USDA/Foreign Agricultural Services in Moldova (\$287,995) and Burkina Faso (\$299,824).
- Design, Management and Evaluation of Surface Irrigation Systems in Egypt - This project is aimed at the improvement of on-farm technologies that will take advantage of better water delivery and yield higher water use efficiencies. Some of these technologies have been developed elsewhere but none have been adapted and applied to significant areas in Egypt. This proposed project would evaluate new surface irrigation technologies, test their application in Egypt, and develop guidelines for their widespread adoption. Wynn Walker, (CEE). - \$16,800
- Middle East Water and Livelihood Initiative - Initiative led by the International Center for Agricultural Research in Dry Land Areas (ICARDA). Five U. S. universities (Florida, TAMU, Illinois, Cal-Davis, and USU) are involved along with seven countries (Yemen, Palestine, Lebanon, Egypt, Jordan, Iraq, and Syria). Areas of focus include: water, livestock, horticulture, socio-economics, and extension. The first year of funding provided \$500,000 to develop the proposal (\$40 – \$50 million over ten years).
- Business Field Study for Carr Foundation – Mozambique - Marketing study of traveling display used to raise money for Gorongosa Restoration Project. Mark Thomas, (HSB). - \$15,000
- China Initiative - Biotechnology and Extension activities in China Federal funding of \$450,000 with money being divided between USU departments of ADVS (Ken White), PSC (Roger Kjelgren), and Extension (Noelle Cockett).

The OGE Office – International Research is currently helping faculty in colleges of Agriculture, Jon M Huntsman School of Business, Engineering, Emma Eccles Jones College of Humanities and Education and Natural Resources to develop projects in east Africa, Philippines, Ecuador and other worldwide programs.

G) The Center for High Performance Computing (HPC@USU)

HPC undertook a new organizational structure after the departure of former Acting Director Nate Benson. To create consistency and to capture broader campus user input, the Chair of the HPC@USU Faculty Steering Committee directs the activities of the HPC staff. The Committee is comprised of HPC users from most colleges and Chairmanship can rotate annually.

Robert E. Spall, Professor of Mechanical and Aerospace Engineering, College of Engineering, accepted the first chairman responsibilities through June 2011. Dr. Spall has taught in the MAE department since 1996 and has served in many USU leadership roles, as well as being an HPC user and professor of Computational Fluid Dynamics.

Other members of the Faculty Steering Committee include:

Alexander I. Boldyrev, Professor of Theoretical and Computational Chemistry, College of Science

Robert R. Gillies, Associate Professor of Aquatic, Watershed and Earth Science, College of Agriculture; Director of Utah Climate Center

Eric Held, Associate Professor of Physics, College of Science

TJ Hilton, System Administrator and Webmaster, Vice President for Research

Jiming Jin, Assistant Professor of Hydro-Meteorological Sciences, Colleges of Agriculture and Natural Resources

Brent Miller, Vice President for Research

Dan Watson, Associate Professor of Computer Science, College of Science

HPC@USU's full time staff includes Jon Huppi (System Administrator) and Barbara Sidwell (Program Coordinator).

Since its inception in 2005, users have reported that the HPC@USU has been instrumental in leveraging awards valued at \$4,157,549. Since 2008, 26 publications have resulted from research utilizing HPC@USU resources and numerous posters, presentations, symposiums, conference and workshop presentations have been given based on research made possible through HPC@USU resources. Overall HPC resource use averages 100 clients per month and includes undergraduate, graduate and faculty researchers from the Colleges of Agriculture, Business, Engineering, Natural Resources, Science, and the Utah Water Research Laboratory.

Major accomplishments for FY 2010 include:

- HPC@USU collaborated with University of Utah (UofU) and UEN to win a competitive EPSCoR C2 grant that was awarded in Fall 2010. The funds will upgrade the *Sawtooth* cluster to enhance compute capabilities and to increase knowledge, educational and computational community in Utah, and within its partnerships.
- In summer 2010, the HPC utilized multiple sources of funding to upgrade equipment in order to provide faster connectivity within the Visualization Lab. Also purchased were two Microway Tesla workstations that provide high-powered computational capability with stand-alone Matlab software. The HPC also purchased two new file servers, four new log-in servers, and 80 TB of additional Panasas storage.
- HPC@USU has a newly designed website with updated secure links to request access, submit trouble tickets, review tutorials, and keep informed of HPC@USU.

H) Advancement & Activities of Student Research

In 2010, Undergraduate Research celebrated its 35th anniversary. USU has the second oldest program in the country, established in 1975 with the help of faculty from MIT, which established its program in 1969. Undergraduate research is one of the primary marketing messages for Utah State University, particularly in recruiting highly talented prospective students. The work of George Kuh (2008) notes that undergraduate research is one of the few "high impact" educational practices that has documented results in student success and

retention. The culture that allows students to “get their hands on research” at an early point in their undergraduate career brings benefits to students and also national recognition to Utah State University. Faculty members, who have an ethic of working with undergraduates, are key to the success of USU students.

Support was provided to 50 undergraduates through the Undergraduate Research and Creative Opportunities (URCO) Grant Program in FY2010. The Research Office has more than doubled its investment in research grants over the last few years. Increasing the maximum award from \$1000 is one of the priorities recommended by the Undergraduate Research Advisory Board (URAB) but is still in the future.

An Undergraduate Research Alumni Newsletter was inaugurated and mailed in fall 2009. URCO alumni provide the basis for enhanced communication and fund-raising to support the undergraduate research program.

The annual Research on Capitol Hill event, designed to illuminate the effect of a research university on undergraduate education, featured 30 Utah State students and a similar number from the University of Utah at the State Capitol. The tenth anniversary of this event occurs January 26, 2011. In the fourth annual Utah Conference on Undergraduate Research (UCUR), hosted on the Southern Utah University campus, 24 USU students presented, joining almost 400 students from practically every institution of higher education in the state. Notably, students represented four of the USU campuses. Seventeen USU students were accepted to present at the National Conference on Undergraduate Research (NCUR) held at University of Montana in April 2010. One student, Tyler Olsen of FCHD was invited to the Council on Undergraduate Research (CUR) Posters on the Hill in Washington, DC, in April 2010, an exclusive event that features 60 posters.

Student Showcase, which is part of our annual Research Week, continued to feature more than 100 posters and presentations. Alan Jenkins, Professor Emeritus of Oxford-Brookes, delivered the celebratory address. At noon, eight undergraduate researchers, representing each college as well as the regional campuses, were recognized with the David and Terry Peak Undergraduate Researcher of the Year Award. Likewise, outstanding faculty mentors for undergraduate research were recognized. The student award was also featured at Robins Awards Ceremony, where Carrie Young, a Biology major located at the Uintah Basin campus, was designated as the University Undergraduate Researcher of the Year.

An Undergraduate Research Advisory Board, chaired by Associate Dean of Science Lisa Berreau and including faculty and student membership from each college and the regional campuses continued to identify the successes and opportunities for undergraduate research. The URAB made a report to Research Council outlining the following needs: increased funds for URCO Grants; increased opportunity for students in the humanities, arts, and social sciences; improved communication and contact regarding undergraduate research for each department and college; support for interdisciplinary projects; support for international projects. A modest grant to fund research assistants to faculty in the humanities was implemented after a pilot in the previous year. The student members of URAB led in securing Tier Two Tuition funds (\$10,000) to be used to establish or enhance department/unit

website to improve information about and access to undergraduate research. This was an initiative suggested by students as they are sometimes frustrated by not knowing what their programs offer in the way of undergraduate research and scholarship. Since funding began, twelve units have enhanced their UR websites. Plans for a new undergraduate research journal to be housed in Digital Commons are underway; a process for developing a Digital Commons student poster site was developed shortly after Student Showcase and is in effect.

Two points of data for undergraduate research: the National Survey of Student Engagement (NSSE) showed that 26% of graduating seniors reported working with a faculty mentor on an independent research project, a higher figure than USU's peer institutions; the number of applications of the transcript designation of *Undergraduate Research Scholar* continued to increase.

Joyce Kinkead, Associate Vice President, who oversees Undergraduate Research, serves as a Councilor on the Undergraduate Research Program Directors Division of the Council on Undergraduate Research (CUR); Kenneth Bartkus, Director of Undergraduate Research for the Huntsman School of Business is a Councilor in the Social Sciences Division; Alexa Sand, Assistant Professor of Art History is a Councilor in the Arts and Humanities Division while Christie Fox, Director of Honors, is in an At-Large position. USU faculty was well represented at the CUR National Conference, which met at Weber State University in June 2010.

Kinkead publishes nationally in undergraduate research. *Undergraduate Research in English Studies* (co-authored/edited with Laurie Grobman and published by NCTE) is the first such book to appear on this topic. Likewise, Kinkead is the author of a forthcoming book from CUR, *Advancing Undergraduate Research: Marketing, Communications, and Fundraising*. She made seven national presentations on undergraduate research.

The signature program of undergraduate research, the University Undergraduate Research Fellows, chose its sixth cohort in March at Scholars Day, interviewing 170 students. Research Fellows number 100 and have led the campus in prestigious awards such as the Goldwater Scholarship. As a result of the Fellows Program, students are presenting earlier at professional conferences and other undergraduate events and being more competitive for external awards.

2. RESEARCH COUNCIL MEMBERSHIP AND MAJOR ACTIVITIES

The Research Council provides advice and recommendations to the Vice President for Research. Additionally, members of the Council provide direct and important channels of communication between researchers and those who make decisions affecting research at USU. Members of the Research Council are college deans or their representatives, and selected center/lab directors as specified by the University code of policies and procedures. Appendix F is a current membership list of the University Research Council. This group meets about once a month to discuss and make recommendations on research issues.

The following is a summary of major issues addressed by USU's Research Council in FY2010:

- \$200 Million Research Goal Update – USU reached \$187 million in externally funded research awards during FY2010, a record 29% increase over funding in 2009, and is the highest level in the university’s history.
- Seed Funding Awards (GEM, SPARC & RC) – Since the program’s inception in spring 2008, the proposal review committee has noted that the quality of RC applications has steadily improved and thereby USU is seeing an increase in the success rate for this program. Application for GEM and SPARC submissions remain low; however, the funding success rates have been consistently high. Each seed funding opportunity requires that an external grant proposal be submitted within three months of the seed grant completion.

To date, our first cohort of awardees have submitted 16 external proposals requesting more than \$14.6 million, and six awards totaling nearly \$9.3 million have been received. Four proposals remain pending while another 4 were denied funding, but plans for resubmission are in place. Thus, the first cohort has experienced a 37.5% success rate and generated a return on investment of \$36 to \$1 (\$9,254,682 received from \$254,223 spent).

- Office of Proposal Development (OPD) – The OPD was implemented under the VPR Office in 2008 to assist USU researchers in developing more competitive proposals. The goal is to expand external research funding at USU through training, enhanced services, insight to proposal strategy, and to foster interdisciplinary collaboration. Resources have been expanded to include a campus-wide network of proposal development specialists in various centers, departments and colleges, as well as the summer Proposal Writing Institute (PWI).
- Time and Effort Reporting – The Research Council continues to review challenges related to Time and Effort Reporting. A total of 1,406 reports were sent out for PI certification with a compliance due date of September 11, 2009. Those returned by the due date represented 69.56% of the total. An additional 20% were received by September 23, 2009, and the ~10% (145) remaining were resolved by October 2009. Efforts are on-going to assure timeliness of all USU reports and compliance to OMB Circular A21.
- ARRA Proposals, Awards, and Reporting Requirements – USU faculty submitted more than \$77 million in proposals for ARRA opportunities, of which \$22 million were from the USU Research Foundation (USURF). Thus far, USU has received \$10.5 million in awards, with the USURF receiving \$ 3.2 million of the total. USU posts this information on the VPR website at: <http://research.usu.edu/htm/arra>. Additional reports showing fiscal year proposal and award progress can be viewed on SPO’s website at: <http://spo.usu.edu/htm/monthly-board-of-trustee-reports>. Deans and Directors are notified when an update is available.
- NSF Experimental Program to Stimulate Competitive Research (EPSCoR) Funding Eligibility – Research Council receives updates on EPSCoR accomplishments/progress for the state of Utah. The Planning Grant was approved and provided \$250,000 (from September 2009 – September 2010) to help establish a science and technology plan for the state of Utah. The State S&T plan is being coordinated with the Governor’s Science Advisor. Utah’s Track I RII proposal progressed rapidly in a 6 week time frame and was

submitted on schedule in October 2009. The proposal was multi-university and multi-disciplinary; however, funding for the Track 1 RII proposal was not awarded. The Track 1 proposal was substantially revised and resubmitted in September 2010. Michelle Baker and David Tarboton are co-PIs for USU.

- Center for High Performance Computing (HPC) and USU HPC Steering Committee – HPC at USU was created in September 2005 and reports to the VP for Research. Computational resources consist of 64 nodes, but the Wasatch cluster has 16 G-byte of memory per node that doubles the capacity of the Uintah cluster. HPC at USU plays a significant role in research capabilities as well as collaborating opportunities with colleagues' offsite. It provides extensive storage, visualization and software resources at no charge to USU faculty, staff and students. A six member steering committee was formed in 2010 to explore and broaden new HPC capabilities at USU. Members are Bob Spall, Chair (Engineering), Rob Gillies (Ag), Jiming Jin (Natural Resources), Dan Watson (Computer Science), Eric Held (Physics), and Alex Boldyrev (Chemistry and Biochemistry) with the committee chair alternating each year. Jon Huppi was hired as the HPC System Administrator to align under USU's IT Department to provide technical support and expertise as a dedicated resource to USU HPC efforts.
- Undergraduate Research Advisory Board Update (URAB) -URAB meets once a month during the academic year with the goal of enhancing undergraduate research at USU. Challenges targeted this past year included: 1) Enhance funding for URAB program, 2) Increase accessibility to undergraduate research, and 3) Enhance climate for undergraduate research in non-traditional areas. URAB goals for 2009-2010 included: 1) Map the curriculum of undergraduate research and assess curricular foundations for students not entering USU as Undergraduate Research Fellows, and 2) Map Responsible Conduct of Research (RCR) training as it relates to undergraduate research.
- Grad Scholars Program/NSF RCR Requirements - The America COMPETES Act includes language that requires all recipients of NSF funding to provide training in the Responsible Conduct of Research (RCR). These guidelines became effective January 4, 2010 and include training for undergraduates, graduates and post-docs. An overview of the congressional mandate, NSF's guidance on institutional plans, and a copy of USU's response to implementation plans to meet the requirements was distributed to deans, department heads and Research Council participants. USU's implementation program consists of four training elements: 1) On-line training through Collaborative Institutional Training Initiative (CITI), 2) Graduate Scholars Orientation held annually with Graduate Student Orientation, 3) Fall Graduate Scholars Forum, and 4) Spring Graduate Scholars Forum. This baseline information provides the necessary training for USU to be compliant with NSF requirements.
- International Program Development Update - International research and education is now combined in one office, the Utah State Office of Global Engagement. DeeVon Bailey, Associate V.P. for International Research, is teamed with Mary Hubbard, Vice Provost for International Education. Activities enhance synergy with international guests and program development. With excellent connections in many countries, USU has several successful research projects that are new and in the early stages of implementation, many that are midway in their progression, and several that are wrapping up across the globe. USU's world class recognition as a land-grant institution and the expertise of its faculty, generate opportunities to expand research and education internationally.

- Nonpayment of Sponsored Awards - Steps to reduce financial risk to the University of Non-payment on sponsored awards was addressed. A procedure was written and discussed with the Provost, who asked that “stop work” decisions reside with the dean. It is proposed that if advance payment terms cannot be negotiated with the customer, Departmental/College Guarantee of Expenditures Form will be required before USU begins work and agrees to other payment terms not defined in the procedure. Also included in the procedure is attention to warranty disclosure language within contracts, as well as clarity in defining contract expectations, milestones and deliverables. The new procedure was approved unanimously in Research Council.
- Research Week 2010 - Highlights this past year included a 200% increase in the number of Grad Student Symposium participants. There were 127 undergraduates in the Student Showcase with ~700 total Research Week material participants. Professor Steve Scheiner was recognized as the 2010 D. Wynne Thorne Career Award recipient. Also, the Undergraduate Student Mentor award was given to a faculty member from each of the colleges. The SPO and Proposal Development Office offered workshops, and new events featured a faculty book exhibit cohosted by the Library and an international research posters display.

3. USE OF FACILITIES AND ADMINISTRATION FUNDS AT USU, FY2009-2010

Facilities and Administrative (F&A) costs are the shared indirect or overhead costs of doing research. The federal government audits actual F&A costs and establishes a rate that the university seeks to recover from sponsors. Recovered F&A funds are used to pay actual indirect costs of research and to stimulate and expand research opportunities.

Appendix J is a report compiled by the Controller’s Office that summarizes the amount of F&A generated in FY2009-10 by department; 30% returned to the cost center; and allocations of the 70% held centrally in the VPR Office.

4. SELECTED RESEARCH INITIATIVES

In 2007, Vice President Miller introduced a goal to Research Council to increase the volume and competitiveness of USU research by 25% over the next 3 years. A committee, which was chaired by Associate V.P. for Research Jeff Broadbent and included representatives from all colleges, SDL/USURF, and major research centers, developed a strategic plan that recommended two major initiatives: 1) Restructure VPR seed grants toward more targeted programs with specific missions/goals and expected outcomes; and 2) Establish of the Office for Proposal Development, described in Section B of this report, to pursue strategic grant opportunities and improve the grant-writing skills and awards won by researchers. Both recommendations were implemented in FY 2008.

A) VPR Seed Grant Program.

The three new seed grant programs have specific missions/goals and expected outcomes which are summarized below:

- **Grant-Writing Experience through Mentorship (GEM)** - GEM provides funding of up to \$5,000 to enhance the professional development of junior faculty through one-on-one research and grant-writing interaction with successful senior faculty mentors. The purpose of this program is to build the University's research capability and increase extramural funding for scholarly activities by enhancing the proposal development skills of junior faculty. To facilitate this goal, it is expected that each funded GEM project will result in the development and submission of at least one proposal to an external funding agency. Eligible junior faculty members include all USU tenure-eligible assistant professors and non-tenure track research assistant professors or research professionals with no more than four (4) years in rank who have not previously received a New Faculty Research Grant.
- **Research Catalyst (RC)** - The RC program provides 1-year seed funding of up to \$20,000 to help applicants develop new initiatives or directions in their discipline that will lead to new externally funded grants. The purpose of this program is to build the University's research capability and increase extramural funding for scholarly activities from government agencies and private sources. Thus, it is required that funded RC projects will directly lead to the submission of at least one proposal to an external funding agency. All tenured or tenure-eligible faculty, research faculty, or other USU research professionals are eligible to apply.
- **Seed Program to Advance Research Collaboration (SPARC)** - The SPARC program provides 1-year seed funding of up to \$35,000 to catalyze development of large interdisciplinary research teams and projects that involve scholarly research in more than one department, research center, college or institution. It is anticipated that new projects catalyzed by SPARC will extend the University's research capability and increase extramural funding for scholarly activities from government agencies and private sources. Thus, SPARC proposals require mutual effort by faculty and researchers from multiple disciplines, and directly lead to the submission of a new, large-scale (solicit at least \$1 million in new research funding), interdisciplinary proposal to an external funding agency. All tenured or tenure-eligible faculty, research faculty, or other USU research professionals are eligible to apply.

As is clearly noted in the description for each program, GEM, RC, and SPARC awardees are required to develop and submit at least one proposal to an external funding agency within three months of project completion. Because proposal submission deadlines vary widely among different agencies, funding for VPR seed grant programs is offered twice yearly, with start dates of January 1 or July 1. Appendix K summarizes seed grant proposals and awards in FY 2010 and Appendix L lists the name of faculty whose proposals were funded in FY 2010.

Seed Grant Program Outcomes

External grant submissions from the fourteen awardees in our first cohort (funding awarded July 1, 2008) were due on or before October 1, 2009. As an aside, if the original proposal is not funded but receives a favorable review, seed grant awardees are required to develop a plan for revision and resubmission. To date, our first cohort of awardees have submitted 16 external proposals requesting more than \$14.6 million, and six awards totaling nearly \$9.3 million have been received. Four proposals remain pending, while another 4 were denied funding but have plans for resubmission in place. Thus, the first cohort has thus far experienced a 37.5% success rate and generated a return on investment of \$36.40 (\$9,254,682/254,223).

The deadline for external grant submissions from the second cohort of awardees was March 31, 2010. One of the 13 PIs is no longer employed at USU, and all but one of the remaining 12 PIs have submitted the required proposal. Nineteen proposals totaling \$8.8 million have been submitted to an external funding agency. Four proposals have been awarded a total of \$2.3 million in funding. Notably, two members of this cohort received NSF Career Awards. Two proposals are still pending; six proposals were not funded and two of those six have already been resubmitted.

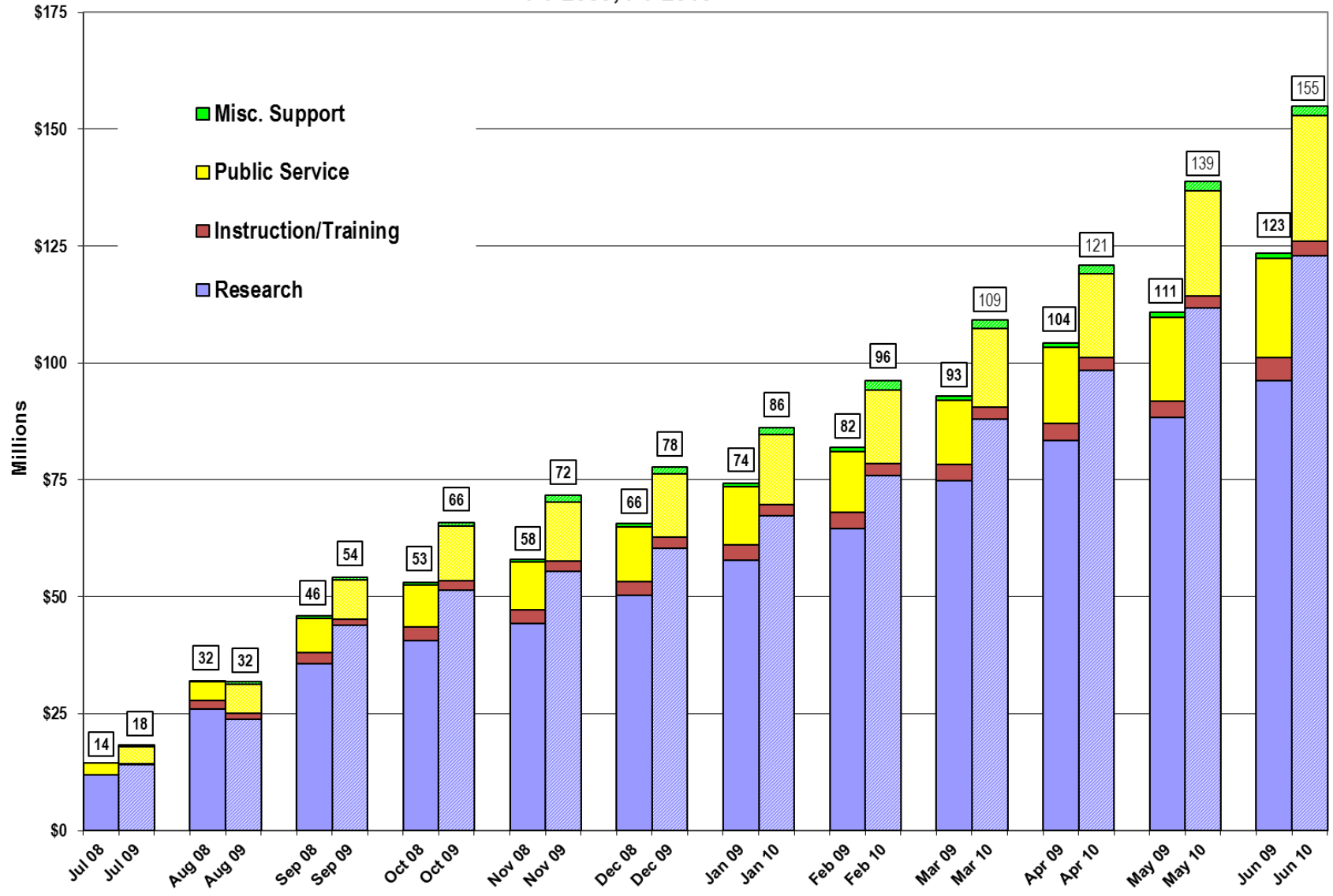
APPENDIX A
SPONSORED PROGRAM CONTRACT/GRANT AWARDS
BY COLLEGE¹

	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Agriculture	\$16,979,327	\$12,022,213	\$15,309,673	\$16,257,864	\$20,776,004
Business	2,373,466	1,334,038	960,504	1,353,087	204,848
Education	20,722,283	22,730,535	18,256,237	20,228,926	28,405,723
Engineering	10,223,439	13,258,408	15,179,544	12,294,578	15,194,085
HASS	1,456,615	1,088,437	1,199,615	2,939,781	1,043,672
Natural Res.	9,684,998	10,482,217	8,200,490	5,478,575	9,984,017
Science	8,123,447	7,890,437	8,598,964	7,320,622	9,968,484
USURF	49,353,930	54,000,033	57,557,872	51,652,892	62,134,540
Other	5,525,978	10,279,740	11,698,365	6,271,093	7,133,973
Jointly Admin. Programs ²	<u>-1,391,647</u>	<u>-395,158</u>	<u>-601,324</u>	<u>-339,087</u>	<u>.</u>
TOTAL	<u>\$123,051,836</u>	<u>\$132,690,900</u>	<u>\$136,359,943</u>	<u>\$123,458,332</u>	<u>\$154,845,346</u>
Financial Aid-Pell Grants, etc.	24,374,592	19,474,007	19,902,221	21,083,543	31,946,867
Adjusted Total	<u>\$147,426,428</u>	<u>\$152,164,907</u>	<u>\$156,262,164</u>	<u>\$144,541,876</u>	<u>\$186,792,213</u>

¹ College awards include centers most closely aligned with that college (See Appendix D for Center totals).

² Awards for jointly administered programs are reflected in the total of both colleges involved with these programs. The amount in the jointly administered programs category is an accounting function designed to eliminate double counting of awards.

APPENDIX B
Utah State University Sponsored Program Awards
FY 2009, FY 2010



**APPENDIX C
RESEARCH AWARDS
BY FEDERAL SPONSORING AGENCY (IN DOLLARS)**

	FY05-06	FY06-07	FY07-08	FY08-09	FY09-10
Department of Agriculture	\$12,933,403	\$11,291,025	\$11,313,340	\$12,752,755	\$16,035,644
Department of Defense	20,718,470	23,854,478	35,294,360	32,715,392	40,274,501
Department of Education	16,683,226	14,080,060	14,180,883	13,778,457	22,352,816
Department of Health and Human Services	10,997,713	10,488,329	11,709,196	8,197,206	11,887,379
Department of the Interior	5,096,481	3,596,782	2,309,079	3,094,563	4,549,083
Department of State	-	188,281	195,135	30,000	0
Environmental Protection Agency	911,386	116,509	0	50,500	871,346
National Aeronautics & Space Administration	23,596,496	21,987,757	13,864,987	10,647,596	6,669,283
National Science Foundation	9,331,392	6,099,684	9,525,689	3,777,608	8,423,124
State Agencies & Others ¹	47,157,861	60,461,975	57,869,495	59,497,798	75,729,037
TOTAL	<u>\$147,426,428</u>	<u>\$152,164,907</u>	<u>\$156,262,164</u>	<u>\$144,541,875</u>	<u>\$186,792,213</u>

¹This number is a composite of international banks, state agencies, other federal agencies, local agencies, private industry, and others.

APPENDIX D
**SPONSORED PROGRAMS CONTRACT/GRANT AWARDS
 BY RESEARCH CENTER**

RESEARCH CENTER	FY05-06	FY06-07	FY07-08	FY08-09	FY09-10
Ag. Experiment Station	\$13,881,355	\$12,933,734	\$15,064,305	\$16,364,154	\$19,532,193
Center for Integrated BioSystems	0	0	90,000	265,626	1,289,698
CASS	537,175	1,226,610	1,134,720	1,150,161	1,200,308
CPD	6,071,622	7,275,949	9,796,797	10,161,700	12,811,236
Cooperative Extension	3,242,340	1,761,756	3,355,502	5,173,285	5,108,411
Ecology	3,250,987	2,755,350	2,722,347	1,092,954	2,978,235
Eng. Experiment Station	558,532	776,561	306,613	47,894	49,371
Financial Aid-Pell Grants, etc.	24,374,592	19,474,007	19,902,221	21,083,543	31,946,867
High Performance Computing	0	523,700	33,713	0	734,217
Univ. Research & Training	44,506,542	45,663,694	41,714,570	31,309,595	44,371,668
USURF/SDL	49,353,930	54,000,033	57,557,873	51,633,892	62,134,540
Remote Sensing	0	0	65,372	135,661	100,760
UT Transportation Center	0	1,801,834	460,261	1,550,240	1,209,483
Utah Water Research Lab.	<u>1,649,352</u>	<u>3,971,679</u>	<u>4,057,870</u>	<u>4,573,171</u>	<u>3,325,225</u>
Total USU	<u>\$147,426,427</u>	<u>\$152,164,907</u>	<u>\$156,262,164</u>	<u>\$144,541,876</u>	<u>\$186,792,213</u>

Appendix E

Successful Proposals Involving OPD Staff Assistance (FY 2010)

PI	COLLEGE / Department	Proposal Title	Agency	Award Value	Notes
John Morrey	AG/ADVS	Animal Models of Infectious Disease IDIQ	NIH - NIAID	No fixed amount	\$50,000 minimum guaranteed \$20,000,000 maximum potential award value
Chris Davies	AG/ADVS	Trophoblast MHC-1: Trigger for Immune-Mediated Rejection of Cloned Bovine Fetuses	NIH	\$132,173	
Jacob Parnell	AG/CIB	Undergraduate Research Program In Microbial Genome Annotation	DOE	No fixed amount	"Adopt a genome" program for undergraduate research
Ilka Nemere	AG/NDFS	Vitamin D Metabolites and the Regulation of Intestinal Phosphate Absorption	USDA - AFRI	\$260,987	
Karl White	EHS/Psy	National Center for Hearing Assessment and Management (NCHAM)	HRSA	\$8,675,000	5 year project renewal
Elaine Thatcher	HASS/Dean	Northern Utah-Southeastern Idaho Folklorist	NEA	\$35,000	
Carlos Licon	HASS/LAEP	Assessment of Sustainable Development Possibilities of Mexican Municipalities Along the United States-Mexican Border	EPA	\$25,000	
Craig Jessop	HASS/Music	American Festival Chorus Season	Utah Arts Council	\$2,500	
Carol Albrecht	HASS/SSWA	High School Student Mentoring with Under Represented Populations	Utah Campus Compact	\$5,000	
Sean Johnson	SCI/Chem-Biochem	CAREER: Structural Studies of Ski2-Like RNA Helicases	NSF	\$1,063,224	2009 PWI participant
Aaron Olsen	VPR/LARC	Laboratory Animal Resource Improvements	NIH	\$454,357	ARRA funds

Total: \$10,653,241

APPENDIX F
2009 PROPOSAL WRITING INSTITUTE PARTICIPANTS & EXTERNAL FUNDING SUBMISSIONS
(AS OF FY 2010 END)

PI	COLLEGE / Department	Final Proposal Title (SPO Control No.)	Submission Date Agency	Total Request	Funded?	Notes
Jong-Su Eun	AG/ADVS	Improving Nutrient Utilization and Environmental Performance of Lactating Dairy Cows Using Condensed Tannin-Containing Forages (091005)	7/6/2009 to USDA - AFRI	\$349,978	NO	Resubmitted revised proposal (as Co-I) for \$1,019,411
Korry Hintze	AG/NDFS	Iron Status and Obesity: Investigating the Links Between Adipose Inflammation (100718)	2/5/2010 to NIH	\$770,000	NO	
Brett Shelton	EHS/ITLS	Historical Pathways of the West (HPOW): American West Heritage through Web and Location-Based Games (100160)	8/26/2009 to NEH - Implementation Grant	\$228,556	NO	
Kerry Jordan	EHS/Psy	Development of Social Categorization During Infancy (100042)	7/14/2009 to NSF	\$180,357	NO	
Soonjo Kwon	ENG/BIE	Advanced Studies of the Micro-Biomechanics of Breast Tissue (090905)	6/3/2009 to NIH	\$1,293,000	NO	Resubmitted for \$1,818,803
Damon Cann	HASS/Political Sci	Collaborative Research: Campaign Contributions and Judicial Decisions (100142)	8/13/2009 to NSF	\$64,408	NO	
Jiming Jin	NR/AWER	Modeling and Analysis of Droughts Over the Southwestern United States (100870)	4/13/2010 to NSF	\$285,383	NO	
Karin Kettenring	NR/AWER	Collaborative Research: Importance of Intraspecific Diversity and Genotype Source on Invasion Resistance in Ecological Restoration (100617)	1/8/2010 to NSF	\$853,968	NO	
Ann Laudati	NR/ENVS	From Chevre to Chanvre: Linking Natural Resources, Violence, and Livelihood Struggles in Eastern Democratic Republic of Congo	8/30/2010 to NSF	\$ (TBD)		
Sean Johnson	SCI/Chem-Biochem.	CAREER: Structural Studies of Ski2-Like RNA Helicases (100067)	7/20/2009 to NSF	\$1,063,224	YES	Funded \$468,224 (years 1 & 2)
John Stevens	SCI/Math-Stats.	Controlling Error Rates in Nested Multiple Hypothesis Testing (100428)	11/5/2009 to NSF	\$173,631	NO	
Shane Larson	SCI/Physics	Compact Binaries and Galactic Astronomy with LISA (090916)	5/29/2009 to NASA	\$308,021	NO	Revised proposal to be funded by NSF for \$180,000

Total: \$5,570,526

APPENDIX G
2010 PROPOSAL WRITING INSTITUTE PARTICIPANTS & EXTERNAL FUNDING SUBMISSIONS
(AS OF FY 2010 END)

PI	COLLEGE / Department	Final Proposal Title (SPO Control No.)	Submission Date Agency	Total Request	Funded?	Notes
Lindsey Shirley	AG/ASTE	Global Perspectives: Enhancing Cultural Awareness through Clothing and Textiles Education and Extension	1/2011 to USDA			
Clay Isom	AG/ADVS	Apoptosis and Reprogramming in Bovine IVF and Nuclear Transfer Embryos (110381)	11/2010 to NIH			
Julie Wolter	EHS/ComD	Multiple-Linguistic Influences on Literacy in Children with Language Impairment (101205)	6/28/2010 to NIH (R03)	\$412,193		
Sarah Bloom	EHS/Special Ed-Rehab	Trial-Based Functional Analysis and Treatment of Problem Behavior (110233)	9/14/2010 to IES			
Dicky Ng	EHS/TEAL	The Role of Elementary Teachers' Cognitive Empathy in Teaching Mathematics	6/2011 to IES			
Jixun Zhan	ENG/BIE	CAREER: Investigation and Engineering of the Lipstatin Biosynthetic Pathway (110050)	7/16/2010 to NSF			
Oenardi Lawanto	ENG/ETE	CAREER: Cognitive and Metacognitive Activities in Engineering Design Education (101128)	7/19/2010 to NSF			
Dhirendra Kubair	ENG/MAE	CAREER: Investigation of Damage Evolution in Inhomogeneous Hydrogels (110026)	7/16/2010 to NSF			
Lisa Gabbert	HASS/English	The Medical Carnavalesque	1/16/2011 to NSF			
Shane Graham	HASS/English	Langston Hughes, Cosmopolitanism, and Black Atlantic Literature (N/A)	7/5/2010 to Fulbright			
Tammy Rittenour	SCI/Geology	CAREER: Understanding Processes Related to Arroyo Systems, Southern Utah (110116)	7/22/2010 to NSF			
Christopher Corcoran	SCI/Math-Stats	Understanding Dementia Progression	2/5/2011 to NIH			

Total: \$412,193

APPENDIX H

**Institutional Review Board (IRB)
Protocol Activity
2006-2010
(Addenda for FY 2007, 2008, 2009, 2010)**



APPENDIX I

UNIVERSITY RESEARCH COUNCIL Membership (2010-2011)

		Phone	
		Ext.	UMC
Brent C. Miller	Vice President for Research, Chair	1180	1450
Jeffrey Doyle	College of Business Representative	2320	3530
Jeff Broadbent	Associate Vice President for Research	1199	1450
Byron Burnham	Dean, School of Graduate Studies	1191	0900
Noelle Cockett	Dean, College of Agriculture	2201	4900
Ray Coward	Executive Vice President and Provost	1167	1435
Jim Dorward	College of Education & Human Services Rep, Assoc. Dean	1469	2800
James MacMahon	Dean, College of Science & Director of Ecology Center	8212	0305
Todd Crowl	College of Natural Resources Representative	2459	5210
Douglas Lemon	President – USU Research Foundation	4501	9700
Jagath Kaluarachchi	College of Engineering Representative, Associate Dean	2776	4100
M. K. Jeppesen	Vice President/CIO-Information Technology	1134	1495
Patricia Lambert	College of Humanities & Social Sciences Representative	0310	0700
Joyce Kinhead	Associate Vice President for Undergraduate Research	1706	1450
Mac McKee	Utah Water Research Laboratory, Director	3188	8200
Robert Pack	Faculty Senate President	7049	4110
Bryce Fifield	Center for Persons with Disabilities, Director	2816	1987
Marv Bennett	Ecology Center, Associate Director	2090	5205
Ned Weinshenker	V.P. for Strategic Ventures & Economic Development	9602	9730
Richard Clement	Dean of Libraries	2631	3000
 <u>Students</u>			
Tanner Wright	Academic Senate President	1726	0105
Matthew Todd	ASUSU Graduate Studies VP	1736	TSC 326

APPENDIX J

Utah State University
Analysis of Facilities and Administrative Costs Generated and Allocated
July 1, 2009 through June 30, 2010

College or Other Unit	Generated	Budget Allocations From 30% Return	Allocations From 70% Centrally Held	Total Budget Allocations	Budget as a % of Generated
College of Agriculture					
Dean's Office – Agriculture			67,146.00	\$67,146.00	N/A
Agriculture – Economics	\$32,141.37	\$9,642.41		9,642.41	30.00%
Agricultural Experiment Station	27,097.23	8,129.17		8,129.17	30.00%
Animal, Dairy and Veterinary Sciences	1,236,833.79	371,050.14	74,982.00	446,032.14	36.06%
Agricultural Systems Technology and Education	(19.42)	(5.83)		(5.83)	30.00%
Center of Epidemiologic Studies	141,376.86	42,413.06		42,413.06	30.00%
Nutrition and Food Science	54,508.01	16,352.40	81,066.00	97,418.40	178.72%
Plants, Soils and Biometeorology	71,895.23	21,568.57		21,568.57	30.00%
Total College of Agriculture	1,563,833.07	469,149.92	223,194.00	692,343.92	44.27%
College of Business					
Dean's Office – Business	2,335.77	700.73	43,665.00	44,365.73	1899.40%
Business Administration	84,233.92	25,270.18		25,270.18	30.00%
Economics	3,306.00	991.80		991.80	30.00%
Total College of Business	89,875.69	26,962.71	43,665.00	70,627.71	78.58%
College of Education and Human Services					
Dean's Office - Education and Human Services			176,167.00	176,167.00	N/A
Center for Persons with Disabilities	947,135.05	284,140.52	65,538.00	349,678.52	36.92%
Communicative Disorders	85,028.34	25,508.50	43,421.00	68,929.50	81.07%
Family Consumer and Human Development	100,456.65	30,137.00	5,003.00	35,140.00	34.98%
Health, Physical Education and Recreation Department	1,969.23	590.77	116,238.00	116,828.77	5932.71%
Instructional Technology	46,261.63	13,878.49	50,285.00	64,163.49	138.70%
Psychology	407,380.48	122,214.14	87,121.00	209,335.14	51.39%
School of the Future	1,523.96	457.19		457.19	30.00%
School of Teacher Education and Leadership	24,565.21	7,369.56	54,305.00	61,674.56	251.06%
Special Education and Rehabilitation	54,922.50	16,476.75		16,476.75	30.00%
Total College of Education and Human Services	1,669,243.05	500,772.92	598,078.00	1,098,850.92	65.83%
College of Engineering					
Dean's Office – Engineering	180,772.81	54,231.84	76,189.00	130,420.84	72.15%
Biological and Irrigation Engineering	200,607.10	60,182.13	262,464.00	322,646.13	160.83%
Civil and Environmental Engineering	352,421.98	105,726.59	102,880.00	208,606.59	59.19%
Electrical and Computer Engineering	128,429.99	38,529.00	146,998.00	185,527.00	144.46%
Engineering and Technology Education	107,295.23	32,188.57	42,015.00	74,203.57	69.16%
Mechanical and Aerospace Engineering	287,114.47	86,134.34	244,293.00	330,427.34	115.09%
Utah Water Research Laboratory	998,821.43	299,646.43	140,034.00	439,680.43	44.02%
Total College of Engineering	2,255,463.01	676,638.90	1,014,873.00	1,691,511.90	75.00%
College of Humanities, Arts and Social Sciences					

Dean's Office - Humanities, Arts and Social Sciences	122,962.41	36,888.72	40,008.00	76,896.72	62.54%
Art			7,000.00	7,000.00	N/A
English	540.33	162.10		162.10	N/A
History			2,800.00	2,800.00	N/A
Intensive English				-	N/A
Interior Design			13,058.00	13,058.00	N/A
Journalism and Communication	294.02	88.21		88.21	30.00%
Landscape Architecture and Environmental Planning	18,834.16	5,650.25	31,731.00	37,381.25	198.48%
Languages and Philosophy			5,000.00	5,000.00	N/A
Music			16,302.00	16,302.00	N/A
Political Science	(68.19)	(20.46)	11,470.00	11,449.54	N/A
Sociology, Social Work and Anthropology	97,807.03	29,342.11	32,500.00	61,842.11	63.23%
Total College of Humanities, Arts and Social Sciences	240,369.76	72,110.93	159,869.00	231,979.93	96.51%
College of Natural Resources					
Dean's Office - Natural Resources	-\$29.63	-\$8.89	\$43,311.00	\$43,302.11	N/A
Aquatic, Watershed and Earth Resources	328,354.50	98,506.35	94,498.00	193,004.35	58.78%
Ecology Center	50,313.06	15,093.92	13,014.00	28,107.92	55.87%
Environment and Society	122,394.35	36,718.31	42,833.00	79,551.31	65.00%
Forest, Range and Wildlife Sciences	340,627.68	102,188.30	70,500.00	172,688.30	50.70%
Total College of Natural Resources	841,659.96	252,497.99	264,156.00	516,653.99	61.39%
College of Science					
Dean's Office - Science			70,224.00	70,224.00	N/A
Biology	334,981.75	100,494.53	44,945.00	145,439.53	43.42%
Center for Atmospheric and Space Sciences	409,453.77	122,836.13		122,836.13	17.08%
Chemistry and Biochemistry	166,455.05	49,936.52	20,000.00	69,936.52	42.02%
Computer Science	226,904.00	68,071.20	53,400.00	121,471.20	53.53%
Geology	124,572.31	37,371.69	20,000.00	57,371.69	46.05%
Mathematics and Statistics	53,588.54	16,076.56	61,383.00	77,459.56	144.55%
Physics	129,475.25	38,842.58	46,930.00	85,772.58	66.25%
Total College of Science	1,445,430.67	433,629.21	316,882.00	750,511.21	51.92%
Vice President - University Extension					
Cooperative Extension				-	N/A
Extension Agriculture and Natural Resources	110,065.20	33,019.56		33,019.56	30.00%
Extension Field Staff	61,425.04	18,427.51		18,427.51	30.00%
Extension Youth Programs	19,248.80	5,774.64		5,774.64	30.00%
Uintah Basin Center	18,334.70	5,500.41		5,500.41	30.00%
Total Vice President - University Extension	209,073.74	62,722.12	-	62,722.12	30.00%
International Programs					
International Programs	-	-	179,259.00	179,259.00	N/A
Total International Programs	-	-	179,259.00	179,259.00	N/A
Vice President - Student Administration and Services					
Campus Recreation	69,784.39	20,935.32		20,935.32	30.00%
Student Support Services	19,942.88	5,982.86		5,982.86	30.00%
Student Wellness	107.70	32.31		32.31	30.00%
Vice President for Student Services	10,221.49	3,066.45		3,066.45	30.00%
Undergraduate Scholarships and Recruitment			77,000.00	77,000.00	N/A
Total Vice President - Student Administration and Services	100,056.46	30,016.94	77,000.00	107,016.94	106.96%

Vice President - Information Technology					
Information Technology	20.20	6.06	-	6.06	30.00%
Total Vice President - Information Technology	20.20	6.06	-	6.06	30.00%
Utah State University Research Foundation					
Space Dynamics Laboratory	12,481,232.00	12,481,232.00		12,481,232.00	100.00%
Total Utah State University Research Foundation	12,481,232.00	12,481,232.00	-	12,481,232.00	100.00%
School of Graduate Studies	9,535.09	2,860.53	300,263.00	303,123.53	3179.03%
Total School of Graduate Studies	9,535.09	2,860.53	300,263.00	303,123.53	3179.03%
Total Colleges and Non-Academic Units	20,905,792.70	15,008,600.23	3,177,239.00	18,185,839.23	86.99%
Support of Infrastructure					
Vice President – Research					
Center for Advanced Nutrition	\$109,601.01	\$32,880.30		\$32,880.30	30.00%
Center for High Performance Computing	1,625.20	487.56	\$207,761.00	208,248.56	N/A
Center for Biofuels	47,369.15	14,210.75		14,210.75	30.00%
Disallowance Account			50,000.00	50,000.00	N/A
Grant Writer/Faculty Grant writing Workshop			168,573.00	168,573.00	N/A
Internet II			100,600.00	100,600.00	N/A
Faculty Activity Database			35,000.00	35,000.00	N/A
Technology Commercialization Office			500,000.00	500,000.00	N/A
Women and Gender Research Institute			34,000.00	34,000.00	N/A
URCO			13,000.00	13,000.00	N/A
Undergraduate Research			39,000.00	39,000.00	N/A
Washington Based Support			191,400.00	191,400.00	N/A
Total Vice President - Research	158,595.36	47,578.61	1,339,334.00	1,386,912.61	N/A
Vice President - Business and Finance					
Accounting and Financial Reporting			168,152.00	168,152.00	N/A
Controller's Office			115,669.00	115,669.00	N/A
Facilities and Administrative Cost Study			272,232.00	272,232.00	N/A
Federal Single Audit			27,920.00	27,920.00	N/A
Purchasing			25,869.00	25,869.00	N/A
Total Vice President - Business and Finance	-	-	609,842.00	609,842.00	N/A
Total Support of Infrastructure (% is computed on total Facilities and Administrative costs generated from all units)	158,595.36	47,578.61	1,949,176.00	1,996,754.61	N/A
Vice President – Research					
Biotechnology Bond			792,318.00	792,318.00	N/A
Building 620 Bond Payment			579,839.00	579,839.00	
Total Vice President - Research			1,372,157.00	1,372,157.00	N/A
Total	\$21,064,388.06	\$15,056,178.84	\$6,498,572.00	\$21,554,750.84	102.33%

APPENDIX K
SEED GRANT PROPOSALS AND AWARDS IN FY 2010

Project Start Date:

Project Type	<u>July 1, 2009</u>			<u>Jan. 1, 2010</u>		
	Received	Funded	Success ^b	Received	Funded	Success ^b
GEM	4	4	100%	3	2	67%
RC	23 ^a	12	60%	23 ^a	15	75%
SPARC	4 ^a	1	100%	1	1	100%

^aThree RC and three SPARC applications for July 2009; and three RC applications for Jan. 2010 were disqualified from consideration because they did not meet core requirements for the respective program. RC disqualifications have been predominantly due to existence of a pending EFG with strong overlap to the seed grant or because the applicant did not follow the RFA, and SPARC disqualifications were due to unacceptable (project budget < \$1M) EFG target.

^bExcluding disqualified proposals

Summary of Seed Grant Activity: FY 2010

For FY 2010, the VPR received seven GEM, 46 RC, and five SPARC proposals (Table 1). Seed grant applications have been dominated by RC proposals since inception of the new seed grant program. The total number of RC submissions declined from FY 09 (61 RC submissions) to FY 10, but an increase in the quality of those applications resulted in a greater success rate for RC applicants. Numbers of GEM and SPARC applications remained relatively low, even though success rates for these programs have consistently been high ($\geq 50\%$). An internal review committee comprised of representatives from each of the academic colleges plus the Associate VPR recommended 35 proposals, including six GEM, two SPARC, and twenty seven RC projects, be funded in FY 2010 (Appendix L).

APPENDIX L
SEED GRANT PROJECTS SELECTED FOR FUNDING IN FY 2010

Funding July 1, 2009:

A. GEM

1. **Sarah Bloom** (PI), Assist. Prof., SPER, **EEJ-EHS**. “An Examination of the Quality Parameter of Negative Reinforcement”.
2. **Christa Jones** (PI), Assist. Prof., LP&SC, **HASS**. “The Cave in North African Fiction”.
3. **Tammy Rittenour** (PI), Assist. Prof., Geol., **SCI**. “Reconstructing Drought and Fire Activity on the High Plateaus of Southern Utah”.
4. **Andrew Samaha** (PI), Assist. Prof., SPER, **EEJ-EHS**. “Examining the Value of Social Cues in Children with Autism”.

B. RC

1. **Kay Bradford** (PI), Assoc. Prof., FC&HD, **EEJ-EHS**. “Marital Advisory: A New Educational Intervention for Couples”.
2. **Grant Cardon** (PI), Assoc. Prof., and **Brent Black** (co-PI), Assoc. Prof., PSC, **AG**. “Green Energy and Biochar Utilization in the Utah Fruit Industry”.
3. **Jiming Jin** (PI), Asst. Prof., Watershed Sci, **NR**. “Predictability of Regional Climate Models During Cold Seasons in the Contiguous United States”.
4. **Anne Diekema** (PI), Assist. Prof., ITLS, **EEJ-EHS**. “Measuring the Impact of Cyberlearning: The Convergence of Curricular Resources, Educational Standards and Assessments”.
5. **Yanghee Kim** (PI), Assist. Prof., ITLS, **EEJ-EHS**. “Social Affable Virtual Environment (SAVE): Creating Technology-based Math Favoring Middle-grade Females”.
6. **Shane Larson** (PI), Assist. Prof., Phys, **SCI**. “Probing Gravity in Gravitational Wave Astrophysics”.
7. **Ann Laudati** (PI), Assist. Prof., Human Geography, **NR**. “The Natural Face of conflict: Resources and the Politics of Identity in Africa's Great Lake Region”.
8. **Silvana Martini** (PI), Assist. Prof., NFS, **AG**, and **Tim Doyle** (co-PI), Res. Assoc. Prof., Phys, **SCI**. “Physics-based Methods for the Nanoscale Monitoring and Processing of Foods”.
9. **Chris Morgan** (PI), Asst. Prof., SSW&A, **HASS**. “Tracking Paleolithic Adaptations in Northwest China”.
10. **Steven Simms** (PI), Prof., SSW&A, **HASS**. “The Fremont, the Numic Spread, and the Shoshone: Ancient DNA, Skeletal Remains, and Quids”.
11. **Gerald Smith** (PI), Prof., and **Dennis Dolny**, Prof., HPER, **EEJ-EHS**. “Bodies in Motion: Using Human Activities to Enhance STEM Education”.
12. **Yibin Xue** (PI), Assist. Prof., MAE, **ENG**. “Texture-induced Uncertainty in Structural Prognosis of Aging Aircrafts”.

C. SPARC

1. **David Rosenberg** (PI), Assist. Prof., CEE & UWRL, **ENG**, **Arthur Caplan** (co-PI), Assoc. Prof., AECON, **AG**, and **Joanna Endter-Wada** (co-PI), Assoc. Prof., ENVIS, **NR**. “Intervening to Encourage Water Conservation: developing an interdisciplinary urban water conservation research program at USU”.

Funding Jan. 1, 2010:

A. GEM

1. **Dr. Amy Bingham-Brown** (PI), Asst. Prof., TEAL-RCDE – Tooele, **EHS**. “Submitting a Successful Application to a Federal Funding Agency through Mentorship Support”. Mentor: Patricia Moyer-Packenham.
2. **Dr. Sarah Clark** (PI), Assist. Prof., TEAL, **EHS**. “The Contributions of Utah Elementary Education Public School Teachers to Student Achievement in Reading: A Value Added Study”. Mentor: D. Ray Reutzel.

B. RC

1. **Dr. Abby Benninghoff** (PI), Asst. Prof., ADVS, **AG**. “Combination of DIM and EGCG in Transplacental Chemoprevention of Lung Cancer”.
2. **Dr. Karen Beard** (PI), Assoc. Prof., Wild. Res., **NR**, **Joel Schmutz** (USGS, Alaska), and **Jeffrey Welker** (Univ. Alaska-Anchorage). “Migratory Geese-Mediated Responses of Circumpolar Sedges to Climate Change in the Arctic”.
3. **Dr. Bradley Davidson** (PI), Assoc. Prof., Chem-Biochem., **SCI** and **Jixun Zhan**, Asst. Prof., BIE, **ENG**. “Exploring Microbial Resources for New Anticancer Cycloamine Analogs”.
4. **Dr. Melanie Domenech Rodriguez** (PI), Assoc. Prof., Psych., **EHS**. “Cultural Adaptation of PMTO Intervention with Puerto Rican Parents”.
5. **Dr. Kai He** (PI), Asst. Prof., Pol. Sci., **HASS**. “The Hegemon's Choice between Power and Security: Explaining U.S. Policy toward Asia after the Cold War”.
6. **Dr. Clay Isom** (PI), Asst. Prof., ADVS, **AG**. “Molecular Determinants of Oocyte Quality”.
7. **Dr. D.V. Kubair** (PI), Asst. Prof., MAE, **ENG**. “Spontaneous crack propagation in inhomogeneous soft materials”.
8. **Dr. Soonjo Kwon** (PI), Asst. Prof., BIE, **ENG**. “Effects of Nano-Scale Scaffolds on Mesenchymal Stem Cells' Differentiation”.
9. **Dr. Victor Lee** (PI), Asst. Prof., ITLS, **EHS**. “Improving upon the “average” mode of instruction: PAD devices and a redesign of elementary school statistics”.
10. **Dr. Charles Miller** (PI), Asst. Prof., BIE, **ENG**, **T.C. Shen**, Prof., Physics, **SCI**, and **Ron Sims**, Prof., BIE. “Growth Inhibitory Effects of Hypericum perforatum L. (St. John's wort) on Mycobacterial Isolates”.
11. **Dr. Ilka Nemere** (PI), Prof., NDFS, **AG**, and **Korry Hintze**, Asst. Prof., NDFS. “Gene Regulation by the 1,25D3 MARRS Receptor”.
12. **Dr. Kady Schneider** (PI), Asst. Prof., Math/Stats, **SCI** and **Brynja Kohler**, Asst. Prof., Math/Stats. “Collaborative Development of Integrated Technology Lessons for Statistics”.
13. **Dr. Edmund Spencer** (PI), Asst. Prof., ECE, **ENG**. “A Model of the Earth's Magnetosphere for Space Weather Prediction”.
14. **Dr. Robert Ward**, (PI), Asst. Prof., NDFS, **AG**, and **Korry Hintze**, Asst. Prof., NDFS. “The Effect of Modulating the Dietary Omega-6 to Omega-3 Ratios and Concentration on Consumption, Weight Gain, and Inflammatory Response in C57B16/J Mice”.
15. **Dr. Joseph Wheaton** (PI), Asst. Prof., Watershed Sci., **NR**. “Tracking Ecogeomorphic Dynamics in Beaver Dam Complexes”.

C.SPARC

1. **Dr. Alvan Hengge** (PI, Chem-Biochem, **SCI**), **Sean Johnson** (Chem-Biochem), **Hua Guo** (Univ. New Mexico), and **Alexander Baldys** (Med. Univ. South Carolina). “New antibacterial approaches: Targeting the OspF family of virulence factors”.