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EXECUTIVE SUMMARY 2010-2011

Summer 2011

The Southern Utah University College of Science (COS) has much to reflect positively upon at the end of the 2010-2011 academic year. This executive summary highlights some of the accomplishments, events, and productivity which all indicate the level of dedication of the talented faculty in this college.

1. As of July 5, 2011, the Science Center addition is open for business. This Center for Health and Molecular Sciences includes a five-room rooftop greenhouse, expanded and updated labs and lab support areas, animal care rooms, a much-needed science-specific study lounge and office space for faculty and advisors. It also expands critical instructional space, including the L.S. and Aline Skaggs Education Suite, located on the second floor, and the Dixie and Anne Leavitt Nursing Education Suite on the first floor — home to the college's Department of Nursing. Additionally, the building will serve as home to the Garth and Jerri Frehner Museum of Natural History. The impressive 48,442-square-foot building fills the footprint of the 9,491-square-foot Life Science building which the College had grossly outgrown in terms of both size and facility enhancements crucial to modern-day science education and research.



2. Our healthcare professional acceptance success continues. In 2010-11, 87% of COS applicants were accepted to medical school; 88% of dental school applicants were successful; and 90% of COS graduates who applied for pharmacy admissions were accepted. This phenomenal success is largely attributable to a dedicated faculty and student body and a working partnership between the southern Utah Area Health Education Center's (AHEC) Rural Health Scholars program, directed by Ms. Rita Osborn, and the College of Science. This partnership is serving the region very well, as attested to by our outstanding success in placing students in graduate healthcare programs.

3. SUU Nursing continues to excel. The Commission on Collegiate Nursing Education (CCNE), a Division of the American Association of Colleges of Nursing (AACN), awarded our programs full accreditation for the maximum period of ten years. Our student's pass-rate on the national standardized licensure exam (NCLEX) was 77.8% for December, 2010, graduates (the state and national pass-rate average were 88.6% and 87.4%, respectively for the same period) and 100% for May, 2011, graduates (state and national averages were 90.0% and 90.5%, respectively). The success of our students is a great tribute to the patience and determination of our nursing faculty and leadership.

4. The Voyager project, which is directed by Professor Peggy Wittwer (Beverly Taylor Sorenson College of Education and Human Development), continues to reach out to public education in the region. Peggy is assisted by COS Professors John R. Taylor and Mackay B. Steffensen. *Voyager* is a state of the art mobile laboratory loaded with teaching technology and able to deliver it to remote locations. Check out our website: <http://suu.edu/cose/voyager/>.

5. We continue our partnership with Southern Utah Center for Computing, Engineering, and Science Students (SUCCESS) Academy. Of the 87 seniors, 76 students earned SUU Associate of Science degrees in 2011 while completing their high school diplomas. The average grade point average (GPA) for these students was 3.57. Most (95%) of these seniors completed four years of math and science and are planning to complete four-year degrees. This has been a very successful collaboration and we thank Principal Vickie Wilson and her staff for the opportunity to continue the partnership. Additional information can be found at: <http://successacademyonline.com/>.

6. The Cedar Mountain Science Camp continues to serve the region. Under the direction of Peggy Wittwer, Assistant Professor of Elementary Education, this joint program between the Beverly Taylor Sorenson College of Education and Human Development and the College of Science has provided high-quality outdoor education to over 4,000 4th-6th students in the last twelve years. This summer Professor Wittwer and her staff served 364 elementary students in nine separate camps, with more than 150 others turned away for lack of space. More information is available at: <http://suu.edu/cose/center/>.

7. The College continues its efforts to serve public education through three important programs:

- *Partnership for Effective Science Teaching and Learning (PESTL)*: Professors John R. Taylor and Mackay B. Steffensen were involved in the completion of the latest three-year cycle of this grant. During this cycle, SUU has played host to Iron and Washington County School District's best science teachers. The program strengthens both science content knowledge and a better understanding of the nature of science for teachers who instruct grades 4-6. We have already received word that SUU will continue to offer this program for another three-year cycle.
- Professor John Taylor co-wrote a grant with BYU, UVU, and Emery County School district for \$104,000. This funded grant will provide professional development to the in-service instructors of eight different curricula over the next two summers.
- Bryce Canyon Natural History Association (BCNHA) Field Seminar Program This long running (15 years) cooperative program is a partnership between COS, BCNHA, and the High Plateaus Institute (HPI). In-service educators primarily from Kane and Garfield counties attend a four-day seminar that integrates archeology, range and plant ecology, and geology. Drs. Ronald Martin and Robert Eves were two of the faculty participants in the program. The participants learn science in a field setting and apply what they have learned in their own classrooms.

8. The Second Annual COS Undergraduate Research Symposium was held on November 8, 2010. This event was an opportunity to showcase student-faculty research in the College of Science. Presentations included in-progress and more complete research presentations. Inter-departmental collaborative presentations were particularly encouraged. There were 27 faculty mentored student presentations (oral and poster) and five faculty presentations at this year's meeting. You can check out the abstracts and some photos at: <http://suu.edu/cose/symposium/>

9. Our agriculture faculty had a particularly busy, and productive, year particularly in the area of service to their professional community. In addition to hosting the statewide Future Farmers of America (FFA) convention on the SUU campus, our faculty organized and hosted the statewide FFA Land, Livestock, Horse, and Range judging contest, Area IX and X FFA contests, the Iron County 3rd Grade Farm Field Day, and the Farm Bureau High School "Discussion Meet".

10. This has been a productive year for College faculty. For the 2010-2011 academic year, the following data were reported:

Refereed Scholarly Publications – 9

Refereed Presentations at Professional Meetings – 18

Funded Grants – 7

Special Recognitions and Awards – 18

11. We acknowledge the retirement of Laura Cotts and Terry Alger at the end of the 2010-2011 academic year. In addition, Dr. Renwu Zhang (Physical Science-Chemistry) has left SUU to seek other opportunities after six years of service. It will be a challenge to replace these great faculty members.



MESSAGE FROM THE DEAN



Welcome

In early 1992, the College of Science moved from their home in what is now the General Classroom building to the Science Center, which has been their home ever since. In 1992, the College of Science consisted of the departments of: Biology, Physical Science, Mathematics and Computer Science, and Family and Consumer Science. The construction of that new facility represented a real paradigm shift for the College. For the first time, there was a desktop computer in every faculty office. Mediation (computer, VCR, DVD, and the now outdated Laser Disk technology) was available in many classrooms. The move also brought with it the opportunity to restock laboratories and obtain some much needed modern equipment.

As of this writing, one of the important developments for the 2010-11 academic year is the completion of the Center for Health and Molecular Sciences (CHMS, but more familiarly known as the Science Center Addition). Just as in 1992, the CHMS brought with it a large sum of money for furnishings, fixtures, and equipment. We have been very successful in obtaining some state of the art instrumentation that will benefit SUU science students for decades to come. The list of individual equipment is long, but the next time you come onto campus, stop by and I'll give you a tour so you can see what has been accomplished. It is quite remarkable.

The other big news of the College actually took place at the very end of last academic year. As of July 1st, 2011, the SUU College of Science is no more! With the merger of the College of Science and the College of Computing, Integrated Engineering, and Technology, we are now the College of Science and Engineering. There are six departments in the college: Agriculture and Nutrition Science, Biology, Integrated Engineering, Mathematics, Nursing, and Physical Science. In addition, the College of Science and Engineering is home to the School of Computing and Technology which includes Computer Science and Information Systems and Engineering Technology/Construction Management. With the addition of these programs, we are the largest faculty on Campus.

As we end this academic year, I wish to extend my personal thanks to our dedicated students, devoted faculty and administration, and, at this particular moment, to all of those generous individuals whose financial contributions to the CHMS have made it a reality. This is truly a wonderful time to be Dean of the College of Science and Engineering.

Sincerely,
Robert L. Eves, Ph. D.

COLLEGE OF SCIENCE MISSION AND GOALS

Mission

The College of Science is made up of academic programs in agriculture, biology, chemistry, geography, geology, nursing and nutrition. These programs are housed in the departments of Agriculture and Nutrition Science, Biology, Nursing and Physical Science. We operate or participate in the operation of several special learning environments for students that include a KECK sponsored undergraduate research lab, an observatory, a GIS lab, a certified water lab, a scanning electron microscopy lab, the Southern Utah Natural History Museum, the Cedar Mountain Science Center, the Valley Farm, and the Mountain Ranch. We serve as the center of scientific learning for the undergraduate and graduate programs offered at SUU. We also serve as the resource center of scientific knowledge and expertise for southern Utah. The purpose of the College of Science is to provide comprehensive classroom and experiential learning that emphasize critical thinking, problem solving, decision making, and communication in science for students.

Goals and Objectives

The observable, measurable goals of the College of Science and the objectives by which they will be accomplished are:

1. GOAL: prepare students for graduate and professional schools.

OBJECTIVE: offer coursework and active learning experiences appropriate to the prerequisites of specified post-baccalaureate programs.

ASSESSMENT: tabulate student reportage on application/acceptance to post-baccalaureate programs.

For this academic year, we note the following:

- 87% acceptance to medical schools
- 88% acceptance to dental schools
- 90% acceptance to pharmacy schools
- 80% acceptance of physical science students to graduate programs
- 100% acceptance of human nutrition students to graduate programs

2. GOAL: prepare students for careers using their baccalaureate degree.

OBJECTIVE: offer coursework appropriate for employment related to departmental majors or minors.

ASSESSMENT: require standardized, nationally-normed tests where appropriate and student reportage of employment at baccalaureate level.

For 2010-11, the following were reported:

- Educational Testing Service (ETS) Major Field Exams
 - Chemistry–84th percentile student average, 95th percentile institutional/program average
 - Biology–50th percentile student average
- NCLEX national standardized nursing licensure exam
 - 78% pass rate for Fall 2010
 - 100% pass rate for Spring 2011
- American Chemical Society (ACS) end of course exams
 - Average for all Fall 2010 sections: 56th percentile
 - Average for all Spring 2011 sections: 70th percentile

3. GOAL: develop skills in analysis, critical thinking, problem solving, decision-making and communication.

OBJECTIVE: offer well-planned and pedagogically sound learning exercises in courses and in research projects.

ASSESSMENT: annually examine and evaluate course syllabi, course materials, and student research experiences.

For 2010-11

- Each syllabus was examined at the department chair level
- Student research experiences were evaluated during local presentation of the results, including the 2nd Annual College of Science Research Symposium

4. GOAL: provide hands-on experiences with state-of-the-art scientific instruments and equipment

OBJECTIVE: provide coursework and research opportunities that include opportunities to use equipment.

ASSESSMENT: inventory current, and continuously update need for future, equipment.

- COS purchased a new Gas Chromatography Mass Spectrometer (\$100,000)
- COS purchased a new X-Ray Diffractometer (\$200,000)

5. GOAL: provide highly skilled teachers and professors that are also respected scholars.

OBJECTIVE: recruiting Ph.D.- prepared faculty, reward good teaching, encourage faculty to conduct funded research and publish results, and encourage participation in professional organizations.

ASSESSMENT: annually evaluate faculty performances, teaching, scholarship, service, and collegiality using criteria and performance standards developed by departments and the college.

- All faculty members were formally evaluated by at least their chairs, peers, and the dean during 2010-11
- All new faculty hires are highly qualified and hold terminal degrees

6. GOAL: provide special, unique learning opportunities.

OBJECTIVE: utilize the Valley Farm, Mountain Ranch, Cedar Mountain Science Center, SUU's Ashcroft Observatory, Water Lab, the Southern Utah Natural History Museum, the GIS lab, and the KECK Molecular genetics and ecology labs.

ASSESSMENT: annually evaluate the use of our specialized learning environments.

- The Valley Farm continues to support the SUU agriculture program.
- The Mountain Ranch and its uses are being reviewed and a utilization plan drafted in cooperation with SUU Outdoor Recreation and the Office of Regional Services.
- Cedar Mountain Science Camp served over 364 students from 64 cities/towns in nine separate camps and continues to have many more applicants than it can accommodate.
- The Ashcroft observatory is utilized as a teaching laboratory each semester and continues to hold community nights each Monday.
- The Water Lab continues to provide a community resource and employment and hands-on experience to SUU chemistry students.
- The Geographic Information Systems (GIS) lab is supporting coursework and completing contract work for local, state and federal agencies.
- The KECK Molecular genetics and ecology labs provide undergraduate research support

THE COLLEGE OF SCIENCE DEPARTMENTS AND THEIR PROGRAMS

Department of Agriculture and Nutrition Science

Department Goals

Agriculture Science

1. Through a broad offering of one, two, and four-year programs, the agriculture program prepares students for careers in agricultural science and industry, farm and ranch management, and related public or private service.
2. The agriculture program prepares students to pursue advanced degrees or admission to a professional school upon completion of their work in the agriculture program at SUU.

Nutrition Science

1. The goal of the nutrition program at SUU is to prepare students for a number of related careers or entrance into a graduate program upon degree completion at SUU.
2. The intent of the program is to foster a broad understanding of the science of nutrition as it is integrated into all human pursuits.

Programs and Degrees Offered

BACHELOR DEGREES

BIS in Agricultural Science & Industry (examples of coursework that can be used toward a BIS degree include Agribusiness, Animal Science, Plant Science and General Agriculture)
BS in Human Nutrition

ASSOCIATE DEGREES

Agriculture: Livestock and Farm Management
Agriculture: Equine Studies

MINORS

Agriculture
Nutrition and Food Science

CERTIFICATES

Agriculture: Livestock Farm Management



Departmental Faculty

Faculty	Rank	Specialty	Year Began at SUU
Dr. Chad L. Gasser	Assistant Professor	Animal Science	2005
Professor Artis P. Grady	Associate Professor	Human Nutrition	1990
Professor Matthew C. Schmidt	Associate Professor	Human Nutrition	2001
Professor Dean L. Winward	Associate Professor	Agriculture	1990
Professor Lee G. Wood	Associate Professor	Animal Science	2000
Dr. Cynthia B. Wright	Professor, Chair	Human Nutrition	1981



Productivity Highlights 2010-11

Scholarly Presentations at Professional Meetings

Croxall, K.; **Grady, A.**; Gubler, R. "A common cultural thread—Bread: more than sustenance" *ACTE Annual Convention and Career Tech Expo*, Las Vegas, NV, December 2, 2010.

Sorenson, K.; Hallows, S.; **Grady, A.**; **Schmidt M.** "Body image among collegiate female athletes at Southern Utah University" *Utah Association of Family & Consumer Sciences Annual Meeting*, Park City, UT, November 6, 2010.

Nelson, J.; Mecham, L.; **Grady, A.**; **Schmidt M.** "Consumer behaviors in self-serve salad bars" *Utah Association of Family & Consumer Sciences Annual Meeting*, Park City, UT, November 6, 2010.

Grady, A.; Gubler, R. "An apple a day keeps the therapist away" *ACTE Annual Convention and Career Tech Expo*, Las Vegas, NV, December 4, 2010.

Walsh, M.; Frehner, C.; **Schmidt, M.** "Hydration Status of Collegiate Female Basketball Players at Southern Utah University", *Experimental Biology*, Washington, DC, April 9, 2011

Horrocks, S.; Steffanof, N.; **Grady, A.**; **Schmidt, M.** "Perceived body image of middle school aged children in rural southern Utah" *Sports, Cardiovascular, and Wellness Nutrition (SCAN) Annual Symposium*, Chicago, IL, March 11, 2011.

Wright, C. B.; Torgerson, C. "Bone health survey results", *Experimental Biology*, Washington, DC, April 12, 2011

Scholarly Publications

Grady, A.; Gubler, R. "Stress a Factor in Students' Bad Eating Habits" *Techniques*, 2010 **85** (8): 8-10.

Reid, C. R.; **Winward, D. L.**; "Windbreak Effect on Alfalfa Yield in Southwestern Utah" *Journal of the National Association of County Agriculture Agents*. 2011 (Web Based Journal)

<http://www.nacaa.com/journal/index.php?jid=54>

Professional and Community Service

Chad L. Gasser

- Member of the Editorial Board for the *Journal of Animal Science* and for *Animal Reproduction Science*
- Member of the NACTA Journal Committee
- Judge or organizer for:
 - FFA events
 - Iron County Farm Field Day
 - SW Junior Livestock Show

Artis P. Grady

- Reviewer of abstract submissions for presentation at the annual meeting American Association of Family and Consumer Sciences (AAFCS)
- Member of Utah Dietetics Association, Scholarship and Awards Committee
- Nutrition consultant for *The Spectrum/Daily News*
- Member Head Start Health Advisory Committee

Matthew C. Schmidt

- Member of Utah Dietetics Association, Scholarship and Awards Committee
- Nutrition consultant for SUU Gymnastics Team

Dean L. Winward

- Member of the North American Colleges and Teachers of Agriculture Teacher Recognition Committee
- Member of the Iron County Weed Board
- Iron County Fair Ag Judge
- Judge for SW Junior Livestock Show
- Provided Master Gardener class for region
- Utah Division of Wildlife Resources arbitrator

Cynthia B. Wright

- Reviewer for the *Journal of Family and Consumer Sciences*
- Reviewer for the American Society of Family and Consumer Science
- Judge for FFA Agriscience Fair

Professional Development Meetings and Training Sessions

Chad Gasser

- Utah Association for Career and Technical Education Annual Conference, St. George, Utah, January 15, 2011
- North American Colleges and Teachers of Agriculture Annual Conference in State College, Pennsylvania, June 22-25, 2010

Artis P. Grady

- Utah State Office of Education "What is an Educated Person?" Conference, November 5, 2010
- Utah Association of Family & Consumer Sciences Annual Meeting, November 5-6, 2010
- Sports, Cardiovascular, and Wellness Nutritionists Annual Meeting, March 11-13, 2011
- Utah Dietetic Association Annual Meeting, Ogden, UT, March 31-April 1, 2011
- Four Webinars

Matthew C. Schmidt

- Experimental Biology International Meeting, Washington, DC, 2011
- One Webinar

Dean L. Winward

- 2010 NACTA/SERD (North American Colleges and Teachers of Agriculture) Conference at Penn State June 22 – 25, 2010. State College, PA
- AZ Strip/Southern Utah Invasive Weed Update Aug. 17, 2010. Washington, UT
- Pesticide Safety Education Program Dec. 2, 2010 Hurricane, UT
- Utah Farm Bureau Hands-on Alfalfa Diagnostic Workshop Jan. 27, 2011, St. George, UT
- Utah Farm Bureau Hay & Forage Symposium Jan. 27 – 28, 2011, St. George, UT
- Utah Water Users Workshop Mar. 14-16, 2011 St. George, UT
- 33rd Annual AZ/UT Range Livestock Workshop Apr. 5 and 7, 2011 Hurricane & Glendale, UT

Cynthia B. Wright

- Twenty webinars

Honors, Awards and Special Recognition

Chad Gasser

- North American Colleges and Teachers of Agriculture Teacher Fellow Award, June, 2010

Matthew C. Schmidt

- Nominated for T-Bird Professor of the Year Award

Dean L. Winward

- North American Colleges and Teachers of Agriculture Teacher Fellow Award, June, 2010
- USDA Dixie National Forest Certificate of Merit
- Nominated for T-Bird Professor of the Year Award

Lee Wood

- North American Colleges and Teachers of Agriculture Teacher Fellow Award, June, 2010

Cynthia B. Wright

- 2010 Undergraduate & Scholarship Mentor Award



Department of Biology

Department Goals

The Department of Biology will provide our students with quality lecture, laboratory, and field instructional experiences which foster student inquiry into science, and prepare them for post-baccalaureate pursuits.

Intended Outcomes/Objectives

1. Students will demonstrate an understanding of the dynamics of interactions and adaptations within biological systems.
2. Students will be able to use appropriate tools to carry out investigations in their intended field.
3. Students will be able to communicate effectively in oral and written formats.
4. Students will be involved in regional service partnerships.
5. Students will be prepared for post-baccalaureate plans.

Because there is considerable freedom of choice to design a program of study to meet individual objectives within the biology major, all students are strongly urged to consult a member of the department faculty for advisement within their emphasis every semester. This consultation should begin before the student enrolls for the first semester of her/his undergraduate work. In order to complete the requirements for the degree in eight semesters, students must begin taking courses in the major during the first year of undergraduate work. This is especially important for students who intend to pursue postgraduate training in health care professions because these students must be prepared to take entrance examinations at the end of the third year of instruction in order to enter professional training in a timely fashion.

Programs and Degrees Offered

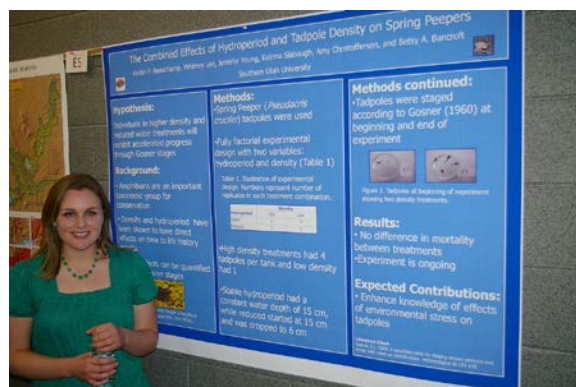
BACHELOR DEGREES:

BA or BS in Biology:

- Botany Emphasis
- Education Emphasis
- Forensics Emphasis
- Zoology Emphasis

MINOR:

Biology



Departmental Faculty

Faculty	Rank	Specialty	Year Began at SUU
Dr. Elizabeth Bancroft	Assistant Professor	Zoology, Ecology	2010
Dr. Helen C. Boswell	Associate Professor	Evolutionary Biology	1999
Dr. Fredric Govedich	Assistant Professor	Zoology, Entomology	2006
Professor Debra Hanson	Assistant Professor, non-tenure track	Biology, Anatomy	2004
Dr. Terri Hildebrand	Assistant Professor	Botany	2006
Dr. Jonathan Karpel	Assistant Professor	Cellular/Molecular Biology	2010
Dr. Ron Martin	Associate Professor	Botany	1996
Dr. Paul Pillitteri	Assistant Professor	Anatomy, Physiology	2005
Dr. Rachel Smetanka	Assistant Professor	Anatomy, Physiology	2005
Dr. Paul Spruell	Assistant Professor	Ecology	2007
Dr. John Taylor	Assistant Professor	Biology, Secondary Education	2002
Mary Jo Tufte	Instructor, non-tenure track	General Biology	2010

Productivity Highlights 2010-2011

Scholarly Presentations at Professional Meetings

Martin, R. M.; McCarthy, S. "Potential Student Intern Relationships between SUU and CPNPI", *Colorado Plateau Native Plant Initiative*, 2011.

Martin, L. T.; **Martin, R. M.** "Increasing Light Spectrum Available for Algae Growth with Fluorescing UV-Absorbing Beads" *International Genius Olympiad*, 2011.

Adams, R.C.; Barnes, G.; Hildebrand, T.; **Spruell, P.** "Identification of bacteria found in water samples extracted from primary irrigation waterways in Iron County, Utah" *Utah Conference on Undergraduate Research*, Orem, UT, February 2011.
(Project presented by SUU undergraduates)

Finstick, S. A.; **Hildebrand, T. J.** "Genetic analysis of thermophilic microorganisms from Thermo Hot Springs, Beaver County, Utah" *Geological Society of America National Meeting*, Denver, CO, 2010.

Hildebrand, T.J.; Weaver, J. "Hybrid fitness among members of wild and cultivated *Rubus L.* (Blackberry and Raspberry)" *Intel International Science and Engineering Fair*, PS032, San Jose, CA.

Scholarly Publications

Bancroft, Betsy A.; Han, Barbara A.; Searle, Catherine L.; Biga, Lindsay M.; Olson, Deanna H.; Kats, Lee B.; Lawler, Joshua J.; Blaustein, Andrew R. "Species-level correlates of susceptibility to the pathogenic amphibian fungus *Batrachochytrium dendrobatidis* in the United States" *Biodiversity and Conservation*, 2011; **20** (9): 1911–1920.

Pillitteri, P. J.; McAllister, D. G.; Larsen, R. J.; Dorsey, A. M. "Effectiveness of Three Hand/Forearm Trainers on Improving Maximal Grip Strength and Grip Endurance" *Journal of Undergraduate Kinesiology Research* 2010; **6** (1): 11–20.

Funded Grants

Terri Hildebrand

- Correlation between Wetland Vegetative and Microbial Community Diversity of Bryce Canyon National Park's Southern Regions – Phase I, 2011 (\$9,986.)
- Targeted Vegetation Survey and Preparation of NPS Technical Report on the Flora of Grand Canyon-Parashant National Monument, Arizona, 2010 (\$49,893).

Ron Martin

- USDA, Forest Service Dixie National Forest, Participating Agreement, Sept. 2010 (\$123,446)

John Taylor

- Teachers as Scientists Program, USOE, Summer 2010 (\$15,976)

Honors, Awards and Special Recognition

Terri Hildebrand

- SUU Undergraduate Research & Scholarship Mentor Award

John Taylor

- SUU Service Learning Fellow Award

Professional and Community Service

Betsy Bancroft

- Member of Ecological Society of America
- Volunteer for Cedar City's Migratory Bird Festival
- Reviewer for five journals:
 - *Biodiversity and Conservation*
 - *Herpetological Conservation and Biology*
 - *Functional Ecology*
 - *Polar Biology*
 - *Ecohealth*
- Editorial Board member for *Animals*

Helen Boswell

- Professional review of 9th edition of *Biology*, by Raven, et al. November, 2011
- Groovefest Planning Committee

Fred Govedich

- Assisted Dr. Deborah J. Hunter from Turtle Mountain Community College, Turtle Mountain Chippewa (Anishinaabe) Reservation, Belcourt, North Dakota, with Leech identifications.
- Reviewer for two journals:
 - *Comparative Parasitology*
 - *Functional Ecology*

Terri Hildebrand

- Expanded size and involvement of SUU Garden to include community at large. Included Cedar Native Plant Society in coordination efforts.
- Herbarium Workshop Participant- College of Eastern Utah (2010)

Professional and Community Service (Continued)

Ron Martin

- Board member of Bryce Canyon Natural History Association

Paul Spruell

- SUU Liaison to the Udall Foundation
- Reviewer for *Transactions of the American Fisheries Society*

John Taylor

- Board member of
 - Zion Natural History Association
 - Utah Science Teacher Association
 - Gateway Preparatory Academy

Documents, Books, and other Publications

Shafer, S.L., J. Atkins, B.A. Bancroft, P.J. Bartlein, J.J. Lawler, B. Smith, C.B. Wilsey, 2010, Projected climate and vegetation changes and potential biotic impacts for Fort Benning (Georgia), Fort Hood (Texas), and Fort Irwin (California): *U.S. Geological Survey Scientific Investigations Report 2010*

Hanson, D. "Human Anatomy: A Visual Workbook" Fountainhead Press ISBN 978-1-59871-429-6

Martin, R. M.; Zhang, R.; Murray, S. "Dry Process Jet Fuel from Algae" *USTAR TCG Report* 2011.



Department of Nursing

Department Goals

The goals and objectives of the Department of Nursing are:

1. To prepare graduates to successfully enter nursing practice by offering well-planned and pedagogically sound learning exercises in courses and in research projects that develop skills in analysis, critical thinking, problem solving, and ethical decision making.
2. To develop technically proficient nurses by offering students hands-on experiences with state-of-the-art health care equipment and providing coursework and clinical practicum opportunities.
3. To support faculty as health care professionals who demonstrate excellence in teaching, scholarly endeavors, practice, and professional community service and who provide leadership in nursing practice by rewarding good teaching, encouraging participation in clinical practice and professional organizations, recruiting professional and doctoral-prepared faculty

Programs and Degrees Offered

BACHELOR DEGREES

BS in Nursing:

- Pre-Licensure Emphasis
- RN to BSN Emphasis



Departmental Faculty

Faculty	Rank	Specialty	Year Began at SUU
Professor Aja James	Assistant Professor, non-tenure track	EMT, ICU	2007
Professor Claudia Kreipl	Assistant Professor, non-tenure track	Nursing Education	2009
Professor Selwyn Layton	Assistant Professor, non-tenure track	Nursing Education	2009
Professor Donna J. A. Lister	Associate Professor, non-tenure track	Clinical Nursing	2005
Professor Alan H. Pearson	Assistant Professor, non-tenure track	Medical/Surgical Nursing	2005
Professor Rebecca S. Rasmusson	Assistant Professor, non-tenure track	Family Nursing	2006
Professor Kevin D. Tipton	Assistant Professor, non-tenure track	Geriatric Nursing	2006
Professor Janet Warner	Assistant Professor, non-tenure track	Maternal/Newborn Nursing	2004



Productivity Highlights 2010-11

Scholarly Presentations at Professional Meetings

Lister, Donna J. A. "Best Learning Experiences: Sharing the Perspective of New Practicing RNs" *NLN Education Summit*, Las Vegas, NV, September 29-October 2, 2010.

James, Aja "Flight Nursing: beyond regular practice" *Utah State Nurses' Association Annual Conference*, February 2011. Orem, UT.

Professional and Community Service

Claudia Kreipl

- Volunteer service at TLC (Training Learning Center)
- Volunteer at St George Free Clinic

Selwyn Layton

- Volunteer service at Valley View Medical Center
- Volunteer service for Head Start

Donna J. A. Lister

- Volunteer service for Celebration of Utah Nursing
- Legislative Liaison, Academic Leadership Committee, AAPN
- Board Member, Utah Organization of Nurse Leaders (UONL)

Rebecca S. Rasmusson

- SWATC Advisory Board Member
- Volunteer service at Valley View Medical Center

Janet Warner

- Instructor, The Arthritis Foundation's Self-Help Course

Membership and Participation in Professional Organizations

Aja James

- National League of Nursing (NLN)
- American Association of Critical Care Nursing
- Emergency Nurses Association

Claudia Kreipl

- Utah Nurse's Association (UNA)
- Sigma Theta Tau
- UpLedge Institute
- Nurse Healers Associates International
- National League of Nursing

Selwyn Layton

- American Association of Critical Care Nursing
- Emergency Nurses Association
- Sigma Theta Tau International Honor Society of Nursing, Gamma Rho Chapter
- National League of Nursing (NLN)

Donna J. A. Lister

- Utah Nurses Association (UNA)
- Sigma Theta Tau
- National League of Nursing (NLN)

Alan H. Pearson

- Utah Nurses Association (UNA)
- Utah Nurse Practitioners Association
- National League of Nursing (NLN)

Rebecca S. Rasmusson

- National League of Nursing (NLN)
- Utah Nurses Association (UNA)

Kevin D. Tipton

- National League of Nursing (NLN)
- Utah Nurses Association (UNA)
- American Nurses Association (ANA)

Janet Warner

- American Nurses Association (ANA)
- Utah Nurses Association (UNA)
- National League of Nursing (NLN)

Honors, Awards and Special Recognition

Aja James

- Resuscitated drowning swimmer at Sorensen Pool, Feb 18, 2011

Selwyn Layton

- 2010 Valley View Medical Center, Employee of the Month
- 2011 Valley View Emergency Department Exceptional Nurse Award
- 2011 Intermountain Healthcare Southern Utah Regional Exceptional Nurse Award

Donna Lister

- 2011 Service Learning Fellow, Southern Utah University

Rebecca S. Rasmussen

- College of Science Outstanding Nursing Faculty Member, May 2011



Professional Development Meetings and Training Sessions

Claudia Kreipl

- NLN Education Summit: Shaping History, Reforming Healthcare: the Power of Nursing Education; September 29-October 2, 2010, Las Vegas, NV
- Two webinars

Selwyn Layton

- Continuing Medical Education Workshops (14 hours)

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Donna J. A. Lister

- AACN 2010 Fall Semiannual Meeting: Leveraging Resources in Challenging Economic Times; October 30-November 2, 2010, Washington DC
- Completion of Utah's Controlled Substance Database Training; October 28, 2010, St. George, UT
- Intermountain Primary Care Clinical Programs Learning Day; May 20, 2011, Salt Lake City, UT
- NLN Education Summit: Shaping History, Reforming Healthcare: the Power of Nursing Education; September 29-October 2, 2010, Las Vegas, NV

Allen H. Pearson

- M Intermountain Great Teacher Summit; October 7-9, 2010, Heber, UT

Rebecca S. Rasmussen

- NLN Education Summit: Shaping History, Reforming Healthcare: the Power of Nursing Education; September 29-October 2, 2010, Las Vegas, NV

Kevin D. Tipton

- AACN 2011 Master's Education Conference, Transitions and Transformation: The Changing Nature of Master's Education in Nursing; February 24-26, 2011, Scottsdale, AZ

Janet Warner

- NLN Education Summit: Shaping History, Reforming Healthcare: the Power of Nursing Education; September 29-October 2, 2010, Las Vegas, NV

Department of Physical Science

Department Goals

Chemistry

As chemistry faculty, we strive to provide students with quality, current, comprehensive, courses of study which serve the following needs including:

- 1) Preparation of students who choose to pursue graduate degrees in chemistry.
- 2) Preparation of students who choose to pursue degrees in the health sciences (medicine, dentistry, pharmacy, etc.)
- 3) Preparation of students who choose to gain employment in a science related field with an undergraduate degree.
- 4) Preparation of students who choose to become chemical educators.
- 5) Education of students to think critically and independently.
- 6) Helping students improve communicative, creative, analytic, and information gathering skills.

To accomplish these goals, the chemistry faculty will provide the following:

1. Honest evaluations of student abilities and potential.
2. A climate of mutual trust and respect among faculty, staff and students.
3. The application and involvement of basic scientific principles and methodologies.
4. Competitive opportunities for mentorship through undergraduate research, employment, and other hands-on educational means.

Geography and Geographic Information Systems (GIS)

The mission of the SUU geography program is:

1. To continue and expand the relationship between the departments of Physical Science and History and Sociology and to support the programs and degrees offered by these departments.
2. To discover, describe, explain, and interpret the character of the earth as home to humans by focusing on interrelationships within and among natural and cultural subsystems and regions.
3. To contribute to the liberal education offered by the university, to provide excellence in teaching, and to offer students the best in geography education that can be obtained at any institution of higher learning.
4. To offer specialized training in applied geography, including GIS and cartography.

Geology

The geology area strives to provide students at Southern Utah University with excellence in earth science education. Our integrated efforts are directed toward those methods we feel produce the best possible educational experience. The primary goal of the geology faculty is to ensure academic excellence while demanding integrity and building self-esteem in our students. Specifically, our mission is to foster a positive learning environment which serves a variety of needs including:

1. Preparation of students who choose to pursue graduate studies in geology;
 2. Preparation of students to directly enter the work force;
 3. Preparation of students who choose to pursue careers in areas other than science (i.e. business or law), but need a broadly based background in geology as a foundation for those pursuits;
 4. Preparation of students who choose a career in earth science education; and
 5. Preparation of students choosing physical science general education courses to be more knowledgeable citizens by providing a quality educational experience.
- The geology area carries out its role through application of, and involvement with, the basic principles of science and by instilling understanding and appreciation of scientific methodologies.

Physics

The mission of the physics faculty is to ensure academic excellence while demanding integrity and building self-esteem in our students. Our mission is met through the following:

The Learning Environment - to provide students with quality, current, comprehensive, rigorous courses of study; to prepare successful pupils by stimulating curiosity and instilling a lifelong love of learning; and to develop within the students communication skills and creative, analytic information gathering and processing skills.

The Faculty - to develop excellence in teaching by fostering the pedagogical development of our faculty, to maintain strong professional commitment and development, and to promote excellence within the faculty through involvement in scholarly activities, developments in our respective fields, and service to the university and the communities of southern Utah.

Programs and Degrees Offered

BACHELOR DEGREES

BA/BS

Physical Science: Teacher Education
Emphasis

BS Chemistry:

Professional Emphasis
Health Care Emphasis
Forensic Emphasis
Teacher Education Emphasis

BS Geology:

Earth Science Emphasis
Professional Emphasis

MINORS

Chemistry

Chemistry Teacher Education

Geography

Geography Teacher Education

Geology Teacher Education

Physics

Physics Teacher Education

CERTIFICATES

Geographic Information System



Departmental Faculty

Faculty	Rank	Specialty	Year Began at SUU
Dr. Terry D. Alger	Professor	Physical Chemistry	1981
Kristina B. Bronsema	Instructional Staff	Chemistry	1997
Dr. James C. Chisholm	Assistant Professor	Physics/Cosmology	2007
Dr. Mark D. Colberg	Associate Professor	Metamorphic Petrology	2001
Professor Laura Cotts	Assistant Professor, non-tenure track	Physics/Astronomy	1994
Dr. Daniel J. Eves	Assistant Professor	Bio-analytical Chemistry	2009
Dr. Robert L. Eves	Professor	Geochemistry	1988
Dr. Sue Ann Finstick	Adjunct Instructor	Hydrology	2008
Dr. Bruce R. Howard	Associate Professor	Biochemistry	2002
Dr. Paul R. Larson	Associate Professor	Geography	1986
Dr. C. Frederick Lohrengel II	Adjunct Instructor	Micro-paleontology	2008
Dr. John MacLean	Assistant Professor	Structural Geology	2010
David Maxwell	Instructional Staff	GIS	1997
Dr. Radhika Nair	Assistant Professor	Inorganic Chemistry	2010
Dr. J. Ty Redd	Professor	Organic Chemistry	1990
Dr. Hussein A. Samha	Associate Professor	Inorganic Chemistry	2001
Professor Brent A. Sorensen	Associate Professor	Physics/Astronomy	1983
Dr. Mackay B. Steffensen	Assistant Professor	Organic Chemistry	2006
Dr. Elaine Vickers	Adjunct Instructor	Inorganic Chemistry	2008
Dr. Kim H. Weaver	Associate Professor	Analytical Chemistry	2000
Dr. Renwu Zhang	Assistant Professor	Physical Chemistry	2005

Productivity Highlights 2010-11

Scholarly Presentations at Professional Meetings

MacLean, J. S., Sears, J. W.; Chamberlain, K. R. "SHRIMP and LAICPMS detrital zircon geochronology of Mesoproterozoic to early Cambrian samples from SE Siberia and SW Laurentia; implications for Rodinia reconstruction" *Geological Society of America Abstracts with Programs*, **42** (5) 2010.

Wiggins, B.; **Sorensen, B.** "Accretion Disk Structure and the Fe Ka Spectral Line Profiles in Active Galactic Nuclei" *Utah Academy of Sciences, Arts, and Letters*, Salt Lake Community College, Salt Lake City, UT, April 8, 2011.

Samha, Hussein "Chemical vapor deposition of three aminosilanes on silicon dioxide: Surface characterization, stability, effects of silane concentration, and cyanine dye adsorption", *241st American Chemical Society National Meeting*, Anaheim, CA, March 27-31, 2011.

Zhang, Renwu "Studying solubility of gases in a high porous polymer using positron annihilation spectroscopy", *241st American Chemical Society National Meeting*, Mar. 2011 Anaheim, CA.

Honors, Awards and Special Recognition

David Maxwell

- Outstanding Staff 2010-2011 awarded by the SUU College of Science

Mackay Steffensen

- Finalist Thunderbird Award-Professor of the Year (2010-11)

Kim Weaver

- Outstanding Faculty Member in the Department of Physical Sciences (2010-11)

Funded Grants

David Maxwell

- CPCESU Zion and Bryce Canyon NP Archeological GIS support (\$48,000 over two years)
- Perkins CTE - Technology Education (\$13,000)

Scholarly Publications

Woolley, A. T.; Larsen, M. G.; Nge, P.; Yang, W.; **Eves, D. J.** "A Microchip Capillary Electrophoresis Experiment for the Instrumental Analysis Laboratory"; *Journal of Analytical Sciences Digital Library* (entry10061, 2011).

Bracken, C. D.; Neighbor, A. M.; Lamle, K. K.; Thomas, G. C.; Schubert, H. L.; Whitby, F. G.; **Howard, B. R.** "Crystal structures of a halophilic archaeal malate synthase from *Haloferax volcanii* and comparisons with isoforms A and G", *BMC Structural Biology* 2011, **11**:23.

Larson, Paul R.; **Lohrengel, C. Frederick, II** "A New Tool for Climatic Analysis Using the Köppen Climate Classification" *Journal of Geography* 2011, **110** (3), 120–130.

Zhang, F.; Sautter, K.; Larsen, A. M.; Findley, D. A.; Davis, R. C.; **Samha, H.**; Linford, M. R. "Chemical Vapor Deposition of Three Aminosilanes on Silicon Dioxide: Surface Characterization, Stability, Effects of Silane Concentration, and Cyanine Dye Adsorption" *Langmuir* 2010, **26** (18), 14648–14654.

Harper, L.A.; Flesch, T. K.; **Weaver, K. H.**; Wilson, J. D. "The effect of biofuel production on ammonia and methane emissions from a swine farm" *Journal of Environmental Quality* 2010, **39** (6), 1984–1992.

Professional Consulting

Bruce Howard

- Bioorganic Reaction Animations; consultant

David Maxwell

- Kolob Infrared, Infrared Image Interpolation and Ortho-rectification; consultant
- Iron County parcel management and tax base integration
- BLM, *Penstemon Franklinii* plant mapping
- Local LDS Church units, boundary mapping, high density housing distribution
- Brian Head, Master Trails Project

J. Ty Redd

- Bioorganic Reaction Animations, Team Advisor

Mackay Steffensen

- Textbook evaluator for publisher Wiley & Sons

Kim Weaver

- Analytical Services, to XECO corporation for their quality control in making circuit boards

Professional and Community Service

James Chisholm

- Reviewer for *Astroparticle Physics*
- Executive Committee (Member-at-Large), Four Corners Section of the American Physical Society (Term: 2010-2013)

Mark Colberg

- Zion Canyon Field Institute; Instructor for two Institute courses

Bruce Howard

- Reviewer for *International Journal of Biological Macromolecules*

Paul Larson

- Reviewer for ACS Petroleum Research Fund grant proposal
- Member, Editorial Board, Iron County Journal, a publication of the Iron County Historical Society
- Member, Board of Directors, Iron County Historical Society

David Maxwell

- ASPRS Intermountain Region Board Treasurer/Secretary
- Utah GIS Advisory Committee

Hussein Samha

- Reviewer for publishers Wiley & Sons and McGraw-Hill



