Message from the dean

Several years ago, I was happily doing research and teaching at BYU when I was recruited to apply for the position of Dean of Science and Health at UVU (then UVSC). When I became dean, we had one baccalaureate degree (Biology) in the College of Science and Health, and just one building, the Pope Science building, devoted principally to science programs. I immediately focused on bringing forward new degree programs. We grew our degree offerings by an order of magnitude (to over 20 bachelor degree programs and one master’s program), and the student enrollment in the sciences more than quadrupled. Still, the space available for our programs barely grew at all.

Thanks to tremendous lobbying of the state government by our student, faculty, and staff, to the foresight of several key state legislators, and to the generosity of many wonderful donors, we eventually secured funding for a new science building at UVU. The new building, which officially opened April 20th, is a technological wonder, at the cutting edge of science teaching technology. It will allow us, just for starters, to alleviate bottlenecks in important science classes, offer critical new programs, improve our pedagogical interaction with our students and enhance critical faculty-student interactions. This new building includes:

- 18 lecture classrooms;
- 1,400-seat auditorium (for classes and special events);
- 27 laboratory classrooms;
- 1,715 classroom and laboratory seats;
- 19,145 students engaging in courses each semester;
- 12 student research laboratories;
- 18 preparatory rooms for labs and classes;
- 57 offices for faculty and staff;
- 198 computer workspaces;
- 30 sub-0° freezers for biological and forensics work;
- 7 high-powered centrifuge spaces;

We in the College of Science and Health could not be happier for these improvements. After a decade of discussion with the State Legislature, we could not be more pleased they recognized the need for this facility, and funded our new building to the benefit of the entire UVU and central Utah communities. Now keep track of what we do with this new facility, both for the student body of UVU and the state of Utah. You may be surprised and you will be proud.

Sincerely,
Sam Rushforth, Dean

Department of Biology

The department of biology has had a productive and exciting year. Many students have engaged with faculty and staff to produce some of the best research our institution has presented thus far. Dr. Heath Ogden took five students, Louis Eubank, Samantha Telaranoja, Tyler Smith, Albert Zylstra, and Matthew Ethington to the Entomological Society of America Meetings where they presented three posters on the phylogenetics of Mayflies. Dr. Ogden’s students have also been developing an insect field guide for Capi-tol Reef National Monument in Southern Utah.

Dr. Lawrence Gray presented his research, entitled “Developing Macroinvertebarte Community Metrics for Water Quality Assessment in Wetlands: an Example from the Impounded Wetlands bordering the Great Salt Lake, Utah,” at the Great Plains Bios-assessment Symposium held at the University of Kansas. Many UVU students have assisted in this work over the last few years.

Students C. Cook and J Told, W. Jensen, M. Ramirez, D. Rawlins, P. Hill, B. Gutierrez, J.C. Smith, and T. Abreu under the tutelage of Dr. Olga Kopp presented four posters at the 2012 National Conference on Undergraduate Research. Biology Senior Benjamin Gutierrez was accepted into a very prestigious Ph.D. program at Cornell University in New York with Assistantship that provides a two year fellowship with the USDA when he finishes his graduate work.

Student interns in UVU’s first contract Research Organization, headed by Dr. Janice Sugiyama, worked on contracted projects including from developing a high throughput method of transforming bacteria to purifying a protein for use in development of an in vitro assay for small molecule testing. The student interns presented these results to the contracting companies. They have also initiated work on a contracted project to optimize experimental conditions for creating recombinant cell lines.

A collaborative project involving Dean Rushforth, Drs. Robert Robbins, Crawley and Van De Graaff produced a beautifully illustrated Photographic Atlas for the Botany Laboratory which was published in January 2012.
Department of Chemistry

The 2011-2012 academic year has seen a great deal of growth in the Department of Chemistry. We welcomed back Dr. Asemahan El Ezzi, whom we hired away from the University of Lebanon. We also hired three additional associate professors who will join us next Fall as we get ready to expand the chemistry program thanks to the opening of the new Science Building. Our goal in the expansion is to accommodate all students who wish to enroll in lower division chemistry classes—something we have not been able to do for the past four years. The demand for quality chemistry instruction is growing, and we have a skilled faculty ready to meet that demand. Now that we have some space to meet that demand! This year has been very productive in terms of student research. Despite having only 900 square feet of shared research space, fifteen students have been actively engaged in research, resulting in the following presentations:

At the National Conference on Undergraduate Research, in Ogden:
- Lance Bowens (with Dr. Bernart): Chemical Studies on Osprey Mushrooms;
- Danie Garner (with Dr. Bernart): Lipid Metabolites of Calycotis polyisophylla;
- W. Chase Madsen (with Dr. Bernart): Utah Mushroom Survey: Searching for New Antibiotics in the Wasatch Backcountry;
- Jeff Mortensen (with Dr. Thulin, et al.): Identification and Evaluation of Candidate Serum Biomarkers of Alzheimer’s Disease,

At the American Society for Mass Spectrometry meeting in Vancouver:
- Matt Ellsworth (with Dr. Thulin, et al.): A Method for Analysis of Low-Molecular Weight Proteomes of Tissues for Possible Use in Biomarker Discovery,

At the EuroMed conference on Plant Natural Products from Biodiversity to Biotechnology in Alexandria, Egypt:
- Elizabeth Goodman (with Dr. El Ezzi), Antioxidant properties of leaves from thyme herb in Lebanon,

At the UVU Chemistry Department symposium in Spring:
- Lueka Lloyd (with Dr. Cabe & Dr. Hansen (BVU)): Bladder Conditioning System,

At the American Chemical Society national meeting in San Diego:
- Sarafyn Ogden (with Dr. Cihak, BVU): Controlled drug release from magnetic liposomes by pulsed magnetic fields.

Department of Dental Hygiene

It has been an engaging year for the Utah Valley University Dental Hygiene Department. On April 7th the department held a “Sealant Saturday”, at which children from the community were invited to our clinic to receive free exams and tooth sealants. Under the guidance of Assistant Professor Danielle Knight and with the assistance of other faculty members, first- and second-year students helped over 45 children that day. There was even a visit from the tooth fairy (see photo). Additional service work by our students and faculty included providing fluoride varnish treatment at six locations; speaking to a Native American career education event, and providing service to the Sealants for Smiles Program.

To facilitate additional outreach to our community, Associate Professor Christina Veit received a grant that helps us improve the communication between our Spanish speaking patients and our students and faculty. Professor Veit led a seminar to teach simple phrases often used in a dental setting, and she discussed cultural issues in an effort to help us be more culturally competent when dealing with the community.

The graduating class of 2012 shows the high level of success that is typical of our students. Besides a 100% graduation rate, our graduates also posted a 100% pass rate on the three licensing boards for dental hygienists. One of our graduates, Elizabeth Pennell, was recently invited to join the faculty at our university, a sign of our commitment to excellence.

Students in our BS completion program internship course have traveled over 30 student presentations at professional meetings; a prestigious publication in Geobiology by Dr. Stephen Emerman and three UVU undergraduates; Dr. Emerman being named University Faculty Fellow in Ethics, Dr. Toke receiving a prestigious grant award from the Southern California Earthquake Center for research on the San Andreas fault; and service work in Nepal (Dr. Emerman & Dr. Anderson working in Nepal; Colton Norman, Andrea Sanchez, and Nathan Scown improving water quality and education on Fridays mornings. This program has been going on for three years. Several UVU students conducted research on the effectiveness of this program, and three of them will present their work to the Southwest District of the American Alliance for Health, Physical Education, Recreation and Dance conference in June.

We are very excited for the programs within our department and the success that we are seeing in our students. We encourage all students to come to our offices and let us know where they are going to work or continue their education.

University of Nevada, Reno

UConn’s students and faculty participated in the Annual Conference of the Western Society for Kinesiology and Wellness in Reno.

Students and faculty on a geology/biology trip to Nepal (Drs. Toke and Abe)
During the 2011-2012 year, the Department of Mathematics has been involved in several endeavors targeting the improvement of mathematics education, the recruitment of women into mathematics, and mathematics research projects. As part of the effort to improve math education, Christine Walk- er helped develop the Math 1030 technology-intensive concurrent enrollment course (which UVU will be piloting for our service area next year), and Kathy Andrich and Brad Roundy have done work on the TUNING project to help establish uniform outcomes for the mathematics degree statewide. We have also been working on changing the math remediation and placement requirements to help a higher percentage of students get through their remedial quantitative literacy mathematics sequence. We have been working on ways to deliver more relevant content to students in quantitative literacy courses, including learning communities work. Robert Palais has been preparing for a 400-student section of Math 1050, which we hope will allow us to accommodate every student who wants to take that class next year. Yingyan Zhu taught a new discrete mathematics course in preparation for the new degree emphasis in applied mathematics (which should begin next year). We have also been involved in the preparation of a statistics degree, which we hope will be approved in the next few years.

The topics of research presently being conducted in our department include DNA modeling, climate change modeling, Ricci flow, quantum probability, approximate fibrations and sticky Cantor sets, Hopfian groups, constructing Moore spaces from dense metric subspaces, comparisons between China and US mathematics education, Groebner bases, Wronskians, and a Calculus readiness preparation of a statistics degree, which we hope will be approved.

Several Nursing students and faculty members have been active with scholarly work. A total of three research papers written by our faculty (Hsu-Dihn Chen, Dianne McAdams-Jones, Mira Wyanan) are currently in press. On April 10th through 14th, Daniel Przybyla, Rebecca Warnick, Adam Fieber, Madison Nitkey, and faculty advisor Laurel Bradshaw attended the National Student Nurses Association Convention in Pittsburgh. They will present a poster and return inspired with a wealth of information and ready to embrace another year of Nursing.

Nursing students teach body by the profession at the Empowering Your Tomorrow event.

The great and dearly missed Lori Richards, Director of the department’s School Health Education program, and long-time UVU Hall of Fame Volleyball coach, died in February. As a mentor to thousands of students in over three decades of UVU service, Lori will be missed in the classroom and on the field of competitive athletics. On a more positive note Rebecca Brimhall, our department advisor, was selected as the UVU advisor of the year.

One of the great recent developments in the Department of Nursing was the approval of the Nursing Master’s program three years ago. This year we will see the first graduates from that program. Also, the Nursing Master’s program was granted initial accreditation from the Board of Commissioners of the National League for Nursing Accrediting Commission (NLNAC) at its meeting on March 1-2, 2012. The next evaluation will be in Fall 2016 and will coincide with the evaluation of the ABN and BBN programs. This was an extremely important event for the department, college and university.

The Department of Nursing continues to be involved with outreach projects. For the past several years, Utah Valley University Student Nurses Association (UVUSNA) members have helped with the Empowering Your Tomorrow and Expanding Your Horizons events at UVU, helping 6th to 12th graders learn about nursing as a career. Attendees are often fascinated by the Department of Nursing’s high fidelity human patient simulator.

During the 2011-2012 year the Department of Physics has been involved in several endeavors targeting the improvement of physics education, Baccalaureate degrees in physics, making a total of 59 graduates since 2004. This year’s graduates are Ryan M Badger, Hatt D Bean, Brigham S French, Jason C Irvine, Jeremy J Jorgensen, Michael R Jorgensen, Justin Z Leavitt, Logan J Manning, Donald H Nielsen, Jeremy J Redd, and Kevin E Shae. Six of these students have applied to graduate schools. To date Brigham S French and Kevin E Shae have been accepted at Ball State University in Indiana, and Michael R Jorgensen has been admitted into the Department of Geology and Geophysics at the University of Utah. The three others are waiting to receive their acceptance notices. On average, about half of the Physics graduates have gone on for advanced degrees.

In March, the Physics Department honored Nathan E Boyer and David A Pease as our Outstanding Students. Not only are Nathan and David excellent students, but they help others by working in the Peer Tutoring Center. Another physics/math student, Victoria A Trevino, won the tutor of the year for the Math Lab. She is also the reigning “calculus integration contest” champion for the last two years. This latter competition includes students from BYU and sometimes other Utah universities.

Our past graduates have gone on to great things. This year two of our graduates, Leland M Page and William J Gray, completed their PhDs, making a total of 5 of our graduates who have received this terminal degree. Another graduate, Garret D Dorch, will finish law school at Franklin Pierce in New Hampshire this May. He has specialized in patent law. Seven others have earned Master’s degrees and several others are close to completing graduate degrees. We are very proud of our physics students. They are truly at the heart of all our effort.

Many Physics majors have been active in undergraduate research. This past year we had over 10 student presentations at the Four Corners Regional Meeting of the American Physical Society, at a BYU acoustics meeting, at the National Conference of Undergraduate Research, and at the Utah Academy of Science, Arts, and Letters. We are proud of each of the presenting students. Two students won paper awards and 100 prizes for their papers: Michael R Jorgensen at the Four Corners Meeting and Michael A Pease at the annual BYU Acoustics Poster Competition.

One group of public health faculty from several institutions, including BYU, Utah State, and University of Utah to meet with the Governor, through their efforts, as well as that of other organizations, the bill was vetoed.

On a sad note Lori Richards, Director of the department’s School Health Education program, and long-time UVU Hall of Fame Volleyball coach, died in February. As a mentor to thousands of students in over three decades of UVU service, Lori will be missed in the classroom and on the field of competitive athletics. On a more positive note Rebecca Brimhall, our department advisor, was selected as the UVU advisor of the year.

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More examples of student activities and accomplishments in the College of Science and Health.

High School Science Day. As part of the celebration for the opening of the new Science Building, we hosted 370 high school students for a half-day science workshop. Here, students are learning about nursing professions.

Service work in Mexico. A UVU student tests water quality on a water development service project in central Mexico.

Health education work in Samoa. UVU nursing students teach health education to school children in Samoa.

Thank you to all our students for a great year and for helping to make UVU the great school that it is!

NEW FACULTY AND STAFF MEMBERS

In our quest to better serve our students, the College of Science and Health hired 14 new faculty members and 5 advisors this past year. This is a world-class group of science educators. We welcome all of you.