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Cover Photos: Dr. Dennis Welker advising a student; Dr. Frank Messina teaching General Biology; Dr. Daryll DeWald and Sherry Baker researching in the lab.

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**PHOTOGRAPHY:** KATHERINE MCCONKIE
1. DEPARTMENT PHILOSOPHY ON TEACHING AND LEARNING

“My goal as an educator/mentor is to give students the tools they need to be successful in whatever path they choose to take in life. This is achieved by carefully listening to identify their needs, acute perception of skills and weaknesses, honest and open communication. In the end, I hope my efforts advance the educational and personal growth of my students.”

~ Dr. Michelle Baker, Associate Professor of Biology ~

As the relevance of the biological sciences to human affairs has continued to expand, the Department of Biology has seen a significant increase in the number of students it serves, particularly at the undergraduate level. With over 800 undergraduates, 69 graduates, and advising over 200 additional prehealth students who have not declared biology as a major...indeed, one could be overwhelmed! Over the years, however, Biology has stepped up to deliver an excellent education to our students and assisted them as they have launched into a career, health professional school, or graduate school. How has the Department kept pace in the face of so many numbers? The answer is simple and lies in our department philosophy: we deal in students, not numbers, and Biology faculty and staff focus on the evolution of one student at a time.

“The engagement of students is critical. The responsibility and pressure for having engaged students lie mostly with the instructor. The key [is] to be approachable and demonstrably willing to have [a] give and take relationship with students.”

~ Dr. Jon Takemoto, Professor of Biology ~

There are three critical components to our philosophy: (1) faculty commitment to teaching that includes working side-by-side with students to mentor them and engage them in meaningful research experiences; (2) a rigorous curriculum that transcends mere requirements to foster an understanding of the aims and methods of science and an appreciation of the complexity of the natural world; and (3) top notch advising services that help students navigate their degree requirements and career options. However, there is a glue needed to bind these philosophical components together so that they can be used in educating our students. What is this glue? It can be expressed in one word: engagement. If faculty and staff are not engaged then effective teaching and learning do not take place. But, when faculty and staff are engaged then we effectively teach and participate in the learning of our students as they develop – or evolve – into scientists, educators, doctors, dentists, nurses, and professionals working in government and industry.
2. DEPARTMENTAL EXCELLENCE IN TEACHING AND LEARNING

“It’s important for students to examine scientific results in the context of the contemporary questions and debates in our scientific discipline. In doing so, students can assess these results in light of general concepts and ideas that will allow them to place their own learning and research into a larger context and generate novel questions they can study. My objective in the classroom and the laboratory is to provide students with opportunities to examine the scientific results, develop and ask pertinent questions, and then demonstrate their understanding and learning through appropriate mechanisms, such as an exam or their own research.”

~ Dr. Morgan Ernest, Assistant Professor of Biology ~

The Department of Biology’s mission is (1) to discover and advance knowledge in the life sciences and (2) to effectively impart that knowledge to students. We pursue this mission through three components:

- Comprehensive core research, teaching, and extension programs leading to degrees in Biology. These programs provide meaningful experiences for undergraduate and graduate students every step of the way and address the major topics of the life sciences. An important part of the student experiences includes engagement in research at both the graduate and undergraduate level.

- A prehealth career education and advising program that facilitates entry of its students into the health professions and with exceptional acceptance rates into health professional schools.

- A public-health program that provides pre-professional education in environmental health, industrial hygiene, and public health education.

Recognizing that we currently live in the Century of Biology (Science 27 February 2004), we consider ourselves to be like other scientific pioneers and explorers who advanced discovery of outer space, evolutionary processes, or nuclear physics. Biology is fantastically rich and to allow students to come to truly know biology, our faculty engage students in vital research programs that allow them to discover and learn alongside their faculty mentor. Whether doing research to learn how breast cancer cells metastasize or why a species of garter snake has evolved resistance to a highly toxic newt, the important thing is that students engage in the process of scientific discovery so that they can in turn advance scientific frontiers. This discovery occurs at both the undergraduate as well as the graduate level. For example, we have had undergraduates and graduates involved in...

Drs. Morgan Ernest and Ethan White Collaborating
research that has been published in two premiere scientific journals, *Science* and *Nature*. In pursuing research, our students have not simple studied the textbooks, they are discoverers. The benefit of these research efforts spreads even to those students who have chosen to not engage in undergraduate research. These students find themselves working alongside research scholars who mentor them in their learning processes. In this way, the teaching that faculty do outside of the classroom comes full circle to re-enter their classrooms through the research students they mentor.

2.1 COMMITMENT TO SUSTAINED EXCELLENCE IN TEACHING AND LEARNING

To sustain excellence in teaching and learning, in other words, to live the philosophy stated above, it is essential that we offer effective advising, teaching, and mentoring to our students. Without each of these vital components, then true learning does not occur. This section discusses how we in the Department of Biology live our commitment to excellence.

Undergraduate Program

**Advising:** With over 800 undergraduate majors as well as an additional 200+ students who have declared a prehealth emphasis, effective advising services is critical to the success of our students. In most cases, a student’s first encounter with Biology comes in our Advising Center. It is critical that this encounter be helpful and welcoming. Students must get the attention and assistance they need. The Center is staffed by a Director of Undergraduate Studies (faculty appointment), a faculty prehealth advisor, a professional staff advisor, an advising assistant, and several peer advisors. In addition, several other faculty play a curriculum and career advising role in the department and meet with students one-on-one to discuss the requirements of specific disciplines of interest to the student, such as evolutionary biology, ecology, animal behavior, cell signaling, etc. Never wanting to miss an opportunity to mentor and engage with students, our Director, Dr. Dennis Welker – who was named Outstanding New Faculty Advisor in 2005 by the National Academic Advising Association, has developed a core of peer advisors to work closely with him. Former peer advisor and Biology graduate, Stephanie Chambers (’05 BS, Biology), and currently a medical student at the University of Utah Medical School, shares her experience as a peer advisor:

“Under the direction of Dr. Dennis Welker, the Biology Advising office helps students make important academic decisions. It is through the coordinated efforts of the entire office, including student peer advisors, that student needs are met. Through working in the Biology Advising Office, I learned that Dr. Welker…is an excellent leader in teaching the student peer advisors how to work together to meet the common goal of advising students. Each of the peer advisors brought unique experiences to the office and Dr. Welker directed us in coordinating our talents to best meet evolving student needs.”
Teaching: Faculty engagement with teaching is obvious to the casual observer when the Biology curriculum and course delivery are reviewed. To begin, faculty – through their representatives on the Department's Curriculum Committee – have developed an overarching set of objectives for all department courses. These are:

1. Graduates will understand the processes and methodologies of science.
2. Graduates will master the core curriculum in:
   i. Biological Diversity and Classification
   ii. Growth and Development
   iii. Genetics and Reproduction
   iv. Energy and Matter in Biological Systems
   v. Regulatory Mechanisms and Behavior
   vi. Ecology
   vii. Evolution
3. Graduates will master the specialized curriculum in their area of emphasis as preparation for employment or advanced study.
4. Graduates will be proficient in mathematics and the physical sciences as required by their emphasis.
5. Graduates will be equipped with the skills and background to continue their education and remain current in their chosen field.
6. Graduates will understand the historical and social context of biological thought and research. They will understand the role and responsibility of biology to provide information to citizens related to the ethical, social and environmental issues related to the biological sciences.
7. Graduates will have effective communication skills.

Often, teaching a science curriculum can be a challenge because science in and of itself is challenging. Students must learn a completely new scientific language in addition to mastering complex material. To keep courses vital and fresh, Biology faculty regularly incorporate their research activities into the courses they teach. Course notes, lectures, and supporting materials are regularly updated. And, faculty have incorporated many classroom technologies such as personal response systems, informative web pages, and lecture recordings. Technology has proved a great boon for students as they learn the name of every bone in the body, the structure and function of cells, the operation of ecosystems, or the interplay of our sensory systems, or the regulation (and sometimes not!) of our food intake. One indicator, student course evaluations, demonstrates that Biology faculty prove effective in delivering a challenging, complex curriculum. Another indicator is the teaching honors given to faculty such as Anne Anderson who gave a Last Lecture in 1997, Greg Podgorski who was named 2006 College of Science Teacher of the Year, and Andy Anderson who is regularly chosen as students’ favorite professor.

As part of our course delivery, Biology routinely harnesses the talents of our graduate teaching assistants, undergraduate teaching aides, and undergraduate teaching assistants.
fellows. While faculty develop lab content and remain involved with the teaching of the lab sections of their courses, graduate and undergraduate students have an opportunity to develop their own teaching skills. Typically, faculty meet once a week with their teaching assistants to review the content of each lab being taught. These teachers-in-training can ask questions, pilot the material, and then prepare the experiments or exercises. This preparation helps them better understand how labs are developed and how they are effectively taught.

Faculty must be accessible to students. Accessibility is an important part of departmental culture. Even for the very large courses of 100 – 400 students, students know that their professor will see them and spend the necessary time with them.

**Mentoring:** Another critical element of evolving – or developing – our students is mentoring them. We can advise and we can teach but if we don’t mentor then most students cannot develop an appropriate context for all that they are learning. They need to be guided and shown how to apply all that they are learning. We would like to focus on three program areas in our department that illustrate how we mentor our students.

- **Undergraduate Research:** For a student to have an appropriate science education, that student needs to be engaged beyond the classroom. Since our mission is the training of biologists, Biology faculty have committed to providing undergraduates with a meaningful research experience.

The only way to become a scientist is through the practice of science. Research, whether in the lab or the field, breathes life into the study of biology and is an important reason why so many of our students are accepted to top medical and dental schools and to leading graduate programs. Undergraduates are encouraged to enroll in BIOL 5800/Undergraduate Research and work one-on-one with a faculty mentor on meaningful research. During fall semester 2006, 104 undergraduates actively conducted research under the direction of their faculty mentor. Many undergraduate research projects yield significant results that are reported at national and international scientific meetings, published in peer-reviewed scientific journals, or presented in a forum sponsored by USU Posters on the Hill. In addition, each semester we organize an Undergraduate Research Symposium that showcases all of the undergraduate research being done that semester. This symposium allows students to discuss their research in the setting of a scientific meeting. Each student presents a poster and discusses his/her work with faculty and staff during the course of the evening. Two or three of the students give research talks to the whole group. Everyone enjoys this event. Students get to flex their intellectual muscles and faculty have another opportunity to mold these young scientists. It is rewarding to see our undergraduate researchers receive research awards from organizations such as...
as the American Heart Association and the American Society of Microbiologists as well as USU awards. In the past few years, two Biology undergraduates have been accepted by the National Institutes of Health to participate in its prestigious post-baccalaureate fellowship program before they entered medical school.

Significant financial resources are committed to the undergraduate research experience. From research funds, faculty pay wages or stipends to their undergraduate researchers and provide support for supplies and for student attendance at research meetings. Faculty also seek extramural funding that supports undergraduate research experiences. For example, the Department, with the current department head serving as principal investigator, has overseen a very successful USDA-funded Multicultural Undergraduate Research Fellows program. In addition to USDA funding, the College of Science and the Vice President for Research’s Office have each provided an additional $10,000 per year during the granting period. This is likely to continue. The undergraduate research fellows are matched to a faculty laboratory where they begin an undergraduate research experience under the guidance of a faculty mentor. This program is nearing completion with 13 multicultural students having participated. Of those 13, two are currently in graduate school, one is doing research at the National Institutes of Health (NIH) as a research fellow before entering medical school in Fall 2007, nine are still students at USU with two of those planning on applying to medical school and, with one exception, the rest planning on going to graduate school. Several of these students have also obtained support for the research from the University’s URCO grant program. Many USDA Multicultural Research Fellows have also presented their work at the National Conference for Undergraduate Research and at professional scientific meetings. This grant effort demonstrates the level of commitment that faculty have to providing undergraduates with meaningful research experiences and the success that students have as a result of that experience.

Finally, faculty invest countless hours developing their students’ research skills. Perhaps the student needs help with written expression or needs guidance on how to give an oral presentation. Perhaps a beginning student cannot effectively read the scientific literature or write a correct literature citation. Whatever the need, faculty are there to work with students on an individual basis. One evidence of the effectiveness of Biology faculty is the fact that of the nine USU students chosen to present their research at the prestigious 2007 National Conference on Undergraduate Research (NCUR), four of those students were from Biology: Uyen Lam, Katherine Grover, Nicole Frank, and Kimberly Warburton. These young women continue a Biology tradition of excellent representation by students presenting their research at campus, national, and international meetings.

- **Prehealth Program**: One of the most successful programs in the Department and, indeed, at USU is its nationally recognized Prehealth Program. Of the almost 450 undergraduates who have declared a prehealth emphasis, well over 200 major in areas outside of biology. Biology serves all USU undergraduates who have an interest in going to medical or dental school, whether they are biology majors or not. Significantly, USU undergraduates experience stunning success when applying to medical or dental school: 83 percent of the students who applied to medical school for fall semester 2006 were accepted; 61 percent
were accepted to dental school. These numbers are consistent over many years and far exceed the national acceptance rate of fifty percent. When the past president of the American Medical Association learned of our students’ success, he visited to learn the reasons. He discovered that USU prehealth students (1) receive an excellent science education; (2) are engaged in a meaningful research experience; and (3) have attentive faculty mentors who make a significant investment in their students.

An outstanding feature of our Prehealth Program is the process that students go through as they prepare their applications for medical or dental school. The medical and dental school application process requires a great deal of faculty involvement in the development and writing of department recommendation letters. The process we have developed in Biology is very thorough as each student must be interviewed by three faculty members in addition to the prehealth faculty advisor and professional staff advisor. The faculty and advisors also take the opportunity to discuss student goals and academic experiences, coach them in effective interview skills, and provide tips for application preparation. Given this, it may not be so surprising that our students are highly successful when they apply to medical or dental school. Faculty involvement beyond the classroom has a demonstrable impact on how well our students compete. While one can never take credit for students’ innate intellectual abilities and drive to succeed, it is also true that faculty direct those abilities to help every student achieve their potential.

- **Public Health Program:** The Public Health Program is a jewel in USU’s crown of achievements. Students who participate in this program are extraordinarily successful in gaining employment in their field. Due largely to the tireless efforts of our Public Health faculty, it ranks among the top 10 programs in the United States. Additionally, the Industrial Hygiene component of the program is one of a handful of ABET-accredited undergraduate programs in the nation. ABET (American Board of Engineering Technology), the industry-based accrediting organization for the field of industrial hygiene, demands a rigorous academic experience.

Public health students benefit from a comprehensive science-based interdisciplinary curriculum that includes engineering courses. Faculty maintain close ties to industry, including serving as consultants, so that students know current industry trends. The faculty’s industry contacts also ensure that students have a wide variety of excellent internship opportunities since all public health students must participate in a capstone experience that involves a substantive summer internship in industry. It is no wonder that these well-prepared students enter a highly paid profession to perform critical work that protects the health of workers and the general public. And it’s not surprising that employers return year after year to recruit our public health students.
Graduate Programs

**Advising:** Biology has a strong graduate program that successfully recruits high quality graduate students. Our graduate students receive extensive advising from their faculty advisor, the Graduate Programs Director, the Graduate Programs Committee (GPC), as well as our Coordinator for Graduate Studies. We carefully monitor the progress of our graduates from the time they submit an application and, once accepted, through to the completion of their degree. The GPC, which includes a graduate student representative, meets weekly to discuss concerns, issues, and graduate programs business. Biology has developed a Graduate Handbook that is given to all graduate students and that is updated annually.

**Teaching and Mentoring:** Our graduate students represent the future of the academy and so our responsibility to teach is amplified. In Fall 2005, we began requiring all of our graduate students to enroll in a special section of BIOL 6750 titled “Introduction to Graduate Studies.” This one credit course covers an array of subjects from career development to building a research program to scientific ethics and integrity. It adds immeasurably to their regular coursework and research. The course has been well received. In addition to this and other conventional course offerings, faculty routinely develop special topics or special problems courses that address immediate student needs. For example, there may be a number of students who need to learn more about cell signaling, mediated by ion channels. In this case, faculty working in that area develop and team teach a course tailored for those students. Numerous special topics courses are developed and taught to meet student needs.

Graduate students are an important teaching resource for the department. And, because most of our graduate students seek careers in academia, it is our responsibility to provide them with as much guided teaching experience as possible. To help prepare them for this task, all Biology graduate students must participate in a department-sponsored teaching workshop before they may teach. While teaching labs, graduate teaching assistants are directed and mentored by the faculty member responsible for that course. In addition to teaching labs, graduate students are also a rich source for our regular course delivery. Whenever possible, we have them teach some of our standard classroom courses, usually during a faculty sabbatical leave. We also seek teaching opportunities for them at our regional campuses.

Significantly, in 2002 and 2006 Biology professors Jon Takemoto and Butch Brodie, respectively, were named as USU Graduate Mentors of the Year. Each exemplifies successful mentoring. Dr. Takemoto states that he sees his graduate students as his “academic offspring” and that he is “compelled to provide guidance and nurturing in ways that are not unlike rearing [my own] children.” Dr. Brodie’s weekly lab meetings are legendary as he welcomes students – both graduate and undergraduate – into his home to read and discuss the latest scientific literature. During these meetings there is lively
debate as well as intense critical analysis of student manuscripts, two of which were recently published in *Science* and *Nature* with a graduate student as first author!

### 2.2 Ongoing Assessment and Improvement of Teaching and Learning Quality

Biology carefully assesses all its programs using a varied and evolving set of protocols. Each program demands different assessment tools. Assessment practices are based on outcome data collected from the following sources: graduating senior exit surveys; placement of students into professional health programs; advising assessment; and curriculum assessment. Assessment practices for undergraduate programs include: analysis of student-teacher evaluations, analysis of College of Science exit surveys, required capstone courses in evolution (BIOL 5250) and public health (PUBH 5500), an undergraduate research conference, and admission rates into medical or dental schools. For the graduate program, assessment practices are based on: surveys of graduate students administered by the Biology Graduate Students Association, and annual analyses of graduate student enrollments, financial support, degree program progress, and career placement. In recent years, several data-based decisions have been made:

1. Advising Changes – a professional undergraduate advisor with an advanced degree in biology was hired in 2004 and the position of advising assistant was created to improve advising services to Biology undergraduates.
2. Physiology Curriculum and Teaching Changes – adoption of name and content changes for the “Comparative Animal Physiology Lab” to “Animal Physiology Lab” and offering the course twice a year instead of only once; recruitment of a new instructor for the Comparative Animal Physiology course; creation of a new physiology faculty position funded by Tier II tuition; overall increase of physiological instruction faculty from four to six.
3. Capstone Course – exploration of ways to modify and improve the BIOL 5250 (Evolutionary Biology) capstone experience, including offering, smaller sections each semester to allow for improved ability to assess depth of knowledge, oral communication and writing skills.
4. Uses of Assessment Data between 1995 and 2002 – seven areas were addressed including reducing credits of freshman series from 10 to eight credits; co-op class opened to all biology related fields; public health education electives in HEP courses changed; public health IH calculus and organic chemistry requirements reduced; 2000-level genetics course changed to 3000-level; application dates of College and Department scholarships coordinated and advertised together; and offering several more special topics courses at both the undergraduate and graduate level to accommodate student requests for learning opportunities in specialized areas.
2.3 Faculty Development for Teaching

When new faculty are hired into the Department of Biology, they are quickly assigned a teaching mentor. This mentor is chosen from our most successful course instructors and provides guidance in course development and delivery. The department head annually attends at least one lecture given by all non-tenured, tenure-track faculty. In addition, each P&T committee member annually attends and evaluates a lecture given by the non-tenured faculty. An evaluation form with numerical and written components is utilized by committee members to provide comments and suggestions with the aim of helping new faculty members improve their teaching.

Even seasoned faculty can make improvements in their teaching. To this end, the promotion and post-tenure review processes are utilized to address needed improvements to faculty who are associate and even full professors. During these evaluations, committee members attend the lectures of their colleagues and provide comments and any needed recommendations. In this way, faculty can help one another continually respond to the needs of the students.

In addition to mentoring new faculty in their teaching responsibilities, many seasoned faculty make direct contributions to the craft of teaching by publishing or reviewing textbooks. There is also general interest in participating in other activities that enhance teaching. For example, in March 2007, the Department is sponsoring a faculty member to attend a national conference on recruiting and mentoring Hispanic students. In addition, the Department will sponsor two faculty members, including one of our Biology faculty at the Uintah Basin campus, to attend The National Academies Summer Institute on Undergraduate Education in Biology. The cost to participate in this conference is sizeable but we believe it is important to the further development of our curriculum here and in the Uintah Basin and thus our other regional campuses and distance education sites.

2.4 Provision of Resources for Students

Any classroom experience, particularly in the sciences, requires various facilities that give students the opportunity to have as many hands-on experiences as possible. In addition to our 11 teaching labs, we maintain a greenhouse, an internationally recognized insect collection, a DNA sequencer, a laser scanning confocal microscope, and have a close collaborative relationship with the Center for Integrated BioSystems and the USDA-ARS Bee Biology and Systematics Lab. In addition, our Intermountain Herbarium provides students with a rich opportunity to work with and identify plant species found throughout the Intermountain West. We also regularly take our students into the field for such courses as Ornithology, Field Ecology, and Discovering Utah’s Biodiversity.

Over the years, we have also sought out our brightest and most motivated undergraduates to serve as undergraduate teaching assistants (UTAs). In recent years, with funding provided by the Provost’s Office, we have recruited these students to serve as Undergraduate Teaching Fellows (UTFs). Faculty mentor the UTAs and UTFs, all of whom register for a teaching internship. These students unanimously express how invaluable this experience is. During the past two years, we have been able to work with approximately 20 undergraduates per year due to the large number of teaching labs we offer each semester.
## Faculty Awards and Recognition

**Utah State University**

### Teacher of the Year – College of Science
<table>
<thead>
<tr>
<th>Year</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1979</td>
<td>Ivan G. Palmblad</td>
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<tr>
<td>1980</td>
<td>James A. MacMahon</td>
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<tr>
<td>1983</td>
<td>Thomas L. Bahler</td>
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<tr>
<td>1992</td>
<td>Raymond I. Lynn</td>
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<tr>
<td>1994</td>
<td>D. Andy Anderson</td>
</tr>
<tr>
<td>2004</td>
<td>Joseph R. Mendelson III</td>
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<tr>
<td>2006</td>
<td>Gregory J. Podgorski</td>
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### Faculty Honor Lecturer
<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
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<tbody>
<tr>
<td>1993</td>
<td>Jon Y. Takemoto</td>
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### Last Lecture
<table>
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<tr>
<th>Year</th>
<th>Name</th>
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<tbody>
<tr>
<td>1997</td>
<td>Anne Anderson</td>
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### Researcher of the Year
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<tbody>
<tr>
<td>1990</td>
<td>Jon Y. Takemoto</td>
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<tr>
<td>1991</td>
<td>Anne Anderson</td>
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<td>1993</td>
<td>D. Andy Anderson</td>
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<td>1996</td>
<td>Keith A. Mott</td>
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### D. Wynn Thorne Research Award
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<tbody>
<tr>
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<tr>
<td>1998</td>
<td>Keith A. Mott</td>
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<tr>
<td>2001</td>
<td>Edmund D. Brodie, Jr.</td>
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### Advisor of the Year
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<thead>
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<tbody>
<tr>
<td>1983</td>
<td>Thomas L. Bahler</td>
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<tr>
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<td>1988</td>
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<td>D. Andy Anderson</td>
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<td>1996</td>
<td>Richard J. Mueller</td>
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<td>2000</td>
<td>David B. Drown</td>
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<td>2004</td>
<td>David Wallace</td>
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<tr>
<td>2005</td>
<td>D. Andy Anderson</td>
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### Outstanding New Faculty Advisor
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<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>2005</td>
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### Undergraduate Research Mentor
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<tbody>
<tr>
<td>2003</td>
<td>Dennis Welker</td>
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<tr>
<td>2004</td>
<td>Daryll B. DeWald</td>
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### Graduate Mentor of the Year
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<td>2006</td>
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### National and Other Recognition

#### “Top Professor” by Mortar Board Society
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<th>Year</th>
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<td>1992</td>
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<td>D. Andy Anderson</td>
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<td>1999</td>
<td>Joseph K.-K. Li</td>
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<tr>
<td>2002</td>
<td>Edmund D. Brodie, Jr.</td>
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<tr>
<td>2005</td>
<td>Dennis Welker</td>
</tr>
<tr>
<td>2006</td>
<td>D. Andy Anderson</td>
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</tbody>
</table>

### Faculty Recognition

#### “Professor of the Year” by International Student Council
<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
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<tbody>
<tr>
<td>1992</td>
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#### “USU Friend of Students Award” by USU Student Services
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<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>1996</td>
<td>D. Andy Anderson</td>
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#### “Professor of the Year” by Presidents Leadership Council
<table>
<thead>
<tr>
<th>Year</th>
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</thead>
<tbody>
<tr>
<td>1999</td>
<td>D. Andy Anderson</td>
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#### “Favorite Professor” by University Diversity and Multicultural Center
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<thead>
<tr>
<th>Year</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>Joseph K.-K. Li</td>
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#### Alumni Award of Excellence – Western Oregon University
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<th>Year</th>
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<tr>
<td>2002</td>
<td>Edmund D. Brodie, Jr.</td>
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#### Outstanding New Faculty Advisor – National Academic Advising Association
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<tr>
<th>Year</th>
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<tbody>
<tr>
<td>2005</td>
<td>Dennis Welker</td>
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#### Plaque of Appreciation from USU Predental Students
<table>
<thead>
<tr>
<th>Year</th>
<th>Name</th>
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<tbody>
<tr>
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<td>D. Andy Anderson</td>
</tr>
</tbody>
</table>
The Department also encourages and support student-sponsored clubs including Alpha Delta Epsilon (AED), the prehealth national student organization; Women in Medicine; and the American Society of Microbiology.

Faculty also organize journal clubs for both graduate and undergraduate students. At the journal clubs, students read and discuss papers from the current literature. The Department also sponsors a seminar series during the academic year that provides students an opportunity to hear from invited speakers from other universities or research organizations who are leaders in their field.

Financial support is often key to enabling students to focus on their studies. The Department has several scholarships that it awards to students based on their academic achievements and financial need. In Spring 2006, we were able to award scholarships to 25 deserving students. Undergraduate awards ranged from $500 to $1,200 for the academic year while the graduate awards ranged from $1,000 to $15,000. In addition, all graduate students who are accepted into our program are guaranteed financial support as teaching or research assistants for the duration of their program, as long as they are progressing in their program in a timely fashion. In addition, the Department works closely with graduate students as they prepare applications for college- and university-level awards. This allows students to focus on their academic work and not worry about financial constraints while completing their degree.

2.5 Linking of Discovery, Creative Activity, and Engagement with Teaching and Learning for the Benefit of Students

In the narrative above, we have outlined and discussed the various ways in which we link discovery, creative activity, and engagement with teaching and learning for the benefit of our students. At the risk of being repetitious, we would like to restate how important it is for us to engage our students. Engagement requires extra efforts beyond the classroom but without that effort, teaching and learning cannot effectively occur. However, through meaningful advising, teaching, and mentoring in areas such as undergraduate research and, in our case, our prehealth and public health programs, then we can make a difference in our students’ education and help them reach their potential. This is what we are about.
3. Evidence of Recognition by Others

- Stephanie J. Chambers, ’05 BS, Biology

“As a sophomore and research assistant in a cell signaling lab, I was invited to join the Cell Signaling Journal club. One example of the department’s dedication to teaching outside the classroom occurred when I presented a paper on an assigned topic at one journal club meeting. As an introduction to public speaking, the task was daunting, and my dissemination of the paper’s results was a disaster. Dr. Jon Takemoto approached me afterwards and, although I had never formally met him, offered to help me become a better public speaker. Subsequently, he gave me experienced insight into presenting material to a scientific audience. I appreciated his guidance very much. As I now prepare to give a neurology grand rounds lecture on my research to over 100 medical school faculty, a rare opportunity for a second year medical student, I feel much more confident because of Dr. Takemoto’s mentorship. He exemplifies the culture of teaching excellence that exists in the Biology Department.

“. . .In conclusion, I believe the Biology department deserves recognition for its continual dedication to and development of programs that both encourage and produce undergraduate achievement. This could not exist without the investment of time and resources by the entire department. I was always impressed that my experiences in the Biology Department were not unique. Many of my fellow students participated in projects under the direction of a faculty mentor that resulted not only in poster presentations or publications, but professional skill development lending to subsequent personal successes. Perhaps the most significant endorsement of the Biology Department is my encouragement of my younger brother, Matthew, to pursue his bachelor’s degree in biology. I know that it is important for Matthew to be involved in a culture that will challenge, and not stifle, his creativity. He is currently working in the lab of Dr. Takemoto and enthusiastically relates to me what he is learning. I am confident that he will find opportunities not provided elsewhere to achieve success. The faculty members in the Biology Department have a genuine desire to provide students with the best possible learning opportunities and are dedicated to creating learning environments that engage students’ individual interest. I heartily recommend them for this award.”

- M. William Lensch, Ph.D. - ’91 BS, Biology

“I write to you today as a former student myself, albeit a terrible one. I think that it is easy to invest one’s attention where it has the greatest likelihood of contributing to success; to get behind a winning horse so to speak. However, to take the time to nurture someone where there is every indication of wasted effort is a different matter. It would not surprise me to hear that anyone considered me to be in this latter category when I was an undergraduate at USU. But, I kept trying. I am not certain where the entirety of this determination came from, but I do know without a doubt, that I am a scientist today because there were people who cared about me when I was struggling. Mentors held me up and pushed me onward. Good people invited me into their
laboratories, into their homes, and into their lives. A student goes to college to learn and the classrooms within the Department of Biology offer the world to willing ears. However, the pearls of my education were found between classes and under the guidance of people who saw more in me than was perhaps outwardly apparent. Dennis Welker, Joanne Hughes, Jim Bowman, Joe Li, Greg Podgorski, Beth Hood, Jon Takemoto, and others. I owe them all such a huge debt. I do my best to repay this debt whenever I am asked for advice, or time, or help — in particular when it looks like it might not be worth the effort. These people’s interest in my dreams reinforced the foundation of my entire life and I have built upon it. I do not know exactly what is ahead for me, but it is science. It will always be science.

“In closing, I feel that I have done well in my career and have a wealth of colleagues to show for it. Simply put, it would have never happened for me were it not for educators, Professors, mentors in every way, and the great fortune to find them when and where I did, in the Biology Department of Utah State University. I can think of no greater praise than this.”

- Becky L. Williams - ‘98 BS, ’02 MS, Biology

“After obtaining a Masters Degree in Biology at USU, I enrolled in a PhD program in Integrative Biology at the University of California, Berkeley. While at USU, I noted that the Biology faculty excelled at several aspects of teaching, including classes, but also extending to more intangible areas such as undergraduate career and research mentoring, unusually high collaboration of faculty and students, and the availability of faculty outside of formal office hours for class, research, or general discussions. The teaching strategies I witnessed pervade my own pedagogical philosophy and I happily commend the Biology Department for their outstanding skills and commitment to teaching.

“While enrolled in undergraduate classes, the faculty impressed me as exceptional researchers, with an uncommon ability to communicate complex concepts to beginning biology students. Biology faculty conveyed information by all three learning modalities (visual, auditory, and kinesthetic) to facilitate learning for all students. A plethora of graphs and diagrams, computer models, and videos allowed me to visualize events on a molecular scale or quantitatively evaluate relationships between two abstract factors, for example behavior and external stimuli. Dr. Messina rephrased each evolutionary biology concept in class such that students progressed past simple memorization without comprehension and began to describe the processes in their own words.

“ During my graduate experience [at USU], I began to teach labs and assist courses. The teaching assistants I had as an undergraduate had infused me with their enthusiasm for biology and were proficient as teachers. This was a large factor in drawing me into the department and my choice of biology as a major. Understandably I was nervous to tackle the difficult task of teaching well. Many professors and fellow
graduate students served as teaching mentors. Professors encouraged creativity and contributed to discussions of how to improve each ensuing reiteration of a course. The faculty in the Biology Department committed significant amounts of time to improving each course they taught each time they taught. I received exemplary mentoring from not only official advisors and professors whose classes I assisted, but many biology faculty.

"...The generosity, enthusiasm, professional collaboration, and the commitment to teaching and students by such a large faculty group ultimately influenced my career choices. I only hope to inspire other students as the members of [the] Biology Department at USU inspired me.”

- Ryan Neal Jackson, current MS Candidate and Graduate Teaching Assistant - '05 BS, Biology

“In the 10 years that I have had association with the Biology Department I have noted that they are committed to excellence in teaching and learning. As a freshman straight out of High School I enrolled in Dr. Andy Anderson’s Human Physiology course to meet a general education credit in the life sciences. At that time I had interest in many fields of study and had no idea of which of the many majors available I would choose. Andy Anderson’s class was entertaining, challenging and rewarding. I remember that my first test score was a D. To help the students succeed Andy recorded all his lectures and made them available at the Sci-Tech library to review. Andy recruited many qualified undergraduate volunteers and graduate teaching assistants to help his students prepare for his difficult exams that required critical thinking skills. After receiving my D I took advantage of the many opportunities that were available to me to excel at the course. With the help of Andy, the advice of the many student volunteers, and hard work I earned a B grade out of the course. My experience was so rewarding that I took Human Anatomy Spring of 1998 also taught by Andy Anderson. Because of these experiences I became highly interested in a career in the life sciences.”

- Jeffrey M. Huffman, MD - '91 BS, Biology

“I thought that my education at USU was the best it could be. I was wrong. It has been improved! Since returning to work in Logan, I have had the opportunity to volunteer as a mentor to pre-med students from USU. This is a new program since I was a student. I have also been involved interviewing pre-med students in preparation for their applying to medical school. This is also new since my time. Both of these programs offer practical experiences. I feel the program is even stronger than when I was a student. I cannot comment on how the rest of the Biology Department is doing, but if the pre-med program is any indicator, it is thriving.”
“Since returning to Logan I have been honored to teach a guest lecture in Dr. Andy Anderson’s anatomy class. I will also be teaching this month in an ethics class about end of life issues. I am glad that in some small way I am able to give back to the Department that has given so much to me.”

- Glen de Guzman - ’06 BS, Biology

“I am writing this letter on behalf of the Department of Biology for the 2007 Department Teaching Excellence Award. During my undergraduate career at USU, the Department of Biology served as more than a lecture hall and laboratory-based facility; it was my home that cultivated my personal growth and helped me to reach my potential.

“As an incoming freshman, there were many things I was uncertain of, but one thing I was confident about was my interest and passion in biological science. Fortunately, the faculty and staff at the Department of Biology were most helpful in creating a suitable environment to satisfy my intellectual curiosity. Whether I was in need of advice at the Biology Advising Office, in search of an explanation, or a mere conversation, there was always someone to guide me and to foster my intellectual needs. More importantly, the research opportunities available in our department had a significant impact to me as a student and to my future career.

“Through the mentorship of faculty members, Dr. Michelle Baker and Dr. Daryll DeWald, I became heavily involved with research and benefited from many of its opportunities. Through research, I learned to integrate the concepts I learned in class and to apply it into practical knowledge. Additionally, it helped me to improve my analytical skills, to think critically, and to broaden my understanding about science. Research has become an additional learning tool in my educational experience. There are no words that could describe my gratitude for the guidance that my mentors have provided to me. Throughout the years, they continue to advise and motivate me especially during difficult times. Truly, they have been more than advisors, professors, and councilors in my life; they have also become my closest friends.

“Overall, my experience at the Department of Biology is filled with cherished memories. It was a nurturing environment that motivated me to be actively involved in many of our departmental programs. After graduating, I felt equipped with the necessary tools needed to be a productive individual both in our society and scientific community. My background in research has influenced me to further my study as a research fellow at the National Institutes of Health. In Fall 2007, I will begin studying for my medical degree at Penn State and in the future hope to be involved in clinical research. Without a doubt, the USU Department of Biology has had a long, positive impact on my life; I attribute my achievements to the faculty and staff who continue to motivate and inspire their students.”
Brandon R. Lloyd - '06 BS, Biology

“It is evident that good classroom instruction goes a long way in helping students decide on a major. Many of my classroom instructors kept me stimulated mentally and catalyzed my desire to pursue a medical profession. Dr. Andy Anderson, Dr. Joseph Li, and many others challenged my mind and kept their office doors open so that I could overcome my areas of weakness when tackling subjects such as Human Physiology and Immunology. In addition, my instructors were particularly good at relating biology to the way we interact with the world around us. Dr. Ted Evans, my Field Ecology professor, was particularly good at this. When our class went on hikes through Logan Canyon, I promise you that not one student hiked the trail as fast as he did. He loved to teach and loved it when students learned.

”. . . I was greatly impacted by the dedication to learning that the Biology faculty maintained outside of the classroom. Many of the professors made ways for students to become involved with biology outside of coursework. In this area, USU soars high above most academic institutions. I have noticed this as a professional student where I interact with many other top ranked graduates on a daily basis. Most students never have an opportunity to work with mutated genes write grant proposals. I was afforded the opportunity to do these things and many more. The department made a way for me to get academic credit for the time I spent in research by creating the course Biol 5800 (Undergraduate Research), which allowed me to be graded by a faculty mentor who guided me in a research topic. My mentor was Dr. Katarina Strofekova. This professor did measures to help my colleagues and me. Through her, we became involved in the research of ion channels. We worked with DNA on a daily basis and became familiar with much of the literature in the field regarding ion channel proteins. Our mentor helped us write grant proposals (which were funded) and also guided us in making research posters which we presented at the Evening of Research held by the Biology Department during Fall and Spring semesters. Dr. Strofekova would critically analyze our data, results, figures, and writing so that our research presentation and conclusions would be as concise as possible. She was not content to have us just doing work in the lab. She wanted us to get involved and become something more. She got us involved in some of the research groups in the department, such as the Cell Signaling and Ion Channel Physiology groups. The purpose of these groups is to bring together researchers and investigate the current studies and publications so as to stay at the cutting edge of research. The faculty of the Biology Department welcomed us to these groups and fellowshipped us. We were able to sit among the great minds of the department and learn current research methods and hypotheses around the world.

“The last area of excellence in the Department that I must emphasize is that of student leadership and teaching. I was given room for growth in these two areas as I may have never had in other departments. First, I was given a chance to be an Undergraduate Aide to the Human Physiology courses (twice). . . Furthermore, the department maintains positions for peer advisors: students who work a few hours a week in the advising office and help other students. I was helped by the peer advisors in the office the year before applied to dental school. Later, I was given the opportunity to work in this capacity and help other students delineate their educational path in preparation for programs such as Pharmacy, Medicine, Dentistry, and Chiropractics.”
### Student Awards and Recognition

#### Utah State University

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<thead>
<tr>
<th>College of Science - Valedictorians</th>
<th>1988</th>
<th>Zoe G. Cardon</th>
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<td>Steven R. Burt</td>
<td>2000</td>
<td>Tasha vonNiedehausern</td>
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<td></td>
<td>1994</td>
<td>Ronald Call</td>
<td>2006</td>
<td>Julie F. Crockett</td>
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<td></td>
<td>1988</td>
<td>Zoe G. Cardon</td>
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<td>J'Dee Wilson</td>
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<td></td>
<td>1993</td>
<td>Paul F. Cliften</td>
<td>1997</td>
<td>Kevn Mark DeWall</td>
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<td></td>
<td>1995</td>
<td>Rodrick Taylor</td>
<td>2000</td>
<td>Tyler L. Christensen</td>
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<tr>
<td></td>
<td>2000</td>
<td>Tasha vonNiedehausern</td>
<td>2001</td>
<td>Rodrick Taylor</td>
</tr>
<tr>
<td></td>
<td>2001</td>
<td>Kurtis B. Reed</td>
<td>2004</td>
<td>Glendell S. deGuzman</td>
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<table>
<thead>
<tr>
<th>Robins Award – Scholar of the Year</th>
<th>2004</th>
<th>Kurtis B. Reed</th>
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<tr>
<th>College of Science and Robins Award - Undergraduate Student Researcher</th>
<th>2006</th>
<th>Glendell S. de Guzman</th>
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</thead>
</table>

| College of Science – Graduate Student Researcher | 1992 | Robin Buell |
|                                                 | 1999 | Thomas N. Buckley    |
|                                                 | 2000 | Sedonia D. Sipes     |
|                                                 | 2004 | Daniel G. Mulcahy    |
|                                                 | 2006 | Chris R. Feldman     |

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<tr>
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#### National

<table>
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<th>Barry M. Goldwater Scholarship</th>
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<th>Stephanie J. Chambers</th>
</tr>
</thead>
</table>

*Undergraduate Research Symposium – Fall 2006*
4. ATTACHMENTS

Letter from M. William Lensch, Ph.D. ('91 BS, Biology):

February 5, 2007

Selection Committee for the Teaching Excellence Award
Office of the Provost
Utah State University
Logan, Utah 84322-1435

Dear Committee Members,

It is a sincere honor to write a letter in support of recognizing the Utah State University Department of Biology with a Teaching Excellence Award. Perhaps my point of view is biased as I am a former Biology undergraduate (Class of '91). However, in the years since my attendance there, I have been fortunate to study and train in a variety of other settings including the University of Pennsylvania (Non-Traditional Graduate Studies, 1993-95), Oregon Health Sciences University (Molecular and Medical Genetics, Ph.D., 2002), the Whithead Institute for Biomedical Research at MIT (Research Fellow, 2002-04), and most recently the Harvard Medical School (Research Fellow, 2004-06; Instructor (in progress) 2006 onwards). Uniformly, these other experiences, while valued immensely, have only made me appreciate my time in Logan even more.

I came to USU from a small farm on a rural route near Lehi, Utah. My mother was a widow and to say that we were poor would be generous. Everything about college was new to me and very difficult. Looking back, it is clear that I knew nothing at all except that I wanted a different life than anyone else I knew. I wanted to be a scientist. I had no idea what that really meant or how (if) I would get there. I stumbled, received good grades, poor grades, withdrew twice, came back each time, and on a sunny day in June became the only college graduate in the history of my family name. It is a measure of pride that perhaps means something only to me, but I cherish it. I may not have come from educated people, but I most certainly have come from good people. I was raised to appreciate what I have, to help whenever I can, and to never be so proud as to refuse assistance when I really needed it. These lessons are why I am writing today.

I am certain that the Biology Department claims many excellent alumni. I was fortunate to know several of them during my own time in Logan. I write to you today as a former student myself, albeit a terrible one. I think that it is easy to invest one's attention where it has the greatest likelihood of contributing to success: to get behind a winning horse so to speak. However, to take the time to nurture someone where there is every indication of wasted effort is a different matter. It would not surprise me to hear that anyone considered me to be in this latter category when I was an undergraduate at USU. But, I kept trying. I am not certain where the entirety of this determination came from, but I do know without a doubt, that I am a scientist today because there were people who cared about me when I was struggling. Mentors held me up and pushed me onward. Good people invited me into their laboratories, into their homes, and into their lives. A student goes to college to learn and the classrooms within the Department of Biology offer the world to willing ears. However, the pearls of my education were found between classes and under the guidance of people who saw more in me than was perhaps outwardly apparent. Dennis Weiker, Joanne Hughes, Jim Bowman, Joe Li, Greg Podgorski, Beth Hood, Jon Takenoto, and others. I owe them all such a huge debt. I do my best to repay this debt whenever I am asked for advice, or time, or help - in particular when it looks like it might not be worth the effort. These people’s interest in my success reinforced the foundation of my entire life and I have built upon it. I do not know exactly what is ahead for me, but it is science. It will always be science.

In closing, I feel that I have done well in my career and have a wealth of colleagues to show for it. Simply put, it would have never happened for me were it not for educators, professors, mentors in every way, and the great fortune to find them when and where I did, in the Biology Department of Utah State University. I can think of no greater praise than this.

Sincerely,

M. William Lensch, Ph.D.
Instructor of Pediatrics (in progress)
and Staff Scientist
Division of Hematology/Oncology
Children’s Hospital Boston
Department of Biological Chemistry and Molecular Pharmacology
Harvard Medical School
Affiliate, Harvard Stem Cell Institute
Letter from Stephanie J. Chambers ('05 BS, Biology)

February 7, 2007

To whom it may concern,

As a baccalaureate graduate from and former research assistant in the Utah State University Biology Department, I was able to know many faculty members. Their dedication to student education and professional development provided opportunities for me that led to my receipt of the Barry M. Goldwater scholarship (a national scholarship for students in the fields of science, mathematics, and engineering) as well as acceptance to the University of Utah School of Medicine. When I learned that the Biology Department was a finalist for the Department Teaching Excellence Award, I was extremely pleased. I enthusiastically support their nomination for several reasons, but will give examples through three professors who exemplify excellence in teaching.

As a sophomore and research assistant in a cell signaling lab, I was invited to join the Cell Signaling Journal Club. One example of the department’s dedication to teaching outside the classroom occurred when I presented a paper on an assigned topic at one journal club meeting. As an introduction to public speaking, the task was daunting, and my dissemination of the paper’s results was a disaster. Dr. Jon Takemoto approached me afterwards and, although I had never formally met him, offered to help me become a better public speaker. Subsequently, he gave me experienced insight into presenting material to a scientific audience. I appreciated his guidance very much. As I now prepare to give a neurology grand rounds lecture on my research to over 100 medical school faculty, a rare opportunity for a second year medical student, I feel much more confident because of Dr. Takemoto’s mentorship. He exemplifies the culture of teaching excellence that exists in the Biology Department.

Dr. Brett Adams served as my research mentor for over three years. During this time, I became acquainted with many faculty members and learned of the amount of time they spent preparing for classroom lectures as well as training and teaching undergraduates. As Dr. Adams guided me through several URCO grant proposal drafts, he was extremely patient in teaching me the writing skills that would be required for future professional work. I recognize the tremendous effect that Dr. Adams’ tutelage had on my writing abilities, as it enabled me to communicate sometimes complex ideas in a short amount of space. Having myself recently submitted a fellowship application to improve medical evacuations in wilderness expeditions, I greatly appreciate Dr. Adams’ experience as an excellent writer, as it has enabled me to pursue opportunities for which I would have otherwise been unprepared. Dr. Adams showed me that time spent on the behalf of the biology students was not limited to just preparing for classroom lectures.

Under the direction of Dr. Dennis Welker, the Biology Advising office helps students make important academic decisions. It is through the coordinated efforts of the entire office, including student peer advisors, that student needs are met. Through working in the Biology Advising office, I learned that Dr. Welker is not only an excellent teacher of genetics (I had been one of his students), but that he is also an excellent leader in teaching the student peer advisors how to work together to meet the common goal of advising students. Each of the peer advisors brought unique experiences to the office and Dr. Welker directed us in coordinating our talents to best meet evolving student needs. Under Dr. Welker’s direction, the other students and I learned how to work as a team to serve a diverse range of students. Currently, I use these same teamwork skills as a member of The National Center of Excellence in Women’s Health Demonstration
Project at the University of Utah, a group of faculty and health care professionals, in coordinating health resources for women in the state of Utah.

In conclusion, I believe the Biology Department deserves recognition for its continual dedication to and development of programs that both encourage and produce undergraduate achievement. This could not exist without the investment of time and resources by the entire department. I was always impressed that my experiences in the Biology Department were not unique. Many of my fellow students participated in projects under the direction of a faculty mentor that resulted not only in poster presentations or publications, but professional skill development lending to subsequent personal successes. Perhaps the most significant endorsement of the Biology Department is my encouragement of my younger brother, Matthew, to pursue his bachelor’s degree in biology. I know that it is important for Matthew to be involved in a culture that will challenge, and not stifle, his creativity. He is currently working in the lab of Dr. Takemoto and enthusiastically relates to me what he is learning. I am confident that he will find opportunities not provided elsewhere to achieve success. The faculty members in the Biology Department have a genuine desire to provide students with the best possible learning opportunities and are dedicated to creating learning environments that engage students’ individual interests. I heartily recommend them for this award.

Sincerely yours,
Stephanie J. Chambers
Letter from Becky Williams, (’98 BS and ’02 MS, Biology):

UNIVERSITY OF CALIFORNIA, BERKELEY

6 February 2007

Selection Committee for Teaching Excellence Award
Office of the Provost
Utah State University
1435 Old Main Hill
Logan, UT 84322-1435

I am writing to detail my support for the Department of Biology at Utah State University (USU) for the Department Teaching Excellence Award. My career path in academia was singularly influenced by my undergraduate experience at USU. After obtaining a Masters Degree in Biology at USU, I enrolled in a PhD program in Integrative Biology at the University of California, Berkeley. While at USU, I noted that the Biology faculty excelled at several aspects of teaching, including classes, but also extending to more intangible areas such as undergraduate career and research mentoring, unusually high collaboration of faculty and students, and the availability of faculty outside of formal office hours for class, research, or general discussions. The teaching strategies I witnessed pervade my own pedagogical philosophy and I happily commend the Biology Department for their outstanding skills and commitment to teaching.

While enrolled in undergraduate classes, the faculty impressed me as exceptional researchers, with an uncommon ability to communicate complex concepts to beginning biology students. Biology faculty conveyed information by all three learning modalities (visual, auditory, and kinesthetic) to facilitate learning for all students. A plethora of graphs and diagrams, computer models, and videos allowed me to visualize events on a molecular scale or quantitatively evaluate relationships between two abstract factors, for example, behavior and external stimuli. Dr. Messina rephrased each evolutionary biology concept in class such that students progressed past simple memorization without comprehension and began to describe the processes in their own words. Hearing the fresh delivery of each concept provided a review of each concept without repetitiveness. Finally, I cannot emphasize enough the importance of hands-on experiments in labs that teach theory with real biological systems. For example, color phases of bean plants and meal worms illustrated the concept of Hardy-Weinberg equilibrium whereas other biology programs use proxies such as colored beads. Even many lectures became kinesthetic when faculty passed around authentic examples of relevant specimens, such as fossils.

Teaching excellence in the department carried far beyond classes to career and research mentoring for undergraduates. My undergraduate advisor, Dr. Evans, asked me a life-changing question—what do you enjoy? Previously I had viewed employment as an unhappy requirement to support oneself, but the following discussion opened a world of career possibilities. Options for practical training such as undergraduate research abound in individual labs, and support in the form of grants and awards, such as the Undergraduate Research and Creative Opportunities grant and the Department of Biology Scholarship, are plentiful. I acquired a paid position assisting in Dr. Brodie’s lab—particularly desirable as I financially supported myself and could not afford to volunteer. These kinds of opportunities open the door for less advantaged students. Dr. Brodie encouraged me to conduct
undergraduate research that I later published as first author in a peer-reviewed journal. Given the nurturing environment, I stayed to conduct graduate research in the Brodie lab. In fact, Dr. Brodie received an award for Outstanding Graduate Mentor in 2006.

During my graduate experience, I began to teach labs and assist courses. The teaching assistants I had as an undergraduate had infused me with their enthusiasm for biology and were proficient as teachers. This was a large factor in drawing me into the department and my choice of biology as a major. Understandably I was nervous to tackle the difficult task of teaching well. Many professors and fellow graduate students served as teaching mentors. Professors encouraged creativity and contribution to the courses I assisted, which gave me confidence. I designed grading rubrics and contributed to discussions of how to improve each ensuing reiteration of a course. The faculty in the Biology Department committed significant amounts of time to improving each course they taught each time they taught. I received exemplary mentoring from not only official advisors and professors whose classes I assisted, but many biology faculty.

This collaboration between faculty and students sets the Biology Department at USU apart from other institutions in my mind and other USU alumni to which I have spoken. Whenever I had questions or was curious about an experimental protocol I could solicit the local expert in cell or microbiology, physiology, evolution, molecular and morphological systematics, or statistics, for example. Faculty such as Drs. Daryll DeWald, Joseph Mendelson, Paul Wolf, and Michael Pfrender, among many others, generously donated their time and intellectual prowess for the betterment of my research. The help extended to training and use of equipment that I would not otherwise have been able to access. Their assistance helped me produce integrative and interesting research and encouraged me to continue in the field and on the path of lifelong learning.

The classes, mentorship, and collaboration in the department are outstanding; however, there is one part of the Biology Department that exceeds even that. The availability of the faculty and the prevalence of general science discussions above and beyond course curriculum really stand out. I could “drop by” a professor’s office with a quick question or bump into someone in the hall and have a discussion about anything science-related. The faculty and graduate students integrated teaching and learning into their daily social and professional routine, demonstrating how fun and exciting biology can be. The generosity, enthusiasm, professional collaboration, and the commitment to teaching and students by such a large faculty group ultimately influenced my career choices. I only hope to inspire other students as the members of Biology Department at USU inspired me.

Becky Williams
PhD Candidate
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beckyw@berkeley.edu
February 7, 2007

Nancy Kay Harrison
Coordinator of Graduate Studies
Utah State University
5305 Old Main Hill
Logan UT 84322-5305

Dear Nancy Kay Harrison,

I was asked to write a letter about my experience as an undergraduate student in the biology department at Utah State University. At the time I was a student, I did not truly appreciate the educational experience I had at Utah State. As I continued in my life and career, I came to see how well my education prepared me.

As a student at USU, I felt that I was receiving a good education. I especially liked the feeling that I was not just a number on a list. I had access not only to the teaching assistants, but also professors. I cannot think of a single professor who was too busy to meet face to face with me when I had questions. My teachers had a good knowledge base and were able to convey that knowledge in a way conducive to learning. I left USU in the spring of 1991 with a degree in biology. I felt I had gotten a good education.

In the fall of 1991, I started medical school at Georgetown University. I admit I was a little intimidated that many of my classmates were graduates of Ivy League schools and other “big name universities”. I wondered how I would fare against such students. It did not take long to see that I was better prepared than many of those students. This was most apparent in study groups where I was often able to explain concepts in cell biology, physiology, microbiology and other subjects to my classmates. I had already learned them while attending USU.

My wife, also a graduate of the biology department at USU, worked in the hospital lab at Georgetown. Her supervisor once commented that if Utah State turned out graduates like her, it must be a great program.

I thought that my education at USU was the best it could be. I was wrong. It has been improved! Since returning to work in Logan, I have had the opportunity to volunteer as a mentor to pre-med students from USU. This is a new program since I was a student. I have also been involved interviewing pre-med students in preparation for their applying to medical school. This is also new since my time. Both of these programs offer practical experiences. I feel the program is even stronger than when I was a student. I cannot comment on how the rest of the Biology Department is doing, but if the pre-med program is any indicator, it is thriving.

Since returning to Logan I have been honored to teach a guest lecture in Dr Andy Anderson’s anatomy class. I will also be teaching this month in an ethics class about end of life issues. I am glad that in some small way I am able to give back to the Department that has given so much to me.

Sincerely,

Jeffrey M. Huffman MD
### Publications, Presentations, Media, and University and Community Service

#### Publications

**Textbooks**


- **Podgorski, G.J.** 2007 (ongoing project). *Current Issues in Biology*, Vol. 4. Pearson-Benjamin Cummings and Scientific American (Chose volume articles, authored all end-of article questions, and prepared PowerPoint presentations for the 7 articles in the volume).


**Textbooks – Reviewer or Consultant**

- **Podgorski, G.J.** 2007. Focus Group Member to discuss a new non-majors biology text authored by Dr. J. Phelan (UCLA) and published by W.H. Freeman (New York); Naples, FL.


- **Podgorski, G.J.** 2007 (ongoing project). *Biological Science*. Consultant to S. Freeman (authors) for preparation of 3rd edition of. Chapters 2 (Development) and 9 (Genetics). Prentice-Hall, Upper Saddle River, NJ.


- **Podgorski, G.J.** 2005. *Biological Science*, 2nd ed. Contributor to text, writing Ch. 17 – “Control of Gene Expression in Bacteria” and Ch 18 - “Control of Gene Expression in Eukaryotes” and consulting closely with the author, S. Freeman.

### Books

### Presentations

### Workshops
- **Lindahl, A.** 1997. Conducted biology lab workshops for middle school teachers under an Eisenhower Grant to Walt Saunders in the Secondary Education Department.
- **Lindahl, A.** 1996. Conducted biology lab workshops for middle school teachers under an Eisenhower Grant to Walt Saunders in the Secondary Education Department.

### Presentations for Middle and High School Students and Educators

- **Anderson, D.A.** Yearly. Lead approximately 800-1,000 high school students on cadaver tours.
- **Anderson, D.A.** 2007. Host visiting high school students and home school students in Human Physiology classes.
- **Baker, M.A.** 2006. High School Research Mentor NASA Science Camp, USU
- **Anderson, D.A.** 2006. “Roads Scholar Tour” guest lectures at Davis High School, Utah.
- **Haefner, J.** 2006. “Roads Scholar Tour” guest lectures at Weber High School, Utah.
- **Flores, J.A.** 2006. Speaker at USU Football Academic Breakfast for Recruits.
- **Flores, J.** 2006. Speaker for North Cache 8-9 Center’s Latino Student Group.
- **Flores, J.A.** 2006. Panel Speaker on “Academic Integrity” for USU’s National Society for Collegiate Scholars
- **Flores, J.A.** 2003. Continuing Education Speaker for Rocky Mountain Center for Occupational Safety and Health.
- **Lindahl, A.** 1996. “Implementing Investigative Laboratory Activities in Seventh and Eighth Grade.” National Science Teachers Association (NSTA), Phoenix, AZ.

### Media

#### Documentaries

**News (Television, Radio, and Print)**

- **Gilbertson, T.A.** 1998-present. Appeared on CNN, Discovery Channel, Discovery Chanel-Canada, National Public Radio and *Inside Science* (PBS) to discuss the Gilbertson laboratory’s research on the chemosensory cues for dietary fat and its relation to obesity.

- **Gilbertson, T.A.** 1998-Present. Featured in print media including USA Today, Science News, Boston Globe, and Business Week to discuss the Gilbertson laboratory’s research on the chemosensory cues for dietary fat and its relation to obesity.

- Faculty (including Brodie, Gilbertson, Mendelson, Ruben, and Takemoto) and student research has been featured in various newspapers across the country including the Herald Journal, Salt Lake Tribune, Deseret News, Silver City Sun-News, and Baltimore Sun.

**University and Community Service**

Following is a partial list of activities and committees that our faculty have participated in over the past five years:

**Utah State University**

- USU Student Alumni Mentor Program, USU Major Fair, USU Pre-Health Professional Advisory Committee, USU Athlete Scholar Luncheon, College of Science Valedictorian Escort, College of Science Representative for College Board Validation Study, USU Advising Coordinating Committee, Advising Conference Organization Committee, Prehealth Professions Committee, New Advisor of the Year Selection Committee, Scholar's Day Committee-Research Fellowship Interviewers, University Undergraduate Research and Creative Opportunities Program Committee, University Undergraduate Scholar's Day Committee, College of Science Women in Science and Engineering Steering Committee, Faculty Advisor for USU’s Ballroom Dance Team, Chair to Provost’s Task Force on Academic Advising, Chair of EPC Curriculum ad hoc Committee on Dual and Composite Majors, Chair to Provost’s Task Force on Graduation Process, President's Blue Ribbon Committee on Distance and Continuing Education, Provost's Blue Ribbon Committee on General Education Curriculum Planning, Judge in Mr. and Mrs. International USU contest.

**National, State, and Local Service and Membership**

- Logan High School Scheduling Committee, Jr. Jazz Basketball Coach for Logan Recreation Center, Logan High School Freshman Football Coach, North Cache Freshman Football Coach, Sky View High School Youth Football League Coach, BYU Football Camp Coach, Smithfield Recreation Basketball North Logan Basketball Coach, Sky View Super League Basketball Coach, American Legion Baseball Coach – Sky View, Rocky Mountain School of Baseball Coach for Sky View, Sterling Scholars Competition State Finalists Judge, Bridgerland Literacy Board Member, Bridgerland Literacy Board Director, Bridgerland Literacy Reading and Math Tutor, Bridgerland Literacy Scrabble Tournament Organizing Committee Member, Member of National Science Teachers Association, Member of Association of Biological Laboratory Education (ABLE), Member of National Association of Biology Teachers, Coauthor of USDA Multicultural Scholars Grant ($50,000; 2003-present).