

# MSU INVESTMENT PROPOSAL FOR INSTITUTIONAL PRIORITIES

## PROPOSAL OVERVIEW

<b>Title</b>	Bridge funding to accommodate the unfunded teaching of <b>BIOB 160 – Principles of Living Systems</b> by LRES	<b>Request Date</b>	Dec. 20, 2011
<b>Department</b>	Land Resources & Environmental Sciences	<b>Email</b>	tracy.sterling@montana.edu
<b>Requestor</b>	Tracy M. Sterling	<b>Phone</b>	994-7060

## STRATEGIC ALIGNMENT

**Core Themes and Objectives (check all that apply)**

### Educate Students

- Our graduates will have achieved mastery in their major disciplines
- Our graduates will become active citizens and leaders
- Our graduates will have a multicultural and global perspective
- Our graduates will understand the ways that knowledge & art are created and applied in a variety of disciplines
- Our graduates are prepared for careers in their field
- We will provide increased access to our educational programs
- Communities and external stake holders benefit from broadly defined education partnerships with MSU

### Create Knowledge and Art

- Students, faculty, and staff will create knowledge and art that is communicated widely

### Serve Communities

- We help meet a fundamental need of the citizens of Montana by providing degree programs for our students
- We help meet the educational needs of the citizens of Montana by providing a wide range of educational opportunities to a variety of students
- Our students, faculty, staff, and administrators reach out to engage and serve communities
- Our students, faculty, staff, and administrator reach in to build the university community

### Integrate Learning, Discovery, and Engagement

- Each graduate will have had experiences that integrate learning, discovery and engagement
- Outreach activities will educate students and address the needs of the communities we serve
- Students, faculty, and staff will create knowledge and art that addresses societal needs
- MSU is a community that will be characterized by synergy within and across disciplines, roles and functions.

### Stewardship

- The public trusts the institution to operate openly and use resources wisely
- The faculty and staff are well-qualified and supported
- MSU will support Native American students, programs, and communities
- MSU will be an inclusive community, supporting and encouraging diversity
- Our publicly provided resources are used efficiently and effectively
- Natural resources are used efficiently and sustainably
- MSU nurtures a culture of resource conservation and ecological literacy among students, faculty and staff
- Our physical infrastructure (e.g., building, equipment, open spaces) will be well-maintained and useful

**INSITUTIONAL BENEFIT**

<b>Campuses</b>	X Bozeman <input type="checkbox"/> Billings <input type="checkbox"/> Havre <input type="checkbox"/> Great Falls <input type="checkbox"/> FSTS <input type="checkbox"/> Extension <input type="checkbox"/> MAES
<b>Cross Depts</b>	Please List: Many departments across multiple Colleges (COA, COEng, CLS, COEd) require their majors to take BIOB 160; Majors enrolling more than 10 students per semester over the past five years have included: AgricEduc, AnimalSci, BioSci, BioTech, CivEng, EnvHort, EnvSci, FoodNut, HealthHumanPerf, LandResources, Micro, NatResSci, PreVet, UnivStudies

**TIMEFRAME**

<b>Proposed Dates</b>	Start: 1 JAN 2013	End: 1 JAN 2016
-----------------------	-------------------	-----------------

**COST AND REQUIREMENTS**

Funding Type	One-Time (\$)	Multi-Year (\$)			Base (\$)	FTE
		Year 1	Year 2	Year 3		
Personnel (w/benefits)		\$12,600 (\$9,000 + 40% benefits)		\$12,600 (\$9,000 + 40% benefits)		
Materials & Supplies						
Travel						
Contracted Services						
Capital						
Other Operations						
<b>TOTAL</b>		\$12,600		\$12,600		

A total of \$16,800 is requested to pay for an instructor to teach two sections of BIOL 160 during the first half of Spring 2013 and the first half of Spring 2015.

Spring 2013 – Salary and Benefits = \$9,000 + \$3,600 = \$12,600  
 Spring 2015 – Salary and Benefits = \$9,000 + \$3,600 = \$12,600

Total requested: \$25,200

Please comment, if necessary, regarding cost and requirements.

## PROPOSAL SCOPE

### Describe the Proposal

**Seeking funds for an unfunded program:** Since 2004, a tenure-track faculty member from the College of Agriculture has taught BIOL 102 (now BIOB 160 – Principles of Living Systems) on a volunteer basis. The volunteer, Dr. Bob Peterson, has taught this course every other even-numbered spring semesters to between 190 and 250 students each time. The course in spring semester has two Monday-Wednesday-Friday lecture sections that are offered back-to-back at 12 noon to 12:50 p.m. and 1:10 p.m. to 2 p.m. The same lecture is given twice each day.

**Using MAES resources to fund teaching mission:** The course has been taught every even spring by Dr. Peterson in excess of his 18% teaching appointment and without added compensation each time. Therefore, the course has been supported by the Montana Agricultural Experiment Station (MAES) because Dr. Peterson has taught it using the time that would have been devoted to his MAES appointment and responsibilities. Please note that LRES is in the College of Agriculture (COA) which is structured differently from other academic units on campus; the COA has three major sources of funding with the funding split in LRES as follows:

- 69% from Montana Agriculture Experiment Station for our Research mission;
- 26% from the MSU Provost which is assigned to the COA Dean as COA funds to fund our Teaching mission; and
- 5% from the Cooperative Extension Service for our Extension mission.

Given the LRES teaching budget makes up 26% of our total budget, and all our faculty are teaching at their full load, we do not have additional funds or personnel in our budget to cover the cost of teaching BIOB 160. This is further supported by the FY10 Key Performance Indicators (KPI) values. While LRES is above the MSU mean for Department SCH taught per instructional FTE (LRES is at 130% of peers, 10<sup>th</sup> out of 33 MSU departments), LRES is consistently below the MSU mean for:

- Instructional Expenditures per SCH on Personnel (LRES is at 75% of peers, 21<sup>st</sup> out of 33 departments).
- Instructional Expenditures per Student FTE (LRES is at 68% of peers, 27<sup>th</sup> out of 33 departments).

**Commitment to Obligations:** LRES is obligated to teach the first half of the course each spring as per an agreement in May 2005 (see attached Biology Curriculum Task Force Report) between Deans Jeff Jacobsen (College of Agriculture) and Dean Sara Jayne Steen (College of Letters and Sciences). LRES faculty member, Dr. Bob Peterson, was asked to teach BIOB 160 (even springs) for a few years as overload with the promise of added compensation which was never actually awarded to him, and will no longer teach this course every other spring. During alternate years, LRES faculty member Dr. John Priscu teaches the course, but in this case, BIOB 160 is formally recognized as a component of his teaching appointment. To help us fulfill our obligation of teaching BIOB 160, Dr. Priscu has agreed to start teaching every even spring (starting in Spring 2012) to fill the gap opened when Dr. Peterson stopped teaching BIOB 160. However, we are still left without an instructor for every odd-numbered spring semester. There is no adjunct funding for LRES to teach the course when it is offered during odd-numbered spring semesters; hence, we are making this request.

**Short- and Long-term solutions:** Dr. Peterson will not be teaching BIOB 160 again. Therefore, for the first time since 2004, the course will be a teaching expectation of LRES and there will not be a volunteer to teach it. Consequently, an arrangement must be made soon for a funding line for this course. For many years now, LRES and MAES have subsidized the course (see KPI numbers above). It is time to align the expectation that LRES will contribute to the course with the funding necessary to make this possible.

Because this freshman-level course is required for numerous majors at MSU and because of its high enrollment, I propose that formal funding be instituted so that LRES can hire an instructor to teach BIOB 160 in Spring 2013 and 2015, after which LRES will have incorporated this course into the teaching responsibilities of a new hire as retirements occur. Ideally, this funding would be in the form of a targeted investment to bridge the funding of the course, so that LRES could continue to offer this strategic course in perpetuity.

## PROPOSAL SCOPE

### Describe the broader impacts and benefits of this proposal

The benefits of funding this **bridge** proposal will:

- Allow LRES to continue to meet the obligations of the 2005 Biology Curriculum Task Force, and provide instructors for BIOB 160 in Spring 2013 and 2015, funding that was absent in 2004, 2006, 2008 and 2010.
- Allow LRES the time to realign teaching responsibilities of a new hire who would be expected to teach BIOB 160 as documented in a letter of hire (LRES anticipates some retirements in the next few years); this alignment is consistent with the Task Force's goals of reducing the difficulties of delivering BIOB 160.
- Reduce the use of MAES funds to support LRES' teaching mission.
- Allow LRES to continue offering this strategic course in perpetuity.
- Better align KPIs for LRES with actual teaching productivity and budgeted faculty workload.

**ADDITIONAL INFORMATION****Implementation Plan** *(Please describe with timelines)*

If funded, the LRES department head will find a qualified instructor for Spring 2013 and 2015; the stipend of \$9,000 plus benefits is requested to assure a qualified, experienced instructor can be recruited. A stipend of \$9,000 plus benefits was paid the previous time this course was taught by an adjunct (Dr. Christine Foreman taught BIOB 160 for LRES in Spring 2011 and taught BIOL 404, Limnology for Ecology in 2007 – a \$9,000 stipend was paid for each of these adjunct teaching appointments). In addition, the LRES department head will work with the Dean as positions become available to incorporate BIOB 160 as part of a new faculty member's teaching responsibilities.

If not funded, the LRES department head will ask the Provost to revisit the 2005 Biology Curriculum Task Force findings and bring them into alignment with current campus needs and resources.

**Assessment Plan** *(Please describe with indicators)*

BIOB 160 instructors during Spring 2013 and 2015 will be evaluated using a mid-term evaluation as implemented by the department head and the semester-end Climate Student Evaluation instrument, as well as by the Peer Review process already actively used in the LRES department to assess instructional efficacy.

The Department Head will incorporate BIOB 160 as a job responsibility in new positions as they open up and as is appropriate to the disciplinary hire.

**If assessed objectives are not met in the timeframe outlined, what is the plan to sunset this proposal?**

If there is an inadequate instructor, the department head will find another instructor as soon as possible.

SIGNATURES		
Department Head (please print)	Signature (required)	Date
Tracy M. Sterling	<i>Tracy M. Sterling</i>	Dec. 29, 2011
Dept Head Priority (please circle one):	Very High   High   Medium   Low   Very Low	#4
Dean/Director (please print)	Signature (required)	Date
JEFF JACOBSEN	<i>JM Jacobsen</i>	12/30/2011
Dean/Director Priority (please circle one):	Very High   High   Medium   Low   Very Low	7 OF 8
Executive/VP (please print)	Signatures (required)	Date
Executive/VP Priority (please circle one):   Very High   High   Medium   Low   Very Low		

May 25, 2005

TO: Sara Jayne Steen, Dean, College of Letters and Science  
Jeff Jacobsen, Dean, College of Agriculture

FR: Biology Curriculum Task Force

RE: Introductory Biology Sequences

## 1. Introduction

In response to difficulties surrounding the preparation and delivery of BIOL 102 in Fall 2004, the Deans of the College of Agriculture and the College of Letters and Science in January 2005 named a Biology Curriculum Task Force with the following charge:

*1. Propose to us an organizational structure by which the entire introductory biology curriculum can be managed, with regard to lab coordinator, GTAs, texts, labs, fees/costs, etc. so that the questions that arose this year will not rise again and that all relevant parties understand who bears responsibility for each and every aspect of the introductory biology curriculum. Please use historical information to make the best available projections on issues such as enrollment shifts to reallocate scarce resources or request new resources. This will optimize resource use (faculty, staff, facilities, etc.) to ensure a high quality educational experience ....required for student retention and success.*

*2. Look to the larger goals of a vision for biology teaching on campus. We have a Hughes renewal coming up, so this should be a good time to assess where we are and look to the advances we would like to make.*

*(e-mail from Deans Jacobsen and Steen, January 17, 2005)*

The Task Force consisted of department heads Dave Roberts (Ecology), John Sherwood (Plant Science and Plant Pathology), Jon Wraith (Land Resources and Environmental Science), Gwen Jacobs (Cell Biology and Neuroscience), Tim Ford (Microbiology) and Allen Harmsen (Veterinary Molecular Biology). George Tuthill (Associate Dean, Letters and Science) served as chair. The group met four times in February and March. In its initial meeting, the group decided to focus its attention on the two introductory sequences BIOL 101-102 and BIOL 213-214-215, since instructional duties are shared across unit lines in these large courses, and there exists need for clarification in the organizational responsibilities.

The following sections of this report contain historical background, resource and student enrollment information, and the Task Force's specific recommendations.

## **2. Background**

The work of this Task Force took place in the wake of two earlier and related efforts. The first was a study group appointed by Provost Dooley shortly after the division of the old Biology Department into the departments of Ecology and Cell Biology and Neuroscience, and the transfer of several members of the instructional faculty from Letters and Science to Agriculture. This group (also called the Introductory Biology Curriculum Task Force) was formed "...in response to a faculty request that the various 100 and 200 level biology courses be examined to determine whether they were serving the needs of students in light of the rapidly paced changes occurring across the subject of biology." Among the recommendations in its report (called the Mathre Report, after the committee chair) was a revision/updating of the BIOL 101-102 series and an endorsement of the plans, then just underway, for a second introductory series – a 3-course sequence serving mainly biomedical students and those preparing for graduate study.

Two years later, Deans McMillan and Quisenberry convened the Biology Core Implementation Committee to re-evaluate the situation in 101-102 and the planned 213-214-215 series, in light of the upcoming conversion to Core 2.0 and possible resulting enrollment shifts. As did the Mathre report, the report of this committee (the "Jacobsen report") called for resources sufficient to transform these central courses into model science experiences for our entering and lower-division students. It emphasized the critical importance of the introductory biology sequences in meeting the university's recruiting and retention goals – goals which have now been made more specific with the appearance of the 2004 Five Year Vision Document (see statement I.G of the Document).

## **3. Enrollment and trends**

BIOL 101 and 102 (either or both) are required courses in many curricula in Nursing, EHHD, L&S and Agriculture. In addition, 101 is elected as an Inquiry Natural Science course in Core 2.0 by students across all disciplines. Enrollment in the 213-214-215 sequence is largely concentrated in Cell Biology and Neuroscience; all three courses are required for the curriculum. Enrollment numbers may change as more departments consider these courses as alternatives to the 100 series. Enrollments for all five courses are summarized in the Appendix for the past six academic years, and breakdowns by major are given for the 2004-2005 academic year.

Implementation of the 200-level sequence began with BIOL 213 in Spring 2004, 214 in Fall 2004, and both 213 and 215 in Spring 2005. In 2004-2005 these three enrolled a total of 205 students. Introduction of the three new courses, plus core conversion, means that enrollments in this sequence have probably not fully stabilized. Nonetheless it seems reasonable to assume that the steady-state enrollment will be roughly 80-100 students per year per course, or 240-300 students per year. Enrollments in 101 and 102 totaled about 830 in '04-'05. The total in these five courses is therefore presently slightly below the total enrollment for 101-102 prior to the development of the 200 series. It is not clear what has caused this decline, but we note that introductory biology enrollments overall have been decreasing slowly but steadily since at least 1999. Note that three other



courses – BIOL 100, 103 and 104, all without lab – carry core credit, and may be having an influence on enrollments in 101-102 and 213-214-215.

#### **4. Long-term goal**

This Task Force endorses the vision for introductory biology that is embodied in the reports from 2000 and 2002. Our specific recommendations (below) are aimed at completing the implementation of that vision. Our overall goal is to put in place a management process that respects the interdisciplinary and interdepartmental nature of biology instruction, is responsive to changing needs of students and developments in teaching, and – most important – provides an exemplary academic experience for MSU students.

#### **5. Specific Recommendations**

##### **a. Course Sequences**

The Task Force reaffirms the recommendation of the earlier study groups, that two sequences (BIOL 101-102 and 213-214-215) of introductory biology are necessary and desirable to meet the differing needs of students in a wide variety of majors at the university. Each MSU department will select, among these courses, the appropriate sequence for their majors, and all are likely to be needed for the foreseeable future. For example, they differ in the science and math preparation that is required. CHEM 131 and STAT 216 are prerequisites for all three 200-level courses. On the other hand, there is no prerequisite for BIOL 101, while either CHEM 121 or CHEM 131 is required for BIOL 102. No changes are planned with respect to prerequisites.

##### **b. Content, Purpose and Prerequisites**

The committee does not recommend any fundamental redirection of the purpose, content or prerequisites of any of the courses, although it does recommend (see below) that BIOL 102 undergo a complete review, especially with a view to improving labs and lecture/lab coordination. As background, we point out that the earlier curriculum reports recommended a complete review and updating of 101-102, and this has recently been completed for 101, with respect to both lecture and lab.

##### **c. Course Coordination and Oversight**

We recommend that the primary responsibility for coordinating these five courses should rest with department heads as follows:

BIOL 101 – ECOL

BIOL 102 – PSPP

BIOL 213, 214, 215 – CBN

That is, these respective departments should be in charge of such duties as scheduling rooms, ordering texts and lab manuals, making EFAC and CFAC requests, and monitoring instructional quality through the standard evaluation process (i.e., student surveys).

However, staffing and general oversight of the two biology sequences should be the shared responsibility of life science departments in both the College of Agriculture and the College of Letters and Science. We recommend the creation of a standing Introductory Biology Curriculum Committee (IBCC) to maintain this oversight, coordinate the sequences where appropriate, and provide a venue for negotiating changes in course resources, responsibilities and directions. The IBCC should be composed of the heads (or their designees) of ECOL, CBN, MB, PSPP, LRES and VTMB, as well as the associate deans of the two Colleges. This group should meet as needed, but at least annually. For the next few semesters, the IBCC should certainly monitor course enrollments so that resources can be allocated effectively.

**d. Instructional Faculty**

Responsibility for providing faculty for these courses has historically been divided among several departments. Lecturing responsibilities in 100- and 200-series will be distributed as follows, with the numbers in parentheses representing instructor-semester per year.

- BIOL 101: ECOL (2.0)
- BIOL 102: PSPP (1.0), MB (0.5), LRES (0.5)
- BIOL 213: CBN (0.5), PSPP (0.5)
- BIOL 214: CBN (0.5), VMB (0.5)
- BIOL 215: ECOL (1.0)

Note that in the 100-series, each instructor is responsible for two lecture sections. An important task of the IBCC will be to ensure stability of the teaching rotation for upcoming semesters.

Student credit hours in each course are assigned to the corresponding instructor's department.

**e. Lab Coordinators**

Each of these courses requires a lab coordinator, whose funding (fractional FTE) should be included in the appropriate department's instructional base budget. Currently these individuals are as follows, with the fractional FTEs devoted to the sequence listed in parentheses:

- BIOL 101 – Dave Willey, ECOL (0.75, now on the supplemental budget)
- BIOL 102 – Carol Johnson, ECOL (0.75, now on the base budget)
- BIOL 213, 214, 215 – Anneke Metz, CBN (0.75, currently Hughes-funded)

We do not recommend any changes in this arrangement, which appears to be functioning well. However, all of these positions should be moved into the base budget to ensure program stability.

**f. GTA Support**

Adequate funding for laboratory instruction in the form of GTA support should be provided. Based on the 2004-2005 situation, our estimates for the minimum number of GTAs needed (in fractional FTE per year) needed are listed below:

BIOL 101 – 5.5  
BIOL 102 – 4.5  
BIOL 213 – 1.0  
BIOL 214 – 1.0  
BIOL 215 – 1.0

The above are calculated from the expected course enrollments by assuming 20 students per lab section, 5-6 lab sections per GTA per year. These numbers are expected to vary according to student demand, and the IBCC will be responsible for adjusting allocations as needed.

Funding for the GTAs should be provisionally allocated to the department of the lab coordinator, that is, to ECOL and CBN as specified in paragraph (e) above. The GTAs for a particular course need not be from the instructor's or lab coordinator's department, although ideally these positions should be assigned to each department's students in proportion to its involvement in the course instruction. Advance knowledge of the number of GTA assignments to each department will provide the departments in questions with a degree of stability in GTA support, and therefore aid in graduate program planning and recruiting. If there are not enough qualified GTAs from a given department, then the unfilled positions would be available first to students from other participating departments, and second to qualified students from any other MSU department.

Specific GTA assignments for upcoming terms should be made by the department heads and lab coordinators in charge of each course. These individuals, in consultation with the IBCC, will evaluate the projected GTA needs and the qualifications of possible GTAs. They will request applications for GTA assignments in advance from all departments involved in teaching the two sequences. The lab coordinators will work with the accounting staff in their respective departments to hire the GTAs and procure fee waivers for them.

**g. Course fees**

The Task Force does not recommend any changes in course fees. Since the lab coordinators are responsible for lab supplies and monitoring the condition of equipment, the course fee accounts should be situated in ECOL for 101 and 102, and in CBN for the 200-series.

**h. Revision of BIOL 102**

BIOL 101 has very recently been revised (including the lab component) and the 213-215 sequence is new, whereas in BIOL 102 some of the labs are thought to be outdated and coordination between lectures and labs is lacking. We recommend the formation of a BIOL 102 working group composed of all instructors and the lab coordinator, to be charged with review and possible revision of lecture and lab content, the upgrading of labs, and the coordination of labs and lectures. This is

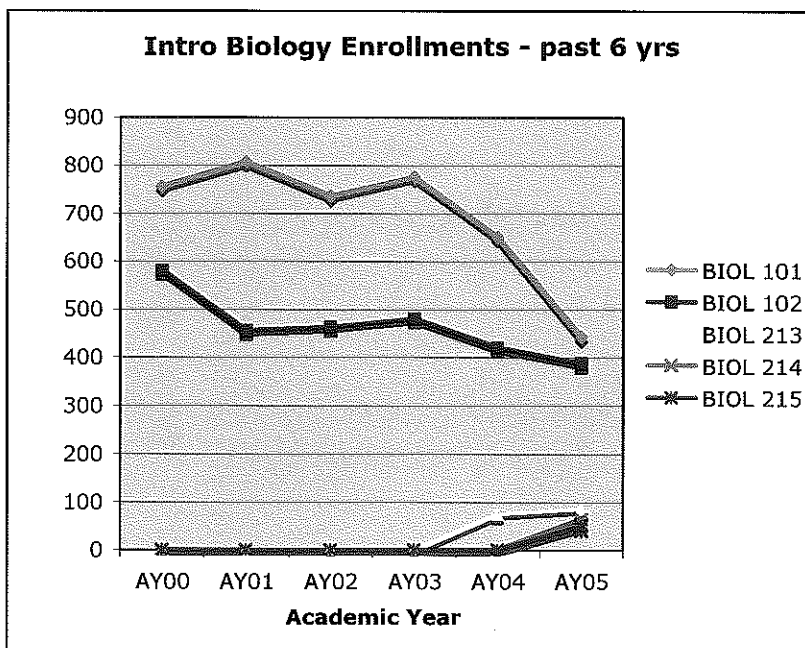
DRAFT-5/25/05

particularly critical in order to ensure quality and consistency in a course environment that involves a large number of instructors. The upgrading of BIOL 102 labs should included an emphasis on inquiry-oriented activities, and aim for the quality level of the recently improved labs in the other four courses. We recommend that these faculty be compensated for their efforts either with teaching relief or through other professional development opportunities.

**APPENDIX**

**Total Enrollments in Introductory Biology Courses, Fall '99 to Present**

<b>Semester</b>	<b>101</b>	<b>102</b>	<b>213</b>	<b>214</b>	<b>215</b>
Fall 1999	493	183			
Spring 2000	262	296			
<b>AY 99-00</b>	<b>755</b>	<b>581</b>			
Fall 2000	501	171			
Spring 2001	306	285			
<b>AY 00-01</b>	<b>807</b>	<b>456</b>			
Fall 2001	412	186			
Spring 2002	323	277			
<b>AY 001-02</b>	<b>735</b>	<b>463</b>			
Fall 2002	452	209			
Spring 2003	323	272			
<b>AY 02-03</b>	<b>775</b>	<b>481</b>			
Fall 2003	363	188	*		
Spring 2004	288	231	75		
<b>AY 03-04</b>	<b>649</b>	<b>419</b>	<b>75</b>		
Fall 2004	259	193	*	63	*
Spring 2005	184	196	86	*	49
<b>AY 04-05</b>	<b>443</b>	<b>389</b>	<b>86</b>	<b>63</b>	<b>49</b>



**Enrollment Breakdowns by Major Field – 2004-2004 Academic Year**

<b>101 – Fall 2004</b>		<b>101 – Spring 2005</b>	
Major Field	Enroll.	Major Field	Enroll.
University Studies	52	University Studies	50
Biological Sciences	44	Earth Sciences	18
Horticulture	25	Elementary Education	12
Pre-Veterinary Medicine	23	Biological Sciences	11
Business	9	Business	10
Animal Science	8	Computer Science	5
Cell Biology & Neuroscience	8	Horticulture	5
Earth Sciences	7	Media and Theatre Arts	5
Secondary Education	7	Psychology	5
Environmental Science	6	Range Science	5
Biotechnology	5	Other majors (34) with < 5	58
Environmental Design	5		
Land Resource Sciences	5		
Media and Theatre Arts	5		
Other majors (28) with < 5	50		
<b>Total</b>	<b>259</b>	<b>Total</b>	<b>184</b>

<b>102 – Fall 2004</b>		<b>102 – Spring 2005</b>	
Major Field	Enroll.	Major Field	Enroll.
Health & Human Devel.	55	Biological Sciences	32
University Studies	25	Animal Science	31
Microbiology	21	University Studies	19
Biological Sciences	14	Health & Human Devel.	15
Cell Biology & Neuroscience	13	Pre-Veterinary Medicine	15
Psychology	9	Agricultural Education	9
Animal Science	8	Microbiology	9
Biotechnology	6	Psychology	8
Pre-Veterinary Medicine	6	Land Rehabilitation	7
Other majors (22) with < 5	36	Land Resource Sciences	6
		Biotechnology	5
		Horticulture	5
		Other majors (23) with < 5	35
<b>Total</b>	<b>193</b>		<b>196</b>

<b>214 – Fall 2004</b>	
Major Field	Enroll
Cell Biology and Neuroscience	50
Chemistry	6
Other majors (3) with < 5	7
<b>Total</b>	<b>63</b>
<b>213 – Spring 2005</b>	
Major Field	Enroll.
Cell Biology & Neuroscience	64
Chemistry	7
Other majors (12) with < 5	15
<b>Total</b>	<b>86</b>
<b>215 – Spring 2005</b>	
Major Field	Enroll.
Cell Biology & Neuroscience	42
Other majors (7) with < 5	7
<b>Total</b>	<b>49</b>