Proposal for Delivery of an Existing OSU Program at OSU-Cascades.

Submit proposals to: Office of Academic Programs and Academic Assessment
110 Kerr Admin -- Oregon State University

For instructions, see http://oregonstate.edu/ap/curriculum/MOUs/mou.html.
Please attach Proposal, Library Evaluation (performed by the library), Liaison Correspondence, Faculty Curriculum Vitae, and Budget Sheets, as appropriate.

Title of Program (include if it is a major, minor, option or certificate)       Effective Date:
B.S., Biology                                                               4/1/2011

Department/Program:                College:
Biology                                                  Science

I have reviewed and approve this proposal:

Corvallis-Based Faculty and Administration                Cascades-Based Faculty and Administration

______________________________       ________________________________
Sign (Dept Chair/Head; Director) Date       Sign (Dept Chair/Head; Director) Date

______________________________       ________________________________
Sign (Dean of College) Date       Sign (Dean of OSU-Cascades)

______________________________       ________________________________
Sign (Dean, Graduate School- If Grad program)       Sign (VP of OSU-Cascades)
Oregon State University

Biology B.S. Program Extended to OSU-Cascades

Executive Summary
January 24, 2011

This proposal in the form of an MOU has been submitted to the Curriculum Council to “extend” an existing Oregon State University degree programs to its branch campus at OSU-Cascades in Bend. OSU Main and OSU-Cascades propose to establish the following programs at OSU-Cascades:

B.S. in Biology

This proposal is a consequence of the change in the University of Oregon’s participation in Bend. The University of Oregon has decided to no longer offer academic programs at the Cascades campus and has proposed that their association with their General Science programs be phased out over the next two years. In response to this decision, and due to the large number of students who are interested in having a degree pathway that prepares them for careers in the life sciences, OSU-Cascades and the College of Science are proposing to offer the Biology degree program beginning Spring Term 2011. A principal focus for the UO General Science degrees had been in biological sciences; the degree proposed here will meet the needs of those students. A previous MOU has been submitted for the B.S. in General Sciences with an option in pre-Education, to address the needs of students with interests other than Biology.

The following briefly highlights the current status of the transition from UO programs:

- Students who were admitted and are currently enrolled in the UO General Science program will be accommodated with the courses that they need to graduate.
- The previously admitted students will receive their degree from the University of Oregon.
- No new students are being admitted into either of the University of Oregon’s degree programs.
- All of the courses associated with the existing programs have been articulated to OSU or appropriate new course offerings have been planned.
- The University of Oregon faculty who have taught and directed the General Science program on the Cascades campus will be hired by Oregon State University in the summer of 2011.
- New students with an interest in life sciences who enter OSU-Cascades beginning Winter Term 2011 will receive their degree from Oregon State University.

The fiscal impact of the proposed Biology degree programs at OSU-Cascades will be minimal. The cost of business cards, new advertising and marketing materials that will be required because of the change, will come from internal reallocation. The same model of program funding that has been applied to the University of Oregon will be applied to OSU-Cascades; i.e., the allocation of E & G funds based on enrollment and the FTE and student credit hours (SCH) generated. Instead of the University of Oregon receiving funds from tuition and fees, those funds will instead be transferred to OSU-Cascades. This budget allocation change will assure that there will be no additional costs to Oregon State University.

The extension of the undergraduate Biology degree program is fully supported by Bob Mason, Chair of the Biology Program and Sherman Bloomer, the Dean of the College of Science. At the beginning of Spring Term 2011, these individuals, working in collaboration with Mary Ann Matzke (College of Science), Marla Hacker and Natalie Dollar (OSU-Cascades), Gary Beach (Academic Affairs), and Larry Bulling (Registrar’s Office) will ensure that the courses, funding model, and associated requirements for both programs are fully in place.
Proposal for Delivery of an existing OSU Program at OSU-Cascades

1. Program Description

a. Program title, level, and delivery sites:

   B.S. in Biology, currently delivered at OSU-Corvallis, proposed for OSU-Cascades

b. Department and school/college that would offer the program. Include the name of the institution program coordinator:

   The College of Science is responsible for the B.S. Biology degree offered through the Biology Program. The responsible administrators are:

   - Marla Hacker, Dean of Academic Programs, OSU-Cascades
   - Sherman Bloomer, Dean, College of Science
   - Bob Mason, Chair, Biology Program, College of Science

c. Briefly describe the academic program. List all course titles, including number of credits:

   The life sciences are one of the largest majors at OSU-Corvallis and the undergraduate B.S. in Biology is one of the largest majors offered at OSU. Students seek a Biology degree to prepare them for graduate school, for diverse careers, and for entry into professional schools including medical, dental, pharmacy, physician assistant, physical therapy, optometry, or nursing school. Health professions are respected and rewarding professions that demand dedication, perseverance, and compassion. This curriculum provides a very strong foundation that can be used to meet the requirements to enter a variety of health professional programs. Requirements vary from school to school, so it is the student’s responsibility to check specific requirements for any school to which the student plans to apply. Admission to all health professional programs is competitive, so completion of required coursework facilitates, but does not guarantee acceptance to any professional program. As at the campus in Corvallis, careful advising is essential for student to prepare for entry into professional schools. The advising for these programs will be coordinated between the Corvallis and Bend campuses.

   The academic program to be offered at Cascades is the OSU B.S. in Biology degree. The options in Marine Biology and Biotechnology will not be offered at Bend at this time. Marla Hacker, Dean of Academic Programs, OSU-Cascades, and Janine Trempy, Associate Dean, College of Science, will meet once a term or as necessary to share, review and discuss the degree curriculum, course outcomes, assessment, and related issues. This close collaboration continues the work of these and other individuals involved in creating this MOU.

   The courses and credits required for the degree are listed in the following degree audit sheet. This sheet is consistent with that used in Corvallis (an audit sheet for the Corvallis degree is included in Appendix 1. The only differences in the Cascades degree will be a lesser number of choices in the elective credit, organismal biology, and physiology requirements.
### Degree Audit Sheet for Biology B.S. at OSU-Cascades*

<table>
<thead>
<tr>
<th>Course</th>
<th>Done</th>
<th>Credit</th>
<th>Institution Providing Course</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Baccalaureate Core</strong></td>
<td></td>
<td>33</td>
<td></td>
</tr>
<tr>
<td>WR 121</td>
<td>3</td>
<td>3</td>
<td>COCC</td>
</tr>
<tr>
<td>WR II</td>
<td>3</td>
<td>3</td>
<td>COCC</td>
</tr>
<tr>
<td>WR III/Speech</td>
<td>3</td>
<td>3</td>
<td>COCC</td>
</tr>
<tr>
<td>Fitness</td>
<td>3</td>
<td>3</td>
<td>COCC</td>
</tr>
<tr>
<td>Math</td>
<td>covered by major</td>
<td>COCC</td>
<td></td>
</tr>
<tr>
<td>Physical Science</td>
<td>covered by major</td>
<td>COCC</td>
<td></td>
</tr>
<tr>
<td>Biological Science</td>
<td>covered by major</td>
<td>COCC</td>
<td></td>
</tr>
<tr>
<td>Additional Bio or Phys Science</td>
<td>covered by major</td>
<td>COCC</td>
<td></td>
</tr>
<tr>
<td>Western Culture</td>
<td>3</td>
<td>3</td>
<td>COCC</td>
</tr>
<tr>
<td>Cultural Diversity</td>
<td>3</td>
<td>3</td>
<td>COCC</td>
</tr>
<tr>
<td>Literature &amp; Arts</td>
<td>3</td>
<td>3</td>
<td>COCC</td>
</tr>
<tr>
<td>Social Processes</td>
<td>3</td>
<td>3</td>
<td>COCC</td>
</tr>
<tr>
<td>Difference, Power, Discrimination</td>
<td>3</td>
<td>3</td>
<td>COCC</td>
</tr>
<tr>
<td>Contemporary Global Issues (Synthesis)</td>
<td>3</td>
<td>3</td>
<td>Cascades</td>
</tr>
<tr>
<td>Science, Technology, Society (Synthesis)</td>
<td>3</td>
<td>3</td>
<td>Cascades</td>
</tr>
<tr>
<td><strong>Major Requirements</strong></td>
<td></td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>General Chemistry CH 221, 222 &amp; 223</td>
<td>15</td>
<td>15</td>
<td>COCC</td>
</tr>
<tr>
<td>General Biology BI 211, 212 &amp; 213</td>
<td>12</td>
<td>12</td>
<td>COCC</td>
</tr>
<tr>
<td>General Physics PH 201, 202 &amp; 203</td>
<td>15</td>
<td>15</td>
<td>COCC</td>
</tr>
<tr>
<td>Calculus MTH 251 &amp; 252</td>
<td>8</td>
<td>8</td>
<td>COCC</td>
</tr>
<tr>
<td>Statistics ST 351, 352</td>
<td>8</td>
<td>8</td>
<td>COCC or E-campus</td>
</tr>
<tr>
<td>Organic Chemistry CH 331, 332 &amp; 337</td>
<td>12</td>
<td>12</td>
<td>Cascades or E-Campus</td>
</tr>
<tr>
<td>History of Science (WIC) HSTS 415, 417, or 425</td>
<td>3</td>
<td>3</td>
<td>Cascades or E-Campus</td>
</tr>
<tr>
<td>BI 198 Freshmen Seminar (waived for transfer students)</td>
<td>1</td>
<td>1</td>
<td>Cascades</td>
</tr>
<tr>
<td>Cell &amp; Molecular Biology BI 314 or BI 460</td>
<td>4</td>
<td>4</td>
<td>Cascades</td>
</tr>
<tr>
<td>General Biochemistry BB 450 &amp; 451</td>
<td>7</td>
<td>7</td>
<td>Cascades or E-campus</td>
</tr>
<tr>
<td>Ecology BI 370</td>
<td>3</td>
<td>3</td>
<td>Cascades or E-Campus</td>
</tr>
<tr>
<td>Evolution BI 445</td>
<td>4</td>
<td>4</td>
<td>Cascades</td>
</tr>
<tr>
<td>Microbiology MB 302 &amp; 303</td>
<td>7</td>
<td>7</td>
<td>Cascades</td>
</tr>
<tr>
<td>Genetics BI 311</td>
<td>4</td>
<td>4</td>
<td>Cascades or E-campus</td>
</tr>
<tr>
<td>1 course in Physiology, Z430</td>
<td>4</td>
<td>4</td>
<td>Cascades</td>
</tr>
<tr>
<td>1 course in Organismal Biology, Z477</td>
<td>4</td>
<td>4</td>
<td>Cascades</td>
</tr>
<tr>
<td>2 additional upper division science courses (choices include BI 371, BI 460, BI 350, new medical physiology course)</td>
<td>6-10</td>
<td>6-10</td>
<td>Cascades or E-campus</td>
</tr>
</tbody>
</table>

**Electives to total 180 total credits and 60 upper division**

*Note audit sheet is consistent with those used in Corvallis. Cascades courses delivered at Bend by instructional staff currently employed by UO. E-campus courses are existing offerings.*
d. **Indicate in what ways the proposed program at the new location(s) will differ from the OSU main campus program.**

- OSU-Cascades will not offer the options in Biotechnology or Marine Biology available on the OSU main campus program.
- OSU-Cascades will not have as many courses for students to choose from in the Physiology and Organismal Biology categories nor as many upper-division science electives.

e. **List any special requirements or prerequisites for admission to the program at the new location(s).**

- There are no special requirements or prerequisites for the program at Cascades.

f. **Is there an accrediting agency or professional society that has established standards for this program? If so, is the program currently accredited? If accredited, what steps would be needed to accredit the program at the proposed new location(s)?**

- There is no accrediting body for the Biology, B.S. However, the degree does require completion of a national examination assessing breadth of life science knowledge.

2. **Demand**

a. **List any similar programs offered at the proposed or nearby location(s).**

- The UO General Science major currently has 79 students enrolled, making it one of the largest programs at OSU-Cascades. About 90% of those students are interested in life sciences. In 2009-2010 the degree enrolled 69 students. Central Oregon Community College, the main source of transfer students to Cascades, currently has 154 students enrolled in pre-medicine.

b. **Provide evidence of need for the program at the new location(s).**

- See part a.

c. **Estimate enrollment and number of graduates over the next five years. Will any enrollment limitation be imposed? If so, how will prospective students be enrolled be selected?**

- We expect enrollment in this program to grow by 12% per year over the next five years. No enrollment limitations will be imposed.

3. **Personnel**

a. **List the names and qualifications of faculty (regular and adjunct) who will be involved in delivering the program to the proposed location(s). Will new faculty be needed?**

- Part of the agreement between Provosts for transferring the UO programs to OSU was that we would retain the UO full-time faculty as OSU full-time faculty with rank to be determined in a process separate from the MOU. Therefore, the same people who are currently offering the UO General Science program at OSU-Cascades, Patrick N. Ball, Ph.D., and Matt R. Orr, Ph.D., will be offering the OSU Biology program in the future. The College of Science and OSU-Cascades will collaborate to determine the rank of these two full-time faculty. Drs. Ball and Orr have been directly involved in the
discussions about moving the UO life sciences courses to OSU BI courses. The degree program outlined reflects those changes.

- Below we include a list of the adjunct faculty UO has relied on to offer the Biology degree. While we will continue to employ adjuncts for this degree we do not have any agreement with specific adjuncts at this time. The list is meant to demonstrate the availability of faculty resources in the region.
- Drs. Ball and Orr will have an academic home in the College of Science within the Division of Arts and Sciences. The College of Science will therefore be involved in faculty evaluation, in collaboration with the OSU-Cascades supervisor, a process that has been successfully developed in the past few years as OSU-Cascades has grown our academic majors in coordination with the main campus in Corvallis. Once the structure of the School of Life Sciences in the College of Science is clear, we will initiate discussions on the appropriate rank and department home for the OSU-Cascades faculty members.

**Regular Faculty:**

**Patrick Noel Ball,** The University of Montana, Missoula, Montana, Ph. D. 2001 - Microbiology with Biochemistry minor; The University of Montana, Missoula, Montana, BS 1991 – Physiology, Chemistry minor

- BI 311 Genetics
- BI 314 Cell & Molecular Biology
- BI 460 Cell Biology

**Matthew Robert Orr,** Population Biology, University of California, Davis, Ph.D., 1995; Biology, Amherst College, Amherst, Massachusetts, Biology, BA, Magna Cum Laude, Phi Beta Kappa.

- BI 370 Ecology
- BI 469/569 (UO) Ecological Restoration (OSU FW 445)
- BI UDT Evolutionary Biology of Infect Disease (UO 489)

**Adjunct Faculty:**

**Eddie Johnson,** Anatomy & Neurobiology, Colorado State University Biology (cum laude), PhD, 1988; Zoology, 1981, University of Vermont, M.S., 1981; City College of New York, B.S., 1974

- MB 302 & 303 Microbiology and Lab
- BI UDT (UO course) Investigations in Medical Physiology, BI 358
- BI UDT (UO course) Neurobiology, BI 360

**Carol Higginbothom,** Biochemistry, Montana State University, Ph.D., 1996; Central College, Pella, Iowa, Bachelor of Arts awarded Cum Laude, 1992

- BB Physiological Biochemistry
- CH 331, 335, 336, and labs 332, 337 Organic Chemistry
- CH 339 (UO course) Analytical Chemistry

b. *Estimate the number and type of support staff needed to provide the program at the new location(s).*

- There are two full-time support staff for four UO programs. These same two people will continue to be employed by OSU-Cascades. One-fourth of their time will support the proposed science programs (General Science and Biology).

4. Other Resources
a. Describe facilities (e.g., buildings, labs, equipment) necessary to offer the program at the new location(s).

- All current facilities needed to offer the current UO General Science program will still be available, so no new facilities are needed.

b. Indicate how library needs will be met.

- The library evaluation is included at the end of this MOU. No additional library resources are required.

c. Indicate how students at the new location(s) will receive student services (e.g., academic advising, financial aid assistance, course registration, access to book/text purchases).

- All current student services for UO General Science students will still be available to students in the Biology program, so no new services are required. Currently the UO programs are supported by two staff members that, similarly to the faculty, will become OSU employees. It is estimated that each spends approximately a quarter of their time on each UO program.

5. Alternative Delivery Methods/Formats

a. Are alternative delivery methods being used (e.g., distance learning or technology-enhanced)? Please describe.

- Students will be able to take some of the required courses in distance learning versions if they chose to. They will also have the option of using E-campus courses for some of their upper-division electives.

b. Will this program be delivered in an alternative format (e.g., weekend, evening, on-site)? Please describe.

- The program will delivered in a standard format, almost entirely with face-to-face classes delivered on the OSU-Cascades campus.

6. Budgetary Impact

a. Indicate the estimated cost of the program for the first four years of its operation. (Use the Budget Outline form, accessible from the Provosts’ Council website.)

- MOUs for Psychology, General Science-Pre-Education option, and Biology are being submitted concurrently. The Mathematics MOU will follow these MOUs later this academic year.

- There is significant overlap in the Gen Science and Biology majors in terms of upper division science requirements. The difference is only three courses. Because of this, the Gen Science and Biology budgets are combined.

- For the last nine years, OSU-Cascades paid UO an annual lump sum amount equal to the tuition plus RAM generated by UO FTE in programs noted below.

- UO programs will now be offered by OSU. The table below is a projection of revenue and expenses. The revenue assumptions are: enrollment increases at 12% per year, tuition increases at 7.5% per year, and RAM funding decreasing by 17%. The expenses are detailed in the budget sheets.
Assumptions for expenses include: salaries increase at 3% per year, OPE is 29% and increases 10% per year, and the overhead rate is 36%.

- Enrollment growth will fund additional faculty support in future years.

- In FY 2011-12, the net balance for Psychology and General Sciences are $66,586 and -$33,788. Together the two programs are net positive at $32,798. Projections are for both programs to grow in enrollment (revenue) and be net positive, enabling both programs to add staffing to support growth.

<table>
<thead>
<tr>
<th>Total Revenue</th>
<th>FY12</th>
<th>FY13</th>
<th>FY14</th>
<th>FY15</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Science/Biology</td>
<td>358,462</td>
<td>426,760</td>
<td>508,411</td>
<td>606,071</td>
</tr>
<tr>
<td>Psychology</td>
<td>412,137</td>
<td>491,616</td>
<td>586,757</td>
<td>700,690</td>
</tr>
<tr>
<td>Mathematics</td>
<td>75,920</td>
<td>90,561</td>
<td>108,087</td>
<td>129,074</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>846,519</strong></td>
<td><strong>1,008,937</strong></td>
<td><strong>1,203,255</strong></td>
<td><strong>1,435,835</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Expenses</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>General Science/Biology</td>
<td>392,250</td>
<td>384,794</td>
<td>398,676</td>
<td>418,680</td>
</tr>
<tr>
<td>Psychology</td>
<td>345,551</td>
<td>340,870</td>
<td>354,289</td>
<td>368,056</td>
</tr>
<tr>
<td>Mathematics</td>
<td>148,085</td>
<td>154,416</td>
<td>161,162</td>
<td>168,349</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>883,886</strong></td>
<td><strong>880,080</strong></td>
<td><strong>914,126</strong></td>
<td><strong>955,085</strong></td>
</tr>
</tbody>
</table>

- Budget details and the **Budget Outline Form** are included in Appendix 3.

b. **If grant funds are required to launch the program, what does the institution propose to do with the program upon termination of the grant?**
   - No grant funds will be used to launch or maintain the program.

c. **Will the allocation of going-level budget funds in support of the program have an adverse impact on any other institutional program, including the on-campus program? If so, in what ways?**
   - The funds currently used to support the UO General Science program will be redirected to support the OSU Biology Program and the students formally served by the UO General Science degree will use the OSU Biology and General Science degrees. There will be no impact on the students or the Corvallis campus budget.

d. **If the program will be financed from existing resources, specifically state:**
   - **i. What the budgetary unit will be doing as a result of the new program that is not now done, in terms of additional activities.**
     - See section a above – no additional activities are needed. The courses and effort used to deliver courses in the UO General Science Program will be redirected to deliver the OSU
Biology courses. We have worked with the Cascades faculty to map the courses and effort appropriately

ii. State what these new activities will cost and whether financed or staffed by shifting of assignments within the budgetary unit or reallocation of resources within the institution. State which resources will be moved and how this will affect those programs losing resources.

o See above, no new activities or costs required.

7. Documentation of Faculty Support
This documentation is in a separate attachment.

OSU Libraries Support for a B.S. in Biology at the OSU Cascades Campus

Journal Collection
Biology is a journal driven discipline. OSU Libraries’ subscriptions to online journal packages, such as Springer, Wiley, and Elsevier have expanded electronic access and in most cases cover the years 1996 to the present. The Bio-One database delivers full-text biology articles from 2000 to the present for most titles. Full-text access to articles older than 3-12 months is available from the array of journals covered by the Libraries’ Ebsco and Gale database subscriptions. Subscriptions to JSTOR to Arts & Sciences I, Ecology & Botany, and General Science collections offer archival coverage of journals back to their inception. In addition, OSU Libraries has instituted a “Scan & Deliver” service that provides next day electronic delivery of full-text journal articles that are not immediately available.

OSU Libraries currently supports the main campus Biology undergraduate degree as well as several related interdisciplinary graduate programs, such as Environmental Sciences, the Genetics Program, and Molecular & Cellular Biology Program. In addition, OSU Libraries supports Extended Campus undergraduate degrees related to Biology, including Environmental Sciences, Natural Resources, General Agriculture, General Horticulture, Fisheries & Wildlife, and Science & Mathematics Education.

Databases
The OSU Libraries subscribe to more 100 research databases in all subject areas, including the science and math databases: Agricola; Aquatic Sciences & Fisheries Abstracts (ASFA); BioOne; Cab Abstracts; Compendex; Citeseer (Computer and Information Science Papers); Computer Source; Current Index to Statistics; EIS: Digests of Environmental Impact Statements; Environmental Sciences & Pollution Management; MathSciNet; SciFinder Scholar (Chemical Abstracts); Wildlife & Ecology Studies Worldwide; the Science and Social Sciences Citation Indexes in Web of Science and Zoological Record. Database subscriptions to ERIC, Education Research Complete, Professional Development Collection and PsycINFO support the Education curriculum.

Monographs
While science is primarily journal driven, the library purchases some monographs as needed to support the programs. OSU Cascades campus invests in monographs to support science and math teaching at the elementary and secondary level to support the Masters of Arts in teaching degree. Increasingly,
books are purchased in digital format so that they are immediately available. Print books from Valley Library in Corvallis can be requested to be delivered in 2-3 working days. The Libraries supplement its book collection through participation in the Orbis Cascades Alliance, a consortium of 36 academic libraries in Oregon and Washington. Books requested through a shared catalog, Summit, are delivered via courier service within 3-5 working days. Books not available through Summit can be requested in the same catalog through OCLC WorldCat; WorldCat delivery time is dependent on availability and location of the lending library, but most are received within a week.

Reference

OSU Cascades Library Services
The OSU Libraries provide services for the Cascades campus in collaboration with the COCC Library. Two OSU Cascades librarians provide reference and instruction services tailored for Cascades students. Kate Gronemyer provides instruction and Maureen Kelly is the Education subject librarian for OSU Libraries. Instruction services can take several forms, from hands-on workshops for specific classes, to customized web pages and tutorials, to individual one-on-one or small group consultations. Circulation and Reserves is handled by COCC staff, and Interlibrary Loan is provided by OSU.

Conclusion
OSU Libraries is prepared to support an undergraduate Biology degree on the OSU Cascades campus. Access to the necessary subject-related electronic journals and other information is readily available through existing library holdings. The OSU Cascades Librarians will support the teaching mission through instruction and consultation. Services are in place to provide quick access and delivery of information.

Respectfully,

Maureen Kelly
OSU Cascades Head Librarian
February 22, 2011