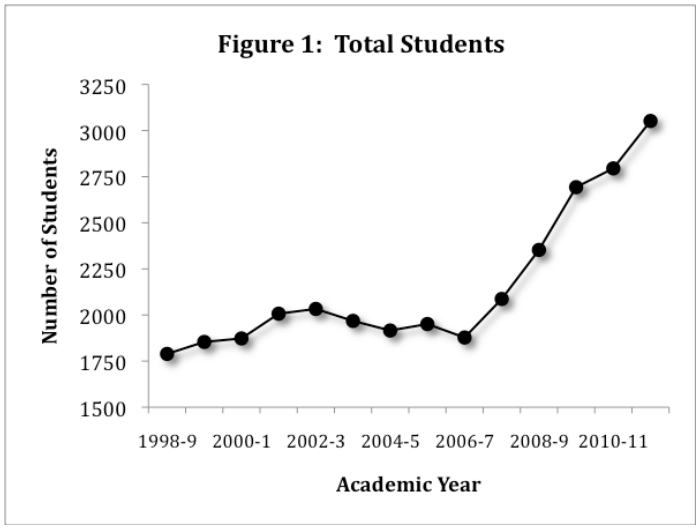
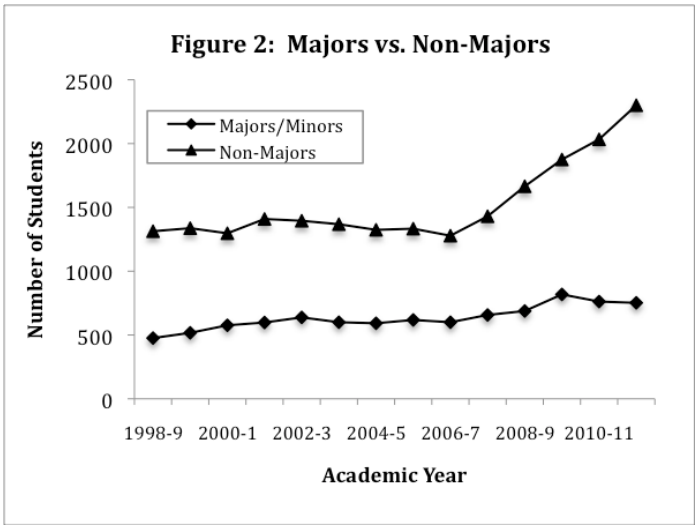
Biology Department Report, 2011-2012 DRAFT

Submitted by Sarah Boomer June 30, 2012

I. EXECUTIVE SUMMARY

A. Enrollment and Growth: Enrollment continued to grow (over 3000 students took Biology-related coursework in 2011-2012, Figure 1). Non-majors enrollment continued to show growth (over 2300 students, Figure 2), particularly in BI 102, which showed a nearly 17% enrollment increase (Section II, Figure 3). Enrollment in the major remained constant (~750 students, Figure 2; more in Section II).





B. Major/Minor Success: Our students have been successful in their Biology-related pursuits. At least 8 current or former majors were accepted into professional schools and advanced degree programs (e.g. Education, Medicine, Veterinary, Nutrition). Another 8 successfully found employment in positions spanning several major disciplines of Biology. In addition, at least 13 advisees were accepted into professional undergraduate programs (e.g. Nursing, Dental Hygiene). Please see Appendix 3 for a complete list of all outstanding student achievements.

C. Enhanced Infrastructure: Our department continued to enhance laboratory space and technology. The Microbiology Teaching Laboratory (NS201) remodel was completed in September 2011, allowing for 25% growth in BI 318 and BI 331. Additional microbiology equipment ($3.5K) was provided using student lab fee and pre-nursing funding. With the loss of AIC support this year, the department invested ~$14K (via student lab fee and pre-nursing funding) to improve computers in our non-majors 100 series labs. Additional equipment upgrades (~$6K) were likewise made for Cell-Molecular, A&P, and Botany coursework. Significant faculty/staff effort was expended over the course of the year to design the DeVolder Family Science Center. Key contributors included Dr. LeMaster (40 hours), Dr. Boomer (10 hours), and Piper Mueller-Warrant (10 hours). Finally, faculty worked with the WOU Textbook Rental Program to acquire ~600 Clickers (retail value = $20K) for a new BI 100 Series-focused rental program to promote active learning and attendance; in the last year, all 100-series instructors have made excellent efforts to learn and implement this important technology into their lecture curriculum.

D. Publications and Presentations: Biology Faculty published 8 papers in peer-reviewed journals, with another 4 in revision or press at this time. We were involved in 13 refereed presentations at state or national meetings and workshops. Eleven of these combined activities were co-authored by current and/or former WOU students. Please see Appendix 2B for a complete list of all publications and presentations.

E. Grants: Biology Faculty continued to receive grant monies for their research, as well as make strong efforts to apply for grants. Ongoing grant support was provided to Dr. Dutton and colleagues via the Department of Justice (a no-cost one-year extension; co-authored with the Department of Earth Science and Oregon State Police), and to Drs. Haberman and Baumgartner via the Oregon Sea Grant ($24K remaining budget). Several new grant-writing efforts resulted in the following: 3 faculty received 5 Faculty Development grants totaling ~$9K. Dr. Baltzley received $600 from the Arctic Research Consortium of the United States. Dr. Latham contributed to a 5-year $600K NSF ADVANCE Project awarded to Gonzaga University, and was selected to receive support for networking efforts aimed at advancing the careers of women in STEM at PUI's. Dr. Howard was awarded a $25K NSF-ROA supplement to an OSU LTER Grant. In terms of submitted new grants pending decisions, Dr. Baumgartner submitted 2 proposals (one pre-proposal W.M. Keck Foundation, and a second $500K NSF Research Network Grant Proposal, co-authored with other members of the Northwest Biosciences Consortium), and Dr. Dutton and colleagues submitted 2 U.S. Department of Justice grants ($606K and $686K, respectively). In terms of submitted grants but not funded, Dr. Baltzley served as a co-PI on a $175K NSF RUI grant; he also requested $1350 from Oregon Humanities.

F. University Service: Biology Faculty contributed to WOU governance, with notable representation on Faculty Senate, Institutional Review Board, Program for Undergraduate Research Experiences (PURE), Faculty Evaluation Committee, Scholarship Committee, and the University Personnel Review Committee.

G. Advising: Tenure-track (TT) faculty advised ~350 students each term (~80 hours per term), with a majority carried by Dr. LeMaster (~125 Pre-Nursing,) and Dr. Dutton (~90 Pre-Medicine).

H. Research and Scholarship: Eight Biology Faculty served as mentors for 30 undergraduates engaged in research projects, including 3 in-progress Honors Theses. Approximately 50 undergraduates participated in course-based research projects, the majority in General Ecology, Systematic Field Botany, and Marine Ecology. All projects involved students engaged in original research, generating original data. Four projects were presented at the Academic Excellence Showcase. Please see Appendix 2A-B for a complete list of all research students, publications, and presentations.

I. Professional Leadership: Biology Faculty were involved in an astonishing array of professional societies beyond WOU, with several assuming leadership roles at the local, regional, and national levels.

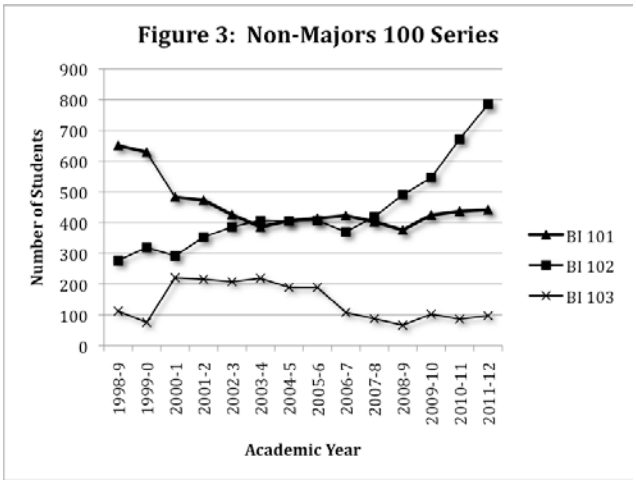
J. Scholarships: Our department awarded more than $31,500 of scholarships to undergraduate Biology majors, with TT faculty providing valuable service on our departmental Scholarship Committee.

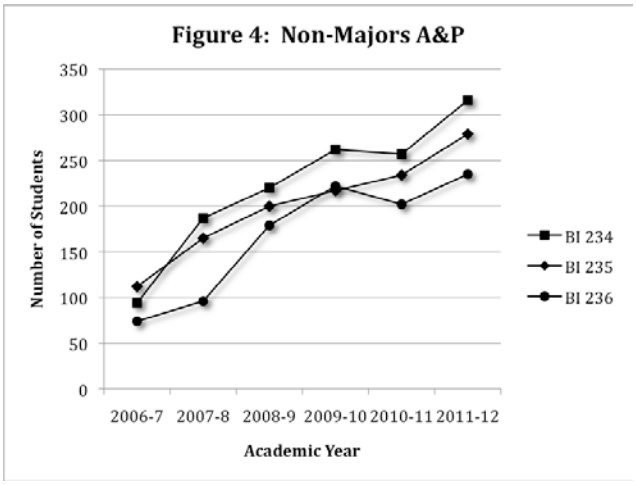
K. Faculty/Staff Changes: Dr. Michael Baltzley (Cell Biology/Animal A&P) and Dr. Amy Harwell (non-majors A&P/100 series) joined our staff in 2011-2. During spring term, 5 TT faculty participated in a search to replace non-tenure-track (NTT) Dr. Elizabeth Martin, who accepted a TT position in Lewiston, Idaho.

II. ENROLLMENT TRENDS:

As described in Sections I.A and I.G, there has been continued enrollment growth in many Biology courses. During the 2011-12 academic year, the Biology Department teaching personnel included 8 TT faculty (2 full professors, 3 associate professors, and 3 assistant professors) and 5 NTT faculty (all full-time or nearly full-time). Although classroom hours available for our current faculty total 513 (1.0 FTE = 36 hours/TT faculty; 45 hours/NTT faculty), this value does not represent the actual hours available given reassignment time awards (~30 hours), including Department Head, PURE Coordinator, 100 Series Coordinator, and PLTL Coordination.

Enrollment Trends – Non-Majors





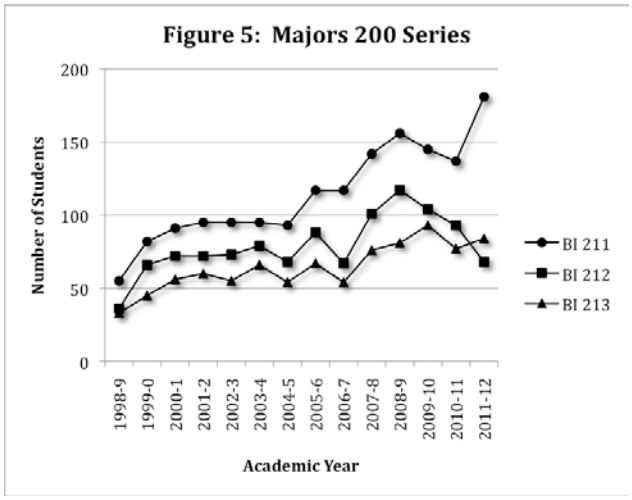
1. 100 Series: (Figure 3, adjacent)
BI 102 showed the most robust growth. While BI 103 showed slight growth, BI 101 was constant.

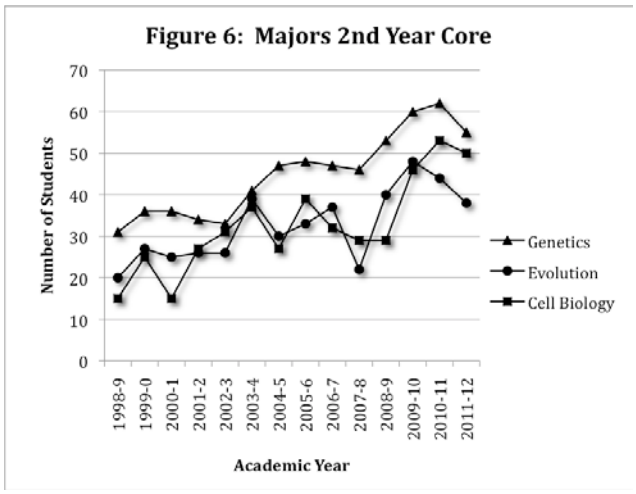
2. Non-Majors A&P/BI 234-5-6: (Figure 4, adjacent)
Last year, we closed nearly all sections once full, owing to a lack of FTE. Given the addition of Dr. Harwell, we were able to schedule and fill more sections.

3. Non-Majors Microbiology/BI 318: (no graph)
Last year, we closed all sections once full, owing to a lack of lab seating. Although the NS201 remodel alleviated some space issues, ALL new sections filled.

4. Human Heredity/BI 441: (no graph)
After last year's overload in this minor elective, we capped enrollment and turned students away; some will be taking Environmental Science in fall 2013, which will become part of the minor option list shortly.

Enrollment Trends – Majors





1. 200 Series: (Figure 5, adjacent)

Although fall BI 211 initially filled, many (40%) students dropped, failed, or earned D's, thus explaining the low BI 212 enrollment situation. The new winter BI 211 trailer was well-enrolled, contributing to growth in both overall and BI 213 numbers – the latter representing retention. Efforts to improve retention in this series remain ongoing.

2. Second Year Core/BI 314-5-6: (no graph)

Despite growth in the majors introductory series (BI 211-2-3), all second year core courses were down in 2011-2.

3. Notable Advanced Coursework: (no graph)

In contrast with last year, only electives in Developmental Biology and Advanced Human A&P showed notable growth. Although Majors Microbiology (third year core) was up (owing to remodel/capacity increases), most other courses (e.g. Ecology, Plant and Marine options) showed decreased or flat enrollment. The department is exploring ways to improve enrollment in such courses.

III. SUMMARY OF PROGRAM CURRICULUM CHANGES

Course	Nature of Change	Status	Justification
BI 324	Added BI 213 pre-req Modified description	In New Catalog (INC)	Pre-req adjustment needed given last year's BI 211-2-3 restructure; Dr. Baltzley modified description as per updates (description was at least 25 years old!).
BI 340	New Course	INC	Plant Nutrition was created by Dr. Howard to support her specialty, and provide breadth to Botany emphasis.
BI 334-5-6	Modified and unified course descriptions into ONE series	INC	Dr. LeMaster has revamped entire series, integrating gross A&P with histology and reorganizing content.
BI 441	Added BI 102 pre-req Increased to 4 credits	INC	To manage enrollment and improve preparation; credit change reflects the way the course has been taught (albeit using temporary green sheets).
BI 434	Added BI 213 pre-req Modified description	INC	Pre-req adjustment needed given last year's BI 211-2-3 restructure; Dr. Baltzley modified description as per updates (description was at least 25 years old!).
BI 475	Modified description	INC	Dr. Latham revamped molecular curriculum, owing to new technology (description was at least 18 years old!).

The department also removed ALL cumbersome, schedule-related language in former catalog descriptions.

IV. PROGRAM ASSESSMENT ACTIVITIES AND RESULTS

Biology Faculty continued to develop and facilitate programmatic and/or course assessment. Given the diversity of collected data, Biology Faculty efforts have been summarized in the following assessment table:

	Nature of Assessment					
Topic	Demographic	Content	Attitude	Other	**Results**	**Faculty**
BI 101	X	X	X	Exam Frequency Study Habits	Pending/Ongoing	Baumgartner Howard
BI 102	X	X	X	Exam Frequency Study Habits	Pending/Ongoing	Baumgartner Howard
BI 103	X	X	X		Pending/Ongoing	Baumgartner
BI 211	X	X	X	At-Risk Advising Active Learning	Pending/Ongoing	Boomer Latham Baltzley
BI 212		X			Pending/Ongoing	Dutton Haberman
BI 318	X				Pending/Ongoing	Boomer
BI 331	X				Pending/Ongoing	Boomer
BI 314	X				Pending/Ongoing	Latham
BI 316		X			Pending/Ongoing	Dutton
BI 321		X			Pending/Ongoing	Dutton
BI 357		X			Pending/Ongoing	Haberman
BI 361		X	X	Course Structure Sea Grant-Driven	Pending/Ongoing	Haberman Baumgartner
BI 371		X			Pending/Ongoing	Dutton
ETS Exam		X		Programmatic	Pending/Ongoing	Dutton*
Exit Survey	X		X	Learning Outcomes Advising Career Placement	Pending/Ongoing	Boomer*

*Biology Faculty who assisted with ETS/Exit Survey administration: Howard, Latham, LeMaster, Dutton

V. SWOT ANALYSIS

a. Strengths

- Biology Faculty are strongly committed to undergraduate education. All are active in all aspects of the university, including teaching, university governance, and research.
- As a department, we have continued to update and enhance our laboratories and budget decision-making process to improve equipment, and to emphasize more cutting-edge laboratory exercises. Construction of the new DeVolder Family Science Building will also solve a serious, long-term space challenge – both in terms of growing class enrollment and supporting faculty/office needs.
- Biology Faculty have embraced assessment as a means to provide empirical evidence for making programmatic and/or course changes with a specific emphasis on improving student preparation, managing enrollment, and better tracking/advising students.

b. Opportunities

- Enrollment growth provides an opportunity, so long as it is appropriately managed and supported.
- The diverse capabilities of Biology Faculty allow for a good balance of new research programs and experienced leadership and mentoring, so long as other workload demands remain in check.
- The 2011-12 academic year saw remarkable increases in scholarship productivity: undergraduate mentoring efforts doubled, publication outputs tripled, and grantsmanship soared, with 14 new funding attempts this year, and Biology Faculty-affiliated grant requests totaling $3 million.

c. Challenges

- The greatest challenge facing Biology at this time is retention – particularly in the major. Although Biology has made strong efforts to promote active learning and basic study skills in our BI 211-2-3 series (including developing and offering a winter BI 211 trailer – so less well-prepared students can take more remedial coursework in the fall), assessment efforts have demonstrated that far more basic challenges exist: the most damning of which is that ~25% students skip class. Consequently, the number of majors continuing in our second year core dropped again this year.
- Once again, challenges regarding research were frequently stated in faculty annual reports – with concerns regarding equipment, space, time, equity, and a support (e.g. FTE recognition for mentoring undergraduates). Indeed, mentoring efforts DOUBLED in the last year, coupled with a tripling of publication output, and a staggering increase in granstmanship.
- Enrollment continues to grow without a concomitant hiring of more tenure-track faculty. As reflected by some negative student feedback (e.g. Exit Survey), this is decreasing our ability to offer advanced electives in a timely manner. In particular, required organismal and A&P (both Human and Animal) coursework for the Pre-Professional, Zoology, and General Biology emphases is suffering from a lack of seats and faculty expertise. It is also effectively increasing our advising workload, which has also resulted in some negative student feedback.

d. Vulnerabilities

- Advising has become a serious vulnerability, not only because it is consuming our collective workload but also because of student feedback (e.g. Exit Survey) regarding requests for more career-focused services, and perceived dissatisfaction among our large Pre-Nursing cohort given an extremely low placement in target programs this year.
- We have long prided ourselves in offering a broad training in the field of Biology for undergraduates. Indeed, General Biology graduates, for the first time since the inception of tracked emphases, out-numbered Pre-Professional graduates in 2011-2; we also continued to graduate majors with Botany or Ecology emphases. Despite these positive trends, several advanced courses remain low-enrolled given ongoing student gravitation toward animal-based coursework.
- Increases in tenure-track faculty positions have not kept pace with increases in student numbers. We believe that the department has been able to build a strong reputation in recent years but, without

investing in additional tenure-track faculty positions, we foresee drops in recruitment and retention as we increase class sizes, reduce class availabilities, and continue to see diminished student satisfaction.

APPENDIX 1: Faculty/Staff Roster

Tenure-Track Faculty

• Dr. Sarah Boomer	Professor	Years of Service = 15
• Dr. Bryan Dutton	Professor	Years of Service = 14
• Dr. Karen Haberman	Associate Professor	Years of Service = 14
• Dr. Mike LeMaster	Associate Professor	Years of Service = 9
• Dr. Erin Baumgartner	Associate Professor	Years of Service = 4
• Dr. Kristin Latham	Assistant Professor	Years of Service = 4
• Dr. Ava Howard	Assistant Professor	Years of Service = 3
• Dr. Michael Baltzley	Assistant Professor	Years of Service = 1

Non-Tenure Track Faculty

• Dr. Karen Bledsoe	Assistant Professor	Years of Service = 12
• Dr. Jeff Snyder	Assistant Professor	Years of Service = 5
• Dr. Elizabeth Martin	Assistant Professor	Years of Service = 2
• Scott MacDonald	Instructor	Years of Service = 5
• Dr. Amy Harwell	Assistant Professor	Years of Service = 1

Lab Preparators:

• Piper Mueller-Warrant	full-time	Years of Service = 7
• Julie Grammer	half-time Biology (half-time Earth Science)	Years of Service = 3

APPENDIX 2: Faculty Highlights

A. TEACHING - *Including Faculty-Student Collaborative Scholarship and Outreach*

- Undergraduate students participated in collaborative scholarship/research with faculty:
  - **With Dr. Haberman**: Sylvia Herrold and Karin Traweek performed independent study research projects – with Karin Traweek working on an Honors Thesis. In addition, Sylvia Herrold Kim Moser, John More, Greg Helmstrom, Tim Lundy, and Kate Claussen performed research in the capacity of field team group leaders.
  - **With Dr. Howard**: Lee Cahalane, Valerie Sims, Annemarie Osurman, Alyssa Palmer, Erin Cooley, and Kayln Meyer – with Alyssa Palmer working on an Honors Thesis.
  - **With Dr. Latham**: Elizabeth Mason, Jenna Schneider, and Amy Nicholson – with Jenna Schneider and Amy Nicholson presenting Academic Showcase posters in May 2011.
  - **With Dr. LeMaster**: Bibiana Guerrero.
  - **With Dr. Dutton**: Carolee Buck, Nicole McLaughlin, and Aquilegia Leet performed independent study research projects – with Carolee Buck working on an Honors Thesis. Sara Hidalgo continues to perform paid supervised research (with Dr. Taylor). .
  - **With Dr. Baltzley**: Andrew Chapman and Michael Turner.
  - **With Dr. Baumgartner**: Carrie Munger, Sylvia Herrold, Heather Fledderjohan, Greg Helmstrom, and Amanda Quiroz all worked on curriculum development projects. In conjunction with his WOU MAT thesis, Tyler Orr presented at the Oregon Academy of Science, and co-authored a submitted manuscript for the NABT College & University Section Research Symposium.
  - **With Dr. Snyder**: Brittany Kramer and Emmalee Thornton – who presented an Academic Showcase talk AND poster in May 2011, and received a Walker Research Scholarship to support their work.
- In addition to **Dr. Haberman**'s ongoing incorporation of Sea Grant-supported Salmon River Estuary research-driven methodologies in Marine Ecology (BI 361), she and **Dr. Baumgartner** have also integrated a portion of this project into Biological Science for Elementary Schools (GS 311), including bringing teachers-in-training into the field.
- **Dr. Dutton** has also revitalized his local "Interactive Flora of Polk County" and "Monmouth City Street Trees" research projects, integrating portions into Systematic Field Botany (BI 321), as well as **Dr. Baumgartner's** Science Inquiry and Design for K-8 Teachers (GS 325).
- Several Biology Faculty have been involved in advanced teaching/research/mentoring in association with other institutions/universities:
  - **Dr. LeMaster**, who received a courtesy faculty appointment at OSU (2010-present), continues to serve on the dissertation committee of Emily Uhrig (a former WOU student), and has also begun to collaborate with Dr. Lutterschmidt at PSU.

- **Dr. Baumgartner** continues to work with Dr. Duncan-Seraphin at University of Hawaii-Manoa (and in conjunction with the Department of Education and National Oceanic & Atmospheric Administration), developing inquiry-based models of teacher professional development for ocean literacy. It should be further noted that Dr. Baumgartner received the National Association of Biology Teachers Four Year College & University Section Research in Teaching Award – with particular recognition for her teaching research activities as a member of the Northwest Biosciences Consortium.
- **Dr. Bledsoe** continues to work with Edith Gummer (Education NW), Heidi Kellar (NW Evaluation Association), the Oregon Science Teachers Association, the Bend-LaPine School District, and other universities on the effects of a blended model of professional development.
- **Dr. Martin** completed publication of a research paper about plant ecology work stemming from her Ph.D. thesis with Dr. Meinke (OSU).
- **Dr. Snyder** was given a courtesy faculty appointment in the Department of Biology at Idaho State University, where he is also serving on the graduate student of M.S. Candidate Adam Lenz.

- **Dr. LeMaster** has continued to lead educational Human A&P Cadaver lab tours to regional high schools. **Dr. Latham** served as an event coordinator at this year's first on-campus "Science Olympiad," and helped with an "Activity Day" for Oakdale first-graders. **Dr. Baltzley** served as a faculty mentor for a student completing an Extended Application Project Project at Dallas High School, and a judge at the aforementioned "Science Olympiad."

B. SCHOLARSHIP

Journal Articles:

- Cox, T.E., Philippoff, J., **Baumgartner, E.**, & Smith, C.M. (2012). Expert variability provides perspective on the strengths and weaknesses of citizen driven intertidal monitoring program. *Ecological Applications*.

- **Boomer, S.M.** and K.L. Latham, K.L. (2012). Manipulatives-based laboratory for majors biology – a hands-on approach to understanding respiration and photosynthesis. *Published on-line at Journal of Microbiology and Biology Education, American Society for Microbiology.*

- **Boomer, S.M.**, Baltzley M.J., Latham, K.L. (2012). Active Learning and Advising Strategies in Freshman Introductory Biology - If You Build It, Some Will Come. *Published on-line at Journal of Microbiology and Biology Education, American Society for Microbiology.*

- **Baumgartner, E.** (2011). Toward a better biology experience: The impact of implicit instruction in the nature of science in an undergraduate biology survey course. In *Proceedings of the National Association of Biology Teachers Four Year College & University Section 2011 Research Symposium*.

- Uhrig, E.J., Lutterschmidt, D.I., Mason, R.T., and **LeMaster, M.P.** (2012). Pheromonal mediation of intraseasonal declines in the attractivity of female red-sided garter snakes, *Thamnophis sirtalis parietalis. J. Chem. Ecol.*, 38(1):71-80.

- **Bledsoe, K.E.** (2011). Managing problem-based learning in large lecture sections. *Bioscience Education*, 18(1).

- **Martin, E.F.** and R.J. Meinke. (2012). Variation in the demographics of a rare, Central Oregon endemic, *Astragalus peckii* Piper (Fabaceae), under varying levels of herbivory. Population Ecology, online first. DOI 10.1007/s10144-012-0318-5.

- Baltzley M.J., Sherman A, Cain SD, Lohmann KJ. (2011). Conservation of a *Tritonia* Pedal peptides network in gastropods. *Invertebrate Biology*. 130: 313-324. (also selected for cover illustration!)

- Uhrig, E.J., **LeMaster, M.P.,** Lutterschmidt, D.I., and Mason, R.T. *In press*. Methyl Ketone Production in Juvenile Red-sided Garter Snakes. *Chemical Signals in Vertebrates 12*.

- **Boomer, S.M**. *In press.* Biotechnology Extension Activities for "Starch Agar Protocol." *Microbe Library, American Society for Microbiology.*

- **Bledsoe, K.E.** *In revision.* "Starch is very fatty": Understanding the logic in undergraduate student conceptions about biological molecules. Electronic Journal of Science Education.

- Flitcroft, Rebecca L., K. Burnett, **J.W. Snyder**, G. Reeves, and L. Ganio. *Submitted.* Patterns of stream network occupancy for juvenile Coho salmon (*Oncorhynchus kisutch*) in mid-coastal Oregon; implications for conservation. Transactions of the American Fisheries Society.

Presentations: *Note – Student Academic Showcase Presentations in Section A*

- **Baumgartner, E.** Commensalism doesn't cut it: Building scientific literacy through science-education partnerships. Invited presentation to Math & Science Seminar Series, Roger Williams University. Bristol, RI 2012.

- **Baumgartner, E.** (2011). Toward a better biology experience: The impact of implicit instruction in the nature of science in an undergraduate biology survey course. National Association of Biology Teachers' Four-Year College & University Section Research Symposium. Anaheim, CA: October 2011.

- Orr, T. and **Baumgartner E**. Contrasting effects of inquiry-based instruction on biology experts and novices. Oregon Academy of Science. Portland, OR: February 2012.

- **Boomer, S.M.**, M.J. Baltzley, K.L. Latham. Active Learning and Advising Strategies in Freshman Introductory Biology - If You Build It, Some Will Come. American Society for Microbiology Conference for Undergraduate Educators, San Mateo, CA: June 2012.

- Uhrig, E.J., **LeMaster, M.P.**, and Mason, R.T. Chemical Ecology of the Red-spotted Garter Snake. Society for Integrative and Comparative Biology (SICB), Charleston, SC: January, 2012.

- **Bledsoe, K.E.** "Sugar has lots of fat in it": Logical structures underlying student alternative conceptions of biomolecules. Oregon Academy of Science. Portland, OR: February 2012.

- Aldrich P.R., Dutton E.K., Taylor, S.B., **Dutton, B.E.**, and Stanley R.J. Geographic Information Systems and Spatial Analysis – Fingerprint Characterization and Quantification. 48th Annual Training Conference of the International Association for Identification, Pacific Northwest Division, Boise, ID: May, 2012.

- Dutton, E.K., Aldrich, P.R., Taylor, S.B., **Dutton, B.E.**, Stanley, R.J., and Hidalgo, S.C. Application of Spatial Statistics to Latent Print Identifications. NIJ Symposium Presentation at the 64th Annual Meeting of the American Academy of Forensic Sciences, Atlanta, GA: February, 2012.

- Stanley, R.J., Dutton, E.K., Taylor, S.B., Aldrich, P.R. and **Dutton, B.E.**. Geographic Information Systems and Spatial Analysis - Part 1: Quantifying Fingerprint Patterns and Minutiae Distributions. 64th Annual Meeting of the American Academy of Forensic Sciences, Atlanta, GA: February, 2012.

- Aldrich, P.R., Dutton, E.K., Taylor, S.B., **Dutton, B.E.**, and Stanley, R.J. and. Geographic Information Systems and Spatial Analysis - Part 2: A Monte Carlo Approach to Estimating Probabilities for Latent Print Identification. 64th Annual Meeting of the American Academy of Forensic Sciences, Atlanta, GA: February, 2012.

- Hidalgo, S.C., **Dutton, B.E.**, Stanley, R.J., Aldrich, P.R., Dutton, E.K., and Taylor, S.B. A Geometric Morphometric Approach to Fingerprint Analysis. The 64th Annual Meeting of the American Academy of Forensic Sciences, Atlanta, Georgia.

- Aldrich, P.R., Dutton, E.K., Taylor, S.B., and **Dutton, B.E.** Application of Geographic Information Systems and Spatial Statistics to Probability Estimates in Latent-Print Identification. International Association for Identification 2011 Annual International Education Conference, Milwaukee, WI: July, 2011.

- **Haberman, K.** and Lewis, J. Invited Talk: Response of invertebrate communities to dike removal in the Salmon River estuary: A model for undergraduate involvement in estuarine research. Ninety-sixth Annual Meeting, Ecological Society of America, Austin, TX: August, 2011.

- **Snyder, J.W.** Aquatic Macrophyte Abundance and Distribution in Henry's Fork of the Snake River through Harriman State Park of Idaho, 1988 - 2011. Caldera Symposium Presentation, Henry's Fork Foundation. Idaho Falls, ID: February 2012.

C. SERVICE - *External or Student Organizations; Note – Outreach in Section A*

- **Dr. Baumgartner** provided leadership, consulting services, and/or commentary for the following: Next Generation National Science Education Standards, NABT (Four Year College & University section), National Marine Educators Association Ocean Literacy Committee, the National Science Teachers Association NSTA Reports Advisory Board, and Audubon Society of Rhode Island Environmental Education Center.

- **Dr. Bledsoe** served as a section chair at the Oregon Academy of Science, performed educational consulting for the Northwest Evaluation Association, served as the Associate Editor for the Electronic Journal of Science Education, and reviewed manuscripts for several education journals.

- **Dr. Boomer** reviewed for 2 manuscripts for ASM, 2 federal grants for the National Science Foundation, and 1 safety guidelines document for teaching laboratory biosafety for ASM/CDC.

- **Dr. Dutton** was a co-advisor for the Natural Science Club (including leading a major field trip to Death Valley, California over Spring Break), served as an Assistant Editor of the Vasculum, and as a reviewer for Systematic Botany.

- **Dr. LeMaster** was a co-advisor for the Natural Science Club.

- **Dr. Baltzley** reviewed manuscripts for Marine & Freshwater Behaviour & Physiology, and Proceedings of the Royal Society. He also served as a question-writer for the ETS-GRE Biology section.

APPENDIX 3: Student Achievements

Acceptances to Graduate Professional Programs:

- **Emily Irby** OHSU Dental School
- **Jennifer Esparza** OHSU Dental School

  Jamie Jones St. George (Grenada) Medical School
- **Keeley Armstrong** Corban College Masters of Counseling Program
- **Amanda DeBelle** University of Denver Physican Therapy
- **Brittany Kramer** OSU Pharmacy School
- **Emmalee Thornton** OSU Pharmacy School
- **Amy Tzou** OSU Pharmacy School

We were also pleased to learn in the past year that many of our majors have successfully secured target employment in biology-related fields. From the 2011 cohort: Autumn Hughes (Biotech Lab), Stephanie Harrison (Clinical Lab), Tyler Albertson (Fish & Wildlife), Kailey Clarno (Forestry), Richard Rayhel (Research Assistant), Nancy Odenthal (National Geographic), and Joe Lewis (Field Research Assistant). From the 2012 cohort: Tim Lundy (Ecology).

Acceptances to Undergraduate Professional Programs:

- **Kelly Bocciolatt** Pacific University Dental Hygiene Program
- **Marley Winkelman** OIT Dental Hygiene Program
- **Max Rothenberger** OHSU Nursing Program - Monmouth
- **Lucas Pyle** OHSU Nursing Program - Monmouth
- **Les McCloud** University of Portland, and Linfield Nursing Programs
- **Hannah Langley** University of Portland, Linfield, and OHSU Nursing Programs
- **Thomas Balcom** University of Portland, and Linfield Nursing Programs
- **Allison Small** Concordia University Nursing Program
- **Cassondra Shenk** OHSU Nursing Program - Monmouth
- **Leslie Broyes** OHSU Nursing Program - Monmouth
- **Jessica Gordon** Montana State/Billings Nursing Program
- **Kirstin Pfeifer** Boise State University Nursing Program
- **Reba Harrington** University of Portland, Linfield, OHSU Nursing Programs (and 3 others!)
- **Michael Frerichs** OHSU – Klamath Falls

Special Recognition – NSM Awards Night:

Outstanding Achievement in Biology & Pre-Professional Studies

Amanda DeBelle **Brittany Kramer** **Emmalee Thornton**

Outstanding Achievement in Principles of Biology

Kieran Kubac **Eli Zachary** **Anusha Hoda**