

MEMORANDUM

TO: Faculty Senate

FROM: Daniel J. Bernardo, ~~Executive Vice President~~ and Provost

SUBJECT: Extend Bachelor of Science in Biology to Global Campus

DATE: October 29, 2018

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The attached proposal to extend the Bachelor of Science in Biology to the Global Campus has been reviewed by the Provost's Office review committee. This proposal has been in development for quite some time and we have worked with Biological Sciences to refine it. The primary issue had been the role of the Vancouver and Tri-Cities campuses in provision of certain laboratory experiences and whether students who lived a considerable distance from Pullman would be required to visit the Pullman campus for these experiences. This has been resolved by listing the course, Biol 251, as an elective.

As the program grows, it is possible that Vancouver and/or Tri-Cities will be in a position to also offer the lab activities for this course. Note that introductory-level lab experiences are required to be completed at other institutions (e.g., community colleges). As this degree is targeted primarily to place-bound transfer students, we see no problem with this requirement.

We are satisfied that the proposal is ready for Senate review.

## Proposal to Extend Biology BS to Global Campus

Degree Title:	Bachelor of Science, Biology
Academic Program:	Biology
Academic Plan:	Biology
Number of Credits:	120
Department(s) or Program(s):	School of Biological Sciences
College(s):	College of Arts and Sciences
Campus(es):	Global
Method of Instructional Delivery:	Online/Hybrid

Contact Name:	Patrick Carter	Email Address:	<a href="mailto:pacarter@wsu.edu">pacarter@wsu.edu</a>
Contact Phone:	509-335-3511	*Proposed start date:	Fall 2019

**\*Proposed Start Date:** Approval must be received from the Northwest Commission on Colleges and Universities before the program may be advertised or recruited for. Financial aid may not be available until the program has been approved by the Department of Education subsequent to NWCCU approval.

**The names typed below certify that the relevant academic and campus officials have reviewed and approved this proposal:**

Chair Name:	Patrick A. Carter	Date:	10 October 2018
Everett Chancellor:		Date:	
Spokane Chancellor:		Date:	
Tri-Cities VCAA:		Date:	
Vancouver VCAA:		Date:	
Dean:	Matthew L. Jockers	Date:	10/11/18
VP Global Campus:		Date:	
Comments:			



Provost Office Sign:		Date: 12/9/18	
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Comments:

For Registrar's Office Use Only:					
Current CIP Code:		New CIP Code:		Date:	

Revised: 7.27.17

**Send completed form to: [provost.deg.changes@wsu.edu](mailto:provost.deg.changes@wsu.edu)**

This template asks you to answer the array of questions about your proposed program that are important to your department, your college, the Faculty Senate, the State of Washington, accreditors and other external stakeholders.

By placing all proposals in a similar format, this template provides a common standard for comparison, ensuring that all potential programs can be evaluated in an equitable fashion. It can be used to determine whether or not a program is feasible within the University's academic and financial situation, and if it will have the resources to further the University's objective of providing high quality education and scholarship.

This template is also a framework to think about the viability of your ideas. It can thus be a tool for strengthening both your proposal and the resulting program itself, since a program that is starved for either students or resources from its inception is not likely to become a high quality program.

Here are some of the things to consider as you complete the template:

What are the aspirations for the reputation of this program - local, regional, national? What will it take to make that a reality?

Who are you trying to attract with this new program? Will it bring new students to the university, better meet the needs of current students in the department, or draw students away from other departments?

How strong is the demand for education of this kind, and in what specific careers will someone who receives such an education find meaningful employment?

How many students do you need to attract to break even, and can both the market and WSU's capacity support this number?

Providing good answers to hard questions maximizes the likelihood that a new program will not just win acceptance by the Faculty Senate and administration, but will ultimately be successful in attracting students and placing graduates. The analyses in the Demand, Financial and Library workbooks will assist you in creating a persuasive proposal. The findings in each area, and their basis or justification, should be summarized in the proposal itself.



## Proposal

### Mission and Core Themes (Strategic Goals):

Provide a clear statement of the nature and purposes of the degree in the context of WSU's mission and core themes (strategic plan).

Offering the Bachelor of Science in Biology online is part of fulfilling the WSU Land Grant Mission, extending any degree the University offers at a distance to benefit the citizens of the state and beyond. Delivering the degree online, asynchronously, provides access to qualified place-bound and/or time-constrained individuals state-wide, nationally, and internationally. Additionally, having this option available online (and hence the availability online of upper level courses including the degree Capstone course) will enable a growing number of students who initially took courses on any of the WSU campuses but who did not complete their degree for varying reasons, to finish their degree in Biology and successfully graduate from WSU.

By extending the Bachelor of Science in Biology to the Global Campus, students will be able to access the award-winning faculty and scholarship offered by the WSU School of Biological Sciences, enjoying a truly transformational student experience at a distance.

The mission of the School of Biological Sciences is to advance and convey fundamental biological knowledge about how organisms function, interact, and evolve in a changing world—information that is critical to confront pressing problems facing our society. Understanding the complexity of life has been one of humanity's greatest quests. The School of Biological Sciences offers courses and research experiences to help students understand diverse aspects of life, ranging from molecular and cellular biology to physiology, ecology, and evolution. The biology major is built around core courses in introductory biology, cell biology, ecology, evolution, and genetics. We will offer the general option of our current biology major through Global Campus. The general option provides students with the greatest flexibility to shape their own programs of study.

The biology major provides students with background and skills that are necessary for a wide variety of jobs, ranging from biotechnology industry to health care to resource management. This major provides students with the coursework and knowledge to later pursue professional studies in medical, veterinary, and physical therapy schools. Similarly, the major provides students with the stepping stones essential for entry into graduate schools to obtain M.S. or Ph.D. degrees. The curriculum to be available online will create opportunities in particular for students interested in careers in health care. Health care is expected to provide about 28% of all new jobs in Washington over the next five years, and the availability of a BS in Biology through online courses will create opportunities for place-bound students to prepare for these jobs.

### Educational Offerings:

Describe the degree program, including the total number of credits required. Provide the four-year degree plan (undergraduate) or appropriate plan of study (graduate and professional). Please note that all courses for the degree must be approved before the degree will be reviewed by the Catalog Subcommittee.



See Exhibit A for four-year degree plan.

See Exhibit B for advising check sheet for the degree.

See Exhibit C for new course development and delivery schedule.

Provide descriptive information regarding (the) method(s) of instructional delivery (percent face-to-face, hybrid, distance, and/or competency-based).

This degree will be delivered primarily online, asynchronously via the Global Campus LMS infrastructure.

Students will access most courses via online delivery. However, students will be required to transfer credits from community colleges or other universities to satisfy introductory laboratory science courses, such as Biology 106-107, Chemistry 105, 106, and 345, Physics 101-102. In addition, one elective in-depth laboratory course (Biol 251) that requires students meet once or twice per semester to engage in hands-on learning experiences will be available for students who would like that experience.

### Assessment of Student Learning and Student Achievement

\* For graduate programs, please contact the Graduate School before completing this section.

Please provide a list and description of expected student learning outcomes.

#### Learning Outcomes

We expect each undergraduate student who has a major in biology to have achieved the following outcomes at the time they graduate with a B.S. from our program:

1. Mastery of fundamental biological concepts and an ability to integrate this conceptual knowledge across different subfields within the discipline.
2. Use critical thinking and scientific skills to analyze and solve biological problems.
3. Effectively communicate biological problems and solutions to the scientific community and the public at large in writing and in oral discussion.
4. Ability to formulate logical hypotheses, to test hypotheses using quantitative and other appropriate methods involving collection and analysis of data, and to make valid inferences from experimental results.
5. Identify and access the central body of knowledge in biology or zoology through utilization of a wide range of methods for researching the primary literature.
6. Use scientific literacy and knowledge of biology or zoology to analyze contemporary social, cultural, and environmental issues to make informed rational decisions.

For undergraduate programs, provide the department's plan for assessing student learning outcomes. Describe briefly how information on student learning will be collected and incorporated into existing processes for evaluating student learning in the department. Please attach the plan and a curriculum matrix.

Assessment efforts in the School of Biological Sciences are coordinated by the Associate Director for the undergraduate program and supervised by the unit Director. We have a clinical faculty member who has a background in education (Dr. Sian Ritchie) assigned to analyze and summarize assessment data each year. Our Undergraduate Program Committee, which is chaired by the Associate Director, has an assessment subcommittee, composed of members from the Pullman, Vancouver and Tri-Cities campuses, that evaluates assessment data results and consults on report preparation. Assessment reports are prepared by the Associate Director for the undergraduate program. Assessment methods and data are discussed at faculty meetings with faculty at large. All faculty are encouraged to participate in assessment efforts in their courses.

Assessment of online courses will be handled in the same manner as for face-to-face courses. Data on student achievement in learning outcomes from online courses will be reported with data from face-to-face courses on each of our campuses at which we offer degrees.

Please indicate as appropriate:

- Assessment of this program will be incorporated into the existing assessment plan for the School of Biological Sciences. Please attach a copy of the existing plan.
- A draft assessment plan is attached.
- A curriculum matrix is attached.

### **Planning:**

Describe plans and include descriptions which provide evidence of:

1. The need for the change

CNN reports that biology majors can use their degrees in a number of disciplines, including genetics, medical research, and ecology. A general biologist starts out at \$38,896, while a biochemist makes slightly more at \$43,961.

Many students utilize the biology degree as a foundation for advanced degrees. For example, biology degrees often serve as a preliminary step toward professional training for health careers, including medical, dental, and physical therapy schools. Students with an interest in nursing and pharmacy schools may want a biology degree prior to entry into those professional programs. With WSU's College of Medicine and other health profession training programs on the Spokane campus, this proposed extension of the biology degree to the Global Campus will serve as a potential feeder program for citizens of Washington and more generally provide another avenue for students to gain access to training for health professions.

Additionally, the Global Campus commissioned a report from the market research firm EAB to identify the top 30 degrees that WSU should offer online, and Biology was listed as one of those top 30 degrees. According to this report, "Institutions nationwide conferred 109,896 "biological and biomedical sciences" bachelor's degrees in academic year 2014-15, 67 percent more than in 2004-05" indicating significant growth.

Exact enrollment projections are extremely difficult to determine with complete accuracy, especially for online programs where very few students are full time. We arrive at enrollment goals and projections through a series of analyses that includes market demand research (Emsi and EAB), historical trends in similar majors, on-campus enrollment trends, and analysis



employment demand for graduates of this major. Though we don't expect a completely linear trajectory of enrollment growth as outlined here, the numbers provided in the budget approximate our best projections of enrollments over time.

## 2. The student population to be served

Provide realistic justification for the projected FTE.

How can transfer students articulate smoothly into the program and complete it with approximately the same number of total credits as students who enter WSU as freshmen? Please describe specific efforts planned to recruit and retain students who are persons of color, disabled, or whose gender is underrepresented in this discipline.

WSU Global Campus programs typically appeal to those students who might not be able to attend a four-year program on a WSU campus, but still want an accredited degree offered by a Tier I Research University with an excellent reputation.

Many of the students interested in the program at a distance are likely first-generation college students, which will be a significant step toward achieving a more diverse group of WSU students. Students who are place-bound for different reasons, including financial constraints, family situations or even disabilities would have the option of obtaining a WSU degree without moving to Pullman, Vancouver or the Tri-Cities. The Global Campus serves rural and urban students alike, and promotes a diverse, inclusive, and community-based model that appeals to students from multiple underserved communities.

WSU Global Campus is focusing on digital marketing to generate awareness and promote all new degrees broadly across social media platforms and other digital access points. Specifically, the goal of the marketing effort is to meet target enrollment goals that enable the degree to reach a sustainable level of enrollments.

In addition, WSU Global Campus ensures that all courses and programs meet ADA requirements for access to individuals with disabilities.

Students who take advantage of the direct transfer agreement guidelines and articulation agreements will be able to transfer seamlessly from a two-year program without relocating to an area with a WSU campus. WSU Global Campus has been accommodating transfer students and former students who are at varying levels along the transfer continuum since its inception. The program is also designed to appeal to working professionals and adult learners who may already work in other fields but wish to refresh and update their skills.

## 3. Procedures used in arriving at the decision to change (e.g., consultation with advisory boards, input from industry or employers, commissioned studies, faculty task force, etc.).



The School of Biological Sciences already offers multiple Biology courses online in support of current students and has been preparing to offer this major online for several years; therefore, relatively few courses need to be developed to support the major.

Additionally, based on market analysis data and commissioned studies from EAB and Emsi, there appears to be growing demand in the workforce for graduates with a Biology Degree, and this modality will make the degree available to individuals who have separated from the University, those who wish to complete a degree, those in rural and under-served communities, and those with time constraints and/or location constraints that would otherwise not have access to a physical campus. By offering the WSU Bachelor of Science in Biology online, students who might otherwise choose another online university will have the option of becoming part of the Cougar Nation.

The Faculty of The School of Biological Sciences and the Dean of the College of Arts and Sciences agree that the degree can be supported for online delivery, and they are prepared to engage fully in the development and delivery of the online degree.

**4. Organizational arrangements required within the institution to accommodate the change.**

The Global Campus is prepared to fully support course development, student services, advising, recruiting, marketing, and faculty development within their existing infrastructure.

Likewise, The School of Biological Sciences is prepared to manage assessment, instruction, innovation, and coordination of the online degree in concert with their existing campus-based degree.

**5. Lay out a three-year timetable for implementation, including hiring plans, partnership contracts if needed, facilities modification, recruiting, and other elements of implementation. Provide dates for each step.**

2018-2019	Course development (see course development schedule, Exhibit C) Marketing/recruitment
2019-2020	Begin offering the online major Hire clinical faculty Continue marketing/recruitment Course update according to schedule
2020-2021	Monitor enrollment in individual courses; revise frequency of offerings as indicated Monitor fees and review student feedback on lab classes to ensure fiscal soundness Begin assessment Continue marketing, assessing marketing effort to date and adjusting as necessary Course update according to schedule



## Budget:

Attach the Financial Worksheet with five-year FTE, revenue and expenditure projections. Fully account for costs such as staff support, training, library, facilities and so on.

Please describe the funding picture narratively, including funding sources, department, college and/or campus commitments, investments already made, one-time costs, facilities costs (labs, classrooms, offices, telecom etc.) and library costs.

The budget requirements for the online degree are primarily course delivery and maintenance costs and secondarily course development costs because many courses have already been developed. On the Pullman campus, instructional costs that support the major are part of the ongoing funding that has been provided by the College of Arts and Sciences. On the Vancouver and Tri-Cities campuses, funding for these instructional costs will be recouped via the AAFTE return to the campus of instruction.

### Pullman Campus

The College of Arts and Sciences committed funding to a new faculty line for a clinical assistant professor in 2015 to assist with teaching online courses to support the major through the Global Campus. A new faculty member was hired in this line, and he has been developing and teaching online courses. This faculty member, Dr. Nii Ankrah, is expected ultimately to teach at least two online courses each semester in support of the major. Other instructional faculty have also been teaching online courses that support the major, and we anticipate that blended sections of other courses taught by tenure track and clinical faculty will be offered in support of the major. Tenure track faculty will be given the option of teaching online or blended courses as part of their assignments.

Efforts from teaching assistants will likely be needed to facilitate the teaching of courses that are part of the online biology major. When the major reaches its maximum capacity, one or two half-time teaching assistants might be needed each semester to provide laboratory teaching and grading.

Competitive funds are available from the College of Arts and Sciences for course development that serves online majors. We have used these funds in the past to develop some of our current online courses, and we will continue to apply for funds for further course development in the future. The School of Biological Sciences also will support course development and maintenance by providing resources, including funding for courses.

New positions are required for one 0.50 FTE PhD TA during years 1 and 2 to support on-site laboratory experiences and assist instructors of record with grading. The college will provide internally reallocated funds to fund the graduate TA (currently = \$8,908). After year 2, if enrollment in courses warrants increased TA support, then a second half-time TA will be added to support laboratory experiences, grading, and other teaching support needs (current cost = \$18,529). This position would need to be funded by CAS through enrollment funding generated by the program or an area reallocation of funds.

The work of the academic coordinator and fiscal specialist will be absorbed by current staff and should not require additional funding to maintain. Should the volume of students necessitate additional help in this capacity, an additional coordinator will be added in year 5, supported by enrollments in the online degree.

Other costs related to course materials and student experiences in courses can be covered by course fees. Initially we will charge the same course lab fees that are charged for the on-



campus version of all courses. Each year, expenditures for the lab experiences will be analyzed to determine if the fees are adequate to cover expenses. Adjustments will be made as needed by applying through the proper channels for increased course fees.

The Dean of CAS has committed to the start-up funding needed to commence offering the degree online with the understanding that the degree will be self-sustaining within a few semesters.

Tuition will be charged at prevailing Global Campus rate. Enrollments are eligible for the undergraduate enrollment funding model. The degree will be marketed through the Global Campus as being predominantly online, requiring limited hands-on lab experiences. It is imperative that the degree program and tuition follow the Global Campus rates in order to maintain competitive advantage when compared with other online programs.

#### **Student Services:**

Describe the capacity of student support services to accommodate the change at this location. Include a description of admissions, financial aid, advising, library, tutoring and other services specific to this request.

The Global Campus provides comprehensive student services, often in collaboration and cooperation with the centralized units, to ensure student success. Included are dedicated recruiters and advisors, transfer credit evaluation, career counseling, financial aid, e-tutoring, student involvement, and tech support for online students. The Global Campus is also skilled in working with students to match their goals with the programs and services offered by WSU.

Additionally, WSU Global Campus personnel are the experts on adult and contemporary distance learners, and provide specialized services to meet the needs of these unique students.

WSU Global Campus creates opportunities for meaningful student engagement through unique student involvement activities offered virtually and face-to-face. The Global Campus encourages and mentors students into research opportunities and creates pathways for students to transition into graduate school.

Describe the implications of the change for services to the rest of the student body.

Adding online courses and creating access to a new degree program adds opportunity and options for student success, potential for better time-to-degree outcomes, and flexibility that accommodates student's needs.

#### **Physical Facilities and Equipment:**

Outline the provision/s made for physical facilities and equipment at the proposed location that will support the program and its projected growth. Include videoconferencing and other technologies that support course delivery as well as classrooms, labs, and office space.



All online courses are fully supported by AOI and the Global Campus through the Learning Management System.

For those courses offered online that require a campus laboratory experience (currently there is only 1 elective course, Biol 251, that has this requirement and there are no plans to develop more), students will be required to attend weekend intensive laboratory sessions once or twice per semester on the WSU campus responsible for teaching that course and perhaps on other WSU campuses as well if area enrollment numbers indicate that doing so would be cost-effective. These labs will incur the same mandatory laboratory fees as the on-campus version of the course and the student will be responsible for any travel costs associated with attending an in-person laboratory experience at the appropriate campus. Biol 251 has already been taught multiple times on the Pullman campus with great success. |

### **Library and Information Resources:**

Using the Library Analysis form, describe the availability and adequacy of library and information resources for this degree, degree level, and location. Note plans to address gaps.

Students have access to all required curriculum as determined by the faculty and no new resources are expected to be required through the library to support this degree. See attached letter of support from the WSU Libraries (Exhibit F).

### **Faculty:**

List the educational and professional qualifications of the faculty relative to their individual teaching assignments.

List the anticipated sources or plans to secure qualified faculty and staff.

All faculty teaching online are held to the same qualifications as faculty who teach face-to-face on any of the WSU campuses. Deans and Directors are directly responsible for the hiring of all teaching faculty and ensure credentials are appropriate for the program. |

### **Impact on Other Locations/Programs:**

Briefly describe any impacts on other WSU programs and locations, and how you came to these conclusions (who was consulted?). If there are potential adverse impacts, describe how these will be addressed. Consider such things as: reallocation of faculty time, reallocation of AMS courses, impact of blended courses, internal competition, "cannibalization" of other programs, curricular effects for other degrees, effects on recruitment markets for other campuses. Indicate how such problems will be addressed for each campus or department affected.

We anticipate very few impacts on other WSU programs or on any of the campuses.

The School of Biological Sciences has faculty and a major in Pullman, Tri-Cities, and Vancouver. Accordingly, all SBS faculty on all three campuses discussed possible enrollment consequences for each of the campuses in both general faculty meetings and in the Undergraduate Program Committee (which has representatives from all three campuses). Because the primary market for the online major is place-bound students, and because of the policy that does not allow students enrolled on a physical campus to enroll in Global Campus courses in Spring and Fall semesters, the online program is unlikely to attract large numbers of campus-based students



during the academic year. We have found that during the summer, students are increasingly taking courses online rather than face-to-face. This trend has had impacts on summer enrollments on all campuses.

All campuses recognize that the addition of the online major increases the need for us to coordinate offerings across the WSU System, and we expect all three campuses to develop and teach online Biology classes that will contribute to the degree. We anticipate that the addition of the online major will allow us to use our resources more efficiently to serve our online students.

**Sustainability**

What are the plans for continuing the program past 5 years if the goals for enrollment are not met, or other circumstances prevent the execution of the plan described here?

All new online degree programs will be evaluated continuously for enrollment and financial metrics. Under-performing degrees will be sunsetted once the college, department, and Global Campus have explored all reasonable efforts to increase enrollments and revenue through marketing, partnerships, and innovation. However, prior to sunsetting a degree, need for the courses that are provided online will also be analyzed to ensure little to no impact on other departments and programs that rely on those courses.

Any sunsetted degree will include an appropriate teach-out plan and students will be supported to graduation.

**External Reviews**

If this program is new to the Washington State University system, please provide the names and addresses of 2-3 external experts from similar institutions who could be contacted to provide reviews of this program.

Name	Contact Information (email, phone, address)
N/A	

**Attachments:**

- Financial Worksheet
- Four-Year Degree Plan (undergraduate); curriculum overview (graduate and professional)
- Curriculum Map (undergraduate)
- Assessment Plan
- Letters of financial commitment
- Contracts or MOUs if applicable

Send to: [provost.deg.changes@wsu.edu](mailto:provost.deg.changes@wsu.edu)



## EXHIBIT A

### Four Year Degree Plan

#### Biology – General Option (120 Hours)

##### First Year

<i>First Term</i>	<i>Hours</i>
BIOLOGY 106 [BSCI]	4
CHEM 105 [PSCI] <sup>1</sup>	4
Creative & Professional Arts [ARTS]	3
HISTORY 105 [ROOT]	3
<i>Second Term</i>	<i>Hours</i>
BIOLOGY 107	4
CHEM 106	4
ENGLISH 101 [WRITG]	3
MATH 140 [QUAN] or 171 [QUAN] <sup>1</sup>	4

##### Second Year

<i>First Term</i>	<i>Hours</i>
BIOLOGY 301	4
CHEM 345	4
Communication [COMM] or Written Communication [WRITG]	3
Humanities [HUM]	3
<i>Second Term</i>	<i>Hours</i>
BIOLOGY 372 [M]	4
CHEM 370 or MBIOS 303	3 or 4
PHYSICS 101 or 201	4
Social Sciences [SSCI]	3
Complete Writing Portfolio	

##### Third Year

<i>First Term</i>	<i>Hours</i>
Diversity [DIVR]	3
PHYSICS 102 or 202	4
Foreign Language, if needed, or Electives <sup>2</sup>	4
Program Option Courses or Electives <sup>3</sup>	5 or 6
<i>Second Term</i>	<i>Hours</i>
BIOLOGY 403 or 405	3
Creative & Professional Arts [ARTS], Humanities [HUM], or Social Sciences [SSCI]	3
Foreign Language, if needed, or Electives <sup>2</sup>	3 or 4
Program Option Courses or Electives <sup>3</sup>	6

## Fourth Year

<i>First Term</i>	<i>Hours</i>
BIOLOGY 352	3
Program Option Courses or Electives <sup>3</sup>	13
<i>Second Term</i>	<i>Hours</i>
Integrative Capstone [CAPS]	3
STAT 212, 412, or PSYCH 311	3 or 4
Program Option Courses or Electives <sup>3</sup>	10
Complete School of Biological Sciences Exit Survey	

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### *Footnotes*

<sup>1</sup> MATH 106 may be taken as a pre-/co-requisite to CHEM 105 and other MATH courses. MATH 108 may also be needed.

<sup>2</sup> Two years of high school foreign language or at least two semesters of college-level foreign language are required by the College of Arts and Sciences for graduation.

<sup>3</sup> Biology General Program option courses should be selected in consultation with a biology advisor and include coursework to fulfill the University requirement of 40 upper division credits. All biology majors must complete 21 semester credits of biological coursework including 15 upper-division credits, 6 of which must be a BIOLOGY subject (prefix) taken in residence at WSU. Approved courses include 200-400-level BIOLOGY courses except those used to fulfill core requirements (BIOLOGY 106, 107, 301, 372, 403, or 405), and any courses approved by advisor. A maximum of 4 credits of coursework graded S/F may be used toward fulfilling departmental requirements or program options and must be approved by advisor. Coursework must include a total of two BIOLOGY [M] courses.



## EXHIBIT B

### Advising Check Sheet

#### BACHELOR OF SCIENCE -- BIOLOGY GENERAL OPTION

A Bachelor of Science degree from Washington State University requires a minimum of 120 total semester hours. At least 40 semester hours must be upper division coursework. A B.S. in Biology requires a minimum of 19 semester hours of core BIOLOGY courses (BIOLOGY 106, 107, 301, 372 and 405 or 403). An additional 21 semester hours of biological sciences coursework selected in consultation with your biology advisor is required. The 21 semester hours must include 15 upper division credits, six of which must be BIOLOGY prefix taken in residence at WSU. [WSU defines "In Residence" as a course taken at any campus in the WSU system, including Pullman, the branch campuses, and the Global Campus.] An overall GPA of at least 2.0 must be maintained in all college and departmental requirements. Two courses must satisfy the "Writing in the Major" [M] requirement.\*\*

#### Core Requirements:

<u>Biology Requirements:</u>		<u>Grade</u>
BIOLOGY 106	General Biology	4 hrs. _____
BIOLOGY 107	General Biology	4 hrs. _____
BIOLOGY 301	General Genetics	4 hrs. _____
BIOLOGY 372 [M]	General Ecology	4 hrs. _____
BIOLOGY 405	Prin Org Evolution OR	
BIOLOGY 403	Evolutionary Biol	3 hrs. _____

#### General Biology Option Electives:

A minimum of 15 credits of Biological Science chosen in consultation with an advisor.

*Courses in other departments at WSU may be suitable as electives and should be chosen in consultation with your advisor.*

#### Calculus Requirement:

MATH 140	Math Life Science OR	4 hrs. _____
MATH 171	Calculus	

#### Statistics Requirement:

STAT 212	Intro Stats OR	3-4 hrs. _____
STAT 412	Int Stat Meth Res I OR	
PSYCH 311	Elem Stats	

#### Chemistry Requirements:

CHEM 105*	Chemistry I	4 hrs. _____
CHEM 106*	Chemistry II	4 hrs. _____
CHEM 345	Organic I	4 hrs. _____

#### Physics Requirements:

PHYSICS 101* OR 201	Physics	4 hrs. _____
PHYSICS 102* OR 202	Physics	4 hrs. _____

#### General Biology Option Requirements:

##### Cell Biology Requirement:

BIOL 352	Cells	3 hrs. _____
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##### Biochemistry Requirement:

CHEM 370	Chemical Biology OR	
MBIOS 303	Int Biochemistry	3-4 hrs. _____

#### UCORE REQUIREMENTS (Including CAS additional req.):

[ROOT]	_____ Roots of Contemporary Issues	(3)
[COMM]	_____ Communication OR	
[WRTG]	_____ Written Communication	(3)
[WRTG]	_____ Written Communication	(3)
[QUAN]	_____ Quantitative Reasoning	(3)
[SSCI]	_____ Inquiry in the Social Sciences	(3)
[HUM]	_____ Inquiry in the Humanities	(3)
[ARTS]	_____ Inquiry in the Creative & Professional Arts	(3)
[BSCI][PSCI][SCI]		
	_____ Inquiry in the Inquiry in the Nat. Sciences	(7)
[ ]	_____ Inquiry in SSCI, HUM or ARTS (CAS)	(3)
[DIVR]	_____ Diversity	(3)
[CAPS]	_____ Integrative Capstone	(3)
[M]	_____ Writing in the major (2 courses)	

**Note: three, 3 credit (9 total credits) UCORE courses may fulfill major requirements.**

\_\_\_\_\_ Foreign Language - 1 yr. OR 2 yrs. H.S.

\_\_\_\_\_ Upper division (Minimum 40 credits)

\_\_\_\_\_ Minimum Total Credits (120)

\_\_\_\_\_ Junior Writing Portfolio

<http://universitycollege.wsu.edu/units/writingprogram/units/writingassessment/juniorwritingportfolio/guidelines/index.html>

\*Chemistry and Physics require a grade of C or better to progress to the next level course.

\*\*All official requirements for each student's specific degree requirements are listed in the MyWSU advisement report. This sheet is meant to serve as a guide.

Fall 2017

**EXHIBIT C**

<b>Course</b>	<b>Title</b>	<b>Development term</b>	<b>Delivery term</b>	<b>Developer</b>	<b>Instructor</b>
BIOL 333	Human Nutrition and Health	Fall 2018/Spring 2019	Summer 2019	Nii Ankrah	Nii Ankrah
Biol 354	Human Anatomy for Health Occupations	Summer 2019	Fall 2019	TBD at WSU-V	TBD
BIOL 3xx or 4xx	TBD	Summer 2019	TBD	TBD at WSU-TC	TBD



## EXHIBIT D

### SBS Assessment Plan

AY 17-18

#### 1. Norming and revision of descriptors for major SLOs.

Having used the new department goals and SLOs for a year, the general definitions seem to be working, but the descriptors indicating different levels need work. Since we also need to normalize our expectations for each SLO, these related discussions will be combined for each outcome.

We will start with SLO #1 "*Mastery of fundamental biological concepts and an ability to integrate this conceptual knowledge across different subfields within the discipline*

*-use the major concepts, principles and theories to account for biological phenomenon.*" We will organize a meeting involving all faculty who use this SLO in their class. We will use samples of student writing at different levels, plus examples of exams questions from classes at different levels, so that we can normalize the scoring across faculty.

#### 2. Faculty involvement in assessment.

During AY 16-17 many faculty on the three campuses were actively involved in assessment. Our goal was to make assessment routine for everyone involved in teaching core classes, option requirement, capstones and common elective classes. In Pullman, out of 28 tenure track faculty, 21 have been asked to be involved in this process, and to date only a few have not provided data. Of the instructors and clinical faculty in Pullman (5) everyone has provided the requested data. From the Vancouver campus four out of the five faculty have provided data. Now our objective is to integrate Tri-Cities faculty into the process; we anticipate they will begin to participate further now that the biology major is in place there (as of fall 2016).

#### 3. Collection of data from all capstone classes.

So far, we have only collected data from 1 capstone class, but we will start to collect data from all of this category to get better assessment of seniors.

#### 4. Curriculum map discussions/ refinement:

When we examined a range of classes in 16/17 we found only a few that included oral communication (SLO #3) as one of the learning outcomes covered. We will survey all classes to determine how many include oral communication as one of the learning outcomes. Depending on the outcome of the survey we will discuss SLO# 3 (communication) in faculty meeting.

There are two core classes (biol 107, mbios 301), and two option requirements (mbios 303, chem 370) taught by other units. Meetings will be set up with the faculty teaching those classes to gauge which of our SLOs are covered in those classes. This will provide a more complete picture for our curriculum coverage map.

#### **Time line**

##### Aug 17

Survey of classes to determine which include SLO#3.  
Contact faculty with courses used for SLO assessment.

##### Sept 17

Assessment committee meeting, and subsequent faculty meeting discussion to determine if action is required regarding oral communication (SLO#3).

##### Oct 17

Norming meeting re SLO #1.

##### December 17

Gather data from fall capstone and elective classes to extent revisions of the curriculum map.  
Senior exit surveys.

##### Jan/Feb 18

Assessment committee meeting- presentation and evaluation of revised descriptors for SLO# 1 after their use in fall classes.

Contact faculty with courses used for SLO assessment

May 18

Gather data from spring capstone and elective classes not yet included in the revisions of the curriculum map.

Senior exit surveys.

Assessment report.



Exhibit E

Letter of Financial Commitment from the Dean



College of  
Arts and Sciences

MEMORANDUM

TO: Patrick Carter, Director  
School of Biological Sciences

Cc: Nancy Lira, Area Finance Officer  
College of Arts and Sciences

FROM: Daryll B. DeWald, Dean *Daryll B. DeWald*  
College of Arts and Sciences

DATE: September 25, 2017

SUBJECT: Support for Biology Bachelor of Science degree through Global Campus

Dear Dr. Carter:

I offer my strong support for the proposal submitted by the School of Biological Sciences to launch online the Biology Bachelor of Science degree through the Global Campus.

The College of Arts and Sciences is committed to provide funding that will support oversight of the online program, development of new and updated courses, and the teaching of online courses for the major in Biology. The College will provide up to \$27,200 to support the appointment of a clinical assistant professor to meet those goals in the first year that the online major is offered and for three successive years if the growth of student majors meets the projection outlined in your proposal. This amount will increase up to \$40,800 if the number of majors in the online program meets the projected target of 75 students.

We are also committed to providing course development funds to the School of Biological Sciences that will support the design and implementation of courses for your online major. Our current standard is to provide \$4500 for the development of courses for the online environment, and these funds will be available through application to the College on a course-by-course basis.

All new online degree programs will be evaluated annually for effectiveness in meeting learning outcomes and for achieving sustainable enrollments. At the end of five years, we will review with the School of Biological Sciences and Global Campus the success of the online major in meeting learning and enrollment goals to evaluate renewal of our commitment to the salary of the clinical assistant professor.

I thank you and the faculty of the School of Biological Sciences for your commitment to providing educational opportunities that meet the needs of diverse students, especially for students who may not be able to access one of our physical campuses.

**Exhibit F**  
**Letter of Support: WSU Libraries**

TO: Kelly Newell, Director, Program and Partner Development

FROM: Kim Andersen, Chair, Faculty Senate Library Committee  
Jay Starratt, Dean of Libraries

RE: Extension of Existing Degrees to Global Campus

DATE: January 25, 2018

Although there is a formal process for new programs and degrees that collects information about the potential impact on Libraries, among other campus resources, when a degree is being extended to Global Campus students, the impact will be minimal.

Over 90% of our materials are already purchased or licensed in digital formats, including journals, e-books, and educational films. Approximately 95% of those materials are already available for the entire WSU system. Adding 60-125 students in a select handful of majors will not impact our ability to deliver content to the students.

With these current projections, we should also be able to handle the increased need for our human resources, such as requests for consultations with librarians, increase in article and book delivery requests and such. It is important to note, though, that we are in a cycle of cancelling resources and reducing materials each year to meet the inflationary costs of the journal packages, so long-term sustainable solutions are needed and are under discussion and development, and major program expansions could impact budgets and contracts more adversely.

The Faculty Senate Library Committee and the Libraries Administration is comfortable in supporting the proposal for Global Campus to extend into history, political science, English, sociology and **biology**, as outlined in your January 3, 2018 memo.

Please let us know if you need additional information from us.





**Use Table 2 to report program costs and revenues**

**BS Biology  
10/26/2018**

	1st FTE	2nd FTE	5th* FTE	1st Academic Year	2nd Academic Year	5th* Academic Year
Total Student HDC				10	25	75
Total Student AAFTE				6	15	45
	†Enrollment values linked to Table 1†					

**Personnel**

**Faculty**

†Insert employee FTE by job title†

†Insert annual salaries by job title†

Clinical Asst. Prof  
<Insert Job Title>

50%	50%	75%	27,200	27,200	40,800
0%	0%	0%	-	-	-

Subtotal

1	1	1	27,200	27,200	40,800
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**Exempt**

Academic Coordinator  
<Insert Job Title>

0%	0%	20%	-	-	9,200
0%	0%	0%	-	-	-

Subtotal

0.00	0.00	0.20	-	-	9,200
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**Classified**

<Insert Job Title>

0%	0%	0%	-	-	-
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Subtotal

0.00	0.00	0.00	-	-	-
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**Graduate**

TA

25%	25%	25%	8,732	8,732	8,732
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TA

0%	0%	50%	-	-	17,464
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Subtotal

0.25	0.25	0.75	8,732	8,732	26,196
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Total Personnel

0.75	0.75	1.70	35,932	35,932	76,196
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**Benefits**

Faculty

†Insert benefits based on current benefit rates†

9,710	9,710	14,566
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Exempt

-	-	3,881
---	---	-------

Classified

-	-	-
---	---	---

Graduate

862	862	1,829
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Total Benefits

10,573	10,573	20,275
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[Link to current benefits model rates](#)

**Goods and Services**

Travel

4,500
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Equipment (laptops, cameras, software)

2,000	2,000	2,000
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Total Direct Costs

48,505	48,505	102,971
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Total Indirect Costs

35%

26,118	26,118	53,023
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Total Costs

74,623	74,623	155,994
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One-Time Costs (course dev)

User inputs one-time costs -->

4,500
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Recurring Costs

Formula calculates recurring costs -->

74,623	74,623	151,494
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Total Costs

74,623	74,623	155,994
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**Calculated total cost per student AAFTE:**

12,437	4,975	3,467
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**Calculated direct cost per student AAFTE:**

8,084	3,234	2,288
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**Revenue**

Internal Departmental /Area Reallocation

24,504.77	(11,495.23)	(77,029.14)
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Enrollment Funding

24,000	60,000	180,000
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New State Funds

-	-	-
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WSU Allocation (Institutional reallocation)

-	-	-
---	---	---

Indirect Allocation (Central reallocation for support services)

26,118	26,118	53,023
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Other <Insert Description>

-	-	-
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Total Revenue

74,623	74,623	155,994
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TRUE	TRUE	TRUE
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†Total costs must equal total revenue†

\*Note on Year "N": Please replace the letter "N" with the year in which you expect the program to reach full enrollment.