

KEEP TRACK OF HOW MUCH TIME YOU ARE SPENDING ON THIS:

TASK	HOURS
SYLLABUS REVIEW	10
SURVEY OF FACULTY	10
INTERVIEWS/SURVEY OF STUDENTS	5
FACULTY FOCUS GROUPS	2
STUDENT FOCUS GROUPS	n/A
PROFESSIONAL DEVELOPMENT	7
OTHER: Writing the Plan	16
Total time	50

WOC Calendar:

- January 30th: faculty filled out survey
- February 1st: send out student survey (extra credit for surveys)
- February 29th: interviews completed
- March 21st week MEETING: leading a focus group and mapping AND SHARE WHAT IT TAKES TO BE A DISCIPLINARY INSIDER
- April 15th: focus group completed. Goals: Desired writing and oral communication/abilities AND share student survey results next to faculty/these are the desired writing /oral communication outcomes, so where are they learning this?
- May 27th first draft
- June 1-June 10 meeting

Appendices:

Key of writing and oral communication:

- **IC**: In-class, low-stakes writing
 - **LR**: Lab report
 - **LT**: Literature review
 - **AS**: Article summary
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 - **CS**: Case studies
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Appendix A: Syllabus Report

Appendix B: Faculty Survey Report

Appendix C: Faculty Interview Questions

Appendix D: Focus Group Agenda

Appendix E: Student Survey Results

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Cover Page

Date:

X First Edition of Writing Plan

☐ Subsequent Edition of Writing Plan. List dates of previous editions:

Department: Biology

Faculty Facilitator: Robin White

Written and Oral Communication Plan ratified by Faculty:

Date:

Vote: ____ (# of yes) / ____ (# total)

Process by which WOC Plan was ratified (vote, consensus, other-please explain)

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Department Profile (as of Fall 2016):

5 Professors

4 Associate Professors

4 Assistant Professors

1 Full Time Non-Tenure Track

14 Total Full-Time

12 Part-Time (Spring 2016)

WOC Process	Date	# of participants	# invited
(ie review of syllabi)	12/2015	All	All
Faculty Survey	1/21/2016	11	All
Student Survey	2/1/2016	30	All
Faculty Interviews	2/8/2016	5	5
Faculty Focus Group	4/11/2016	6	All

Signature Page:

WOC Consultant:

Department Chair

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Dean of Faculty?

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WRITING PLAN NARRATIVE

Section 1: Executive Summary (1 page maximum):

- For what reasons did your department become involved in the WOC Initiative?

In the field of Biology, written and oral communication is vital; although biology is a broad field encompassing many topics, all share in that the ability to communicate clearly with peers and the public is a necessary cornerstone to the advancement of the field.

In the WSU biology department, written and oral communication already plays a major role in the curriculum. Furthermore, faculty members in the biology department are willing to make changes and improve upon instruction. By implementing this plan, the department can more purposefully communicate with students about expectations in communication and coordinate with each other to enhance communication instruction.

- What key implementation activities are proposed in your WOC Plan and what, briefly, is the thinking behind these proposed activities?

There are 5 key implementations in the WOC plan. Additional implementations are described in Section 7. These implementations will be presented as suggestions to the Biology department curriculum committee, which will work closely with Dr. Robin White to determine how best to incorporate these changes.

1. Create a database of assignments and syllabi: Using a shared Google Doc, we will have an online database of varied assignments done in different classes so that these assignments and experience with those assignments can be easily shared between faculty members. In addition, faculty will be invited to share syllabi using this database.
2. Use the last 10 minutes of departmental meetings to discuss WOC pedagogy: One faculty member will be assigned to present/share/ask questions to the group about a WOC assessment or instructional technique so that we can learn more about what our colleagues are doing. At the first departmental meeting of each semester, a

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sign-up sheet will be distributed to determine the presentation schedule. The department chair may ask specific faculty members to cover topics as the semester progresses.

3. Increase the diversity of writing assignments: Although students primarily write lab reports in courses, it is important that other assignments that more closely mimic those that the students will have to do in the workplace are assigned as well.

4. Streamline WOC instruction throughout the biology curriculum: In order to train students to be expert communicators, we must have a coordinated, scaffolded plan for them to reach advanced levels of communication (described in the curriculum map) including the 200-level classes. This includes use of the Pechenick book, A Simple Guide to Writing in Biology.

5. Integrate the Novice, Intermediate, and Advanced communication skills into the student portfolio by requiring students to demonstrate these skills as they progress through the curriculum.

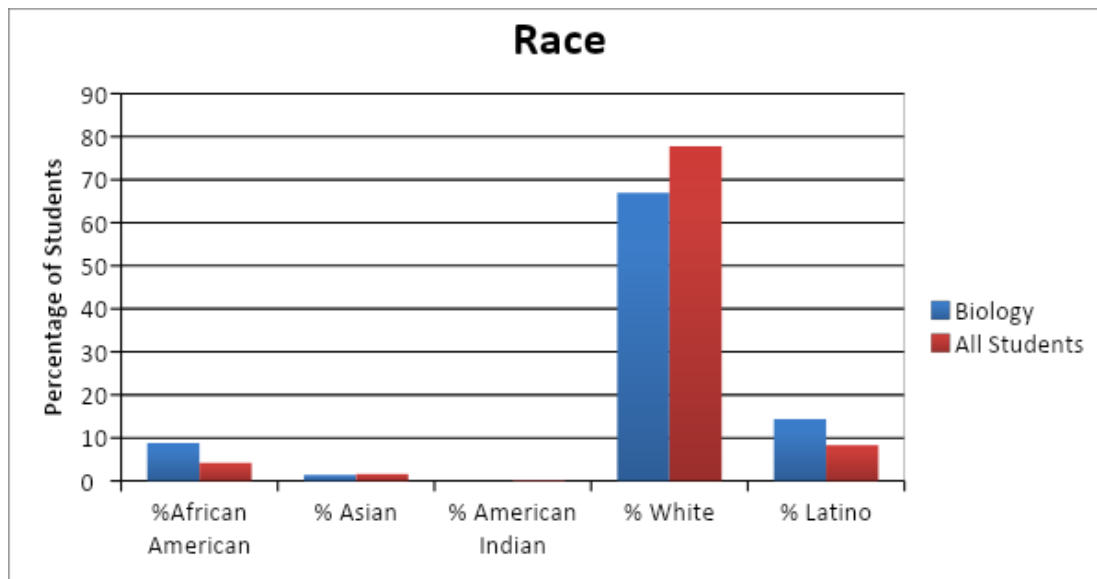
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Section 2: STUDENTS:

- Who are our students? Gender, race, class, age, dis/ability

During the 2015-2016 academic year, 25 biology majors were enrolled in TRiO and 21 used the Banacos Center. Fifty-eight appointments from 24 students were made at the Reading and Writing Center. The Biology student body is relatively similar to that of the entire campus with the exception of fewer white students and more African American and Latino students. Sixty-seven percent of Biology students are female compared to 54% for WSU. Four percent of Biology students are over 24 years of age, significantly higher than the WSU percentage of 0.5. Forty percent of Biology students are Pell grant recipients, and 1.4% have a learning disability admission code compared to the campus-wide 8.0%.

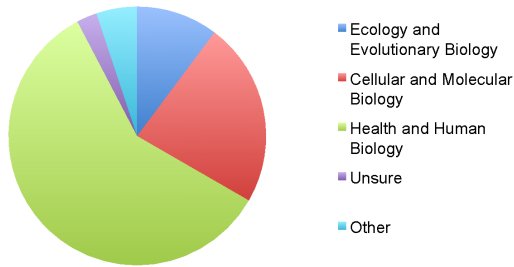


- What do your students want to do when you graduate?

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Primary Area of Interest



Based on the student survey, 77% of the students are interested in Health and Human Biology, 30% are interested in Cellular and Molecular Biology, and 13% are interested in Ecology and Evolutionary Biology. Of the 30 responders, the majority seeks to attend medical school, PA school, or dental school. Other interests include biomedical industry, pharmacy, conservation, secondary school teaching, medical technician, and nursing.

- Their perception of writing and oral communication in the major.

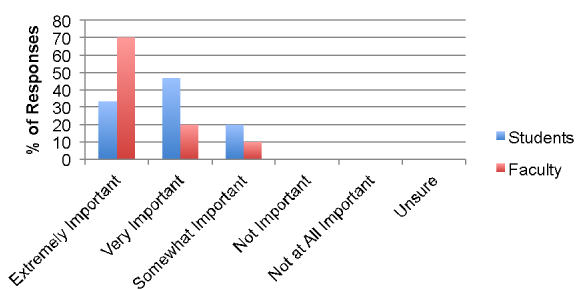
Writing

Based on the student survey, 46% of students reported that writing is very important (whereas the majority of faculty responded as writing being “extremely important”), and that the majority of writing is done for either an academic or professional audience.

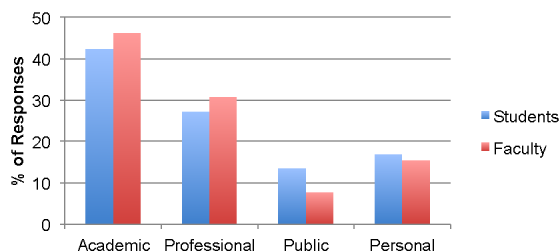
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How important is writing?



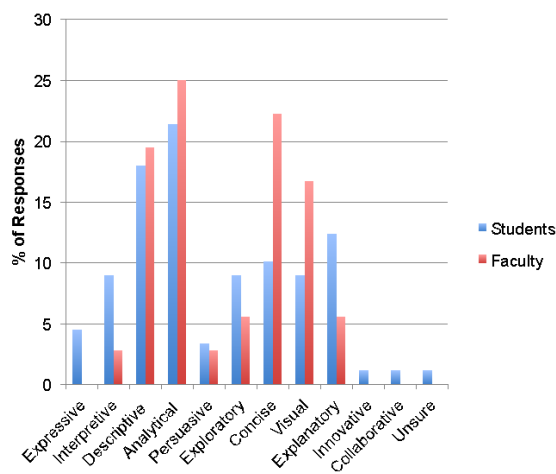
Which audiences do you write for?



Most students said that analytical, descriptive, and explanatory writing is most important, and that analysis of ideas, field-specific terminology, and precise definitions of processes are the most important writing abilities to have by graduation. Lab reports, notebooks, and essays were the most commonly assigned assessments.

Characteristic	Students	Faculty
Analytical	21	25
Descriptive	18	19
Explanatory	12	6
Concise	10	22
Interpretive	9	3
Exploratory	9	6
Visual	9	17
Expressive	4	0
Persuasive	3	3
Innovative	1	0
Collaborative	1	0
Unsure	1	0

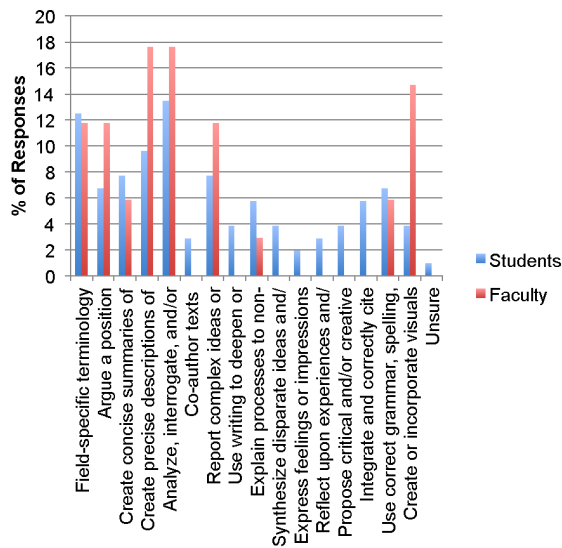
Three Most Important Characteristics of Writing



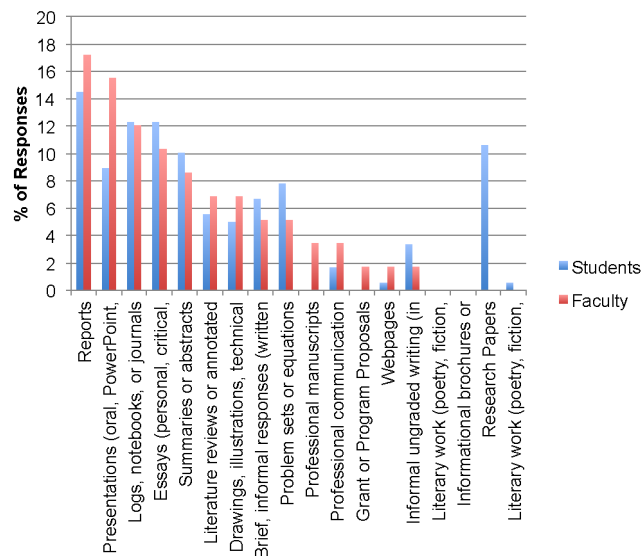
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Three Most Important Writing Abilities to have by Graduation

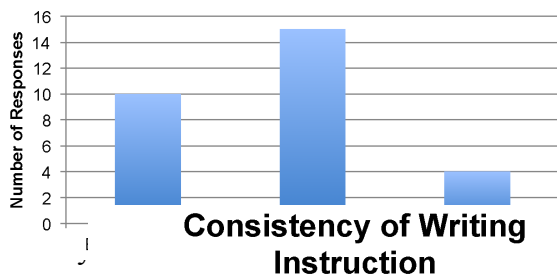


Types of Assignments

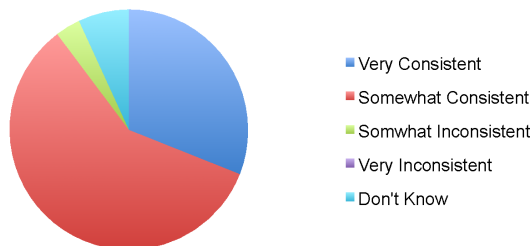


Fifty percent of the students reported using web resources about writing/oral communication or print resources,

Usefulness of English Comp in Biology Writing



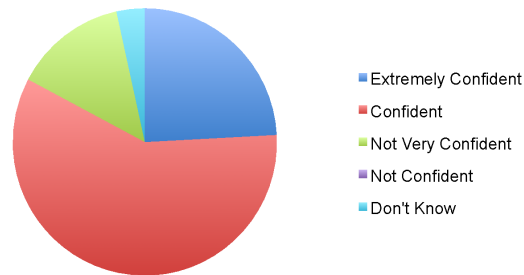
while few used Banacos center tutors or the Reading and Writing Center. Purpose, organization, and writing multiple drafts were the 3 most common interdisciplinary abilities addressed in the first-year writing courses; the majority of students reported that English Composition was useful for biology writing. Most students viewed writing instruction as being somewhat consistent, and over half reported being confident in their writing abilities. The majority of



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faculty reported that they are dissatisfied with student writing, but confident in their ability to teach writing.

Confidence in Writing

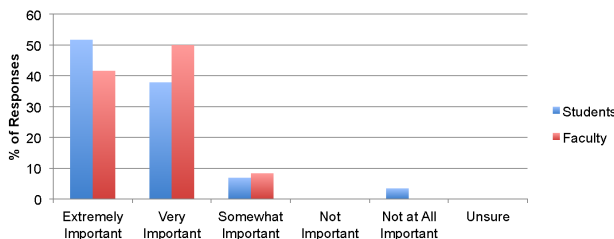


Assignments were most often graded with letters/numbers and comments. Self-assessment was rarely integrated in grades. All students were at least somewhat comfortable writing in Standard English and the majority were comfortable using documentation styles and databases. Fewer students were comfortable going to the Reading and Writing Center, but all were at least somewhat comfortable seeking support from a professor or peer.

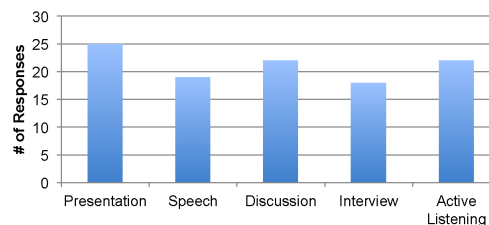
Oral Communication

Approximately 50% of students reported that oral communication is extremely important (compared to about 40% of faculty) and that oral presentations are the most important skills to have by graduation.

Importance of Oral Communication



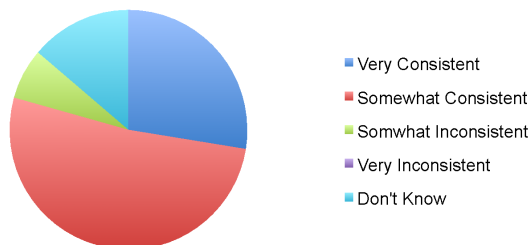
Oral Communication Skills to have by Graduation: Students



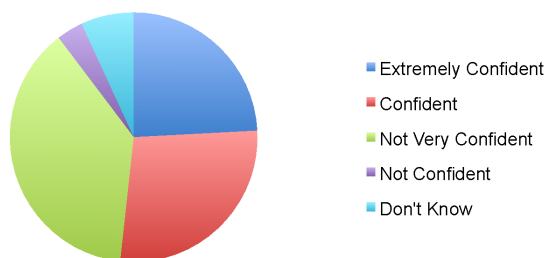
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About half of the students reported that oral communication instruction is somewhat consistent and 25% of present were confident in their oral communication skills while 40% were not very confident. Most students are somewhat comfortable delivering presentations and participating in class discussions. The majority of faculty reported being satisfied with student oral communication.

Consistency of Oral Communication Instruction



Confidence in Oral Communication

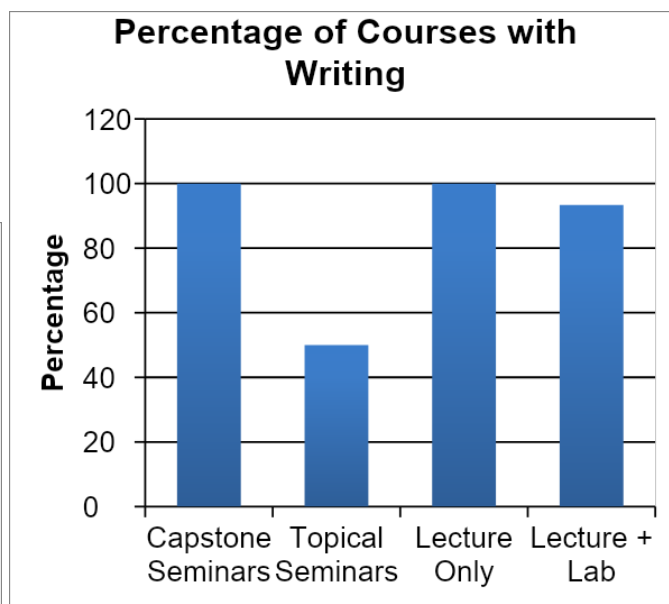
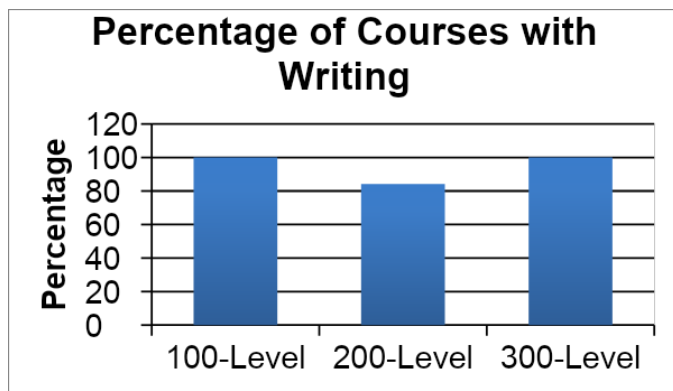


Section 3: What are our department's strengths when it comes to written and oral communication?

First, our department already implements a significant amount of written and oral communication into the curriculum. One hundred percent of lecture-only courses and capstone seminars include writing and oral communication, while 93% of lecture + lab courses include written or oral communication. All of the 100- and 300-level courses already have a writing component, while 84% of 200-level courses have writing.

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Communication with each other is a major strength in our department – we have an excellent rapport with each other and are consistently engaging in conversation about instruction. According to faculty interviews, in addition to requiring our students to communicate, we also give feedback and, as mentioned above, share ideas. However, we would benefit from additional training on how to give feedback and also enhance our ability to share ideas.

Each student is required to complete a portfolio during his or her time at WSU, beginning during BIOL0180, the first-year seminar. Throughout the academic career, the student gathers examples of knowledge and skills and describes his or her experience in a narrative. In addition, students are introduced to and use the Pechenick book, A Simple Guide to Writing in Biology, in this course.

Section 4: Discipline-specific written and oral communication characteristics:

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A. Written:

o Why do we write in biology?

There are multiple facets to writing in biology. First, we write **academic** papers about scientific findings to share with the scientific community, and industry will write reports to share with their **professional** community. In addition we write news articles/press releases to share our findings with the **public**. In addition, protocols and standard operating procedures need to be written for both **academic** and **professional** purposes. Grant-writing to receive funding and support can be for **academic**, **professional**, and **public** applications.

o What makes good writing in biology (faculty surveys)?

According to faculty interviews, there are several common aspects of good writing, including precision, conciseness, and clarity. In addition, it is important to be mindful of audience and be able to communicate complex ideas to any **public** audience; jargon should be used sparingly. If writing for a **professional** or **academic** audience, students must have a good grasp of technical language and an ability to interpret information and apply it to broader concepts. All writing must have good grammar and paragraph structure, and the author must be knowledgeable about the topic.

o How do we go about writing in biology?

All writing in biology ultimately begins with research; the ultimate goal of writing is to communicate scientific findings. No matter who the audience – **public**, **professional**, or **academic** – the audience's viewpoint must be on the forefront. All **academic** writing includes formal peer review, but **all** writing should also include informal review by representative audience members and experts in the field. In addition, much biology writing includes visual aspects such as schematics, graphs, and representative images.

o What abilities do we need to write effectively in biology?

According to faculty interviews: In addition to having the background knowledge to understand the content of the writing, we must have the motivation to learn to write and be flexible with format and audience, including

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knowing the conventions of our biological subfields. Furthermore, we need to know how to edit our own work prior to sending it to peers or audience members. We need to have a main theme/message in writing instead of haphazardly stating everything we know about a topic.

B. Oral

- **Why do we speak/give presentations in biology?**

We speak in biology for many of the same reasons we write – primarily to share information with various audiences about scientific findings and/or proceedings. In **academia**, we give oral presentations at meetings to share unpublished information and to get feedback. At a **professional** level, we participate in meetings and communicate clearly how experiments were performed. Furthermore, we share information with the **public** through town hall meetings, television and/or radio interviews, podcasts, and advertisements for drugs.

- **What makes effective public speaking/presentations in biology?**

Audience is key when considering public speaking and presentations; we must always be mindful of audience, but when the audience cannot quickly Google an unknown term, jargon must be avoided entirely. Visual aids to the oral presentations are also incredibly important and must reflect the background of the audience.

- **How do we go about public speaking/presentations in biology?**

See above “Why do we speak/give presentations in biology”. As with writing, presentations must be carefully practiced and planned, and ideally given to a representative audience member prior to the final presentation.

- **What abilities do we need to communicate orally in biology?**

Similar to writing, first and foremost knowledge of the topic and background in the field is necessary to communicate clearly. Next, we must be able to distill a complex topic into a short, digestible message that can be easily understood by the appropriate audience.

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Section 5: Desired Written and Oral Communication Abilities

A. Identify specific writing abilities with which students in your major should graduate:

According to the faculty survey, the following abilities were identified as being the most important to have by graduation (in order from most to least important):

- Create precise descriptions of ideas
- Analyze, interrogate, and evaluate ideas
- Create and incorporate visuals
- Use field-specific terminology
- Argue a position using a central thesis
- Report complex data or findings
- Create concise summaries of ideas, text, or events
- Use correct grammar and spelling
- Explain processes or data to non-academic audiences

B. Identify specific oral communication abilities students in your major should graduate with:

According to the faculty survey, the following abilities were identified as being the most important to have by graduation (in order from most to least important):

- Oral Presentation
- Discussion
- Poster

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Section 6: Curriculum Map

All courses are grouped into Novice (green), Intermediate (pink), or Advanced (blue) as defined below:

Novice

- Have a firm grasp of grammar
- Use of biological terminology
- Write biologically accurate concise, concrete descriptions of processes or ideas
- Write a lab report in correct format
- Differentiate between and cite sources (primary and secondary)
- Write a basic summary of a primary research article
- Give an oral presentation and correctly explain others' results

Intermediate

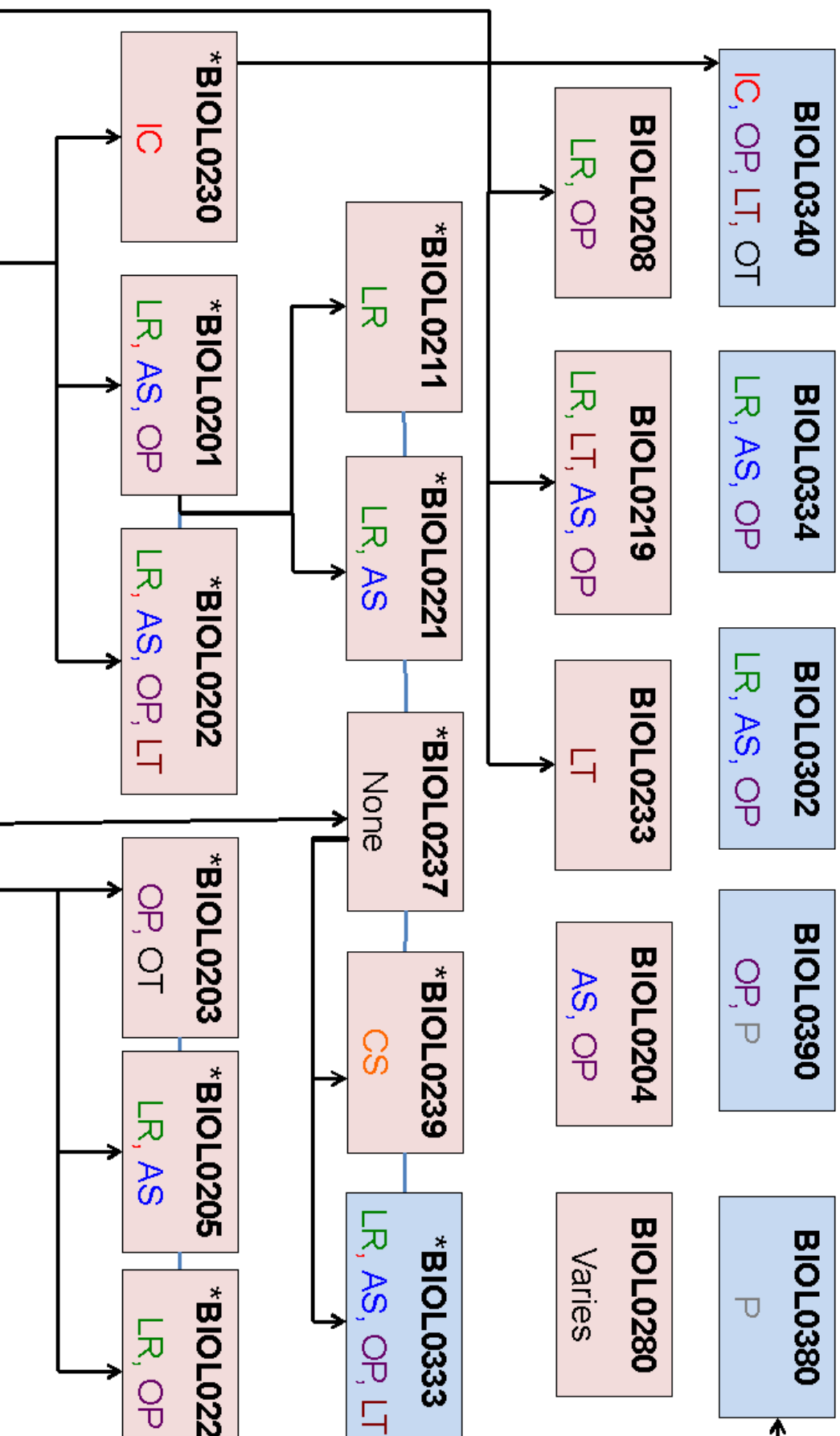
- Cohesively express arguments and evaluate cause and effect
- Use peer review and collaborative writing
- Interpret results with correct use of primary sources
- Revise and self-edit
- Use and locate primary research sources and cite those sources correctly
- Give either a poster or oral presentation of own findings
- Write for non-academic audiences

Advanced

- Write field-specific applications
- Evaluate scientific sources for accuracy and consistency with known literature
- Be able to discuss and debate biological ideas

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Section 7: Proposed Integration of Written and Oral Communication into the Department's Undergraduate Curriculum:

As discussed above, all changes will be presented to the Biology Curriculum Committee as suggestions and Dr. White will work with that committee to determine how to best integrate the changes into the current curriculum.

- What plans does this department have for changing the way that written and oral communication instruction is sequenced across its course offerings?

As a first step in determining potential gaps in the curriculum and the sequence of instruction, a curriculum map was created (see previous page). This reveals some gaps that need to be filled in the overall sequence. Based on the curriculum map, faculty interviews and survey, and the student survey, the following implementations will be suggested to the curriculum committee:

1. Use of A Short Guide to Writing in Biology by Jan Pechenick should be used **consistently** throughout the curriculum for style and formatting guidance. For example, it should be a required text for all courses and students should be referred to the book when inquiring about formatting and writing.
2. Written abilities will be grouped as described above into novice, intermediate, and advanced categories corresponding to 100-, 200-, and 300-level courses. Students will include these abilities in the narrative portion of their portfolios. In addition, these expectations will be shared with the students on Opening Day, in BIOL0180, and throughout the curriculum.
 - a. Novice: Currently, the majority of goals in the novice category are addressed as all students take BIOL0128, BIOL0129, and BIOL0180.
 - b. Intermediate: There is significant variability in writing and oral communication at the 200-level. It is recommended that each 200-level course integrate at least 1 aspect of intermediate-level writing in the course. Literature reviews are used very infrequently in courses, yet we expect students to be able to correctly locate, use, and cite primary sources.

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Additional literature reviews at the 200-level (intermediate) will be one way to address this issue.

- c. Advanced: At the advanced level, 300-level courses should integrate field-specific writing and communication such as grant-writing, blogging, report-writing, letters to congress, etc. In addition, students should be able to evaluate primary literature, potentially via journal club formats.
3. Scaffolding of writing should occur both throughout the curriculum and within courses. Scaffolding throughout the curriculum should be based on the novice, intermediate, and advanced skills above. Within courses, smaller assignments and/or drafts should be used to “build up” to lab reports, literature reviews, and other large assignments. Examples of scaffolding assignments may be shared at departmental meetings.
 4. The only lab + lecture course without any writing is Anatomy and Physiology I. As this is an option for a core requirement for graduation, it is important that some aspects of intermediate writing skills be integrated into this course.
 5. There is much variation in the 280 topical seminars; each topical seminar should integrate some aspect of intermediate-level writing.
- What plans does this department have for improving WOC instruction?
1. In order to improve WOC instruction, we plan to create a database of assignment descriptions using a Google Doc so that we can more easily share ideas for assessments.

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2. During the last 10 minutes of each departmental meeting, 1 faculty member will be responsible for sharing an assessment or instruction technique – this can either be a successful one or one in need of feedback.
3. In 200- and 300-level courses, we will increase the diversity of writing assignments to include those that will be used during the post-graduate career. To help determine these assignments, we will be discussing this with our external advisory committee and colleagues. Ideally, these assignments can be shared during departmental meetings in order to increase awareness of other writing genres. These should also include oral presentation assignments that include presentations to varied audiences.
4. In order to teach students more about correct citation, we plan to implement a program such as Turn It In so that students can easily assess their own assignments for proper use of citation.
5. Use of the portfolio, including reflective essays and reflections about different writing abilities, should be integrated throughout the curriculum.
6. Although faculty are relatively satisfied with oral presentations, and they are assigned in many courses, 40% of students reported being “Not Very Comfortable” with oral communication. This suggests that students may lack confidence in the oral communication abilities. To improve this situation, faculty should give more constructive, positive feedback to students giving oral presentations and provide concrete guidelines and training about expectations of oral communication.

- With what rationales are changes proposed and what indicators will signify their impact?

See above for rationales and Section 9: Assessment Plan below for indicators.

Section 8: Inclusive and Equitable Pedagogy:

Key of writing and oral communication:

- **IC**: In-class, low-stakes writing
 - **LR**: Lab report
 - **LT**: Literature review
 - **AS**: Article summary
 - **OP**: Oral presentation
 - **CS**: Case studies
 - **P**: Portfolio
 - **OT**: Other, field-specific writing
- * denotes required course for the major
- Arrows denote prerequisites needed for courses

“Making excellence inclusive means attending both to the demographic diversity of the student body and also to the need for nurturing climates and cultures so that all students have a chance to succeed.”

How is your plan intentionally inclusive of all students (students with learning disabilities, physical disabilities, mental health conditions; ELLs; LGBTQIA students; students of color)?

All students benefit from the ability to receive feedback and revise their work. Throughout the curriculum, students will learn how to improve upon their writing by peer and professor feedback. Faculty members will be available to help students who need extra assistance, and we would like to require students to go to the Reading and Writing Center at least once during their first year. As part of this requirement, we will have a student in the biology department be a tutor in the RWC. In the classroom, conversations about research ethics, such as the story of Henrietta Lacks, will be addressed to open discussion about racial and gender discrimination as we have a relatively diverse group of students who would all benefit from learning about these issues.

As many readings in Biology are technically difficult, faculty members should try to provide the students with the content in multiple ways. For example, if they students are reading a scientific article, the news release and/or a TED talk video could be provide to encourage comprehension.

Section 9: Assessment Plan: how will you assess your WOC plan?

Our departmental assessment committee has discussed implementing a pre- and post-test for the major which will include writing and oral communication outcomes, in addition to ratings of confidence in different aspects of communication. We will also be administering an alumni survey before and after the plan is integrated to see how recent graduates are prepared for communication in their careers, and what genres of written and oral communication are used most frequently in those careers. Finally, professors teaching at the 200- and 300-level will take a survey to determine if students already have novice and intermediate skills prior to coming to class. These assessments are contingent upon receipt of funding for the 2016-2017 academic year.

Section 10: Requested Support:

Key of writing and oral communication:

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- What forms of instructional support does this department request to help implement the proposed changes? What are the expected outcomes of the named support?

The biology faculty request science-specific writing and oral communication workshops to help train faculty in WOC instruction. According to the faculty survey, desired workshop topics include the following:

- o Organizing effective peer review activities
 - o Grading writing in ways that are efficient and fair
 - o Incorporating brief in-class writing instruction into class
 - o Providing useful feedback on drafts
 - o Addressing grammar, usage, and mechanics
 - o Teaching students to do effective oral presentations
- What kinds of assessment support does this unit request to help assess the efficacy of this WOC Plan? What are the expected outcomes of this support?

We require access to Survey Monkey and funds for a work-study or independent research student to analyze the data. Ideally, the WOC coordinator would receive 3 hours of course credit per semester for implementation and assessment of the plan.

Section 11: Process used to create this writing plan:

How, and to what degree, were stakeholders in this unit (faculty members, non-TT instructors, undergraduates, other) engaged in providing, revising, and approving the content of this WOC Plan?

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All faculty members completed the survey and many faculty members attended the focus group to discuss the content of the plan. Thirty students completed the student survey. Dr. Robin White coordinated and wrote the plan with input from colleagues. See page 3 for a table describing the timeline of the WOC process.

Key of writing and oral communication:

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