

I. Writing Plan Cover Page

Please fill in the gray areas on this form.

3/30/15

First Edition of Writing Plan

Subsequent Edition of Writing Plan: previous plan submitted Spr/14, First edition submitted Spr/14

WEC Unit Name

Agronomy and Plant Genetics

CFANS

Department

College

Kevin P. Smith

Professor

WEC Faculty Liaison (print name)

Title

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Phone

Writing Plan ratified by Faculty

Note: This section needs to be completed regardless of Writing Plan edition.

Date: 3/27/15 If Vote: $\frac{16}{\# \text{ yes}}$ / $\frac{16}{\# \text{ total}}$

Process by which Writing Plan was ratified within unit (vote, consensus, other- please explain):

Vote in faculty meeting.

III. Signature Page

Signatures needed regardless of Writing Plan edition. Please fill in the gray areas on this form.

If this page is submitted as a hard copy, and electronic signatures were obtained, please include a print out of the electronic signature chain here.

WEC Faculty Liaison

Kevin P. Smith

Professor

WEC Faculty Liaison (print name)

Title



3/31/15

Signature

Date

Department Head/Chair

Nancy Jo Ehke

Professor and Department Head

Print Name

Title



March 30, 2015

Signature

Date

Associate Dean

Micheal White

Associate Dean

Print Name

Title



March 30, 2015

Signature

Date

For College of Liberal Arts units only:

CLA - Curriculum, Instruction, and Advising Committee approved Writing Plan on _____

Date

Print Name

Title

Signature

Date

IV. Writing Plan Narrative

Executive Summary (1-page maximum): For what reason(s) did this unit (department, school, college) become involved in the WEC project? What key implementation activities are proposed in this edition of its Writing Plan and what, briefly, is the thinking behind these proposed activities? If this is a second+ edition of this unit's Writing Plan, please describe activities that have been successfully completed and those that are new to this edition.

The Department of Agronomy and Plant Genetics embarked on the WEC project to coordinate and formalize our teaching of writing in the discipline and to align efforts to improve writing instruction with ongoing curriculum changes. This included the creation of the new Plant Science major (Fall 2014) in collaboration with Horticultural Science, Plant Pathology, and Entomology and the new Food Systems major (Fall 2014) in coordination primarily with Horticultural Science. As a department, we are interested in improving our student's abilities to think with numbers and words. Thus, we have included quantitative reasoning and computing skills in our WEC plan as they are intimately linked to writing with data and using information and communication technologies. Lastly, there is a need for faculty/instructors in our department to learn more about what and how we are teaching across our curriculum. We are framing these discussions around writing and quantitative reasoning.

In our 1st Edition Writing Plan, we made progress on six key implementation activities, and in our 2nd Edition Writing Plan, we propose to advance these activities as described below.

- 1) **Implement revisions in key courses to better structure writing instruction in the curriculum.** We have identified seven courses that we will revise to various degrees to better implement and sequence writing instruction and evaluation. Continuing the process of course revision is a new objective for our 2nd Edition Plan.
- 2) **Revise Agro 1660W to introduce quantitative reasoning and data analysis skills.** This is a continuation of an objective of our 1st Edition Plan. After thorough investigation of various options to introduce quantitative reasoning and data analysis skills into our curriculum, we have decided to revise our current first-year course Agro 1660W from two credits to three credits and incorporate fundamental quantitative reasoning and data analysis skills as evidenced by student writing assignments. This revised course will be offered in fall 2016.
- 3) **Define research lab notebook best management practices and plan how to teach these through a series of lab-based courses.** This is a continuation of an objective in our 1st Edition Plan. Best practices will be described in online materials and implemented in several lab courses beginning in fall 2015.
- 4) **Continue to develop an accessible online resource library for writing instruction.** This is a continuation of an objective in our 1st Edition Plan. We have collected writing samples from several courses, de-identified them, and used them to create five-minute writing workshops. Several of these were piloted this past year. We will continue to develop new workshops tailored to specific courses and designed in consultation with current instructors. We will track their use and employ standardized grading rubrics to assess student performance.
- 5) **Extend writing exercises like those developed for AGRO 4605 to other courses in the curriculum.** Course specific and generic versions of five-minute workshops and data engagement assignments will be made available to other instructors to clearly communicate the expectations for this specific course and provide templates for learning activities that could be implemented in other courses.
- 6) **Share writing instruction experiences to inform our teaching.** We held monthly WEC Lunch Discussions to discuss topics including: peer review of writing, development of quantitative reasoning assignments, supporting students' ability to interpret quantitative data, and five-minute writing workshops. The last few lunches have included graduate students and these meetings have been a good way to communicate progress on activities and keep people engaged. We will continue them as part of our 2nd Edition Plan.

Section 1: DISCIPLINE-SPECIFIC WRITING CHARACTERISTICS *: What characterizes academic and professional communication in this discipline?

Based on surveys conducted by WEC staff of faculty, students, TAs, and affiliates and subsequent faculty discussion, we identified ten important characteristics of writing in Agronomy and Plant Genetics (Table 1).

Table 1. Characteristics of writing in Agronomy

1. Critical
2. Evidence-based
3. Unbiased, cognizant of the limits of evidence
4. Appropriate to purpose and audience
5. Narrative, telling a coherent story
6. Insightful, even creative. It goes beyond description, and it considers alternate interpretations
7. Visual, using graphics and figures to convey complicated ideas
8. Concise
9. Culturally respectful in its audience address
10. Persuasive

We have not made any changes to this list of characteristics of writing in Agronomy.

*Adjectives, or adjectival phrases are typically most useful here, for example, “transparent to logic,” (Nursing); “Analytic (versus journalistic) and argumentative” (Political Science).

Section 2: DESIRED WRITING ABILITIES **: With which writing abilities should students in this unit's major(s) graduate?

We have carefully reviewed the desired writing abilities submitted with our 1st Edition Writing Plan and feedback from the WEC ratings of upper division writing and have made some modifications. These modifications were either to 1) remove abilities that were covered by other abilities or were difficult to assess as written; 2) clarify the meaning to make it easier to incorporate into assignment rubrics or other grading guidelines; or 3) merge with abilities articulated in the Horticultural Science Writing Plan. This is necessary as our two departments have joint ownership of two undergraduate majors. Below we indicate where we revised, added, or removed abilities from the original plan.

Writing abilities for students in Plant Science and Agricultural Industries and Marketing majors.

1) Integrate ideas to gain insight into a situation

2) Critically understand other points of view

REVISED: Acknowledge and demonstrate critical understanding of other points of view.

3) Distance personal biases from the data

REMOVED, dealt with in other abilities.

4) Create logical flow in their writing; that is, the writing is not choppy

REVISED: Create logical flow

5) Make choices appropriate to their audience and purpose (e.g., use appropriate levels of jargon)

REVISED: Convey information at an appropriate level of scientific sophistication based on the audience, using scientifically correct terminology and an appropriate level of jargon.

6) Write in a way that creates confidence in readers

REMOVED, should happen if other writing skills are exhibited, difficult to assess.

7) Explain and interpret data (e.g., figures, tables)

REVISED: Interpret data accurately and objectively

8) Locate, assess, and cite sources

REVISED: Identify and cite appropriate research-based sources

9) Understand and respect boundaries of plagiarism

10) Write collaboratively

REMOVED: covered in #12.

11) Produce clear, efficient visual presentations

12) Edit (team-based writing and individual writing) for concision, unity, and readability

13) Use standard English grammar so that readers are neither confused or distracted

REVISED: Utilize grammar and mechanics that conform to patterns of standard academic English

ADDED: Organize writing according to standard scientific reporting methods

In addition to the development of key writing abilities, members of the department also developed a set of key quantitative reasoning abilities. They are offered here to emphasize the close connection between writing and quantitative reasoning in our field. Goals 3 and 7 are expressly related to writing and presentation, and the other abilities can be measured in the context of written assignments and presentation. These quantitative reasoning abilities will be used to develop grading rubrics that will help us assess the performance of students relative to these skill sets.

Quantitative reasoning abilities for students in Plant Science and Agricultural Industries and Marketing majors.

- 1) Manage data
- 2) REVISED: Acquire, select and manage data
- 3) Summarize data

REVISED: Summarize data using descriptive statistics and represent these in figures and tables

- 4) Use basic spreadsheet functions
- 5) Detect relationships/correlation

REVISED: Accurately describe relationships based on quantitative evidence and statistical tests

- 6) Use simple statistical tests

REMOVED

- 7) Make arguments based on quantitative data

REVISED: Use quantitative evidence to support an argument

ADDED: Connect data to real-world situations

Section 3: INTEGRATION OF WRITING INTO UNIT’S UNDERGRADUATE CURRICULUM: How is writing instruction currently positioned in this unit’s undergraduate curriculum (or curricula)? What, if any, structural plans does this unit have for changing the way that writing and writing instruction are sequenced across its course offerings? With what rationales are changes proposed and what indicators will signify their impact?

1st Year	AGRO 1660W FDSY 2101		
2nd Year	HORT 3005W		
3 rd Year	AGRO 4401	AGRO 3660	AGRO 4605
4th Year	HORT 4096W	AGRO 4097	

Figure 1. Courses that will be targeted for writing enrichment within the Plant Science curriculum. The courses in bold are required for all students. Other courses are options for students. All students will take either Hort 4096W or Agro 4097.

The Plant Science major does not have a well-defined course chronology common for all students. We have received comments from students that indicate some redundancies in our curriculum indicating a need for examining the content and sequencing of courses. This presents clear opportunities to improve specific writing abilities (see Table 1 in section 4). We have identified key courses that most students will enroll in on their way toward graduation (Figure 1). The Food Systems major also requires Agro 1660W and FdSy 2101. Thus, improved instruction through better sequencing in these courses will benefit students in that major as well. We have begun implementing new writing instruction in several of these courses through piloting five-minute workshops and new writing assignments that integrate quantitative reasoning. We will build on this progress by identifying specific writing abilities (revised and presented in Section 2) that should be addressed in these key courses. Additional five-minute workshops and writing assignments will be developed for each course. Instructors for these courses will incorporate specific writing abilities into rubrics used to grade assignments. Instructors will pull out the scores for the writing ability components of the rubric and report them (de-identified) at a faculty meeting or WEC lunch. These will be collected and summarized on an annual basis. This data will be used to further refine writing instruction through an annual evaluation process. Described below are the plans for improving writing instruction for these courses.

Agro 1660W First-Year Colloquium/Experience in Agroecosystems Analysis This is a two credit first-year experience course that serves Plant Science, Food Systems, and Agriculture Industries and Marketing majors. The content focuses on the fundamentals of Agroecology. It also introduces students to the college and major through presentations and assignments that utilize the library, academic advising, Career and Internship Services, and faculty interviews. This course was recently revised to be writing intensive. Students complete several types of writing assignments including a resume, short reflective texts, and a staged literature review paper. Key writing abilities that are addressed include: *Identify and cite appropriate research-based sources, Integrate ideas to gain insight into a situation, Create logical flow, and Understand and respect boundaries of plagiarism.* We have developed five-minute writing workshops for the first three of these four writing abilities. We propose to revise this course to include development of quantitative reasoning and computing/analysis skills. The exact skills and abilities to implement will be decided by a team of faculty from the other courses listed above in Figure 1, but will likely include: *Acquire, select and manage data and Use basic spreadsheet functions.* The revised course will be three credits and offered in the fall of 2016.

FDSY 2101 Plant Production Systems This course is taken the second semester by all Plant Science and Food Systems majors. It was offered for the first time in the spring of 2014. This summer we will convene a meeting of instructors for Agro 1660W and FDSY 2101 to identify specific writing and quantitative reasoning abilities that

should be introduced and reinforced in Agro 1660W. Likewise, we will identify abilities that should be introduced in FDSY 2101 and reinforced in subsequent courses.

Hort 3005W Environmental Effects on Horticultural Crops This course will be taught by a new faculty member that will arrive in July, 2015. Historically there were two plant physiology type courses (Hort 3005W and Agro 4005). We are discontinuing Agro 4005 and have decided to revise Hort 3005W to serve a wider student audience. A team of faculty, including Mary Brakke and the WEC RA, will assist the new faculty member in revising this course for offering in Spring 2016. This will be an opportune time to integrate specific writing and quantitative reasoning instruction into the course.

Agro 4401 Plant Genetics and Breeding This course will also likely undergo some revision as another new faculty member arriving in April will co-teach this course with a Horticultural Science faculty member in spring 2016. We will use this opportunity to incorporate specific writing and quantitative reasoning skills into the lecture and lab sections of the course.

Agro 3660 Plant Genetic Resources: Identification, Conservation, and Utilization We have collected writing samples from the students in this course and are using them to develop five-minute workshops. These will be piloted in spring 2015 semester and fully implemented in spring 2016. Mary Brakke, Robert Stupar, and Eric Watkins are developing guidelines and best practices for keeping lab notebooks. These will be refined over the summer and documentation and examples will be posted online for use in courses beginning fall 2015.

Agro 4605 Strategies for Agricultural Production and Management In 2014, AGRO 4605 underwent a major revision to incorporate instruction on the writing and quantitative reasoning goals outlined above; lessons from this revision are guiding similar revisions in other AGRO courses (see Section 5 for details). Major goals for this year (2015) include explicit instruction of quantitative reasoning and writing, and more efficient incorporation of data manipulation and interpretation into the curriculum using materials developed by the WEC RA. Assessment of writing abilities and quantitative reasoning will be assessed by performance on three types of assignments: lab reports, extension letters, and a group writing capstone assignment.

Hort 4096W Professional Experience Program: Internship This course was recently revised as part of the Horticultural Science departments WEC Writing Plan. We will visit with the instructor of this course to confirm both the expectations for writing skills coming into this course as well as the skills that will be developed in this course and align that with the rest of the curriculum. We will also identify components of the grading rubric for the capstone writing assignment in this course that can be mapped back to our specific list of writing abilities.

Agro 4097 Undergraduate Research Thesis In this course, each student identifies a faculty mentor with which to conduct a research project. The graded product is a thesis written in the form of a ready to submit manuscript to a scientific journal. Because the research and writing is done with different faculty, there has not been a very consistent set of learning objectives and performance standards with respect to writing. Also, often the thesis is submitted at the very end of the semester and the student has not benefitted from previous review and revision. Comments back from faculty advisors have indicated that the students performed well as researchers, but did not dedicate enough time to the writing of their thesis. We will revise this course to have a single course manager and provide specific writing instruction and feedback. The thesis will be drafted by the student and reviewed by the faculty mentor sequentially in sections. The revised course will be presented to the Writing Board for consideration for the writing intensive designation. Since this is a “capstone” course, nearly all of the writing abilities defined in section 2 will be assessed except those having to do with team writing.

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WEC
**WRITING-ENRICHED
CURRICULUM**

Section 4: ASSESSMENT of STUDENT WRITING : What concerns, if any, have unit faculty and undergraduate students voiced about grading practices? What, if any, new grading systems or practices are proposed, whether for individual courses or for a program? How satisfied is the unit faculty that students are adequately familiar with writing expectations? What do these expectations look like when they are translated into grading criteria? **Please include a menu of criteria extrapolated from the list of Desired Writing Abilities provided in Section II of this plan.** (This menu can be offered to faculty/instructors for selective adaptation and will function as a starting point in the WEC Project's longitudinal rating process.)

The rating of upper division writing was organized by WEC and carried out in the summer of 2014 using samples from Agro 4005. We used the report presented to the faculty to generate our 2nd Edition Writing Plan. The comments from raters and rating scores are presented below. This information was used to revise the writing abilities (section 2). We have also used it to identify priorities for improving instruction. For example, both the comments and rating scores indicate that we need to improve student's abilities to produce clear tables and figures and use appropriate statistics to draw conclusions. We will bring these results to faculty discussions that take place to coordinate course revisions. Lastly, this feedback has reinforced the need to have some consistent standards of writing that can be defined in learning objectives and reflected in grading rubrics. Therefore, we will incorporate specific writing abilities into grading rubrics for the courses that we are targeting for revision. This will allow us to track progress in writing instruction in real time rather than waiting for a formal review that will not take place for several years.

Rating Upper Division Writing - Responses from the Rating Session Debriefing

Strengths:

- Good identification of credible, peer reviewed scientific sources
- Collaborative writing was internally consistent
- Good interpretation of data (although not all were statistically analyzed)
- Appropriate levels of technical vocabulary

Weaknesses:

- Poor integration of primary source material (insufficiently contextualized)
- Lack of statistical analysis
- Figures were difficult to read or follow
- Literature citations were not cited at first mention
- Duplication in presentation of data (e.g. same data presented in multiple figures)
- Audience address: shifting from technical/professional to non-technical/casual language

Table 1. Rating* upper-division writing of graduating majors (Agronomy and Plant Genetics, July 2014)

#	Criteria	2014	Agro	Writing Spec.
1	Integrates ideas for insight into a situation	1.33	1.50	1.00
2	Critically assesses and discusses other points of view	1.17	1.50	0.50
3	Presents unbiased results and conclusions drawn from the data	1.94	2.00	1.83
4	Exhibits logical flow	1.67	1.83	1.33
5	Makes choices appropriate to audience and purpose	1.56	1.67	1.33
6	Creates reader confidence in the author	1.67	1.83	1.33
7	Uses and interprets simple statistical tests correctly	0.89	0.92	0.83
8	Identifies relationships/correlation	1.61	1.67	1.50
9	Uses figures and tables to clearly and accurately represent research results.	1.39	1.25	1.67
10	Uses quantitative evidence to support an argument	1.22	1.17	1.33
11	Interprets data (e.g., figures, tables) and draws reasonable conclusions based on the data.	1.33	1.33	1.33
12	Uses primary scientific sources	2.06	2.17	1.83
13	Assesses the credibility of sources	1.94	2.08	1.67
14	Cites those sources appropriately ; Avoids plagiarism	1.89	1.83	2.00
15	Is collaboratively authored, such that it is internally consistent and readers do not recognize multiple voices	1.72	1.58	2.00
16	Is concise	1.39	1.25	1.67
17	Reads with minimal distractions due to stylistic shifts.	2.00	2.00	2.00
18	Uses standard English grammar so that readers are neither confused nor distracted	1.78	1.75	1.83

* Rating scale is 0 – 2, where 0 is insufficient and 2 is sufficient

Section 5: SUMMARY of IMPLEMENTATION PLANS and REQUESTED SUPPORT: Based on above discussions, what does the unit plan to implement during the period covered by this plan? What forms of instructional support does this unit request to help implement proposed changes? What are the expected outcomes of named support?

For the 2nd Edition Plan we will implement the following six activities:

- 1) Implement revisions in key courses to better structure writing instruction in the curriculum. In section 3, we presented the structural changes that we plan to make in our curriculum with respect to writing instruction over the next two years. Faculty associated with each of the courses will be responsible for implementing changes and reporting outcomes. As described above, we will summarize the scores from components of grading rubrics that map back to the writing abilities presented in section 2. These compiled scores will be one way to assess progress resulting from course revisions. The expected outcome is that we will see improvement in writing abilities, which were the focus of previous instruction, on graded assignments over time.
- 2) Revise Agro 1660W to introduce quantitative reasoning and data analysis skills. The Plant Science Major Coordinating Committee identified a need to improve learning around the subject of quantitative reasoning (QR) in the curriculum. This need was reaffirmed by both rater comments and ratings of upper division writing reported in Section 4. The Agronomy and Plant Genetics Department has discussed ways to strengthen student skills in working with data and has integrated this goal into their first year Writing Plan for the Writing Enriched Curriculum. Two objectives in this first year plan were 1) to develop, incorporate, and assess QR assignments/activities into the course Agro 4605; and 2) explore the development of a QR course that would be taken by all PS students in their first semester. Rex Bernardo surveyed current course offerings at the UM and identified STAT 1001 and STAT 3011 as a potential course that would fit our QR goals. Based on further exploration of these courses and discussions with Sandy Weisberg in Statistics, neither of these courses appears to be appropriate. The following options were presented to the Plant Science Major Coordinating Committee in March, 2015.
 - Add STAT 1001 to PS core course requirements
 - Add STAT 3011 to PS core course requirements and work with the STAT department to develop “biology” module and or course assignments to better contextualize the subject.
 - Develop our own QR course and add it to the core course requirements
 - Explore requiring ANSC 3011 or ESPM 3012 in the core course requirements.
 - Substantially revise Agro 1660W to include QR.

The major coordinators for both the Plant Science major and Food Systems majors agreed that the last option was the best. Therefore, Kevin Smith and James Anderson will revise the course, submit it to CFANS Curriculum Committee for approval, and offer the revised course in the fall of 2016. The expected outcome of this activity will be students that are better prepared to work with data in upper division courses. This should allow instructors of those courses to focus more attention on producing high quality figures and conducting appropriate statistical tests as opposed to data management and preliminary data summary.

- 3) Define research lab notebook best management practices and plan how to teach these through a series of lab-based courses. Science labs offer students an important hands-on experience that enhances their

understanding of scientific concepts, teaches critical thinking through generating hypotheses, data collection, hypothesis testing, and clear presentation of findings. Managing a lab notebook and generating lab reports is important in developing scientific literacy as students are more actively engaged during the lab and are required to reflect on the lab experiment. This past year was spent sharing best practices that are used in various lab courses. Mary Brakke, Robert Stupar and Eric Watkins are working to develop guidelines and instructional materials for keeping/using a lab notebook. These will be posted online and revised during the summer for use next fall. One outcome of this activity will be students that are better prepared for their internship and undergraduate research thesis experiences. In these courses (Hort 4096W and Agro 4097), we will ask students to reflect on how they made use of these skills in those capstone experiences.

- 4) Continue to develop an accessible online resource library for writing instruction. We currently have four five-minute workshops available on a Google drive. Based on our experience developing these workshops, rather than develop them and share them so that they can be tailored by instructors for each course, Mary Brakke and the WEC RA will work directly with individual instructors to deliver a finished product ready for use. This will insure that they are specific and appropriate and get used for instruction. We will ask instructors to report which workshops they use in each course and this will be summarized in a report annually. Last year our WEC RA developed several writing assignments for Agro 4605 and reported on them at a WEC lunch. We will collect these materials on the Google drive so that they are easily accessible to others that will be developing new assignments. Mary Brakke and Robert Stupar are currently using student writing samples from Agro 3660 to develop five-minute workshops for that course. These will also be made available online.
- 5) Extend writing exercises like those developed for AGRO 4605 to other courses in the curriculum. In 2014, AGRO 4605 underwent a major revision to incorporate instruction on the writing and quantitative reasoning goals outlined above. This served as a “test revision” for other AGRO and HORT courses to enhance writing and quantitative reasoning instruction. Through this work we learned/reaffirmed the importance of explicit communication of course expectations for writing and quantitative reasoning abilities. Another lesson was the need to balance instruction of data acquisition, analysis, presentation, and interpretation, and the need to develop some fundamental skills in prior coursework. Assignments from 2014 are being generalized for use in other AGRO courses, and being made available online in coordination with Mary Brakke. Materials will be designed to be directly transferable to other AGRO courses. These include:
 - A. Design assessments for components of quantitative reasoning, including pre /post measures of attitude and ability. These will be designed to be given at the beginning and end of the course, and take no more than ten minutes. Developing this baseline will assess the effectiveness of instruction in the course and ensure assignments are tailored to student abilities.
 - B. Design "Writing in Excel" activities for acquiring, manipulating, and interpreting data with spreadsheets and tables. The format will be similar to a lab that gives basic instructions, but provides creative leeway to students. This will (1) ensure that all students who pass through the Plant Sciences curriculum achieve a basic ability to manage data; (2) provide a reference for students to revisit as they encounter their own datasets in other courses; (3) provide an activity into which instructors in the various sub-disciplines of Plant Science can ‘drop in’ a dataset appropriate for their course. Assessment of written communication products (tables, figures, etc) will be based on a general rubric and on a dataset-specific grading key.
 - C. Design mini lessons and resources on the "hows and whys" behind figure development in assignment genres. Slides/materials from these lessons, including notes guiding within-lecture discussion, will be available to instructors. This foundational knowledge will aid critical self-assessment and long-term retention of data communication abilities, as opposed to blind following of assignment steps.

Assessment will be through other course-specific assignments and grading rubrics that map back to the revised writing abilities (Section 2).

- D. Design workshops to address strategies for teaching and feedback on quantitative communication. Slides will be available to all Plant Sciences instructors and will be specifically implemented in the key courses identified in section 3.

- 6) Share writing instruction experiences to inform our teaching. We will continue the monthly lunch meetings established last year. At the meetings, faculty and others will make informal presentations primarily about their classroom activities and assignments that focus on writing and/or quantitative reasoning. These discussions have been very useful in communicating best practices and defining needs for improving writing instruction. They have also provided regular communication and have kept people engaged throughout the year. We will continue to invite WEC staff to these meetings to participate in these discussions. This has been a valuable means to keep in touch WEC support staff and identify specific ways that the WEC program can support our efforts. To improve participation, lunch will be provided. Proposed budget: Lunch for 8 meetings per academic year for 25 participants: \$1,600 (\$200 per meeting). Department funds will provide a 50% match for these lunches. Nancy Ehlke and James Anderson will organize the lunches. The major outcome of this work will be a better understanding of the writing instruction that is happening in our classrooms and networks of colleagues to improve writing instruction.

Mary Brakke will be a key person coordinating the efforts, particularly activities 1, 3, and 4. She has taught a variety of courses in our department for the past 20 years. She has been very involved in course design to include active learning, problem-based learning, and online technology. She has also been involved with design of majors in our program. In the past year she has worked with Janna Knittle to develop five-minute workshops.

Mary is funded %50 on hard support dollars through the department. Her remaining support is provided through grants. We propose to dedicate 20% of Mary's effort to the WEC activities of which the department will support half. Proposed budget from WEC: 8% of Mary Brakke's salary and fringe benefits.

Patrick Ewing is a Research Assistant in the Applied Plant Sciences (APS) Graduate Program and has been involved with writing/quantitative reasoning assignments for Agro 4605. He has indicated that he would like to continue to work as part of our WEC plan on this course (#5) and he (or another WEC RA) will work on activities #1 and #4, If Patrick does not continue in the second year of the plan we will recruit another graduate student to serve as our WEC RA. We request support for 26 weeks of the academic year (10 hour/week, \$20 hour; \$5,200). As in the past year, this time will be spent developing and accessing writing/quantitative reasoning assignments and not time spent teaching in a course.

Section 6: PROCESS USED TO CREATE THIS WRITING PLAN: How, and to what degree, were stakeholders in this unit (faculty members, instructors, affiliates, teaching assistants, undergraduates, others) engaged in providing, revising, and approving the content of this Writing Plan?

The work of our current WEC plan and the development of our 2nd Edition Writing Plan has been integrated into the routine workflow of the department. Either a brief update or more extensive discussion is presented at each of our monthly faculty meetings as was initiated in the M1, M2, etc, meetings that were convened in our first year. The monthly WEC lunches were another opportunity to discuss ideas relevant to this plan and included faculty, teaching assistants, WEC staff, and graduate students. In addition several ad hoc meetings between the WEC liaison and key instructors took place during the last semester to finalize aspects of the plan. Finally, a draft

of the plan was distributed in March to the entire faculty. The plan was discussed at our 3/27/15 faculty meeting and approved unanimously by the faculty present.

Section 7: Briefly, please describe the ways that the ideas contained in this Undergraduate Writing Plan address the University's Student Learning Outcomes (<http://www.slo.umn.edu>).

Our Undergraduate Writing Plan addresses all of the Student Learning Outcomes to some extent, but in particular our plan addresses the following three outcomes:

Can identify, define, and solve problems

Improving skills to manage, analyze and interpret data and communicate quantitative information will be done in the context of defining and solving problems.

Can locate and critically evaluate information

An increased emphasis will be placed on conducting literature research and writing a review of literature with emphasis on recognizing and using primary scientific literature and drawing conclusions from multiple independent sources of evidence. Also, in some courses students will be asked to access data from publically available databases, analyze that data, and present it to a specific audience in a writing assignment.

Can communicate effectively

Writing, as defined broadly in this plan, includes a wide array of modes of written communication - reports, peer reviewed articles, lab notebooks, graphs, figures, PowerPoint presentations, extension bulletins, etc..., each targeted to a specific audience. Recognizing the audience and tailoring writing to that audience is a key aspect of our plan to improve our students writing abilities.

V. WEC Research Assistant (RA) Request Form

This form is required if RA funding is requested. If no RA funding is requested please check the box below.

No RA Funding Requested

RAs assist faculty liaisons in the WEC Writing Plan implementation process. The specific duties of the RA are determined in coordination with the unit liaison and the WEC consultant, but should generally meet the following criteria: they are manageable in the time allotted, they are sufficient to their funding, and they have concrete goals and expectations (see below).

RA funding requests are made by appointment percent time (e.g., 25% FTE, 10% FTE, etc.). Appointment times can be split between two or more RAs when applicable (e.g., two 12.5% appointments for a total of 25% FTE request). Total funds (including fringe benefits when applicable) need to be calculated in advance by the liaison, usually in coordination with administrative personnel¹.

Please note that, outside of duties determined by the liaison, WEC RAs may be required to participate in specific WEC activities, such as meetings, Moodle discussion boards, and surveys.

RA Name (Use TBD for vacancies): Patrick Ewing

RA Contact Information: email pmewing87@gmail.com, phone _____

Period of appointment (Semester/Year to Semester/Year): Su 2015 to Spr 2016, Patrick is also funded on other funds. So he will work on WEC intermittantly throughout the year.

RA appointment percent time: 25% ie. 10 hrs/week, \$20/hr for 26 weeks. \$5,200 for year 1 only.

Define in detail the tasks that the RA will be completing within the funding period:

These are described in more detail in the plan.

1. Design assessments for components of quantitative reasoning, including pre /post measures of attitude and ability.
2. Design "Writing in Excel" activities for acquiring, manipulating, and interpreting data with spreadsheets and tables.
3. Design mini lessons and resources on the "hows and whys" behind figure development in assignment genres.
4. Design workshops to address strategies for teaching and feedback on quantitative communication.

Define deadlines as applicable (please note that all deadlines must be completed within the funding period):

Deadlines for above products.

1. Sept 1, 2015
2. Jan 1, 2016
3. Oct 1, 2015
4. March 1, 2016

Describe how frequently the RA will check in with the liaison:

RA will check in once per month with liaison

Describe in detail the RA's check-in process (e.g., via email, phone, in-person, etc.):

Generally, each month check-in will be in person and in conjunction with monthly WEC lunches. Email communication between check-ins will be done as needed to indicate when products have been uploaded to Google drive or when assessments have been summarized.

ⁱ An example for determining funding for appointments can be found on the WEC Liaison Moodle. This is for planning and example purposes only and cannot be used to determine final budget items for the Writing Plan.

VI. WEC Writing Plan Requests

Unit Name: **Agronomy and Plant Genetics**

Financial Requests (requests cannot include faculty salary support) *drop-down choices will appear when cell next to "semester" is selected*

Total Financial Request: **\$23,022.00**

Semester 1: Summer 2015		Semester 2: Fall 2015		Semester 3: Spring 2016	
Item	Cost	Item	Cost	Item	Cost
RA 10 weeks, 10 hours/week, \$20/hour	\$2,000.00	8 weeks, 10 hours/week, \$20/hour	\$1,600.00	8 weeks, 10 hours/week, \$20/hour	\$1,600.00
Mary Brakke 8% Sal	\$6,062.00				
Mary Brakke 8% FB	\$2,049.00				
		50% support of WEC Lunches	\$400.00	50% support of WEC Lunches	\$400.00
Semester 1 Total: \$10,111.00		Semester 2 Total: \$2,000.00		Semester 3 Total: \$2,000.00	

Rationale for costs and their schedule of distribution

Patrick Ewing (RA) will work intermittently throughout the year on WEC activities. Mary Brakke - 20% Total Effort on WEC, 10% funded through Dept. 4 WEC lunches per semester.

Service Requests *drop-down choices will appear when a cell in the "service" column is selected*

Semester 1:		Semester 2:		Semester 3:	
Service	Qty	Service	Qty	Service	Qty

Description and rationale for services

April 13, 2015

Kevin Smith
Agronomy and Plant Genetics
smith376@umn.edu

Dear Professor Smith,

I write to let you know that the Campus Writing Board (CWB) recently discussed and approved the Writing Plan submitted by you on behalf of the Department of Agronomy and Plant Genetics.

The decision whether to fund the project and at what level rests with the Vice Provost for Undergraduate Education, who has received the recommendation from the Campus Writing Board and will notify you soon about funding.

Sincerely,

Katie Russell
Staff, Campus Writing Board
russellk@umn.edu
612-624-6040

CC: Molly Bendzick, Will Durfee, Dan Emery, Pamela Flash, Leslie Schiff, Steven Wandler

UNIVERSITY OF MINNESOTA
Office of Undergraduate Education

April 13, 2015

To: Kevin Smith, Agronomy and Plant Genetics
From: Robert McMaster, Office of Undergraduate Education
Subject: Decision regarding WEC funding proposal

The Department of Agronomy and Plant Genetics recently requested the following funding to support its Writing Enriched Curriculum:

Summer 2015	RA 10 weeks, 10 hours/week, \$20/hour	\$ 2,000.00
Summer 2015	Mary Brakke, 8% salary	\$ 6,062.00
Summer 2015	Mary Brakke, 8% fringe benefits	\$ 2,049.00
Fall 2015	RA 8 weeks, 10 hours/week, \$20/hour	\$ 1,600.00
Fall 2015	50% support of WEC lunches	\$ 400.00
Spring 2016	RA 8 weeks, 10 hours/week, \$20/hour	\$ 1,600.00
Spring 2016	50% support of WEC lunches	\$ 400.00
Summer 2016	Mary Brakke, 8% salary	\$ 6,062.00
Summer 2016	Mary Brakke, 8% fringe benefits	\$ 2,049.00
Fall 2016	50% support of WEC lunches	\$ 400.00
Spring 2017	50% support of WEC lunches	\$ 400.00
TOTAL REQUEST		\$ 23,022.00

All items above have been approved by the Office of Undergraduate Education, for a total of \$23,022. Please provide Pat Ferrian (ferri004@umn.edu) with your department's EFS information within 30 days of the receipt of this letter so the funds may be transferred.

CC: Suzanne Bardouche, Molly Bendzick, Will Durfee, Dan Emery, Pat Ferrian, Pamela Flash, Leslie Schiff, Steve Wandler, Lori Buboltz