

Psychology Department Assessment Report: 2014-2015

Timeline and Background regarding Psychology Department Assessment:

2007-2008: The department adopted the American Psychology Association's Undergraduate Learning Outcomes and created a departmental curriculum map (see Appendix 1). At that time, the College established a plan for departments to submit departmental reviews (including learning outcomes assessment) every five years.

2012-2013: The department submitted its five-year review to the Curriculum Study Committee (CSC). The committee found that the department needed to develop a rigorous, systematic, but manageable assessment plan. Shortly after we had received feedback from the CSC, we learned from Middle States that assessments of learning outcomes should be rigorous but efficient for departments. Thus, the psychology department created an assessment plan to meet the expectations of CSC and Middle States.

Spring 2014: The department began to implement the new assessment plan. The project used for this part of the assessment was a mock research proposal that was completed in partial fulfillment for the requirements of the lower-level, foundation course, PSY 222-Research Methods. Full review of this assessment can be seen in the 2013-2014 Psychology Department Assessment Report.

Spring 2015: The department assessed a sample of student papers from the 300-level laboratory series, including PSY-340 (Conditioning & Learning), PSY-342 (Cognitive Psychology), and PSY-343 (Sensation & Perception). We specifically assessed advances in students' skills on components related to the learning outcomes, 1) Knowledge base in Psychology, 2) Scientific inquiry and critical thinking, 3) Ethical and social responsibility in a diverse world, and 4) Communication.

Progress Report for Action Items from 2013-2014 Psychology Department Assessment:

Action Item #1: “[W]e will use a universal grading rubric for all of the courses in which students are required to write an APA research report...”

A general template has been developed and shared among all faculty members of the department and faculty who may teach PSY listings requiring APA-formatted research papers (i.e. Dr. Greg Butcher, Neuroscience). Given the nature of each course's research report/paper, it was felt that a strictly universal grading rubric would not be feasible based on differences in assignment requirements, such as those required for a literature review paper and those required strictly for a research/lab report. The general template, however, can be used to ensure that concepts on the grading rubric for a given course's particular writing assignment are aligned with course learning goals and departmental student learning outcomes. See Appendix 1 for examples of the developed grading rubrics.

Action Item #2: “[A]ll students will be strongly encouraged to take PSY 222 before they take any of the 300 level laboratory courses. There is still discussion about making PSY 222 a prerequisite for the 300 level laboratory courses.”

During the 2014-2015 academic year, the Psychology Department has worked to develop a significant redesign of the psychology major and minor. This redesign received approval from the Curriculum Study Committee (CSC) and Faculty Council in Spring 2015, with the first stages of implementation beginning in the Fall 2015 semester. Please see Appendix 2 for an overview of the new curriculum for the psychology major. Full consideration of the prerequisite component of this Action Item was impeded by the changing of Psychology Department faculty. We will continue discussion of making PSY-222 a prerequisite for the 300-level laboratory courses associated within each track once Dr. Kristel Gallagher arrives to offer her input and expertise. She will be redesigning the PSY-222 course to align with a newly approved Statistics for the Social Sciences course throughout the 2015-2016 academic year through the approval of a course release for her overall teaching load. Despite this impediment, the department drafted a “suggested” sequence of courses within the Psychology major given the newly redesigned psychology curriculum that addresses this Action Item, and it can be seen in Appendix 3. See this year’s Action Items (#1) for a continuation of this discussion.

Action Item #3: “[A]s a result of our assessment this spring, the department has decided to collect a sample student papers from the 300 level laboratory series next year...”

This Action Item was successfully completed. A review of this year’s assessment is forthcoming in this document, following this progress report on last year’s Action Items, under the heading, “2014-2015 Psychology Department Assessment Summary”.

Action Item #4: “[T]he department will study the revised (2014) American Psychological Association (APA) Undergraduate Student Learning Outcomes (SLO’s) and decide which are appropriate to adopt for our program.

Following discussion of the APA SLO’s, the department agreed to adopt all 5 for our program. The 5 APA SLO’s are:

- SLO #1: Knowledge Base in Psychology
- SLO #2: Scientific Inquiry and Critical Thinking
- SLO #3: Ethical and Social Responsibility in a Diverse World
- SLO #4: Communication
- SLO #5: Professional Development

See this year’s Action Items (#2) for a continuation of this discussion, specifically regarding the APA’s “Foundation/Baccalaureate Indicators” within each of the SLO’s.

Action Item #5: “[T]he department is planning to develop the psychology capstone course with the intention of developing projects that are aimed at assessing the newly adopted learning outcomes. It is our hope that the capstone will allow us to move assessment to a three-year assessment cycle.”

The first steps to completing this Action Item were accomplished. During the 2014-2015 academic year, the Psychology Department has worked to develop a significant redesign of the psychology major and minor. This redesign received approval from CSC and Faculty Council in Spring 2015. An important immediate development in this approval process was the passing of a 1CH, freshmen-only, PSY-100: Orientation to Psychology course to the curriculum. The catalog description of the course is as follows:

PSY 100: Orientation to Psychology for Majors (1CH) (3 sections)

In this course, students will become oriented to the unique self-reflection and interpersonal skills necessary when working with human participants in the field of psychology. Three sections of this course will be offered with each section meeting for one 55 minute period one day a week. Assessment will be based on attendance at and participation in discussion during each class period as well as on weekly self-reflective journals. (This course meets at the same time as the “Research with Human Participants” laboratory course.) Offered to Freshman psychology majors during the fall semester beginning Fall 2016.

PSY-100: Orientation to Psychology has been specifically designed to let our majors know what our departmental expectations are across their four years. Additionally, the department has seen a need to introduce students to the self-reflective process and insight based developmental traits needed for success in the field of psychology. Exposure to the processes of self-reflection and development of insight will better prepare students in psychology to be ethical and competent researchers, clinicians, and academics. Furthermore, it is believed that helping students develop these skills early during Psychology 100 Orientation to Psychology for Majors will assist them in being better students and citizens within the psychology department and at Thiel in general. Students enrolled in PSY-100: Orientation to Psychology will be effectively mentored by upper class students in psychology, specifically by those students enrolled in PSY-373: Research with Human Participants, who will be working directly with PSY-100 students as part of their course requirements. The goal is that this will foster a community of integration within the psychology department and lead to higher retention of psychology majors.

Also contained in this approved redesign were two, 2CH “Capstone” courses that will be specifically designed to directly deliver professional & graduate preparation for our students. This will help the department facilitate APA/Departmental SLO #5: Professional Development in a direct, hands-on way with dedicated course time and assessment of this goal.

- PSY-333: Junior Seminar in Psychology (2CH)
- PSY-444: Senior Seminar in Psychology (2CH)

Please see Appendix 2 for an overview of the new curriculum for the psychology major, including the PSY-100:Orientation to Psychology course, and two “Capstone” courses. Please see this year’s Action Items (#3) for further discussion.

2014-2015 Psychology Department Assessment Summary:

The projects we used for this part of the assessment were samples of student papers from the 300-level laboratory series, including PSY-340 (Conditioning & Learning), PSY-342 (Cognitive Psychology), and PSY-343 (Sensation & Perception). (See Appendix 4 for course descriptions and the student prompts that described the assignments). A total of 12 samples were assessed across the 3 courses, with 5 samples coming from PSY-340, 5 samples coming from PSY-342, and 2 samples coming from PSY-343. Only two samples were collected from PSY-343, as the total student enrollment of 7 students were split into 2 groups (of 3 and 4 students, respectively) for the development, implementation, and completion of the assignment.

The full-time faculty read the final papers and scored them on a rubric of learning outcomes (please see Appendix 5 for the rubric of learning outcomes assessed with this assignment). All evaluations were completed independently by each faculty member. As a control measure, the faculty members who were not the class instructor for a given course completed the assessment blind to student authorship for each sample. Please see Appendix 6 for raw assessment scores for each SLO and Foundation Indicator for each sample.

Before discussing the outcome of the assessment, it is important to note that the department discussed our expectations of proficiency in the learning outcomes following our independent assessment of the project. It is important to keep in mind that the course chosen for assessment this year is a Junior, 300-level course. As such, the expectation of “average” proficiency should reflect the course level. Therefore, the department felt that “average” performance for this assignment would be a proficiency rating of “Intermediate” on the learning outcomes rubric. As course level increases, the expectation of “average” proficiency would increase as well (i.e. “Novice” for 200-level, “Intermediate” for 300-level courses, and “Advanced” for 400-level courses).

Of the 12 research papers that were assessed, 2 were assessed as “above average”. They were given a proficiency rating (according to the learning outcomes rubric) of “Advanced” on at least 2/3 of the foundation indicators for each learning outcome. Five of the samples were assessed as “below average”. These 5 samples did not meet the 2/3 of foundation indicators requirement for an “Intermediate” proficiency rating. It was noted that of these 5 “Novice” samples, 3 had “Intermediate” proficiency ratings on at least 1/2 of the foundation indicators but did not meet the 2/3 cutoff. The remaining 2 “Novice” samples were clearly below standard on all foundation indicators. Some discussion of assessing the samples on a spectrum within this proficiency rating, then, will need to occur to account for the variability of performance with each proficiency rating. For example, the department felt there were clearly above/below average novice/intermediate ratings. Discussion of this conceptualization will continue (see this year’s Action Item #4) as we prepare for the 2015-2016 assessment. The remaining 5 research papers

were assessed as “Intermediate”. They were given a proficiency rating of “Intermediate on at least 2/3 of the foundation indicators.”

Following this blind assessment, we reflected on the distribution of proficiency ratings across the 3 lab courses. Interestingly, the two samples that rated as “above average” with an “Advanced” proficiency rating both came from PSY-343 (Sensation & Perception), and were comprised of all 7 seven students enrolled in the class being divided into two groups (of 3 and 4 students, respectively, with the purposeful separation of students with the two highest overall G.P.A.’s to separate groups). The group then submitted a final research report at the end of the semester that had been developed throughout the semester. Based on this purposeful separation of students into their groups, there is a question raised of assessment of individual proficiency within the group based solely on this final project. Additionally, when comparing all supplemental material and class/lab time devoted to the paper/project, it seems as though PSY-343 had more dedicated facilitation time compared to the other lab courses under review for this year’s assessment. See this year’s Action Items (#5) for a continuation of these reflections.

When considering the other end of the proficiency rating scale, a similar trend occurred that we first observed last year when assessing a 200-level course. The students who were rated as below average (below "Intermediate") were generally graduating seniors and current juniors, who, in comparison to the rest of the class, demonstrated generally low academic performance in other areas of assessment for the course, and had the lowest cumulative G.P.A.’s prior to the start of the semester. We are interested in continuing to investigate this trend in future assessments for other courses, especially in light of the newly approved psychology curriculum redesign of the major.

2015-2016 Action Items:

1. Continue discussion of Action Item #2 from the 2014-2015 assessment regarding the prerequisite designation for 300-level laboratory courses to include PSY-222. This discussion will take place following the arrival of the new faculty member, Kristel Gallagher. If the discussion yields the need to submit documentation for approval to CSC, this will be done in the 2015-2016 academic year as well.
2. Continue discussion of SLO’s, specifically including the APA’s “Foundation/Baccalaureate Indicators” within each of the 5 SLO’s that the Psychology department adopted this past year. The department will discuss which foundation indicators to adopt within courses.
3. Following the approval of the overall framework of the psychology curriculum, the department will use the 2015-2016 academic year to focus on the development of course content in new courses (and submission to CSC for approval), and the redesign of some existing courses (and submission to CSC for approval). Included within this development phase are the following courses:
 - PSY-333: Junior Seminar in Psychology (2CH) New
 - PSY-444: Senior Seminar in Psychology (2CH) New

- PSY-364: Experimental Social Psychology +lab (4CH) New
- MATH-2XX: Statistics for the Social Sciences (3CH) New
- PSY-222: Research Methods (3CH) Mod.
- PSY-246: Lifespan I (3CH) Mod.
- PSY-248: Lifespan II (3CH) Mod.
- PSY-330: Conditioning & Learning (3CH, non-lab) Mod.

4. Formalize a “low” and “high” conceptualization within each proficiency rating, establish criteria for these designations, and update the assessment rubric prior to the Spring 2016 assessment.
5. Further discuss the implications of assessing group work in the context of the SLO’s. Develop/Formalize ways to evaluate individual contribution to a group project/paper in psychology courses. Additionally, discuss implications on the departmental assessment process of varying levels of facilitation and class time dedication to the development of the final paper.
6. Develop an assessment cycle timeline in light of the newly approved curriculum.
7. As a result of our assessment this spring, the department has decided to collect a sample of student work from the PSY-450: Special Topics seminar series in Spring 2016. Special Topics to be covered are:
 - PSY-450-1: Special Topics: Depth Psychology and Dancing Mindfulness
 - PSY-450-2: Special Topics: Health Psychology
 - PSY-450-3: Special Topics: Sex in the 21st Century

We will be looking for advances in students’ skills on the following SLO’s:

- SLO #1: Knowledge Base in Psychology
- SLO #2: Scientific Inquiry and Critical Thinking
- SLO #3: Ethical and Social Responsibility in a Diverse World
- SLO #4: Communication

Appendix 1

Example Grading Rubric

S&P Group Project – Final Paper Due Dec 8th, noon (50pts)

Title Page:

A. The students followed formatting instructions: Typed, double-spaced, 1-inch margins, TNR font Running head (header, flush left, correct formatting) Page number (header, flush right, correct formatting)	<u> </u> /1
B. The students followed content instructions: Title, byline, and affiliation ending in upper half of page	<u> </u> /1

Introduction:

Did the students select and cite primary journal articles as background? If “yes” continue assess A-F. If “no” assess all but B (score of 0 for B).	<input type="checkbox"/> <u>Yes</u> <input type="checkbox"/> <u>No</u>
A. The students provided a general introduction to the topic chosen, including an explanation of any relevant terminology or necessary background information on the topic.	<u> </u> /2
B. The students sufficiently/adequately described <u>in their own words</u> , what happened in each of the experiments selected as sources, and explained the questions that the previous work answered. (2pts per article, at least three should be used in this section of the paper)	<u> </u> /6
C. The students sufficiently/adequately defended his/her reasoning for including each of the chosen articles. In other words, the students explained how the previous work leads to their hypothesis.	<u> </u> /2
D. The students described their hypothesis for their proposed study in a well-worded, direct way.	<u> </u> /1
E. The students explained why they think this hypothesis may be correct.	<u> </u> /1
F. The students state a <i>critical prediction</i> of the hypothesis- the result that will occur if the hypothesis is correct. The students described the alternate hypothesis. In other words, students discuss what their results would look like if their hypothesis was incorrect.	<u> </u> /4

Methods:

A. The students included subsections to the Methods section (Subjects, Materials, Procedure)	<u> </u> /1
B. Subjects 1. The students provided detail regarding participant characteristics (including but not limited to: species, sex, age, etc)	<u> </u> /3
C. Materials 1. The students provided detail regarding any materials needed to conduct the study (including but not limited to: all supplies needed and an explanation of apparatus, assessments, inventories)	<u> </u> /4

D. Procedure	
1. The students identified, and accurately/sufficiently described, an experimental research design(s) to be used.	<u> /1</u>
2. The students accurately identified the IV(s), and sufficiently defended his/her reasoning for the choice made	<u> /1</u>
3. The students accurately identified the DV(s), and sufficiently defended his/her reasoning for the choice made	<u> /1</u>
4. The students provided a detailed description of the procedure.	<u> /2</u>

Results:

A. The students described the results	<u> /2</u>
B. The students included appropriately constructed graphs	<u> /2</u>
C. The students sufficiently described each graph. In other words, the students thoroughly “walk” the reader through the data displayed in the graph.	<u> /2</u>

Conclusions:

A. The students described what the outcomes of the experiment <i>mean</i> . In other words, the students discuss the implications of the results.	<u> /3</u>
B. The students sufficiently discussed some limitations to the chosen experimental design, and possible way to correct them (if possible).	<u> /3</u>
C. The students sufficiently described some future questions that could be asked based on their results.	<u> /3</u>

References:

A. The student followed formatting instructions: Typed, double-spaced, 1-inch margins, TNR font Running head (header, flush left, correct formatting) Page number (header, flush right, correct formatting) APA formatting(deduct 1pt per error, up to 4 points)	<u> /4</u>
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Additional Deductions:

Proofreading (0.5 pt/occurrence, up to 10 points after two “freebies”; including misspellings, run-ons, incomplete sentences, and other grammatical errors)	
Incorrect formatting for within-text citations (0.5 pt/occurrence up to 5 points)	
APA formatting for body of proposal (not within-text citation): Typed, double-spaced, 1-inch margins, TNR font, 1 staple in upper left corner, page number, running head information (1pt/item)	

TOTAL: /50

Appendix 2

Overview of the new curriculum for the psychology major

Foundation Courses:		CH:	
<i>(Majors take all foundation courses)</i>			
PSY-100 Orientation to Psychology	1		
PSY-150 General Psych	3		
PSY-270 Neuropsychology	3		
MATH-2XX Statistics for the Social Sciences	3		
PSY-222 Research Methods	3		
PSY-246/PSY-248 Lifespan I or II	3		
PSY-430 Hist & Phil of Psych	3		
Foundation Course total:	19		
Capstone Courses:		CH:	
<i>(Majors take all capstone courses)</i>			
PSY-333 Junior Seminar in Psychology	2		
PSY-444 Senior Seminar in Psychology	2		
Capstone Course total	4		
Track 1: Counseling	CH:	Track 2: Cognitive	CH:
		<i>(Majors select 1 track)</i>	
PSY-300 Abnormal Psych	3	PSY-210 Positive Psychology	3
PSY-370 Counseling Methods	3	PSY-440 Cog Theories	3
400-level Seminar/Topics course	3	400-level Seminar/Topics course	3
Track 1 Lab:		Track 2 Lab:	
PSY-373 Research with Human Participants	4	PSY-342 Cognitive Psychology	4
		Track 3 Lab:	
		PSY-364 Experimental Social Psychology	4
Track 1 total:	13	Track 2 total:	13
		Track 3 total:	13
Electives:			
<i>(Not to overlap with Foundation, Capstone, or selected Track courses)</i>			
Electives in PSY: <i>(Majors take 9CH of Elective courses)</i>			
200-level or higher	6		
300-level or higher at least	3	(Note: 4CR labs as electives)	
Can include:			
Internship (Leadership component to Core)			
Research (Scholarship component to Core)			
Electives total:	9		
Psychology Major Summary:			
Foundation Course total:			19
Capstone Course total			4
Track total:			13
Electives total:			9
TOTAL CH for Major:			45

Appendix 3

“Suggested” sequence of courses within the Psychology major

<u>Track 1: Counseling</u>				<u>Track 2: Cognitive</u>			
Year	Sem	Course	CH	Year	Sem	Course	CH
1	Fall	PSY-100: Orientation to Psychology	1	1	Fall	PSY-100: Orientation to Psychology	1
		PSY-150: General Psychology	3			PSY-150: General Psychology	3
	Spr	PSY-246/248: Lifespan I or II	3		Spr	PSY-246/248: Lifespan I or II	3
		PSY-270: Neuropsychology	3			PSY-210: Positive Psychology	3
2	Fall	PSY-222: Research Methods	3	2	Fall	PSY-222: Research Methods	3
		MATH-233: Statistics for the Social Sciences	3			MATH-233: Statistics for the Social Sciences	3
	Spr	PSY-300: Abnormal Psychology	3		Spr	PSY-270: Neuropsychology	3
		PSY Elective 1	3			PSY Elective 1	3
3	Fall	PSY-333: Junior Seminar in Psychology	2	3	Fall	PSY-333: Junior Seminar in Psychology	2
		PSY-370: Counseling Methods	3			PSY Elective 2	3
	Spr	PSY-373: Research with Human Participants	4		Spr	PSY-342: Cognitive Psychology	4
		PSY Elective 2	3			PSY Elective 3	3
4	Fall	PSY Elective 3	3	4	Fall	PSY-440: Cognitive Theories	3
		400-level Seminar/Topics course	3			400-level Seminar/Topics course	3
	Spr	PSY-444: Senior Seminar in Psychology	2		Spr	PSY-444: Senior Seminar in Psychology	2
		PSY-430: Hist & Phil of Psychology	3			PSY-430: Hist & Phil of Psychology	3
Total Credit Hours:			45	Total Credit Hours:			45

<u>Track 3: Social</u>			
Year	Sem	Course	CH
1	Fall	PSY-100: Orientation to Psychology	1
		PSY-150: General Psychology	3
	Spr	PSY-246/248: Lifespan I or II	3
		PSY-250: Applied Psychology	3
2	Fall	PSY-222: Research Methods	3
		MATH-233: Statistics for the Social Sciences	3
	Spr	PSY-270: Neuropsychology	3
		PSY Elective 1	3
3	Fall	PSY-333: Junior Seminar in Psychology	2
		PSY-360: Social Psychology	3
	Spr	PSY-364: Experimental Social Psychology	4
		PSY Elective 3	3
4	Fall	PSY Elective 2	3
		400-level Seminar/Topics course	3
	Spr	PSY-444: Senior Seminar in Psychology	2
		PSY-430: Hist & Phil of Psychology	3
Total Credit Hours:			45

Appendix 4

Course Descriptions and the Student Prompts for 2014-2015 Assessment

Course Descriptions: (from 2014-2015 Catalog)

PSY 340—Conditioning and Learning (4 CH) An introduction to the important concepts of learning. Pavlovian and operant conditioning, stimulus control of behavior, cognitive control of behavior, biological influences and the encoding, storage and retrieval of information. The course will meet each week for three 55-minute lectures and students will complete computer-based laboratory exercises. (P: PSY 150 and two other courses in psychology) (WIC)

PSY 342—Cognitive Psychology (4 CH) The theory and data of cognition, information systems and memory from the viewpoint of modern cognitive psychology. Emphasis will be placed on the methods of determining and measuring cognitive processes and on the data relating to these processes. Laboratory experiments in sensation, perception, and memory will investigate selected phenomenon from these areas. (P: PSY 150 or PSY 109) (WIC)

PSY 343—Sensation and Perception (4 CH) An introduction to the sensory systems of the human body, with an emphasis on vision and hearing. Students will also be introduced to the methods of measuring and researching sensation and perceptual processing. This is a lecture course with a complementary lab. (P: PSY 150 or PSY 109 and sophomore status or permission of the instructor.) (WIC)

Student Prompts for Assignment:

PSY 340—Conditioning and Learning

RESEARCH PAPER (120 POINTS): Students will develop an original literature review of any learning issue or topic you find interesting. A list of suggestions will be provided during the course, but can include any subject matter related to the area of learning, such as learning disabilities, state-dependent learning, autoshaping, learned helplessness, or social learning (just to name a few). The paper must be in APA format, and have a minimum of 8 primary source journal/book references. The use of popular press articles/websites can be used but will not count toward your 8 references. Instruction time will be dedicated to discussion and facilitation of the research paper, though students are expected to complete a majority of this work outside of class time. The final paper will be 8-10 pages (including title and reference pages).

PSY 342—Cognitive Psychology

Data Collection: Each student will be responsible for collecting data from at least two people and yourself (that's three people in total). Attempt to use participants who are in college or college-aged. Please record the age and sex of each subject for each experiment. Record that information on the subject's data sheet. Print out all data and turn it in to the instructor on the due date. **DO NOT TURN IN DATA SHEETS WITH PARTICIPANTS' NAMES ON THEM.**

Writing the report: Students will work together as co-authors on APA style research reports. In order to make the writing project more "real world", I am requiring that you write a draft and have your writing partner(s) in the class revise your draft. On the due date writing partners should turn in the paper **WITH the REVIEWER'S comments on it.** The due dates are listed below. I will not record a grade for a paper that is turned in

without reviewer's comments. The final paper may be turned directly in to me without your Reviewer's comments. I will provide a rubric that will guide you in the production of your paper.

Lab Assignments:

Sept. 19^h—IRB Forms due

Sept. 26th— Partial Report data due, Brown-Peterson data due

Oct. 3rd—Memory Span data due

Oct. 10th—Encoding Specificity data & Mental Rotation data due (all experimental results will be posted during mid-term break—Check Moodle)

Oct. 17th—Oct 31st—selection of paper topic, email article summary, 5 references (in APA format) you'll use in your introduction

Nov. 7th—Draft of Methods & Results, outline of Introduction

Nov. 14^h—Draft of Discussion/Conclusion, Introduction and revised Method Results

Nov. 21nd—Draft of Abstract, Introduction, revised Discussion/Conclusion (method and results)

Dec. 5th—Final Paper due

PSY 343—Sensation and Perception

Block A (Sept 1st – 24th; 30 points)

In the first block of your project, you will identify a topic, investigate background material and determine an experimental question and hypothesis. Your project may relate to almost any sensory or perceptual topic, with a few caveats. Your idea and experiment must be at a level appropriate for a 300-level course. Therefore, you can't simply replicate a science fair project from elementary school. Your topics are also limited to those you can actually test given your knowledge and resources. Generating a genetic knockout for a given taste receptor may be a valid test, but is not something you can complete in a semester. I'm also going to require that you work with living, invertebrate organisms. I have several different species available in the lab, but may also be able to obtain others depending on your needs. If you have any questions, please ask BEFORE you submit your first assignment. Although the summary of the background readings isn't due for several weeks, you may want to spend some time looking into the literature as you are brainstorming.

Block B (Sept 25th – Oct 22nd; 30 points)

Now that you have identified your topic and begun looking into the background, you will have the opportunity to refine your experiment through pilot testing the complete methods. Your group MAY NOT conduct the actual data collection, until I have received and approved your methods.

Block C (Oct 23rd -Nov 19th, 30 points)

The overall goal of this final block is to collect and analyze your data. Once this is finished, you will then develop the final written report. In addition to the general duties for each position (see Block A materials if you've forgotten), the assignments outlined below are required for Block C. Unless otherwise noted, all assignments are to be submitted via email to Dr. Butcher by noon on Nov 19th. As before, the PI is responsible for collecting and submitting all assignments. Additionally, the PI should only submit materials that the entire group has reviewed as all members of the group will receive the same grade for each assignment regardless of the primary author.

Final Paper Due (50 points)

Appendix 5

APA SLOs Rubric - Spring 2015 Assessment of 300-level PSY laboratory courses					
Goal 1: Knowledge Base in Psychology		Proficiency Rating			
<i>Outcomes- Students will:</i>	<i>Foundation Indicators- Students will:</i>	Novice	Intermediate	Advanced	Superior
1.1 Describe key concepts, principles, and overarching themes in psychology	1.1a Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes 1.1b Explain why psychology is a science with the primary objectives of describing, understanding, predicting, and controlling behavior and mental processes 1.1c Interpret behavior and mental processes at an appropriate level of complexity				
Goal 2: Scientific Inquiry and Critical Thinking		Proficiency Rating			
<i>Outcomes- Students will:</i>	<i>Foundation Indicators- Students will:</i>	Novice	Intermediate	Advanced	Superior
2.1 Use scientific reasoning to interpret psychological phenomena	2.1a Identify basic biological, psychological, and social components of psychological explanations (e.g., inferences, observations, operational definitions, interpretations) 2.1b Use psychology concepts to explain personal experiences and recognize the potential for flaws in behavioral explanations based on simplistic, personal theories 2.1c Use an appropriate level of complexity to interpret behavior and mental processes 2.1d Ask relevant questions to gather more information about behavioral claims 2.1e Describe common fallacies in thinking (e.g., confirmation bias, post hoc explanations, implying causation from correlation) that impair accurate conclusions and predictions				
2.2 Demonstrate psychology information literacy	2.2a Read and summarize general ideas and conclusions from psychological sources accurately 2.2b Describe what kinds of additional information beyond personal experience are acceptable in developing behavioral explanations (i.e., popular press reports vs. scientific findings) 2.2c Identify and navigate psychology databases and other legitimate sources of psychology information 2.2d Articulate criteria for identify objective sources of psychology information 2.2e Interpret simple graphs and statistical findings				
2.3 Engage in innovative and integrative thinking and problem solving	2.3a Recognize and describe well- defined problems 2.3b Apply simple problem- solving strategies to improve efficiency and effectiveness 2.3c Describe the consequences of problem- solving attempts				
2.4 Interpret, design, and conduct basic psychological research	2.4a Describe research methods used by psychologists including their respective advantages and disadvantages 2.4b Discuss the value of experimental design (i.e., controlled comparisons) in justify case- effect relationships 2.4c Define and explain the purpose of key research concepts that characterize psychological research (e.g., hypothesis, operational definition) 2.4d Replicate/Design and conduct simple scientific studies (e.g., correlational or two-factor) to confirm a hypothesis based on operational definitions 2.4e Explain why conclusions in psychological projects must be both reliable and valid 2.4g Describe the fundamental principles of research design				
Goal 4: Communication		Proficiency Rating			
<i>Outcomes- Students Will:</i>	<i>Foundation Indicators- Students Will:</i>	Novice	Intermediate	Advanced	Superior
4.1 Demonstrate effective writing for different purposes	4.1a Express ideas in written formats that reflect basic psychological concepts and principles 4.1b Recognize writing content and format differ based on purpose (e.g., blogs, memos, journal articles) and audience 4.1c Use standard English, including generally accepted grammar 4.1d Write using APA style 4.1e Recognize and develop overall organization (e.g., beginning, development, ending) that fits the purpose 4.1f Interpret quantitative data displayed in statistics, graphs, and tables, including statistical symbols in research reports 4.1g Use expert feedback to revise writing of a single draft				

Appendix 6

Raw Assessment Scores (2014-2015)

Student Learning Outcome		Goal 1: Knowledge Base	Goal 2: Scientific Inquiry and Critical Thinking				Goal 4: Communication	Overall Proficiency Rating
Foundation Indicator		1.1 Describe key concepts, principles, and overarching themes in psychology	2.1 Use scientific reasoning to interpret psychological phenomena	2.2 Demonstrate psychology information literacy	2.3 Engage in innovative and integrative thinking and problem solving	2.4 Interpret, design, and conduct basic psychological research	4.1 Demonstrate effective writing for different purposes	
PSY-340: Sample 1	FacScore 1	Intermediate (Low)	Intermediate	Intermediate (Low)	N/A	N/A	Intermediate	11/16= Intermediate 5/16= Novice
	FacScore 2	Intermediate (Low)	Novice	Intermediate (Low)			Intermediate (Low)	
	FacScore 3	Novice	Novice	Intermediate (Low)			Novice	
	FacScore 4	Intermediate (Low)	Novice (H)	Intermediate (Low)			Intermediate (Low)	Intermediate
PSY-340: Sample 2	FacScore 1	Intermediate (Low)	Novice (High)	Intermediate	N/A	N/A	Intermediate	11/16= Intermediate 5/16= Novice
	FacScore 2	Intermediate (Low)	Novice (High)	Intermediate			Intermediate	
	FacScore 3	Intermediate	Novice (High)	Intermediate			Intermediate (Low)	
	FacScore 4	Novice (High)	Novice (High)	Intermediate			Intermediate (Low)	Intermediate
PSY-340: Sample 3	FacScore 1	Novice	Novice	Novice (High)	N/A	N/A	Novice	16/16= Novice
	FacScore 2	Novice	Novice	Novice (High)			Novice	
	FacScore 3	Novice	Novice	Novice (High)			Novice	
	FacScore 4	Novice	Novice	Novice (High)			Novice	
PSY-340: Sample 4	FacScore 1	Novice	Novice	Intermediate (Low)	N/A	N/A	Intermediate	9/16= Intermediate 7/16= Novice
	FacScore 2	Novice	Novice	Intermediate (Low)			Intermediate (Low)	
	FacScore 3	Intermediate (Low)	Novice	Intermediate (Low)			Intermediate	
	FacScore 4	Novice	Novice	Intermediate (Low)			Intermediate	Novice
PSY-340: Sample 5	FacScore 1	Intermediate	Intermediate	Intermediate	N/A	N/A	Intermediate (Low)	16/16= Intermediate
	FacScore 2	Intermediate	Intermediate	Intermediate			Intermediate	
	FacScore 3	Intermediate	Intermediate (High)	Intermediate (High)			Intermediate	
	FacScore 4	Intermediate	Intermediate	Intermediate			Intermediate	
PSY-342: Sample 1	FacScore 1	Intermediate	Intermediate (Low)	Intermediate	Intermediate	Novice (High)	Intermediate (Low)	17/24= Intermediate 7/24= Novice
	FacScore 2	Intermediate (Low)	Intermediate (Low)	Intermediate (Low)	Intermediate (Low)	Novice (High)	Intermediate (Low)	
	FacScore 3	Intermediate (Low)	Intermediate (Low)	Novice	Novice	Novice (High)	Intermediate (Low)	
	FacScore 4	Intermediate (Low)	Novice	Intermediate (Low)	Novice (High)	Intermediate (Low)	Novice (High)	Intermediate
PSY-342: Sample 2	FacScore 1	Intermediate	Intermediate	Intermediate	Intermediate (L)	Novice	Intermediate	14/24= Intermediate 10/24= Novice
	FacScore 2	Intermediate	Intermediate	Intermediate	Novice	Novice	Intermediate	
	FacScore 3	Intermediate	Intermediate	Novice	Novice	Novice	Intermediate	
	FacScore 4	Intermediate	Intermediate (Low)	Novice	Novice	Novice	Novice (H)	Novice
PSY-342: Sample 3	FacScore 1	Advanced (Low)	Advanced (Low)	Advanced (Low)	Advanced (Low)	Intermediate (High)	Advanced (Low)	5/24= Advanced 19/24= Intermediate
	FacScore 2	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate (High)	Intermediate (High)	
	FacScore 3	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate (Low)	Intermediate (High)	
	FacScore 4	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate (Low)	Intermediate (High)	Intermediate
PSY-342: Sample 4	FacScore 1	Novice	Novice	Novice	Novice	Novice	Novice	1/24= Intermediate 23/24= Novice
	FacScore 2	Novice	Novice	Novice	Novice	Novice	Novice	
	FacScore 3	Intermediate (Low)	Novice	Novice	Novice	Novice	Novice	
	FacScore 4	Novice	Novice	Novice	Novice	Novice	Novice	Novice
PSY-342: Sample 5	FacScore 1	Novice (High)	Novice	Novice	Novice	Intermediate (Low)	Novice (High)	12/24= Intermediate 12/24= Novice
	FacScore 2	Intermediate (Low)	Intermediate (Low)	Intermediate (Low)	Intermediate (Low)	Intermediate (Low)	Novice (High)	
	FacScore 3	Intermediate (Low)	Intermediate (Low)	Intermediate (Low)	Intermediate (Low)	Intermediate (Low)	Novice (High)	
	FacScore 4	Novice (High)	Novice (High)	Novice (High)	Novice (High)	Intermediate (Low)	Novice (High)	Novice
PSY-343: Sample 1	FacScore 1	Advanced (Low)	Advanced	Advanced (Low)	Advanced	Advanced	Advanced (low)	24/24= Advanced
	FacScore 2	Advanced	Advanced	Advanced	Advanced	Advanced	Advanced (Low)	
	FacScore 3	Advanced (Low)	Advanced	Advanced	Advanced	Advanced	Advanced (Low)	
	FacScore 4	Advanced	Advanced (Low)	Advanced (Low)	Advanced (Low)	Advanced	Advanced (Low)	
PSY-343: Sample 2	FacScore 1	Advanced	Intermediate	Intermediate (High)	Intermediate (High)	Intermediate	Advanced (Low)	16/24= Advanced 8/24= Intermediate
	FacScore 2	Advanced	Advanced (Low)	Intermediate (High)	Advanced (Low)	Advanced (Low)	Advanced (Low)	
	FacScore 3	Advanced	Advanced (Low)	Intermediate (High)	Advanced	Advanced (Low)	Advanced (Low)	
	FacScore 4	Intermediate (High)	Advanced (Low)	Intermediate (High)	Advanced	Advanced (Low)	Advanced (Low)	Advanced