

2014-2015 Innovation of the Year Application

First name	Last name	Phone	Email
Ladonna	Lewis	6238453645	ladonna.lewis@gccaz.edu
College	Project title		
Glendale	High Touch Teaching with Rats		
Team members – List the team members involved in this project, including yourself. Provide name, job title, email for each. One person per line.			
Dr. Kam Majer, Psychology Department Chairperson, kam.majer@gccaz.edu Dr. Lesley Schimanski, Psychology Faculty Member, lesley.schimanski@gccaz.edu			
A team photograph including all members must accompany this application. Photograph must be 5"x7" and 300dpi or larger. Create a caption for this photograph Identifying team members (using full names) in order of appearance from left to right.			
From left to right: Dr. Kam Majer and Dr. Lesley Schimanski			
Executive summary (50 words or less)			
Changing the way we run our Rat Lab, Drs. Schimanski and Majer have found a cost effective way to give psychology students the high touch experience of conducting their own research projects with the precision that can only be obtained from working with animals.			

Innovations should include information that addresses all of the criterion below and is in alignment with the [Maricopa Vision, Mission, and Value Statements](#).

<p>Quality: It is evident that the innovation increases "quality" in the course, program, office, or institution.</p> <p>In 2010, the American Psychological Association published a book entitled "Undergraduate Education in Psychology: A Blueprint for the Future of the Discipline". The book lays out the hallmarks of quality undergraduate psychology programs, and includes an emphasis on the scientific method as the core of the discipline. Chapter three lists the Scientific Method as central to the discipline and the authors state that students should be taught the skills and behaviors of scientists (Halpern, 2010). One of the primary ways a student can be taught the skills and behaviors of scientists is through the practice of designing studies, collecting and analyzing data, and summarizing the results to share with others. The lab that is run by Dr. Schimanski and the coursework accompanying this lab enhances the ability of the psychology department at Glendale Community College to offer the kind of quality undergraduate education that the APA Blueprint document touts as the future of the discipline.</p> <p>Working with animals provides students with a level of control over the relevant research variables that is not possible when working with human participants. This precision is very important in science, and allows students who take Dr. Schimanski's research methods class to be prepared for any other science they may pursue in the future.</p> <p>Prior to being allowed to collect data from the animal subjects, students are trained in proper animal care, and they design, plan, and implement their experiments from start to finish. Students write formal research proposals and protocols, and use software to analyze the results of their experiments. This is the type of experience usually reserved for undergraduate seniors or graduate students.</p> <p>One of the measures of success for research students is presenting their results at a professional conference. Since Dr. Schimanski has been offering this course students have presented their research findings at the Estrella Mountain Community College Student Conference, the Association for Psychological Science Convention, and the Western Psychological Association Convention. These poster presentations have all required submission of an abstract prior to the meeting, and passing a</p>
--

2014-2015 Innovation of the Year Application

peer review process for acceptance. This opportunity increases the students' professional expertise.

I

Efficiency: There is evidence that the innovation contributes to a more efficient way of doing things.

While the psychology department has had a small animal vivarium (rat lab) for many years, under the leadership of Dr. Majer, and the direction of Dr. Schimanski the lab has become more efficient. Dr. Schimanski has streamlined the way the class is offered by bringing in Long-Evans rats each semester instead of breeding rats in the lab. Purchasing rats each semester, as opposed to running a breeding program, means that more rats can be used as subjects in the student research projects. This increases the flexibility that students have in selecting topics and experimental designs for their studies while decreasing the cost of operating the lab.

In addition, Dr. Schimanski has outfitted the psychology lab classroom with equipment in the form of video tracking software and cameras, along with professionally constructed maze apparatuses compatible with the software, that aid in teaching students the research techniques used in research labs across the country. Use of this new equipment required modification of existing lab tables in the research classroom and the installation of overhead webcams and USB wall plugs, which Dr. Schimanski supervised. She further initiated the renovation of a storage room into a dedicated animal testing area, which has a private, superior environment for conducting carefully controlled behavioral experiments. Her strategic use of the available space, and of up-to-date technology and more standard maze apparatuses makes the time spent in lab more efficient than when students did much of the work by hand, and gives the students hands-on experience with the tools used in more advanced labs in other settings.

Cost effectiveness: There is evidence that the innovation adds a value to the institution while at the same time containing or reducing costs.

One of the major advantages of the changes in the Rat Lab introduced by Drs. Schimanski, and Majer is that Dr. Schimanski has been able to improve the lab and the class while at the same time reducing cost. Prior to Dr. Schimanski, the lab was run by Dr. Sue Oliver. Dr. Oliver was a trailblazer as she was running the only small animal vivarium at a community college in the United States. Dr. Oliver was also breeding a unique strain of rats, the Westenberg-Long-Evans strain. Current budget constraints raise the importance of keeping the cost of the lab down while increasing the quality of the student experience. Dr. Schimanski has contracted professional services to provide animal care technicians and veterinary care for the rats. This has afforded Dr. Schimanski the opportunity to spend more of her time and effort in helping students to design and carry out creative and high quality research studies, rather than cleaning rat cages. The streamlining of the lab by Dr. Schimanski has increased both efficiency and cost effectiveness as outlined below:

Fiscal year 2014

Current cost of services and supplies for lab per year = \$13,956.54

Reassigned time = 3 load hrs. per semester, \$5,178 per year at current rate.

Total Cost per year = \$19,134.54

2014-2015 Innovation of the Year Application

Fiscal Year 2009

Cost to pay Dr. Sue Oliver \$25.50 per hour, 10 hours per week: \$13,260 per year.

Cost to pay Dr. Greg Privitera \$25.50 per hour, 5 hours per week: \$4,845 per year.

Cost of services and supplies for lab per year = \$10,677.78

Total Cost = \$28,782.78

Savings of approximately \$9,648.24 per year

Replication: The innovation selected can be replicated in other institutions with a minimum of difficulty.

Colleges should consider the construction of this type of facility when they are designing science lab space. This space, while currently primarily being used by the psychology department for research purposes, could be shared by several departments if the faculty were interested in such collaborations. It is easy to foresee such a space being used by psychology, biology, chemistry, and veterinary medicine faculty members. These types of STEM collaborations would further the mission of the college, and the Maricopa Community College District. In addition, because this is such a unique facility, it is possible to share the space with faculty members and students who are taking classes at other nearby sister colleges.

Creativity: The innovation should be as original as possible or the adaptation should be creative.

Having researched this topic, I have been unable to find another community college with a facility like this one. Naugatuck Valley Community College in Connecticut has a behavioral rat lab, however it is not on par with the facility here at Glendale Community College. Our lab is one of a kind, and it is exceptional. Many of our students continue their education at nearby universities, and report that their university instructors are amazed and impressed by the training and experience available to the research methods students at GCC. Within the first year after transferring to university, our students have found placements in university labs where they are conducting, and even sometimes managing, research projects.

Timeliness: The innovation should not be more than five years old in the institution, but it must have been around long enough to be tested so that it meets most of the criteria.

Following the retirement of Dr. Oliver, the rat lab was discontinued and there were no animal research options available for students. Dr. Schimanski began her innovative use of the lab in 2013 and is currently supervising her fourth semester of research projects using the lab. With the current emphasis on Science and Technology education, and the recognition of Psychology as a STEM discipline, the timing of these improvements could not be better.

Learning: The results of the innovation have been shared with others for the benefit of students throughout Maricopa.

Students who take PSY290AB with Dr. Schimanski present the results of their research at a public research forum on campus each semester. This open poster session is typically attended by a number of other psychology classes taught by other instructors. This serves two purposes: firstly, research methods students gain practice in presenting their research, and secondly, students in other courses gain the opportunity to learn how to design, carry out, and interpret, a research project.

2014-2015 Innovation of the Year Application

At the end of each semester, after student researchers have finished collecting data, Dr. Schimanski openly invites all interested psychology faculty and students to observe the assessment of rat behavior in the lab by research methods students. During this open session, research methods students design their own mini-study using the rats, and explain their method of measuring rat behavior to the observers in attendance. This allows for faculty and students to gain understanding of the research opportunities available in the lab, and learn about the process of measuring animal behavior through observation.

In addition, some research methods students go on to present their research at the Estrella Mountain Community College Student Conference, and other regional or national conferences, including the Western Psychological Association Convention and the Association for Psychological Science Convention. Travel to conferences is typically done in conjunction with the GCC chapter of Psi Beta (the national honor society for students of psychology at two-year colleges), giving the students further opportunity to discuss their research with other members of this society. Not only do the students who take the class get hands on training in the science, but they also educate others through their public research presentations.

Collaboration: The innovation successfully demonstrates collaboration, teamwork, and cooperation to ensure continuous process improvement efforts on behalf of students throughout Maricopa.

While Drs. Majer and Schimanski are primarily responsible for the lab, ongoing functioning has been a departmental effort. Every member of the psychology department has supported the rat lab. As a department, psychology has committed to providing the best science education possible, and the rat lab is an integral part of that commitment. In each department meeting, we discuss ways to improve what we do, and the rat lab is part of that discussion. Numerous members of the department have also supported research students in their preparation for presentations at professional conferences by reviewing their abstracts prior to the submission process, and also reviewing drafts of their research posters.

Dr. Schimanski has worked cooperatively with the instructors that teach research methods using human participants for their studies to collectively share the outcomes of student research at an open poster session in the GCC Student Union twice a year. This provides an opportunity for research methods students to interact with other students about their research; in fact, a number of faculty have designed interactive assignments for their students in other courses to complete by asking the research methods students questions about their research and about experimental design. This allows the research methods students to serve as role models and gain experience in explaining high level concepts and complex research designs and results to their peers.

There is no question that Drs. Majer and Schimanski have introduced an high degree of teamwork, cooperation, and transparency, and that these changes have been key to creating the lab as it currently exists.