Department Update

The Bioscience Department approach to teaching is progressive and responsive to student needs. Our faculty and staff have advanced training in cutting edge teaching technologies, development and teaching of online classes, and Master Teaching training and leadership, all of which contribute to student engagement and success. Many of our faculty lead learning communities or have been awarded or nominated for Distinguished Teaching awards. Two of our faculty serve in high-level faculty governance roles on campus and at the multi-college level. This year, the Biosciences Department once again hosted numerous student interns funded by our NSF S-STEM grant and Western Alliance to Expand Student Opportunities (WAESO) grants, and faculty and staff were funded to support student projects.

To further advance department initiatives for student-centered approaches to teaching and learning, we have and continue to successfully garner grants for STEM student advancement and support. As in 2015-2016, there was once again a flurry of grant writing and grant submissions from several faculty including Robin Cotter, Anil Kapoor, Anna Marti-Subirana, Elena Ortiz, Amy Bell, Amanda Chapman, and Maggie McGraw. These requested funds are for students to develop and perform lab research projects that augment their experience in STEM training outside of the classroom. Several grant submissions were made in collaboration with Arizona State University faculty to create a transferable bridge to university research. We have been successful in being awarded capital funds from the college for various student lab equipment needs. Our continued gains and successes are reflected in student surveys, student success and completion rates are linked to our data-driven (evidence-based) approach to our operations.

As a department this year, we worked on a document of workplace expectations (attached at the end of this report). All department members, faculty and staff, had input into this document. The completed document details etiquette and responsibilities to each other about most of our day-to-day operations. All department members agreed that this document would be a framework for roles, communications and behavior in the department. For example, the first section covers department chair expectations for communications to the department and several other chair roles. Other sections address faculty and staff responsibilities to each other.

1 Thanks to Janene Armstrong for her substantial work on the Workplace Expectations and work on updating the data charts and edits to the report narrative.
for clear lines of communication and expectations with respect to department operations and the teaching environment.

For many years, I have shared Chair pay and responsibilities with other full time faculty. A significant source of Chair responsibility and pay is the supervision of adjunct faculty. Adjunct supervision has been delegated to faculty that serve as lead instructors and mentors of adjunct faculty that teach the same courses. The responsibility and pay associated with this adjunct supervision includes helping to recruit and interview prospective adjuncts and provide instructional support and evaluations. Class scheduling, textbook and course materials and course delivery has always been left up to full-time faculty as teaching professionals.

Biosciences FTSE trends

The Phoenix College Biosciences Department annual enrollment outpaces college enrollment trends. Campus enrollment has steadily dropped for the past six years while Biosciences enrollment has not changed significantly over the same period. On average, Biosciences FTSE rate of growth has consistently outpaced the campus FTSE growth since 2001.

Challenges to operations and enrollment

Student Course Fee Policy: On November 7, 2016, the MCCCD Governing Board issued a mandate to strictly follow an updated student course fee policy. The policy allows for the purchase only of those items that students can take away with them, which clearly excludes most equipment and supplies that are used in science labs. We were also informed that there should be little or no course fee funds to carry over from one fiscal year to the next. The
impact of this policy on science teaching would be devastating. Beginning each fiscal year with no funds will interrupt service to our teaching labs, blocking our ability to purchase necessary supplies in advance of student activities. We also would not be able to purchase or maintain equipment absolutely necessary for science labs.

Chancellor Harper-Marinick held an open forum at Phoenix College on January 11, 2017 to discuss culture and operational changes at MCCCD. I had the opportunity to speak about the devastating effects that the restrictive course fee policy will have on science teaching. Soon after the open forum, I requested that a group of interested Department Chairs from Phoenix College meet to produce a statement about the impact of the course fee policy on instruction and to develop suggestions on how to structure a course fee oversight process that would ensure the efficient and appropriate use of course fees (see the attached email). The Chancellor also initiated a District-wide faculty committee to consider the policy’s impact on teaching. The selected committee has not updated the faculty about their progress and what recommendations are being made.

Faculty Reassignment: We also have a continuing challenge to our instruction from full time faculty reassignment from teaching for the past three years. This creates pressure to compensate for teaching vacancies with temporary faculty and produces disruption in planning and scheduling. These reassignments will continue through the 2017-2018 academic year. We do not have information whether these reassignments will continue, creating a lack of predictability.

Restrictions on Faculty Load: Restrictions placed on full-time and part-time faculty load have increased the pressure to find and maintain significantly more adjunct faculty to staff classes usually taught by full time faculty. Full-time faculty in the lab sciences are restricted from teaching more than one lecture and one lab as overload, which means that faculty in lab sciences are allows to teach less overload than non-lab science faculty. The differences in science lab faculty loading clearly were not considered when this policy was made.

**Student success in the lab sciences is a central focus for STEM initiatives.**

Lab science classes are challenging due to the rigors of lab work and the integration of data analysis, advanced reading, writing and information literacy skills required to succeed. We recognized these challenges for students and have developed and implemented many activities that train and prepare students for these skills in class. Our in-class and online instructors all report to students about their grade progress on a regular basis during the semester in class and using Canvas.
An important augmentation to the Biosciences Department promotion of STEM is that we offer student lab internship scholarship opportunities for students interested in STEM careers. We have awarded an increasing number of funded student internships over the past several years, this year hosting 25 interns that have completed or have in process a laboratory research project using science methodologies training. These amazing successes in student engagement and career development are the direct result of faculty that have been actively seeking and being awarded funds for these STEM student retention and career pathways.

**Biosciences Student Success and Completion Rates**

Phoenix College BIO student success rates (C or better grades) have been in the mid-seventy percent range for the past several years; this is 3-4% percent higher than all students completing BIO classes in MCCCD. Compared to the success rates for all PC students, PC BIO student success rates have been an average of 3% lower; this is common for the lab sciences.

**Percent Student Success in BIO Courses**

![Percent Student Success in BIO Courses](image)

Student course completion rate for Phoenix College students enrolled in BIO classes has remained consistently above 84% for the past nine years; the completion rate for 2016-2017 is 86%. Students enrolled in PC BIO classes have been within 2% of all students enrolled in BIO within MCCCD for the past 6 years. Students enrolled in BIO classes in MCCCD have been 2-5% lower than students enrolled in all other classes at PC.

Rosati 16-17
Student surveys of BIO faculty are an important measure of the learning environment from the student perspective. Since 2012, BIO lecture student survey results have been consistently above 4.5 out of 5, with an average of 4.6 during this period (i.e. >90% average). BIO lecture student survey results are similar to overall campus class student survey averages over this same time period, with BIO averages above the campus average in five of the ten measured semesters.
We serve over 3,500 students per year with online enrollment increasing to 24% of our total enrollment. Our courses serve three major concentration areas including: health occupations at almost 61% of BIO enrollment, bioscience and biomedical professionals at 16% of BIO enrollment, and general education requirements 21% of BIO enrollment.
Core Planning Areas

Access to Learning and Effective Teaching and Learning

The Biosciences Department serves students by offering courses that satisfy degree requirements, university transfer, occupational program and healthcare program requirements, and general education. We offer different modes of course delivery that include in-person (F2F), online, and combination online lecture and in-class lab instruction (hybrid). We have nearly met our long-term goal of developing and deploying fully online and hybrid versions of each course we teach. Ideally, students will have the option of choosing fully online, hybrid or face to face delivery modes for each course offered. To maximize flexible scheduling for students, we allow students to match any lecture offering with any lab. All BIO classes have significant internet-accessible class materials and grade and student progress reports.

Biosciences faculty have been at the forefront of early adoption of all major teaching technologies. Most of our faculty use student responder technology in the classroom (Nearpod or Turning Point), which allows for immediate student assessment of content and understanding and are used for evaluations for grades. We were early adopters of SmartBoard and Starboard technologies at PC. All our full-time faculty utilize Canvas as our college-supported learning management system and have adopted online learning technologies including Lesson builder, SoftChalk, and other software that supports hybrid or fully online courses.
In this section of the report, I have requested that each department member contribute by writing a narrative of their activities and strategies they have implemented to improve student support and success. In alphabetical order: Amanda Chapman, Robin Cotter, Cori Leonetti, Joshua James, Anna Marti-Subirana, Jim Neuenfeldt, Elena Ortiz, and James Sinner.

**Amanda Chapman:**

- **Major activities:**
  - Awarded 12 scholarships in the fall and 7 in the spring
  - Placed scholarship awardees in research internships in their respective fields of interest (Biology, Biochemistry, Genetics, Ecology)
  - Research internships were an optional but encouraged
  - All recipients chose to participate
  - One awardee was placed at the Translational Genomics Research Institute (TGen)
  - Six awardees are working on internship projects at Phoenix College
  - A faculty mentor met with and reviewed academic plans with each recipient
  - All recipients plan to participate in an undergraduate research presentation.
  - 7 recipients have applied to present their research at the Student Conference at Estrella Mountain Community College on April 26, 2017
  - 2 recipients have applied to present their research at the Arizona State University New College Undergraduate Research Symposium on April 20, 2017.
  - 12 recipients presented their research in December 16, 2016 at Phoenix College to interested Faculty, Staff, and students.
  - All active recipients have committed to present at the final S-STEM Research Mentoring Project Presentation at MetroTech High School in Phoenix Union High School District at the end of the term.
  - Last year faculty from Arizona State University, University of Arizona and Phoenix College attended as well as several industry partners.
  - This year Phoenix College has committed $3,000 in institutional funds to support this event.
  - All recipients participated in the online cohort, and developed and posted a web log detailing their research activities.
  - A partnership with the Arizona State University is being fostered and developed as this is the four-year campus to which most of our S-STEM scholars transfer. Development of this relationship has included the following activities:
    - During the academic year, four S-STEM students (along with 8 other S-STEM interested students not yet in the program) visited the campus Arizona State University in Glendale, Arizona where they met with Dr. Beth Polidoro, and her research students, to learn more about their research on micro-plastics.
The S-STEM students had the opportunity to converse with several former S-STEM students who previously matriculated to ASU. The aim of these conversations was to demystify the transfer process, and share best-practices and lessons learned by former students regarding this process.

Dr. Elena Ortiz, Co-PI completed an RET with Dr. Becky Ball and is incorporating current scientific practices into her support of S-STEM students as well as her courses.

Dr. Todd Sandrin, Senior Associate Dean of ASU’s New College, Senior Sustainability Scientist with ASU’s Julie Ann Wrigley Global Institute of Sustainability, and director of NCUIRE (an undergraduate research program at ASU) co-taught a research course for Phoenix College S-STEM students along with PI Amanda Chapman. Dr. Sandrin also mentored a research internship for one of the S-STEM awardees in his ASU laboratory.

A collaborative proposal for expanding the partnership between ASU’s New College (Todd Sandrin), Phoenix College (Amanda Chapman), South Mountain Community College (Ann Scarborough), and Glendale Community College (James Thouy) was developed and submitted to NSF for consideration. This proposal would essentially expand the Phoenix College program to the other two community colleges, and expand and formalize the transfer relationship developed with ASU’s New College. Development of this proposal allowed for conversations and communication that helped to clarify and address issues related to student transfer.

Monthly meetings between PI Amanda Chapman and Dr. Ed Ong, Phoenix College Chemistry Faculty, and co-PI of the Academic Success and Professional Development (ASAP) Project-Based Engineering Excellence Transfer Academy Across Arizona (NSF 1565177), have been occurring for the purpose of developing a common application process for the two programs. This will allow students who apply to our current S-STEM program with an interest in an engineering field (not currently supported by this grant award) to seamlessly be evaluated for an appropriate support program.

The ASAP program is a partnership between nine community colleges, including Phoenix College, and ASU’s Fulton Schools of Engineering. Dr. Armando Antonio Rodriguez is PI of this program, which is also supported by NSF S-STEM funds.

Several S-STEM students, over the course of the program, have switched from engineering to chemical or biological sciences, and vice-versa. This partnership will allow us to better support these students in a seamless fashion, regardless of their STEM goals.
One of our S-STEM Scholars in Mathematics, under the supervision of Frank Marfai, Phoenix College Mathematics Faculty, has been working with the Arizona Mathematics Partnership Project (NSF 1103080) during her internship. This student has progressed to the point of initiating her own research project, and was provided a copy of Studiocode by the Arizona Mathematics Partnership Project, to support her research.

Specific Objectives:

- Fifteen scholarships will be awarded each semester.
- Twelve scholarships were awarded in Fall of 2016 and 10 in Spring of 2017.
- The S-STEM Selection Committee determined that only 12 of the applicants met appropriate selection criteria for an award in the Fall.
- The program is operating under a no-cost extension and has a reduced number of scholarships to offer for the next year. The advisory board determined it was best to only offer new scholarships to the number of students (7) that could be supported through the end of Spring 2018. A revised determination will be made next Fall to ensure that appropriate support can be offered to each student and the remaining funds are distributed with the greatest good can be accomplished.
- Four of the students awarded in Fall 2016 graduated or reported transferring to a 4-year institution early (Fall 2016) and thus did not need a Spring 2017 award.
- More than 75% of program participants will transfer to a four-year institution.
- Data for the 2014 year was not yet available at the time of this report. It is anticipated that this data will be available in the next report. Summary data provided below was already given in the last annual report, but is provided here for reference.
- Based on informal follow-up contact with scholarship recipients awarded during the 2012-2013 academic year, 13 out of 17 (76%) transferred to a four-year institution.
- For the subset of fall 2012 scholarship recipients, 11 out of 15 (73%) transferred to a four-year institution.
- For the subset of spring 2013 scholarship recipients, 2 out of 2 (100%) transferred to a four-year institution.
- This data is not yet available for subsequent academic years, but will be reported once it is.
- 85% of Academic Scholars scholarship recipients will make satisfactory progress in their academic program of study (12 credits completed with a cumulative GPA of 3.0 or better).
- Spring 2016
  - 90% (9/10) completed at least 12 credit hours with a GPA of 3.0 or better.
  - The 1 student that did not meet this goal completed 9 credit hours and graduated with an A.S. degree at the end of the term.
- Fall 2016
  - 83% (10/12) completed at least 12 credit hours with a GPA of 3.0 or better.
One of the students who previously had family issues and needed to drop down to part-time status withdrew or failed all courses and did not return to college Spring term. While this student not enrolled in classes, this student has been in touch with the faculty mentor and student support coordinator on several occasions. We plan to keep following up with this student and give any non-financial support possible to support successful completion.

One of the students who participated in the program had a parent deported and chose to withdraw from all classes to work full-time and support the family. We plan to keep following up with this student and give any non-financial support possible to support successful completion.

More than 50% of scholarship recipients will be from groups traditionally underrepresented in STEM.

91% of Fall 2016 scholarship recipients, and 100% of spring 2017 scholarship recipients were from groups that are traditionally underrepresented in STEM (women, persons with disabilities, Hispanic, African-American, Native American, Native Hawaiian or other Pacific Islander).

Individual education plans will be used with 100% of the participants.

All scholarship recipients met with an advisor, and a faculty mentor to discuss and, if necessary, revise their educational goals.

100% of scholarship recipients will be enrolled in courses that are required for them to complete an AAS or AS degree within the targeted STEM academic areas and in accordance with their Individual Education Plan.

All recipients met this criterion.

100% of recipients will participate in Academic Scholars special events/activities and/or internships during the semester for which they receive scholarship support.

All recipients created a weblog, updated weekly, during the year. Additionally, they participated in semi-weekly virtual discussions regarding these weblogs and their career, academic, and/or research progress.

A continuing relationship was utilized with a Translational Genomics Institute (TGen) scientist who agreed to mentor one intern per term from the PC S-STEM program.

Three former S-STEM scholars are currently attending ASU’s New College and performing undergraduate research in their respective science programs.

All recipients plan to participate in an undergraduate research presentation during the year with two applying to present at ASU, seven applying to present at EMCC, and all agreeing to present at MetroTech. All fall recipients completed a mid-year presentation of research.
All recipients chose to be paired with a faculty mentor and a laboratory supervisor with whom they worked approximately nine hours per week to complete and document an undergraduate research experience.

Recipients participated in field trip experiences:
- Seven of the participants traveled to Arizona State University research laboratories in the New College of Interdisciplinary Arts and Sciences. Research faculty discussed their current work with students and the college dean discussed opportunities for continued undergraduate research post-transfer.
- Several students participated in an ephemeral wash hike in the desert that included Geocaching and specimen collection for one of the research projects.
- 100% of scholarship recipients will work one-on-one with a faculty mentor.
- All recipients met this requirement.
- Additionally, all Spring 2017 recipients had the opportunity to participate in a presentation of research where they will be given feedback from faculty from various disciplines as well as industry partners, and local high school students.
- Significant Results:
  - All of our scholarship recipients chose to participate in an optional undergraduate research experience either on the Phoenix College campus, Arizona State University campus, or the Translational Genomics Research Institute. Students worked with their faculty mentor and research advisor, and spent approximately nine hours per week in the lab to complete the project. Students had the option of enrolling in a special projects course in either biology, physics, or mathematics to receive credit for their work. All students had the opportunity to present their research (specifics are listed in the preceding section of this report).
  - A summer internship program and application process was established for both incoming students (just graduated high school) and continuing S-STEM students to participate in mentored undergraduate research. This was supported by both institutional Phoenix College funds and the supplemental award to this grant.
  - Data for the research project approved in the supplemental request was gathered, organized, and prepared for analysis. This includes data on the matched control group from the general STEM population at Phoenix College.
Key outcomes or other achievements:

- 91% of Fall 2016 scholarship recipients, and 100% of spring 2017 scholarship recipients were from groups that are traditionally underrepresented in STEM (women, persons with disabilities, Hispanic, African-American, Native American, Native Hawaiian or other Pacific Islander).
- A summer successful summer internship program was established in which three incoming students (just graduated high school) and five continuing S-STEM students participated in mentored undergraduate research. This was supported by both institutional Phoenix College funds and the supplemental award to this grant.
- Data for the research project approved in the supplemental request was gathered, organized, and prepared for analysis. This includes data on the matched control group from the general STEM population at Phoenix College.

How have the results been disseminated to communities of interest?

- Four members of the S-STEM program were part of and assisted the Phoenix College Robotics club, an organization with an aim of spreading awareness and raising interest within our school and our community about STEM careers related to robotics.
- During the past year seven S-STEM students coordinated with the robotics club as they co-hosted two robotics workshops during the college’s community outreach programs; the Hermanas Conference and the Dare 2 Dream Conference. Both conferences were established to expose high school students to STEM careers and majors in a fun and interactive way and to encourage attendees to pursue their educational goals.
  - During the workshops S-STEM students assisted attending high school students as they programmed and controlled the robots maintained by the college.
  - The S-STEM students also answered questions about their educational experiences and their field of major and any tips the wanted to share.
- This academic year S-STEM students also visited the campus of Arizona State University (ASU) in Glendale, Arizona. Here they met with Dr. Beth Polidoro and her research students to learn more about their research on micro-plastics. The S-STEM students also had the opportunity to converse with former S-STEM students who matriculated to ASU.
- One of our co-PIs, Dr. Elena Ortiz, completed a summer RET with Dr. Becky Ball at ASU’s New College and is incorporating this research into her courses, and using this knowledge to support the research of several of our current S-STEM scholars.
- All recipients are encouraged to participate in an undergraduate research presentation that will also be attended by P.I.s and research advisors.
  - All recipients plan to participate in an undergraduate research presentation.
• 7 recipients have applied to present their research at the Student Conference at Estrella Mountain Community College
• 2 recipients have applied to present at the Arizona State University Undergraduate Research Presentation
• 2 current and 2 former recipients have applied to present their research with their mentors at the Arizona-Nevada Academy of Science Meeting in April
• 12 recipients presented their research in December 2016 at Phoenix College to interested Faculty, Staff, and students.
• All active recipients were encouraged to present at the final S-STEM Research Mentoring Project Presentation at the end of the term.

• All recipients participated in the online cohort, and developed and posted a web log detailing their career, academic, and/or research progress.
• The S-STEM Mentorship blog was updated and facilitates communication.
• The S-STEM Homepage on the Phoenix College website detailing our purpose and application process was updated.

• Summer S-STEM Program Summary
  • Three summer internships ($1,000 stipend each) were awarded from supplemental funds requested.
  • All three interns were graduates from the local Metro Tech High School, who became interested in the program following the S-STEM Presentations of Research.
  • All three students successfully completed the summer program.
  • Two of these students subsequently applied to the PC S-STEM program and are currently in the program.
  • One of these students completed the program and was accepted directly to attend ASU’s Fulton School of Engineering to study Bioengineering.
  • Phoenix College provided supplemental funds to expand the summer internship program through which five continuing S-STEM students were granted stipends of $1,500 each to continue their research through the summer.
  • All five of these awardees had existing S-STEM research projects.
  • All five of these students continued in the S-STEM program in Fall 2016.
• It is expected that results of the research funded with the supplemental request will be available to report next year.
What do you plan to do during the next reporting period to accomplish the goals?

- We will continue to utilize the established selection and support process to identify and fund scholarship recipients. We also plan to expand the peer-mentoring program established this year, specifically for S-STEM, that pays stipends to previous or continuing scholars, potentially advanced or transfer students, to help support and expand undergraduate research at PC. Our college administration has agreed to fund this initiative for 3-6 students per year. We also plan to build on and strengthen the partnership established with Arizona State University through which more of our students are becoming familiar with the local university, and scientific research at the next level.

- We will continue to utilize the established probation process for recipients who drop below 12 credits or a 3.0 GPA in any semester. This process is designed to support student completion through enhanced and early advisement, connection with tutoring, and a summer program to make-up credits or complete research projects.

- The process of data collection for the effectiveness analysis in the funded supplement is complete. For the rest of this year and next the focus will be on completing the analysis (partially complete currently), and appropriate presentation and dissemination of these results.

**NSF S-STEM program Products**

- All recipients participated in the online cohort, and developed and posted individual web logs detailing their research activities.

- The “mentorship” web log was updated to organize access to student weblogs, disseminate information, and promote interest in the program: [http://s-stemmentor.blogspot.com/](http://s-stemmentor.blogspot.com/)

- The S-STEM Homepage on the Phoenix College website detailing our purpose and application process was updated: [http://www.phoenixcollege.edu/academics/programs/biosciences/s-stem-program](http://www.phoenixcollege.edu/academics/programs/biosciences/s-stem-program)

**Robin Cotter**: Phoenix College Faculty Developer & PAR Facilitator (Fall 2016-Spring 2017) and SASS mentor (Fall 2016-Spring 2017).

Undergraduate Research Mentor & WAESO grants: On Saturday, April 1st, 14 members of the Ursa-Majors Science Club, WAESO, and S-STEM programs represented Phoenix College at the 61st Annual Arizona-Nevada Academy of Science meeting. The meeting was organized and chaperoned by lab staff Cori Leonetti, Matt Haberkorn, and Joshua James. Two groups of Phoenix College students presented their undergraduate research projects at this event and Amber Neal received a "Top Poster Award" for her poster presentation.
"Detection of Legionella in Water and Biofilm Samples on a Community College Campus in the Desert Southwest"
Amber Neal, Daisy Rodriguez, Zaira Grijalva, David Reyes, Oliver Garcia, Anthony Gutierrez, Karissa Marquez, Matt Haberkorn, and David Otto Schwake - **Advisors:** Cori Leonetti and Robin Cotter

Three of our students, Jonah Mayers, Stephanie Mena, and Barierane Akeeh, won 2nd place at the 12th Annual Arizona Western Alliance to Expand Student Opportunities (WAESO) for their poster presentation, "Detection of Pseudomonas in Water and Biofilm Samples on a Community College Campus in the Desert Southwest."

Daisy Rodriguez won 3rd place for her poster presentation, "Detection of Legionella pneumophila in the Water System of an Educational Institution in the Desert Southwest."
This regional WAESO conference involved undergraduate and graduate students from ASU, NAU, U of A, as well as from other schools in the region.
Our students were also successful in the Estrella Mountain Student Conference competition. 1st Place Poster went to PC BIO student intern Barierane Akeeh for The Growth of Pseudomonas aeruginosa on Microplastics”. “

Cori Leonetti: Cori Leonetti received the Outstanding Adjunct Faculty Award for 2016-1017 hosted at Rio Salado College during Spring 2017 semester. Cori had also received the 2015-2016 Outstanding Adjunct Faculty Award.

“I have implemented the use of video lectures in BIO 205. Students have used the videos as supplement to lecture to review content at home. It helps students who struggle with note taking in class as they can slow the video down, pause and re-watch. The subtitle option is also useful for students who learn better while reading. I have also used videos to flip some lectures. During such sessions, active learning is implemented including use of mini white boards, games and role playing. I will be teaching a BIO 205 during summer 2017, which students will be using video lectures as their main delivery of content, besides assigned reading. I implement MasteringMicrobiology as a supplemental tool in BIO 205. Students can watch videos, tutorials, take quizzes, practice assignments, and utilize the study tools including flash cards, matching, etc. I also use peer review of lab reports, my own video tutorials on technology used in class and surveys to assess self-efficacy.”

Joshua James: “The Biosciences Department had the opportunity to host interns from Phoenix College. Thanks to the grant writing work of Amanda Chapman, Biosciences Professor & S-STEM Grant Director, the National Sciences Foundation awarded Phoenix College $500,000 that

Rosati 16-17
includes student scholarships over its 5-year term. The S-STEM Scholarship Program is intended for students who are interested in majoring in Biology, Chemistry or Mathematics. The program provides scholarship assistance of up to $3,500 per semester and can be renewed (through a reapplications process) for up to 4 semesters. In addition to financial assistance, the program provides access to mentorship and internship experiences. The program is designed to give the experience working in a science lab as well as giving them the opportunity to do independent research and present those findings at a conference. This year the Bioscience Department had 12 students in the program and they attended and presented their research during conferences at Arizona State University, Estrella Mountain Community College, Glendale Community College and Metro Tech High School. Part of my responsibilities as a mentor included, helping students’ select appropriate research topics and ensure students had adequate resources - work space, training time, and supervision to enable them complete their learning objectives.

During the past year, I continued to serve as the lead mentor for the Phoenix College Robotics Club with the overall goal of helping students develop attitudes conducive to effective interpersonal relationships as well as increasing the student’s sense of responsibility. The Phoenix College Robotics Club earned the Judges Award during the Arizona Vex U Competition that was hosted at Embry Riddle Aeronautical University, and the club competed against eleven
other university and college teams during the Southwest Vex Tournament VEX tournament also hosted by ERAU. This year the club created seven robots for this season’s competition.

Phoenix College Robotics Club members (forward and back table) preparing their entry.

I led a robotics workshop during the 2017 Hermana’s Conference at Phoenix College. The mission of the conference is to increase the number of underrepresented female students choosing to go to college and major in a STEM field. In addition to providing robotics demonstrations I encouraged some of the female members of the club to share their testimonies on what motivated them to pursue degrees in STEM fields.

I also had the opportunity to lead a programming workshop during the Dare to Dream youth leadership conference. The conference seeks to motivate middle school students to pursue their educational goals and assume leadership roles in their communities. The workshop was intended to get the students thinking about their future academic careers and classes and courses related to programming and robotics.

During 2016-2017, I applied for and was awarded a Western Alliance to Expand Student Opportunities (WAESO) grant to support a student project that entailed the development of a programming pedagogy for Arduino-based drones. The goal of this project was to develop a workshop that provides basic training for drone programing. The programming training
included implementing sensor-guarded and sensor-guided motion commands with respect to a reference coordinate system for small indoor drones.

PC WAESO funded student intern Linda Russell programming drones as part of her project.

I have been actively working on a Phoenix College online publication named *Undergraduate Research at Phoenix College*. This work is a web-based publication devoted to undergraduate research papers and presentations completed by students of Phoenix College. The publication represents a wide range of topics, relating to student projects for research that are as broad ranging as the projects. The publication is available to anyone at the following address: [http://pc.maricopa.libguides.com/URPC/](http://pc.maricopa.libguides.com/URPC/) During the spring of the 2017, the published its fourth issue. Undergraduate Research at Phoenix College is faculty, staff and student peer-reviewed that is intended to promote the exchange ideas and inquiry among Phoenix College students by publishing their original project works completed at Phoenix College.”

**Anna Marti-Subirana**: “Face to face lecture and lab courses: mentoring is key to student success. I mentor my students for improving their note-taking skills by providing concept maps and classroom worksheets for each topic; I mentor students for improving their critical thinking and problem solving skills by using research notebooks instead of lab manuals. The use of research notebooks for educational purposes has been proven to bolster organizational, problem-solving, critical thinking, and written communication skills.

Online lecture courses: I provide recordings and screen captures of lecture material. Visual elements and guided instruction are essential for the success of online students, who, by the nature of online delivery, do not have access to classroom instruction and discussion.

Rosati 16-17
I mentor two students in biotechnology research projects with funding from the National Science Foundation (NSF) Western Alliance to Expand Student Opportunities (WAESO).

James Neuenfeldt: “As an experienced and passionate online Biosciences Faculty, I strive to offer high quality, student-centered online learning opportunities to the community served by Phoenix College. It is important to me that each student’s experience is of the highest possible value in terms of relevance to their academic and professional careers; as such, I place an emphasis on skill development in the areas of critical reading and thinking, writing, and media, digital, and information literacy in all my classes.

Since 2009 (when I started offering BIO100 and BIO156 online) and 2010 (when I started offering BIO108 online), I would conservatively estimate that the Biosciences Departments has served an additional 300-400 students per year because of the online classes that I have developed. As of this year, online instruction accounts for nearly 30% of the total FTSE for the Biosciences Department (we offer BIO100, BIO105, BIO108, BIO145, BIO156, BIO160, BIO201, and BIO202 fully online).

Online learning provides access to students who often have no other options to attain their academic goals. Many of my students work full time, have family obligations, and carry a full college load of classes (12+ credits). By offering courses that are 100% online, asynchronous, OER-based, and flexible, I reduce (or remove) time, location, and financial barriers to their academic success.

Online learning requires students to have an appropriate mindset and specific skills to be successful. Often this is not the case, and without the proper interventions incorporated throughout online courses, student success can be impacted negatively. Using evidence-based best practices and feedback from my students and colleagues, I have attained completion and success rates for my classes that are well above-average for online courses at PC and are above-average nationally for online courses. In fact, the gap between the success and completion rates for face-to-face, online, and hybrid Biosciences classes has narrowed in each of the last five years such that as of the end of this academic year, that gap is all but gone. Some of the most effective strategies that I incorporate into my classes are:

**Humanizing:** Online learning can feel cold and isolating to some students, especially those taking an online class for the first time. To alleviate this, I make sure that I 1) am present and involved in my classes, 2) am available to my students, 3) provide adequate motivation and encouragement, and 4) express my personality and true self through genuine, authentic interactions at the class and individual level. When students are convinced that they are not alone in their journey through my classes and that I have
each of their success and best interests in mind, they are more willing to take responsibility for their education and work harder to be successful.

**Durable Learning:** This requires students to take responsibility for their learning and to interact with their instructor. Correct answers are never given for assessments. Instead, I encourage students who have gotten questions wrong to 1) try to discover the answers to the questions they missed themselves, and 2) if unsuccessful, interact with me to determine the correct answer and why they got it wrong. The extra effort on the student's part reinforces the material and makes it more likely that they will understand the material better and in the long term.

**Effective Use of Examples and Feedback:** Modeling the appropriate formatting and depth of content for assignments and assessments is critical in shaping student performance in my classes. As such, I provide ample examples of course deliverables as well as detailed feedback on every written assignment that students submit. The only way for students to know how to improve is to be provided with specific examples as to where they are deficient and specific examples of ways to improve those deficiencies.

On the other side of the equation, it is important for me to know what is working for my students and what is holding them back. To that end, I provide my students a structured means to share with me with honest, constructive feedback about the design of my classes as well as the effectiveness of my delivery. Each term since I have been teaching online, I have made changes to course structure, content, and delivery methods based on the feedback that I have received from my students. By allowing students that ability to have a say in how they can learn better, I have built rapport and a sense of shared purpose in my classes.

In addition to developing and delivering my own online Biosciences classes (specifically BIO100, BIO105, BIO108, BIO145, BIO156, BIO201, and BIO2), I also provide oversight and support for other faculty (adjunct and residential) in our department teaching online classes. This includes but is not limited to: faculty online class evaluation; scheduling for online adjuncts; providing online faculty with course updates; providing support for online faculty (bookstore orders, updates about department/college/District policies, mediate Canvas/Turnitin issues, provide advice for student complaints, etc); and mentoring of online faculty. Due to this oversight, online courses are delivered and evaluated in a cohesive manner which I believe has been a significant contributing factor to the narrowing of the completion and success gaps between face-to-face and online classes that we have seen over the past few years.”
Elena Ortiz: “This academic year I participated in a pilot program using next-generation interactive courseware from Inspark and ASU’s Education Through eXploration program. I used this courseware as a low cost textbook replacement; it also replaced the exams as a different form of assessment and evaluation for student learning.

I found no consistent pattern in retention or grades between the two semesters I compared to each other. Average grades were slightly lower Fall 2016, the semester when I used the next-gen courseware, compared to Fall 2015. However, for those students not on Pell grants, retention and average grades were slightly higher in Fall 2016 compared to Fall 2015.

This spring I participated in the CTL’s Whiteboard project. I received a set of 30 small individual whiteboards and some instruction on techniques to incorporate them into the class. The technique was well received by students and provided a low-tech way to quickly assess students’ understanding of concepts. I plan to continue using this new-to-me and effective instructional technique. It did not result in a noticeable improvement in student’s grades, but worked well to increase engagement with the course material and a lively classroom environment.

Students in my Honors section of Bio108 worked in a community school garden at Solano Elementary School in the Osborne School District. There were 14 students in the course in Fall of 2016. They explored issues of food production, food access and food insecurity.

In addition, all students (158 total) in all in-person daytime sections of Bio108 worked on PC’s Edible Garden, learning about issues of food production and attempting to grow their own vegetables.”
James Sinner: “I just finished my 10th year teaching full-time at Phoenix College which culminated in being recommend and for appointive status by the governing board. This semester to improve retention I focused on using screen-casto-matic to make short tutorials over topics in lecture in which students struggle. I also spent quite a bit of time fixing videos in lab the students use outside of class to study. This was to not only help my students but all students in BIO 201 and 202. Some of the videos I have made have allowed us to flip the classroom in lab with respect to the cadaver cross-sections and CT scans. I meet frequently with Jim Neuenfeldt to get advice on the online class I have been teaching for just over a year. Jim has been extremely helpful in educating me on what works best for online students. With the classes I teach being a requirement for allied health I try hard to use pathologies into the class to help assess the students understanding and to make the material more relevant. It is like looking at the material as a case study but on a much smaller scale and with me walking them through it. I continue to give tours of the cadavers’ labs this semester both to local high schools and Bret Little’s forensic students here at PC.”

Organizational Integrity

All students enrolled in biosciences classes at PC have the use of computers for classwork, online and printed class materials and assignments, course-specific tutors, clean and safe lab classrooms, and fully functional current lab equipment and supplies. We carefully structure our course revenues to meet these classroom needs and equipment and supply maintenance and replacement.

We have collected and utilized student, financial and operational data including analyses in submitted annual reports to PC administration since 2001 and HLC department reviews in 2006 and 2012. Even though we are a lab equipment intensive discipline, our campus assigned general supplies fund (110) costs are among the lowest compared to other instructional units at PC. We have created and implemented a financial strategy that involves close monitoring of costs and a continuous evaluation of labs and technologies to maximize use and to maintain a valuable and relevant STEM educational experience.

BIO faculty actively seek and are awarded external and internal funding to develop student skills. Some examples of our efforts include a $250,000 Proposition 301 grant for equipment to modernize our labs and create student skill development activities for biosciences currency in the workplace. Since then, we have been awarded more than $750,000 in grants and awards in college capital funding, college new initiatives grants and further Prop 301 Workforce Development monies for computer equipment and current biotech equipment. NSF awarded $482,800 to the department for 150 STEM student scholarships over 5 years. The scholarship
assistance covers up to $3,500 per student per semester and can be renewed for up to 4 semesters. This program utilizes a virtual cohort model partnered with faculty mentoring and a comprehensive authentic experience internship program to fully support students to successful completion of their academic goals in STEM. During this year faculty members, Anil Kapoor, Ana Marti-Subirana, Robin Cotter, Elena Ortiz and Maggie McGraw have applied for millions of dollars in funding new federal STEM programs at PC. Although the grant was not funded, the experience will be used to again re-apply.

The PC Biosciences Department mission and goals specify that we will deliver a high-quality classroom experience, with up-to-date equipment and supplies that reflect the workplace or are used to develop student skills for success and career choices. Our mission states that the "Phoenix College Biosciences Department faculty and staff are committed to providing relevant and current biology instruction in an accessible and respectful atmosphere." Our goals include: "1. To facilitate an accessible, safe, and respectful learning environment for students, faculty, and staff. 2. To encourage and broaden the student learning experience by employing a variety of instructional delivery methods and current technologies. 3. To ensure relevancy in bioscience education by reflecting current practices and technology used by industry and research in health care, biotechnology and environmental areas."

BIO employs two full time lab technicians and one lab supervisor that manage and oversee lab operations, student employees and student interns. Our technicians prepare, support, and take down about 70 student laboratories per week, which totals about 1000 lab section preps and support during a semester. Technicians maintain more than 155 pieces of laboratory equipment and purchase, inventory, employ and prep over one million dollars of expendable supplies in over 15,000 square feet teaching labs. We also maintain a working greenhouse and large campus garden with technicians and students.

We are efficient stewards of classroom space. Our class sizes and utilization of classroom capacity have been significantly greater than the average classroom on PC campus. The average lecture and lab class size for BIO are about one third higher compared to the Phoenix College class average sizes.
Pathways to Success

Biosciences faculty are engaged in substantive student development and curriculum advancement activities in any given semester. This year there has been a significant number of grant applications from our faculty that could bring millions of dollars to our students for STEM training. In this section of the report, I have requested that each department member contribute by writing a narrative of their partnership and community activities.

Robin Cotter: “The Seminars & Fellowships I attended are: Louisiana Master Teacher Seminar, Lead Facilitator (June 2017), REIL-Biology Fellowship to attend ASM-CUE meeting in Denver, CO (July 2017) and E. Kika De La Garza Fellowship (June-July 2017)
Through participation in the E. Kika De La Garza Science Fellowship, I seek to create a partnership between MCCCD and the USDA to provide professional development opportunities for MCCCD faculty, establish collaborative research projects that can be integrated into the STEM curriculum, and apply for funding sources to support these endeavors. The development and implementation of undergraduate research modules within the Majors Biology and Microbiology courses at Phoenix College will allow nearly 300 students to engage in and benefit from undergraduate research. In addition, I hope to work with other MCCCD faculty to develop course-based research projects that can be used to enhance the STEM curriculum district-wide.”

**Joshua James**, our Lab Manager, continues to work on compliance with regulations governing research and laboratory activities. Mr. James also conducts laboratory training specific to the Biosciences Department of Phoenix College to ensure that faculty, staff, and student interns receive necessary safety training prior to conducting laboratory activities. He has also assisted the department with capital equipment purchases and establishing laboratory activities at Phoenix College.

Mr. James, along with Amanda Chapman, Matt Haberkorn, and Cori Leonetti, continue work that began with a group of students six years ago as students develop and conduct their own independent research projects as members of the S-STEM Program at Phoenix College. Mr. James also continues to work on publishing the first peer review journal from Phoenix College, the Journal of Undergraduate Research of Phoenix College, as a forum where research conducted by PC students can be published.

**Cori Leonetti**: “Biosciences staff member, Cori Leonetti, continues to lead the URSA Majors Science Club. The goal of URSA Majors is to provide community college students with the opportunity to explore topics in STEM through individual and group experiments and activities as well as stimulate their interest in pursuing graduate degrees and careers in STEM.

URSA Major members have participated in campus events such as the St. Mary’s Food Drive and Tunnel of Oppression. During Spring 2017, students initiated a research project, detecting Legionella bacteria in windshield wiper fluid using standard DNA techniques. Members also attended field trips to the Arizona Nevada academy of Science and iFly Phoenix.
Cori Leonetti has continued to serve as a co-director with Dr. Robin Cotter on the Western Alliance to Expand Student Opportunities (WAESO) research project titled “Detection of Pseudomonas in the Water System of an Educational Institution in the Desert Southwest”, which funded 3 students during the Fall 2016 and Spring 2017 semesters. The goal of this ongoing project is to provide community college students with the opportunity to acquire basic research experience while stimulating their interest in pursuing advanced degrees and careers in the area of bioscience research. This project was also incorporated into the BIO 205 lab curriculum. Students working on this project collected water and biofilm samples from different locations on the PC campus. Biofilm and water samples were filter-concentrated, DNA was extracted, and samples were analyzed by PCR and DNA sequencing to screen the presence of Pseudomonas bacteria. Students presented their research at the ASU-Tempe during the national WAESO conference and the Arizona Nevada Academy of Science conference, which lead to recognition including 2nd place achievements.”
Anna Marti-Subirana: “I am collaborating with Dr. Pamela Marshall (associate Professor of Eukaryotic Genetics, School of Mathematical and Natural Sciences, Arizona State University West) in a Yeast-Two-Hybrid experiment to be executed as undergraduate research projects integrated in the BIO 181 curriculum. I am the PI of a NSF KickStarter Award. The Phoenix College KickStarter Team has established partnerships with ASU West School of Mathematical and Natural Sciences, ASU School of Sustainability, ASU College of Liberal Arts and Sciences Division of Undergraduate Research, INTEL corporation, and Phoenix Union Middle and High School District.”

Elena Ortiz: “Current partnership with Osborn School District and Bio108 students provides students with real-world problems to solve. The students work together to create a working food producing community garden, providing advice to community members, while learning all the intricacies involved.

I’m also involved in a partnership with a soil ecologist at ASU West, learning new lab and field techniques that I will share with undergraduate research students, including those in the S-STEM and WAESO programs. I also hope to modify what I have learned into a laboratory activity for students in Bio105. This collaboration yields multiple benefits. Foremost, it provides timely and current state-of-the-art techniques and skills that I can share in the lab and classroom. Additionally, it provides me as the instructor, inside knowledge on how to best prepare students for transfer and beyond.”
Attachments

From: Mark Rosati <mark.rosati@phoenixcollege.edu>
Date: Wed, Jan 25, 2017 at 3:39 PM
Subject: Phoenix College Chair course fee task force
To: Maria Harper-Marinick <maria.harper@domail.maricopa.edu>
Cc: Liz Logan <liz.logan@phoenixcollege.edu>, Dale Doubleday <dale.doubleday@phoenixcollege.edu>, Joe Sueyoshi <joe.sueyoshi@phoenixcollege.edu>, Jim White <james.white@phoenixcollege.edu>, Cindy Cloud <c.cloud@phoenixcollege.edu>

Dear Chancellor Harper-Marinick:

I am writing to you on behalf of the Phoenix College Department Chairs and Program Directors that represent Art, Biosciences, Business, Health Occupations, Math, and Physical Sciences. Six Department Chairs volunteered to meet and develop this communication to you, as was discussed in your open forum at Phoenix College.

It is a central value of the Maricopa Community Colleges to provide our students with current relevant experiences and skills development, to make sure our students are prepared for transfer to the university and for employment in our community. The District and College Administrations have promoted the advancement of teaching and learning to be current, relevant to real-world applications and to keep current with technology for many years.

Course fees have been essential for us to provide these experiences and skills to our students. It is currently the only way that we can fund the up-to-date equipment and supplies to match real-world environments. As just a few examples, course fees provide funds to extract DNA and analyze it and to learn biomedical skills through anatomical models and cadavers; to analyze chemical samples for chemistry and forensics; to provide sewing machines to learn to create design; to provide and maintain kilns for students enrolled in ceramics who could never afford their own; and to provide a myriad of other equipment essential to a college professional-level experience. We can provide you with a detailed accounting of our existing equipment and supplies if you would like to review course level and department level examples.

We thought some history would be helpful to understand why using course fees to fund equipment and supplies is so important. Under the previous process at Phoenix College to obtain equipment and supplies, a department requested funds for capital, equipment maintenance, and supplies through informal meetings with College Administrators, initiated by Chairs and Directors. The processes for such funding needs were inconsistent and political, and varied greatly from department to department. Funding amounts and budgets were not communicated to the Chairs and Directors and most financial requests were made on an “as needed basis” with no timelines or process. Many requests were made on an emergency basis as equipment wore out or completely broke down. This ad hoc “process” produced a system of competition between Chairs and Directors and fostered decades of favoritism and an adversarial environment.

In response, Phoenix College departments developed the current process to fund classroom equipment and supplies from course fees where college operational funds (from the 110 budget) were not consistently available as needed. This process has a number of important benefits. First, funding course requirements through course fees removed departments from the political ad hoc “process” for obtaining capital from the College. Second, through statewide purchasing agreements with large vendors, the cost of supplies and equipment is deeply discounted. If students are required to purchase individual items through our bookstores (if available), students pay the high cost of retail. For items as simple as paper, pens, notebooks and testing forms, the costs are significantly higher at retail than leveraging those purchased through a college vendor at Arizona statewide discounts. Third,
funding these items through course fees spreads a portion of the cost of class-specific equipment and supplies across numerous students across many years. Fourth, we suggest that many of our students will not be prepared for class if they are required to bring all supplies with them. “Learning starts from day one”: students must register for classes before the first class meeting, and substantive teaching begin in the first class session. To achieve this, we provide all necessary equipment and supplies on the first day, because our students often are not prepared in the first week or for the entire semester.

Importantly, funding equipment and supplies through course fees has imposed minimal cost to students, especially compared to Arizona’s universities (see current ASU college and course fees attachments).

We are extremely concerned that Phoenix College operational funds will not be used to fund classroom equipment and supplies necessary to maintain our current standards. It will return us to the ad hoc, political method of funding departments. We also expect that there will be insufficient operational funds to keep our departments and programs up-to-date so that we can continue to provide an excellent education to our students. (A technology fee, if approved, will be used for computers and software and will not help with our department and program non-computer needs.)

We are asking for your support on a modified proposal for course fees. We suggest that the Department Chairs and Program Directors maintain responsibility for curriculum and delivery of instruction, which includes the appropriate procurement of equipment and supplies for each of the programs and courses through course fees. We also recommend that all colleges be required to participate in an annual local campus assessment of course fees. Engaging in a periodic monitoring process will help align student costs with curriculum, college and department mission and goals, and course-specific related real world advancements in technologies and skills. The process would be reported annually to the District Office. This process must be transparent and consistent across all colleges.

Thank you very much for your dialog on this important issue. We appreciate your willingness to support the faculty and our students in how we structure the delivery of our education. We invite you to Phoenix College for a tour of affected departments, so that we can demonstrate our state-of-the art classrooms and demonstrate why reliable funding is so important to our mission.

Sincerely,
Mark Rosati – Chair, Biosciences Department
Dale Doubleday – Chair, Fine and Performing Arts
James White – Chair, Physical Sciences
Cindy Cloud – Chair, Business
Joe Sueyoshi – Chair, Mathematics
Liz Logan - Chair, Department of Health Professions, Fitness and Wellness

Center of Excellence in Healthcare Education

From: Mark Rosati <mark.rosati@phoenixcollege.edu>
Date: Mon, Nov 14, 2016 at 3:12 PM
Subject: Limiting course fees is an extinction-level event for lab sciences
To: ICBIO <dl-icbio@memo.maricopa.edu>, DL-ICCHM <dl-icchm@memo.maricopa.edu>, DL-ICART <dl-icart@memo.maricopa.edu>, DL-ICGEOG <dl-icgeog@memo.maricopa.edu>, DL-ICAST <dl-icast@memo.maricopa.edu>, DL-ICENGR <dl-icengr@memo.maricopa.edu>, DL-FACULTY-PHYSICS <dl-faculty-physics@memo.maricopa.edu>, DL-ICAGRI <dl-icagri@memo.maricopa.edu>, DL-ICGLG <dl-icglg@memo.maricopa.edu>
Dear colleagues,

I’m writing to ask you to contact your college Administration and college faculty senate leaders about a proposed policy being considered by the Board. The Board may limit the use of course fees to items that a student can take home and cannot be purchased at the campus bookstore. This will be a disaster for any class with labs, including science, art and occupational programs. While I will continue to encourage and support excellence in teaching within my role as Chair of Biosciences, this decision will likely reduce our science labs to a paper and pencil stone-age experience for students and will prevent us from providing real-world college-level training needed by Arizona employers.

For the past sixteen years our department has carefully built a system that utilizes course fees effectively and efficiently for the learning environment. We have developed maintenance and equipment replacement processes that keep our faculty and students with an up-to-date real-world science methods experience. This accomplishment has been built with minimal cost to students, especially compared to universities, and is tracked by us down to the course level of use. The prospect of losing this infrastructure undermines our goal of offering a college-level experience for our students.

For Biosciences labs, there are many items essential to basic lab instruction that students can’t take home with them. Just a few examples:

- DNA isolation and analysis
- Microscopes
- Sterilizing equipment to handle biohazards
- Bacterial culture incubators
- Cadavers and anatomy models

Other disciplines have similar lab equipment needs, such as sewing machines, computers, kilns, musical instruments, and a myriad of other equipment essential to a college professional-level experience.

College operational funds typically are not used to fund classroom equipment and supplies (and are small amounts if provided at all). That means that the only way we can fund this is through course fees. The prohibition on using course fees to fund items that students can’t purchase at the campus bookstore will also result in increased costs to students. Our purchasing agreements with large vendors deeply discount the cost of supplies for students. If students are required to pay the high cost of retail purchases from our bookstores, they will pay more. For items as simple as paper and pens, notebooks and testing forms, the costs are at least 30 to 50% higher than those purchased through a college vendor.

Even with course fees, our community colleges offer an excellent education at a low cost. I strongly urge you to send your concerns to your college Administration and college faculty senate leaders, with details about how this policy change will affect the quality of your instruction. They need to understand the level of devastation that this policy will cause. For lab sciences, it will be an extinction-level event.

Thank you for your consideration of this important issue. Best regards, Mark

Rosati 16-17
Biosciences Department Workplace Expectations

1. Department Chair communication
   a. Updates after Chair meetings will be emailed to department as soon as possible but at most within one week.
   b. Updates after IC meetings will be emailed to department as soon as possible but at most within one week.
   c. Notice of funding opportunities (college capital requests, grants) will be emailed to department as soon as possible but at most within one week.
      i. Prior to chair action on staffing needs, a discussion will take place with the department, before request for new full-time positions are submitted. Email to department employees within one-week notice
      ii. Employees will meet and/or weigh in via email or survey
   d. Hiring Committee
      i. Request to all employees will be made
      ii. Department Chair and Course Lead(s) will serve
      iii. At least one staff member will serve
      iv. Residential faculty will have the option to serve
      v. Appropriate academic administrator will serve

2. Department member communication and processes
   a. Lab supervisor and Chair involvement in decisions that affect lab operations, equipment and personnel requires regular meetings with faculty, lab supervisor and chair.
      i. Course fees
      ii. Equipment purchases
      iii. Modifications to labs
   b. Department member roles regarding student workers and interns in the lab
      i. Email chair, administrative assistant, and lab supervisor a list of student workers (open lab & supplemental assistant) and the details of their employment.
      ii. Supervisors of Open Lab & Supplemental Tutor(s):
         Supervisors of student workers are expected to; orient the student in detail to his or her role in the department, explain the standards of behavior expected of employees, ensure that students comply with FERPA policy, provide the training necessary to perform tasks, ensure adequate supervision of student work, keep lines of communication open, clear, and constructive, treat students in accordance with their rights, which are the same as those of all employees as defined by applicable state, federal, and college policies, ensure that students are performing the tasks defined in their job descriptions, verify the accuracy of student time entry, confirm student work schedule with department chair, laboratory supervisor, and student worker. Timekeeper will run timesheets for review by faculty/supervisor and submit the time for approval after confirming student weekly schedule with faculty/supervisor
      iii. Intern Supervisor:
         Faculty advisors should maintain records and forms for each student during their internship, evaluate student coursework and provide feedback to students. They should also assist students in applying internship objectives and knowledge base to the internship experience and support the practice of professional skills as well as respond to concerns and questions of student. The Faculty advisor should also provide a minimum of one hour of weekly supervision to monitor the student(s) performance in meeting goals, objectives, and responsibilities.
c. Utilization of support staff.
   i. Department staff are resources and not to be utilize as personal assistant. Support outside of that scope must go through the department chair. All requests for support must be related to the operations of the department. Any aspect of an employee's teaching responsibility, professional growth, and travel activities are the responsibility of the employee not the department support staff. Student and classroom support and many campus services including testing center use, counseling, cashiers, and other services are the responsibility of faculty member or the employee.

d. Communication with Chair and staff about issues and problems with operations
   i. Staff and faculty will attempt to address issues with each other informally first
   ii. Faculty and staff will communicate with Department Chair about issues that are unable to be resolved informally

e. Communication with Chair about purchasing office equipment and supplies
   i. Faculty and staff will communicate with Administrative Assistant about general office supplies
   ii. Faculty and staff will communicate with Chair about anything other than general office supplies

f. Course fees
   i. Course Leads and other residential faculty teaching the course will be provided information regarding course fee revenue, expenditures and balances on an annual basis (approximately mid-July)
   ii. Residential faculty teaching the course(s) and appropriate lab staff will collaborate on course fee expenditures

g. There will be faculty inclusion in the discussions of potential, new and existing space allocation (lab rooms, multipurpose rooms, etc).

h. Faculty and staff will have access to all departmental spaces with the exclusion of individual office space.

i. Faculty and staff will have involvement in regards to the distribution of college funding.

j. Faculty and staff will have a voice and vote in departmental strategic planning and growth, and promote and support leadership opportunities among and for all department members.

k. 3. Self-management
   a. In the case of reportable absences, notify Chair and Department Secretary on absences via email as soon as an employee knows he/she will be absent.
   b. Reportable absences in need of substitutes should communicate with chair/department secretary to implement the contingency plan which consist of a list of vetted substitutes information for contact to ensure no issues with load or overtime.
   c. All full-time faculty will have alternate classes within every semester that they can be assigned in case of cancelled classes within their planned assignment of classes.
   d. In consultation with the department chair, it is the responsibility of the faculty member applying for sabbatical to ensure that there is sufficient coverage for her/his base load during the period of time that the faculty member will be on sabbatical no later than the week of planning.
   e. Department etiquette promotes and observes a professional, safe, and respectful working environment. To resolve issue the department encourages early communication to avoid disputes. Department employees practice should be to talk with each other before escalating to department chair or administration (unless the issue relates to department operations).

4. Department meetings
   a. The Biosciences Department monthly meetings will be held on the 2nd Friday of each month, the time will be agreed upon by the department faculty and staff.
   b. Agenda items will be emailed to the department secretary by the Friday before the meeting to allow time to create the agenda for distribution.
c. Announcements only will be handled by email.

d. Meeting etiquette

e. Emergency meetings

5. Course structure and maintenance
a. Those who teach the same course will communicate to provide consistency among residential faculty within a course with respect to content, delivery, grading, class policies, lab scheduling and choice of books or other supportive materials.

b. After a syllabus is handed out, changes should be communicated to students and lab staff by providing a copy of the changes.

c. Minimal changes or modifications to a lab should be communicated to lab staff not less than 1 week in advance.

d. Process of developing new lab activities: faculty and staff should consider using summer sessions to test out new wet labs. This will give faculty and lab staff adequate time to develop the activity.

e. Faculty participation in the implementation of new lab activities communicate to lab staff and anyone impacted no later than the week of accountability.

f. Technology requests can be made through communication with the lab staff and utilizing the Google Doc sign up calendar to schedule usage. Routine requests will not be adjusted, however, in the event usage requests increase, those new requests will be accommodated accordingly, either by dividing up laptops, reserving through CTL, or booking space in the lower level library, etc.

6. Course textbook and teaching materials will be housed on a google doc, accessible by faculty and staff with adoptions and selections.

a. Residential faculty will collaborate on textbook and course materials for a particular course
   i. Adjunct will utilize coordinator-provided textbook and course materials.
   ii. Exception will be given on case by case basis.

b. Communication with the Bookstore
   i. Course leads are responsible for contacting the bookstore with the adoptions for each section by the adoption deadline the semester prior to the start of classes
   ii. Residential faculty will have the responsibility of updating the google doc.

7. Class scheduling process and goals
a. The department primary goal is to offer courses with days and times that fills on a regular basis.

b. New courses or renewed older courses need to establish enrollment trends and thus should not be a part of a full-time faculty basic load (15) since a new course offering may be cancelled. New courses and late start courses will be assigned to residential faculty first and then to adjuncts, since a full-time load is not at risk of cancellation.

c. Class schedule building
   i. Once a future semester schedule is open for changes by campus scheduling department, each full-time faculty should carefully review all aspects of the schedule and make changes in red pen within 2 weeks of delivery.
   ii. For those courses that have multiple residential faculty teaching in the sequence, at least one meeting should be held.
   iii. The chair reviews all proposed changes prior to Department Secretary sending the schedule to Instructional Support.
   iv. Each residential faculty is responsible for a contingency plan for cancelled classes