**Unit Strategic Plan**

**2016 - 2018**

**Department: Biology Department Shelby Campus**

**Mission Statement**

The mission of the Biology Department is consistent with the mission of Jefferson State Community College. The department provides biology courses appropriate for students majoring in both science and non-science disciplines. Our teaching aims to help prepare students for their future professions both inside and outside of the scientific field and also to be a more informed member of their

**Summary of Access, Productivity, and Effectiveness**

The Biology Department offers a wide array of courses that serve as degree requirements and foundational prerequisites for non-science majors, biology majors, and students pursuing careers in Nursing and allied health at the college and other four-year institutions. These courses include a two-course biology sequence for non-science majors (Introduction to Biology I & II), science majors (Principles of Biology I & II) and Anatomy and Physiology (Anatomy and Physiology I & II). The department also offers a one-semester course in Microbiology (Biology 220), and Human Biology (Biology 111). Four of these courses serve as degree requirements for two-year career programs **(Table 1)** offered at the college.

**Table 1: Two-year Career Program Biology Courses**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Biology 103** | **Biology 111** | **Biology 201** | **Biology 202** | **Biology 220** |
| Clinical Laboratory Technology | Funeral Services | Clinical Laboratory Technology | Nursing | Nursing |
| Emergency Medical Service (Paramedic) |   | Biomedical Equipment Technology | Physical Therapy Assistant |   |
| Biomedical Equipment Technology |   | Nursing | Radiologic Technology |   |
| Veterinary Technology |   | Physical Therapy Assistant |   |   |
| Transfer Students |   | Radiologic Technology |   |   |

**Internal Conditions:**

1. **Technology**
* Every instructor is assigned Blackboard course management shell for each course they teach. Over 60% of the faculty utilizes the Blackboard course management system within their courses. Minimal use includes the posting of the course syllabus, grades, and class communications. Instructors that maximize Blackboard in the class not only use it for the posting of course materials but also provide links to outside resources that are valuable to student success.
* All lecture classrooms in the Health Sciences Building are equipped with a computer and projector for instructor use. This equipment allows instructors to present lecture material to the students using alternative formats such as PowerPoint, animations, and videos. Four of the five biology laboratories contain 9-10 desktop computers that are used to complete virtual biological and physiological simulations.
1. **Budget**
* The academic budget for the office and classroom supplies have met the needs of the department.
1. **Staffing**
* The department employs five full-time faculty, an office manager, and a lab coordinator. On average, the department employs seventeen adjunct instructors during the fall and spring semesters and nine during the summer. A full-time instructor from the Jefferson campus taught at the Shelby campus during the 2015 summer semester to achieve a full teaching load. Notable decreases in enrollment can be contributed changes in Pell Grant funding. Therefore, departmental chairpersons were informed that there is a need to develop a faculty rotation schedule to assist in staffing when enrollment is low and the number of course sections decrease.

|  |  |  |
| --- | --- | --- |
| ***Full-Time*****Table 2. Credit Hour Production Based on Faculty Status** | **Part-Time** | **Total** |
| ***Sections*** | ***Enrolled*** | ***Credit Hr. Production*** | ***Credit Hr, %*** | **Sections** | **Enrolled** | **Credit Hr. Production** | **Credit Hr. %** | **Total Number of Sections** | **Total Credit Hr. Production** |
| ***52*** | ***1,343*** | ***5372*** | ***52.6%*** | **53** | **1212** | **4848** | **47.4** | **105** | **10,220** |

1. **Resources**
* Several resources are available to faculty members for professional development. These resources include professional science and teacher organizations, publisher-supported seminars/webinars, Alabama Community College System sponsored events, and Jefferson State library-supported resources.
1. **Enrollment**
* Students pursuing degrees in Nursing and allied health programs contribute significantly to steady enrollment in Anatomy and Physiology and Microbiology courses. Enrollment in non-majors science sequence (Introduction to Biology I & II) remains constant because these courses are chosen to meet general science requirements for both the AS and AAS degrees. Additionally, the online and hybrid courses provide accessibility and flexibility to another cohort of students that may not be able to enroll in the traditional campus course offering.
* A comparison of the 2013 – 2014 and 2014-2015 academic years reveals the department experienced an 11% overall decrease in enrollment. Additionally, enrollment in Anatomy and Physiology II decreased by 24% during the 2014-2015 academic year when compared to the 2013-2014 academic year.
* There was a 14% increase in the number of students enrolling in hybrid courses. This increase occurred due to the offering Anatomy 201 hybrid course during the 2015 summer semester. This department was able to provide the course offering because an adjunct instructor, Dr. Mark Stinson, offered to teach the course.

**Table 3. 2013-2014 Enrollment by Class Offering Format** 

**Chart 1. 2013-2014 Enrollment Percentage by Class Offering Format**

**Table 4. 2014 -2015 Enrollment by Class Offering Format**



**Chart 2: 2014-2015 Enrollment Percentage by Class Offering Format**

1. **Facilities**
* The facilities at the Shelby campus adequately support the classes offered by the department. Classes are taught in various classrooms in the Health Science Building and each course with more than two-course offerings a semester has a designated laboratory. Two courses, Principles of Biology II (Bio 104) and Introduction to Biology II (Biology 102) float between available lab spaces.
* The biology department is located on the second floor of the Health Science Building. All faculty members are housed in Suite 200, and the lab coordinator is located in room 207. Office space reserved for adjunct instructors is located in room 203.
1. **Equipment**

The biology department has adequate equipment to support faculty, lecture, and laboratory classes. Routinely, equipment is ordered to maintain the faculty offices and the laboratory.

**External Conditions**

All Biology courses are regulated by the Department of Postsecondary Education. A statewide syllabus and competencies are established for every course. The competencies are reviewed and updated as changes occur.

**2013-2014 Accomplishments:**

**The Biology Department continues to examine ways in which to diversify student learning and improve instruction. The following items reflect ways by which the department as a whole and individually have made strides to the former:**

* During the fall 2013 semester Principles of Biology I was offered in a hybrid format for the first time. With this specific course being added to the course roster, all courses except Principles of Biology II is being offered either exclusively online (Introduction to Biology I & II) or in a hybrid format.
* All faculty members and the office manager received computer upgrades during the fall 2013 semester. Instructors that teach online or hybrid courses received new laptops, and all others received the new desktop computer.
* **Julie Parker**- During the summer 2014 academic semester Dr. Parker attended the Gross Anatomy Teacher Education (GATE) program at the University of Alabama at Birmingham. This professional development course will include complete dissection of the thorax, abdomen, and pelvis. It will also cover strategies on how to utilize team-based learning to teach anatomy.
* **Tom Baker** – In order to improve student retention and better prepare students for course content, Tom Baker implemented more homework and post-reading quizzes. Mr. Baker reported that students were more knowledgeable of the lecture materials and class participation increased.
* **Stephanie Miller** – Ms. Miller Served on Quality Enhancement Program (QEP) Committee. She also implemented more class discussions on current topics and trends in the field of Microbiology. She noted that students had a greater interest in the content, and she modified her lectures when necessary to keep students involved in the class.
* **Meena Bej** – Dr. Bej continued to provide assistance to her students through teaching and advising. Specifically, she assists individual students that indicate that they are choosing careers in medicine and/or allied health fields by putting them in touch with her professional contacts at other institutions.
* **Masheika James** **(adjunct)** – Dr. James is providing research opportunities to two JSCC students **(Kelsey Allison & Jacob Ferguson)** at the University of Alabama at Birmingham during the summer 2014 term. The students will learn basic laboratory techniques in a research laboratory and conducting *in* *vitro* research*.*
* **Nakia R. Robinson -** Dr. Robinson was promoted to Division Chairperson of Math, Engineering and Physical Sciences. She participated in the SACs reaffirmation process as a representative from the biology department.

**2014-2015 Accomplishments:**

* **Tom Baker-** Mr. Baker was chosen to serve on the Outstanding Faculty MemberCommittee 2
* **Julie Parker- (1)** Dr. Parker attended the Gross Anatomy Teacher Education **(GATE)** program at the University of Alabama at Birmingham. This was Dr. Parker’s second year of attendance. This professional development course will include complete dissection of the thorax, abdomen, and pelvis. It will also cover strategies on how to utilize team-based learning to teach anatomy. As a result of her participation in the program Dr. Parker partnered with Dr. Erin Arnold to pilot team-based learning in an Anatomy and Physiology II course. **(2)** Dr. Parker participated in the University of Alabama System Scholars Institute hosted at the University of Alabama at Birmingham. The Institute focused on ways to try and engage students in class, using technology (Blackboard, Noodle), virtual lab homework for students in the sciences, and partnerships with high school students and teachers to better prepare students for entering the higher education arena.
* **Stephanie Miller –** Ms. Miller represented Jefferson State Community College at the 2015 Alabama Community College System Human Resource Management Association Diversity Conference. She also participated in the University of Alabama System Scholars Institute hosted at the University of Alabama at Birmingham. The Institute focused on ways to try and engage students in class, using technology (Blackboard, Noodle), virtual lab homework for students in the sciences, and partnerships with high school students and teachers to better prepare students for entering the higher education arena.
* **Nakia R. Robinson –** Dr. Robinson was appointed by the Chancellor, Dr. Mark Heinrich, as the Associate Director of Developmental Education for the Alabama Community College System. Her duties include serving as the System liaison to the Developmental Education Task Force, system representative at state and national meetings, and assisting colleges in developing and implementing educational programs that prepare students for success.
* The Shelby Biology Department along with the Jefferson, Pell City, and Clanton campuses continue to partner successfully with one another to collect, analyze and review student learning outcome data.

**Unit Goals 2016-2017:**

**Goal 1: Upgrade of dissection specimens to the Anatomy and Physiology laboratory component.**

1. Objectives
* To add additional specimens for student dissection to Biology 201
	+ Specimens that highlight the muscular system
	+ Specimens that highlight the nervous system
* To add additional specimens for student dissection to Biology 202
	+ Specimens that highlight the cardiovascular system
	+ Specimens that highlight the Renal System
	+ Specimens that highlight the Respiratory system
* Order additional torso, skull, and heart models to replace damaged and worn models\*
1. Method of Assessment
* New specimens will be included on laboratory exams
* Informal feedback and conversation between students and instructors
* End of the semester course evaluation forms
1. Additional Funding requests- Funds are requested used to purchase the following laboratory specimen/items.
* 2 cases of skinned cats @ $350.00 per = $700.00
* 2 pail’s of Mammal Hearts @43.80 per = $87.60
* 2 pails of Mammal Kidneys @ 47.75 per = $95.50
* 5 skulls (Fisher/S07115) @ $41.75 per = 208.75
* 1 heart (Fisher/S171572) @ $556.00

**Goal 2: Increase professional development opportunities for faculty and staff.**

1. Objectives
* Provide guest and faculty-driven lecture series that would enable faculty and staff to have additional professional development opportunities. Two adjunct faculty members within the department, Dr. Stinson and Dr. Ernst, have agreed to serve as lectures.
	+ Dr. Mac Stinson – The Biology of Parkinson’s Disease
	+ Dr. Fred Ernst – Patient Advocacy and Consumer Protection in the Health Care Field
	+ Dr. Peggy Sparks – Deliberate Pedagogy
1. Method of Assessment
* Participant feedback
1. Additional Funding Requests
* The department would like to format the lecture series as a “chat and chew” that would require lunch to be served. It is estimated that between $250 - $500 dollars would cover pizza and drinks for all three events.

**Goal 3: Hire new faculty member to fill vacancy due to anticipated retirement of current faculty member**

1. Objective
	* Maintain the full-time/part-time ratio of faculty within the department
2. Method of Assessment
	* The new faculty member will be formally evaluated annually by department chairperson
	* The new faculty member will be evaluated formally by students at the end of each semester.
3. Additional Funding Request
	* Education and experience will determine the salary of the new faculty according to the D-1 salary scales.

**Goal 4: Service Microscopes in all laboratories**

* + - 1. Objective
* Microscopes in all laboratories need to be cleaned and serviced in order to work properly
	+ - 1. Method of Assessment
* The lab coordinator, instructors, and students will provide feedback on the functionality of the microscopes.
* The lab coordinator will establish a schedule with the service provider to ensure that the microscopes are cleaned and serviced in annually.
	+ - 1. Additional Funding Request
* Cleaning 167 microscopes @ 20.00 – $3340.00
* Repairs @ $300.00
* Bulb replacement 10 @$100.00

**Unit Goals 2017 – 2018**

**Goal 1: Replace autoclave in Microbiology lab**

**Objective**

* The current autoclave was purchased during 2003 academic year. More recently, the twelve year old unit has undergone a number of repairs. When it is inoperable, there is a lag in the laboratory schedule, equipment is not sterilized in a timely fashion, and the lab coordinator, instructors, and students have difficulties completing task on schedule. Therefore, it is necessary to take the appropriate steps to order a new autoclave to make certain that there is a reliable and functioning piece of equipment that will serve the needs of the department.
1. **Method of Assessment**
* The autoclave will be monitored by the both the lab coordinator and microbiology lead microbiology instructor, Ms. Stephanie Miller.
	+ - 1. **Additional Funding Request**
* $38,712.00 - Primus Sterilizer Company Quote

**Goal 2: Service Microscopes in all laboratories**

Objective

* Microscopes in all laboratories need to be cleaned and serviced in order to work properly

Method of Assessment

* The lab coordinator, instructors, and students will provide feedback on the functionality of the microscopes.
* The lab coordinator will set up schedule with the service provider to ensure that the microscopes are cleaned and serviced in a timely fashion

Additional Funding Request

* Cleaning 167 microscopes @ $20.00 = $3340.00
* Repairs @ $300.00
* Bulb replacement 10 @$100.00= $1000.00

**Goal 3: Enhance student learning through the integration of technology the Anatomy and Physiology**

 **laboratories**

1. Objective:
* The use of biological simulations in the laboratory can increase student learning and success. In the past, Anatomy and Physiology courses used BioPacs systems that allow students to simulate real life physiological process, perform experiments, and interpret the data. However, the units have remained inoperable because they are not compatible with the current operating system on the laboratory computers. The department is requesting an upgrade of the BioPac Systems. These systems allow students to conduct physiology experiments that focus on the circulatory system, respiratory system, neurophysiology and other systems of the body.
1. Method of Assessment
* Student performance on graded assignments.
* Qualitative feedback from both instructors and students.
1. Additional Funds Requested
* Both the Shelby and Jefferson campuses have the MP30 models (14 total) that were purchased back in 2002. However, there are four units currently on the Shelby campus. If the current models are returned to the supplier, a 40% discount will be given for a final price of $1,895 /unit.
* **$1,895 x 4 = $7580.00**