**Unit Strategic Plan**

**2017- 2019**

**Name of Program/Department: Biology Department – Jefferson Campus**

**Mission Statement (for the program or department):** 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 community, able to make responsible decisions in biological matters.

**Summary of Access, Productivity and Effectiveness (Including, but not limited to, program load, success rate, retention rate, completion rate, employer surveys, student surveys):**

The Biology Department supports the Associate in Arts, Associate in Science and the Associate in Applied Science curriculums through Area III. Both our Biology for majors (Bio 103, 104) and Biology for non-majors (Bio 101, 102) can help to fulfill the 8 hours of Natural Sciences with laboratory requirement in Area III.

In Addition, several career programs have specific Biology course requirements. The table below outlines these programs and the courses within the Biology department that are required.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **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 | Radiological Technology |  |
| Veterinary Technology |  | Physical Therapy Assistant |  |  |
| Transfer Students |  | Radiological Technology |  |  |

**Internal Conditions:**

1. **Technology**
   1. Our department has permanent projectors with a dedicated computer in three of our classrooms (RCH 244, RCH 245, and RCH 235). In addition we still employ two functioning mobile technology carts. Each cart is equipped with a projector and computer set up. The Biology 202 laboratory has room for ten computer workstations that are essential for simulated physiological experiments. We are still looking to add projectors with dedicated computers to all 4 laboratories so that we are consistent with all the other campuses.
   2. The microbiology laboratory is equipped with a walk-in incubator that is original to the building from 1965 and there is one functioning bench top incubator. It is also equipped with a large autoclave that is well over ten years old and consistently malfunctions. Spring of 2017 we received approval to replace the autoclave and are currently in the process of collecting estimates.
   3. Each of the five laboratory spaces is equipped with a set of microscopes. The microscopes used for both the majors and non-majors biology laboratories as well as the microbiology laboratories are extremely outdated and in need of replacing. In spring of 2017 we received approval to purchase 12 new microscopes. We placed all 12 of these in the microbiology lab.
   4. All full-time faculty members have computers in their offices. Full- time faculty computers are being upgraded gradually as funds become available.
   5. All faculty members are encouraged to use the blackboard learning system to aid in classroom instruction by posting syllabi, grade books, and classroom communications. The hybrid offerings in our department utilize both blackboard and Tegrity to deliver the lecture portion of the course. We have also added a section of the internet BIO 101, non-majors biology which utilizes blackboard, Tegrity and Late-nite labs.
2. **Budget**
   1. The budget for the Biology department has been sufficient in the past in order to maintain and pay for small repairs on our equipment.
   2. It is anticipated that the budget will need to be increased in the near future to cover major repairs and/or replacement of major pieces of equipment within the Biology laboratories including microscopes, autoclaves, and incubators
3. **Staffing**
   1. The current staff is sufficient to maintain a consistent level of instruction within the department.
4. **Resources**
   1. Faculty members may choose to belong to individual scientific communities within their discipline. There is a set amount of money allocated for professional development which they can use to attend meetings, conferences, and workshops.
5. **Enrollment**

Enrollment in the Biology department continues to hold stead. The Jefferson campus hold the second largest number of registrations among the campuses.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total Registrations | Credit Hour Production | Term |
| BIO | 4781 (9.1%) | 19124 | 2014-2015 |
| BIO | 4833 (9.2%) | 19400 | 2015-2016 |
| BIO | 5126 (9.7%) | 20504 | 2016-2017 |

\* Biology registrations account for of the total registrations at the college

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total Registrations | Credit Hour Production | Term |
| Jefferson | 669 | 2676 | FA2016 |
| Shelby | 1080 | 4320 | FA2016 |
| Pell City | 259 | 1036 | FA2016 |
| Clanton | 193 | 772 | FA2016 |

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total Registrations | Credit Hour Production | Term |
| Jefferson | 481 | 1924 | SP2017 |
| Shelby | 1013 | 4052 | SP2017 |
| Pell City | 270 | 1080 | SP2017 |
| Clanton | 171 | 684 | SP2017 |

1. **Facilities**
   1. Biology has three dedicated classroom spaces for lecture and several others that are shared with other transfer and general studies courses. There are five laboratories which are dedicated to specific Biology courses.
   2. Each full-time faculty member maintains an office space and the department maintains a central office, which houses both the chairperson and the office manager for Mathematics and Sciences, and Business and Administration Systems. Facilities and spaces are adequate with no anticipated need for additional facilities.
2. **Equipment**
   1. Other equipment that has not been mentioned under the Technology section of this report include, two laser jet printers, a copy machine, and two television/VCR carts. We did have a fax machine but it has been out of services for three years and we need to get that replaced.

**External Conditions (such as state funding, accrediting agencies, advisory committees, postsecondary policy changes):**

All of our Biology courses are regulated by the Alabama Department of Postsecondary Education. Competencies for each course are reviewed and adopted. Instructors are encouraged to use the competency to outline their courses and their own individual syllabi.

**2015-2016 Accomplishments:**

* Microscopes in all of our laboratories were serviced
* Four computers in the 202 laboratory were replaced
* Faculty members who were due for new computers received their computers

**2016-2017 Accomplishments:**

* Received approval for a new autoclave and are currently acquiring the requisite number of bids
* Implemented a new manual for BIO 101. The new manual consists of innovative and inquiry based experiments.
* Purchased 12 microscopes for the Microbiology laboratory
* Co-wrote with biology faculty on all campuses and submitted a STEAM grant that was funded by the state of Alabama

**Unit Goals (plans for the unit for the next two years):**

**Unit Goals for 2017-2018**

**Goal 1: Install projection Technology in the five Biology laboratories**

1. Outcomes
   1. This goal will help to meet all of our departmental and student learning outcomes by enhancing the educational experience in lab. Also adding projectors and dedicated computers to our laboratories will allow us to be consistent with the laboratories at all the other Jefferson State Campuses.
2. Objectives
   1. Install a computer and projector in Room 230
   2. Install a computer and projector in Room 232
   3. Install a computer and projector in Room 240
   4. Install a computer and projector in Room 241
   5. Install a computer and projector in Room 243
3. Method of assessment
   1. Obtain feedback from full-time and part-time faculty on the ease of use of new equipment
   2. Monitor the number of faculty participating in more technology use in the classroom
4. Additional funding request
   1. Projectors for each of the laboratories @ $2252.28 x 5 labs = $11261.40
   2. Computers for each of the laboratories @ $1005.74 x 5 labs = $5028.70

**Goal 2: Replace the autoclave and walk in incubator in the microbiology laboratory**

1. Outcomes
   1. Students will receive the appropriate biological knowledge to support a career within the Scientific, Medical, or Health and Fitness Community
   2. Microbiology is a requirement for nursing and is often part of a biology transfer degree. The requested equipment is necessary to maintain a functioning microbiology laboratory. The laboratory component to this class is essential to students mastering the following learning objectives
      1. Students will develop an understanding as well as the ability to handle microorganisms using aseptic technique
      2. Students will be able to prepare microscope slides using live microorganisms, stain the slides using basic or acidic stains, and use a light microscope
      3. Students will develop an understanding and application of microbiological growth techniques including nutrient, selective, and differential media.
2. Objective
   1. Replace the autoclave in the microbiology laboratory
   2. Replace the walk in incubator in the microbiology laboratory
3. Method of assessment
   1. Work with the laboratory manager to monitor down time to the lab due to malfunction of the autoclave and incubator
4. Additional funding request
   1. Replace and install a new autoclave @ $38,712.00
   2. Replace the walk in incubator with a stand alone incubator $12,186.50

**Goal 3: Increase the number of functional microscopes**

1. Outcome
   1. Students will understand the fundamental principles of biology at the elemental, cellular, molecular, and organism levels
2. Objective
   1. Increase the servicing of microscopes to yearly
   2. Replace the decades old monocular microscopes found in the general biology laboratories
3. Method of Assessment
   1. Microscopes will be fully incorporated into the laboratory experience and assessments
   2. Informal feedback and conversation between students and instructors
   3. End of semester course evaluation forms
4. Additional Funding requests
   1. Microscope servicing for all current microscopes $3,360.12
   2. Replace outdated microscopes in BIO 220(12), BIO 101 (24) and BIO 103 (32) @ 1,676.7 each X 68 = $114015.60

**Goal 4: Update the Physiology simulation technology**

1. Outcome
   1. Students will receive the appropriate Biological knowledge to support a career within the Scientific, Medical, or Health and Fitness community
   2. Students will understand principles of biology that relate to health and fitness
2. Objective
   1. Replace the outdated physiology simulation system with a new system
3. Method of assessment
   1. Monitor SLO assessment data from 201 and 202 for increased mastery in physiology concepts
   2. Informal feedback and conversation between students and instructors
   3. End of the semester course evaluation forms
4. Additional funding requests
   1. Neuron SpikerBox kits - $94.99 each x 8 = $759.92
   2. Muscle SpikerBox kits - $114.99 each x 8 = $919.92
   3. Spiker box consumables (extra cables, electrodes, etc) = $500
   4. AliveCor Kardia Mobile ECG - $99 each X 8 = $792
   5. Blood typing simulation kits - $43/kit X 8 = $344

**Goal 5: Update the Anatomy Models**

1. Outcome
   1. Students will receive the appropriate Biological knowledge to support a career within the Scientific, Medical, or Health and Fitness community
   2. Students will understand principles of biology that relate to health and fitness
2. Objective
   1. Add additional anatomy models to enhance the Anatomy 201 and 202 laboratorty
3. Method of assessment
   1. Monitor SLO assessment data from 201 and 202 for increased mastery in Anatomy
   2. Informal feedback and conversation between students and instructors
   3. End of the semester course evaluation forms
4. Additional funding requests
   1. SOMSO Heart Models - $281 each x 2 = $562
   2. SOMSO Human Torso - $1493 each X 2 = $2986
   3. SOMSO median section of the head model $248 each X 2 = $496
   4. SOMSO brain model $294 each X 2 = $588
   5. SOMSO urinary organs model $342 each x2 = $684
   6. SOMSO lungs, with heart diaphragm and larynx model $1015 x 2 = $2030

**Goal 6: Maintain adequate computer technology**

1. Outcome
   1. This goal will help us to meet all of our departmental and student learning outcomes by ensuring we have the computer technology to maintain a high quality educational experience
2. Objectives
   1. Ensure that instructors teaching hybrid courses or at distant campuses have lap top computers with docking stations
   2. Replace the remaining 6 outdated computers in the BIO 202 laboratory
   3. Continue to update instructor and classroom computers every three years
3. Method of assessment
   1. Informal feedback and conversation with faculty
4. Additional funding requests
   1. Lab top and docking stations $1459.94 each x 3 instructors teaching hybrid s = $4379.82
   2. Upgrade computers in the BIO 202 lab $1005.74 each x 6 = $6034.44
   3. Upgrade computers as needed at $1005.74 each

**Goal 7: Update classrooms and laboratories as needed**

1. Outocme
   1. This goal will help us to meet all of our departmental and student learning outcomes by ensuring our classrooms and laboratories are modern and functional
2. Objectives
   1. Ensure that our classroom and laboratories maintain maximal functionality
3. Method of assessment
   1. Informal feedback and conversation with faculty
4. Additional funding requests
   1. 48” x 96” white board to replace unusable chalkboard in Rm 245 at $359.99 each
   2. Laboratory stools as needed at $255 each

**Unit Goals for 2018-2019**

**Goal 1: Assess the feasibility of starting a Gross Anatomy class at the Jefferson Campus**

1. Outcome
   1. Students will receive the appropriate Biological knowledge to support a career within the Scientific, Medical, or Health and Fitness community
   2. Students will understand principles of human biology that relate to health and fitness
2. Objectives
   1. Visit Gadsden State Community College and determine the requirements for a Gross Anatomy laboratory
   2. Determine the costs associated with a Gross Anatomy laboratory
   3. Identify potential funding sources to support a Gross Anatomy laboratory
   4. Assess student interest in a Gross Anatomy laboratory
3. Method of Assessment
   1. Present the results of the feasibility study to the Biology faculty
4. Additional funding request
   1. No funds are requested at this time