



Program Review Self-Study Template

Academic unit: Medical Laboratory Sciences _____

College: Health Professions _____

Date of last review SP 2011 _____

Date of last accreditation report (if relevant) SP 2014 _____

List all degrees described in this report (add lines as necessary)

Degree: B.S. in Medical Laboratory Sciences _____ CIP* code: 51.1005 _____

Degree: _____ CIP code: _____

Degree: _____ CIP code: _____

*To look up, go to: Classification of Instructional Programs Website, <http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55>

Faculty of the academic unit (add lines as necessary)

Name	Signature
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<u>Jean Brickell, Chair and Associate Professor</u> _____	_____
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<u>Diana Cochran-Black, Associate Professor</u> _____	_____
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<u>Reitha Deiter, Clinical Educator (teaches > 50%)</u> _____	_____
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<u>Laurie Alloway, Clinical Educator (teaches > 50%)</u> _____	_____
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<u>Stephanie Rogers, Clinical Educator (teaches > 50%)</u> _____	_____
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Submitted by: _____ Date _____

(name and title)

1. Departmental purpose and relationship to the University mission (refer to instructions in the WSU Program Review document for more information on completing this section).

a. University Mission:

The mission of Wichita State University is to be an essential educational, cultural, and economic driver for Kansas and the greater public good.

b. Program Mission :

The mission of the department of Medical Laboratory Sciences is to improve the health of the community by

- Educating resourceful, adaptable, and well-prepared individuals to serve and lead the medical laboratory sciences profession
- Contributing to the body of knowledge for Medical Laboratory Sciences, and
- Facilitating life-long learning for Medical Laboratory Scientists.

c. The role of the program (s) and relationship to the University mission:

The Medical Laboratory Sciences Program strives to help the university meet Strategic Goals 1 and 3:

- Guarantee an applied learning or research experience for every student by each academic program.
- Capitalize systemically on relevant existing and emerging societal and economic trends that increase quality educational opportunities.

The program is closely associated with Kansas healthcare facilities in Wichita and throughout the surrounding area. Medical Laboratory Sciences students complete applied learning experiences in medical centers in Wichita, Garden City, Dodge City, Salina and other centers providing healthcare to Kansas residents. Laboratory directors of these facilities serve on the Advisory Board for the program and help align the program curriculum with current practices and policies.

d. Has the mission of the Program (s) changed since last review? Yes No

- i. If yes, describe in 1-2 concise paragraphs. If no, is there a need to change?

The mission has changed over time to respond to changes in healthcare as described by our Advisory Board and to emphasis of our accreditation body, the National Accrediting Agency for Clinical Laboratory Sciences (NAACLS).

- e. Provide an overall description of your program (s) including a list of the measurable goals and objectives of the program (s) (programmatic). Have they changed since the last review?

Yes No

If yes, describe the changes in a concise manner.

The Bachelor of Medical Laboratory Sciences Program prepares students to enter clinical assessment positions of health and disease. The Program consists of 59 credit hours in lecture, student laboratory and applied learning experiences in clinical settings. Student laboratories are located on the first floor of Ahlberg Hall. Students participate in over 100 hours of student laboratory practice before applying this experience in urban and rural medical facilities across the state. Student laboratory equipment includes microscopes and manual body fluid testing equipment. Students are exposed to automated clinical equipment during applied learning experiences at medical facilities. Students participate in interdisciplinary learning experiences during on-campus student laboratories. For example, during the time period assessed, students participated with nursing students to practice reporting patient information in electronic health records. Most graduates find employment in clinical laboratories in Wichita and smaller communities in Kansas. Other graduates use the bachelor degree to enter graduate programs in healthcare. Slight changes have occurred to the goals and objectives of the program over time to reflect changes in a dynamic healthcare environment. Over the time period of this review, the name of the program has changed from Medical Technology to Medical Laboratory Sciences to reflect current terminology.

The goals of the medical laboratory sciences program remain to:

1. Prepare students as competent medical laboratory sciences professionals as defined by the program's local and regional community of interest and by National Board credentialing examination matrices.
2. Prepare students who will continue to contribute to Medical Laboratory Sciences and other healthcare professions after completion of the program.
3. Provide students with a relevant, current curriculum which addresses and meets the demands of the changing technology and practice in the profession.

The second goal has been broadened from leadership to continued interest and contribution to the profession.

Measurement and outcome of these goals is described in 3c of this report.

2. Describe the quality of the program as assessed by the strengths, productivity, and qualifications of the faculty in terms of SCH, majors, graduates, and scholarly/creative activity (refer to instructions in the WSU Program Review document for more information on completing this section).

Last 3 Years	Tenure/Tenure Track Faculty (TTF)		Tenure/Tenure Track Faculty with Terminal Degree (Number)		Instructional FTE (#): GTA=Grad teaching assist O=Other instructional FTE			Total SCH - Total SCH by FY from Su, Fl, Sp	Total Majors - From fall semester	Total Grads – by FY							
	GTA	O	FTE														
Year 1→2010	3	2	0	1	4	1826	91	23									
Year 2→2011	2	2	0	2	4	2208	98	22									
Year 3→2012	2	2	0	3	5	2406	119	29									
Total Number Instructional (FTE) – TTF+GTA+O							SCH/ FTE	Majors/ FTE	Grads/ FTE								
Program Instructional Effort per FTE for Fall Semester					College (Fall)			University (Fall)									
SCH/FTE					SCH/FTE			SCH/FTE									
Year 1→2010	233				215			236									
Year 2→2011	256				218			231									
Year 3→2012	232				224			222									
Scholarly Productivity	Number Journal Articles		Number Presentations		Number Conference Proceedings		Performances			Number of Exhibits		Creative Work		No. Books	No. Book Chaps.	No. Grants Awarded or Submitted	\$ Grant Value
	Ref	Non-Ref	Ref	Non-Ref	Ref	Non-Ref	*	**	***	Juried	****	Juried	Non-Juried				
Year 1→ 2011	1		5		4												
Year 2→2012	3		3		1												
Year 3→2013			1		1									1	1		3,000

* Winning by competitive audition. **Professional attainment (e.g., commercial recording). ***Principal role in a performance. ****Commissioned or included in a collection. KBOR data minima for UG programs: Majors=25; Graduates=10; Faculty=3; KBOR data minima for master programs: Majors=20; Graduates=5; Faculty=3 additional; KBOR data minima for doctoral programs: Majors=5; Graduates=2; Faculty=2 additional.

3. Provide a brief assessment of the quality of the faculty/staff using the data from the table above and tables 1-7 from the Office of Planning Analysis as well as any additional relevant data. Programs should comment on details in regard to productivity of the faculty (i.e., some departments may have a few faculty producing the majority of the scholarship), efforts to recruit/retain faculty, departmental succession plans, course evaluation data, etc.

Provide assessment here:

Through the efforts of faculty, the program consistently meets the benchmarks of NAACLS accreditation:

- Pass rate on the national certification examination for Medical Laboratory Sciences given by the American Society for Clinical Laboratory Sciences at or above 75% over 3 years
- Graduation rate from the program at or above 70% over 3 years
- Employment or matriculation into graduate school at or above 70% over 3 years

Two department faculty, the chair and one other faculty member are tenured and have teaching, scholarly activity and service requirements. All other faculty members are designated as clinical educators with greater than 50% teaching

effort. These department members have greatest responsibility in teaching activities. The department has provided support for faculty development over AY 12 and AY13 to strengthen teaching contributions in immunohematology, molecular diagnostics and educational techniques. Over this period, faculty members have maintained high teaching loads of 10-12 credits per semester plus participation in clinical rotation evaluation. In addition to professional courses, faculty members also contribute to the basic sciences and general education requirements of undergraduates. Department faculty offer courses in medical terminology, molecular diagnostics and immunology each semester. The Issues and Perspectives course, The Effects of Disease on Global Events, is offered every fall and spring semester. The courses have increased credit hours production by MLS faculty under course prefix HP. Some faculty members produce over one thousand credits in a semester from HP and MLS prefixed courses.

Due to the heavy teaching load, the department has struggled to maintain a research or scholarly activity focus. The department is interested in the efficacy of distance learning tools, such as SoftChalk and is attempting to evaluate use of these tools in professional courses.

3. Academic Program: Analyze the quality of the program as assessed by its curriculum and impact on students for each program (if more than one). Attach updated program assessment plan (s) as an appendix (refer to instructions in the WSU Program Review document for more information).

a. For undergraduate programs, compare ACT scores of the majors with the University as a whole.

2011	Program ACT scores 22.4.	University ACT scores 22.8
2011	Program ACT scores 22.7	University ACT scores 23.0
2010	Program ACT scores 22.5	University ACT Scores 22.7

b. For graduate programs, compare graduate GPAs of the majors with University graduate GPAs.

N/A

c. Identify the principal learning outcomes (i.e., what skills does your Program expect students to graduate with). Provide aggregate data on how students are meeting those outcomes in the table below. Data should relate to the goals and objectives of the program as listed in 1e. Provide an analysis and evaluation of the data by learner outcome with proposed actions based on the results.

In the following table provide program level information. You may add an appendix to provide more explanation/details. Definitions:

Learning Outcomes: Learning outcomes are statements that describe what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that students acquire in their matriculation through the program (e.g., graduates will demonstrate advanced writing ability).

Assessment Tool: One or more tools to identify, collect, and prepare data to evaluate the achievement of learning outcomes (e.g., a writing project evaluated by a rubric).

Criterion/Target: Percentage of program students expected to achieve the desired outcome for demonstrating program effectiveness (e.g., 90% of the students will demonstrate satisfactory performance on a writing project).

Result: Actual achievement on each learning outcome measurement (e.g., 95%).

Analysis: Determines the extent to which learning outcomes are being achieved and leads to decisions and actions to improve the program. The analysis and evaluation should align with specific learning outcome and consider

whether the measurement and/or criteria/target remain a valid indicator of the learning outcome as well as whether the learning outcomes need to be revised.

Learning Outcomes (most programs will have multiple outcomes)	Assessment Tool e.g., portfolios, rubrics, exams)	Target/Criteria (desired program level achievement)	Results	Analysis
Upon graduation, the student will demonstrate the ability to comprehend, apply and evaluate information relevant to the role of a medical laboratory scientist.	Comprehensive written examinations given at the completion of the program	100% pass with minimum grade of 70%	Over the past 3 years, no students have been dismissed at the level of comprehensive exams	The program has instituted intensive review of content during the last semester and will continue this option.
	National Board Credentialing examination by the American Society for Clinical Pathology	75% pass rate over 3 years	Pass rates: 89-93%	Continue review of content during last semester
	Indication of satisfaction with program graduates by employers. Employers are surveyed at two year intervals	100% satisfaction of employers of program graduates	2012 employer shows 100% satisfaction with WSU MLS graduates	Continue to respond to subjective comments of employers to improve program
Upon graduation, students will demonstrate technical proficiency in all skills required to practice in the profession.	Clinical rotation checklists completed by clinical instructors at the end of the rotation	Ratings at or above minimal performance levels	3 ratings below minimum – problems addressed to satisfaction of evaluator	Continue to respond to suggestions and comments of evaluators to improve program
	Indication of satisfaction with program graduates by employers. Employers are surveyed at two year intervals.	100% satisfaction of employers of program graduates	2012 employer shows 100% satisfaction with WSU MLS graduates	Continue to respond to subjective comments of employers to improve program
Upon graduation, students will demonstrate the ability to effectively communicate and interact with patients, physicians and other health professionals, in a manner consistent with employer standards.	Summative affective evaluations completed by clinical rotation instructors. Evaluations are conducted at the end of each clinical rotation.	Ratings at or above minimal performance levels	2 ratings below minimum – problems addressed to satisfaction of evaluator	Continue to respond to suggestions and comments of evaluators to improve program
	Indication of satisfaction with program graduates by employers. Employers are surveyed at two year intervals.	100% satisfaction of employers of program graduates	2012 employer shows 100% satisfaction with WSU MLS graduates	Continue to respond to subjective comments of employers to improve program
Upon graduation, 25% of students have joined professional healthcare organizations or have applied to or been accepted by graduate programs in the healthcare professions.	Students are surveyed at completion of the program to solicit relevant information.	25% of graduates are participating in professional healthcare organizations or have applied to or been accepted by graduate programs in the healthcare professions	Less than 5% of graduates continue to support professional organizations or continuing healthcare education	Increased student activity in avenues for professional growth

	Alumni surveys are implemented at two year intervals to solicit information concerning accomplishments in education and professional leadership.	25% of graduates are participating in professional healthcare organizations or have applied to or been accepted by graduate programs in the healthcare professions	Less than 5% of graduates continue to support professional organizations or continuing healthcare education	Increased student activity in avenues for professional growth
Upon graduation, students will be able to function as entry level Medical Laboratory Scientists, requiring no more than the usual orientation time.	Employer and graduate surveys at two year intervals for all graduates	100% satisfaction of employers and graduates with regard to entry level functions	2012 employer and graduate surveys show 100%, with comments for improvement	Continue to respond to subjective comments to improve program
	Site visits every five to seven years on-site by the National Accrediting Association for Clinical Laboratory Sciences	Full accreditation of the MLS program by NAACLS	7 year accreditation through April 2021	Continue evaluating and revising program in accordance with NAACLS guidelines

- d. Provide aggregate data on student majors satisfaction (e.g., exit surveys), capstone results, licensing or certification examination results (if applicable), employer surveys or other such data that indicate student satisfaction with the program and whether students are learning the curriculum (for learner outcomes, data should relate to the outcomes of the program as listed in 3c).

	Student Satisfaction at End of Program		
	Program	College	University
Year 1→2011	na	na	na
Year 2→2012	87%	82.2%	79.5%
Year 3→2013	97%	85.8%	82.9%

Learner Outcomes (e.g., capstone, licensing/certification exam pass-rates) by year, for the last three years				
Year	N	Name of Exam	Program Result	National Comparison±
2010		American Society of Clinical Pathology	89%	82%
2011		American Society of Clinical Pathology	93%	84%
2012		American Society of Clinical Pathology	93%	84%

Results of program surveys of graduates and employers of graduates are provided in 3c under Outcomes.

- e. Provide aggregate data on how the goals of the *WSU General Education Program* and *KBOR 2020 Foundation Skills* are assessed in undergraduate programs (optional for graduate programs).

Outcomes:	Results	
	Majors	Non-Majors
<ul style="list-style-type: none"> ○ Have acquired knowledge in the arts, humanities, and natural and social sciences ○ Think critically and independently ○ Write and speak effectively ○ Employ analytical reasoning and problem solving techniques 		
MLS faculty facilitate an Issue and Prospective course, <i>The Effects of Disease upon Global Events</i> . Through online discussion, written papers and learning exercises, students are encouraged to examine varying perspectives and form fact-based evaluations of information presented.		100% participation by non-majors
MLS students participate in laboratory medicine case studies which require examination of objective information to make subjective assessments.	100%	
MLS students present an overview of the healthcare of a foreign country to practice speaking clearly and formulating relevant oral analyses.	100%	

Note: Not all programs evaluate every goal/skill. Programs may choose to use assessment rubrics for this purpose. Sample forms available at: <http://www.aacu.org/value/rubrics/>

- f. For programs/departments with concurrent enrollment courses (per KBOR policy), provide the assessment of such courses over the last three years (disaggregated by each year) that assures grading standards (e.g., papers, portfolios, quizzes, labs, etc.) course management, instructional delivery, and content meet or exceed those in regular on-campus sections.

Provide information here: N/A

- g. Indicate whether the program is accredited by a specialty accrediting body including the next review date and concerns from the last review.

Provide information here:

The program is accredited by the National Accrediting Agency of Clinical Laboratory Sciences (NAACLS). The program was review in 2014 and received 7-year continuing accreditation (the longest period given in this review cycle). No concerns or deficiencies were noted by the reviewers.

- h. Provide the process the department uses to assure assignment of credit hours (per WSU policy 2.18) to all courses has been reviewed over the last three years.

Provide information here:

Credit hours are calculated on the basis of contact and study hours:

Lecture: 1 credit hour is given for lecture courses in which faculty has 1 hour in-person or virtual (distance learning courses) contact with students over 15 weeks of the semester AND assigns 2 hours external work per contact hour.

Lab: 1 credit hour is given for lab courses in which faculty has 2 hours contact with students over 15 weeks of the semester AND assigns 1 hour external work per contact hour; OR lab courses in which faculty has 3 hours contact with students over 15 weeks.

Applied learning: 1 credit hour is given for applied courses in which students participate in 3 contact hours clinical training over 15 weeks of the semester. For applied learning courses that are less than 15 weeks, 1 credit hour is given on an equivalent basis:

1 applied learning credit hour over 15 weeks = 9 contact hours/week OR

1 applied learning credit hour over 4 weeks = 3 contact hours/week

- i. Provide a brief assessment of the overall quality of the academic program using the data from 3a – 3e and other information you may collect, including outstanding student work (e.g., outstanding scholarship, inductions into honor organizations, publications, special awards, academic scholarships, student recruitment and retention).

Provide assessment here:

The Medical Laboratory Sciences program is accredited by a body of its peers. Guidelines and benchmarks for accreditation are created by educators and practitioners of the field to shape the education of future practitioner in the field. These guidelines are continually examined and revised as healthcare changes. The WSU Medical Laboratory Sciences program was privileged to earn a seven year accreditation in 2014. The seven year accreditation is the highest accreditation that is given to a Medical Laboratory Sciences program at this time. Accreditation site visitors found no deficiencies during their examination of the program and complimented the program on the enthusiasm of students, dedication of faculty and support of the area healthcare facilities.

4. Analyze the student need and employer demand for the program. Complete for each program if appropriate (refer to instructions in the WSU Program Review document for more information on completing this section).

- a. The program continues to grow in applicants, admissions, graduates and under-represented minority students. Over the three year period, applicants have increased from 41 to 59, while admissions have increased from 39 to 52 per fiscal year. Bachelor degrees were conferred to 32 candidates in 2013, as compared to 22 candidates in 2011. Bachelor degrees were conferred to 12.5% of the program class in 2012, as compared to 11.8% in the college and 12.7% in the university.

- b. Utilize the table below to provide data that demonstrates student need and demand for the program.

Employment of Majors*							
	Average Salary	Employment % In state	Employment % in the field	Employment: % related to the field	Employment: % outside the field	Number pursuing graduate or professional education	Projected growth from BLS** Current year only.
2010	Not collected						
2011	Not collected						
2012	43,954	80	88%			2	22%

* May not be collected every year

** Go to the U.S. Bureau of Labor Statistics Website: <http://www.bls.gov/oco/> and view job outlook data and salary information (if the Program has information available from professional associations or alumni surveys, enter that data)

- Provide a brief assessment of student need and demand using the data from tables 11-15 from the Office of Planning and Analysis and from the table above. Include the most common types of positions, in terms of employment graduates can expect to find.

Provide assessment here:

Employment of medical laboratory technologists and technicians is projected to grow 22 percent from 2012 to 2022, much faster than the average for all occupations. An increase in the aging population will lead to a greater need to diagnose medical conditions, such as cancer or type 2 diabetes, through laboratory procedures. Federal health legislation will increase the number of patients who have access to health insurance, increasing patient access to medical care. As a result, demand for the services of laboratory personnel will grow. About half of all medical laboratory technologists and technicians were employed in hospitals in 2012. Others worked in doctors' offices or diagnostic laboratories. Most medical laboratory technologists and technicians work full time. Technologists and technicians who work in facilities that operate around the clock, such as hospitals and some independent laboratories, may work evening, weekend, or overnight hours. The median annual wage for medical laboratory technologists in the United States was \$57,580 in May 2012. Medical laboratory personnel are trained to work with infectious specimens or with materials that produce fumes. When they follow proper methods to control infection and sterilize equipment, few hazards exist. They wear protective masks, gloves, and goggles for their safety and protection.*

- From U.S. Bureau of Labor Statistics Website: <http://www.bls.gov/oco/>

5. Analyze the service the Program provides to the discipline, other programs at the University, and beyond. Complete for each program if appropriate (refer to instructions in the WSU Program Review document for more information on completing this section).

- a. Provide a brief assessment of the service the Program provides. Comment on percentage of SCH taken by majors and non-majors, nature of Program in terms of the service it provides to other University programs, faculty service to the institution, and beyond.

Provide assessment here:

The MLS professional curriculum has entry points in January, June and August to meet the needs of students, clinical practica sites and prospective employers. Employers and students are pleased with the three entry/exit points because it provides graduates and potential employees throughout the year.

The program has clinical affiliate sites in the Kansas communities of Salina, Hutchinson, Emporia, Garden City, Dodge City, Hays and Topeka, as well as Tulsa and Enid, Oklahoma. All clinical practica have been reviewed by NAACLS and meet national standards. Rural and urban sites are recruited to provide a more comprehensive view of laboratory practice. In return, more healthcare facilities are introduced to potential employees.

The program continually strives to meet the needs of both students and employers. The MLS Advisory Board is an essential source of information about trends in the clinical laboratory community. The Board consists of representatives from all clinical affiliates of the program. Information provided by these employers of MLS graduates is used to make changes to the curriculum in order that students are better prepared for clinical practica and entry level practice in healthcare.

The department provided 1,161 credit hour for professional courses in 2012, an increase from 924 professional course credit hours in 2010. In addition, department faculty provided over 1000 credit hours in pre-professional courses prefixed HP. The total credit hour production by department faculty in fall 2013 was 2324.

The department continues to provide distance learning opportunities for pre-medical technology and other health professions students. The department offers online courses in immunology, molecular diagnostics, biochemistry and medical terminology. In addition, the department offers a general education course for development of interdisciplinary perspectives in health and disease. The department is experimenting with educational software to increase the geographic boundaries of instruction.

6. Report on the Program's goal (s) from the last review. List the goal (s), data that may have been collected to support the goal, and the outcome. Complete for each program if appropriate (refer to instructions in the WSU Program Review document for more information on completing this section).

(For Last 3 FYs)	Goal (s)	Assessment Data Analyzed	Outcome
	Increase enrollment by 25% by developing specialty tracks within the Medical Technology degree.	Institutional research database	Number of applicants has increased 27% over the 3 year period
	Develop additional laboratory simulations to reduce the cost of laboratory equipment and reagents.	Curriculum	Simulations have been created for Electronic Information Systems, as an inter-professional activity with the nursing department
	Identify additional pre-requisite courses which can be offered by department faculty as online courses.	Course schedule/curriculum	Department faculty now facilitate over 100 credit hours in pre-requisite courses
	Develop and implement a plan to evaluate the WSU General Education Program and KBOR 2020 Foundation Skills for retention and success of Medical Technology undergraduates	Institutional research database	Over the 3 year review period, graduation rates increased from 85% to 90%

7. Summary and Recommendations

- a. Set forth a summary of the report including an overview evaluating the strengths and concerns. List recommendations for improvement of each Program (for departments with multiple programs) that have resulted from this report (relate recommendations back to information provided in any of the categories and to the goals and objectives of the program as listed in 1e). Identify three year goal (s) for the Program to be accomplished in time for the next review.

Provide assessment here:

The main focus of the MLS program is the facilitation of opportunities for growth in the medical laboratory sciences. The program evaluates success through examination by its accreditation body, responses of the Advisory Board, evaluation of individual students during clinical experiences and surveys of its graduates and employers of its graduates. Over the three year review period, these outcome measures have been positive. MLS faculty listen carefully to subjective comments and suggestions collected through these outcome measures and respond in a continuing effort for improvement. The department will continue to respond to the needs of the healthcare community and seek better ways to perform its function. The following outline provides a list of strengths, weaknesses, and plans for the upcoming three years.

Strengths:

1. Strong community support. Community laboratory professionals serve on the advisory board, give guest lectures and freely give many hours as clinical mentors. Community healthcare facilities have donated laboratory materials and equipment for use in student laboratories.
2. Students. The department enjoys a positive reputation in the larger Kansas community which attracts increasingly more and brighter students.
3. Cooperative, experienced, multi-faceted faculty who have the ability to meet many challenges
4. Strong curriculum as evidenced by external exams scores and clinical affiliate evaluations

Weaknesses:

1. The department serves a narrow healthcare need. Community clinical laboratories are staffed by diverse personnel with a variety of skill sets.
2. Although progress has been made, the department is still dependent on expensive equipment and reagents
3. A research or scholarship activity has not been created for the department.

Plan/Goals – (To be met prior to AY 2017/2018):

1. Develop additional laboratory simulations to reduce the cost of laboratory equipment and reagents.
2. As the department reduces focus on faculty development, develop a research/scholarly activity focus that is appropriate to the structure of the department.