Mission / Purpose
The Polymer Science and Engineering Ph.D. Degree in the School of Polymers and High Performance Materials is designed as a rigorous curriculum that will be the best possible preparation for post-doctoral studies or for employment in advanced fields in the polymer and materials scientific workforce. Advancement from MS in Polymer Science to PhD in Polymer Science and Engineering: Students advance from the MS program to the doctoral program by the following 3 criteria: • Passing a set of comprehensive examinations given by the Polymer Science faculty • Successfully defending a research prospectus • Successfully defending an independent research proposal.

Student Learning Outcomes/Objectives, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: Grasp fundamentals of polymer science
The students will demonstrate a comprehensive grasp of the fundamentals of polymer science.

Related Measures:

M 1: Dissertation
Students will produce a dissertation that is rated satisfactory by their advisory committee and they will successfully defend this dissertation by public oral presentation to the satisfaction of their committee.

Target:
100% of students will pass the dissertation on their first attempt. Passing is defined by the committee and judged on 1) Unique contributions to the field of study; 2) Communicating clearly and concisely the role of this contribution to the scientific community; and 3) Writing clearly and technically the objectives, background, and results of their research in the dissertation.

Findings (2013-2014) - Target: Met
Summer 2013 - 100% (3 of 3) of students defending their dissertation in the summer passed on their first attempt. Fall 2013--100% (1 of 1) of students defending their dissertation in the Fall passed on their first attempt. Spring 2014--No PhD dissertation defenses. Passing a dissertation defense is defined by the dissertation committee and based on 1) Unique contributions to the field of study; 2) Communicating clearly and concisely the role of this contribution to the scientific community; and 3) Writing clearly and technically the objectives, background, and results of their research in the dissertation.

M 3: Comprehensive Exam
Students will demonstrate a comprehensive understanding of the field of polymer science by taking nine comprehensive examinations (three organic, three physical and three practical. (Comprehensive examinations are given on a rotating basis by a variety of polymer science faculty members - in one complete rotation all of the faculty are required to give at least one comprehensive examination in their area of specialty.)

Target:
90% of students pass 6 of 9 comprehensive examinations, including at least one from each section.

Findings (2013-2014) - Target: Met
Fall 2013--100% (1 of 1) of first time comprehensive exam takers passed 6 of 9 exams, including one from each section Spring 2011--100% (9 of 9) of first time comprehensive exam takers passed 6 of 9 exams, including one from each section.
**Related Action Plans (by Established cycle, then alpha):**
For full information, see the *Details of Action Plans* section of this report.

**Grasp fundamentals of polymer science**  
*Established in Cycle: 2005-2006*  
90% of students will grasp the fundamentals of polymer science and pass their comprehensive exam on the first attempt.

**Move Polymer Kinetics to coincide with PSC 701 and 702**  
*Established in Cycle: 2013-2014*  
The class PSC 740, Polymer Kinetics, will be taught in the Fall semester to reinforce material that is taught in PSC 701 and 702...

**M 9: Self-efficacy questionnaire**  
A student self-efficacy survey will be conducted after the comprehensive examinations. Using a scale of 1 (no impact) to 5 (high impact) the student will indicate how preparation for the comprehensive exams impacted their awareness and knowledge of the field of polymer science.

**Target:**  
90% of respondents will indicate that preparation for the comprehensive examinations gave them a more holistic view of Polymer Science and Engineering.

**Findings (2013-2014) - Target: Met**  
Fall 2013--survey given in Spring 2014--100% (4 of 4) respondents indicated that preparation for comprehensive exams positively impacted their awareness and knowledge of the field of polymer science.

**M 10: Seminar Participation**  
Students will demonstrate sufficient knowledge of polymer science as measured by each student asking relevant questions in School seminars. The graduate coordinator keeps tally of questions using a check off sheet at each seminar.

**Target:**  
80% of students will ask relevant questions as measured by in at least 10 percent of the School seminars.

**Findings (2013-2014) - Target: Met**  
Fall 2013-93% of students (43 of 46) in seminars asked a relevant question during at least one seminar. Spring 2014-98% (46 of 47) of students in seminars asked a relevant question during at least one seminar.

**SLO 2: Awareness of field and research**  
Students will maintain current awareness of the field of polymer science and especially of the areas of research within the School of Polymers at the University of Southern Mississippi.

**Related Measures:**

**M 1: Dissertation**  
Students will produce a dissertation that is rated satisfactory by their advisory committee and they will successfully defend this dissertation by public oral presentation to the satisfaction of their committee.

**Target:**  
100% of students will pass the dissertation on their first attempt. Passing is defined by the committee and judged on 1) Unique contributions to the field of study; 2) Communicating clearly and concisely the role of this contribution to the scientific community; and 3) Writing clearly and technically the objectives, background, and results of their research in the dissertation.
**Findings (2013-2014) - Target: Met**

Summer 2013 - 100% (3 of 3) of students defending their dissertation in the summer passed on their first attempt. Fall 2013--100% (1 of 1) of students defending their dissertation in the Fall passed on their first attempt. Spring 2013--No PhD dissertation defenses. Passing a dissertation defense is defined by the dissertation committee and based on 1) Unique contributions to the field of study; 2) Communicating clearly and concisely the role of this contribution to the scientific community; and 3) Writing clearly and technically the objectives, background, and results of their research in the dissertation.

**M 3: Comprehensive Exam**

Students will demonstrate a comprehensive understanding of the field of polymer science by taking nine comprehensive examinations (three organic, three physical and three practical. (Comprehensive examinations are given on a rotating basis by a variety of polymer science faculty members - in one complete rotation all of the faculty are required to give at least one comprehensive examination in their area of specialty.)

**Target:**

90% of students pass 6 of 9 comprehensive examinations, including at least one from each section.

**Findings (2013-2014) - Target: Met**

Fall 2013--100% (1 of 1) of first time comprehensive exam takers passed 6 of 9 exams, including one from each section Spring 2011--100% (9 of 9) of first time comprehensive exam takers passed 6 of 9 exams, including one from each section.

**M 4: Alumni Survey**

An alumni survey will be given to determine how well the student seminars prepared the students to formulate and ask questions of a technical nature as practicing polymer scientists and engineers. The survey will be a series of questions regarding questions at student seminars with a scaling of 1-5, 1 being no benefit adn 5 being very beneficial.

**Target:**

80% of respondents agree that the encouragement to formulate and ask questions has enhanced their ability for scientific enquiry as practicing polymer scientists and engineers.

**Findings (2013-2014) - Target: Met**

Fall 2013--Survey given in Spring Spring 2014--100% of respondents (4 of 4) agreed that asking questions in seminars has enhanced their ability as scientists and engineers by indicating 4 (beneficial) or 5 (very beneficial). A Likert scale of 1 (detrimental) to 5 (very beneficial) was utilized for the survey question.

**M 7: Alumni Survey - II**

Alumni will be surveyed to determine if the independent proposal provided them with an advantage in understanding and preparing research proposals and projects. The survey will be scored on a scale of 1 (not helpful) to 5 (very helpful).

**Target:**

80% of respondents will average a score between 4 and 5, indicating that that independent proposal provided them with advantage in preparing research proposals and projects.

**Findings (2013-2014) - Target: Met**

Fall 2013--Survey given in Spring Spring 2014--100% of respondents (4 of 4) agreed that the independent research proposal provided and advantage in preparing research proposals and projects. The answers are provided on a Likert scale from 1 (strongly disagree) to 5 (strongly agree).
M 9: Self-efficacy questionnaire
A student self-efficacy survey will be conducted after the comprehensive examinations. Using a scale of 1 (no impact) to 5 (high impact) the student will indicate how preparation for the comprehensive exams impacted their awareness and knowledge of the field of polymer science.

Target:
90% of respondents will indicate that preparation for the comprehensive examinations gave them a more holistic view of Polymer Science and Engineering.

Findings (2013-2014) - Target: Met
Fall 2013--survey given in Spring Spring 2014--100% (4 of 4) respondents indicated that preparation for comprehensive exams positively impacted their awareness and knowledge of the field of polymer science.

M 10: Seminar Participation
Students will demonstrate sufficient knowledge of polymer science as measured by each student asking relevant questions in School seminars. The graduate coordinator keeps tally of questions using a check off sheet at each seminar.

Target:
80% of students will ask relevant questions as measured by in at least 10 percent of the School seminars.

Findings (2013-2014) - Target: Met
Fall 2013-93% of students (43 of 46) in seminars asked a relevant question during at least one seminar. Spring 2014-98% (46 of 47) of students in seminars asked a relevant question during at least one seminar.

SLO 3: Comprehend, construct, and orally present
Students will be required to demonstrate their ability to comprehend their specialty in polymer science, to construct a research project (under guidance from a faculty adviser), to orally present their research plan, defend it publicly.

Related Measures:

M 1: Dissertation
Students will produce a dissertation that is rated satisfactory by their advisory committee and they will successfully defend this dissertation by public oral presentation to the satisfaction of their committee.

Target:
100% of students will pass the dissertation on their first attempt. Passing is defined by the committee and judged on 1) Unique contributions to the field of study; 2) Communicating clearly and concisely the role of this contribution to the scientific community; and 3) Writing clearly and technically the objectives, background, and results of their research in the dissertation.

Findings (2013-2014) - Target: Met
Summer 2013 - 100% (3 of 3) of students defending their dissertation in the summer passed on their first attempt. Fall 2013--100% (1 of 1) of students defending their dissertation in the Fall passed on their first attempt. Spring 2013--No PhD dissertation defenses. Passing a dissertation defense is defined by the dissertation committee and based on 1) Unique contributions to the field of study; 2) Communicating clearly and concisely the role of this contribution to the scientific community; and 3) Writing clearly and technically the objectives, background, and results of their research in the dissertation.

M 5: Research Prospectus
Students will present their prospectus of research in written form and defend it publicly to the entire department, to the satisfaction of their advisory committee.

**Target:**
80% of students will be able to defend their Prospectus to the department and their committee members regarding their research on their first attempt. Successful defense incorporates 1) a document that clearly and concisely describes the proposed research and its relevance; 2) an oral presentation that clearly demonstrates knowledge of the field of research and has clear goals and objectives for the proposed research; and 3) the ability to answer questions posed by faculty and students in a professional manner.

**Findings (2013-2014) - Target: Met**
Fall 2013--100% (4 of 4) of student presenting a prospectus of research successfully defended their prospectus. Spring 2014--100% (3 of 3) of student presenting a prospectus of research successfully defended their prospectus of research. Successful is judged by the PhD committee and based on a clearly written document, an oral presentation to the faculty, students, and staff of the University of Southern Mississippi, and the ability to answer questions and lead a discussion of the topic among those attending the oral presentation.

**M 6:Research proposal**
Students will complete an original research proposal and publicly defend the proposal to the entire department and to the satisfaction of their entire committee.

**Target:**
80% of students will successfully defend their proposal to their committee on the first attempt. The success of the proposal depends on 1) the originality of the idea 2) The scientific merit and rationale of the idea 3) a document that clearly and concisely demonstrates an understanding of the field of the proposal 4) an oral presentation that clearly defines the goals, objectives, and rationale for the proposed research, and 5) the ability of the student to answer questions by the faculty and students related to their proposal.

**Findings (2013-2014) - Target: Met**
Fall 2013--100% (3 of 3) of students presenting a proposal of research successfully defended their proposal to the satisfaction of their committee. Spring 2014--100% of students (4 of 4) presenting a proposal of research successfully defended their proposal to the satisfaction of their committee. Successfully defending is based on the committee's overall agreement on the originality and scientific merit of the topic, a clearly written document in the format of an NSF style proposal, and the ability to present and discuss the idea to the committee and other faculty members as well as the student body.

**M 8:Conference Presentation**
Doctoral students are encouraged to communicate their research by having their work accepted for public presentation at a regional, national, or international scientific conference.

**Target:**
75% of the doctoral students will demonstrate the ability to communicate this research by having their work accepted for public presentation at a regional, national, or international scientific conference.

**Findings (2013-2014) - Target: Met**
Summer and Fall 2013-- 100% (4 of 4) of graduating doctoral students had work accepted for presentation at regional, national, or international scientific conferences. Spring 2014-- no graduating PhD candidates.

**SLO 4:Knowledge of theory and develop new knowledge**
Students will be required to demonstrate their mastery of the field of polymer science to include knowledge of theory, ability to conceptualize, ability to analyze, compare and contrast their ideas and concepts with current scientists in the discipline, and to independently develop plans to generate new knowledge in the field of polymer science.

**Related Measures:**

**M 1: Dissertation**

Students will produce a dissertation that is rated satisfactory by their advisory committee and they will successfully defend this dissertation by public oral presentation to the satisfaction of their committee.

**Target:**

100% of students will pass the dissertation on their first attempt. Passing is defined by the committee and judged on 1) Unique contributions to the field of study; 2) Communicating clearly and concisely the role of this contribution to the scientific community; and 3) Writing clearly and technically the objectives, background, and results of their research in the dissertation.

**Findings (2013-2014) - Target: Met**

Summer 2013 - 100% (3 of 3) of students defending their dissertation in the summer passed on their first attempt. Fall 2013--100% (1 of 1) of students defending their dissertation in the Fall passed on their first attempt. Spring 2013--No PhD dissertation defenses. Passing a dissertation defense is defined by the dissertation committee and based on 1) Unique contributions to the field of study; 2) Communicating clearly and concisely the role of this contribution to the scientific community; and 3) Writing clearly and technically the objectives, background, and results of their research in the dissertation.

**M 2: Publication**

Doctoral students will demonstrate their ability to communicate their investigative findings by having their work accepted for publication in a peer-reviewed scientific journal.

**Target:**

75% of the doctoral students will have parts of their work accepted for publication in a peer-reviewed scientific journal within one year of graduation.

**Findings (2013-2014) - Target: Partially Met**

Summer 2013 - 66% (2 of 3) of doctoral students graduating were credited with at least one co-authorship of a peer-reviewed scientific journal; Fall 2013--100% (1 of 1) of doctoral students graduating were credited with at least one co-authorship of a peer-reviewed scientific journal; Spring 2014--No doctoral students graduated.

Overall, 75% (3 of 4) of doctoral students graduating were credited with at least one co-authorship of a peer-reviewed scientific journal during this cycle.

**M 4: Alumni Survey**

An alumni survey will be given to determine how well the student seminars prepared the students to formulate and ask questions of a technical nature as practicing polymer scientists and engineers. The survey will be a series of questions regarding questions at student seminars with a scaling of 1-5, 1 being no benefit and 5 being very beneficial.

**Target:**

80% of respondents agree that the encouragement to formulate and ask questions has enhanced their ability for scientific enquiry as practicing polymer scientists and engineers.

**Findings (2013-2014) - Target: Met**

Fall 2013--Survey given in Spring
Spring 2014--100% of respondents (4 of 4) agreed that asking questions in seminars has enhanced
their ability as scientists and engineers by indicating 4 (beneficial) or 5 (very beneficial). A Likert scale of 1 (detrimental) to 5 (very beneficial) was utilized for the survey question.

**M 6: Research proposal**
Students will complete an original research proposal and publicly defend the proposal to the entire department and to the satisfaction of their entire committee.

**Target:**
80% of students will successfully defend their proposal to their committee on the first attempt. The success of the proposal depends on 1) the originality of the idea 2) The scientific merit and rationale of the idea 3) a document that clearly and concisely demonstrates an understanding of the field of the proposal 4) an oral presentation that clearly defines the goals, objectives, and rationale for the proposed research, and 5) the ability of the student to answer questions by the faculty and students related to their proposal.

**Findings (2013-2014) - Target: Met**
Fall 2013--100% (3 of 3) of students presenting a proposal of research successfully defended their proposal to the satisfaction of their committee. Spring 2014--100% of students (4 of 4) presenting a proposal of research successfully defended their proposal to the satisfaction of their committee. Successfully defending is based on the committee's overall agreement on the originality and scientific merit of the topic, a clearly written document in the format of an NSF style proposal, and the ability to present and discuss the idea to the committee and other faculty members as well as the student body.

**M 7: Alumni Survey - II**
Alumni will be surveyed to determine if the independent proposal provided them with an advantage in understanding and preparing research proposals and projects. The survey will be scored on a scale of 1 (not helpful) to 5 (very helpful).

**Target:**
80% of respondents will average a score between 4 and 5, indicating that that independent proposal provided them with and advantage in preparing research proposals and projects.

**Findings (2013-2014) - Target: Met**
Fall 2013--Survey given in Spring Spring 2014--100% of respondents (4 of 4) agreed that the independent research proposal provided and advantage in preparing research proposals and projects. The answers are provided on a Likert scale from 1 (strongly disagree) to 5 (strongly agree).

**SLO 5: Communicate research in written and oral formats**
Students will demonstrate the ability to communicate the results of their research in written and oral format.

**Related Measures:**

**M 1: Dissertation**
Students will produce a dissertation that is rated satisfactory by their advisory committee and they will successfully defend this dissertation by public oral presentation to the satisfaction of their committee.

**Target:**
100% of students will pass the dissertation on their first attempt. Passing is defined by the committee and judged on 1) Unique contributions to the field of study; 2) Communicating clearly and concisely the role of this contribution to the scientific community; and 3) Writing clearly and technically the objectives, background, and results of their research in the dissertation.

**Findings (2013-2014) - Target: Met**
Summer 2013 - 100% (3 of 3) of students defending their dissertation in the summer passed on
their first attempt. Fall 2013--100% (1 of 1) of students defending their dissertation in the Fall passed on their first attempt. Spring 2013--No PhD dissertation defenses. Passing a dissertation defense is defined by the dissertation committee and based on 1) Unique contributions to the field of study; 2) Communicating clearly and concisely the role of this contribution to the scientific community; and 3) Writing clearly and technically the objectives, background, and results of their research in the dissertation.

**M 2:Publication**

Doctoral students will demonstrate their ability to communicate their investigative findings by having their work accepted for publication in a peer-reviewed scientific journal.

**Target:**
75% of the doctoral students will have parts of their work accepted for publication in a peer-reviewed scientific journal within one year of graduation.

**Findings (2013-2014) - Target: Partially Met**
Summer 2013 - 66% (2 of 3) of doctoral students graduating were credited with at least one co-authorship of a peer-reviewed scientific journal; Fall 2013-- 100% (1 of 1) of doctoral students graduating were credited with at least one co-authorship of a peer-reviewed scientific journal

Spring 2014-- No doctoral students graduated

Overall, 75% (3 of 4) of doctoral students graduating were credited with at least one co-authorship of a peer-reviewed scientific journal during this cycle.

**M 5:Research Prospectus**

Students will present their prospectus of research in written form and defend it publicly to the entire department, to the satisfaction of their advisory committee.

**Target:**
80% of students will be able to defend their Prospectus to the department and their committee members regarding their research on their first attempt. Successful defense incorporates 1) a document that clearly and concisely describes the proposed research and its relevance; 2) an oral presentation that clearly demonstrates knowledge of the field of research and has clear goals and objectives for the proposed research; and 3) the ability to answer questions posed by faculty and students in a professional manner.

**Findings (2013-2014) - Target: Met**
Fall 2013--100% (4 of 4) of student presenting a prospectus of research successfully defended their prospectus. Spring 2014--100% (3 of 3) of student presenting a prospectus of research successfully defended their prospectus of research. Successful is judged by the PhD committee and based on a clearly written document, an oral presentation to the faculty, students, and staff of the University of Southern Mississippi, and the ability to answer questions and lead a discussion of the topic among those attending the oral presentation.

**M 8:Conference Presentation**

Doctoral students are encouraged to communicate their research by having their work accepted for public presentation at a regional, national, or international scientific conference.

**Target:**
75% of the doctoral students will demonstrate the ability to communicate this research by having their work accepted for public presentation at a regional, national, or international scientific conference.

**Findings (2013-2014) - Target: Met**
Summer and Fall 2013-- 100% (4 of 4) of graduating doctoral students had work accepted for presentation at regional, national, or international scientific conferences. Spring 2014-- no graduating PhD candidates.
Other Outcomes/Objectives, with Any Associations and Related Measures, Targets, Findings, and Action Plans

O/O 6: Obtain employment in the field
Graduates of the program will obtain employment in a polymer or closely related field or continue their education in professional schools.

**Related Measures:**

**M 11: Graduate exit interview**
Program graduates will complete an exit interview that indicates their future plans within 3 months of graduation.

Source of Evidence: Exit interviews with grads/program completers

**Target:**
80% of program graduates will have obtained employment in a related field or will be continuing their education in professional schools.

**Findings (2013-2014) - Target: Met**
Summer 2013 - 100% (3 of 3) of students graduating in the summer term were employed in the field prior to graduation. Fall 2013--100% (1 of 1) of students graduating in the summer term were employed in the field prior to graduation. Spring 2014--No PhD graduates

Details of Action Plans for This Cycle (by Established cycle, then alpha)

**Grasp fundamentals of polymer science**
90% of students will grasp the fundamentals of polymer science and pass their comprehensive exam on the first attempt.

Established in Cycle: 2005-2006
Implementation Status: Finished
Priority: High

Relationships (Measure | Outcome/Objective):  
Measure: Comprehensive Exam | Outcome/Objective: Grasp fundamentals of polymer science

Implementation Description: immediate
Responsible Person/Group: PSRC Graduate Committeefaculty
Additional Resources Requested: All resources are in place.

**Improve new students backgrounds for PhD study.**
The first year graduate adviser will carefully examine the background of new program students, and assign courses to improve upon the students background when that background is deemed insufficient for study at the highest level.

Established in Cycle: 2006-2007
Implementation Status: Finished
Priority: Low
Implementation Description: August 2007
Responsible Person/Group: First year adviser/student services coordinator

**Clearly provide "best practices" to students**
Students will be presented with clear expectations and "best practices" for approaching graduate coursework and the comprehensive exams during a program orientation at the beginning of the Fall semester.
Established in Cycle: 2007-2008  
Implementation Status: In-Progress  
Priority: High  
Implementation Description: Fall semester 2008  
Responsible Person/Group: Student Services Coordinator/Director/Assistant Director

**Develop new special topics courses**

New courses will be developed and offered to students covering recent advances in polymer science and engineering, providing an updated and advanced base of elective courses for students. These courses will cover the topics of composites, Advanced NMR techniques, and synthetic methods and strategies.

Established in Cycle: 2009-2010  
Implementation Status: Finished  
Priority: Medium  
Implementation Description: Spring 2009  
Responsible Person/Group: PSC Faculty

**Target specific cohorts and modify the timing of the alumni survey**

The survey will be provided to targeted graduating cohorts (such as 2 and 5 years prior to the assessment cycle) and made available online (via a web based survey tool) earlier in the assessment period.

Established in Cycle: 2009-2010  
Implementation Status: In-Progress  
Priority: High  
Projected Completion Date: 01/30/2011

**Creation of Tutorial Center GA positions**

The SPHPM will create a tutorial center for undergraduate students to be manned partly by incoming graduate students seeking a PhD. It is believed that having graduate students assisting undergraduates will strengthen the foundation of the graduate students because they will need to teach the material in addition to learning it for a course.

Established in Cycle: 2013-2014  
Implementation Status: Planned  
Priority: High  
Implementation Description: GA's will be assigned to take part in the undergraduate tutorial center during the Fall and Spring semesters  
Responsible Person/Group: Associate Director for Undergraduate Success  
Additional Resources Requested: none at the current time

**Move Polymer Kinetics to coincide with PSC 701 and 702**

The class PSC 740, Polymer Kinetics, will be taught in the Fall semester to reinforce material that is taught in PSC 701 and 702.

Established in Cycle: 2013-2014  
Implementation Status: In-Progress  
Priority: Medium

Relationships (Measure | Outcome/Objective):

Measure: Comprehensive Exam  |  Outcome/Objective: Grasp fundamentals of polymer science

Implementation Description: activate PSC 740 for Fall enrollment; move PSC 730 to spring semester.  
Responsible Person/Group: Assistant Director/ Curriculum committee  
Additional Resources Requested: none
Analysis Questions and Analysis Answers

What specifically did your assessments show regarding proven strengths or progress you made on outcomes/objectives?
The PhD in Polymer Science and Engineering continues to be a research intensive program that provides close mentoring relationships between students and faculty. This generates cohorts of students that are able to learn not only through traditional classroom experiences, but are taught and trained through the highest level of relevant research activity. Students excel not only in scientific knowledge but also in soft skills such as writing for publication and presentation skills.

What specifically did your assessments show regarding any outcomes/objectives that will require continued attention?
The peer reviewed scientific journal publication targets were not met during one semester's data, but met overall for the year. The impacted student published work in trade journals and has submitted papers for review by his research advisor but had not had a publication prior to graduation. The bulk of the student's research was funded by industrial contracts and was not appropriate to disclose through scientific journals. Close attention will be given to the ability of students to have peer reviewed publications moving forward.

Annual Report Section Responses

Program Summary
The PhD program in the School of Polymers and High Performance Materials at the University of Southern Mississippi continues to be a high level research program that supports the education of our students through personal interactions with faculty members and staff. Students graduating with a PhD are in demand from international companies as skilled researchers and as post doctoral associates by the world's leading academic scientists. The faculty and staff strive to meet the expectations of the university by developing students to the highest level and seeing students through to graduation. New leadership in the SPHPM promises to continue the tradition of attracting external research funding, world class fundamental research, and an increased emphasis on applied, industrial sponsored research and economic development. Additionally, new avenues and a renewed emphasis on student success promise to enhance the existing reputation of the School of Polymers and High Performance Materials over the coming years.

This year, the School has made three new hires who will join the School of Polymers and High Performance Materials in August of 2014. The youth and excitement of these new polymer scientists and engineers signal the beginning of new program growth and an expansion of the existing expertise found in the School.

Continuous Improvement Initiatives
The School of Polymers and High Performance Materials continues to closely monitor the field of polymer science and engineering in order to maintain a cutting edge curriculum and research program. Recently, a few peer programs have begun to make changes to their curricular structure based on current trends in the field(s) covered by polymer science & engineering. At the current time, programmatic changes are being examined and discussed among faculty members. As the school expands the faculty, new expertise and new viewpoints and ideas are also brought into the faculty ranks. The School will continue its excellence by noting what is and has traditionally worked well in the program, but will listen and examine the movement of the field of polymers as more areas of research emerge and become important, such as computational applications in polymer science and engineering.

Closing the Loop
New special topics have been created and are planned for students in order to enhance the amount of research tool offerings, including a special topics course on light scattering and a course on transmission electron microscopy. The initial offering of the scattering course was met with an enthusiastic student reaction and a full class. The TEM course will be offered in the fall of 2014 with limited enrollment. A "best practices" handout has been added to first year student materials to encourage good habits in studying, choosing a research project, and the "graduate school life." Initial feedback on the handout has been positive, and it is anticipated the handout will be continuously updated through student feedback as needed.