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Academic Program Review Committee
2002-2003

*Members of the 2002-2003 Academic Program Review Committee will be available at a later date.*
Eastern Kentucky University

ACADEMIC PROGRAM REVIEW

Policy
Approved by
Council on Academic Affairs
September 21, 2000

Approved by
Faculty Senate
November 6, 2000
Eastern Kentucky University

ACADEMIC PROGRAM REVIEW

Principles of Academic Program Review

1. The primary purpose of academic program review is to ensure that quality and continuous improvement is an integral component of all EKU programs.

2. Academic program review is an ongoing process that contributes to refining Eastern’s programmatic directions and priorities, which then shape resource allocations and other academic and administrative decisions.

3. The review process involves the faculty and administrators of the program being reviewed as well as the Academic Program Review Committee.

4. Every effort has been made to ensure that the institutional criteria used in program review are clearly stated, are uniform, and disseminated with sufficient lead-time so that program faculty and administrators are aware of them before the review process starts. Program faculty may develop additional criteria that are unique to an individual program.

5. Program review is intended to provide helpful information through a process that is designed to be thorough yet not excessively burdensome to faculty and administrators.

6. A university-wide organizational framework for program review has been developed and will be consistently implemented. Program review is an integral part of each program and the University’s ongoing assessment and strategic planning processes.
Eastern Kentucky University

ACADEMIC PROGRAM REVIEW

Process and Structure

1. The normal review cycle is five years. With approximately 150 degree programs we will review approximately 30 degree programs per year. The Office of Planning and Assessment will distribute a five year schedule listing programs to be reviewed.

2. The definition of an academic program is any degree program.

3. Academic program review is normally scheduled for all degree programs within a department during a given academic year.

4. To the extent possible, for programs which have specialized accreditation, the academic program review is scheduled to occur in relationship to the specialized accreditation process as determined by the department.

5. Indicators which will trigger early program review include but are not limited to:
   a) decreases in enrollment
   b) lack of a critical mass of faculty required for a quality program
   c) loss of program accreditation
   d) lack of evidence that the program is achieving its stated goal(s) and objective(s)

   The Provost Council initiates any early program review. The same guiding principles, criteria and data used for a regular program review govern any early program review. As resources permit, external review may also be utilized as deemed appropriate by the Provost Council and/or the relevant program.

6. An Academic Program Review Committee is established to coordinate academic program review. The Academic Program Review Committee is a standing university committee. Membership of the committee consists of three faculty from the College of Arts and Sciences, two faculty each from the Colleges of Business and Technology, Education, Health Sciences, and Justice and Safety. Committee members are to be appointed by the President from nominations from the deans. (Initial appointments are for a one, two and three year period.) Two students are members. The Director of Institutional Research is a permanent non-voting member. The Associate Vice President for Planning and Assessment, a voting member, chairs the committee.

7. The Academic Program Review Committee makes recommendations concerning academic degree programs to the Provost Council. Any formal actions based upon these recommendations go through normal university approval processes as appropriate.
Eastern Kentucky University

ACADEMIC PROGRAM REVIEW CRITERIA

1. With respect particularly to numerical data, no single piece of data or narrow data set is used as the sole assessment criterion for any program.

2. The Office of Institutional Research provides the same data set about each program for a five year period of time. These data are identified and consistently defined across programs. Programs may provide additional data in order to clarify some aspect of the program.

3. Some data at the university are collected and reported by department and not by program. The program review process uses available data. The Associate Vice President for Planning and Assessment approves requests for extraordinary data.

4. Information provided by the program should be presented in a clear and concise manner. The review must provide specific indicators or evidence of program accomplishments and quality and must clearly demonstrate the use of assessment of student learning in the program review process.

5. Every effort is made to minimize redundant, and repetitive information.
Overview Of The Program Review Report

The Academic Program Review Committee has prepared this resource manual in an effort to assist departments as they prepare review reports for the Committee’s consideration. The suggestions and comments are derived from our experience during the previous reviews. The program review report should consist of the following:

1. Executive Summary (1–2 numbered pages) – The executive summary should be no more than two pages and should highlight the major aspects of the program review report.

2. Program Review Report (15-20 numbered pages) – The body of the program review report will consist of two parts.
   Part I is Information and Data Provided by Institutional Research and includes the following:
   - Enrollment and faculty data
   - Number of majors
   - Number of graduates
   - Ratio of graduates to majors
   - Student credit hours
   - Average class size
   - Number of full-time faculty
   - FTE part-time faculty
   - SCH generated by part-time faculty and the student faculty ratio.
   - This section also includes student profile data and budget and expenditure information.

   Part II is Information Provided by the Program and includes the following:
   - Mission Statement/Relation to University Mission
   - Indicators of Teaching and Advising Quality
   - Scholarly/Creative Efforts
   - Service
   - Assessment of Student Learning
   - Currently Enrolled Students
   - Program Graduates
   - Program Viability
   - Contributions to University Programs
   - Use of Technology
   - Uniqueness/Distinctiveness of Program
   - Contributions to Diversity Goals
   - Accreditation Status
   - Planning
   - Development
   - Additional Indicators for Career Preparation Programs
   - Other Indicators of Program Quality
   - Response to Previous Program Reviews or Other Assessments
3. Appendices may be attached to provide additional information or supporting documentation as deemed necessary by the program. Appendices are OPTIONAL.

With regard to the data provided through the Office of Institutional Research, the Committee is aware of the limitations of some of these data particularly for departments where multiple programs exist and institutional data is maintained only at the departmental level. Every effort is made by the Office of Institutional Research to provide data at the program level but this is not always possible. As an example, budgets are assigned at the department level and these budgets may serve several programs within one department. Only the department is knowledgeable as to how the various resources are allocated among programs within the department. A department may wish to provide the Committee with a more refined analysis of the department program review data than is available from the Office of Institutional Research. As the University moves toward the implementation of the Human Resources and Financial modules of Banner, we will work toward the goal of providing data to departments at the program level to the extent possible.

In regard to the information and data in Part I of the review report noted above, the program should provide tables for each indicator showing data for the last five years where available. Summary statements and interpretations regarding the stability, growth or decline apparent in the data over the five-year period should be included. In addition, comparisons of the program to College and University figures should be included and interpreted. If external data are available for comparisons they should be included. Examples of tables are included in this resource manual.

In regard to the data in Part II of the program review report, i.e., Information and Data provided by the Program, the presentation guide illustrates the desired information and also provides quantitative and qualitative examples. In regard to student opinion of instruction, relevant data from the administration of the IDEA or the alternative systematic student opinion questionnaire used by the department should be provided.

In preparing Part II of the program review report, there are several criteria that may need elaboration. To assist the committee in its review, it would be helpful if the report contained a brief definition of scholarly/creative activity and service and how each is evaluated for the particular program. In some disciplines, there seems to be a clear-cut distinction between scholarly and service activities, but in others the distinctions seem less clear-cut. For example, a faculty exhibit in the Giles Gallery seems to be evidence of creative activity but also provides enrichment and service to the University and Richmond community.

The Committee believes most aspects of the required criteria in Part II are best captured with both quantitative and qualitative evidence. To facilitate our accurate understanding of quantitative data that is presented we request that you consider the following in presenting the data.

When presenting percentages, include the total number from which the percentages were derived. For example, reporting that 50% of graduates rated the quality of instruction as “excellent” is less compelling when the data involve 1 of 2 students compared to 50 of 100 students.
When presenting averages, include standard deviations, numbers of students, or at least comparison averages. For example, reporting that graduates rated the quality of advising as 3.5 on a 6 point scale sounds fairly impressive until you learn that there were two students, one of whom gave a rating of “1” and the other a rating of “6” and that the college average on that item is 4.5 and that the University average on that item is 5.0.

In regard to qualitative data, the data provided will be as varied as the programs under review and that is to be expected. It may be that some aspects of program effectiveness can only be captured by qualitative data. Qualitative information should also be systematically collected and objectively reported.

In summary, in submitting your program review report we ask that you submit a one to two page executive summary in which you highlight the major aspects of the program’s review. We also ask that you limit the body of the report to no more than 15-20 numbered pages. You are welcome to submit appendices and supporting documentation as you deem necessary. We are trying to balance the need for a report that is sufficient in scope so that the Committee may get an accurate picture of the program with the desire not to have volumes of paper.

We hope that as we continue with program review that you will find this guide useful. We welcome your comments and hope to improve on the guide as a result of our experience in the 2002-2003 academic year.
Report Outline

Part I

I. INFORMATION AND DATA PROVIDED BY INSTITUTIONAL RESEARCH

(These data are typically examined when considering the viability and distinguishing profile of a program. Data is available at http://www.ir.eku.edu/ProgramData/ProgData.shtml or go to Institutional Research web site and click Academic Program Data.)

A. Program Enrollment and Faculty Data (most recent five-year period)
   1. Number of Majors
   2. Number of Graduates
   3. Ratio of Graduates to Majors
      (This ratio provides a rough gauge of the rate of the persistence of majors through a program to graduation.)
   4. Student Credit Hours
      Lower
      Upper
      Graduate
   5. Average Class Size
      Lower
      Upper
      Graduate
   6. Number of Full-time Faculty (budgeted lines)
   7. FTE Part-time Faculty and SCH Generated by PT
      On-campus
      Off-campus
   8. Student/Faculty Ratio
   9. Comparisons with External Data
      (Where available and appropriate, data about the program will be compared with data about similar programs elsewhere, especially in Kentucky through CPE-supplied data, or from benchmark institutions.)

Please explain any special circumstances affecting Program Enrollment and Faculty Data.
B. Student Profile Data

(These data, supplied by Institutional Research, provide indicators of the program’s student quality, as reflected in standardized input measures.)

1. Higher Education GPA of Program Graduates
2. ACT scores and high school GPA
3. Graduate Program Data
   (GPA, GRE, GAP)

Please explain any special circumstances affecting student profile data.

C. Resources

(Supplied by Budget Office and/or Institutional Research)

1. Total Institutional Budget and Expenditures, including research & support materials
2. Ratio of total expenditures/Student Credit Hour
   (This ratio reflects a rough cost per credit hour measure.)

Please explain any special circumstances affecting resources.
Part II

II. INFORMATION AND DATA PROVIDED BY THE PROGRAM

(The program will provide specific indicators of its quality and viability as reflected in the following categories. Note that many of these indicators are based on outcomes, not inputs, of the program.)

1. Mission Statement/Relation to University Mission
   (Provide a copy of the program’s mission statement, and explain how it is congruent with and supportive of the university’s mission.)

2. Teaching and Learning, Scholarly/Creative Efforts and Service
   A. Indicators of Teaching and Advising Quality
      (Provide evidence of the program’s quality of teaching and advising.)
   
   B. Scholarly/Creative Efforts
      (Provide evidence that the program is productive in scholarly/research/creative activity and that the quality of the activity is high. Provide evidence that the program is active and successful in attracting funds from extramural sources.)
   
   C. Service
      (Provide evidence of the quantity and quality of the program’s university service and public service.)

3. Indicators of Student Learning Outcomes
   A. Currently Enrolled Students
      (Describe the program’s methods of assessing the learning outcomes of its students. These methods should be delineated in the department’s assessment plan. Provide evidence of student achievement and success.)
   
   B. Program Graduates
      (Provide evidence that graduates of the program achieve professional success.)

   The indicators used in this section should reflect as much as possible outcomes not inputs and should be clearly delineated in each program’s assessment plan.

   Provide evidence of program improvement based upon assessment.

4. Other Indicators of Program Achievement and Contribution
   (Supply information reflecting specific ways in which the program contributes significantly to the mission and success of the university in any of the following categories, as appropriate.)
   
   A. Program Viability
(Provide evidence that the program attracts, recruits, and retains quality students. Explain any anomalies that are reflected in Institutional Research or program-supplied data. Provide any relevant data, citing recognized sources, about enrollment trends, cycles, etc., in the specific field.)

B. Contributions to University Programs
(Describe the program’s contribution to other university programs through its significant involvement in the general education program, its support to other university programs through service course offerings, or in other ways.)

C. Use of Technology
(Describe the program’s significant use of technology to enhance learning. Describe the program’s use of technology to provide alternative delivery to time/place-bound learners.)

D. Uniqueness/Distinctiveness of Program
(Describe the program’s uniqueness to the state or region of the country and indicate specific advantages the uniqueness affords the university.)

E. Contributions to Diversity Goals
(Describe the program’s efforts and progress toward promoting diversity of students, faculty and curriculum. Explain how issues of diversity, including contributions of women and minorities, are integrated into the curriculum.)

F. Accreditation Status (if applicable):
(What is the program’s accreditation status? Is accreditation available for the program? If the program is not accredited, explain why. Does the most recent accreditation report identify program strengths and/or areas needing improvement?)

G. Planning
(Address the achievement of any strategic planning goals or action plans not covered elsewhere in this document.)

H. Development:
(Indicate the success of the program in attracting development funds and other forms of private support.)

I. Additional Indicators for Career Preparation Programs
(Programs that have preparing students for specific careers as an identified and central part of their missions should supply any additional, relevant information not already covered concerning the following topics: current and future demand, or job outlook, for graduates in this specific
career area; the need [social, economic, technological, etc.] for program graduates in the region, state, and nation; job placement data for graduates; achievement and success of graduates in the specific career area.)

J. Other Indicators of Program Quality
   (For example, awards and recognitions; successful transfer of majors to professional programs.)

K. Response to Previous Program Reviews or Other Assessments
   (Address any perceived problems in the program as identified in previous program reviews or other relevant assessments, internal or external.)
Sample Report

Part I

I. INFORMATION AND DATA PROVIDED BY INSTITUTIONAL RESEARCH

A. Program Enrollment and Faculty Data (most recent five-year period)
   1. Number of Majors – see example below and Appendix A

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Major A</td>
<td>52</td>
<td>41</td>
<td>37</td>
<td>29</td>
<td>25</td>
<td>36.8</td>
</tr>
<tr>
<td>Major B</td>
<td>24</td>
<td>26</td>
<td>30</td>
<td>39</td>
<td>50</td>
<td>33.8</td>
</tr>
<tr>
<td>Major C</td>
<td>67</td>
<td>58</td>
<td>61</td>
<td>68</td>
<td>88</td>
<td>68.4</td>
</tr>
<tr>
<td>Totals</td>
<td>143</td>
<td>125</td>
<td>128</td>
<td>136</td>
<td>163</td>
<td>138.6</td>
</tr>
<tr>
<td>College</td>
<td>1,496</td>
<td>1,647</td>
<td>1,724</td>
<td>1,775</td>
<td>2,657*</td>
<td>1859.8</td>
</tr>
<tr>
<td>University</td>
<td>12,100</td>
<td>12,278</td>
<td>12,301</td>
<td>12,218</td>
<td>13,311</td>
<td>12,441.6</td>
</tr>
</tbody>
</table>

* Represents total undergraduates with the new College organization. Earlier years represent old College total undergraduates.

See narrative below for how one might summarize/interpret the stability, decline, or growth shown by the data in Table 1 above.

Number of department X’s majors: Although the total number of students decreased for the second year of this five-year study, enrollments have increased steadily since the second year. The biggest increase of 19.9 percent occurred from 1998-99 to 1999-00 when enrollments increased from 136 to 163, as shown in Table 1. Student enrollments by major options show a steady decline for Major A, a steady increase for Major B, and an increase for Major C since the 1996-97 academic year (see Table 1). Both Major B and C have shown the biggest increase between the last two academic years, 28.2 percent and 29.4 percent respectfully. The report should outline the steps the department has taken or plans to take to address any enrollment issues.

2. - 8. (Number of Graduates, Ratio of Graduates to Majors, Student Credit Hours, Average Class Size, Number of Full-time Faculty, FTE Part-time Faculty and SCH Generated by PT, Student/Faculty Ratio, Ratio of Graduates to Majors, Student Credit Hours) use the same format shown above in item I.A.1. For items I.A.2.-8. present tables for a five-year period and provide a narrative summarizing/interpreting patterns of stability, decline or growth exhibited by these data. Explain any special circumstances affecting program enrollment and faculty data.

9. Comparisons with External Data. These data should be presented in a similar fashion if possible.
B. Student Profile Data

(These data, provided by Institutional Research, represent indicators of the program’s student quality as recognized in standardized input measures.)

Please explain any special circumstances affecting student profile data.

1. Higher Education GPA of Program Graduates
2. ACT and high school GPA
3. Graduate Program data (GPA, GRE, GAP). Other indicators might include number of students recognized by National (Golden Key) and disciplinary (Psi Chi) Honor Societies or the University (President’s, Dean’s) Award/List.

C. Resources

(Supplied by Budget Office and/or Institutional Research)

Please explain any special circumstances affecting resources.

1. Total Institutional Budget and Expenditures, including research and support materials.
2. Ratio of total expenditures/Student Credit Hour
Part II

II. INFORMATION AND DATA PROVIDED BY THE PROGRAM

1. Mission Statement/Relation to University Mission

Quantitative Data: N/A

Qualitative Data: Narrative – Discuss the program’s mission statement and how it is congruent with and supportive of the university’s mission.

2. Teaching and Learning, Scholarly/Creative Efforts and Service

   A. Indicators of Teaching and Advising Quality – Provide evidence of the program’s quality of teaching and advising. Quantitative data from IDEA evaluations or other student opinion questionnaire used by the program should be included. Provide a narrative summary interpreting the data.

   Teaching Quality

   Quantitative Data: IDEA for following items: 1) progress on relevant objectives 2) improved student attitude 3) overall teacher excellence 4) overall course excellence.

   Qualitative Data: Excellence in teaching awards, efforts to improve teaching, student letters/comments, peer comments, teaching portfolio.

   See example below

   Table 2

   Progress on Relevant Objectives (Cumulated over Fall 98 – Fall 2000)

   Total Number of Classes in Adjusted T-Score Categories and Adjusted Averages for Program, College, and University

<table>
<thead>
<tr>
<th>Adjusted T-Score Category</th>
<th>Department</th>
<th>College</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Total</td>
<td>% of Total</td>
<td>% of Total</td>
</tr>
<tr>
<td>Low (37-)</td>
<td>2.8</td>
<td>5</td>
<td>3.5</td>
</tr>
<tr>
<td>Low Average (38-44)</td>
<td>11.1</td>
<td>20</td>
<td>11.3</td>
</tr>
<tr>
<td>Average (45-55)</td>
<td>58.3</td>
<td>105</td>
<td>45.6</td>
</tr>
<tr>
<td>High Average (56-62)</td>
<td>25</td>
<td>45</td>
<td>33.2</td>
</tr>
<tr>
<td>High (63+)</td>
<td>2.8</td>
<td>5</td>
<td>6.5</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>180</td>
<td>100</td>
</tr>
</tbody>
</table>

   Adjusted Average (1-5 scale) NA NA NA
Table 3

<table>
<thead>
<tr>
<th>Adjusted T-Score Category</th>
<th>Department</th>
<th>College</th>
<th>University</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>% of Total</td>
<td>Number</td>
<td>% of Total</td>
</tr>
<tr>
<td>Low (37-)</td>
<td>5.6</td>
<td>10</td>
<td>10.6</td>
</tr>
<tr>
<td>Low Average (38-44)</td>
<td>33.3</td>
<td>60</td>
<td>15.4</td>
</tr>
<tr>
<td>Average (45-55)</td>
<td>36.1</td>
<td>65</td>
<td>38.6</td>
</tr>
<tr>
<td>High Average (56-62)</td>
<td>19.4</td>
<td>35</td>
<td>25.2</td>
</tr>
<tr>
<td>High (63+)</td>
<td>5.6</td>
<td>10</td>
<td>10.2</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>180</td>
<td>100</td>
</tr>
<tr>
<td>Adjusted Average (1-5 scale)</td>
<td>3.8</td>
<td>3.9</td>
<td>4.0</td>
</tr>
<tr>
<td>National Adjusted Average</td>
<td>3.9</td>
<td>3.9</td>
<td>3.9</td>
</tr>
</tbody>
</table>

See narrative below as an example of how one might interpret these Tables.

These data suggest that students are reasonably satisfied with the courses and how they are taught. However, the fact that the department scores trail the college, university and national figures is a matter of concern. The report should outline steps the program has taken or intends to take if the evidence presented indicates a problem in the quality of teaching or advising which need to be addressed.

Use the same reporting format as in Tables 2 and 3 to report data relevant to the overall evaluation of teacher excellence and the overall course evaluation.

Teaching Quality

Quantitative Data: Graduating Student Survey Data

Question 1a. How would you rate the quality of instruction in your major?
1 = excellent, 2 = good, 3 = fair, 4 = poor

Question 1b. How would you rate the quality of instruction at EKU?
1 = excellent, 2 = good, 3 = fair, 4 = poor

Other quantitative data might include peer ratings, hours attending teaching workshops/seminars.

Teaching and Learning - Advising Quality

Quantitative Data: Graduating Student Survey Data

Question 27. Included under ratings of University Services is Advising
1=unknown, 2=very satisfied, 3=satisfied, 4=unsatisfied, 5=veryunsatisfied

Qualitative Data: Efforts to improve advising, student letters/comments.

Provide a table similar to those above where data is presented for a five-year period and the program average ratings are compared to those of the college and university. Provide a narrative summarizing/interpreting the data.
B. Scholarly/Creative Efforts
Research should be construed to include activities related to the scholarship of Discovery, Integration, Application, and Teaching.

Quantitative Data: Number of books, chapters in books, referred publications, magazine, newspaper articles, software development, number of national, local, regional presentations, shows, recitals, juried art exhibits, artistic performances (see Appendix E), dollar value of external/internal grants.

Qualitative Data: Professional Awards

See Chemistry report narrative and accompanying documentation in Appendix D and E or example below.

Table 4

<table>
<thead>
<tr>
<th>Publications and Paper Presentations of Program X Faculty</th>
<th>1995 – 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty Member</td>
<td>Number of Publications</td>
</tr>
<tr>
<td>Faculty Member A</td>
<td>4</td>
</tr>
<tr>
<td>Faculty Member B</td>
<td>4</td>
</tr>
<tr>
<td>Faculty Member C</td>
<td>3</td>
</tr>
<tr>
<td>Faculty Member D</td>
<td>3</td>
</tr>
<tr>
<td>Faculty Member E</td>
<td>1</td>
</tr>
<tr>
<td>Faculty Member F</td>
<td>1</td>
</tr>
</tbody>
</table>

Include in an Appendix a complete list of references for publications and presentations of program faculty.

C. Service

Professional/University Service

Quantitative Data: Number of College/University Committees, Number of Seminars/Workshops. See Chemistry report in Appendix E or example below.

Qualitative Data: Leadership roles in Faculty Senate Journal Editor/Reviewer

Table 5

<table>
<thead>
<tr>
<th>Service Contributions of Program X Faculty</th>
<th>1995 – 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Paper Reviewer</td>
</tr>
<tr>
<td>Faculty Member A</td>
<td>Delta Pi Epsilon National Conference</td>
</tr>
<tr>
<td>Southwestern Assoc. for Bus.</td>
<td>Coordinator for state KY Business Educators Annual Conference</td>
</tr>
</tbody>
</table>
Community Service - Should be construed as ways in which you bring the perspective of your discipline to the community.

Quantitative Data:  See Chemistry Report in Appendix E

Qualitative Data:  Participation in Community Development Centers, FBLA event, Math/Science Day, Judging at Science Fairs, Band Camps.

3. Indicators of Student Learning Outcomes

Using the program’s assessment plan, describe the method of assessing student learning and provide evidence of student learning and use of assessment results to improve the program. Here it is important to demonstrate that the program has established criteria for quality of student learning outcomes, is systematically collecting data assessing outcomes, and is using those data for improving program quality. (See Appendix B, Department of Art example.)

A. Currently Enrolled Students

Quantitative Data:  From Department Outcomes Assessment Plan

Example

The Department Planning Report establishes a goal of having 90% of graduating BA/BS students rate the degree program as “above average, or excellent” in the exit questionnaire. Data from exit questionnaires are currently being compiled and will be reported in the final draft of this report. Since 1998, the Department has administered the Project for Area Concentration Achievement Test (PACAT). It is a nationally normed test, and the Department Planning Report establishes a goal of having all graduates exceed the 50th percentile. To date, 10 students have taken this test, and have averaged at the 45th percentile. Two of these students had not taken a course covering one of the areas in the exam, and thus scored poorly. That, plus the low number of participants provide a partial explanation for the current results. It will be a point of emphasis to raise these scores in future semesters.

Qualitative Data:  Performance of academic teams, student participation in organizations related to major, participation in recitals/shows.
B. Program Graduates (See Appendix C)

Quantitative Data: Pass rates/scores on standardized area exams (PRAXIS, Certification, etc.), acceptance rates into advanced training, job placement rates, employment in major field – see Graduating Student Survey question 13 data (compared to College/University).

Qualitative Data: Involvement in professional organizations, leadership roles in professional organizations.

4. Other Indicators of Program Achievement & Contribution

A. Program Viability

Quantitative Data: Provide/Interpret trends in enrollment/graduation rates. See example below.

The department is currently collecting data via an alumni survey that demonstrate that our BA/BS programs in Program X attract and retain students who become successful working in a wide variety of fields in Program X.

The American Program X Institute publishes data on enrollment and graduation trends for the past 20 years. During the past five years, nationwide enrollment in Program X undergraduate programs has declined from 20,682 in 1995-95 to 13,416 in 1999-2000, or a 35% decrease in enrollment. During the same period, EKU’s undergraduate Program X suffered a decline in majors from 34 to 28, an 18% decrease. A similar trend is seen for BA/BS degrees granted in this time period. During the 1995-96 academic year, 3,588 students graduated from this program across the United States, while in 1999-2000, only 2,493 students successfully completed BA/BS degrees. This is partially due to the decrease in enrollment and the loss of students to other majors due to economics and interest. While the country suffered a 30.5% decrease in student graduation rates, the BA/BS in Program X at EKU maintained relatively stable numbers, averaging 3.6 graduates per year. The peak in EKU graduates 1996-97 corresponds to a similar national peak of 4,686 graduates during that academic year. Therefore, the BA/BS degree in Program X is more successful at recruiting and retaining students and graduating students than the national norm, given the drastic decrease in student enrollment and graduation nationwide during that time.

B. Contributions to University Programs

Quantitative Data: Number of General Ed Student Credit Hours, Number of Student Credit Hours for Service Courses, Provide tables with 5 year SCH data.

Qualitative Data: Statistical consulting, Writing Center, Grading UWR, Involvement in Honors Program.

C. Use of Technology

Quantitative Data: Number of Online Courses
Qualitative Data: Narrative regarding use of technology. See example below.

General education courses also use technology, although the goals are changed to address the needs of this population of students. Since many of these students are involved in teacher education, the department has focused on building the capacity for these students to use technology similar to that in the P-12 classroom. Members of the faculty have participated, and are continuing to participate, in projects aimed at revising course content and delivery to model technology in the classroom and allow the students to practice with this technology as part of the course curriculum. Additionally, many of the students in these courses are nontraditional students, so the department uses Web-enhanced courses to maintain interaction with students outside the classroom. For example, students in XXX 380 can retrieve their homework questions from the Web and submit the homework in word processing format via e-mail. Some courses are enhanced using class management software such as Blackboard where students participate in discussion groups and chat rooms despite being time/place bound. The introductory physical geology course, which serves the program and general education, is currently being revised to include pre-tests on Blackboard so that students can maximize their learning during lab by mastering the introductory material independently.

D. Uniqueness/Distinctiveness of Program – If applicable, describe the program’s uniqueness to the state or region and indicate how this uniqueness is a strength.

E. Contributions to Diversity

Describe the program’s efforts and progress toward promoting diversity of students and faculty. Explain how issues of diversity, including contributions of women and minorities, are integrated into the curriculum.

Quantitative: Number of minority students/faculty. See example below.

Qualitative: How to integrate into curriculum, specialized courses (e.g. Psychology of Women; Biology of Gender Narrative. See example below.

F. Accreditation Status (if applicable)

Quantitative: N/A

Qualitative: Narrative

G. Planning

Strategic Planning - Show that the program has long range goals and a vision for the future.
Quantitative Data: N/A

Qualitative Data: Narrative

Development - Show that the program has outside support.

Quantitative Data: Dollar value of development funds or scholarships given to specific program.

Qualitative Data: N/A

H. Development: indicate the success of the program in attracting development funds and other forms of private support.

I. Additional Indicators for Career Preparation Programs

Quantitative Data: N/A

Qualitative Data: Narrative (see below)

According to the Occupational Outlook Handbook from the U.S. Department of Labor, Bureau of Labor Statistics, employment of Program X graduates is expected to increase by 10-20 percent through 2008. Additionally, “the need to replace those who retire will result many additional job openings over the next decade.” The growth in this area will be affected primarily by the need for organizations to comply with environmental regulations, so a strong environmental background is crucial to the employment capabilities of Program X graduates. Another significant area of need for graduates is in the field of hazards, since the population of the nation is increasing and people are residing in more environmentally, sensitive areas. These areas of employment are of particular concern to Kentucky, where the increasing exploration for oil and natural gas plus continued mining of coal resources will require a strong background in stratigraphy and sedimentology, and the removal of these resources will impact environmentally sensitive areas, particularly in eastern and western Kentucky.

J. Other Indicators of Program Quality

Quantitative Data: N/A

Qualitative Data: N/A

K. Response to Previous Program Reviews or Other Assessments

Quantitative Data: N/A

Qualitative Data: Narrative
Appendix A

Eastern Kentucky University

Example of Information and Data Provided By Institutional Research

Program Enrollment and Faculty Data - Number of Majors

Department of Math & Statistics and Department of Geology
DEPARTMENT OF MATH & STATISTICS

Placing the numbers for the department in a national context is quite illuminating. Very few schools that offer B.S. degrees in Statistics have large enrollments. According to Bryce et al in “Curriculum Guidelines for Bachelor of Science Degrees in Statistical Science,” a paper prepared for the Undergraduate Statistics Education Initiative (USEI) in 2000, “most undergraduate programs in statistics are small,” as seen in the table below. In fact, it should be noted that fewer than 19% of the institutions meet the criterion of having 12 or more degrees awarded.

<table>
<thead>
<tr>
<th>Bachelor’s Degrees in Statistics Awarded in 1996-1997</th>
<th>Number of Degrees Awarded</th>
<th>Number of Institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 5</td>
<td>37</td>
<td></td>
</tr>
<tr>
<td>5-9</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>10-14</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>15-19</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>20 or more</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

DEPARTMENT OF GEOLOGY

Students graduated: For the B.A./B.S. programs, the graduation rates range from a low of about 6 students per year (Morehead, Murray State, Central Missouri) to a high of 14 students per year (U. Wisconsin-Oshkosh). Thus, while Eastern’s graduation rate in geology falls at the low end of the spectrum of graduation rates at its benchmarks and Kentuckyan regionals, it is comparable to the rates at half of the schools for which we were able to accumulate data.

Ratio of majors to grads: For the B.A./B.S. programs, these ratios range from 3 (Illinois State) to 7 (Central Missouri State). Eastern’s major’s to graduates ratio of 8 is at the upper end of this range. Bearing in mind that Eastern serves an increasingly non-traditional student audience, this ratio indicates that students in the Geology majors make reasonable progress toward their degrees.

Student credit hours per academic year: Three schools reported this data in terms of lower division, upper division, and graduate courses. Lower division credit hours ranged from 3000 to 4364, with Eastern showing 3794. Upper division credit hours ranged from 636 to 1561, with Eastern showing 1302. Graduate credit hours for schools with graduate programs ranged from 100 to 432, with Eastern showing 273. Eastern seems to fall in about the middle in each case.

Average class sizes: These were reported in a variety of formats, so direct comparisons are difficult. EKU's average class sizes in GLY and NAT are 20 and 55, respectively. Morehead's average geology class size is 25. The three reporting benchmark schools showed average lower division class sizes of 40 to 225, and average upper division class sizes of 10 to 25.

Faculty: Many of the reporting departments are combined departments, as is Eastern's Department of Earth Sciences. Three departments reported faculty in geology only: Illinois State reported 7 FTE; U. Wisconsin-Oshkosh reported 6 FTE; Central Missouri State reported 6 FTE. Eastern has 5.5 FTE faculty in geology only, if the TA's are not included. (One faculty member has split GLY/NAT responsibilities.) It should be noted that only Eastern and Illinois State offer graduate programs in geology, which require more faculty effort. Eastern has one fewer FTE faculty position than the two schools that offer B.A./B.S. programs only, and two fewer FTE faculty positions than the school that offers B.A./B.S. and M.A./M.S. programs. Combined programs reported about 9 to 17 FTE faculty, and EKU's Department of Earth Sciences has 10 budgeted faculty lines. Thus, the department falls at the small end of the total faculty.
range, and contains fewer geology faculty than comparable schools. EKU’s production of geology majors and graduates look more impressive when viewed in the context of its relatively smaller faculty.

Student credit hours generated by part-time faculty: only Central Missouri State reported a figure for this. Part-time faculty generate 600 credit hours per year on campus, and none off-campus. By comparison, EKU Earth Sciences generates none on-campus and 255 credit hours per year off-campus.

Student-faculty ratio: Only two other schools reported data in this category. U. Wisconsin-Oshkosh reported 26:1, and Westchester U. reported 17:1. EKU's Earth Sciences Department reported 28:1. EKU's numbers are higher than both of the other reporting schools.

Contributions to other degree programs: some of the other reporting departments noted contributions to teacher training programs, and to other programs such as geography, chemistry, biology, construction, and environmental studies. Eastern's Department of Earth Sciences makes similar contributions.

Full-time teaching load: two departments reported 12 to 13 contact or credit hours per semester, which is similar to Eastern's 12 adjusted load hours per semester. Two departments reported somewhat lesser loads of two to 2.5 courses per semester. These two departments also posted the best graduation rates of 12 to 14 students per year.
Appendix B

Eastern Kentucky University

Example of Information and Data Provided By the Program

Indicators of Student Learning Outcomes

A Hard Copy of the Department of Art Appendix to the 2000-2001 Program Review Report is Available for Review in the Office of Planning and Assessment
Appendix C

Eastern Kentucky University

Example of Information and Data Provided By the Program

Indicators of Student Learning Outcomes - Program Graduates

Report on EKU Undergraduate Wildlife Management Alumni Survey
A mailing list of 153 Wildlife Management BS degree Alumni was obtained from the Alumni office. A survey (Appendix) was mailed on February 23, 2001 to each graduate, along with a stamped, self-addressed envelope for return of the survey. Alumni were asked to return the survey by March 3. I would like to thank Drs. Charles Elliott and Stephen Sumithran for their help in conducting the survey. Chuck Elliott provided helpful comments on an early draft of the survey, and Steve Sumithran helped plan the survey, prepare the survey for mailing, and tabulate the results.

Of 153 mailed surveys, 17 were returned by the Post Office as undeliverable (typically the address was old and no forwarding address was given). An updated address was obtained for 2 of those and they were re-mailed. Thus, 138 (90%) of the 153 surveys may have reached the intended Alumni.

As of March 7, 40 completed surveys had been received (29 % of 138 or 26% of all graduates of the program on the mailing list). Results of objective questions (items 1-6 and 13 on the survey) are listed in Table 1. Responses to other items are summarized separately.
Table 1. Summary of results of a survey mailed to 153 alumni of the Wildlife Management BS degree program at EKU according to decade graduated. The survey was mailed on February 23, 2001, and results were tabulated from the 40 surveys received by March 7. Percentages are based on the sample of completed surveys (n=40), except for item 1, which is based on the total number of graduates of the program that are on the alumni office mailing list (N=153). Items are paraphrased in the table; see Appendix for exact wording on the survey.

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Year graduated</td>
<td>11</td>
<td>12</td>
<td>17</td>
<td>40 (26)</td>
</tr>
<tr>
<td>2. Professional fate of graduates:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. a. went on to graduate school in Biology Department at EKU</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>5 (13)</td>
</tr>
<tr>
<td>2. b. went on to graduate school in biological science elsewhere</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>7 (18)</td>
</tr>
<tr>
<td>2. c. started graduate school but did not obtain degree</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1 (%)</td>
</tr>
<tr>
<td>2. d. worked before obtaining a wildlife-related position</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>4 (10)</td>
</tr>
<tr>
<td>2. e. obtained wildlife position within a year of school</td>
<td>1</td>
<td>8</td>
<td>8</td>
<td>17 (43)</td>
</tr>
<tr>
<td>2. f. currently work as wildlife-related professional</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>18 (45)</td>
</tr>
<tr>
<td>2. g. do not currently work as wildlife-related professional</td>
<td>5</td>
<td>5</td>
<td>9</td>
<td>19 (48)</td>
</tr>
<tr>
<td>2. h. retired from the wildlife profession or another profession</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>3 (8)</td>
</tr>
<tr>
<td>2. i. do not work full time</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>2 (5)</td>
</tr>
<tr>
<td>2. j. work full time</td>
<td>6</td>
<td>10</td>
<td>14</td>
<td>30 (75)</td>
</tr>
<tr>
<td>2. k. satisfied with professional situation</td>
<td>9</td>
<td>9</td>
<td>13</td>
<td>31 (78)</td>
</tr>
<tr>
<td>3. If not a wildlife professional, why not?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. a. to live where I wanted to, I chose another vocation</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>5 (13)</td>
</tr>
<tr>
<td>3. b. unable to secure a position</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4 (10)</td>
</tr>
<tr>
<td>3. c. changed career due to personal or financial considerations</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>9 (23)</td>
</tr>
<tr>
<td>3. d. other</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>2 (5)</td>
</tr>
<tr>
<td>4. Level of satisfaction with EKU Wildlife program</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. a. extremely satisfied</td>
<td>3</td>
<td>6</td>
<td>11</td>
<td>20 (50)</td>
</tr>
<tr>
<td>4. b. very satisfied</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>13 (33)</td>
</tr>
<tr>
<td>4. c. satisfied</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>4 (10)</td>
</tr>
<tr>
<td>4. d. somewhat dissatisfied</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3 (8)</td>
</tr>
<tr>
<td>4. e. very dissatisfied</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0)</td>
</tr>
<tr>
<td>4. f. extremely dissatisfied</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>
### Year graduated:

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5. Strengths of the undergraduate wildlife program at EKU</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. a. Small class size, especially in the wildlife classes</td>
<td>8</td>
<td>11</td>
<td>16</td>
<td>35 (88)</td>
</tr>
<tr>
<td>5. b. Caring, friendly, and helpful faculty</td>
<td>10</td>
<td>11</td>
<td>17</td>
<td>38 (95)</td>
</tr>
<tr>
<td>5. c. Knowledgeable faculty</td>
<td>9</td>
<td>10</td>
<td>16</td>
<td>35 (88)</td>
</tr>
<tr>
<td>5. d. Physical facilities (classroom comfort, equipment ...)</td>
<td>7</td>
<td>2</td>
<td>8</td>
<td>17 (43)</td>
</tr>
<tr>
<td>5. e. Hands-on field/lab experiences; practical approach</td>
<td>7</td>
<td>10</td>
<td>14</td>
<td>31 (78)</td>
</tr>
<tr>
<td>5. f. Balance of practical and theoretical knowledge</td>
<td>6</td>
<td>8</td>
<td>13</td>
<td>27 (68)</td>
</tr>
<tr>
<td>5. g. Good academic advising</td>
<td>5</td>
<td>7</td>
<td>14</td>
<td>26 (65)</td>
</tr>
<tr>
<td>5. h. Availability of faculty outside of class</td>
<td>6</td>
<td>10</td>
<td>13</td>
<td>29 (73)</td>
</tr>
<tr>
<td>5. i. Opportunities for independent research</td>
<td>3</td>
<td>4</td>
<td>12</td>
<td>19 (48)</td>
</tr>
<tr>
<td>5. j. Other strengths</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>7 (18)</td>
</tr>
</tbody>
</table>

### Weaknesses of undergraduate wildlife program at EKU

<p>| | | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>6. Weaknesses of the undergraduate wildlife program at EKU</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. a. Class size was too big</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0)</td>
</tr>
<tr>
<td>6. b. Faculty were not very helpful or friendly</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1 (3)</td>
</tr>
<tr>
<td>6. c. Faculty were not particularly knowledgeable</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1 (3)</td>
</tr>
<tr>
<td>6. d. Physical facilities were inadequate</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>9 (23)</td>
</tr>
<tr>
<td>6. e. Not enough hands-on experience; too much book learning</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>8 (20)</td>
</tr>
<tr>
<td>6. f. Poor balance of practical and theoretical knowledge</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>5 (13)</td>
</tr>
<tr>
<td>6. g. Poor academic advising</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>3 (8)</td>
</tr>
<tr>
<td>6. h. Faculty not available outside of class</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0 (0)</td>
</tr>
<tr>
<td>6. i. Little opportunity for independent research</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>5 (13)</td>
</tr>
<tr>
<td>6. j. Other weaknesses</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>6 (15)</td>
</tr>
</tbody>
</table>

### Should continue to offer a major in wildlife at EKU?

<p>| | | | | |</p>
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>13. Should continue to offer a major in wildlife at EKU?</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>8</td>
<td>11</td>
<td>17</td>
<td>36 (90)</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1 (3)</td>
</tr>
<tr>
<td>Unsure (not a choice, but written in)</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2 (5)</td>
</tr>
<tr>
<td>No response</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1 (3)</td>
</tr>
</tbody>
</table>
The 40 respondents represented a good balance of graduates among the last 3 decades (Table 1, item 1). Twenty-five (63%) said they either currently work as wildlife-management professionals (n = 18; Table 1, item 2f) or previously held wildlife-related jobs (n = 7) subsequent to obtaining their degree. Of those who do not consider themselves wildlife-related professionals (n = 19; Table 1, item 2g), many (at least 10) have or had careers related to conservation. Two, for example, are currently university or college professors in the natural sciences. Another, after several years as a wildlife biologist is currently a professional bass fisherman (has won major competitions and has been featured on ESPN, etc.), a career he said he only dreamed of when a student at EKU. Seven others are employed full-time in biology, health, conservation, or environment-related careers. Thirty-five of 40 respondents included optional information indicating their job title; Of the 35, only 8 are not employed full-time in wildlife or related careers or retired from such careers. In other words, almost 80% currently hold jobs related to their major in wildlife management. Those who work in other disciplines typically chose a different career for personal reasons (Table 1, items 3a and 3c), and not because they could not find a job in the wildlife field (n = 4; item 3b). Of the 4 who could not find jobs in wildlife (Table 1, item 3b), 1 is an environmental technologist with the state of Kentucky, one is a lab animal technician at the University of Kentucky, one is a county environmentalist in Kentucky, and one is a prototype model maker with a fortune 500 company and is satisfied with that career (Table 1, item 2k). The 2 who listed other reasons for not working as a wildlife professional (Table 1, item 3d) are (1) a graduate student - research assistant in agronomy and soil science at the University of Kentucky (pursuing additional areas of interest) and (2) the professional bass fisherman (thinks he’s dreaming).

Whether they are wildlife professionals or have chosen related or non-related career paths, nearly 80% of respondents were generally satisfied with their careers (n = 31 of 40, Table 1, item 2k). In terms of their level of satisfaction with their experience at EKU (item 4), 50% were “extremely satisfied,” 33% “very satisfied,” and 10% were “satisfied” (i.e., 93% were satisfied to extremely satisfied). The lowest rating given by any respondent was “somewhat dissatisfied” (n = 3), and none were “very dissatisfied” or “extremely dissatisfied.” It can be seen (Table 1, item 4) that the level of satisfaction increases with more-recent graduates. Specifically, The percentage of those indicating “extremely satisfied” was 27% (3 of 11) for those graduating in 1980 or earlier, 50% (6 of 12) for those graduating 1981-90, and 65% for those graduating 1990 or later. Comments from some alumni who have chosen other career paths indicate they were no less happy with their education than those currently working in wildlife-related careers. For example, one company president had this to say: “...even though I am not working in a wildlife related field, I would not trade my degree for any other” and “... a great degree for persons wishing to work in the field (of wildlife) or at another occupation.”

Several strengths of the program are apparent from responses to item 5 (Table 1). Nearly all (95%) felt caring, friendly, and helpful faculty was a strength (100% of those graduating since 1990 indicated this was a strength). Knowledgeable faculty and small class size were close behind as program strengths (items 5a and 5c), as indicated by 88% of respondents. A practical, hands-on approach and field experience (item 5e) with a balance of theoretical knowledge (item 5f) were considered strengths as well, as was availability of faculty outside of class (item 5 h). Other strengths listed (5j) were the Natural Areas, the student chapter of The Wildlife Society, the close student-faculty connection, dedicated faculty, the herbarium, the regional perspective, frequent and valuable field trips associated with classes, exposure to professionals in the field through classes and extracurricular activities, and the fact that our students are “ready to work” upon graduation with little on-the-job training required.

As for weaknesses (item 6, Table 1), significantly, half of the respondents listed no weaknesses. Indeed, some even commented there were no weaknesses. None listed class size (6a) or availability of faculty (6h) as weaknesses. The physical facilities were listed as a weakness by 23% of respondents (item 6d). Some commented that equipment in the labs was old, outdated, or nonexistent. From table 1, it appears this has become a bigger problem in recent years, with 35% of those graduating in the last decade.
indicating facilities as a weakness. It is also possible that the lack of comfort in the classrooms and labs contributed to this result (the Moore building is notoriously hot or cold, depending on the season and outside temperature). One commented that microscopes were old and of inferior quality. With the exception of microscopes for the wildlife laboratory, this has been remedied by the recent purchase of over 100 new microscopes. Other weaknesses listed (item 6j) were problems with a particular faculty member (3 respondents; in each case, the faculty member is no longer here), required course infrequency and academic advising (1 respondent), courses not applicable to their career (1), the lack of computer training (1), and the apparent focus of energy and money on the graduate program (1). Only one of these comments comes from a graduate from within the last decade, and that was about a particular faculty member no longer with the Department.

When asked if we should continue to offer a BS degree in Wildlife Management at EKU, 90% of respondents said yes (100% of those graduating within the last decade). Only 1 responded no to this question (2 were unsure and one offered no response). The one “no” respondent felt there was a general lack of jobs available in wildlife management, and felt the degree in wildlife management was not a particularly good one for someone competing for other kinds of jobs. One of those indicating they were unsure as to whether we should continue to offer the degree felt we should be cautious about training too many in a field that has a limited number of professional positions. The other unsure about the degree offering referred to a perception they had about the low quality of faculty involved in the major in the 1970’s, and said if faculty had improved, then we should continue to offer the degree. All current faculty in the major joined EKU in the 1980’s and 90’s. The increased satisfaction in the program expressed by alumni from more-recent years suggests that, if there was a problem, it has been addressed.

Alumni were asked to list the most beneficial biology course they took at EKU or to rank them if they listed more than one (survey item 7, see Appendix). By assigning their top 4 choices a score (from 4 for most important to 1 for the 4th-most important), Wildlife Techniques (BIO 382) topped the list with a sum score of 68 points (33%, or 13 of 40 respondents listed it as most important, with over half listing it in their top 4). The next was Plant Systematics (BIO 335), with a score of 38, followed by Principles of Wildlife Management (BIO 381) at 33 points, and Migratory and Resident Wildlife Ecology and Management at 25 points. Ecology, Ornithology, Zoology, Dendrology, and Mammalogy all received scores of 10 or more. Others mentioned by one or two respondents were ichthyology, limnology, evolution, grasses and grasslands, comparative anatomy, principles of biological systems, general physiology, fisheries biology, and soil science. When asked why they listed their number one choice (item 8 on the survey, see Appendix), most (68%, 27 of 40) said it provided practical, hands-on, job-related knowledge or field skills. Twenty-three percent (9 of 40) listed a course they thought was a “foundation” course upon which all other courses or their career depended, and 13% listed a course because they thought it was simply a well-taught or good course or one they still remembered.

As for least beneficial courses (survey item 9), significantly, 9 respondents (23%) listed none, with many specifically commenting that all courses were beneficial. For those listing a course, or ranking courses, the top 4 were scored in the manner described previously for the most-beneficial courses. Regional Wildlife Management and Policy (BIO 585) topped the list of least beneficial courses, with a score of 25 (5 of 40 listed it as the least beneficial). All of those listing this course, however, took the course before it changed hands and was completely restructured a few years ago. Recent course evaluations indicate it may enter the most beneficial course category in the next decade. Tied for the top spot was Genetics (BIO 315), with Principles of Microbiology (BIO 320) close behind at 23 points. General Physiology, Evolution, Principles of Biological Systems, and Plant Physiology each scored more than 10 points. Other courses mentioned as one of the 4 least beneficial courses were botany, ecology, mammalogy, and 3 courses taught by other departments; organic chemistry, geographic information systems, and fundamentals of policing. Of those listing a least beneficial course (n = 31), 42% (13) listed a course they felt was worthless or not job-related, 23% (7) listed a course that they felt was filled with
trivia, too much detail, rote memorization, or too hard, 23% listed a course they felt was simply poorly taught, and 10% (3) listed a course they felt was too general or that lacked depth (based on responses to item 10 of the survey, see Appendix).

Item 11 of the survey asked alumni to list courses or topics they would like to see added to the wildlife management curriculum. Many alumni graduating in the 1970's and 80's listed courses or topics we have already incorporated into the requirements, such as mammalogy, ornithology, and public speaking. Other courses listed by earlier alumni are relatively recent additions to the list of electives wildlife majors can select, such as non-game wildlife management, geographic information systems, wildlife law enforcement, and conservation biology. However, many felt some of the courses we currently offer as choices should be requirements. These included dendrology, urban/non-game wildlife, and courses integrating agricultural techniques and wildlife management. The list of courses and topics mentioned is longer than the list of alumni who responded, with most listing several topics but with very few listing the same topic listed by others. The only suggestions listed by more than one respondent were the idea of an agriculture and wildlife course (n = 4), an ecosystem management course (2), a wildlife diseases course (2), and a more-advanced statistics course (2). Eight respondents (20%) recommended we allow more room in the curriculum for the various “ology” electives, such as ichthyology, herpetology, and dendrology, and that we increase the coverage of the habitat-species relationships of important wildlife species such as wild turkeys, white-tailed deer, ruffed grouse, and other important resident game species. Other individual suggestions included greater coverage of technical writing, fire ecology, computer techniques, geology and other abiotic habitat factors, forestry, people and public-relations skills, zoo keeping, private lands management, the National Environmental Policy Act (NEPA), wetlands ecology, wildlife reintroductions, wildlife education, wildlife diseases, interview skills and resume preparation, aquatic biology, and several others. But 9 respondents (23%) listed no additional courses or topics, with many saying none were needed. Two suggested we needed to stick to the basics and leave the more specialized areas of wildlife ecology to a variety of elective courses students can select from. One said an MS degree is required to fit in all the course work that is needed, acknowledging the difficulties of covering such a diverse field within the framework of an undergraduate degree.

Actually, we cover nearly every one of the topics listed by alumni to some degree in our courses already, either as part of broad required courses or as major components of electives students can take in addition to their degree requirements. We will, however, be re-evaluating the curriculum, course content, and electives in the months to come, incorporating many of the suggestions made by alumni.

Item 12 of the survey (see appendix) asks for suggestions regarding which courses or topics to drop from the program in order to give greater coverage to their suggestions in the previous item. The 23% (n = 9) suggesting no additional topics and many others (n = 7) who did suggest additional courses offered no suggestions here (i.e., 16 respondents, or 40%). The dominant courses listed by the 24 (60%) who offered suggestions were genetics (6 respondents), evolution (6), and chemistry (5). Most felt the genetics and evolution already incorporated into other general biology classes was enough for the wildlife biologist, and that less chemistry would suffice. Some said these were areas some students could specialize in by taking them as electives or in graduate school. While some probably feel a 3-hour introductory chemistry course would be enough, it should be noted that organic chemistry was changed from a requirement to an elective in the mid 1980's, and that the chemistry requirement will be only 8 semester hours next year. Thus, we have already reduced this requirement by about 40% as far as the early graduates of the program are concerned. Other courses listed by multiple respondents included principles of biological systems, plant physiology, and animal physiology (3 respondents each), and microbiology (2 respondents) and comparative anatomy (1 respondent). The principles of biological systems course was too much like high school biology according to some early graduates, and too much repetition of zoology and botany for more-recent graduates. Several thought physiology was sufficiently covered in other biology courses so that animal or plant physiology were not needed. And 2 commented that the animal physiology was too human-physiology oriented for wildlife management majors. Others
pointed to elective courses that they felt students should not elect (replacing them with more important wildlife-related course work). Specifically, cartography, remote sensing, police administration, and other courses advisors often recommend for certification (as a wildlife biologist by The Wildlife Society) were of limited value to some respondents in their wildlife careers.

In item 14 (see appendix) we also asked why alumni either supported continuing a wildlife management major at EKU or recommended otherwise (item 13). In responding to this open-ended question, 17 of 40 (43%) felt it was a strong program or provided better-trained professionals than similar programs in the state or broader region. Fourteen (35%) felt there is a significant need for professional biologists of the kind graduating from EKU or that the need will be increasing in the future. Eight (20%) said a degree program in wildlife management was needed in the eastern part of the state, some noting that, in addition to EKU, only Murray State offers a named degree in wildlife management in Kentucky, and that the regional perspective offered by EKU was unique and important. Three respondents (8%) simply said it was a good major, provided a great experience for anyone interested in wildlife conservation, or provided a good education. Other comments supporting the major at EKU included the good location for access to wildlife management areas, national forests, national and state parks, and similar areas; the small size of the program which allowed for personal attention given by professors to individual students and their varying needs, that the program was about the right size considering the job market for wildlife biologists in the region, and that the courses and professors in the major are not only good in conveying the fundamentals of ecology and conservation, but also in conveying current trends and covering the latest events. Even those supporting continuation of the major pointed out some concerns, however, including low pay associated with wildlife jobs relative to other careers, the fact that few jobs are available and there is significant competition for those jobs, and the difficulties encountered by women in a male-dominated profession.

In summary, it is evident that alumni of the BS degree in Wildlife Management at EKU are generally happy with the education they received (93% were satisfied to extremely satisfied) especially among more-recent graduates (65% were extremely satisfied), despite the perception of relatively low pay and limited job openings for wildlife professionals. It also is evident that they are successful professionals generally happy with current jobs, and that most (about 80%) hold positions in wildlife management or related career areas (of a biological, conservation, health, or environmental nature). Even those who have made other careers are generally happy with their professional situation and feel they received a good education.

The written comments of several alumni follow:

Glenn Watson, Conservation Officer, Kentucky Department of Fish and Wildlife Resources (KDFWR), Westport KY: “...(EKU’s Wildlife Management Major is) a premier program within this state ... just look at the positions of prominence graduates hold both with local and national agencies”

James Whisman, Wolf County Environmentalist: “If one loves the outdoors and wildlife, it’s the perfect major.”

and

“Maybe if there were more jobs in the wildlife management field (in Kentucky) there would be a higher graduation rate for EKU.”

Patrick Heltsley, President, Pittsburg Tank and Tower, Corydon, KY: “...even though I am not working in a wildlife related field, I would not trade my degree for any other.”
and

“... a great degree for persons wishing to work in the field (of wildlife) or at another occupation.”

Ray Toor, biologist, USDA Natural Resources Conservation Service, Hartford, KY: “...(the program) provides graduates to employers that are ready to work with little additional training.”

and

EKU has the best quality wildlife program in the state.”

Hannah Helm, Kentucky Department of Environmental Protection (retired), Frankfort: “... I got a good education and was very happy with my career.”

Brad Huelsman, Regional Manager, Shearer Foods, Morrow, OH: “I enjoyed my experience at EKU (in wildlife management) thoroughly.”

Chris Coulter, Graduate Assistant, Department of Plant and Soil Science, University of Kentucky: “The wildlife program at EKU and the faculty are of high quality and are a valuable asset to the University”

Ed Davis, Foreman, Frankfort Fish Hatchery, KDFWR: “...(the program enjoys) up close and personal contact between its students and faculty. I know of no other institution with this close student/faculty relationship that offers a better degree in wildlife management. EKU is truly a quality educational experience.”

Joe Settles, Biologist, East Kentucky Power, Winchester: “...(if EKU were to lose the Wildlife Management program) I feel it would be a disservice to the individuals in the eastern part of the state who want this type of degree to be denied this service.”

Anonymous graduate from the 1970's: “... the principles, techniques, and concepts translated well in my field (zoo keeping).”

Scott Cornelius, Manufacturing Supervisor, Toyo Seat, USA, Flemingsburg, KY: “It is imperative that we continue to train and educate wildlife managers to deal with the ever-changing environment and our changing world.”

Mickey Craig, Conservation Officer, KDFWR: “It’s been 21 years since graduating from EKU, but I still recommend the wildlife program during career days and to other students who ask or call about my profession.”

Joel Beverly, field biologist, Appalachian Technical Services, Whitesburg, KY: “Even though the number of graduates per year may be relatively low, the people who do graduate usually go on to important state, federal, and private sector jobs within the wildlife management sector (and speaking with many state and federal employees, they agree that the program (and students produced from) are head and shoulders above the rest).”

Charles Stallings, Professor and Acting Department Head, Dairy Science Department, Virginia Tech, Blacksburg: “...(the program is) well respected and (there are) not many comparable programs around.”

Lynda Perry, Biologist, Daniel Boone National Forest, Stearns, KY: “it is an excellent program and most of the best biologists I’ve met in Kentucky have passed through the EKU wildlife program ...”
Earl Jerry Sparks, US Army Corps of Engineers, Sassafras, KY: “In the course of my career, I have met numerous graduates of the EKU program. These people serve as valuable public servants in various state and federal programs. The level of knowledge that is brought to the table from those graduating from EKU’s wildlife program has proven to be among the best in the nation. I base this evaluation on my experience working with wildlife professionals across the United States. No other university in the state of Kentucky offers the field-based, hands-on program in wildlife management/ecology that is offered at EKU. For the state of Kentucky, this EKU program is irreplaceable.”
Appendix D

Eastern Kentucky University

Example of Information and Data Provided By the Program

Executive Summary and Report Narrative for MS in Chemistry
Chemistry Report Narrative


The Master of Science Degree in Chemistry program at Eastern Kentucky University is academically sound, serves a very useful function to the Department, the University, and the region, is highly cost effective and thus should most definitely be retained. The following points summarize our reasons for retention of the program.

1. The program provides help for B.S. or B.A. chemists who need more training to be employable, but who cannot adapt to a larger, typically full-time, program.

2. The existence of the program provides enrichment and further training for locally employed chemists (high school teachers and industrial chemists).

3. The program provides tutelage and inspiration to undergraduate students by making them aware of the availability of advanced training in their field, and hence broader job opportunities.

4. The program produces well-trained chemists with strong ties to southeastern Kentucky.

5. The program provides mechanisms and encouragement for faculty to keep abreast in their field by making it possible for them to achieve publishable research. This strengthens faculty morale. Offering the MS program assists the Department in recruiting a stronger faculty, because there is a possibility of working with masters students in addition to undergraduate research. A faculty with strong interest in the discipline, in turn, benefits the undergraduate students in the department.

6. The program brings in students who provide high quality, low cost instruction for chemistry laboratories. To this extent, the M.S. program actually represents a saving to the University.

7. The program results in a diversity of student interactions within the science area of the University, which, of course, makes for a better University.

8. The program provides courses required by other programs in the University. Graduate students in the Department of Biology, candidates for the Master of Arts in Education degree with emphasis in Chemistry, and teachers working towards Rank I certification are regularly enrolled in our graduate courses.
Below are some changes we are proposing in order to make the program even stronger. We believe that if these changes are made, the productivity of this program is likely to match or exceed the levels set up by the CPE.

1. In order to achieve the desired productivity of the MS program we will strengthen new recruitment efforts we recently initiated and which have already produced significant results, with 6 new students joining the M.S. program in the 2000-2001 academic year. This is in contrast to the typical 1-2 in the recent past.

2. We will be looking at ways in which to improve our retention rate. One of the factors that affect our ability to retain graduate students is that our stipends are not competitive. To help us out in this area, we hope that the university administration will consider increased stipends and/or tuition waiver for teaching assistants. In addition, we will explore ways of obtaining scholarships and/or stipends for our students from external sources.

3. We intend to explore ways of widening the scope of our program so that it may appeal to a wider pool of students. We will be exploring the possibility of developing options with specialization in Forensic Science and Biological Chemistry.

4. We would like our students to graduate in the 2 to 2½ years typical for a masters degree in chemistry. Among the actions we intend to take to achieve this goal is to look for ways of supporting the students during the summer so that they can stay on campus and complete their research instead of the looking for summer jobs elsewhere.

5. In order to attract quality students and faculty, a graduate program in the sciences need to provide support for professional development in the areas of teaching and scholarly activities. Again administrative support in this area is essential.
I. INFORMATION AND DATA PROVIDED BY INSTITUTIONAL RESEARCH

A. Program Enrollment and Faculty Data (most recent five-year period)

Data for the following categories are summarized in Table 1.

1. Number of Majors
2. Number of Graduates
3. Ratio of Graduates to Majors
4. Student Credit Hours
5. Average Class Size
6. Number of Full-time Faculty (budgeted lines)
7. FTE Part-time Faculty and SCH Generated by PT
8. Student/Faculty Ratio

We anticipate a turnaround in the number of majors in the M.S. program as a result of both recent faculty hiring and renewed recruiting efforts. Already we have started to see positive results. Six new students joined the M.S. program in the 2000-2001 academic year, more than doubling our total enrolment. We also have some active students who are not reflected in the enrollment data because they have completed their coursework and are now working only on their thesis work. Two such students are expected to graduate this summer.

B. Student Profile Data

1. Higher Education GPA of Program Graduates
   • Average GPA for program graduate for the period 1995-2000 is 3.77.
2. ACT scores and high school GPA
   • N/A
3. Graduate Program Data
   • Average GRE scores for program graduates for the period 1995-2000 is 1562.
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<tr>
<td>A1 No. of Majors</td>
<td>9</td>
<td>7</td>
<td>7</td>
<td>6</td>
<td>5</td>
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<td>A2 No. of Graduates</td>
<td>1</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>3</td>
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<td>A4 Student Credit Hours&lt;sup&gt;a&lt;/sup&gt;</td>
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<td>106</td>
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<tr>
<td>A5 Average Class Size&lt;sup&gt;b&lt;/sup&gt;</td>
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<td>A6 Full-time Faculty</td>
<td>c</td>
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<td>13</td>
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<tr>
<td>A7 FTE part-time on campus</td>
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<td>A8&lt;sup&gt;d&lt;/sup&gt; Student/Faculty Ratio</td>
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<td>Instructional Dollars/SCH</td>
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<td>$84</td>
<td>$97</td>
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<sup>a</sup>For graduate students only. Does not include summer.  
<sup>b</sup>Not provided for M.S. but typically 3-6.  
<sup>c</sup>Data not provided by Institutional Research.  
<sup>d</sup>Includes undergraduates courses and part time faculty.  
<sup>e</sup>Includes undergraduate programs.

### C. Resources

Data for the following categories are summarized in Table 1.

1. Total Instructional Budget and Expenditures
2. Ratio of total expenditures/Student Credit Hour

Instructional dollars and instructional dollars/SCH data are provided for only the entire department and not for any specific program. Since several faculty members teach both graduate and undergraduate classes, and some of these classes (500/700 series) include both graduate and undergraduate students, it would be very difficult to apportion faculty time by program. However, we have been able to estimate that the potential savings if the program were to be cancelled are minimal — less than one full time FTE would be saved. Based on our present program, the savings would be 0.625 FTE (4 courses and release time for the director of graduate studies). A new curriculum we are proposing will reduce the marginal cost of operating the program to 0.375 FTE by reducing the number of 800 level courses and making better use of the 500/700 level courses.
Off-setting these minimal gains would be the loss of our graduate teaching assistants who are reliable, competent and cost-effective source of talent for teaching our undergraduate labs. That would require us to seek additional part-time faculty in a presently very tight market for chemists.

II. INFORMATION AND DATA PROVIDED BY PROGRAM

1. Mission Statement/Relation to University Mission

The graduate program of the Chemistry Department of Eastern Kentucky University will serve the Commonwealth by producing workforce personnel and teachers with advanced training in chemistry, thereby contributing directly to Kentucky's science and technology initiatives.

The specific purposes of the program include but are not limited to:

a. Providing advanced training for bachelor's level workforce employees who are working full time and who would like to further their proficiency in an area of chemical science.

b. Providing advanced training for teachers seeking to improve their knowledge, as well as their laboratory and teaching skills in the chemical sciences.

c. Providing additional training and preparation for bachelor's level graduates wishing to proceed to a doctoral program, but who are for some reason not yet qualified.

The Program's mission and purposes are consistent with those of the University in that the Program offers opportunities for citizens of the Commonwealth to improve their quality of life through advanced education. The Program presents these opportunities by providing advanced course instruction and research opportunities towards a post-graduate degree in Chemistry. The Program further supports the University's mission of providing public service by virtue of the advanced workforce personnel and teachers that are produced. Additionally, the graduate program attracts higher quality faculty that, in turn, contribute to the various professional and university services of the department. The Program caters to students who are primarily from within the Commonwealth, but it also involves students from outside. Thus, the Program offers even greater opportunities in terms of cultural enrichment for our citizens by providing a cosmopolitan, and in fact international, environment in which they study and learn.

2. Teaching and Learning, Scholarly/Creative Efforts and Service

A. Indicators of Teaching and Advising Quality

The Department of Chemistry places a high priority on quality of instruction at both the undergraduate and graduate levels. All graduate courses are taught by full-time graduate faculty members, all of whom hold a Ph.D. degree in Chemistry. There is constant attention in the department to meeting the needs of all our students. Most of our graduate students are full-time and have teaching assistantships. We also have part-time students who work during the day. The classroom needs of both of these groups is best met by having evening or late afternoon classes. Accordingly, we regularly teach graduate classes in the evenings to accommodate these needs.

The Graduate Committee reviews the graduate program frequently to ensure that the program continues to have a strong and current curriculum. The entire faculty of the Department votes on any suggested changes in content of any course. The most recent extensive review of the curriculum, conducted in 1998-1999 academic year, resulted in the reorganization of the core courses. A set of four advanced chemistry courses (one each in the areas of analytical, inorganic, organic, and physical) now
provides a broad-based background in chemistry at an advanced level. The graduate students' training is then supplemented by a series of specialty courses to help them focus on one or more areas of specialization. The implementation of the changes is being spread over three semesters: fall 2000, spring 2001 and fall 2001. A summary of the program requirements and a listing of the available graduate courses are provided in Appendix 1A.

The graduate advisor is able to offer services to the students on a continuous basis (not confined to a set period of a given semester). In addition, an advising pamphlet is updated regularly and is given to all incoming students (Appendix 1B). A copy is also placed on the Department's Graduate Studies Web page. This document contains information relevant to graduate students entire career at EKU.

In addition to academic advising, thesis committees meet regularly (once per semester) with each graduate student to keep him or her on track scientifically.

B. Scholarly/Creative Efforts

An active research program is central to the mission of a graduate program in chemistry. The Department of Chemistry at Eastern Kentucky University has recently made significant strides in revitalizing its research program and several faculty members are very active in research activities. These activities provide a multitude of research opportunities for both undergraduate and graduate students, in diverse areas. An important indicator of our recent efforts in research is the increase in the number of undergraduates involved in research activities. Eleven students were enrolled in CHE 495, Introduction to Undergraduate Research, in both the fall 2000 and spring 2001 semesters.

Another important indicator of our renewed vitality in research is the number of publications and presentations originating from faculty members in the department. They published 44 papers in peer-reviewed journals between 1995 and 1999 and several submitted in 2000 have been accepted (Appendix 2A). Additionally, research efforts have resulted in 97 presentations (50 oral and 47 poster) at regional, national and international professional meetings between 1995 and 2000 (Appendices 2B and 2C). The presentations were made by faculty members, and both graduate and undergraduate students. The quality of these presentations is reflected in the fact that between 1997 and 2000, five of our undergraduate students won awards (three placed 1st and two placed 2nd) in regional undergraduate research competitions. Further evidence of the high quality of scholarly activities in the department is provided by the fact that two colleagues hold editorial positions in international journals.

There has also been a significant increase in the number of proposals submitted, and funded, by faculty members of the Chemistry Department. In the year 2000 twelve proposals were submitted to various funding agencies compared to only four in 1999 and one in 1998. This resulted in our faculty members being awarded grants in excess of $184,000 in 2000 (Appendix 2D). Between 1995 and 2000 the current faculty is this department have obtained grants in excess of $900,000. Although this figure includes some grants made to faculty members before their arrival at EKU it is evident from their activities that they will continue with efforts to obtain research grants.

C. Service

In the last five years the chemistry department faculty have made extensive and significant service contributions to the profession and community (Appendix 3). These service activities have increased our interaction with other professional chemists and are important for establishing networks that eventually add to our quality of teaching and level of research.
Our service to the chemical profession includes membership on editorial boards of scientific journals, reviewing journal articles, serving on committees (including as chairs) of professional societies such as the American Chemical Society, and organizing symposia and conferences. These are all leadership roles that demonstrate that our faculty is well respected in their research areas.

We have also used our expertise to serve the local community. Faculty members have assisted local industry, government agencies and educational institutions as paid and non-paid consultants. Members of the chemistry department have also been active in outreach activities that have benefited local elementary and high schools. For example, several faculty members have served as judges at local science fairs, have spoken to students at high school career days, and performed chemical demonstrations to elementary school students. Our graduate students have also presented chemical demonstrations to the general public during National Chemistry Week and have served as tutors to home-schooled students. Our department has also run the National Chemistry Olympiad that is an annual competition among high school chemistry students.

3. Indicators of Student Learning Outcomes

A. Currently Enrolled Students

Because of the highly technical nature of chemical research, there are no standardized national methods for assessing student learning at the graduate level. A thesis defense oral examination is used to assess whether or not the student has mastered the material. The student's primary advisor and at least two other faculty members pass independent judgement on the student's competency. Additionally, we use coursework GPA as an internal measure of student learning, and we view publication of thesis work in peer reviewed journals as an external measure of student achievement and success.

B. Program Graduates

The primary objective of this program is to provide a high quality curriculum leading to the Master of Science degree in chemistry for students who have the Bachelors degree (B.S. or B.A.) with a major in chemistry, but who have need for more chemical background before embarking on (or during) their intended careers. These careers might involve work toward a Ph.D. degree in chemistry, work toward a professional degree, or industrial employment. A second objective of this program is to create and maintain a pool of trained qualified personnel available for technical industry within this region.

The success of this program in meeting these objectives is measured by the ability of these students to go into the next step of their career and succeed. Our most recent graduate is now pursuing a Ph.D. program in chemistry at the University of Cincinnati. Nine of our graduates in the last 5 years went directly into industrial or government jobs. In fact, many of these students were able to secure employment even before completing the program. Another of our graduates in the last five years is employed in this institution as the Chemical Storage Facility Manager. Thus, all of our graduates from the last five years are either pursuing the Ph.D. degree or employed in a field related to their studies here (Appendix 1C). It is also noteworthy that most of our graduates stay in Kentucky. Clearly our program is meeting its objectives.

In fact, the program has been sufficiently successful such that two students who began the program here were able to strengthen their chemical background and obtained admissions to Ph.D. schools (M. Jason Hatfield, University of Alabama and William Burton, University of Louisville, fall 2000) before completing the program here. In the past, too, we have had students leave the program for either Ph.D. schools or professional schools.
A number of students have also obtained the M. A. Ed. degree with emphasis in chemistry and are teaching in Kentucky schools or colleges (Appendix 1D; also see section E2).

We recently asked some of our former students to reflect back on their experiences in our program. Their responses were overwhelmingly positive (Appendix 1E).

4. Other Indicators of Program Achievement and Contribution

A. Program Viability

The American Chemical Society (ACS) Committee on Professional Training (CPT) is charged with examining education in chemistry at the postsecondary level. The CPT has studied many facets of graduate training in chemistry and periodically has published reports of these studies. According to a study done in 1998 by the CPT the average number of Master's degrees awarded annually from both Master's-only and Ph.D. schools is 5 (Appendix 4). Our department awards 2-3 per year, which is close to the national average. We believe that the program is providing a significant service to these students and Southeastern Kentucky. Nonetheless, we anticipate increasing our graduation rate to at least the national average and eventually to higher numbers. A detailed discussion on how we plan to address issues of recruitment and retention is presented in Section 7 below.

B. Contributions to University Programs

Our graduate program makes significant contributions to other programs at EKU. For example, some of our graduate courses (700- and 800-levels, see Appendix 1A) are utilized by biology students who need background in areas such as biochemistry and analytical chemistry for their programs. The same can be said for our 500-level courses which, by university-wide policy, are linked to the 700-level graduate courses.

Our graduate level courses are also taken by a number of students in the College of Education who are working towards the M. A. Ed. degree with emphasis in chemistry or Rank I certification (Appendix 1D). Graduate faculty members from the Department of Chemistry also serve on oral comprehensive examination committees for degree candidates in the College of Education. The state is moving to replace the present Physical Science Teaching Certification with certification in the content area. Consequently, we anticipate an increase in the number of teachers requesting graduate level course offerings in chemistry. Our program will thus continue to provide important service to the College of Education and the Commonwealth.

The graduate program also contributes to our undergraduate B.A. and B.S. programs through interactions between the graduate students (as graduate assistants or as fellow students in research groups) and undergraduate students.

C. Use of Technology

The Chemistry Department uses modern technology in a number of ways to enhance learning. As chemistry is essentially an experimental science, graduate students make extensive use of modern instrumentation and computer technology in their research work. This includes acquisition and processing of original data and of information from public domains. This training is essential to preparing them for their success in industrial jobs and Ph.D. programs. If technology is limited to mean the use of computer, internet, and distance communication methods in the classroom, we have not to a large degree implemented this in our graduate program. Rather we are focusing on making our courses
flexible enough to be available to students who may only be able to take a majority of classes in the evenings.

D. Uniqueness/Distinctiveness of Program

The M.S. program offered here is unique in Southeastern Kentucky in several aspects. It is of a different nature from the M.S. programs offered at Ph.D. granting institutions. At most Ph.D. granting departments, all first year graduate students are considered to be Ph.D. candidates. Some of these schools award the masters degree as a milestone to students who are continuing work toward the Ph.D. degree at the same school. In other schools the M.S. degree is only given as a "consolation" prize to those students who for some reason fail to complete the Ph.D. In addition, while graduate students in other schools tend to specialize in a subdiscipline of chemistry, our program stresses general chemical knowledge and skills across the subdisciplines. This breadth prepares our students for a wider variety of positions in the workplace. Also, as a regional university, EKU is aware of and attuned to the needs of southeastern Kentucky. Since many of our graduate students are in some way connected with, and choose to stay in, this region and since most of these students have special needs that would not be met by larger schools, our program is fulfilling a regional need. For example, we have made our program uniquely flexible by offering most of our graduate courses in the evenings such that persons working full-time can acquire the M.S. degree here. In addition, we have made it possible for students to carry out their thesis research at their place of work. Our flexibility is illustrated by the words of an alumnus (Appendix 1E): "Unfortunately, having to work at a full time job during the day made class availability and scheduling almost impossible. The University of Kentucky and Western Kentucky University told me to quit my job, and attend the chemistry classes that were offered during the day. No job means no money, and no money means no classes. They were not very helpful. I was grateful to the chemistry department at EKU for not only understanding my needs, but also going above and beyond in assisting with special projects and class fulfillment."

That we continue to meet a special need in our region is exemplified by the fact that we are able to draw students from Lexington, despite the fact that there is a school with a graduate program in chemistry located in that city. Three of our current graduate students commute from Lexington.

E. Contributions to Diversity Goals

The department has made progress toward obtaining diversity of students and faculty. Women and minority students are encouraged to apply for admission. Efforts have been made to recruit women and minority faculty. Our faculty is quite diverse for a chemistry department, with 38% (5 of 13) of our faculty being of recognized minority status (based on either race or gender). We believe this diversity has a profound effect on our students at both the undergraduate and graduate level. The number of women in our undergraduate classes is greater than 50%. In our Forensics Science major the courses are populated almost entirely of female students. Our Master's program is currently 71% female or racial minority.

F. Accreditation Status (if applicable): Attach copy of most recent report.

No specific accreditation is available for M.S. programs across the country. However, our B.S. program maintains the American Chemical Society accreditation and undergoes periodic professional review. Such accreditation is a measure of the quality of our faculty and facilities.

G. Planning

The Master of Science Degree in Chemistry program at Eastern Kentucky University is academically sound, serves a very useful function to the Department, the University, and the region, is
highly cost effective and thus should most definitely be retained. We have developed the following plan to increase the number of graduates per year and improve the program even more.

**Student Recruitment**

At present, the Department is going through a period of evolution under new leadership (from Chairman, through the Dean of the College of Arts and Sciences and the anticipated Dean of the Graduate School, to the Provost). The faculty is also changing through retirements. The new and continuing faculty members are increasing the level of scholarly research in the Department and this has already led to a significant increase in the number of undergraduate students doing research (see Section C). A similar positive impact of these changes on the graduate program is expected over the next several years. In order to achieve the desired productivity of the MS program we will strengthen new recruitment efforts we recently initiated and which have already produced significant results. In the 2000-2001 academic year 6 new students have joined the M.S. program. This number is considerably higher than those who joined in recent years: 1999-2000 (2), 1998-1999 (1), 1997-1998 (2), 1996-1997 (5) and 1995-1996 (1).

Some of the specific actions we have begun, or intend, to take include (i) Redesigning our recruitment brochure to make it more informative. (ii) Listing our program in the Directory of Graduate Research, a publication of the American Chemical Society widely used by potential graduate students. (iii) Negotiating with the University, through the new permanent Dean of Graduate School, increased stipends and/or tuition waiver for teaching assistants. Larger schools offer stipends of $16 000 or higher and hence draw students away from EKU and similar schools. For us to successfully recruit more students we need higher stipends and, in view of the anticipated increased enrollment, more graduate assistantships. A tuition waiver for graduate students will also go a long way in making our financial support attractive to prospective students. (iv) Exploring ways of obtaining scholarships and/or stipends for our students from external sources. (v) Ensuring that new faculty hires have a significant interest in research, in addition to being committed to excellence in teaching. (vi) Improving our research facilities in general. The last two points mentioned above have a direct bearing on recruitment because a major consideration for most students looking for graduate school in chemistry is the availability of a variety of research opportunities and facilities.

In order to maximize our recruitment efforts, we are sending a faculty member to a workshop on March 8-9, 2001 run by the Graduate and Professional School Enrollment Management Corporation. The workshop is entitled, “How to Recruit Graduate Students, Strategies, Techniques and Secrets.” Among other things the course instructs on: (i) How to increase the size and quality of our prospective student pool by developing highly persuasive direct mail programs and use of the World Wide Web. (ii) How to convert more inquiries into applications. (iii) How to convert more admitted students into enrolled students. (iv) How to recruit minority students. The registration for the course is provided by the graduate school but the department is picking up travel costs as demonstration of our commitment to the graduate program.

**Student Retention and Throughput**

We will also be looking at ways in which to improve our retention rate. Some of the factors mentioned above that will help with student recruitment are also important for retention. A major factor that affects our ability to retain graduate students is that our stipends are not competitive. As documented in Section B2, we lost 2 graduate students to Ph.D. schools in the year 2000. In order to increase our retention rate we need higher stipends and tuition waivers for graduate assistants. Most of our graduate assistants have been (and are) people who had particular reason for wanting to attend EKU and this reason overshadowed the low G.A. stipend. As mentioned in the preceding section, we intend to negotiate
with the university increased financial support, in addition to exploring ways of obtaining scholarships and/or stipends for our students from external sources.

One way to attain the desired productivity for the M.S. program in chemistry is to get graduate students to complete all the requirements for the degree in the typical two to two-and-a-half years. In general, summer is the time when most graduate students make significant strides in their research work since they are able to devote more time to research with fewer distractions. Most of our students are not able to do this because they have to look for summer employment, sometimes outside of Richmond. This problem could be alleviated if we were able to offer the students support. Towards this end, the department was able to support one graduate student as a laboratory instructor in summer 2000 semester and is planning to support two students in the summer 2001. The availability of summer support would also be a useful recruitment tool.

Faculty Recruitment and Space Issues

A successful academic program requires highly dedicated and motivated faculty. Potential faculty members in chemistry, when they apply and accept jobs, typically evaluate the opportunities for maintaining active scholarly programs. Adequate research support and facilities will, therefore, help in recruiting quality faculty and, hence, students. An integral part of the research support would include startup research funds for new faculty. This should be of the order of $20 000 - $50 000, which is typical for public regional universities (Chemical and Engineering News, June 19, 2000, p. 44).

While teaching remains the major mission of EKU, research is an important avenue for achieving this mission, especially at the graduate level in the sciences. Consequently, as some of the faculty who have not been active in research in the last few years retire, the department is committed to replacing them with research active faculty. However, the current research space will be inadequate for this transition to successfully take place. More faculty office space is also needed. At the present time, two faculty offices and a graduate students' office are located in Miller Hall, far removed from instructional classrooms and research laboratories housed in the Moore and Memorial Science buildings. This is not only inconvenient to the faculty and graduate assistants concerned, but also to their students. To meet the needs for office and research space the department has undertaken a self-study of its space utilization and has come up with some viable solutions that involve remodeling some of our existing space allocation. We are currently working on proposals to be submitted to the university administration shortly.

Curriculum

A strong, well-organized curriculum is essential to the success of an academic program and we are constantly reviewing our program to see how we can give our students the best education possible.

The M.S. program as it stands now is a strong one and is achieving the objectives of providing advanced training for bachelor level people who require additional training in chemistry. However, we think it is time to explore other options. We recently developed a non-thesis option that targets people working fulltime, who thus, can not make time commitment required for laboratory based search. We are also revising the curriculum to make better use of our 500/700 level courses and reduce the number of 800 level courses, which tend to have low enrolment.

In order to broaden our appeal to students we plan to explore the possibility of developing specialized options within our graduate program. For instance, we will explore the feasibility of developing a strong interdisciplinary focus in biological chemistry. There are several faculty members with overlapping expertise in biochemistry, structural biology and molecular biology in the Departments of Chemistry and Biology. Since EKU already has a very strong faculty in this area additional faculty are
unlikely to be required for such a focus to be developed. We have already begun to actively nurture
collaborations across departments. For example, we have a faculty member in the Chemistry Department
directing the thesis research of a graduate student in the Biology Department.

The department runs a very successful and nationally respected forensic science program at the
undergraduate level. Naturally, we have begun exploring the possibility of developing a forensic science
option within our M.S. program. The M.S. degree would focus on students with a bachelor’s degree in
chemistry interested in transitioning into the field of forensics. While this has the potential of attracting a
high number of students (20 graduates per year) it would require significant financial resources from the
university. We have identified the following areas that need to be addressed. (1) At least two tenure
track faculty positions in the forensics science specialty. These faculty are needed to teach the graduate
level forensics courses and to do research in the forensics area. (2) Research laboratory space for above.
(3) A second forensics-teaching laboratory. The current laboratory is at 75% capacity for students in our
undergraduate program. (4) Equipment for the forensics teaching laboratory and research grade
equipment for graduate research. The current equipment is being heavily used by the undergraduate
forensics students. (5) An administrative position for the director of the undergraduate and graduate
Forensic Science Program and an administrative assistant. The high number of students for both
programs would necessitate this.

H. Development

I. Additional Indicators for Career Preparation Programs

The American Chemical Society Committee on Professional Training (CPT), which is charged
with examining education in chemistry at the postsecondary level, recently wrote a report titled "The
Master's Degree in Chemistry", based on two surveys it conducted. The report was posted on their
website at [http://www.acs.org/education/cpt/cptsr02.htm](http://www.acs.org/education/cpt/cptsr02.htm) and a copy is provided here as Appendix 4.
According to this report, "There are obvious indicators that the Master's degree in chemistry is alive and
well. The numbers of Master's degrees awarded in chemistry are quite comparable to those for the Ph.D.,
and have showed an upturn in this decade. The annual salary survey conducted by the ACS shows a
consistent and significant added value of the M.S. degree for professional chemists as they enter the
workforce."

Clearly there is demand for the M.S. degree in chemistry in America. The fact that all our
graduates get jobs that require a strong chemical background, most of them in Kentucky, is clear evidence
that the degree is an important qualification on the job market in our region. In fact the demand is such
that some of our students get jobs before they even complete the program. Others who joined the
workforce with only a bachelor's degree come back to obtain the masters' degree because of its added
value.

J. Other Indicators of Program Quality

K. Response to Previous Program Reviews or Other Assessments

No external professional accreditation agency reviews this program. The Department of
Chemistry has a graduate committee which is responsible for a continuing review of the program. As a
result of a recent review of the curriculum by this committee, the contents of two core courses (Separation
methods, CHE 824 and Thermodynamics, CHE 873) were significantly changed and the courses given
new names and numbers (Advanced Analytical Chemistry, CHE 822 and Advanced Physical Chemistry,
CHE 772). A completely new course was introduced (CHE 850) and one course eliminated from the
program (CHE 825). These changes were undertaken to strengthen the curriculum by widening the scope of topics and bringing in more recent developments in the various sub-disciplines of chemistry.

The committee has also identified student recruitment, student retention and inadequate office and research space as concerns that need to be addressed. These have already been discussed in section G. Other concerns identified by the committee are addressed below.

**Equipment**

Funds for purchase of new equipment and maintenance of existing equipment will also be necessary. Indeed, the hiring of an instrument technician would be a very positive step. Such a technician would be responsible for repairing equipment across departments. It should be pointed out that the graduate program does not contribute to the number or complexity of the department's instrument inventory. The graduate program requires no special equipment; it utilizes the same equipment required for the advanced students in the undergraduate program. None of the major pieces of equipment in the department was justified by or requested for the graduate program and very few of the requests even mentioned usage of the desired resources in this program. The graduate program does contribute to the total use of these instruments, but any extra wear and tear is more than offset by the collective operating expertise which graduate students provide simply by being near the instruments during the time undergraduate are using them.

**Faculty Professional Development**

In chemistry, as in other sciences, the content of the discipline is in almost constant change due to new technology. It is impossible to totally keep up with the state-of-the-art developments, but it is necessary that we not stand still. These new developments are almost always in the area of chemical instrumentation and they necessitate some changes in both the M.S. and B.S. programs. Not only must we constantly ask for new equipment, but we must also ask of funds to send faculty members to short courses for training on these instruments as well as for general upgrading of other skills. Travel funds for faculty and students to attend scientific conferences also need to be increased.

A summary of the salient features of this report is provided at the beginning.
Appendix E

Eastern Kentucky University

Example of Information and Data Provided By the Program

Scholarly/Creative Efforts

Chemistry Report Appendix 2A-D and Appendix 3

2000


1999


• Chrysotherapy: Gold Drug Metabolism and Immunochemistry” in P. J. SADLER and M.J. Cleare, Metal Ions in Medicine, Springer Verlag, Heidelberg, 187-216 (1999).


1998


1997


1996


1995


• Three new polynuclear, bis(µ-phosphato) vanadyl clusters: [HB(pz)2VO(µ-(C6H4O2)2PO2)2], [HB(3,5-Me2pz)2VO(µ-(C6H4O2)2PO2)2]2C7H8, and H2O[t-Bupz(µ-C6H5OPO3)VO]2(H2O)2·2CH3CH2OH. Adaptability of the cyclic (OV)(OPO)2(VO) bridging unit. Marcus R. Bond, Ladd M. Mokry, Tom Otieno, Jeffrey Thompson, and Carl J. Carrano, *Inorg. Chem.*, 34, 1894-1905 (1995).


**2000**

• Enzymes: the hot and cold of it. Leslie P. Allen, Elizabeth R. Kiely, V. Welch and Martin L. Brock. 32$^{nd}$ Annual Southeastern Regional Student Affiliate of the American Chemical Society Undergraduate Research Conference, Richmond, Kentucky, April 2000, Abstract O2.


• Synthesis and Characterization of a Pyrazine-Bridged Coordination Polymer of Copper(II) Nitrate. Ann M. Gipson§ and Tom Otieno. 86$^{th}$ Annual Meeting of the Kentucky Academy of Science, Lexington, Kentucky, Nov-Dec. 2000. (Ann M. Gipson won 2$^{nd}$ place in the undergraduate competition, Chemistry Section.)

• Synthesis and characterization of copper complexes of 2,4,6-trimercaptotriazine. Jaime R. Bailey§ and Tom Otieno, 32$^{nd}$ Annual Southeastern Regional Student Affiliate of the American Chemical Society Undergraduate Research Conference, Richmond, Kentucky, April 2000, Abstract O6.

• Spontaneous Aggregation of Meso-Tetra(4-Sulfonatophenyl)Porphine in Polyelectrolyte Multilayer Thin Films,” A. M. Gipson§, G. A. Schick, 32$^{nd}$ Annual ACS Southeastern Regional Undergraduate Research Conference, Richmond, KY, April 13-14, 2000, Paper O3.


• Undergraduate Research at EKU. W. D. Schulz, Kentucky Community and Technical Colleges Symposium, Bowling Green, KY. April 14, 2000.

• Mechanism for the Reduction of Tetracyanoaurate by Biological Thiols." Matthew D. Phillips§ and C. Frank Shaw, III. 32$^{nd}$ Annual Southeastern Regional Student Affiliate of the American Chemical Society Undergraduate Research Conference, Richmond, Kentucky, April 2000, Abstract O5.

1999

• Synthesis and crystal structure of pentakis(imidazole)copper(II) hexafluoroarsenate monohydrate. Sherry L. Asher§, M. Jason Hatfield§, and Tom Otieno, 85th Annual Meeting of the Kentucky Academy of Science, Richmond, Kentucky, November 1999. (M. Jason Hatfield won 1st place in the undergraduate competition, Chemistry Section.)


• Hexakis(pyrazole)copper(II) complexes. Jaime R. Blanton§, Sherry L. Asher§, Michael J. Hatfield§, and Tom Otieno, 31st Annual Southeastern Regional Student Affiliate of the American Chemical Society Undergraduate Research Conference, Cullowhee, North Carolina, April 1999, Abstract 1.

• Incorporation of Patterned Inorganic Electrochromic Materials into Organic Thin Films. B. Craven‡, Y. Liu, and G. A. Schick, 85th Annual Meeting of the Kentucky Academy of Science, Richmond, KY, Nov. 4-6, 1999.


• Investigation of Solid Phase Microextraction (SPME) for Analysis of Scents. Mary Ann Roark and W. D. Schulz. 85th Annual Meeting of the Kentucky Academy of Science, Richmond, Kentucky, November 1999.


1998


• A Preliminary Analytical Look at a Tyrannosaurus rex Rib Bone. Nancy Plunkett, Robert E. Fraas, William Farrar, 84th Annual Meeting of the Kentucky Academy of Science, Jefferson Community College, SW, Louisville, KY, Nov. 12 – 14, 1998. (Nancy Plunkett won 1st place in the undergraduate competition, Chemistry Section.)


• Application of UV-Photoresist Technology to Patterning Organic Thin Films,” B. Craven,‡ A. Gipson,§ G. A. Schick, 84th Annual Meeting of the Kentucky Academy of Sciences, Jefferson Community College, SW, Louisville, KY, Nov. 12 – 14, 1998, Chemistry paper 5:30 pm.


1997

• Synthesis of Substituted Dienes and their ultrasound mediated Cycloaddition Reactions With Aldehydes. Charles Allen, R.L. Eisenberg, Department of Chemistry, Texas A&M University-Commerce, Commerce, TX. ACS Meeting in miniature, Dallas, TX, 1997.

• Evaluation of Headspace Solid-Phase Microextraction in the Analysis of Oxygenated Liquid Residue from Fire Debris. Scott May, Julia Dolan, Robert E. Fraas. 83rd Annual Meeting of the Kentucky Academy of Science, Morehead, KY, November 14, 1997. (Scott Maye won 1st place in the undergraduate competition, Chemistry Section.)


• Synthesis and characterization of vanadium(IV) thiocyanate complexes. Wendell B. Lake§ and Tom Otieno, 29th Annual Southeast Regional Student Affiliates of the American Chemical Society Undergraduate Research Conference, Johnson City, Tennessee, March 1997, Abstract 18.


1996


• Science in Court: Forensic Science Careers”, *82nd Annual Meeting of the Kentucky Academy of Science*, Kentucky State University, Frankfort, KY, November 15, 1996.


• Cyanides and Oxidation Reduction Reactions in the Chemistry of Gold Pro-Drugs” C. F. Shaw III, *International Conference on Gold in Science and Technology*, June 17-20, 1996, Hanau, Germany [Invited Talk]


1995


2000


1999


•Organic Chromophore Monomers in Polyelectrolyte Multilayer Assemblies. A. M. Gipson,§ B. F. Craven,‡ G. A. Schick, 85th Annual Meeting of the Kentucky Academy of Science, Richmond, KY, Nov. 4-6, 1999, Poster No. 17.


•Models of the Symmetry Point Groups: Correlating Group Order and Structural Complexity. C. Frank Shaw III, Kentucky Academy of Sciences 85th Annual Meeting, EKU, Nov. 4-6, 1999.


•Determination of Rare Earth Elements in Solder by Inductively Coupled Plasma Mass Spectrometry. Joy Hackman, and Diane Vance. 85th Annual Meeting of the Kentucky Academy of Science, Richmond, KY, Nov. 4-6, 1999.


1998


- Biomimetic oxidation of the drug Et₃PAuSAtg and the metabolite Au(CN)₂⁻ by hypochlorite ion, OCI, an immunooxidant. A. J. Canumalla and C.F. Shaw III, Fourth International Conference on Gold and Silver in Medicine, Milwaukee, WI, May 31 - June 1, 1998.

- Isolation, ¹³C NMR and ¹⁹⁷Au Mössbauer spectroscopy of serum albumin-Au(CN)₂⁻ adducts. Annapurna J. Canumalla, Fritz E. Wagner and C. Frank Shaw III, Fourth International Conference on Gold and Silver in Medicine, Milwaukee, WI, May 31 - June 1, 1998.

- The Immunochemistry of Gold Drugs and Metabolites. C. Frank Shaw III, A. Muñoz, A. Canumalla, and N. Alzamil. Fourth International Conference on Gold and Silver in Medicine, Milwaukee, WI, May 31 - June 1, 1998.


1997


- Internships: Worth the Effort for Laboratory and Student? Robert E. Fraas, Southeast Regional Meeting of the American Chemical Society, Roanoke, VA, October 21, 1997.


• Developing a Method to Study the Reactions of Lobster Metallothionein with the Alkylation Antitumor Agent, Melphalan. Jennifer Schellhaas, A. Muñoz and C. F. Shaw III, National Conference on Undergraduate Research, Austin TX, April 24-26, 1997.


1996


• Probing Protein-Precipitant and Protein-Protein Interactions with UV Absorption Spectroscopy, L.J. Wilson and M. Esteban§, NIH/NAI Protein Crystal Growth Workshop, Panama City, FL, May, 1996.

• Purification of Human Serum transferrin by Preparative Isoelectric Focusing. S. Whitehead§ and L.J. Wilson, Southeast Regional Meeting of the American Chemical Society, Greeneville, SC, October, 1996.

• A Quantitative Study of Protein Aggregation using Size-Exclusion Chromatography, L. Lonon§ and L.J. Wilson, Southeast Regional Meeting of the American Chemical Society, Greeneville, SC, October, 1996.

1995


2000


• Development of Metallopeptidase Active Site Mimics. R. L. Eisenberg, EKU Research Committee, $6000, Submitted October, 2000.


• Transition metal complexes of Schiff base ligands derived from aniline based diamines. Tom Otieno, Council on Undergraduate Research, $3000-4000. Submitted, November 2000.


• Patterned Organic Thin Films. G. Alan Schick, EKU University Research Committee, $2500. Funded, 1/18/00 - 6/30/01.

• Interdisciplinary Research Experiences for Chemistry Students in Surface Chemistry and Nanolithographic Device Fabrication. G. Alan Schick and Robert W. Cohn (University of Louisville), NSF-EPSCoR, Requested, $ 29 454. Funded, $8 650, 5/15/00 - 8/15/00.

• Patterning of oriented protein nanostructures on surfaces. G. Alan Schick and Leonidas Bachas (University of Kentucky), NSF-EPSCoR, Requested, $9,024. Funded, $7,720, 5/15/00 - 8/15/00.

• Domain Reactivity and Function of Lobster Metallothionein - Change of Grantee Institution. C. F. Shaw, National Institutes of Health, $25,039. Funded, 4/1/00 - 12/31/00.

• Research Enhancement Grant to Attract Dr. Lori Wilson to EKU. C. F. Shaw and L.J. Wilson, Kentucky EPSCoR, $18,000. Funded, May, 2000 - April, 2001.


1999


1998

1997

• Coordination Chemistry of Vanadium Cyanate Compounds. Tom Otieno, Kentucky NSF EPSCoR, $150,000, 1997. Not funded.


• Laser-Induced Fluorescence Detection of Protein-Protein Interactions. L.J. Wilson, Bio-Rad Laboratories, $34,000. Funded, August, 1997.

1996


• Domain Reactivity and Function of Lobster Metallothionein. C. Frank Shaw III, National Institutes of Health, $75,000. Funded, 5/1/96-3/31/00.

1995
• Cadmium, Zinc, Metallothionein and Kidney Cytotoxicity," D. H. Petering, PI, C. Frank Shaw III and S. Blumenthal, National Institute of Environment of Health Sciences, $976,804; ~190,000 per year. Funded, 7/1/90-6/30/95.


**Eisenberg, Rodney L.**
- Regional High School Science Fair Judging. Tyler, Texas, 1996

**Fraas, Robert E.**
(a) Forensic Science Talks
- Northwest Health Education Center, Louisville, KY. June 29, 2000.
- Upward Bound Program, Morehead State University, June 28, 2000.
- "The Wonderful World of Forensic Science", Phi Sigma Meeting (National Biology Honor Society), November 18, 1999, Richmond, KY.
- Garrard County High School, Lancaster, KY, April 28, 1999
- Pulaski County High School, November 13, 1997
- Garrard County High School, November 6, 1997
- Estill Garrard County High School (Chemistry class), October 25, 1996.
- Estill County High School (Career Day), September 30, 1996.
- Louisville Moore High School, November 30, 1995
- Madison Southern High School, Berea, KY, November 30, 1995
- Estill County High School, November 3, 1995
- Governor’s Scholars Program, Centre College, July 18, 1995
- North Laurel High School, London, KY, April 18, 1995
- Pulaski County High School, Somerset, KY, April 7, 1995

(b) Consulting (unpaid)
- University of Wisconsin – Milwaukee, January 7, 2000. Dr. Victor Skrinska, Director of Clinical Laboratory Sciences and Dr. Michael Camp, Laboratory Director, Wisconsin State Crime Lab – Milwaukee.
- College of Arts and Science and Department of Chemistry, Virginia Commonwealth University, Richmond, VA (Dr. Fred Hawkridge, Chair), January 28-29, 2000.

(c) Others
- “Experiential Programs in Chemistry”, panel discussion participant at the Southeast Regional Meeting of the American Chemical Society, Roanoke, VA, October 21, 1997.
- Board of Trustees, Capital University, Columbus, OH 1989- present
  - Executive Committee
    - Academic Affairs Committee, Chair
    - Honorary Degrees Committee
    - Presidential Search Committee.
- Ethics Committee, Midwest Association of Forensic Scientists, 1998 - present.
- Kentucky Academy of Science, Chemistry Section
  - Secretary, 1998-1999
  - President, 1999-2000

**Godbey, Susan**
(a) Consulting and professional service
- Science Fair Judging.
• 1999 Kentucky American Water Company Science Fair
• 1997 International Science & Engineering Fair, Louisville, KY
• Fellowship Reviewing.
  • 1997 National Defense Fellowship Reviewer, Research Triangle Park, NC.
  • 1995 National Defense Fellowship Reviewer and Chair of Chemistry Review Committee, Research Triangle Park, NC.
• Liberal Arts Chemistry Focus Group 2000 Consultant for McGraw-Hill, April 7-9, Chicago, IL.

(b) Outreach
• Presented chemical demonstrations to elementary school children (5th graders) from Hannah McClure Elementary School, Winchester, KY, on Dec. 16, 1996 and led the students on a tour of our department. (Co-presenters: Drs. Martin Brock and Tom Otieno)

Otieno, Tom
(a) Invited talks at colleges and universities
  • Synthesis and characterization of mononuclear copper(II) and vanadium(IV) pyrazole complexes. Department of Chemistry, University of Kentucky, Lexington, Kentucky, April 2, 1999.
  • Synthesis and characterization of copper(I) and vanadium(IV) thiocyanate complexes. Department of Chemistry, Berea College, Berea, Kentucky, February 26, 1998.

(b) Consulting and professional service
  • EKU liaison for the Council on Undergraduate Research (1995 to date).
  • Public Relations Chair for the Lexington Section of the American Chemical Society (1997 to date).
  • Served on the Local Arrangement Committee for the 32nd Annual Southeastern Regional Student Affiliate of the American Chemical Society Undergraduate Research Conference, Richmond, Kentucky, April 2000.
  • Served on the Local Arrangement Committee for the 85th Annual Meeting of the Kentucky Academy of Science, Richmond, Kentucky, November 1999.
  • Presided over a conference session at the 51st Southeastern Regional Meeting of the American Chemical Society, Knoxville, Tennessee, in October 1999.
  • I provided free consultancy services to Mr. Randall Sale (teacher) and Ms. Katie Ewalt (student) of Paris High School, Paris, Kentucky (Fall 1995 and Spring 1996). The consultations were in regard to a chemical project they are working on.

(c) Outreach
  • Participated in the Rockcastle County High School’s (Mt. Vernon, KY) Semi-Annual Science Career Day (Nov. 19, 1999).
  • Visited with high school students of Paris High School, in Paris, KY (December 11, 1998). Our discussions centered on transition from high school to college, and careers for chemists.
  • Presented demonstrations on chemical energy to elementary school children (5th graders) at the Madison County Energy Fair at EKU on May 5, 1997. (Co-presenter: Dr. Martin Brock)
  • Presented chemical demonstrations to elementary school children (5th graders) from Hannah McClure Elementary School, Winchester, KY, on Dec. 16, 1996 and led the students on a tour of our department. (Co-presenters: Drs. Martin Brock and Susan Godbey)
  • Made a presentation on "career opportunities for chemists" to high school students at Burgin Independent School, Burgin Kentucky, October 2, 1996.
Schick, Alan
(a) Invited talks at colleges and universities
• How to keep desert reservoirs full using olive oil. Berea College, April 22, 1999.
• Post-collapse relaxation processes in monolayers at the air/water interface. Eastern Kentucky University, Feb 2, 1997.
• Patterned polymeric thin films for flat-panel displays. Eastern Kentucky University, March 14, 1995.
(b) Consulting and professional service
• American Chemical Society, Lexington Local Section
  • Webpage coordinator (1997 - present).
  • 1999 National Chemistry Olympiad Coordinator
  • 2000 National Chemistry Olympiad Co-coordinator
• Symposium organization.
• Short Course offering.
  • "Physical Surface Chemistry," Lexmark International, Lexington, KY (Jan. 3-5, 1999), a 2-1/2 day short course on the title subject. The course was attended by 34 scientists and engineers.
• Peer Review.
(c) Outreach
• Poster Judge (4/25/98), University of Kentucky's Chemistry Day poster session.
• Science Fair judge, 2000 Kentucky American Water Company Science Fair (Tate's Creek H.S., Lexington, 3/11/2000)
• Faculty Sponsor (Fencing Club, 1997 - present)--Chartered in Spring 1997.
• School chemistry Demonstration (spring 1996), East Jessamine Middle School.

Schulz, William
(a) Invited talks at colleges and universities and other institutions
• Solid Phase MicroExtraction for Arson. Eastern Kentucky University, Feb 10, 1999.
• Solid Phase MicroExtraction (SPME) for Fossil Fuel Detection and Analysis, Center College, Danville, April 28, 1998.
• Active and Benign Sulfur Compounds in Fuel Decomposition, Fuels Group and Contractors, USAF Wright Patterson, OH, May 1997.
(b) Consulting and professional service
• Consulted for USAF Fuels Group, Univ. Dayton Research Inst., Sherwin William, 2 Law firms, Madison County Concerned Citizen, Trenco Coatings, Richmond Fire Dept.
• KAS Research Awards Committee
• Madison Co. Hazardous materials/Safety Committee

(c) Outreach
• Teach Ky. Huntr Safety Courses
• Coach 4-H Trap Team

Shaw, Frank
(a) Invited talks at colleges and universities
• Metal-Induced Changes in Peptide and Protein Structures. Medizinisches Institut für Umwelthygiene", Düsseldorf, Germany, July 21, 1997.
• Symmetry from Modern Art to Molecular Structures. Colloquium at Augustana College Chemistry Department, January 28th 1997, Rock Island, IL.
• Metallothionein - An unusually versatile metalloprotein. Illinois State University, March 22 1996.
• Through the Looking Glass: The Symmetry of Right and Left. The UWM Science Bag, Milwaukee WI, - Jan 8, 15, 17, 22, 29, 1999.
• KY Teacher Intern Program Teacher-Educator for Mr. Edgar Rhodus, Integrated Science teacher at Kirksville Elementary School, 2000-2001 academic year.
• Chair of International Organizing Committee, 4th International Conference on Gold and Silver in Medicine", Milwaukee, WI, May 31-June 1, 1998.

(c) Outreach
• UWM Science Bag (a public outreach program)

Vance, Diane
(a) Invited talks at colleges and universities
• Environmental and Risk Issues in the DOE Nuclear Weapons Complex. Invited seminar, NRIChEd summer workshop for secondary teachers. University of Kentucky, 7/27/00
• Forensic Applications of Inductively Coupled Plasma Mass Spectrometry. Austin Peay University, Clarksville, TN, 3/22/00.

(b) Consulting and professional service
• Collaboration with the Analytical Chemistry group at the University of Kentucky Center for Applied Energy Research (CAER) to work with the inductively coupled plasma mass spectrometer (ICP-MS) (2000)
• Working with the Kentucky State Police lab in Frankfort on their purchase of a laser ablation ICP-MS (2000)

(c) Outreach

Wilson, Lori

(a) Invited talks at colleges and universities
• Protein Crystal Growth in Microgravity. Jewell Friend Lecture, College of Arts and Sciences, East Tennessee State University, Johnson City, TN Fall, 1999.
• Exploring Protein Crystal Growth in the Laboratory and in Microgravity. Tennessee Technological Institute, Cookeville, TN, Fall, 1998.
• Exploring Protein Crystal Growth in the Laboratory and in Microgravity. University of North Carolina - Asheville, Asheville, NC, Fall, 1996.

(a) Professional Service:
• Topic Editor, Journal of Crystal Growth and Design (A new ACS journal).
• Reviewer for (i) National Aeronautics and Space Administration, Grant Panel, (ii) National Aeronautics and Space Administration, EpSCOR Program, (iii) Reviewer, Journal of Polymer Science, (iv) Acta Crystallographica Section D. Biological Crystallography, (v) National Science Foundation, Analytical Chemistry
• Northeast Tennessee Representative, Steering Committee, Southeast Regional Meeting of the American Chemical Society, 1994-Present.
• Northeast Tennessee Representative, Steering Committee, Southeast Regional Meeting of the American Chemical Society, 1994-Present.
• Chair-Elect, Program Chair, Northeast Tennessee Section of the American Chemical Society, 1998-1999.
• Chairman, Northeast Tennessee Section of the American Chemical Society, 1998-1999.

(c) Outreach
• Mall Madness, Chemical Demonstration Show, Appalachian Girl Scout Council, Johnson City Mall, Spring 1996 and 1997.
• Judge, Undergraduate Division, Student Research Forum, East Tennessee State University, Spring 1995 and Spring 2000.
Appendix F

Eastern Kentucky University

An Electronic Copy of the Academic Program Review Committee Review Form is Available at http://www.academicaffairs.eku.edu/planning/programreview/