DEPARTMENT OF CHEMISTRY AND PHYSICS  
FACULTY MEETING MINUTES  
November 30, 2016


ABSENT: Suzanne Carpenter (excused), Sarah Gray, Jeffery Secrest and Randal Wilson.

I. CALL TO ORDER
The meeting was called to order at 12:05 on November 30, 2016 in Room 2016. Dr. Will Lynch presided.

II. APPROVAL OF MINUTES
The Minutes from October 19th, 2016 were approved as presented.

III. NEW BUSINESS
A. Faculty Senate
The following items are the highlights of the last Faculty Senate Meeting:

1. Dr. Mark Taylor, director of Academic Advising and Support reported that students are at the heart of what they are doing. Dr. Taylor distributed handouts regarding what is taking place in Academic Advising and how they are handling the many challenges. Among the challenges they are facing are post-bacs in terms of serving through advising and identifying benchmarks in regards to when advising should transfer to the departments. Currently they are offering walk-in advising and have taken over hardship withdrawals.

2. SmartEval, students’ comments
Smart Evaluations were supposed to have a mechanism in place so that faculty could see signed and unsigned comments but that is not the case yet.

3. Sanctuary Campus Resolution.
The Faculty Senate decided that they would push back this item to the USGFC so that something could be put forward by the full faculty council of the USG schools.

4. Faculty Evaluation
The Ad Hoc Committee was charged with addressing compensation for post-tenure review and to look at consistency in the post-tenure process across the university. Currently they are looking to generate suggestions for both issues.

5. Summer Profit
The Ad Hoc Committee has met on several occasions and downloaded from Banner information from last summer in terms of enrollment, revenue and cost. They were able to identify profitable and unprofitable courses. Some courses and pay were in there that should not have been included. They identified the fact that there is a need for summer revenue to generate money for the academic year as a whole. Right now they are looking at a model that will help incentivize departments to increase enrollments in their summer courses so that those departments would share in the profits.

6. Education Technology
The committee has been charged with reviewing the software that is used to back-up files since some say that it does not work and has limited capacity. In addition to this, they have heard that computer labs have many computers that not work and that some computer labs are not heavily used by students.

B. Planning, Budget and Finance
Dr. MacGowan informed the faculty that costs on campus due to Hurricane Matthew are estimated at $772,000, which will be paid mostly by FEMA and insurance. She also mentioned that beginning this summer 2017 faculty will be paid twice monthly.

C. T & P Document
The T & P Document was reviewed and the changes were highlighted. The faculty voted unanimously in favor of the changes. For more details, please refer to Attachment#1.

D. ACS Exams
New ACS exams were ordered and received, so there is an up-dated version of the exams. The exams will be placed in cabinet #2 in the main office. You will need a key to unlock the cabinet, which is with all the other keys in Gladys’ desk. Dr. Lea Padgett is asking that when taking the exams to please take the whole set to avoid pages from being lost. Faculty need to go to Dr. MacGowan for the exam key. Faculty need to ask students to indicate whether they are male or female for the school data. Scantrons still need to be handed over to Dr. Cliff Padgett.

Please note that due to Hurricane Matthew there has been set a Conflict Time for tests, which will be held in room 2016 from 2:00-4:00pm on Friday, December 9th.

E. Student Professionalism Lunch – Monday, January 9 at noon in SC 1407
Some time ago some faculty members approached Dr. Lynch regarding students’ professionalism, their behavior, their commitment to activities that go on in the department, work ethics, attention to detail and concerns related to the faculty’s expectations.

Dr. Lynch has come up with an idea and would like for feedback on whether it is a good idea or not. The idea consists on inviting the students to lunch to discuss the faculty’s concerns. A good idea would be to bring in the students by discipline. So far, Dr. Lynch thinks that the lunch could be held by mid-January next year. He is asking for faculty to give their input.
F. End of Term Deadlines
Just a note, because of the pushing back by 1 week of the fall semester, the turnaround on grades is going to be very quick. So, please try to plan ahead so you can make the deadline.

Reminder:
Final Exams End on Thursday December 15
Grades are due at 9 AM on Monday Dec. 19

This is going to be a hard deadline, there will be no wiggle room as has been in the past. Please plan accordingly so you can make this deadline, they need to process grades and turn that around immediately on Monday the 19th to get ready for Spring 2017.

G. Instruments List
The instrument was distributed and contents will be discussed again in January 2017. If there is anything that was left out, please relay information to Dr. Lynch. For more details, please refer to Attachment #2.

V. OLD BUSINESS
A. Budget Up-date
The budget is still in good shape. If traveling during the spring, do remind Dr. Lynch since traveling is no longer being encumbered by the Business Office.

B. Newsletter
Drs. MacGowan and Lea Padgett agreed to work with Dr. Lynch to put the newsletter together but if anyone else would like to be involved, there is always room for a 4th member. We are still looking to release the newsletter on January 2017. Do let the committee know about any outstanding requests to be included in the newsletter.

VI. Announcements
A. Upcoming Dates
   i. CHEM 4500 – MWF Dec. 5,7,9 @ noon
   ii. BCHM 4501 – MTW Dec. 5,6,7 @ noon
   iii. Oct. 28 – Country Day AP Class on Campus

B. Faculty Information
   i. Dec. 8 – ASTR Club Seminar featuring talk by Dr. Secrest

The meeting was adjourned at 12:40pm.

cc: Dr. Delana Nivens, Interim Dean, College of Science and Technology
    Dr. Brent Feske, Interim Associate Dean, College of Science and Technology
Attachment 1

Department of Chemistry and Physics
Criteria Relating to Tenure and Promotion
(Approved Oct. 22, 2014)

The Department of Chemistry and Physics supports the Mission Statement of Armstrong State University and the Philosophy and Goals of the College of Science and Technology, in accordance with University regulations as outlined in the Armstrong State University Faculty Handbook. The major focus of faculty effort and resources is on quality undergraduate instruction, and service is considered a responsibility of employment. The pursuit and support of scholarly activities are professional obligations of every tenure-track faculty member. Professional development, through participation in discipline-related activities, is expected of all faculty.

Diversity is important to a dynamic and well-rounded department. For tenure-track and tenured faculty members, quality undergraduate teaching is paramount, and the individual faculty member may choose how to allocate resources between scholarship and service providing that satisfactory performance is achieved in all areas. Activity in both scholarship and service is required, and in matters of promotion, scholarship shall be given more weight than service. In consultation with the department head, faculty members may decide the focus of their activities within the long-range needs of the department, college and university.

The following are the categories of full-time faculty members. Tenure-Track faculty include Assistant Professors, Associate Professors, and Professors. These faculty have professional obligations of teaching, scholarship, service and professional development. Lecturers and Senior Lecturers are instructional faculty who are not eligible for tenure. Their appointments include teaching, service and professional development obligations. Employees who are hired as Limited Term Faculty have the title of Instructor.

I. Suggested Professional Activities

 Following is the suggested professional activities list developed by the department to aid in the evaluation of teaching, scholarship, service and professional development activities. These activities are in accordance with those outlined in the current version of the Armstrong State University Faculty Handbook (105.2.3 Guidelines for Faculty Evaluation) Guidelines for Tenure and Promotion as well as the College of Science and Technology Guidelines for Retention, Pre-Tenure Review, Promotion, Tenure and Post-Tenure Review (hereafter referred to as CST Guidelines). This list is an evolving entity, and presents representative items in general order of importance. It is by no means intended to be comprehensive. Categories are ranked according to the workload and resources required for activities within each area. Evaluation procedures will provide greater reward for success in higher categories and take into account total workloads of individual faculty members.

I.A. TEACHING
Teaching effectiveness will be the most important single factor in all evaluations. Teaching includes all work that involves the use of a faculty member’s expertise to communicate a subject
matter to students. It may, therefore, include traditional lecturing in the classroom, supervision and training in a laboratory or clinical setting, nontraditional communication of a discipline, the collecting and developing of subject materials for communication to students, the guidance of students in independent study and research, and academic advising. A faculty member’s command of the subject matter, motivation of and relationship to students, testing and grading practices, and overall fulfillment of teaching responsibilities are primary characteristics to be considered in the evaluation of teaching. The department recognizes and encourages faculty consider but not limit their activities to the indicators of teaching effectiveness as outlined in the Evaluation of Teaching Effectiveness (2.2.2) contained in the CST Guidelines.

Evaluation of teaching will be carried out using the Guidelines for Evaluation (2.2.3) outlined in the CST Guidelines, other related survey methods, and an evaluation of class materials such as tests, syllabi, handouts, etc. Academic advisement is also an important teaching activity, therefore participation in advisement will be considered in the evaluation process.

I.B. SCHOLARSHIP
Scholarship involves the use of a faculty member’s expertise as a scholar or artist. It includes work that adds to the subject matter of a discipline and work that increases the expertise of a faculty member as a professional. Research and publications are encouraged by the university; the pursuit and support of scholarly activities, consistent with the role of the institution, are professional obligations of every tenure-track faculty member. In the judgment of the department, scholarship must involve peer review.

Scholarship for tenure or promotion requires accomplishments from the following categories:

Category I
- Publishing a book in your professional field
- Writing a chapter for a book in your professional field
- Publishing a discipline-related article in a refereed journal
- Developing and submitting an external proposal which is funded

Category II
- Presenting a discipline-related paper at a national, regional or international meeting or conference
- Serving as an editor or referee for a professional journal
- Reviewing a discipline-related article or book
- Developing and submitting an internal proposal which is funded
- Judging proposals for grant awards
- Conducting a discipline-related workshop
- Serving on a panel at a state, national or international meeting or conference
- Publishing a discipline-related article in a non-refereed journal
- Presenting a discipline-related work in a local or regional magazine
- Submitting an external proposal which is not funded

Category III
- Attending a discipline-related research-related workshop or presentation
- Attending a sectional, national or international meeting or conference
• Submitting an internal proposal which is not funded
• Presenting or authoring a discipline-related paper at a state or local meeting or conference
• Presenting a general, college or departmental lecture (including Faculty Lecture Series)

I.C. SERVICE
Service includes all work that involves the use of a faculty member’s academic status or professional expertise to benefit the university, the community or the profession. The essential element of service is that it involves contributions associated with a faculty member’s established status in a discipline and at the university. Unless otherwise stipulated in a faculty member’s job description, service is considered a responsibility of employment and consequently subject to evaluation.

Service for tenure or promotion requires accomplishments from the following categories:

Category I
• Maintaining instrumentation
• Serving in a university-wide advisory capacity
• Coordinating Departmental outreach activities
• Serving as consultant to a school, university, organization or industry
• Serving as an officer or committee chair for a professional society

Category II
• Serving as faculty advisor for a student organization
• Regular service in the Advisement Center or other advisement programs
• Organizing university functions
• Chairing a university committee
• Participating in a Departmental outreach activity
• Serving on a committee of a professional organization

Category III
• Speaking to a school class on a discipline-related topic
• Chairing a departmental committee
• Supervision of students in support of the departmental programs

Category IV
• Serving on a university or departmental committee
• Serving as liaison between Armstrong and community organizations
• Judging science fairs and other competitions

I.D. PROFESSIONAL DEVELOPMENT
Professional development includes strategic learning and services that increase individual and institutional effectiveness in support of the university and the University System of Georgia.

• Attending presentations
• Workshops
• Post-doctoral training
• Attaining additional degrees
• Continuing education
• Training sessions
• Seminars on matters pertaining to the application of disciplinary knowledge and institutional effectiveness.

II. Departmental Faculty Review Procedures

The system for departmental evaluation adopted by the Department of Chemistry and Physics consists of two parts: a review by department faculty and a faculty evaluation instrument. A departmental committee will conduct evaluations required for retention (non-tenured retention), pre-tenure, tenure, promotion, and post-tenure review recommendations. The Department of Chemistry and Physics is committed to high quality teaching effectiveness as the highest priority of the faculty, the department supports Peer Review of Instruction (2.2.4.3) as outlined in the CST Guidelines. The faculty evaluation instrument is attached at the end of this document. Guidelines for portfolio content are found in the CST Guidelines Portfolio Contents (3.4.9). The following outlines the departmental faculty review process.

II.A. For all department faculty members being considered for retention (non-tenured retention):

1. Two faculty mentors are assigned annually by agreement between the faculty member, two faculty mentors and Head to conduct a Peer review of instruction for mentoring as outlined in 2.2.4.3.a of the CST Guidelines. The evaluation instrument is attached and may be included in the portfolio.

2. A departmental committee will conduct the evaluation.

3. All full-time tenured and tenure-track faculty having seniority in years of service at Armstrong to the person under review (excluding the department head) will participate in these evaluations.

4. Scheduling of these evaluations will be done by the department head, in a timely manner consistent with the annual academic calendar.

5. Faculty members up for pre-tenure review will not be reviewed by this committee for retention, as the department head can examine the pre-tenure review for faculty input.

6. Senior lecturer yearly retention will be handled by the department head. The five year review replaces the yearly retention procedure. The department head will seek faculty input before not retaining a senior lecturer.

7. The first retention of a tenure track faculty member shall be handled by the department head. The department head will seek input from the faculty.

II.B. For all department faculty members being considered for tenure:
1. Two faculty mentors are assigned during the academic year of application by agreement between the faculty member, mentors and Head to conduct a Peer review of instruction for mentoring as outlined in 2.2.4.3.a of the CST Guidelines. The evaluation instrument is attached and may be included in the portfolio.

2. A departmental committee will conduct the evaluation.

3. All full-time, tenured department faculty (excluding the department head) will participate in these evaluations.

4. Scheduling will be done by the department head. The evaluation must begin at least one calendar month prior to the due date for the departmental recommendation for tenure.

II.C. For all department faculty members being considered for promotion:

1. Two faculty mentors are assigned during the academic year of application by agreement between the faculty member, mentors and Head to conduct a Peer review of instruction for mentoring as outlined in 2.2.4.3.a of the CST Guidelines. The evaluation instrument is attached and may be included in the portfolio.

2. A departmental committee will conduct the evaluation.

3. All full-time, tenured department faculty at or above the level of promotion being considered (excluding the department head) will participate in these evaluations for tenured and tenure-track promotion applicants. All full-time, tenured department faculty (excluding the department head) as well as senior lecturers will participate in the evaluations of lecturers applying for promotion to senior lecturer. At least one senior lecturer (from outside the department if necessary) must be on the committee when discussing a promotion from lecturer to senior lecturer.

4. Scheduling will be done by the department head. The evaluation must begin at least one calendar month prior to the due date for the departmental recommendation for promotion.

II.D. For all department tenured faculty – post-tenure review:

1. Two faculty mentors are assigned during the academic year of application by agreement between the faculty member, mentors and Head to conduct a Peer review of instruction for mentoring as outlined in 2.2.4.3.a of the CST Guidelines. The evaluation instrument is attached and may be included in the portfolio.

2. A departmental committee will conduct the evaluation.
3. All full-time, tenured department faculty (excluding the department head) will participate in these evaluations.

4. Scheduling will be done by the department head, in a timely manner consistent with the annual academic calendar, and as outlined in the Faculty Handbook.

5. The faculty member to be evaluated should be notified at the beginning of the academic year during which the evaluation is to be conducted.

II.E. For all senior lecturers – 5 year review:

1. Two faculty mentors are assigned during the academic year of review by agreement between the faculty member, mentors and Head to conduct a Peer review of instruction for mentoring as outlined in 2.2.4.3.a of the CST Guidelines. The evaluation instrument is attached and may be included in the portfolio.

2. A departmental committee will conduct the evaluation.

3. All full-time, senior lecturers and tenured department faculty (excluding the department head) will participate in these evaluations.

4. Scheduling will be done by the department head, in a timely manner consistent with the annual academic calendar, and as outlined in the Faculty Handbook.

5. The faculty member to be evaluated should be notified at the beginning of the academic year during which the evaluation is to be conducted.

III. Peer Review of Instruction for Mentoring Procedures

A. The department head, faculty member under evaluation and mentor all agree on the assignment of the mentor.

B. The mentor shall contact the faculty member and agree on a two week window for observation of both classroom and laboratory (in the event a faculty member under review does not have a laboratory that semester, only a classroom visit will occur).

C. The mentor shall visit the faculty member’s classroom and laboratory and perform a mentoring evaluation using the departmental instrument (College of Science and Technology Peer Review of Instruction for Mentoring Form).

D. The mentor and faculty member shall meet to review the outcomes within two weeks of the visit.

E. The faculty member shall receive the original evaluative summary for their records and may choose to include this document in their portfolio.
IV. Peer Review of Instruction for Evaluation Procedures

A. The department head shall contact the faculty member and agree on a two week window for observation of both classroom and laboratory (in the event a faculty member under review does not have a laboratory that semester, only a classroom visit will occur).

B. The department head shall visit the faculty member’s classroom and laboratory and perform a mentoring evaluation using the departmental instrument (College of Science and Technology Peer Review of Instruction for Mentoring Form).

C. The department head and faculty member shall meet to review the outcomes within two weeks of the visit.

D. The faculty member shall receive the original evaluative summary for their records, a copy will be placed in the faculty member’s permanent record and the document will be included in their portfolio.

V. Committee Procedures

A. The department head shall appoint a chair for the committee.

B. Records of performance in teaching, scholarship, service and professional development for the faculty member being evaluated must be made available for review by the committee prior to each evaluation. Portfolio contents are specified in the College Tenure and Promotion documents. In addition, reports on departmental votes and department head recommendations must be included.

C. The committee shall review the portfolio to ensure its completeness.

D. Committee members should read the files of the respective applicants. Files are available in the departmental office and may be taken to the conference room for reading. In the interest of speed and confidentiality, packets may not be taken to faculty offices.

E. A Faculty Evaluation Form should be used to record the assessment of the files and any information or opinions pertinent to the decision making process.

F. The committee will meet to discuss the strengths and weaknesses of the applicants. In all cases, discussion should be conducted in a collegial manner. The goal of all retention, tenure, promotion and post-tenure procedures is to improve the department.

G. Votes will be conducted by secret ballot supplied by the department head. There will be separate ballots for each promotion and tenure vote. These will be tabulated by the committee, sealed in an envelope, and submitted with the recommendation of the committee.

H. The chair of the Retention, Tenure, Promotion, Post-Tenure Review and/or 5-year Senior Lecturer Review Committee will submit a memorandum detailing the outcome of the vote.
and a short rationale for the result. This memorandum should be signed by all committee members. The committee’s memorandum shall be attached to the application and made available to the applicant. Should the committee be unable to agree on an acceptable memorandum then the majority of committee members will submit a signed memorandum and a minority memorandum may also be submitted. In addition, all committee members have the right to submit memoranda to the department head about the results of the proceedings.

I. All committee recommendations are due to the department head two weeks before the evaluation results are due in the office of the Dean of Science and Technology.
Faculty Evaluation Form
Department of Chemistry and Physics

Evaluation for ____________________________ Date________

In consideration of (check one)
Retention ____  
Tenure ____  

Promotion to:
  Assistant Professor ____  
  Associate Professor ____  
  Professor ____  
  Senior Lecturer ____  

Post-tenure Review ____  
5-Year Senior Lecturer Review ____  

Rating Scale

Lowest    [ 1 ] Unsatisfactory
[ 2 ] Needs Improvement
[ 3 ] Satisfactory (indicates meeting departmental expectations)
[ 4 ] Highly Satisfactory
[ 5 ] Outstanding

Highest

1. TEACHING: How do you evaluate this colleague with regard to teaching? Does (s)he effectively use her/his expertise to communicate the subject matter to students? How do you evaluate the command of subject matter, testing and grading practices, and overall fulfillment of teaching responsibilities for this colleague? Does the faculty member use student-based outcomes to evaluate her/his teaching effectiveness and guide her/his professional growth? Is the faculty member engaged in disciplinary activities to maintain currency in the discipline to support high quality teaching?


Comments:
2. SCHOLARSHIP: Does (s)he participate in the peer review process in her/his academic area of expertise which includes demonstrated outcomes (not required of Lecturers and Senior Lecturers)?


Comments:

3. SERVICE: How do you evaluate this colleague with regard to professional service (both within the University and in the community at large) and “reputation value” to the University and Department?


Comments:

4. PROFESSIONAL DEVELOPMENT: Does the faculty member demonstrate a commitment to professional growth and development manifested by interaction and collaboration with colleagues with common interests on campus and in the professional community at large?


Comments:
GENERAL COMMENTS:

STUDENT INVOLVEMENT: How do you assess the extent, nature, and value of this colleague’s involvement with students of Armstrong State University? Is (s)he considerate and non-abrasive in relations with students?

PROFESSIONAL DEVELOPMENT: Does the faculty member demonstrate a commitment to professional growth and development manifested by interaction and collaboration with colleagues with common interests on campus and in the professional community at large?

SERVICE TO UNIVERSITY AND COMMUNITY: How do you evaluate this colleague with regard to professional service (both within the University and in the community at large) and “reputation value” to the University and Department?

INTEREST AND INITIATIVE: Does this colleague participate actively and effectively in the identification, discussion, and resolution of problems and issues facing the Department, the College and the University?

PROFESSIONAL BEARING: Is (s)he self-confident and fully professional and collegial in manner and appearance?

DEPENDABILITY: Does (s)he willingly carry a full share of departmental duties such as committee work, and accomplish related tasks punctually, completely, and without undue prodding?

VERSATILITY: To what extent is (s)he able and willing to teach a wide variety of the Department’s courses - not only in diverse areas, but also at a variety of levels?

GENERAL EFFECTIVENESS: Compared to other colleagues you have known, and to generally accepted standards of the academic community, how do you appraise his/her performance in terms of value to you as a colleague and/or in terms of overall effectiveness as a member of the faculty of the University and College in general, and the Department of Chemistry and Physics in particular?
Attachment #2

(Draft, Nov. 21, 2016)
Memorandum

To: Dr. Delana Gadosik-Nivens, Interim Dean, College of Science and Technology
From: Dr. Will Lynch, Head, Department of Chemistry and Physics
Date: November 21, 2016
Re: Budget Request for FY 16 EOY support

------------------------
Department of Chemistry and Physics
End of Year Instrument Requests
------------------------

**Priority X: Lyophilizer.** Budget impact: $15,000  (have quote)

Justification:

**Priority X: Spinsolve NMR.** Budget impact: $94,890. (have quote)

Justification: Rationale: High throughput, cryogen free NMR for the organic chemistry sequence.

**Priority X: Chemidoc System.** Budget impact: $24,520. (have quote)

Justification: Rationale: Advancing the biochemistry laboratories for the BS Biochemistry program.

**Priority X: 400 MHz High Field NMR.** Budget impact: $341,998. (have quote)

Justification: Rationale: Access to high field NMR is required by the American Chemical Society Committee on Professional Training. One 300 MHz NMRs is over 10 years old while the magnet on the second 300 MHz NMR is also over 10 years old. It is time to begin to investigate replacement. NSF MRI grants will be submitted starting in 2016.

Priority X: Laptop upgrade in organic sequence. Budget impact: $9,000.

Justification: Rationale: Organic 2101L and 2102L are taught in studio format and rely heavily on computers for students to analyze data and work through chemical problems. The computers...
we are presently using in these two labs are to be used in pairs, this will allow for individual
students to use their one computer and improve student learning.

**Priority X: Rotovaps and Vacuum Pumps for Organic Chemistry.** Budget impact: $15,000
(2 @ $7500).

**Justification:** Rationale: Organic 2101L and 2102L are central to the biology and chemistry
programs as well as all students interested in pre-medical fields. The roto-evaporators are a
central tool to use in instruction and organic laboratories. The laboratory requires two
evaporators which are both in need of replacement.

**Priority X: Direct Injection Probe for GC-MS.** Budget impact: $10,000

**Justification:** Direct Injection probe for the new GCMS is the preferred method to collect batch
GC-MS data on a pure compound. The injector will facility sample collection in our upper
division courses allowing for less wait time for students and a more efficient learning experience.
It will also be heavily used in undergraduate research.

**Priority X: TGA/DSC Combination Instrument.** Budget impact: $39,404.47. Have quote.

**Justification:** Appendix 2 (Quote TGAQuote2014). Our Thermogravimetric Analysis System /
Differential Scanning Calorimetry instrument is used in a number of courses and undergraduate
research. The TGA is no longer functional and was purchased in 2002 with the move into the
new Science Center. The DSC is still functional, however is also 12 years old. Replacement of
these instruments is a priority for our program and would stabilize this instrumentation for the
foreseeable future.

**Priority X: Physics Laboratory Upgrades** Budget impact: $5,400. Type: One Time.
Criteria Met:

**Justification:** Rationale: Classic physics experiments that allows students to investigate
fundamental experiments that shaped modern physics. This would support student learning
outcomes in physics as well as chemistry.

- 1. Franck-Hertz Setup for Neon $3100.00
- 2. Photoelectric Effect System $2300.00

(Have quote)

**Justification:** Our department is requesting a new XRF to help meet our instrumentation
requirements. XRF is used throughout our program and presently our XRF is antiquated. This
request would replace that piece and help support our instruction and program.
**Priority X: X-ray Tracer Spectrometer (XRF).** Budget impact: $48,100. (Have quote)

**Justification:** Our department is requesting a new portable XRF for site analysis.
Instrument: A Portable XRF: XRF Tracer III-SD unit
Potential Use Area (specific class and/or research): all areas (CHEM 1211/1212, Chem 4600, CHEM 2300, CHEM3300, CHEM 3401/3402, ISCI 2001, PHYS 1111K/1112K, PHYS2211K/2212K)
Preferred vendor: Bruker
Approximate Cost (don't need a quote just now, but if you have an old one, send it along), $48,055

**Priority X: Flame Spectrometer.** Budget impact: $3466. (Have quote)

**Justification:** Instrument: FLAME UV/VIS spectrometer (will cover UV/VIS/NIR regions)
Potential Use Area (specific class and/or research): CHEM 3300, 1212 special projects, chem in art research
Preferred vendor: Spectr ecology (Ocean Optics)
Approximate Cost: $3466

**Priority X: Inert atmosphere system (glovebox) Budget impact: $35000. (Have quote)

**Justification:**

**Priority X: Analytical Balances.** Budget impact: $4060 (2 @ $2030). (Have quote)

**Justification:**
Instrument: Fisher Science Education Analytical Banance, 200 g (x2)
Potential Use Area (specific class and/or research): CHEM 2300
Preferred vendor: Fisher
Approximate Cost: $2030 each, $4060 total