

Final Report

Student Tuition Surcharge Committee

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Preface:

The Student Tuition Surcharge Advisory Committee (STSAC) received its charge from Dean Mark Kushner on February 12, 2006. The charge presented by Dean Kushner was to facilitate wise use of the Tuition Surcharge Funds by surveying the opinions of the student body on how to improve the undergraduate experience while also strategically investing where the committee felt the best long term benefit would be received. It is the responsibility of the Student Tuition Surcharge Committee to rank the proposals received in priority order for approximately one million dollars in funds.

Process:

The Student Tuition Surcharge Advisory Committee (STSAC) kicked off on February 16th, 2006, receiving its charge from Dean Mark Kushner. STSAC also met with the Faculty Tuition Surcharge Advisory Committee on February 20th, 2006 to finalize the proposal format and prioritizing schedule for the remainder of the semester. STSAC met every Thursday (excluding the week of March 13th) after receiving the charge in order to discuss individual departmental progress and ranking criteria and methods. This being the first year of the implementation of the Tuition Surcharge; the responsibility of making the engineering community aware of the opportunity fell on all parties involved. The STSAC put forth a great effort within each department through surveys, open forums and visits with student groups and classes to make sure student were aware of the funds available and the opportunity to develop proposals or supply input for faculty sponsored proposals¹. Aside from developing a flow of communication between the students and the parties developing proposals, STSAC developed a set of weighted criteria to be utilized throughout the prioritizing process and a method for prioritizing proposals upon receiving them.

Prioritizing Process:

¹ Please reference Appendix A through Appendix H for more details.

Prior to receiving any written proposals STSAC developed criteria to be utilized throughout the prioritizing process. These criteria in weighted order are; visible impact, educational value added, student wants, departmental needs, value, department rank, lasting effect, cost effective, and interdepartmental effect. Upon receiving the written proposals for Tuition Surcharge Funding, STSAC evaluated each proposal individually; discussing the strong and weak points of each proposal in connection with the developed criteria. Each proposal then received a high, medium or low priority rating. The committee then calculated the total dollar amount requested in the high, medium and low groupings. The high priority group totaled \$784,880, the medium priority group totaled \$368,042 and the low priority group totaled \$2,152,937. Since the high priority group did not exceed the dollar amount necessary to fulfill our charge STSAC chose the top four of proposals from the medium priority group to fulfill the \$1 million dollar priority list. These 20 proposals were then re-ranked high, medium and low priority within the top priority group and then placed in a ranked order based again on the previously developed criteria. Throughout the ranking process individuals with knowledge on each proposal explained in detail the need for the requested funding and how the proposal met the set funding criteria. Each individual was then free to pose questions and present their arguments for or against the particular proposal. The committee was also able to adjust budgets and strike line item funding in order to reach consensus on any particular proposal.

Proposal rankings in the order of priority:

- Rank 1: Proposal 58: Lecturers to support high enrollment courses in Mechanical Engineering
- Rank 2: Proposal 5: Mechanics Service courses for the new Millennium
- Rank 3: Proposal 28: Redesigning Senior Design
- Rank 4: Proposal 38: Advanced Machinery Systems Laboratory
- Rank 5: Proposal 48: Renovation of the Materials Laboratories in the Department of Civil, Construction and Environmental Engineering
- Rank 6: Proposal 1: Undergraduate supplemental assistance program
- Rank 7: Proposal 42: Enhanced Undergraduate Education in Chemical and Biological Engineering – Teaching Assistant Support for Core Classes
- Rank 8: Proposal 7: An Academic Advisor
- Rank 9: Proposal 49: Enhanced Study Space in Town Engineering (194 and front lobby)
- Rank 10: Proposal 18: Class Size Reduction in IE 305: Engineering Economic Analysis
- Rank 11: Proposal 45: System Design Coordination for Buildings
- Rank 12: Proposal 6: Sustaining the Spacecraft Systems and Operations Lab (SSOL) Undergraduate Experiential Learning Program
- Rank 13: Proposal 29: Circuits Laboratory Test and Measurement Equipment

- Rank 14: Proposal 37: Instrumentation Hardware Upgrade for AE216, AE363 and AE404.
- Rank 15: Proposal 61: Upgrade ME 445 Internal Combustion Engine Laboratory Equipment and Develop Additional Labs for Fuel Combustion Study
- Rank 16: Proposal 19: Education Support Center
- Rank 17: Proposal 43: Establishment of Biological Engineering Laboratory
- Rank 18: Proposal 3: Laboratory Specific Integrated Teaching Assistant Program
- Rank 19: Proposal 4: Virtual Reality based Instruction Software for Depicting Crystal Structures and Defects
- Rank 20: Proposal 59: ME Learning Center: A Student Resource for Problem-Solving, Recitation and Review

Rationale behind rankings:

Rank 1: Proposal 58: Lecturers to support high enrollment courses in Mechanical Engineering

Currently the Mechanical Engineering Department sits at a 36:1 student to faculty ration and has continued to grow in popularity over the last five years. On a regular basis students within the Mechanical Engineering department are forced to adjust their graduation plan due to the limited number of seats in core ME courses. Upper level ME courses have grown from 35 students to the upward of 75 students which has hindered the availability of individual attention for each student and compromised the educational value added throughout core courses. STSAC was in support of Lecturers over Tenure Track Faculty due to the promise for reduced class sizes and/or more sections of core courses provided through a lesser funding request.

Rank 2: Proposal 5: Mechanics Service courses for the new Millennium

There are four EM courses which encompass some of the most important fundamental concepts in engineering. Currently Statics, Mechanics of Materials, Dynamics and Fluid Mechanics are all offered as large lecture style courses to sections of 100 to 200 students at a time. These large lectures limit the individual attention students may receive and also limits the creative freedom each Professor has to make their courses as innovative and interesting as possible. These courses are incorporated into the core curriculum of several different engineering majors and can also be taken as technical electives. Although the proposal originally requested funding for three lectures and four PhD level Teaching Assistants (TA's), the STSAC decided that funding for two lecturers and two PhD level TA's would be a significant enough to create a visible impact through improving the quality of education received by the undergraduate students while significantly reducing course sizes.

Rank 3: Proposal 28: Redesigning Senior Design

Senior Design is the culminating experience that ties together the fundamentals and problem solving skills, which have been developed during the course of the student's degree program. Therefore, it is pertinent that this experience not only be well managed, but also ties into current industry practices and standards. At present, the ECpE Senior Design course is taught by two professors who, while talented, are extremely overloaded and have no current industry experience. Although the funding requested was for a dollar amount larger than a lecturer typically would receive, the STSAC felt that this was appropriate in order to be competitive with the industry level salaries of those individuals with the desired qualifications.

Rank 4: Proposal 38: Advanced Machinery Systems Laboratory

The ABE Department currently has no way to utilize new equipment that has been donated by John Deere. This capital equipment and curriculum development funding will allow the ABE Department to develop a course with state of the art laboratory equipment which will greatly increase the quality of the undergraduate educational experience. Due to the Industry investment of over \$145000 and a replacement scheduled for delivery within the next 3 to 5 years this proposal was well received. Over all, this entire project will force the curriculum to advance closer to the concepts used in industry.

Rank 5: Proposal 48: Renovation of the Materials Laboratories in the Department of Civil, Construction and Environmental Engineering

The need for renovation of the Materials Laboratory within the Civil, Construction and Environmental Engineering Department has been acknowledged by both Industry and Private Investors such that it has merited \$160,000 of funds over two years for equipment and materials. In order to increase the benefit of these funds this laboratory space must be renovated. Renovations totaling \$47,000 over two years will provide the space needed for a state of the art laboratory experience while demonstrating to outside investors that the College of Engineering values their opinions and support.

Rank 6: Proposal 1: Undergraduate supplemental assistance program

This was considered a strong proposal by the committee for its immediate, creative and highly visual impact upon the Materials Engineering undergraduate student population. In addition to the proposal's benefits, its low cost provided for its high ranking within the college and the department. For future proposals, it is recommended that the proposal outline how this service will be both evaluated and facilitated.

Rank 7: Proposal 42: Enhanced Undergraduate Education in Chemical and Biological Engineering – Teaching Assistant Support for Core Classes

The Chemical and Biological Engineering Department currently does not have teaching assistants for instruction and supplemental help in core courses and the students within the CBE Department often have difficulty receiving one on one attention from professors

due to time constraints. In the past when teaching assistants have been supplied for coursework help, the students in the CBE Department have taken full advantage of the opportunity and found it to be of great benefit to their learning. This proposal was supported by the STSAC, but the number of TA's were reduced from four to three with the recommendation that a greater amount of funding be requested in the future if the department finds that the TA's are overloaded and that students are taking full advantage of the resource.

Rank 8: Proposal 7: An Academic Advisor

Currently the Aerospace Department does not have an academic advisor which has caused difficulty for students as the department has grown rapidly. The responsibility of mentoring students, which should be taking place in the advisee-advisor relationship, is currently placed upon the faculty within the Aero Department. This consumes their time and ability to provide students with individual attention on coursework. The lack of consistency within the department has become detrimental to the students, which can be seen in the retention rate of Aerospace Engineering students. The STSAC felt that this issue should have been addressed long ago and that this request was a must have for the Aerospace Engineering Department.

Rank 9: Proposal 49: Enhanced Study Space in Town Engineering (194 and front lobby)

The proposal to renovate the study space in Town Engineering room 194 was highly regarded based on the overwhelming need of the department for such a facility, as well as the extremely positive student response. This study space will allow students to more effectively complete their coursework, at a reasonable expense to the tuition surcharge funds. Having a highly visual improvement affecting all CCEE students will also generate a more positive reaction from students towards the surcharge.

Rank 10: Proposal 18: Class Size Reduction in IE 305: Engineering Economic Analysis

This proposal was ranked number one by both the IMSE department and IMSE students in a survey. The committee felt that this proposal, while not absolutely necessary, would benefit many majors within the college of engineering by making IE 305 a more accessible course. This would be accomplished with the implementation of two sections, which would allow for better instruction through a lower student to faculty ratio and therefore fulfilling the criteria set forth by the STSAC.

Rank 11: Proposal 45: System Design Coordination for Buildings

The CCEE department has lacked a course that approaches construction projects as a system. Coordination between disciplines is an important aspect in the industry today, and the committee felt that students would greatly benefit from a course such as this. Brad Perkins has demonstrated to the ConE department that he can effectively incorporate his vast industry experience into the CCEE curriculum for the benefit of students.

Rank 12: Proposal 6: Sustaining the Spacecraft Systems and Operations Lab (SSOL)
Undergraduate Experiential Learning Program

This was a strong proposal because the SSOL program needs to survive in order to keep our department within reach of those at other prestigious engineering schools. The low number of students impacted was questioned, but the STSAC felt that this number will increase with more advertising in the next year. Committee members also questioned the student salary line items, yet trusted the necessity of the proposed budget based on the longevity and history of the program.

Rank 13: Proposal 29: Circuits Laboratory Test and Measurement Equipment
Replacement of the equipment in this laboratory is extremely necessary. An update has been long overdue, and funding from the tuition surcharge would make this possible. The proposed laboratory upgrades also fall well within the desired scope of the tuition surcharge.

Rank 14: Proposal 37: Instrumentation Hardware Upgrade for AE216, AE363 and
AE404.

This proposal fit within the specified funding criteria well, as several majors will benefit from this use of funding and the lab is in need of upgrades to keep the educational value up to date with industry standards. The need to reduce and or eliminate the required \$120 course fee was another factor in the decision to pursue this proposal.

Rank 15: Proposal 61: Upgrade ME 445 Internal Combustion Engine Laboratory
Equipment and Develop Additional Labs for Fuel Combustion
Study

The ME department has received a brand new engine from John Deere and is now in need of proper lab equipment in order to analyze it. This was subsequently ranked high by the ME students and #4 of 12 by the ME department. The STSAC liked this proposal because it is inexpensive and exactly what the committee considered the surcharge money to be for; the improvement of existing educational infrastructure that lacks any other funding to proceed.

Rank 16: Proposal 19: Education Support Center

This proposal was based on an idea brought forth by students and ranked highly by the department. The committee felt that it would benefit a number of IMSE students and provide better instruction related to software-based classes. However, it was felt that the proposed scale was unnecessary and a reduced project budget of \$10K for a ½ time TA was approved.

Rank 17: Proposal 43: Establishment of Biological Engineering Laboratory

The committee thought that compared to other highly ranked proposals, this deserved a lower ranking because it would not affect a great number of students immediately. However, it was felt that this would be a good opportunity to establish a brand-new lab, which is needed to help fulfill the recently added Biological part of CBE's name.

Rank 18: Proposal 3: Laboratory Specific Integrated Teaching Assistant Program
Currently, the MSE department has no laboratory TA's and thus much of their laboratory equipment is being misused or underutilized. However, the committee felt that the immediate implementation of all 4 TA's as requested in the proposal was unwise. This was due in part to the cost of 4 TA's and the uncertainty of their effectiveness. Therefore, the committee recommended allocating money for 1 TA in FY07 with the option to increase this number in subsequent years after a departmental review of the program.

Rank 19: Proposal 4: Virtual Reality based Instruction Software for Depicting Crystal Structures and Defects

This proposal could be used as an extremely visible example of how the tuition surcharge is being spent as well as a valuable recruiting tool for Iowa State University. It is also closely aligned with a goal stated in the College of Engineering Strategic Plan:

"New resources will be devoted to improving the quality and uniqueness of instruction."

Undergraduates in a variety of classes such as Mat E 272 would finally be granted access to one of the premiere facilities that exists at Iowa State. It is hoped by STSAC that this will serve as a catalyst for more undergraduate opportunities at the VRAC.

Rank 20: Proposal 59: ME Learning Center: A Student Resource for Problem-Solving, Recitation and Review

This proposal was ranked high by both the ME students and ME department. The committee also liked the idea, but for reasons similar to those for Proposal 3, it was ranked low among the highs and some funding was cut. It would be recommended that another proposal be prepared in the future for additional TA hours with supporting data on the affectivity of the first year was.

Non-prioritized Proposal Comments

Aerospace Engineering

Proposal 8: I³ Lab

While a good idea, this proposal could not be fully considered due to its extremely high cost. A capital request to build this lab is recommended in the future. STSAC felt that the lab would be a great learning tool for students and would also be a great recruiting tool yet, STSAC felt that there were other areas within the college which needed more immediate attention.

Proposal 9: Fluids improvements

Improving fluids labs across the entire college is a desire of the committee, and so it is wished to see a proposal in the future, which unifies fluids requests (or at least simplifies them). It would be great to have interdepartmental courses so students studying the same phenomena could work together and see the many applications of the fundamentals of engineering.

Proposal 10: Systems Engineering (Wind, Energy)

This proposal seems like something that should be taken advantage of without additional funding. While project costs may be significant, it seems that there should be another way to fund them. Variable recurring costs were not well-received.

Proposal 11: Structures Design help from industry

Industry lecturers were not generally seen as the best place the tuition surcharge could go in its first year. The extremely narrow focus of this proposal also made it weak in the eyes of the committee.

Proposal 12: Composites Lab

This was seen as weak because of its redundancy. With such a limited amount of funding available this year, STSAC was unable to fund proposals of this nature.

Proposal 13: MATLAB resource

While seen as a great idea, the lack of a recurring class made this proposal not as appealing. If the proposal had been for a permanent class instead of creating an online resource, it would have been supported. Online resources were generally not supported because of the amount of information and help already available online.

Proposal 14: Ethics

While the committee felt that this is an important issue, the creation of a new course, which was not required, would not be a successful solution. Including these teachings in ENGR 101 and all engineering courses would be the best option to go forward from a student's standpoint.

Proposal 15: Software Toolset

The committee felt that other computer fees should be sought and that the course should teach programs other than those on the list.

Proposal 16: Computational Methods

This proposal was not favored because of its narrow focus and limited effect. Student comments also led the committee to believe that this would possibly limit the draw to this class instead of broaden it.

Proposal 17: Industry Lecturers

This proposal was viewed as too expensive and while not providing enough effect on students' educations for significant consideration. Funding industry lecturers was not generally seen as necessary for the first year of the tuition surcharge. Although interaction with industry representatives is important, surcharge monies should not be used for this purpose initially.

Agricultural and Biosystems Engineering

Proposal 39: FE review course revamp

The committee felt that with the tuition surcharge in place, a review of what was supposed to be learned would be unnecessary. This proposal was marked to be resubmitted for FY 08 or FY 09, after the effects of the surcharge could be reviewed.

Proposal 40: Cultural Adaptability

The need for cultural adaptability was recognized, but the committee felt there were better alternatives to accomplish this task. A format with less frivolous spending was requested for next year.

Proposal 41: Davidson Hall Academic Success Center

This was recognized as a major need for the ABE department. Committee members felt that this could be funded in part or in whole by industry, following precedents set by other departments on campus.

Chemical and Biological Engineering

Proposal 44: Development of a Principles of Quantitative Biological Engineering Course

This was given a low priority by the committee because it was felt that it would not directly impact students in the next school year. Though this is a good idea and should happen in the future, this year STSAC was looking for projects that would affect students now. The committee mentioned they would like to see this proposal back again next year.

Civil, Construction and Environmental Engineering

Proposal 47: Supplemental Instruction Pool

This proposal, while modest in cost, was decidedly not as important to the education of CCEE students as competing proposals within the department. It was decided that this would be a proposal to consider for next year, due to the fact that reducing class sizes is important but not needed as immediately as is funding within other proposals. Also this proposal was not ranked as high as other proposals by the CCEE students.

Proposal 46: Civil Engineering Highway Design Classroom/Lab

The senior design room development was hampered by what seemed to be a scheduling issue. Too many courses currently take place in Town 220, so the department should look to spread these courses out among other labs. Upon the results of relocating courses, the

proposal will be considered next year because of the apparent demand for this facility in the CE department. Also this proposal requested funding for computers and monitors which should be taken care of by the computer fee.

Electrical and Computer Engineering

Proposal 30: Web Based Remote Access and Control of Power Electronics and Drives Lab for Teaching and Learning

This proposal has been dismissed as relatively frivolous. It was suggested that students would probably not use the remote access capability as often as would be necessary to justify the expense.

Proposal 31: An Electronic Library for Engineering Concepts, Tools, Measurement, and Supplemental Instruction for Students

The idea of a web-based library covering electronics was not funded due to other priorities. It could be beneficial, but there were many other proposals that outweighed it.

Proposal 32: Industrial and International Engineering Engagement

Of the proposals that were not funded within the ECpE department, this proposal has a great deal of potential benefit for the ECpE department. The international nature of the ECpE field and the excellent start that has been made on the program already both speak in its favor, but the committee held other priorities at this time. STSAC would encourage that this proposal return in the future with a more detailed budget and outcomes of the program after further investigation.

Material Science Engineering

Proposal 2: MSE (Development of Sustainable College of Engineering-Wide Undergraduate Materials Characterization and Processing Laboratories)

The committee felt that this proposal was a bit far reaching for the first year of the tuition surcharge. Its large expense and non-immediate impact unfortunately lessened its importance when compared to proposals which provided for more pressing needs within the college. Future proposals in this area would do well to include a more detailed vision of where these laboratories would be housed and who would actually use the improved facilities.

Industrial and Manufacturing Systems Engineering

Proposal 20: Problem Solving Learning Portal

The committee felt that this proposal would do little to better the education of students, especially as compared to other proposals. In addition, this proposal was ranked low by the IMSE Department.

Proposal 21: Integrated Engineering Communications Curriculum and Studio

STSAC and student support for communications class reform is very high. However, the committee felt that this proposal did not adequately meet this need. It was expressed that support of the proposal would be higher if it did not include the proposed facility and if it found a way to incorporate current English 314 faculty into the course redesign. Such improvements would thereby drastically reduce the proposed budget.

Proposal 22: Consolidation of Manufacturing Course Offerings

This proposal was ranked lowest by IMSE department and students. The committee felt that this proposal was a valid need and would create an elective that would be taken by many students outside the IMSE department, therefore providing college-wide benefit. However, the budget was felt to be unsustainable and the project was to be of lower priority than other proposals.

Mechanical Engineering

Proposal 51: Development of Alternative Energy Laboratory Setups and Experiments

This was ranked low by STSAC because once again in the first year of the tuition surcharge, it is important to focus on specific needs and already existing necessary improvements. In future years, the committee would be more willing to fund new things such as this lab. Several people from other departments supported it and perhaps a cooperative type of proposal could be written in the future. The committee would welcome the chance to see this proposal again.

Proposal 52: Development of Web-Based Alternative Energy Experiments, Demonstrations, and Exercises

This proposal was ranked low by the ME department and was seen by STSAC as not being a high priority. The committee again wanted to focus on improving already existing infrastructure and also shied away from web-based curriculum development due to mixed feelings towards the affectivity of it.

Proposal 53: Facility Improvements--Renovation of Open Computer Lab--1012 Black

This proposal was ranked low by the ME students and the ME department. The chairs in this lab are as old as Black is, the desks are in poor condition and the floor may, very soon, cause injuries. Yet the ME students polled and STSAC both agreed that the money received should be used on educational purposes and this was seen as solely a cosmetic improvement. Although there is a great need for improvements in 1020 Black, there should be other avenues of funding for this improvement effort.

Proposal 54: Improvement of Manufacturing Laboratory in ME and IMSE Curricula

This was generally agreed upon to be necessary, but because of the financial constraints of this year's budget, STSAC decided to delay this proposal for one year. The committee would like to see this combined with IMSE's proposal in the future and possibly to see it

expanded to other equipment/labs with an interdepartmental focus in order to cooperatively use mutually owned equipment and reduce redundancy.

Proposal 5: Integrate ME 466 as a Senior Design Elective

First, this was ranked low coming out of the ME department. Additionally, once again as a committee, it was desired to use the initially available funds to fix or update already existing programs and consider new development starting next year. Therefore the committee also decided to rank it low. While senior design is important, the existing senior design courses in the ME department are strong. ME 466 allows ME students the freedom to tailor their education, yet it should be noted that the current structure of ME 466 provides no ME faculty support.

Proposal 56: Integrated Engineering Communications Curriculum and Studio

This was ranked low by the ME students and the ME department although there is a desire in the college to modify/develop an engineering specific ENGL314 course. Communication skills are extremely important and the concept behind this proposal was strongly supported by STSAC. However, the proposal was very weak. Overall, the committee felt the ENGL314 wasn't a bad course for engineers, but that the quality of the education received in this course was dependent on the instructor. Although this is a core course for many engineering students, the College of Engineering has no control over the instructors and the curriculum. STSAC felt that it is important for the college to play a role in the instruction received by its students, yet felt there was much development work to be done before funding should be applied. As well, communication skills should be developed throughout the curriculum and not solely taught in one course. The committee would like to see oral and written communication skills development written into much of the curriculum in the future and would strongly consider supporting such a development effort.

Proposal 57: Laboratory Enhancement of ME421, Dynamic Systems and Controls

This was something that the committee liked, but thought should wait a year for serious funding consideration. STSAC would like to see a more detailed and thought out lab improvement/rennovation plan in the future before funding is supplied. Another year of consideration placed into the laboratory modifications would serve this proposal well.

Proposal 60: New experimentation suites for ME 370: Engineering measurements and instrumentation

This was ranked low by the ME department and was not considered a high enough priority to rank high this year. This proposal, as with all other laboratory equipment update proposals, was supported but was ranked low due to other proposals written for more immediate needs. STSAC would like to see an interdepartmental measurements and instrumentations laboratory proposal in the near future and would strongly consider supporting the development of that effort.

Proposal 62: Virtual Inclusion of Engineers and Engineering Practice from Industry in Core ME classes

This was ranked low by the committee because although additional guest lecturers with industry experience would be nice, it wasn't deemed a necessity nor a highly ranked item. However the committee would like to see this proposal again next year.

College of Engineering

Proposal 24: ENGR 160 Coordination: core group of faculty

STSAC felt that this proposal grossly over estimated the contact hours impacted per year, mostly with respect to Juniors and Seniors, and similarly would primarily affect freshman and sophomores only. Although a high quality experience for first and second year students is important, the tuition surcharge is coming from junior and senior level students and should affect those students directly as often as possible. STSAC also felt that appointing four individuals to teach all of ENGR 160 would hinder a department's ability to tailor this introductory level course to particular majors. The committee agreed that ENGR 160 needs to be revamped, but did not agree that streamlining the course was a good idea. ENGR 160 is a course which has the potential to introduce students to programs and methods which they will utilize throughout their undergraduate education and therefore this course should be tailored to major areas of study.

Proposal 25: PERUSE (Providing Experiences in Research for Undergraduate Students in Engineering)

The committee felt that providing undergraduate research opportunities to more students was a great goal and an important part of an engineering education. However this proposal, which was for two half time Graduate Level TA's that would search for outside funding to pay undergraduate students to do research, was not favored. The committee felt that this proposal would supply no visible impact the first year and provided no guaranteed impact overall. Although, STSAC supports the ideals for this proposal, the mechanics of it were not well received.

Proposal 26: Homework Help Center

"The Homework Help Center is for a retention aid for underclass engineering students from all eight departments."

The Tuition Surcharge is a charge paid for by Junior and Senior level students; therefore this funding should benefit Junior and Senior level students, especially during the first year. The Academic Success Center provides tutors and SI sessions. Professors hold mandatory office hours. Freshman and sophomore students have the opportunity to participate in Learning Communities. This proposal is attempting to provide a service that already exists and is underutilized by students already and was therefore not supported by STSAC.

Proposal 27: Enhancing Classroom Climate in Engineering

This proposal is requesting funds to study the classroom climate within the college of engineering. The tuition surcharge funds are meant to improve the undergraduate education received by students within the college of engineering. It was felt that this proposal does not fit within the funding criteria set forth, would have no visible impact to undergraduate students and includes no future plans for the information received after this study is conducted. STSAC felt that funding for such a project should come from within the college or the university and not from the tuition surcharge.

Proposal 33: Technician Position within the Framework of the University Honors Program, Leadership Training and Senior Design.

STSAC, whose membership is comprised of some honors students, felt that a Technician would not be utilized by students within the honors program to a great extent. This, along with the already small number of engineering students in the honors program, lead the committee to believe that this proposal grossly over estimated the contact hours per year for undergraduate level engineering students and would in fact only affect a select few honors students with very specific interests in research.

Proposal 34: Study Abroad Academic Adviser

STSAC was surprised by this proposal. The responsibilities of the requested advisor struck the committee as the purpose of the Engineering International Programs and Services Office and would seem to be redundant. STSAC felt that such information on major specific study abroad programs could be easily collected from students who have benefited from those experiences and then compiled and provided to existing academic advisors. Because of this, this proposal received low priority, although the committee values the study abroad experience.

Proposal 35: ISU Center for Engineering Fundamentals

The tuition surcharge is a charge paid for by Junior and Senior level students; therefore this funding should benefit Junior and Senior level students, especially during the implementation years of the surcharge. Unfortunately, the proposed impact of this proposal predicts limit impact upon upper level students. Also, as stated before in relation to Proposal 26, the Academic Success Center provides tutors and SI sessions, freshman and sophomore students have the opportunity to participate in Learning Communities, and there are also several existing online tutorials, which students can access through a simple Google search. This proposal is attempting to provide a service that already exists and therefore this proposal was not fully supported by STSAC.

Proposal 50: Tuition Surcharge Donor Challenge

STSAC did not choose to place a high priority on this proposal mainly because much of it was vague and misunderstood. Although the concept is interesting, the committee was not sure if the endowed chair would become a professor in the department of their

choosing or if the endowed chair would have the ability to choose which department the new faculty member would be a part of. STSAC was apprehensive about either of these possibilities due to the fact that there are departments within the college that are in great need of faculty while there are others whose needs are less significant and this proposal could potentially take away the ability to serve those needs first. STSAC also felt that this proposal (although there is no dollar amount attached to it) would have no immediately visible effect on the education of undergraduates and therefore did not support it through the first portion of the surcharge fees. More explanation and a detailed budget may build support for a proposal of this type in the future.

Future Committee Structure and Schedule

This being the first year in the implementation of the Tuition Surcharge, STSAC felt it would be beneficial to comment on the structure and schedule of the prioritizing process and to make several suggestions for improvement.

Committee Structure

Currently there are two committees; the Faculty Tuition Surcharge Advisory Committee and the Student Tuition Surcharge Advisory Committee. STSAC recommends that the feasibility of forming a third committee be investigated. Several of the CCEE proposals provided Industry comments and the STSAC felt that this input was valuable and should be sought out by all individuals generating proposals. STSAC also recognizes that seeking Industry input may strain university relationships in the field and/or may present an opportunity for biased input to surface. To combat this, it is STSAC's recommendation that if formed, the Industrial Tuition Surcharge Advisory Committee (ITSAC) should be comprised of Alumni with between 3 and 5 years of Industry experience. Due to their still recent graduation, those Alumni would uniquely be able bridge the gap between the needs of the students and the requirements of industry. Furthermore, to reduce any chance of bias, their participation would be solely limited to providing insight and commentary and would not include being a part of the final prioritization process. It is STSAC's feeling that creating the ITSAC in this manner will afford both STSAC and FTSAC the ability to apply relevant, non-biased Industry comments to the decision making process.

After Industry review, STSAC and FTSAC would then prioritize the proposals received by the College of Engineering separately as they did this year. Producing separate proposals not only provides two distinct viewpoints, but also ensures that faculty-student relationships are not jeopardized by what could be a difficult and heated discussion process. Finally, these rankings would be presented to the Dean who would be tasked with the responsibility for determining the final rankings of the proposals. STSAC is confident that the administration is well prepared to pass final judgment and to select the proposals which will be most beneficial to the Undergraduate Students within the College of Engineering.

Members

It is pertinent that the responsibility of committee members, the time commitment involved in functioning on the committee and the need to dedicate time and effort to the committee is properly advertised to the students who participate. Furthermore it is crucial that members of the committee have a wide reaching knowledge of their respective departments and it is thus recommended that STSAC members are in their junior or senior year of their undergraduate education. STSAC should consist of one representative from each department, one representative of the college and the committee Chair. The STSAC Chair should be a returning member of STSAC.

Member and Chair Selection

STSAC proposes that there be a standard college wide application for students who wish to become department or college representatives serving on the committee. All members of STSAC must reapply to hold their representative seat in the next fiscal year. The current members of STSAC feel that the responsibility of selecting departmental representation should rest on the department chairs, or those to which they delegate the task and in the case of the college representative, the administration should make this decision. It is reasoned that it is in the best interest of the department chair to select the best-suited student representative of their department and that this process will foster an initial connection between departmental committees and department representatives. Applications for departmental and college representative seats will be available April 1st of each fiscal year and be due to the proper representative on May 1st of each fiscal year. Departmental and college representative must be selected and notified of selection before the end of each fiscal year and will begin service at the beginning of the new fiscal year.

STSAC believes that the committee chair should be a returning member of STSAC, selected by the members of STSAC. The rationale behind this is that the existing members of STSAC are in the best position to evaluate applicants and to serve as chair due to their direct experience with the developed process. This will insure that the purpose of the committee is well understood and that the committee functions to the best of its ability. Towards the conclusion of each fiscal year, STSAC will open nominations for the chair and then take a vote. A majority vote will elect a chair; the elected chair will begin service at the beginning of the next fiscal year.

Schedule

Several comments and concerns have been made about the rapid schedule which was laid out for the development and prioritizing of FY07's proposals. It is understood by STSAC that this is due to the fact that this is the first year in which the surcharge is being implemented. It is crucial that committee selection, proposal development and proposal

prioritization take place on an extended schedule throughout each fiscal year. Below is a proposed list of bench marks for the conduct of each fiscal year in order to ensure the quality of proposals, communication and selection.

STSAC Proposed Schedule

April 1 st FY06	FY07	Proposals are prioritized by STSAC Applications for FY08 Committee Representation are available Nominations for FY08 Committee Chair is opened
May 1 st FY06		Applications for Committee Representation are due FY08 Committee Chair is elected FY08 Proposal format is agreed upon by STSAC and FTSAC FY08 Proposal format is made public
July 1 st FY07		FY08 Committee Representatives are selected and notified FY07 Funding is allocated
September 1 st FY07		FY08 STSAC Kick Off FY08 STSAC develops proposal evaluation criteria
February 1 st FY07		FY08 Proposals are due to STSAC with departmental rankings
April 1 st FY07		FY08 Proposals are prioritized by STSAC Applications for FY09 Committee Representation are available Nominations for FY09 Committee Chair is opened
May 1 st FY07		Applications for Committee Representation are due FY09 Committee Chair is elected FY09 Proposal format is agreed upon by STSAC and FTSAC FY09 Proposal format is made public
July 1 st FY08		FY09 Committee Representatives are selected and notified FY08 Funding is allocated

APPENDIX A – Aerospace Engineering Communications; David Miles

I worked with students in my classes and with students whom I knew from other classes to evaluate specific proposals which they had more knowledge of than I did. I also attended meetings of our faculty tuition surcharge committee, and used their comments to form opinions of proposals and programs. Finally, I met with our department chair and we discussed each proposal which effected the department in depth. From the beginning, it was clear which proposals would be necessities and which were superfluous, but the ones in between those levels raised a great bit of discussion within our department.

APPENDIX B – Agricultural and Biosystems Engineering Communications; Barrett Reed

Communication was a key component in the development of the ABE proposals. Initially, the ABE Tuition Surcharge Advisory Committee of students and faculty was

formed. We held one meeting in person to get ideas and methods started. Correspondence from then on was via email.

Students were contacted through several means. Individual and small group discussions with students were the main communications route of ideas and concerns, notes were taken. Later, a WebCT survey was taken to get general thoughts on initial proposals and other concerns, the results were influential in determining which proposals and concerns to pursue.

Faculty members were consulted for development and support of proposals. The range of communications varied from direct conversation to email.

APPENDIX C – Chemical and Biological Engineering Communication; Katherine Gidlewski

Prior to my appointment to the TSAC committee the Department of Chemical and Biological Engineering had begun a process for gathering ideas for proposals within our department to propose to the TSAC committees and Dean Kushner. After meeting with the TSAC faculty representative for CBE, I understand that faculty discussions began in December following a request from Dean Kushner for departmental spending priorities. An initial list of approximately ten priority items were discussed. In February, still prior to my appointment to the committee an open-ended survey was taken of a number of junior and senior students in the CBE department. The question to answer was essentially: “what would you like to see done to benefit the you (as students) with the Tuition surcharge funds?” The list of three proposals proposed by the CBE department incorporated student feedback from these surveys and faculty feedback. I supported these three proposals as the total proposals from the CBE department after talking with students in my department and talking to students after they answered their surveys. As a department the top three proposals were submitted, which I felt emphasized their importance.

APPENDIX D – Civil, Construction and Environmental Engineering Communications; Eric Lindquest

The CCEE department felt it was extremely important to choose the ranking of proposals based on the input of our students. By collecting student input throughout the initial proposal brainstorming, the department was able to effectively meet the growing needs of students. The CCEE faculty chair, Ed Jaselskis, organized meetings with the two student TSC representatives, as well as with the different faculty members within the department for input on the proposals. Conducting a WebCT survey was extremely important to the proposal writing process. While some of the ideas were very similar to what students felt were missing, others were far off. By analyzing student response data, the proposals were catered specifically to the students. It was highly encouraging to see just how many

students took the time to fill out the voluntary survey; a true testament to the level of concern for our education on behalf of the CCEE students.

Faculty members offered some invaluable input as to what areas the department needs to target with the tuition surcharge funds. Having faculty that had been in the department an extended period of time was helpful in better understanding where our department currently is and where it needs to be. Faculty members also spent considerable time developing proposals of their own, whether it was adding a new course, improving lab equipment, or hiring teaching assistants. The CCEE department held an open forum for anyone within the department to attend. This forum served as a medium for students to discuss their needs specifically and to give TSC student and faculty members an idea what types of proposals are most beneficial.

Another strong source of support for proposals was within the CCEE student organizations. The Associated General Contractors Student Chapter (AGC) spent considerable time during its monthly meetings to explain the situation and how these proposals could have an extremely positive effect on our education. Feedback during these meetings was extremely strong and often implemented into the final proposals.

Also important to the students of the CCEE department was being able to see first-hand the results of the additional tuition for upperclassmen. By our faculty TSC member pushing hard for the proposal with the most student interest, (Room 194 Study Room Renovation) the department showed both their commitment to the students and the significant improvements these funds create. Particularly in the first year, the tuition surcharge needs to fund proposals that are highly visual, while maintaining a strong educational impact. For the most part, each proposal met the criteria and will surely be beneficial to students in the near future.

APPENDIX E – Electrical and Computer Engineering; Kristen Pudenz

The primary tool in efforts to engage Electrical and Computer Engineering students in the surcharge proposal process was a paper survey that was distributed in all ECpE classes. This survey contained descriptions of all the preliminary proposals within the department, and asked students to rate their interest in each one. The proposals with the strongest student support were then advanced to the tuition surcharge advisory committees by the department chair.

Also printed on the survey was information about the surcharge proposal process, such as the history of the surcharge itself, purposes of the surcharge, and starting points for students who wanted to initiate a proposal. There was space left for comments, which provided a simple path for student feedback. Overall, the survey was effective in soliciting the opinion of the department's student body because it had good coverage (all

students taking ECpE courses) and provided both quantitative and qualitative feedback on each departmental proposal.

Communication with the faculty was primarily handled by the faculty tuition surcharge committee representative, although a line of contact was kept open between the student and faculty tuition surcharge committee members. The student tuition surcharge committee member for the department also had a meeting with the department chair to discuss the proposals. Any information that needed to go between the student and faculty committees, then, got there with relative efficiency.

APPENDIX F – Industrial and Manufacturing Systems Engineering Communications; Joe Petrzelka

I would characterize my level of communication with my department as sufficiently strong throughout the process of obtaining, evaluating, and ranking tuition surcharge proposals.

Initially, I met with the IMSE faculty surcharge committee representative, Dr. Frank Peters, to discuss the proposal process and current needs within the department. Dr. Peters remained my primary faculty contact during the proposal process. I also spoke to several other faculty members briefly about their observations of departmental health and needs. I specifically approached faculty that proposals originated from in order to answer specific questions posed by the surcharge committee.

Input was gathered from students in several different manners. Shortly after the faculty and student committees were formed, a meeting was held after IE 448, a primarily senior class. Input was gathered from students on current proposal ideas, as well as ideas for additional proposals. This meeting gave strong clarification as to the needs and desires of the student population.

After the proposals had been written, a WebCT survey was provided to all IMSE undergrads. Approximately 40% of the students responded, and a relatively strong hold was established on the student rankings of proposals.

In addition to the student contact mentioned above, I also asked for student input from friends and classmates. Several students emailed me with questions, concerns, or thoughts about the surcharge. I also spoke with my advisor on several occasions about her feelings on the matter, as well as what she had heard from other students.

APPENDIX G – Mechanical Engineering Communication; Michael Snodgrass

In order to best communicate with ME students the ME department created a faculty committee; several student representatives including myself were asked to be a part of this committee. The department created a survey for the students to take to determine general areas of need. We had a forum where anyone could come and learn the survey results, learn about some of the proposals and voice their opinion. After an internal departmental proposal deadline, we posted all the proposals and had both the students and faculty rank (high, medium, low) and individually comment on them. All this information was passed to the faculty committee who ranked the proposals and sent them to the department chair who finalized those rankings to STSAC. All results, information, forum times, etc were posted on the MESAB website.

APPENDIX H – Material Science and Engineering Communication; Josh Haroldson

As the Materials Engineering Student Representative to the Tuition Surcharge Advisory Committee, I have felt it extremely important to communicate with the students and faculty within the MSE department. I must always remember that this surcharge is being funded directly by students and as such, they deserve to know how *their* money is being spent.

One of the best things about my department is its small size. As a result, it has been very easy for me to informally speak with a great number of students about the surcharge. In addition to our small size, we are also lucky to have the ‘Student Room’, a 24 hour student study space in 3327 Hoover, whose central location has provided a ready-made forum for student discussion of this topic. More formally, I also plan to present the progress of the committee at the April 2, 2008 meeting of Material Advantage, the MSE pre-professional society. Looking to the future, I plan to work closely with Material Advantage in order to establish more concrete ways to communicate with the MSE students about the tuition surcharge.

Faculty to student communication in my department has also been strong. The departmental surcharge committee includes three students among its seven members and a WebCT survey was created to field student input on the MSE proposals.

Overall, I feel that every student within the MSE department has had the chance to learn about and to comment on each proposal. However, in the future I hope to include more students in a ‘sub-committee’ and to increase my involvement with Material Advantage.