APPLYING INDUSTRIAL ENGINEERING CONCEPTS TO THE PLANNING, EXECUTION AND FOLLOW-UP OF A 3-DAY CONFERENCE

by

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Executive Summary

Using our experience in running the 2012 American Society for Engineering Education (ASEE) Pacific Southwest (PSW) Region conference at Cal Poly, we created this report to serve as a "how to" reference guide for applying Industrial Engineering topics towards the planning, execution and follow-up of a technical conference. Contained within this document are all the necessary tools and references needed in order to run an effective and efficient technical conference at Cal Poly similar to the ASEE PSW conference. Although it is specific to the Cal Poly campus, the Industrial Engineering techniques and methodologies (such as scheduling, facility design and project management) used can easily be extrapolated to any type of large event or conference.

The "design" of this project—or the steps taken in order to run the conference—is broken into three main phases. The first phase is the pre-conference planning phase. In this section we describe the Operations Research (OR) used to limit conflicts when scheduling lab tours, the project management tools needed to run the conference (from work breakdown structures to volunteer task lists), economic analysis and justification for our decisions and the database design for developing a Microsoft Access database for payment and attendee information. The second phase involves the execution of the conference. Lastly, the third phase is the post-conference follow-up phase. Also known as "lessons learned", we compared our results to those of the 2011 ASEE PSW conference in Fresno.

Ultimately, through this project we were able to assess the success of our project through the comparison of the 2011 Fresno conference and through the distribution of evaluation forms. As a result of our efforts in completing this project, we were able to increase the budget by $11,790, obtain 8 more sponsors, and improve ASEE PSW member attendance by 59 people. When we asked the attendees about their overall level of satisfaction of our conference, 98% of the 28 surveyed said they were highly satisfied and the remaining 2% said they were very satisfied.

We hope you find this document helpful as a planning, execution and follow-up resource when you are running your next event—whether it be at Cal Poly or off-campus.

Contents

Introduction

This project was developed in response to the need for a project management team to plan and run the 2012 Pacific Southwest (PSW) Region American Society for Engineering Education (ASEE) Conference. This project was initially taken on as a class project while Claire Lyles and Megan McIntyre were enrolled in their IME 303 Project Management course. At the close of the course, the pair was hired on by the Industrial Manufacturing Engineering (IME) Department to help run the 2012 conference. This document outlines the Industrial Engineering techniques used throughout planning, execution and follow-up stages of the conference.

ASEE Section conferences are typically three days in duration and offer three main segments: technical workshops, technical sessions and an EXPO. Technical workshops are hands-on learning opportunities for engineering educators to share their best practices in teaching with others. Technical sessions are divided up into engineering-related "themes" and make up the focus of the conference. For example, such themes as "Technology in the Classroom" and "STEM Education and Retention" were discussed at this year's conference. The EXPO serves the purpose of providing engineering educators direct access to companies with products and services that facilitate learning. The EXPO is an all-day event where professors and students can talk with various exhibitors at leisure during lunch and break times.

The purpose of this project was to host a three-day professional conference that supported the theme, "Engagement, Collaboration and Innovation in Engineering Education" while promoting the sharing of knowledge between different professors, students and colleges. In addition to running the conference with the three main segments (technical workshops, technical sessions and an EXPO), our stakeholder and conference chair, Dr. Jose Macedo insisted on additional requirements based on his experience attending conferences in the past. These requirements included:

- An off-campus banquet containing ASEE PSW awards and a keynote speaker
- Improved EXPO and poster presentation visibility
- Increased pre-conference communication with attendees
- Create a database to store attendee information (e.g. linking payment information, presentation information, etc)
- Tours of Cal Poly College of Engineering labs
- Additional conference programs & pamphlets for attendees
- More student and faculty involvement

In order to meet these objectives, several IME courses were utilized. These classes involved English 149 (Technical Writing), IME 301 (Operations Research I), IME 303 (Project Management), IME 312 (Data Mgmt & Systems Design), IME 314 (Engineering Economics), IME 421 (Manufacturing Organizations) and IME 443 (Facilities Planning & Design). A detailed analysis of how these classes were applied will be discussed in this document.

Background

Engineering education and the course structure at universities like Cal Poly are becoming increasingly important. Not only is a degree a key to success for students graduating in 2012, the quality of learning and the ability to apply that learning is instrumental to the structure of education and success beyond college.

Many educators focused on achieving excellence in teaching of science, technology, engineering, and mathematics (STEM), have turned to the American Society for Engineering Educators (ASEE).

"ASEE is a non-profit organization which brings together engineering educators from all of the engineering and engineering technology fields to collaborate on solutions to promote excellence in instruction, research, public service, and practice" (ASEE National Website). ASEE, according to their website, works to facilitate collaboration among universities and industry and to promote educational exploration and development. To achieve collaboration, ASEE board members host annual national and regional conferences. These conferences are in place to promote the exchange of ideas between professors and students at different universities.

The theory behind collaboration is pointed out in the National Science Foundation paper, "Course, curriculum, and laboratory improvement." While focusing on STEM, the authors look at the cycle of innovation. The cycle **Figure 1** describes the elements to achieving success in STEM for students. Not only should faculty conduct research into educational methods, they should explore new materials and new techniques. This encourages faculty to be on the cutting edge of education and for our educational system and degrees to thrive.

Figure 1: STEM Curriculum and Improvement from National Science Foundation

This model is one depiction of why the 2012 ASEE PSW (American Society for Engineering Education in the Pacific Southwest) Conference at Cal Poly was important. The conference focus was to promote "Engagement, Collaboration and Innovation in Engineering Education" (2012 PSW ASEE). While a similar conference is held each year for the PSW region (last years was in Fresno), there is always room for this cycle to be improved. With more engaging the sessions, more relevant the speakers, and more enticing the topics—American engineering professors will thrive.

Last year the conference in Fresno held approximately 70 professors from the region. While the conference was an overall success, there were several aspects that could be improved upon.

- An off-campus banquet containing ASEE PSW awards and a keynote speaker
- Improved EXPO and poster presentation visibility
- Increased pre-conference communication with attendees
- Create a database to store attendee information (e.g. linking payment information, presentation information, etc)
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These problems provided a project for the IME department at Cal Poly. Dr. Jose Macedo took the reins in volunteering Cal Poly to host the ASEE PSW 2012 conference. To show off Cal Poly, he envisioned a 3-day event with workshops, posters, technical sessions, welcome receptions, a banquet, and tours. To take that vision to the next level, McIntyre and Lyles executed the 3-day conference (April 19-21) while fixing many of the problems from the previous year and meeting the additional requirements set forth by Dr. Macedo. The project is necessary because the same methodology that was used by professors to run these conferences in the past was not very effective or efficient. In addition, the IME department had hosted a conference in the past unsuccessfully.

As mentioned in the Introduction of this document, the conference utilized many topics from the IME curriculum. The literature review explores the topics of running a conference, economic analysis, operations research, room layout and design, project management techniques, and database.

Literature Review

Conference Planning

Conference planning for the ASEE PSW 2012 Cal Poly Conference began in October 2011. Because the two students involved in the project have never hosted a 3-day conference or been to an ASEE conference, it was important to draw from Dr. Macedo's wealth of knowledge and experiences benchmarked in technical literature regarding conference planning.

One of the first steps in any conference is to clarify the "purpose for bringing the participants together... Once the purpose is clear, it is possible to clearly define the role for participants, how decisions will be made, and even the type of pre-work required" (Wilgus). The purpose for the ASEE PSW 2012 conference was to promote "Engagement, Collaboration, and Innovation in Engineering Education." After the vision was clear, the positions were defined: technical reviewers, technical writers, and conference planners. Dr. Macedo completed this prior to the project. While the direction of the conference was clear, the planning and implementation team had to make a path to achieve this vision.

The following steps to consider when planning a conference draws from "Developing Leadership Skills for Reference librarians: The Case for Planning a Local Conference." Lawrence Treadwell, the author, describes the planning process for a librarian conference and steps that were crucial to the success of their 1-day conference:

- **Committee Team:** First establish a committee team to host a variety of events, programs, and workshops to provide professional development opportunities. The ASEE conference planning

committee team consisted of the conference chair (Dr. Macedo), the planning team (Lyles and McIntyre), IME 303 teams (with project managers Lyles and McIntyre), and the IME faculty and staff (especially office staff).

- **Budget:** Itemize all anticipated costs such as (Treadwell, 140)
    - "location rental and associate costs (the # of rooms needed, technology required, food and parking"
    - "speakers (including travel expenses and honorariums)"
    - "marketing costs and supplies (including fliers, event program, folders, note paper, pens and any other giveaways)
- **Budget (revenue):** "inviting vendors provides additional funding as well as demonstration of latest products for participants" (Treadwell 141). The vendors should be contacted a few months prior to the event regarding any additional needs for the conference. A committee member should be assigned to helping all vendors at the event. Because the ASEE conference is not funded through any grants, outside vendors (EXPO members) and sponsors should be contact.
- **Registration Fee:** Keep the registration fee affordable. While there was no money initially for the conference, Dr. Macedo was adamant about keeping the conference affordable for professors. The registration fee for the ASEE conference was created regardless of the budgeting costs and each participant was charged $50 for a student, and $100-$125 for professors.
- **Program/Schedule Development:** Allow time for breaks, introductions, and time with vendors. In addition, it was effective to have keynote speakers present the opening and closing remarks (Treadwell 142). According to Dale McIntyre, a previous conference planner for MASCO, it is often distracting to have multiple Keynote Speakers at a dinner or banquet. Additional time for participants to mingle is necessary at breakfast, lunch, and banquet events.
- **Picking the Date:** The date of the conference should be chosen by "minimizing any conflicts with dates that will negatively impact attendance" (Treadwell 145). As soon as the date is chosen, the conference should be advertised using a website with the "conference theme, name, and date" (Treadwell 145). The ASEE conference occurred in April 2012. This is also the same month as Open House on campus. To avoid conflict, the date was chosen to reduce the conflict for professors participating in open house.
- **Food/Catering Choice:** Food is one of the key elements in a conference and is often one of the most memorable. The food choices will "directly impact the evaluations of the conference and [the participants] willingness to attend in the future" (Treadwell 143). Another main aspect to food catering for the ASEE conference is the limited budget for the conference. Catering options should be compared using economic analysis.
- **Policies and Contracts:** Contracts should be verified for all catering and venue choices. The contract should include a complete breakdown of cost and quantity as well as constraints on changing headcount (Treadwell 144). In addition, policies regarding internet use or technology at the venue should be verified prior to the event. Since the ASEE conference is held on the Cal Poly campus the policies and contracts regarding logo use or food on campus are crucial to the success and implementation of the conference.
- **Follow –Up:** For reoccurring conferences it is necessary to get feedback from the participants. "An overall conference evaluation should contain questions about each segment of the conference" (Treadwell 145). In the case of our conference, this will include the food, the technical sessions, and the overall organization of the conference.

Economic Analysis

Cost Benefit Analysis

The cost benefit analysis from *Engineering Economic Analysis* was used in the decision making for parking. Within the conference, there were approximately 50 participants registered who did not teach at Cal Poly. Hotels were reserved for these attendees, but parking and transportation to and from Cal Poly was determined through a cost-benefit analysis.

To determine the least cost to the conference, different scenarios were investigated using fixed, variable, and marginal cost.

- **Fixed costs** are constant or unchanging regardless of the level of output
- **Variable costs** depend on the level of out or activity
- **Marginal cost** is the variable cost for one more unit
- **Opportunity cost** is associated with using a resource in one activity instead of another
- **Breakeven point** is the level of activity in which the total costs for a product, good or service are equal to the revenue (or savings) generated. (34-38 Newnan)

The costs of different scenarios are investigated by comparing the graphs of total cost for a participant. The total cost of a scenario is determined by:

Total cost = Total fixed cost + Total variable cost

The total cost should then be compared across all different scenarios. In the conference, the price point was the most important (not necessarily convenience for the participants). The graph below shows some of these costs and where the different definitions come into play. In the red line on the graph, there is no fixed cost, but there is a marginal cost ($8) and therefore a variable cost. Looking at the blue graph there is an initial fixed cost of $500 with an additional marginal cost of $2. Therefore the equation for the red and blue options is:

Red Line: Total Cost = 0 + 8* Participants

Blue Line: Total Cost = 500 + 2* Participants

In this case the breakeven point is where the two graphs cross each other. This would be where the opportunity cost of one option is equal to the other option. From **Figure 2**, the two lines cross at approximately 85 people. To make the best economic decision, the number of people will determine which option will cost the less; if there are 100 participants it will cost less to choose the blue option, if there are 40 participants needing the service then it will cost less to choose the red option.

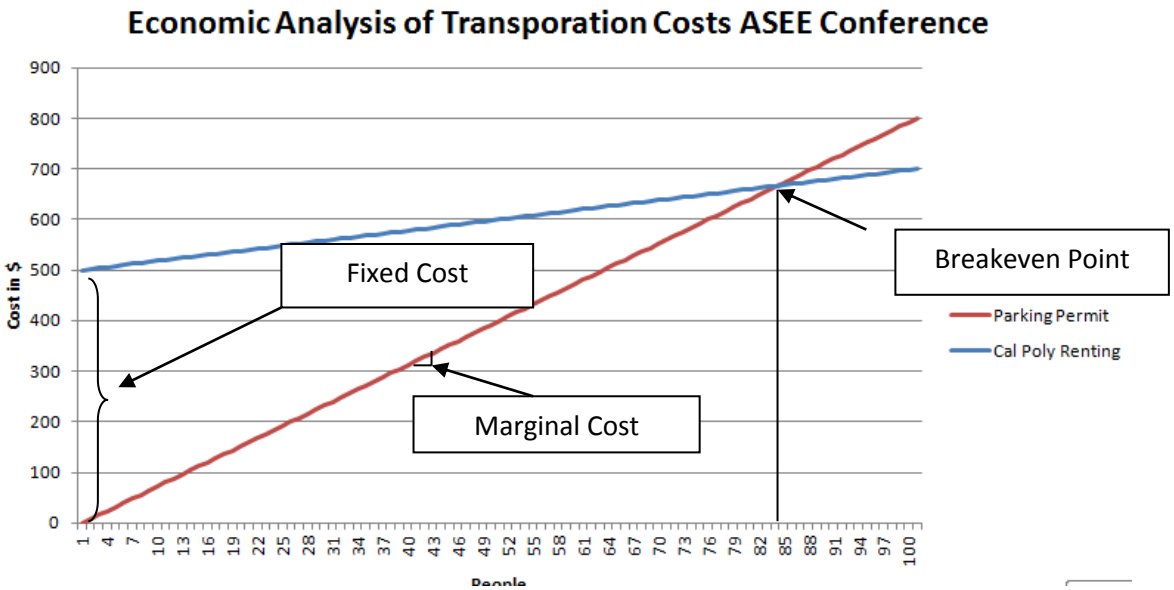

Figure 2: Economic Analysis Breakeven, Fixed, and Marginal

Cost Revenue Analysis

With large projects such as running a conference comes an equally complex budget. As scopes are constantly going under change, so are budget constraints, which made the need for a flexible and highly reviewed budget necessary for this project. In order to review and edit with ease, we developed a "Cost_Revenue.xls" excel document, which managed all of our profits and expenses. This document was broken into three separate tabs; "Cost" which managed all of our costs incurred from catering to printing, "Revenue" which managed our income and finally "Cost_Balance" which gave us an idea of any debt or profit made.

Revenue received for the conference came from three sources and was managed in the "Revenue" tab of the "Cost_Balance" document. These sources included registration, sponsors, and EXPO participants. Below in **Figure 3** is a cost breakdown for the revenue generated.

Type	Details	Cost
Sponsor	Silver Sponsor	$200
	Gold Sponsor	$500
Registration	ASEE Member Early Registration	$100
	ASEE Member Early Registration	$125
	Student Registration	$50
	Additional Conference Proceedings CD	$5
	Additional Lunch Tickets	$15
	Additional Banquet Tickets	$35
EXPO	EXPO Fee	$300

Figure 3: Cost breakdown for sponsors, registration and EXPO fees.

Using this cost structure we developed 3 types of PDF forms for attendees to fill out. The Sponsorship Form (**Appendix I)** was given to companies and private parties interested in supporting the

ASEE conference as either a Silver Sponsor ($200) or Gold Sponsor ($500). The Conference Registration Form (**Appendix I**) included contact and school/company represented fields to be filled out. Attendees had the option of selecting their type of registration (ASEE member, non-member or student) in addition to extra tickets and preceding CD's. The Exhibitor Form (**Appendix I**) was given to companies who were interested in having a booth during our EXPO. The form included contact information and a field to list additional materials, products or services that would be used for display at the booth. Payment options for all three forms were in the form of cash, credit card (faxed or mailed) or check. All payment and contact information obtained from these forms was input into the database. For specific information about the use of the database, refer to the "Database Interfaces" section of this report.

After the conference was complete, we were able to analyze our revenue. As a result of obtaining 13 sponsors, 6 EXPO members and 129 registrants the following graph in **Figure 4** was generated to review our areas of revenue.

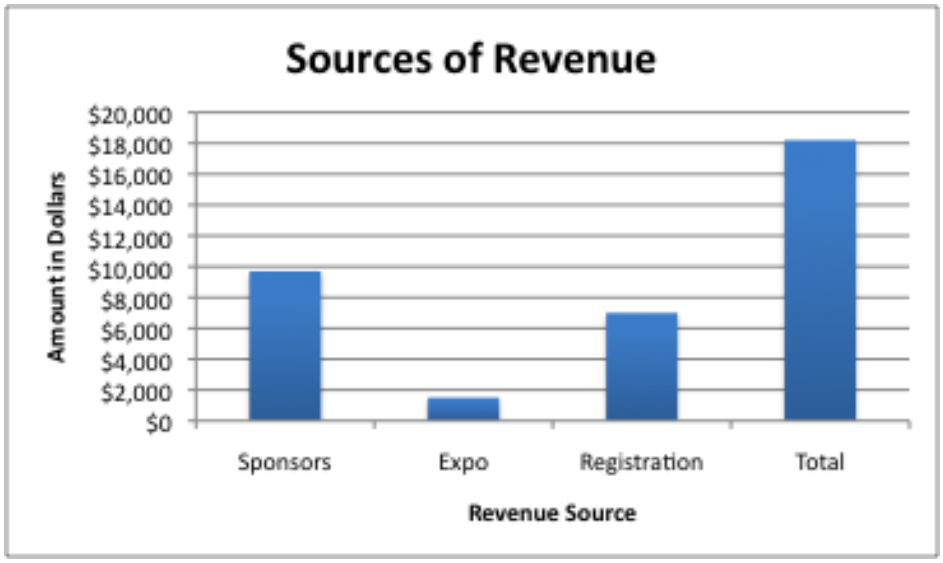

Figure 4: depicts the breakdown of revenue sources.

As seen from the above graph, approximately 53% of our revenue was generated from our 13 company sponsors. Registration for 129 attendees accounted for 38% and revenue generated from the EXPO accounted for 9% of the total. A detailed comparison of the 2012 Cal Poly conference revenue with the 2011 Fresno conference can be seen in the "Methods" section of this document.

Costs incurred with running the conference were divided into 5 main categories: banquet, printing, catering, logistics and other (shirts, bags, etc). This data was saved under the "Costs" tab of the "Cost_Revenue" document. Within each category was an itemized list of individual items, their unit cost and if the amount was actual verses estimated (for budget forecasting purposes). **Figure 5** below was generated to review our main areas of cost.

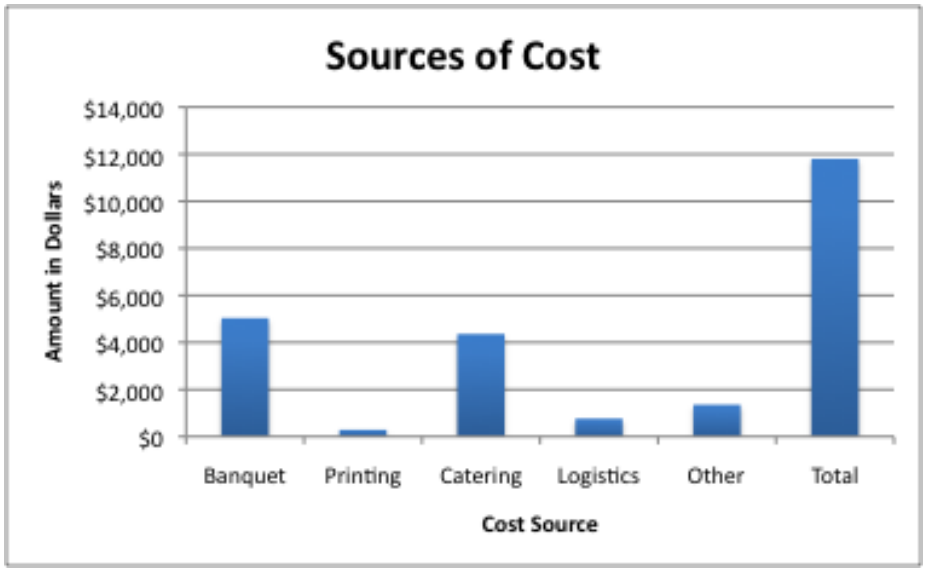

Figure 5: depicts the various sources of cost.

The two largest areas of cost were from the banquet at the Madonna Inn (43% of the total cost) and catering for all three days (37% of the total cost). Parking logistics and document printing (conference and banquet programs) had very little impact on the budget when compared to the banquet and catering. It is important to note that when communicating with these various companies Lyles and McIntyre negotiated to receive the greatest discounts available when placing orders. Although the banquet was the largest expense, we saved a considerable amount by having wine donated by a local winery Edna Valley Vineyards. Instead of having an open bar (with limitless tabs), we negotiated with the Madonna Inn event coordinator to obtain a reduced corkage fee for the wine we provided at the banquet.

Operations Research

To solve the problem of how to assign tours to certain times on Saturday, a preference form was given to individuals. The problem is a linear programming problem to reduce the number of conflicts between the six randomly chosen tours that participants can attend. There are 3 potential time slots because there will be 2 parallel tracks of tours. The OR problem will determine (based on the preference forms returned by the participants) which sessions should be scheduled at the same time therefore resulting in the least amount of conflicts.

Math Behind Operations Research

Linear Programming is a way to "allocate limited resources among competing activities in the best possible way" (Hillier 23). There are different methods to determining the best solution possible including graphical and simplex. However, for this conference there are several different constraints and variables that go outside of the capabilities of a graphical solution. The following terminology is used to construct a linear programming model (Hillier 31-34):

- Z = value of overall measure of performance. This is the value that will be optimized.
- S_j = level of activity j (for j = 1, 2, … n). For the conference "j" is the two tour groups that could be in conflict. If they should be in conflict S_j is 1 and if they should not be in conflict S_j = 0 for those two tour groups.

- C_j = the constant value given to S_j. The constant reflects how many conflicts would occur based on the preference forms.
- B_i = amount of resource i that is available for allocation (for i = 1, 2, … m). In terms of the conference, this dictates the constraints of the S_i values.
- A_{ij} = amount of resource i consumed by each unit of activity j. For the conference these values are 1 or 0.

To create a linear program there is an objective function and constraints that can be functional or nonnegative. The objective function is the function that should be maximized or minimized. In the ASEE conference this function is created to minimize the conflict between tour groups. The constraints reflect that S_i can't be negative and they are also related to each other (Hillier 32). The standard form for a conflict resolution model is to choose values of S_1, S_2, S_n so that

$$\text{Minimize} \qquad Z = C_1S_1 + C_2S_2 + \ldots + C_nS_n,$$

Subject to the restrictions:

$$A_{11}S_1 + A_{12}S_2 + \ldots A_{1n}S_n <= B_1$$
$$A_{21}S_1 + A_{22}S_2 + \ldots A_{2n}S_n <= B_2$$
$$A_{m1}S_1 + A_{m2}S_2 + \ldots A_{mn}S_n <= B_m$$

And

$$S_1 >= 0\ ,\ S_2 >= 0,\ \ldots\ S_n >= 0$$

Once this problem is clearly defined, it can be solved using the solver in excel. This is a tool that will help to optimize the attendance to the tours at the conference and minimize the conflict of participants based on their preferences.

Using the Solver

To optimize the problem, solver is used in excel. Solver is an add-on that can be used to find the best schedule for the conference. Different parts of the solver include the target cell, the changing cells, and the constraints. The target cell "represents the objective or goal" (Introduction to Optimization). You can minimize or maximize the target cell. In this example we will minimize the number of conflicts. The changing cells are the "spreadsheet cells that we can change or adjust to optimize the target cell" (Introduction to Optimization). These changing cells are part of a sumproduct (along with coefficients) that determine the target cell value. In the case of the conference the changing cells determine whether there is a conflict between two sessions. The constraints are "restrictions that you place on the changing cells" (Introduction to Optimization). The constraints in the scheduling problem will be that only 2 sessions can be in conflict at one time. A session cannot be in conflict with more than one other session.

To install solver and use it in excel 2007, first go to excel options → Add-Ins → Solver Add-In. Then under the data tab, access the solver under analysis. Click on the solver and then enter the parameters below based on the excel file that is used for the problem. When using the solver, **Figure 6** shows what needs to be inputted.

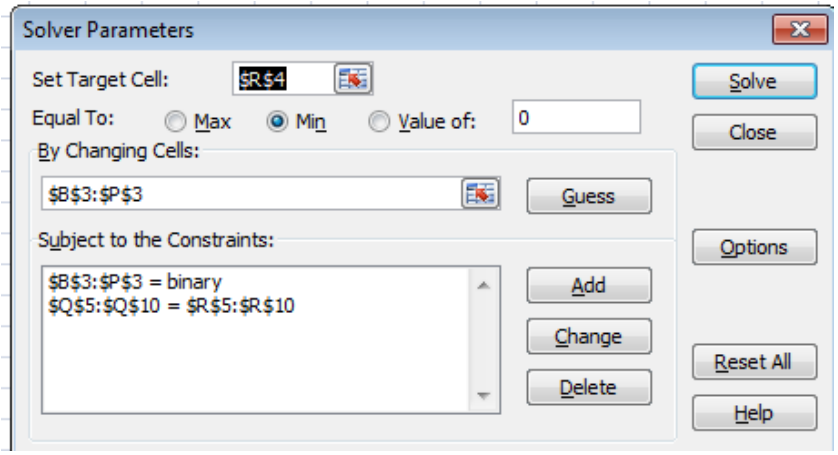

Figure 6: Solver Input

Room Layout and Design

Conference room orientation and layout design is critical to the success of the project. Deciding such factors such as seating arrangements, viewing angles, projectors, outlets and catering areas all must be considered in order for effective flow and communication to take place. Research performed at the Wisconsin Center for Education Research (WCER) showed that when considering conference or meeting rooms, the following factors in **Table 1** must be considered.

Relationship to registration area	Is the presentation room far from the registration area? If so, will maps or signs be necessary?
Speaker prep area	Is there room for the speaker to place his/her belongings during the presentation?
A/V and other secure storage area	Will presenters and EXPO displays be able to connect to power? Where are the outlets located?
Presentation Space	Are there enough resources (ex: lights, projectors, screens, computers, presentation remotes, etc)
Traffic flow*	How do you expect attendees to maneuver through your layout?
Internet connection/WiFi	Can guests access it? Is there a password required?
ADA requirements	Does your facility and/or proposed layout meet ADA requirements?
Adequate restroom facilities	Are they within reasonable distance? Will they accommodate your expected headcount?
Room capacities	What is your backup plan in case of overflow?

Table 1: Conference Room Considerations, WCER

These questions are used to guide a project manager in the development of their conference work breakdown structure (WBS). A list of Cal Poly contacts for the various above information can be found in the "Summary Contact Information" section at the end of this document.

Open source facility design software such as Google SketchUp can be downloaded online and used to develop your room layout if you are looking for digital resources. In order to obtain exact room dimensions it is often helpful to contact a facility manager or architect of the building you are working with

since building plans are usually open to the public. Whereas measuring outlet, chair, table, and board dimensions can be performed using a tape measurer. In order to orient the desired room layout, Google SketchUp can be used to place tables, chairs and other room supplies to the correct dimensions.

Project Management Techniques

In large-scale projects, such as running a 3-day conference, there are exhaustive lists of considerations one must look at before d project. According to *Project Management: The Managerial Process*, there are three main steps to defining a project that meets the needs of the stakeholders and strategic plan of the organization. These steps include: project scope definition, project priorities and a work breakdown structure.

Project Scope

The purpose of the project scope is to define the end product or "mission" of your project. This is important not only for those directly on the project team, but also for the end user and client/customer. In a study conducted by Smith and Tucker involving 1,400 project managers, 50 percent of the planning problems related to an unclear scope definition. The scope should be developed with the direction of the project manager and the customer. The scope should describe what your customer's expected deliverables are when the project is complete. In addition, the scope should also define how your results will be achieved in measureable terms.

Project Priorities

A successful project is one that meets its customer expectations in terms of budget, schedule and scope. In visual form, the interrelationship among these criteria can be seen in **Figure 7.** It is the responsibility of the project manager to find a proper balance among these three trade-offs. In order to do so, project managers must define the priorities of the project and understand the relative importance of each criterion. It is important to note, however, that during the course of the project these priorities may change. Due to this, it is also the responsibility of the project manager to anticipate, confirm and adjust their priorities accordingly.

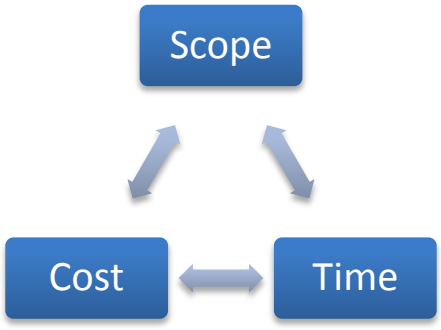

Figure 7: Project management trade-offs

Work Breakdown Structure (WBS)

Once the project scope and priorities have been set in place, the work content then needs to be broken down into subdivided work elements. When complete, the WBS is a map of the project—it's framework serves as a hierarchical process of small work elements. The purpose of developing a WBS is to assure project managers that all elements of the project have been considered in detail. In developing the

WBS, you begin with a final deliverable (ex: holding a banquet) and then branch off and divide into sub-deliverables (ex: selecting menu options, centerpieces, banquet program, etc.) until the lowest level task is identified. These lower level tasks are then divided into work packages and assigned to project members. By grouping them together, it facilitates the monitoring of the scope, cost and time trade-offs.

Oftentimes the WBS is portrayed using a hierarchical tree or a tabular format with a list of "elements" divided by categories. In our case, we decided to create a tabular list since our project spanned three days and had several components involved (see **Appendix F** for the ASEE WBS). The tabular format us used to break the WBS into several chunks in order to make the project scope more quantifiable. Since it is easy to get overwhelmed and confused when a large project is broken into several pieces, the WBS can be used to track and monitor work package progress and deliverable punctuality.

Database Interfaces

The check-in system and payment system for the conference is on a Microsoft Access database. Microsoft Access is "an accurate and user-friendly data entry system… that allows automatic tabbing from one variable to another" (Schneider). To avoid confusion among the paying customers and the volunteers working at the check-in table, the database needs to be user-friendly through using forms to append table information, writing receipts to the desktop, using joins within a query, and allowing for an easy tab interface.

Entry Form:

The first step to making a database user-friendly is allowing for data entry into a form. To avoid the user from entering table information, a form can "contain all fields on one screen" and "allows automatic tabbing to the next record in the database" (Schneider). Forms can also be modified in the 'Design' view and can append information to the important tables. The form entry locations are used in the append query to update the table with a new entry. The following steps for making an append query are from the Microsoft Office website (ADD RECORDS)

1. Create a select query
2. Convert the select query to an Append Query. (the other icon shown in **Figure 8**).
3. Choose the destination fields for each column in the append query
4. Preview and Run the query to append the records

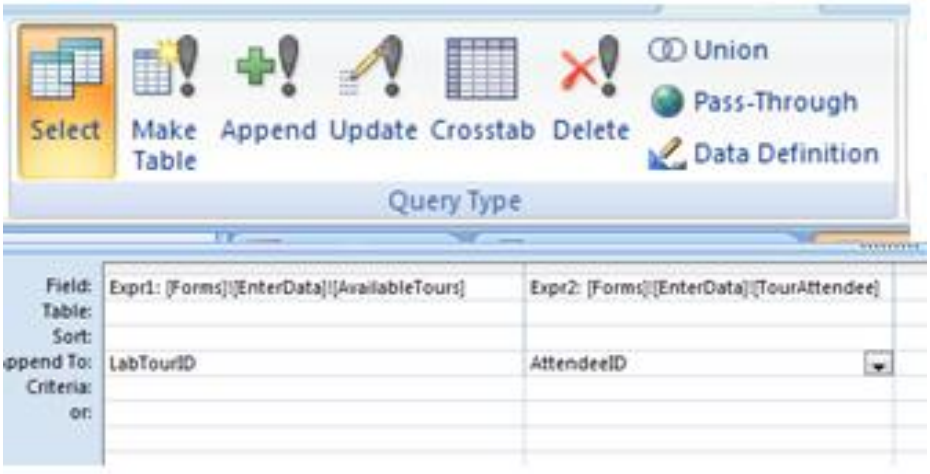

Figure 8: Database Entry Form

In this case, the Field for each query is defined from an entry box on the original form. This is how the results will be appended to the particular tables. In addition, the database needs to be able delete the records. This can be done by converting the select query to a delete query.

Writing Receipts to the Desktop:

It is important to provide a hard copy of the information about how each attendee paid for the conference. After the information is inputted into the database forms, the database will write the information to a report and output this report to a pdf document. To do this, the information below must be filled in with the correct objects:

***DoCmd.*OutputTo(*ObjectType*, *ObjectName*, *OutputFormat*, *OutputFile*, *AutoStart*, *TemplateFile*, *Encoding*, *OutputQuality*)**

The following definitions are from OutputTo (DOCMD.OUTPUTTO):

Table 2: Database OutputTo inputs

Name	Required/Optional	Data Type	Description
ObjectType	Required	**AcOutputObjectType**	An AcOutputObjectType constant that specifies the type of object to output.
ObjectName	Optional	**Variant**	A string expression that's the valid name of an object of the type selected by the *ObjectType* argument. If you want to output the active object, specify the object's type for the *ObjectType* argument and leave this argument blank. If you run Visual Basic code containing the **OutputTo** method in a library database, Microsoft Office Access searches for the object with this name, first in the library database, then in the current database.
OutputFormat	Optional	**Variant**	An **AcFormat** constant that specifies the output format. If you omit this argument, Access prompts you for the output format.
OutputFile	Optional	**Variant**	A string expression that's the full name, including the path, of the file you want to output the object to. If you leave this argument blank, Access prompts you for an output file name.
AutoStart	Optional	**Variant**	Use **True** (–1) to start the appropriate Microsoft Windows–based application immediately, with the file specified by the *OutputFile* argument loaded. Use **False** (0) if you don't want to start the application. This argument is ignored for Microsoft Internet Information Server (.htx, .idc) files and Microsoft ActiveX Server (*.asp) files. If you leave this argument blank, the default (**False**) is assumed.
TemplateFile	Optional	**Variant**	A string expression that's the full name, including the path, of the file you want to use as a template for an HTML, HTX, or ASP file.
Encoding	Optional	**Variant**	The type of character encoding format you want used to output the text or HTML data.
OutputQuality	Optional	**AcExportQuality**	An **AcExportQuality** constant that specifies the type of output device to optimize for. The default value is **acExportQualityPrint**.

Using Join

The reason for a division query in the ASEE PSW conference is to keep track of those authors who have written papers, but have not yet paid for the conference. Since authors can write multiple papers and papers can have multiple authors, it is important to identify papers that have NO authors signed up for the conference. To accomplish this task, the database must include a "join." A join is "a connection between two tables where the two tables are merged across a field that they have in common" (DESCRIPTION OF THE USAGE). For example two tables are shown below to display the payment query joins. A join will essentially combine the information into a new table. The resulting table will include the ID's that appear in both tables using this method of an inner join.

ID	Name
1	John Doe
2	Jane Doe
3	Jake Doe

ID	Paid?
1	120
3	120

ID	Name	Paid
1	John Doe	120
3	Jake Doe	120

Figure 9: Database Using Join

The outer join occurs when you want to get "all the records from one table and only those records from the other table that have matching values from the first table" (DESCRIPTION OF THE USAGE). This is the join necessary to see who is not yet in the paid table. By using a "right outer join" the table below is created.

ID	Name	Paid
1	John Doe	120
2	Jane Doe	(Null)
3	Jake Doe	120

Figure 10: Database Using Join II

At this point the outer join allows you to search for the criteria of "If Paid = Null" then return a value. Multiple iterations of this must be made to search for who has not paid and has written a paper.

Tab Control Function

Tabbing on the entry form will be required to check people into the conference. Using the tab function will allow for multiple entry pages to be contained on the same form. To create a tab form (CREATE A TABBED FORM):

- On the new form, click the design view and in the controls section click on the Tab Controls

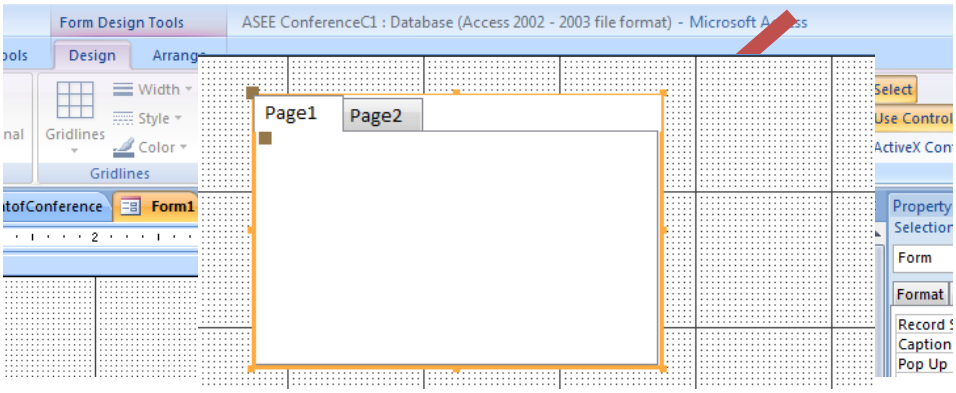

Figure 11: Database Tab Control

- Select the tab and then place them on the form by clicking

The tabs will allow the database construction to be all on one form for easy interaction. The tabs, in the conference case, will be used for entering certain registration, speaking information, payment information, and tour preferences.

Problem Statement

This project was developed in response to the need for a project management team to plan and run the 2012 Pacific Southwest Region American Society for Engineering Educators (ASEE) Conference. This project was initially taken on as a class project while Lyles and McIntyre were enrolled in their IME 303 Project Management course. At the close of the course, the pair was hired on by the Industrial Manufacturing Engineering (IME) Department to help run the 2012 conference. Attempts to run a conference have been made by the IME Department in the past, but have run with little to no success. The purpose of this project was to run a 3-day conference by making improvements from the 2011 Fresno ASEE PSW conference, as well as create a report for running conferences for future department use.

Deliverables

The deliverables for this project were divided into two main sections: the Industrial Engineering methodologies used for the planning, execution and follow-up of the conference and developing a detailed report to serve as a reference guide for conferences in the future. The first deliverable included the successful planning, execution and follow-up of a 3-day ASEE PSW conference at Cal poly. Included in the deliverable were the project management and planning documents in addition to the execution and post-conference lessons learned. The purpose of the second deliverable—the report—is to serve as a guideline for running conferences for the IME Department and/or related Cal Poly programs in the future. Currently, there exists no document that outlines the planning efforts, required steps and on-campus resources needed to run a conference of this scale. In addition, this document serves as an outline for the technical Industrial Engineering techniques used to run any type of conference or large scale event.

Constraints

There are a few major constraints to take into account when planning this conference. These constraints include budget, time frame, and manpower.

Budget

The ASEE conference is not funded through the university. Therefore all funds must be raised by the planning team for this event. In addition, Dr. Macedo was adamant about keeping the charge for the conference at a minimal level. For each attendee, the charge would stay between $100-$125 for the 3-day conference. While some revenue will come from the attendees, the registration fee alone will not pay for the catering or banquet costs incurred.

Time Frame

The ASEE conference was originally scheduled for April 12th – April 14th. This time frame conflicted with Open House, another large Cal Poly event. The conflict significantly impacted many of the prospective attendees for the ASEE conference. Therefore, the date was changed to April 19th – April 21st. This date, when originally scheduled, showed no other conflicts on campus. The conference was scheduled and requests for use of both Bonderson and the ATL (on campus conference locations) were placed.

In November 2011, the project team was notified that another large conference (CUBESAT) was occurring on campus April 18th – April 20th. This directly impacted the team and moving forward because CUBESAT reserved Bonderson and the ATL and received priority over the ASEE conference. At this point, there was no place to put the conference rooms. Another time frame switch was proposed, but literature and the conference website had already notified attendees of the April 19th – April 21st date. While it would be harder to work around the CUBESAT conference, the time frame posed a large constraint and would not be changed.

Manpower

Initially the ASEE PSW Conference project was presented to an IME 303 project team group. The group consisted of 2 project managers (Megan McIntyre and Agnes Pangilinan). Each group consisted of 8 team members. In the early stage of the project, the teams encountered the problem of the CUBESAT double schedule of Bonderson at the ATL. While there were many members, the project was at a standstill. In December 2011, the project teams dissolved at the end of the quarter and McIntyre stayed on.

In January 2012, Claire Lyles became the project manager of another IME 303 group for the ASEE project. Unlike the winter quarter groups, Lyles managed a group with two other students. Working alongside McIntyre, Lyles continued to plan the conference until April as co-student coordinators.

In addition to Macedo, McIntyre, and Lyles, two other team members were hired and the IME office staff was utilized to assist with the planning of the conference. Timothy Brophy, an IE student experienced in database, helped to create a database for registration and tracking of attendees. Brophy was able to complete much of the database before leaving for a Co-Op in March. Jacob Rucker, a former team member of Lyles', stayed on the project to assist with catering planning and volunteer organization. Rucker helped with the implementation of the project. The IME office staff helped to organize incoming information, helped with printing, and helped with all money transactions.

While there was a team of 4 paid members, the budget for the conference did not allow for more members to be hired. This was a major constraint on the project. The duties of project management fell to Lyles and McIntyre.

Initial Design

The design of the project consisted of several components outside of the scope of senior project. There were countless hours spent doing conference preparation. The initial design described below shows how key aspects of the conference were planned using Industrial Engineering Techniques.

Project Management - Work Breakdown Structure

Of the two work breakdown structure (WBS) methodologies, graphical and tabular, we decided to create our WBS in a tabular format. Initially, we considered the graphical hierarchy technique however our scope proved to be too overwhelming to create this in a visually organized manner. Therefore, we decided to develop a tabular format broken into 10 main segments. Working from the "highest level" task, we broke it down in the following tasks and sub-tasks:

1. Tours
    a. Labs
    b. Logistics
2. Banquet
    a. Venue
    b. Food & Beverage
    c. Schedule
3. Catering
    a. Location
    b. Catering analysis
    c. Logistics/Room Configuration
4. Parking
    a. Thursday & Friday
5. Database
    a. Create a database to track the participants at the conference
    b. Manage Data
6. Technical Session and Workshop Scheduling
    a. Create a master schedule of all technical sessions and workshops to be held
7. Funding
    a. EXPO
    b. Sponsors
8. Volunteers
    a. Pre-Conference Activities
    b. Execution Activities
9. Printed Documents and Merchandise
    a. Programs
    b. Tote Bags
    c. Folders
10. Sponsors/EXPO
    a. Obtain EXPO exhibitors
    b. Obtain sponsors
    c. EXPO facility design

A detailed version of the above tabular information can be found in **Appendix F**. The purpose of this WBS is to break down the project into quantifiable sections. Since the project planning staff was small (contained just 3 students and Dr. Macedo), a WBS allowed the team to assign the larger tasks (1-10) to various members who would then execute the lower-level sub tasks until the deliverable was complete. The WBS also served as a helpful tool when determining which tasks were required for volunteers during the execution phase of this project.

Technical Writing – Conference Literature

The ASEE conference literature was developed in order to offer our attendees information regarding the schedule, workshop/session locations, banquet information, CENG tour information and general information about the surrounding areas of San Luis Obispo. These topics were divided into three different documents: a conference program, banquet program and conference pamphlet.

Conference Program

The conference program served as a comprehensive document featuring the entire schedule for all three days. Encompassing eighteen pages, the program was comprised of four main areas of information: schedule, maps to parking and banquet, vendor and EXPO information and finally an awards/Thank You section. The schedule mapped out the details of all three days. For each day, it included the technical session and/or workshop topic, presenter(s) and/or author(s), the title of the session or workshop as well as the corresponding location and time block. In addition to the technical sessions and workshops, it also outlined all the breakfasts, lunches, breaks, Welcome Receptions, banquet, EXPO, poster presentation and CENG tours.

Since approximately 40 attendees were from out of the area, it was important our program included detailed maps of the 192, 197 and ATL buildings where the conference would be held in. Maps for parking and directions to the off-campus banquet at the Madonna Inn were also included. The EXPO and vendor section was added in order to increase the awareness of the EXPO component. This was an area we focused on as a result from the "lessons learned" from the 2011 Fresno ASEE PSW conference. Lastly, we included a section to feature all the sponsors and EXPO exhibitors who supported our conference.

Conference Pamphlet

The conference pamphlet (as seen in **Appendix H**) is a double-sided, tri-fold document that served as a quick preview of the conference without having to flip through the many pages of the program. It differs from the program in that is features an "at-a-glance" schedule and explains the lab tours in detail. Since the lab tours were a new addition to our conference, we wanted to make sure attendees could read a bit about what we planned to offer them. Lastly, the pamphlet features an explanation of the EXPO (again, to raise more awareness about it) and information about local hikes and beaches in the City of San Luis Obispo. This document along with the conference program was placed inside the folders and then inside the tote bad and given to attendees upon check-in/registration.

Banquet Program (8 pages)

The Banquet program (as seen in **Appendix G**) is a single-fold, 6 page document that covered all the necessary information for the banquet. This included a bio and photo of the keynote speaker (Beth

Anderson, Boeing), a brief program, special thanks, awards and finally a "meet the team" section. This document was placed at all the table settings prior to the arrival of attendees.

Operations Research – Tour Scheduling

Operations research provided the framework for the scheduling of tours. Initially there were 8 tours. However, two of these tours required 45 minutes and six of the tours required only 30 minutes. Therefore there were three tracks required shown in **Figure** :

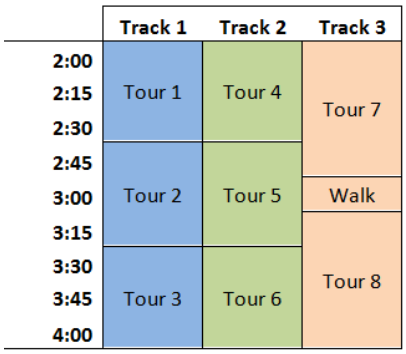

Figure 12: Tour Track Options

Track 3 was already determined by both time and walking constraints. Tour 7 was the Microfabrication Lab. Because this lab was a clean room, there was a required cap on the number of attendees allowed to enroll. Tour 8 was the C/F Microwave Communications Lab hosted by Dennis Derickson. This lab was an EE lab but was located across campus in building 20. Because of the walking constraints, the attendees were given 15 minutes to relocate. After assigning these two tours, there were 6 other tour options listed below that were available for the attendees:

- Option 1 (S_1): Electronics Manufacturing and Packaging – John Pan (IME)
- Option 2 (S_2): Air Motor – Paul Rainey (MfgE)
- Option 3 (S_3): Aircraft and Spacecraft Design Lab – Eric Mehier (AERO)
- Option 4 (S_4): Structures – Mechatronics – Robotics – Fluids Lab – Andrew Davol (ME)
- Option 5 (S_5): Netshape & Foundry Lab – Martin Koch (MfgE)
- Option 6 (S_6): Vibrations – Controls – HVAC – Engines Lab – Andrew Davol (ME)

The options for the tours were given to the attendees in a preference form (see Appendix C). From this form the attendees could

- Fill out that they wanted to fix track (Tour 7 and Tour 8) or
- Select the A'la Carte option by choosing 3 of the options from option 1-6

Operations Research (OR) was required to assign option 1-6 to tour slot 1-6. We accomplished this by creating an OR problem that minimized the number of conflicts for every attendee. A conflict occurs if an attendee wants to attend two tours that are scheduled at the same time. For example, an attendee wishes to attend both Electronics Manufacturing and Packaging (option 1) and Air Motor (option 2). If option 1 was assigned to tour 1 and option 2 was assigned to tour 4, these two tours would be scheduled at the same time. This results in a conflict. The data for the tour preferences submitted are below:

AttendeeID/labs	S1	S2	S3	S4	S5	S6	S1+2	S1+3	S1+4	S1+5	S1+6	S2+3	S2+4	S2+5	S2+6	S3+4	S3+5	S3+6	S4+5	S4+6	S5+6
109	0	0	1	0	1	0	0	1	0	1	0	1	0	1	0	1	2	1	1	0	1
112	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	1	0
113	1	0	0	1	1	0	1	1	2	2	1	0	1	1	0	1	1	0	2	1	1
12	1	0	0	1	0	1	1	1	2	1	2	0	1	0	1	1	0	1	1	2	1
128	0	1	1	1	0	0	1	1	1	0	0	2	2	1	1	2	1	1	1	1	0
135	1	0	1	1	0	0	1	2	2	1	1	1	1	0	0	2	1	1	1	1	0
16	0	0	0	1	0	1	0	0	1	0	1	0	1	0	1	1	0	1	1	2	1
19	1	0	0	1	0	1	1	1	2	1	2	0	1	0	1	1	0	1	1	2	1
32	1	1	0	0	0	1	2	1	1	1	2	1	1	1	2	0	0	1	0	1	1
4	1	0	0	1	0	1	1	1	2	1	2	0	1	0	1	1	0	1	1	2	1
44	1	0	1	1	0	0	1	2	2	1	1	1	1	0	0	2	1	1	1	1	0
46	1	1	0	1	0	0	2	1	2	1	1	1	2	1	1	1	0	0	1	1	0
52	0	1	1	1	0	0	1	1	1	0	0	2	2	1	1	2	1	1	1	1	0
58	0	0	0	1	1	1	0	0	1	1	1	0	1	1	1	1	1	1	2	2	2
60	0	1	0	0	0	0	1	0	0	0	0	1	1	1	1	0	0	0	0	0	0
65	1	1	0	0	1	0	2	1	1	2	1	1	1	2	1	0	1	0	1	0	1
104	1	0	1	1	0	0	1	2	2	1	1	1	1	0	0	2	1	1	1	1	0
					Conflicts		3	3	8	2	4	2	3	1	1	5	1	0	2	5	1

Figure 123: Operations Research Tour Preferences

The attendee preferences are shown on the left of **Figure 12**. If an attendee requested a tour, then that tour option =1. On the right, the conflicts are calculated. These numbers are calculated by adding the number of tours together. For example, S1 + 2 values are 0 if neither are selected, 1 if either 1 or 2 is selected but not both, and 2 if both are selected. By looking at the columns, the conflicts are calculated by "Countif(column, 2)". This will count all conflicts in the column. These "Conflict" numbers become the coefficients in the OR problem.

The OR variables and coefficients are defined below:

- Variables: S_{i+j}, where "i" and "j" are the different tour options that could be scheduled at the same time (binomial)
  - If both "i" and "j" should be scheduled at the same time then $S_{i+j} = 1$
  - If "i" and "j" should not be scheduled at the same time then $S_{i+j} = 0$
  - $S_{1+2}, S_{1+3}, S_{1+4}, S_{1+5}, S_{1+6}, S_{2+3}, S_{2+4}, S_{2+5}, S_{2+6}, S_{3+4}, S_{3+5}, S_{3+6}, S_{4+5}, S_{4+6}, S_{5+6}$
- Coefficients determined from the number of conflicts that would exist if the tours were scheduled at the same time.

The OR problem statement is defined below:

- **Objective Function:** Minimize $Z = 3(S_{1+2}) + 3(S_{1+3}) + 8(S_{1+4}) + 2(S_{1+5}) + 4(S_{1+6}) + 2(S_{2+3}) + 3(S_{2+4}) + 1(S_{2+5}) + 1(S_{2+6}) + 5(S_{3+4}) + 1(S_{3+5}) + 0(S_{3+6}) + 2(S_{4+5}) + 5(S_{4+6}) + 1(S_{5+6})$
- **Subject to Constraints:**
  - Only two tours can be scheduled at the same time, so only one conflict can occur for each tour combination. For example, if a conflict occurs between tour 1 and tour 2, then a conflict cannot occur between tour 1 and tour 3 etc.
    - $(S_{1+2}) + (S_{1+3}) + (S_{1+4}) + (S_{1+5}) + (S_{1+6}) = 1$
    - $(S_{1+2}) + (S_{2+3}) + (S_{2+4}) + (S_{2+5}) + (S_{2+6}) = 1$
    - $(S_{1+3}) + (S_{2+3}) + (S_{3+4}) + (S_{3+5}) + (S_{3+6}) = 1$
    - $(S_{1+4}) + (S_{2+4}) + (S_{3+4}) + (S_{4+5}) + (S_{4+6}) = 1$
    - $(S_{1+5}) + (S_{2+5}) + (S_{3+5}) + (S_{4+5}) + (S_{5+6}) = 1$

- $(S_{1+6}) + (S_{2+6}) + (S_{3+6}) + (S_{4+6}) + (S_{5+6}) = 1$

- All tours can either be in conflict or not be in conflict
  - For all S_{i+j}, $S_{i+j} = 0, 1$

Using the solver and excel, we were able to determine the pairs of tours to assign together. The results from the OR solution were

- Objective Function: 5, meaning only 5 conflicts between the total number of 41 conflicts would occur
- $S_{1+2}, S_{1+3}, S_{1+4}, S_{1+6}, S_{2+3}, S_{2+5}, S_{2+6}, S_{3+4}, S_{3+5}, S_{4+5}, S_{4+6}, S_{5+6} = 0$
- $S_{1+5}, S_{2+4}, S_{3+6} = 1$, meaning these are the pairs that will decrease the total number of conflicts

Table 3: Tour Assignments

Time	Professor/Major	Room #	Title of Lab
2:10 - 2:40 PM	Dr. John Pan/IME	192-105	**Electronics manufacturing and Packaging**
	Martin Koch/MfgE	41-101	**Netshape & Foundry Lab**
10 min			
2:50 - 3:20PM	Andrew Davol/ME	192-135	**Structures - Mechatronics - Robotics - Fluids Lab**
	Paul Rainey/MfgE	41-103	**Air Motor**
10 min			
3:30 - 4:00PM	Eric Mehier/AERO	192-323	**Aircraft and Spacecraft Design Lab**
	Andrew Davol/ME	13 - 101	**Vibrations - Controls - HVAC - Engines Lab**

The schedule in **Table 3** schedule reduced the overall number of conflicts and allowed for the attendees to see the largest number of tours.

Data Management and Systems Design - Database

The database needed to be usable by volunteers who were registering guests. The user manual can be seen in Appendix B. This was a tool used to walk the volunteers through how to register the guests.

The database was an original expectation set forth by Dr. Macedo. Originally, the database was assigned in October 2011 to a 4th year Industrial Engineer on Megan McIntyre's IME 303 project team. However, the database that he constructed was not user friendly and Dr. Macedo expressed the need for a new database to be developed. That is when Timothy Brophy, a 5th year Industrial Engineering student, became the main programmer for the current database.

The database had to:

- Record which attendees had submitted papers
- Assign papers to time slots and print an appendix

- Record payment by the attendees and print receipts
- Output emails for the attendees to send the receipts to
- Keep count of how much revenue was expected from Attendees and sponsors
- Record number of attendees that were off campus

Tim Brophy developed the main database, while Megan McIntyre developed the Count of the Conference (see other key features). The main database, outlined in Appendix D allowed for the user to enter in all information relevant to an attendee. This included the university, email, payment information, first and last name, registration date, and tour information. Using several different queries, the information was stored in the database.

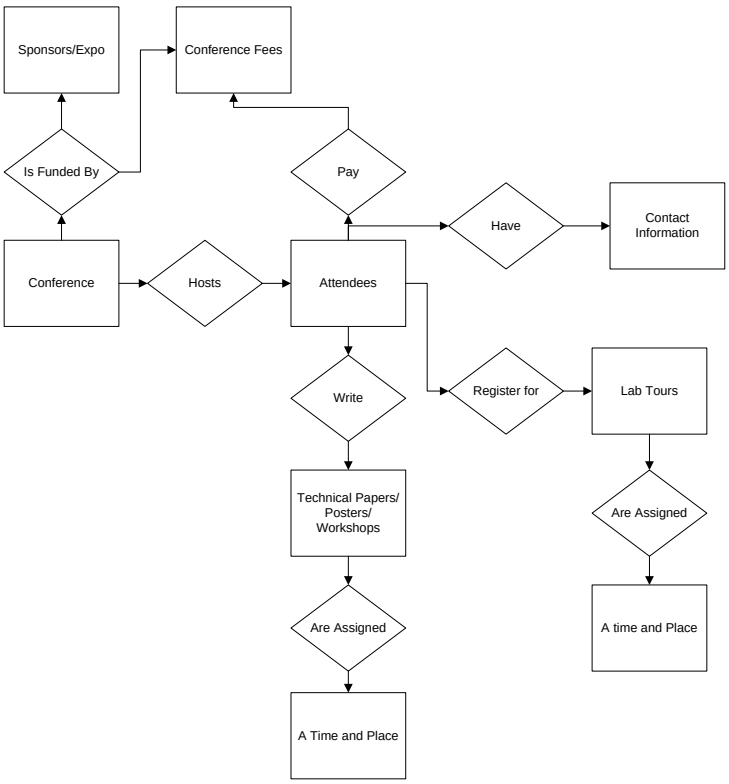

Figure 13: Database E-R Diagram

The Entity-Resource(E-R) Diagram for the main database is shown in **Figure 134**. An entity resource diagram describes how everything in the database is connected and provides a starting point for the tables that need to be created for the database. The conference was centered around attendees, so many of the tables carried an attendee ID.

The tables created for the database include:

- Assigned Time Slots (Title of Paper, TimeSlots)
- Attendees (**AttendeeID**, First Name, Last Name, Email, University/Institution
- Cost Tables
    - Cost Banquet Tickets (**NumBanquetTickets**, BTCost)
    - Cost Extra Conference Proceedings (**NumExtraProceedings**, EPCost)

    - Cost Lunch Tickets (**NumLunchTickets**, LTCost)
    - Cost Membership (**Type_Of_Member**, MCost)
    - Cost Factorial (BTCost, EPCost, LT Cost, MCost)
- Lab Tour Attendees (**AttendeeID**, **LabTourID**)
- Lab Tour Rooms (**LabTourID**, **AssociatedRoom**)
- Lab Tours (**LabTourID**, Title, Professor, Major, Track, StartTime, EndTime, Description_
- Paper Information (**Title of Paper**, **AttendeeID**, Type of Paper)
- Payment Information (**AttendeeID**, MembershipTypeCost, ExtraConferenceProceedings, LunchTicketsCost, BanquetTicketsCost, Type of Payment, Total Cost, Paid, ReceiptPrinted)
- Sponsors (**SponsorID**, Expo/Sponsor, OrgName, Amount, Number Attending)
- Time Slots (**TimeSlotID**, Room, Start, End, Day)

Other Key Features:

Along with recording pertinent information about the attendees, the database also functioned as a management tool by Lyles and McIntyre. They developed different parts of the database that would:

- Return results about attendees (Count of Conference)
- Return total revenue from the conference (Count of Conference)
- Print schedules for the rooms (Schedule)
- Print appendix for the main schedule (Appendix)

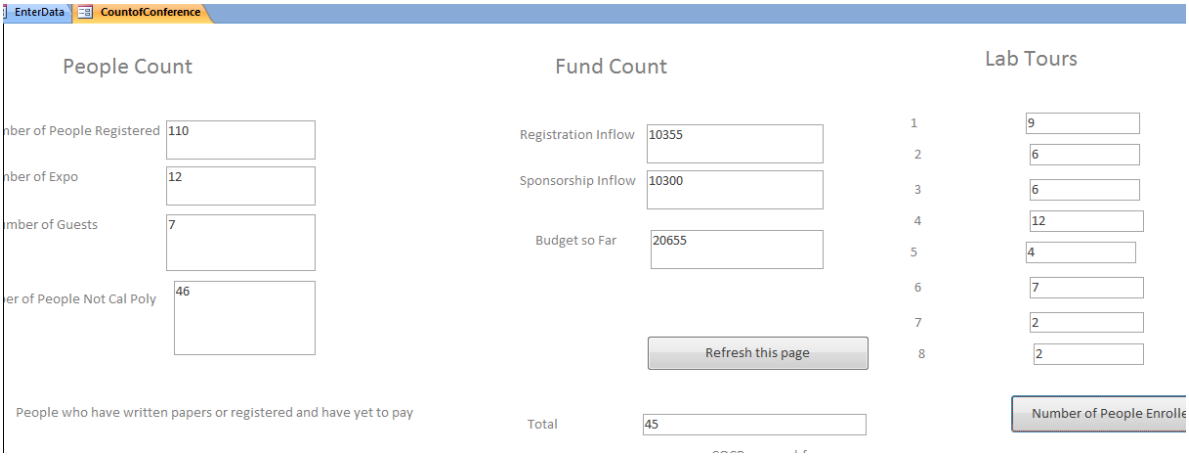

Figure 145: Database Count of Conference

The "Count of Conference" (**Figure 14**) form allowed a quick and easy way for the planners to evaluate the status of the conference. The "Count of Conference" showed important information such as number of people registered, number of expo participants, number of guests, number of attendees from off campus, cash inflow from attendees, cash inflow from sponsors, and number of attendees registered for tours. In addition, this sheet also provided a list of attendees who had submitted papers but who had not paid for the conference. This list allowed for the team to send out specific email reminders to those who had not yet paid.

Title of Paper	Start	End
Virtual Presentations in Pursuit of Industry Academia Interaction	11:30 AM	12:00 PM
Underrepresented Community College Engineering Students Through the Integration of Research in Curricular Improvement	12:00 PM	12:30 PM
A Model to Offer Courses Led by Industry Advisory Boards	12:30 PM	1:00 PM

Figure 16: Database Schedule Export in Excel

The schedule exported the schedule for each room for the day. This schedule allowed for attendees to know what presentations were occurring in each room. It also coincided with the program schedule. Each paper was connected to a presenter. In addition each paper was presented in a certain room at a certain time. This allowed for the database to export the data to different sheets in Excel. Each sheet coincided to a certain room location, date, and time shown in **Figure.**

List of Authors/ Presenters — ASEE PSW 2012 Cal Poly, SLO

Last Name	First Name	University/ Institution	Time Slot	Day
Alpert	Dave	goEngineer	2B	Thursday
Alpert	Dave	goEngineer	1B	Thursday
Alptekin	Sema	Cal Poly SLO	13C	Saturday
Anderson	Beth	Boeing	11A	Friday
Anderson	Kevin	Cal Poly Pomona	10C	Friday

Figure 17: Database Appendix

The last key feature was that the database produced an up to date appendix that could easily update in a word file. Each attendee could look at the back of the conference program and find their name, time slot, and day for presenting. Having this as part of the database saved time on updating the overall conference program. It also provided a quick way for the conference team to look up different presenters and confirm their presenting time and location.

Problems with the database:

Overall, the database was able to check people in at a much faster rate and provide receipts to the attendees. However, only one computer was able to be used because the information for the database had to be maintained in a central location. The problems that were encountered include:

- **Print Receipt:** This function only worked on computers with the same file pathway C:\Users\"student"\Desktop\"Filename" where "student" and "Filename" changed based on the computer login and the receipt printed. However, this only works on certain Windows 7 and not Windows Vista. In the future this could be solved by only having check-in computers with Windows 7 or making the database compatible with both.
- **One Computer:** Originally it was thought that the database could function off of more than one computer. However, to utilize the information in the database, only one could be used so that all information was stored in a certain location. In the future this could be solved by having a central storage location and using a network.

- **Discrepancies:** Often there were some attendees who said they had paid but were not registered in the database. One reason for this is that the payments were sent to the department and not directly to the team entering in the data. Also, several people using the database and not recording correctly. In the future, printing a hardcopy with payment information and having a central information location would have been useful.

Engineering Economics – Economic Decisions

The engineering economic decisions consumed a large part of conference planning. The goal was to create the most cost effective ways to have parking, catering, and a banquet location for the conference. Because this project was cost constrained, getting the most bang for our buck was a priority.

Parking and Hotel Locations

Starting in October 2011, one of the most important issues was achieving room blocks at hotels to accommodate the 80 attendees that were projected to attend the conference. Because the CUBESAT conference was occurring the same week, many of the larger hotels were already blocked out. Smaller hotels in the San Luis Obispo area were contacted. The only requirements included: low nightly rate, complementary breakfast available, and relatively close proximity to campus. Because of this, many hotels were selected from the Grand Monterey area.

Hotel	Rate	Rooms	Contact/Information
Apple Farm	• Specialty Rooms Main Inn - $199 • Deluxe Rooms Main Inn - $179 • King Rooms Trellis Court Motel - $129 • Queen Rooms Trellis Court Motel -$119	20	**James Leigh** Sales Manager 805-544-2040 ext. 632 jamesL@applefarm.com
Embassy Suites	• Single or Double Occupancy -$159	20	**Emily Tonini** Catering Sales Manager Direct Line: 805-547-6406 Emily.Tonini@hilton.com
Holiday Inn Express	• $129 + tax	20	**Sandy Wirick** Director of Sales Direct: 805-544-8850 swirick@hisanluisobispo.com
Quality Inn	• Single - $129 • Double - $139	20	**Angela Kimball** Sales/Accounting Direct Ph: 805.597.6030 qssales@qualitysuitesslo.com

Table 4: An economic analysis of hotels in San Luis Obispo.

After the initial contact with the hotels, each hotel was required to prepare a contract regarding the cancellation policy. These contracts were processed through Cal Poly and had to include a clause saying that if no one agreed to stay in the hotel, Cal Poly would not be charged for the rooms.

Once the hotels were decided, the issue of parking came to light. For out of town guests it was extremely important to have a shuttle or parking locations that could be easily accessible from the hotels or on campus. To decide which transportation method was most effective, engineering economics played a hand.

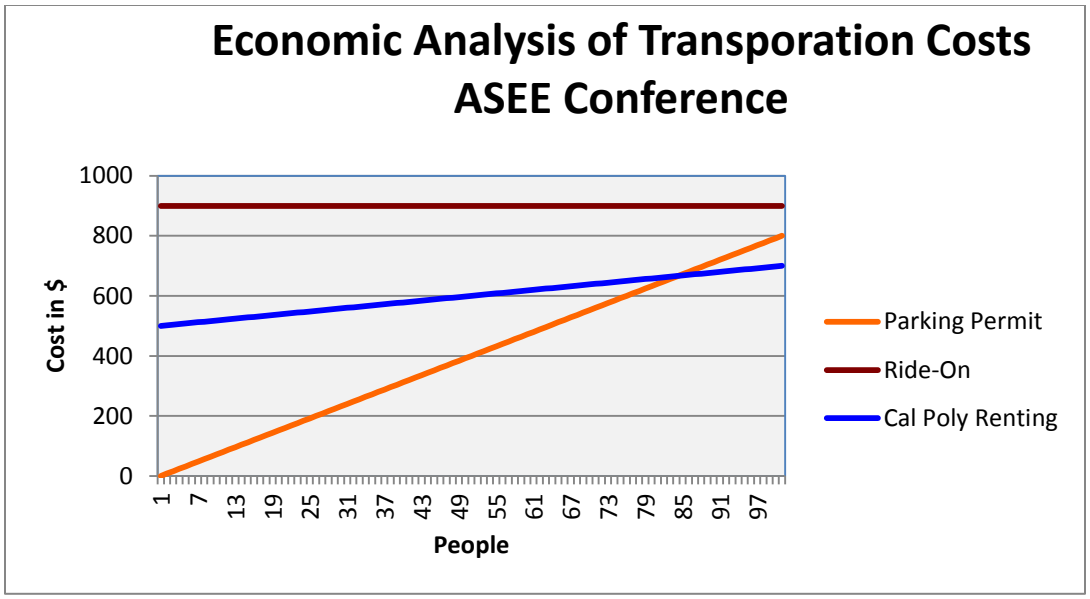

Figure 18: Graph of transportation costs for three parking alternatives.

Three options were investigated in terms of cost for transportation for a three-day conference: Parking Permits on campus, Ride-On, and Renting a lot on the Cal Poly campus:

Method	Cost	Pros	Cons
Parking Permit	$4/permit/day	• Only have to pay for 2 days	Hard to distribute
Ride-On	$900 for the week	• No handling of permits and Attendees from outside of Cal Poly have shuttle service to and from their hotels	Expensive
Cal Poly Renting	$250/day (splitting with CUBESAT) • Set-Up and takedown • $2 for permits parking police officers hand out	• Directional signage placed around campus • Don't have to hand out permits	Expensive • Renting the lot on Saturday doesn't make sense

Table 5: An economic analysis of conference parking options

When evaluating parking options, the number of people expected for the conference was estimated to be between 60 and 80 people. However, not all of these people would need parking permits because many were assumed to be Cal Poly faculty. Therefore, the best option was to provide parking permits to off-campus attendees.

Banquet Locations

In order for the project team to meet the additional requirements set forth by Dr. Macdo, it was important that we not only find an appropriate location to hold the banquet, but that it also didn't affect our budget too much. Potential banquet locations in the San Luis Obispo area were narrowed down to the following three options in **Table 6.** Our requirements for selecting the banquet location included: capacity

greater than or equal to 100 people (since the number of attendees was estimated to grow from 80 at this point in the decision phase), proximity to Cal Poly campus and cost per plate.

Location	Room/Rate	Capacity	Event Coordinator
Inn at Morro Bay	The Morrow Bay Room: • $40/per plate • $4,278 (incl gratuity @ 19%)	120	Denise Morton (805) 772-5651
Café Roma	The Deruta Room: • $44/per plate • $4,497 (incl gratuity @ 19%)	100	Maria Rosa (805) 541-6800
Madonna Inn	The Garden Room: • $37/per plate • $3,776 (incl gratuity @ 19%)	150	Kristen Trevino (805) 784-2410; Kristen@madonnainn.com

Table 6: An economic comparison of banquet location alternatives.

After contacting the event coordinator at each venue, we itemized the above information in a document titled "BanquetVenues" and noted their gratuity and cancellation fees. Since the Garden Room fulfilled all three requirements, the choice was made to go with the Madonna Inn. Once we selected the Madonna Inn, Kristen Trevino (the event coordinator at the Madonna Inn) processed our contract. After our revisions, the contract was then sent to the Cal Poly Contracts Department where it is required that they review any document between Cal Poly and outside businesses.

Banquet Menu Options

After the banquet location and contract was finalized, the menu options needed to be selected. Based on the menu availability at the Madonna Inn, three meat options (Chicken, Steak and Salmon) were compared by cost per plate. In addition to each meat option, a vegetarian option was also included. For approximately 120 attendees, we estimated 75% would want the meat option (90 guests) and 25% would want the vegetarian option (30 guests). Using this breakdown, we were able to compare the price per plate among the three options as seen in **Appendix A**. In addition, we sent out a "Preference" form to registered guests 3 weeks before the event to determine the number of vegetarians and which meat option was most preferred. As a result we were better able to gauge the attendees for their most desirable dish. Comparing our price options with the most preferred dish (Salmon fillet), we decided to choose the Salmon option. Although this was not the cheapest option of the three, we saved a considerable amount by negotiating a corkage fee with the Madonna Inn, which in turn allowed us to accommodate the conference attendee preferences better.

Catering Options

The second largest cost to the conference was catering; making it increasingly important this cost was kept at a minimum. Our catering analysis involved the research of three local catering companies: Two Cooks Catering, Phoenix Catering and Sue's Sandos. The cost summary for all three companies can be seen below in **Table 7.** The total cost was broken down from serving 2 breakfasts, 3 lunches, 1 welcome reception and 3 break periods. The criterion for selecting the catering company was: total cost, menu selection and staffing/logistics.

Catering Company	Total Cost	Taxes & Gratuity	Company Contact
Two Cooks Catering	$5,081.85	7.75% & 15%	Heather (805) 710-2882
Phoenix Catering	$4,664.50	7.75% & 15%	Michael (805) 544-4889
Sue's Sandos *(Initial)*	$4,605.58	7.75% & 15%	Kathy Dagnell (805) 543-8398
Sue's Sandos *(Revised)*	$3,3449.97	7.75% & 15%	Kathy Dagnell (805) 543-8398

Table 7: A cost breakdown between different menu options.

After assessing the total cost for each company, it was determined that both Phoenix Catering and Sue's Sandos were the cheapest option but that we would try to negotiate down to the $3,000-$4,000 range. As seen above, it was clear that Sue's Sando's was the only company willing to adjust their price—by a considerable amount—in order to meet our budget. We negotiated the staffing requirements and agreed to the use of ASEE Conference volunteers to monitor the food, check for replenishment, set-up, clean-up and help with the loading and unloading of food from their vehicles in order to bring the price down significantly. Negotiating staff and menu items ultimately brought the total cost down by over $1,000.

Facilities Planning and Design – Layout of Expo

With small project teams comes the increased need for the proper delegation of work. As project managers, Lyles and McIntyre focused on the backend planning efforts and delegated conference set-up and day-of activities among the 37 student volunteers. Since different rooms inside building 192 needed to be set-up with varying layouts, we utilized IME 443 Facilities Planning and Design skills in the development of the EXPO room layout. There were three critical elements to the EXPO room, which needed to have a unique set-up that was different from the "classroom" settings in the Technical Sessions and Technical Workshops.

The EXPO room was designed to improve the visibility from the 2011 conference and encourage attendees and poster presenter interaction. In order to achieve this, we created a "flow" which allowed attendees to walk around the catering stations and enjoy the poster sessions and EXPO booths that were located along the perimeter of the room. Posters were hung using clips along the wall and the catering stations and booths were arranged using 23 of the existing 6' x 2' classroom tables. All chairs and extra tables were removed from the room and placed in storage.

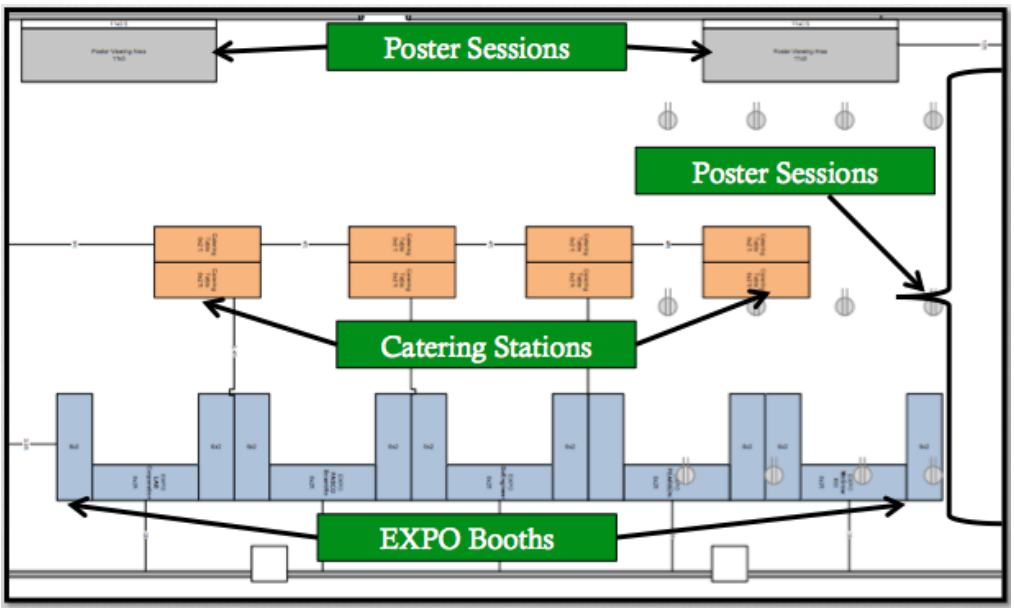

Figure 15: a detailed view of the EXPO room layout

The above **Figure 19** shows a detailed view of the room layout and dimensions. Outlet locations (for EXPO computer displays, catering heating, etc), tables and poster locations were properly dimensioned for easy reference when creating the initial layout and implementing the design in the room. This layout was given to the set-up team of volunteers (approximately 4 people required to move everything) the evening before the conference and was used to set up for the EXPO.

Benchmarked against Fresno

The ASEE conference 2011 was hosted by California State University in Fresno. This created a benchmark for many of the decisions that were made regarding the execution and the estimates for the Cal Poly conference.

Metric	FRESNO 2011
Budget	$6,865
Spent	$3,952
Registration	$125-$150
Sponsors	7 (school departments)
Expo Members	4
Attendees	70-75
Number of Sessions	40

Table 8: Breakdown of the results from the 2011 ASEE PSW Conference in Fresno.

These initial metrics set down a ground rule for estimations of attendees. For all costs, the number of attendees was projected from 60-80. However, the budget seemed unreasonable for the scale of our conference. Because we wanted to have a reception at a local restaurant, that alone would cost around $4,000. Additionally, Dr. Macedo requested that the registration fees be held to a minimum. For the Cal Poly ASEE PSW conference, the registration fees were set at $100-$125. Therefore, the budget for our conference had to surpass $6,865. **Note: All money not spent from the budget was sent back to the ASEE fund.*

Results

In order to quantify the success of the conference, an evaluation form was developed. As seen in **Appendix E**, the evaluation form included five questions that covered the scope of the 3-day conference from questions regarding food selection to parking and registration. These forms were handed out to participants during the banquet on Friday and lunch period on the last day of the conference. By this point, many attendees had trickled out due to travel plans and optional tour attendance, and as a result we only received 28 responses. Based on what we received, the responses have been analyzed per question.

1. **Question 1:** *Please indicate if you are a student, author, sponsor, EXPO or attendee (not presenting).*
    a. *Q1 Results:* 4 students, 12 authors, 9 attendees and 3 no response; 28 total responses.
2. **Question 2:** *Please indicate your level of satisfaction (1=highly satisfied, 2=very satisfied, 3=satisfied, 4=slightly unsatisfied, 5=unsatisfied). The attendees were asked to rate their level of satisfaction among the following 6 sub-questions:*
    Responses:

	Highly Satisfied	Very Satisfied	Satisfied	Slightly Unsatisfied	Unsatisfied	Total
Question 2a: Overall Experience	26	2	0	0	0	28
Question 2b: Organization of Event	28	0	0	0	0	28
Question 2c: Presenters	8	19	1	0	0	28
Question 2d: Materials and Handouts	7	21	0	0	0	28
Question 2e: Facilities	28	0	0	0	0	28
Question 2f: food	24	4	0	0	0	28

Table 9: Number of responses for question #2 on the Evaluation Form.

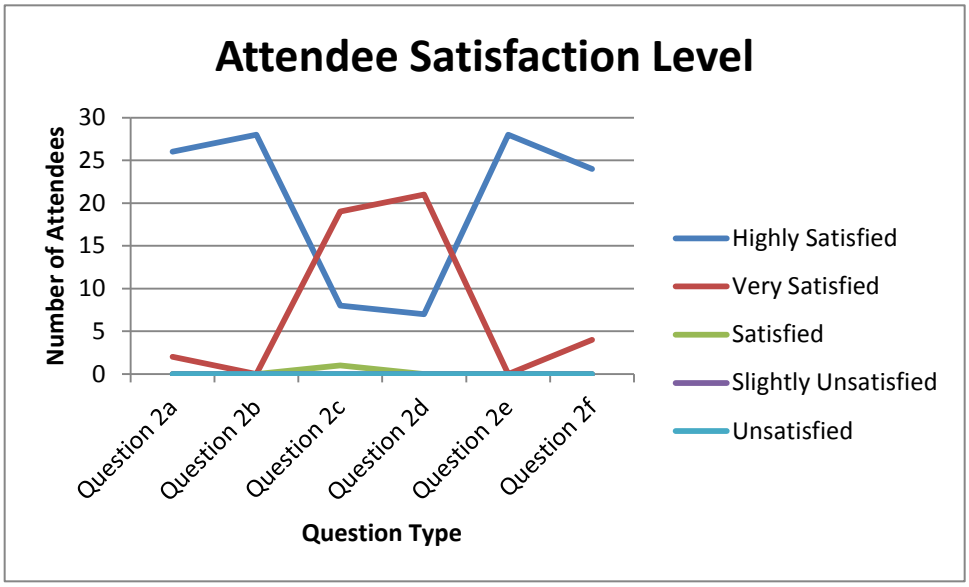

Figure 20: attendee response to question #2

As seen from the graph in **Figure 20**, the overall response from our attendees was very positive. In review of question 2a, we had 26 (93%) of responses as highly satisfied by their overall experience. There were 2 (7%) of responses that were very satisfied. All 28 responses (100%) were highly satisfied with the organization. Question 2c had 8 (29%) highly satisfied, 19 (67%) very satisfied and 1 (4%) satisfied with the presenters. Question 2d had 7(25%) highly satisfied and 21 (75%) very satisfied with the materials and handouts. Question 2e had all 28 (100%) responses that were very satisfied with the facilities. Lastly, 24 (86%) were highly satisfied with the food and only 4 (14%) were very satisfied.

Overall, the attendee satisfaction was nearest to highly satisfied for all six sub-questions. Although both the presenters and material/handouts questions received the lowest percent of "highly satisfied", the lowest level of satisfaction received for presenters was "satisfied" and for material/handouts was "very satisfied".

3. **Question 3:** *Are you happy with the organization/ arrangements and presentation process of this event including registration, parking, etc?*
    a. See **Table 10** for results.
4. **Question 4:** *Would you like to participate once again in such an event?*
    a. See **Table 10** for results.

Question	Yes	No
Q3: Are you happy with the organization/arrangements and presentation process of this event including registration, parking, etc?	28 (100%)	0
Q4: Would you like to participate once again in such an event?	28 (100%)	0

Figure 10: Responses to questions 3 and 4 from the Evaluation Form

Overall, we were very pleased by the response from attendees about their appreciation for the organization and process of the conference. In addition, there was 100% feedback from attendees who said they would attend another ASEE PSW conference based on their experience at our conference.

5. **Question 5:** *Please describe any additional comments you would like to share with the planning and coordination team.*

Attendees (not presenting)	Authors	Students
▪ Best conference yet! ▪ Nice job. This is the best PSW meeting ever attended. Keep up the good work. ▪ It was a great effort to put all this together; I enjoyed what the presenters presented.	▪ Very efficient and well-ran conference ▪ Very professional! ▪ Very well organized ▪ Jose and his Angels were great! ▪ Oh yes. This was GREAT!	▪ I was unable to attend Friday portion of presentations but the banquet has been wonderful. ▪ It was an incredibly enjoyable event. These students who volunteered were incredibly helpful and friendly ▪ Very happy with everything. ▪ Very efficient and well-ran conference ▪ Nice organization in every regard! ▪ Very nicely organized. Look forward to more student involvement in the future ▪ Excellent food and people. The Presentation/Keynote with dinner (vs afterwards) was well-planned and time effective

Table 11: Free response answers from question #5 on the Evaluation Form.

Based on the results from the evaluation form, there is very little room for improvement. Across the board, the conference received a highly satisfied response level which implies the design, methodology and execution of this project was an appropriate fit.

The results from our conference, when compared to Fresno 2011 differed significantly. As shown in the table, the budget for the Cal Poly 2012 conference was nearly three times the budget for the Fresno 2011 conference. However, the amount that was spent on the conference also reached three times the amount spent on the Fresno 2011 conference. One of the main reasons was the sheer number of attendees. The Cal Poly 2012 conference attracted nearly twice as many attendees as the Fresno 2011 conference, and each attendee paid less for the Cal Poly 2012 conference. This increased our project spent and therefore increased our sights on what the budget should be.

Metric	CAL POLY 2012	FRESNO 2011
Budget	$18,655	$6,865
Spent	$11,304	$3,952
Registration	$100-$125	$125-$150
Sponsors	13 (school departments and industry)	7 (school departments)
Expo Members	6	4
Attendees	129	70-75
Number of Sessions	69	40

Table 12: Comparison of the 2012 vs. 2011 conference results.

Summary Contact Information

Running a conference is a challenge, especially when you are running a conference from scratch. A lot of time on this project was spent contacting organizations for donations, figuring out what forms were needed to get approvals and who those forms should go to, and contacting local vendors. We have created **Table 3** below which outlines a summary of all contacts made and how they were useful towards the execution of the conference.

Contact Name/Organization	Contact	Why Contacted
Cal Poly Building Floor plans	http://www.afd.calpoly.edu/facilities/unsecured/planroom/database/building/Floor_Plans/ http://www.afd.calpoly.edu/facilities/maps_floorplans.asp?pid=7	Used to obtain room dimensions (see both PDF and CAD files) in order to make the facility room design for the EXPO (192-220)
Cal Poly Chocolates/Cal Poly	Tom Neuhaus tneuhaus@calpoly.edu 805-756-2240	Provided discounted chocolates for the conference bags
CENG Ambassadors/Cal Poly	cp.eng.amb@gmail.com	Helped out with providing CENG Ambassador volunteers to lead the lab tours on Saturday
CENG Facilities/Cal Poly	Jeff Nadel jnadel@calpoly.edu 805-756-2666	Scheduled rooms for use and provided access to locked rooms (ATL, Bonderson) and discussed AC and lighting system)
CENG Publications/Cal Poly	Amy Hewes ahewes@calpoly.edu 805-756-6402	Helped with the approval of printed documents (conference program, conference pamphlet and banquet pamphlet)
CENG Webmaster/Cal Poly	Miles Clark mmclark@calpoly.edu 805-756-6582	Maintained the Cal Poly ASEE Website to keep information up-to-date for conference attendees
Edna Valley Vineyards Sponsor	Constance Peck constance@ednavalleyvineyards.com 805-544-5855 x 230	Donated 40 bottles of wine to be used at our Welcome Reception and Banquet (2 cases of red (12 bottles/case) and 2 cases of white (12 bottles/case))
EXPO/GoEngineer	Dave Alpert dalpert@goengineer.com 760-473-3024	EXPO Exhibitor
EXPO/Lab Corporation	Larry Bjurlin larr@LABcorpoedu.com 602-524-5222	EXPO Exhibitor
EXPO/McGraw Hill	John Fitzgibbons johnfitzgibbons@mcgraw-hill.com 609-426-5400	EXPO Exhibitor
EXPO/Pasco Scientific	Lance Mayhofer tstout@pasco.com 800-772-8700	EXPO Exhibitor

EXPO/Pearson Higher Education	Kathryn Ferranti kathryn.ferranti@pearson.com 201-236-7013	EXPO Exhibitor
EXPO/Western Digital	David Renuart david.renuart@wdc.com 949-466-6653	EXPO Exhibitor
Facility Services/Cal Poly	facserv@calpoly.edu 805-756-2321	They provided free stakes for directional signs.
IME IAB Sponsor/Boeing	Majid Abab majid.abab@boeing.com	Company sponsor
IME IAB Sponsor/Frito-Lay	David Hampton dave.a.hampton@fritolay.com	Company sponsor
IME IAB Sponsor/Lockheed Martin	Larry Patzman laurence.s.patzman@lmco.com Richard Bronson richard.bronson@lmco.com	Company sponsor
IME IAB Sponsor/Northrop Grumman	Chuck Osberg charles.osberg@ngc.com	Company sponsor
IME IAB Sponsor/Solar Turbines	Leslie Sutherland Sutherland_leslie_1@solarturbines.com	Company sponsor
J Carroll Merchandise Printing	Travis Harrison travis@jcarroll.com 805-595-1000	Main contact for contracts, invoices and design proof of conference t-shirts and bags
Madonna Inn Banquet Room	Kristen Trevino kristen@madonnainn.com 805-784-2410	Banquet coordinator at the Madonna Inn Garden Room. Helped coordinate contracts, invoices, menu items and set-up requirements
Media Resources Center /Cal Poly	mds@calpoly.edu 805-756-7198	Rented easels, power cords, projectors and computers for free.
Office Max	impress1374@officemax.com	Used to print out name tags using our word template and logos
Poly Plant Shop/Cal Poly	805-756-1106	Provided discounted flower centerpieces for the banquet
Public Affairs/Cal Poly	Stacia Momburg 805-756-6260 smomburg@calpoly.edu	Provided approval for the Cal Poly logo on conference literature, t-shirts, tote bags and name tags
Sue's Sandos/All Seasons Catering	Kathleen Dagnall sandwichqueen@sbcglobal.net 805-543-8398	Provided catering for all 3 days including the Welcome Reception. Very flexible with negotiating

UGS (University Graphic System)/Cal Poly	Alicia Cameron (805) 756 1140 amcamero@calpoly.edu	Sales manager at UGS helped with contract, invoice and pick-up of all our printed conference literature

Table 13: Cal Poly and off-campus business contacts

Conclusions (or summary)

- As a result, our most important results rely in both the economic comparison to the 2011 Fresno ASEE PSW conference and the results obtained from the evaluation form. The highlights include:
    - Budget increase of $11,790
    - Increase of 8 sponsors/exhibitors
    - Improved ASEE PSW member attendance by 59 people
    - Met all additional requirements and improved upon last years "lessons learned"
    - 98% of the 28 surveyed said they were highly satisfied with the conference
    - 100% of the 28 surveyed said they would attend another ASEE PSW conference based on their experience at our conference
- Based on the problem statement and the additional objectives setforth by Dr. Macedo, we were able to not only meet these objectives but exceed our expectations of how the conference would result. Specifically, we
- Not only did we learn about how to run a large technical conference and how to apply Industrial Engineering principles to improve the execution of them, but we also learned how to work with each other. Oftentimes the communication and teamwork aspect gets overlooked in projects of this scale, however we learned—especially when working with peers—that it is important to address the issue, not the person. This can be said for any group project, but we felt in the context of our interactions with peers on the planning team and the volunteers that it was necessary we mention this.
- In terms of how our project could have been improved, there is very little to mention. One important improvement could have been the use of a larger project team during the planning phase. We often got burdened and overwhelmed with the scope of the project and it would have been helpful to delegate more in the early stages of the project.

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Appendix A: Banquet Menu Economic Comparison

	Madonna Inn Menu Options					
	Option 1		Option 2		Option 3	
Menu Item	Boneless Breast of Chicken	Three Cheese Tortellini w/Meatless Marinara Sauce or Alfredo Sauce	Prime Rib	Three Cheese Tortellini w/Meatless Marinara Sauce or Alfredo Sauce	Salomon Fillet	Three Cheese Tortellini w/Meatless Marinara Sauce or Alfredo Sauce
Cost Per Plate w/ Service & Gratuity included (18% & 7.75%)	$35.54	$36.14	$43.17	$36.14	$40.62	$36.14
Catering (80 ppl)	$3,198.60	$1,084.20	$3,885.30	$1,445.60	$3,655.80	$1,084.20
Room Rental	Waived	Waived	Waived	Waived	Waived	Waived
Service & Gratuity	Waived	Waived	Waived	Waived	Waived	Waived
20 Wine Bottles ($7.50 Corkage)	$150	$150	$150	$150	$150	$150
	$3,348.60	$1,234.20	$4,035.30	$1,595.60	$3,805.80	$1,234.20
Option 1 Total=	**$4,582.80**	**Option 2 Total=**	**$5,630.90**	**Option 3 Total=**	**$5,040.00**	

Figure 21: A cost breakdown between different menu options.

Appendix B: How to Use the Database

Before you start up the database log into the gmail account:

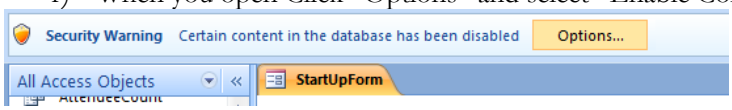
Login: ASEEConference

Password: asee2012

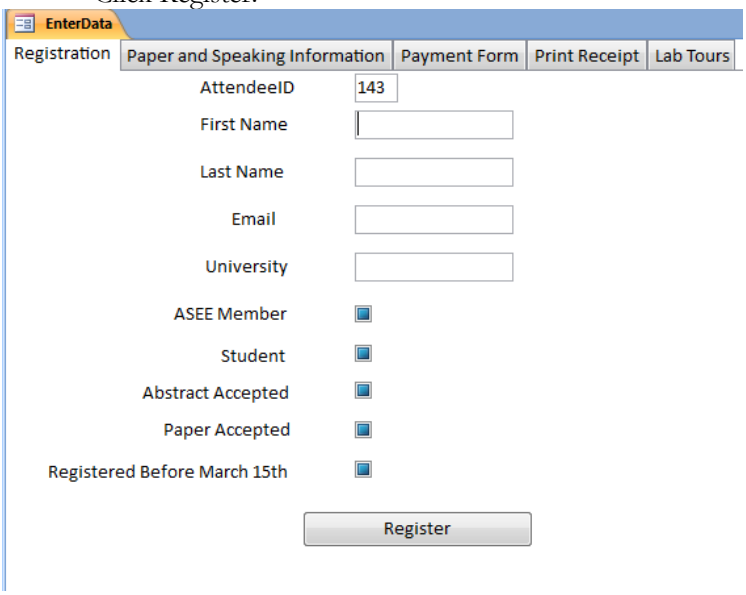
Go to Compose Mail

To use the database:

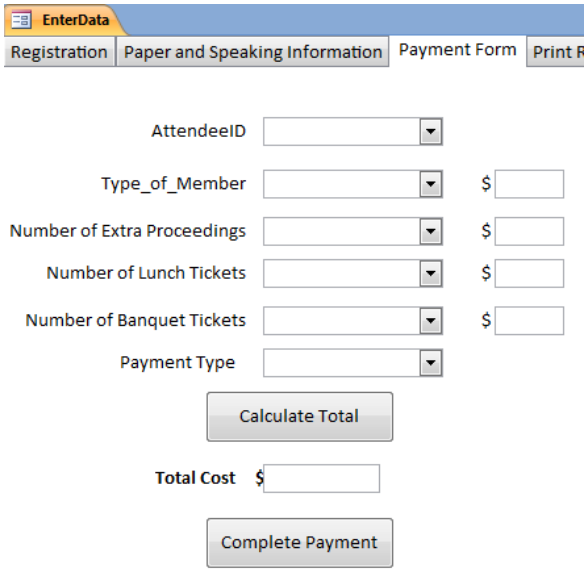
1) When you open Click "Options" and select "Enable Content"



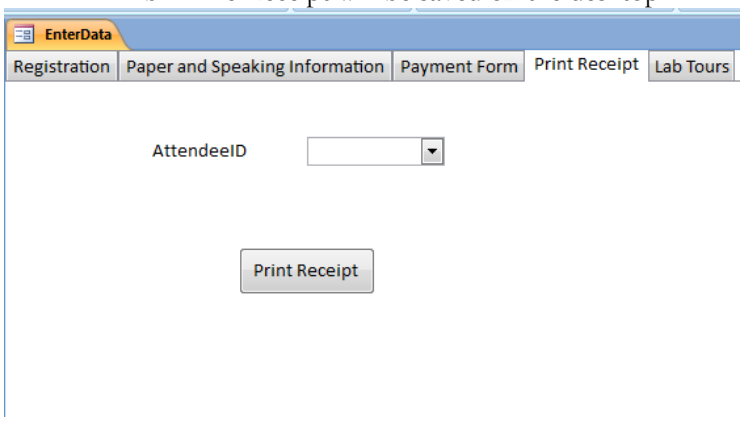
2) Then on the StartUpForm Click "Enter Data"
3) Under the Registration Tab Enter in the Participant information (MUST HAVE A EMAIL). Then Click Register.



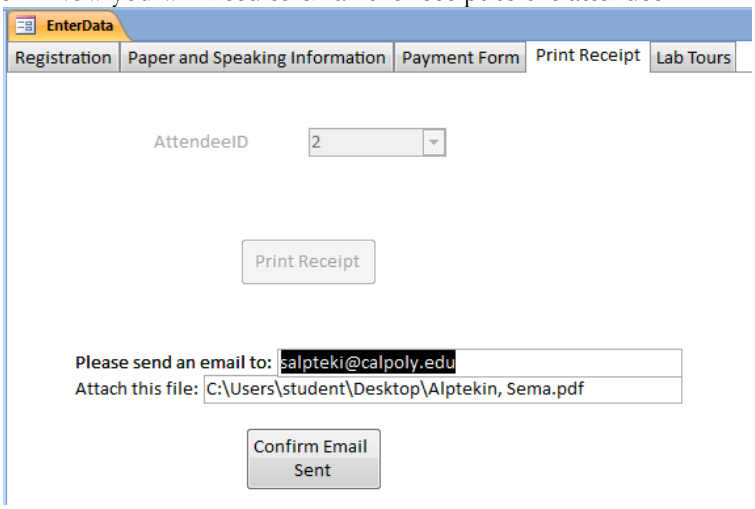
4) After you register, click on the payment form. Fill in the information for the participant.
    a. Select the Attendee ID from the Alphabetical List (if the ID does not show up press the Refresh button)
    b. Select type of member (ASEE after March, Non Member, Student)
    c. Ask if they want extra proceedings, lunch tickets, banquet tickets
    d. Then enter in their payment type
    e. Press Calculate total and verify with customer
    f. Press complete payment
    g. Then ask if they would like a receipt emailed to them



5) To email a receipt go to the print receipt tab
   a. Select the Attendee ID and press Print Receipt
   b. The Receipt will be saved on the desktop

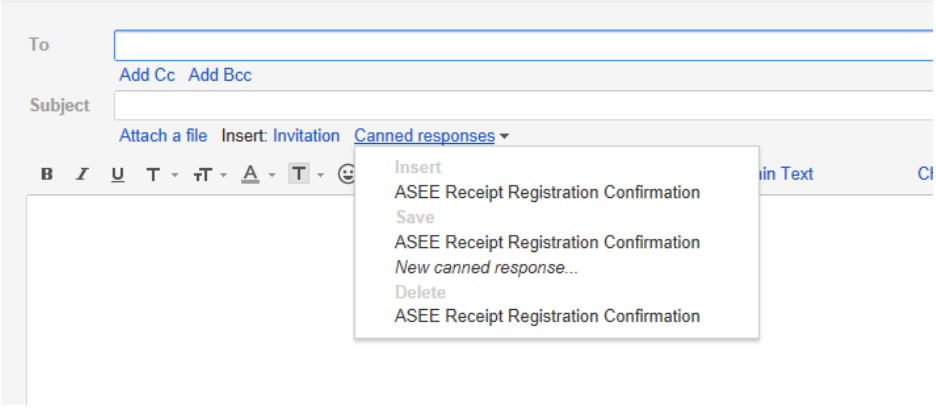


   c. Now you will need to email the receipt to the attendee



   d. Select the email from the database and put it in the Send To Line
   e. Make the title of the email: ASEE Receipt Confirmation

f. Then select the Canned Response: ASEE Receipt Registration
g. Attach the file from the filepath or on your desktop
h. Sign your name and press send.
i. Return to the database and press "Confirm Email Sent"



Appendix C: Preference Form

Name _____

1. Workshop Options (Thursday April 19th : 8AM – 5PM)

Workshops are Free to those registered for the conference. **I want to attend the following workshops: (check one for each time slot)**

8:00 AM – 10:00 AM	**1A** _____ Sustainable and Effective Practices for ABET Assessment, *Fred Depiro*	**Or**	**1B** _____ SolidWorks Hands-On: 3D Design, Documentation, Simulation, and Sustainability, *Dave Alpert*
10:00 AM – 12:00 PM	**2A** _____ Facilitating the Transfer of Community College Engineering Students through Model Transfer Curicula, *Kate Disney*	**Or**	**2B** _____ SolidWorks Hands-On: 3D Design, Documentation, Simulation, and Sustainability, *Dave Alpert*
1:00 PM – 3:00 PM	**3A** _____ Personalized Experimentation in Claissical Controls with Matlab Real-Time Windows Target and Portable Aeropendulum Kit, *Eniko Enikov & Estelle Eke*	**Or**	**3B** _____ From Art to Part: Rapid part realization from CAD to CNC machining to cast metal, plastic or chocolate, *Martin Koch*
3:00 PM – 5:00 PM	**4A** _____Teaching Engineering Design to Middle and High School students using Rube Goldbergineering, *Odesma Dalrymple*	**Or**	**4B** _____ Breaking New Ground from the STEM-Up, *Gary Cruz*

2. Banquet Options (Friday April 20th : 6PM- 9PM)

Please select one food option for dinner. **I would prefer … (Check One)**

Meat Option: *Salmon*	____	OR Veggie Option: *Pasta*	____

3. Tour Options (Saturday April 21st : 2PM – 4PM)

Please check either A'la Carte or Fixed Track below. If you choose A'la Carte then specify which labs you wish to attend. **I would prefer…**

____ Fixed Track		
	Microfabrication Lab	*Richard Savage/ MATE*
	C/F Microwave Communications Lab	*Dennis Derickson/EE*
	OR	
____ A'la Carte (Mix and Match)		
Pick 3 out of Six of the options to the right if you are interested in A'la Carte	____ Electronics Manufacturing and Packaging	*John Pan/ IME*
	____ Air Motor	*Paul Rainey/ MfgE*
	____ Aircraft and Spacecraft Design Lab	*Eric Mehier/ AERO*
	____Structures – Mechatronics – Robotics – Fluids Lab	*Andrew Davol/ ME*
	____Netshape & Foundry Lab	*Martin Koch/ MfgE*
	____Vibrations – Controls – HVAC – Engines Lab	*Andrew Davol/ ME*

Appendix D: Database

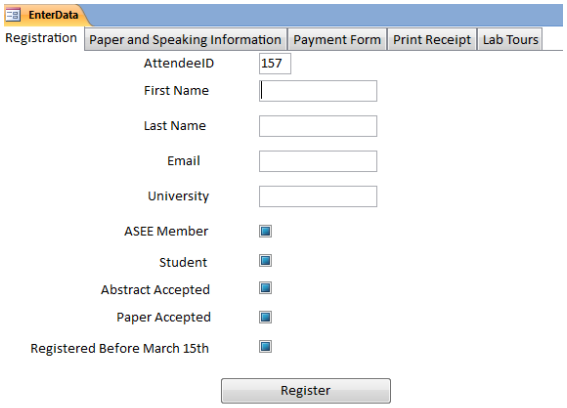


Figure 16: Registration Database

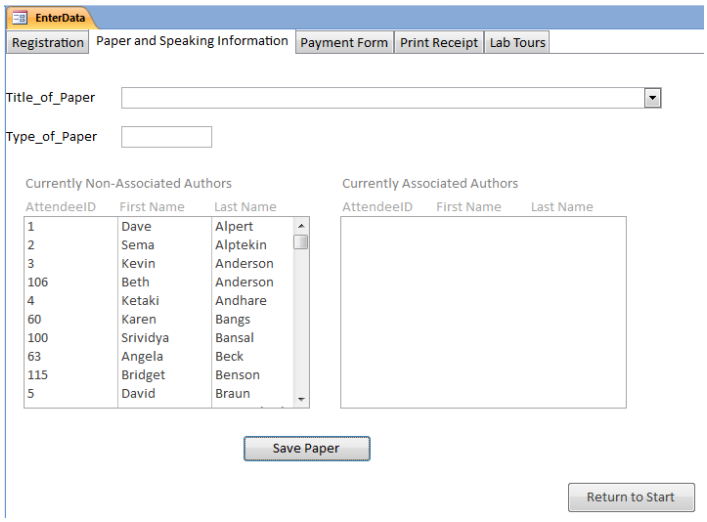


Figure 17: Paper Information Database

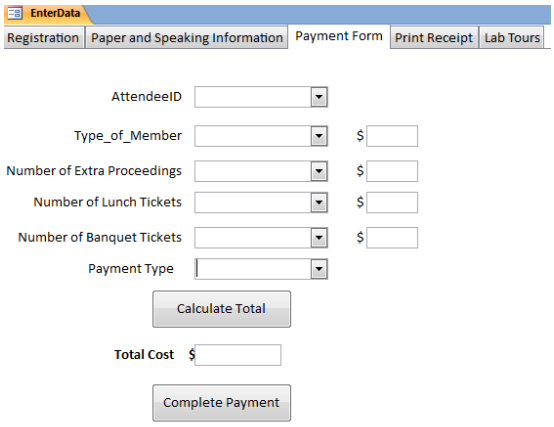


Figure 18: Payment Form Database

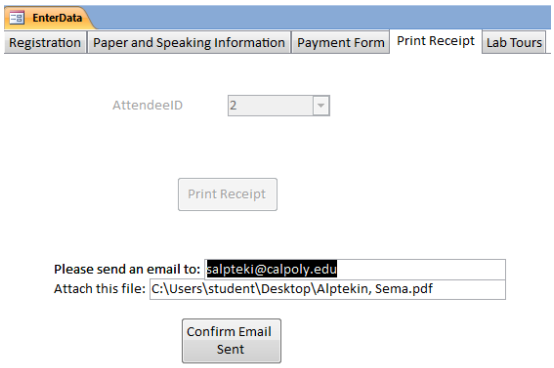


Figure 19: Print Receipt Database

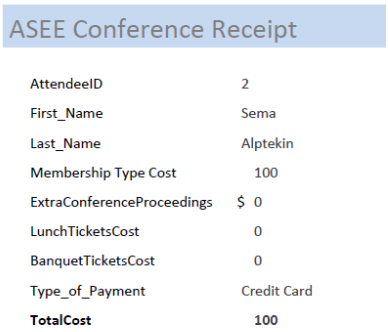


Figure 20: Receipt

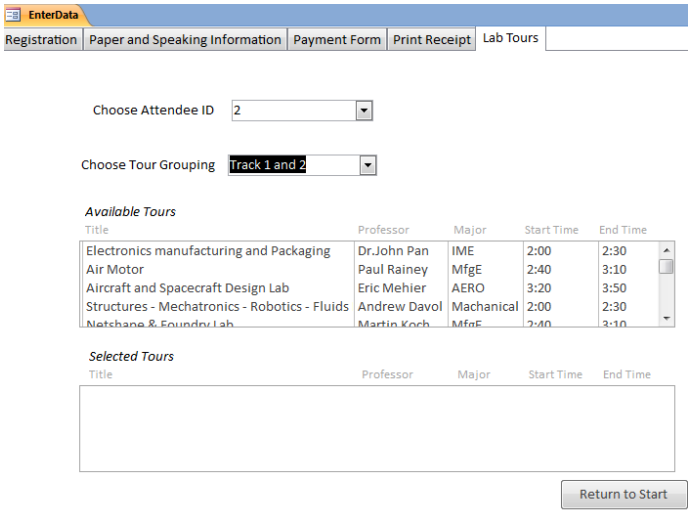
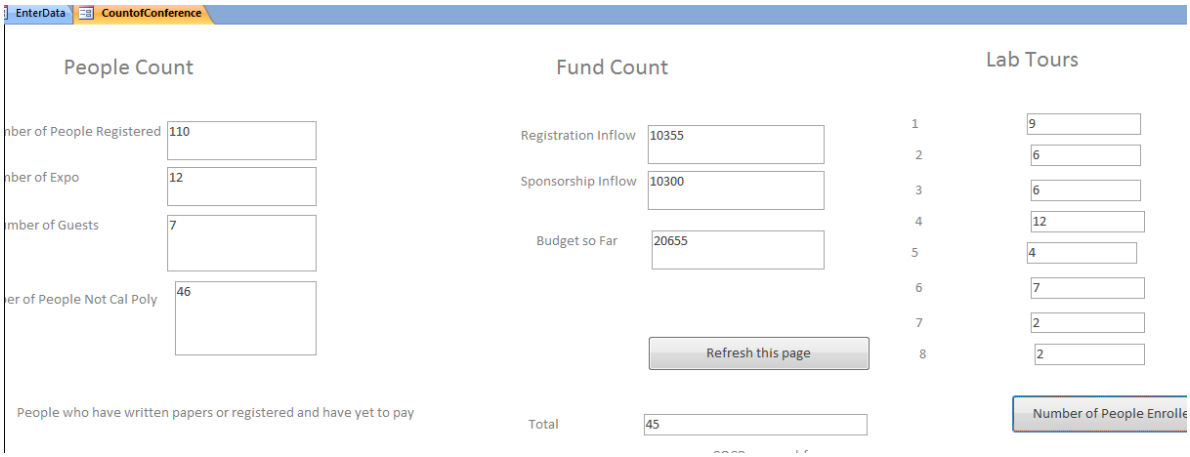


Figure 21: Lab Tours Database


EnterData
CountofConference
People Count
mber of People Registered
110
mber of Expo
12
mber of Guests
7
er of People Not Cal Poly
46
People who have written papers or registered and have yet to pay
Fund Count
Registration Inflow
10355
Sponsorship Inflow
10300
Budget so Far
20655
Refresh this page
Total
45
Lab Tours
1
9
2
6
3
6
4
12
5
4
6
7
7
2
8
2
Number of People Enrolle

Appendix E: Evaluation Form

1. Please indicate if you are: (by circling one)

Student Author Sponsor Expo Attendee (not presenting)

2. Please indicate your level of satisfaction

	Highly Satisfied	Very Satisfied	Satisfied	Slightly Unsatisfied	Unsatisfied
Overall Experience					
Organization of Event					
Presenters					
Materials and Handouts					
Facilities					
Food					

3. Are you happy with the organization/arrangements and presentation process of this event including registration, parking, etc?

Yes/No

4. Would you like to participate once again in such an event?

Yes/No

5. Please describe any additional comments you would like to share with the planning and coordination team. If you have any additional questions, please leave your email.

Appendix F: Work Breakdown Structure

1. **TOURS:**
    - **1.1. Labs**
        - 1.1.1. Facilitator
            - 1.1.1.1. Faculty
                - 1.1.1.1.1. Contact each major to see what faculty are available
                - 1.1.1.1.2. Determine which teacher leads each lab
            - 1.1.1.2. Volunteers
                - 1.1.1.2.1. Find out if student volunteers are needed required
        - 1.1.2. Tour Guides
            - 1.1.2.1. CENG Ambassadors
                - 1.1.2.1.1. Draft e-mail to Ambassadors to garnet 3-4 coordinators/volunteers
                    - 1.1.2.1.1.1. Confirm 3 Ambassadors
                    - 1.1.2.1.1.2. Assign 3 tracks to 3 ambassadors
        - 1.1.3. Lab Options
            - 1.1.3.1. Narrow down options to 6-8
                - 1.1.3.1.1. Send out lab track "options" to registered attendees in database
    - **1.2. Logistics**
        - 1.2.1. Pre-Tours
            - 1.2.1.1. Building Access
                - 1.2.1.1.1. Coordinate with administration to gain/confirm access to labs
            - 1.2.1.2. Transportation – Walking
                - 1.2.1.2.1. Transition from workshops to tour area
            - 1.2.1.3. Reception packet
                - 1.2.1.3.1. Include mini-description and map of layout/where to go
            - 1.2.1.4. Signs
                - 1.2.1.4.1. Place at each lab with description of lab, facilitator
        - 1.2.2. During
            - 1.2.2.1. Determine duration of each tour
            - 1.2.2.2. Create rotational schedule around 4-6 labs
                - 1.2.2.2.1. Set time limit per lab – 20-25 minutes each
        - 1.2.3. Post-Tour
            - 1.2.3.1. Thank you cards
                - 1.2.3.1.1. Determine # thank you cards needed for both faculty and volunteers
                - 1.2.3.1.2. Find costs to print # of thank you cards
                    - 1.2.3.1.2.1. Address & mail out thank you cards
2. **BANQUET:**
    - **2.1. Venue**
        - 2.1.1. Cost analysis among 3 venues
            - 2.1.1.1. Consider catering, service and usage fees
                - 2.1.1.1.1. Select 1 venue based on lowest cost
                - 2.1.1.1.2. Create and sign a finalized contract
        - 2.1.2. Keynote Speaker
            - 2.1.2.1. Select 3 candidates
            - 2.1.2.2. Submit to Dr. Macedo for approval
    - **2.2. Entrance/Registration Booth**
        - 2.2.1. Create a booth for families to check in
        - 2.2.2. Name tags
            - 2.2.2.1. Print out name tags
            - 2.2.2.2. Designate veggie vs. meat
            - 2.2.2.3. Designate which table to sit at

2.3. Signage

2.3.1. Create signs for interior directions

2.3.2. Create signs for guest parking

2.3.3. Include directions to banquet on registration pamphlet

2.4. Food and Beverage

2.4.1. Headcount

2.4.1.1. Double check minimum date to edit headcount

2.4.1.2. Make final adjustments to catering headcount

2.4.1.3. Add in conference guests

2.4.2. Open Bar

2.4.2.1. Decide price cap for open bar

2.4.3. Veggie and Meat Options

2.4.3.1. Check after final registration date to get headcount for veggie options

2.5. Seating

2.5.1. Tables

2.5.1.1. Decide how many tables are needed

2.5.1.2. Create seating arrangement

2.5.1.3. Decide on name tags vs. centerpieces

2.5.2. Centerpieces

2.5.2.1. Select flower centerpieces from Poly Plant Shop (off Via Carta)

2.5.2.1.1. Obtain a quote for ~16 flower centerpieces

2.5.2.1.1.1. Create Sponsor & Expo name titles to be placed in the planter of each centerpiece

2.5.2.1.1.1.1. Arrange Centerpieces on all 16 tables at the Madonna Inn

2.6. Schedule

2.6.1. Confirm salad, dinner and desert delivery times

2.6.2. Social/Networking Hour (6-7pm)

2.6.2.1. Allow new registrants and guests to obtain tote bags and name tags

2.6.3. Keynote speech

2.6.3.1. Confirm Keynote Speaker – Beth Anderson from Boeing

2.6.3.1.1. Confirm speaking time (7:15)

3. <u>CATERING:</u>

3.1. Location

3.1.1. Thursday – Bonderson 220

3.1.1.1. Layout selection

3.1.1.1.1. Catering Layout

3.1.1.1.1.1. Email catering company with directions and room layout

3.1.1.1.1.2. Determine if tables/tablecloths are needed

3.1.2. Friday

3.1.2.1. Location

3.1.2.1.1. Layout

3.1.2.1.1.1. Create template layout design

3.1.2.1.1.2. Allot seating for # of confirmed attendees

3.1.2.1.2. Logistics

3.1.2.1.2.1. Contact CubeSat on timing for rearranging layouts

3.1.2.1.2.2. Create schedule for

3.1.2.1.2.3. Assign volunteers to rearrange rooms post-CubeSat conference

3.1.2.1.2.4. Gain early access for setup

3.1.3. Saturday

3.2. Catering Analysis

3.2.1. Thursday

3.2.1.1. Drinks/Snacks

3.2.1.1.1. Compare 3 Companies/Self-Serve
3.2.1.1.1.1. Price
3.2.1.1.1.1.1. Allocate amount to spend for this event
3.2.1.1.1.1.1.1. Pick caterer
3.2.1.1.1.2. Options
3.2.1.1.1.2.1. Choose type of food (meat and veggie options)
3.2.1.1.1.2.2. Research alcohol on campus
3.2.1.1.1.2.2.1. Can we serve alcohol in Bonderson at the Welcome Reception?
3.2.1.1.1.3. Contracts
3.2.1.1.1.3.1. Create invoice
3.2.2. Friday
3.2.2.1. Breakfast
3.2.2.1.1. Hearty vs. Light
3.2.2.1.1.1. Compare 3 companies
3.2.2.1.1.1.1. Price
3.2.2.1.1.1.1.1. Allot % funds to catering budget
3.2.2.1.1.1.2. Options
3.2.2.1.1.1.2.1. Type of snacks
3.2.2.1.1.1.2.1.1. Survey?
3.2.2.1.1.1.2.1.2. Research previous event choices
3.2.2.1.1.1.2.1.3. Dr. Macedo/Upper Management Input
3.2.2.1.1.1.3. Contracts
3.2.2.1.1.1.3.1. Create invoice
3.2.2.2. Grab n' Go Lunch
3.2.2.2.1. Compare 3 Companies/Self-Serve
3.2.2.2.1.1. Price
3.2.2.2.1.1.1. Allocate amount to spend for this event
3.2.2.2.1.1.1.1. Pick caterer
3.2.2.2.1.2. Options
3.2.2.2.1.2.1. Choose type of food (meat and veggie options)
3.2.2.2.1.2.1.1. Select options that are only pre-wrapped
3.2.2.2.1.3. Contracts
3.2.2.2.1.3.1. Create invoice

3.3. **Logistics/Room Configuration**
3.3.1. Thursday
3.3.1.1. Welcome Reception Room Configuration
3.3.1.1.1. Obtain room dimensions
3.3.1.1.2. Room Layout
3.3.1.1.2.1. Decide location for speaker area, PowerPoint presentation equipment, food tables, seating and Welcome Reception registration booth
3.3.1.1.3. Schedule
3.3.1.1.3.1. Create a schedule to include speakers (Dean of CENG), Welcome Reception packet pick-up, etc.
3.3.2. Friday
3.3.2.1. Grab n' Go Lunch Room
3.3.2.1.1. Obtain room dimensions
3.3.2.1.2. Room Layout
3.3.2.1.2.1. Decide location for assembly line lunch pick-up
3.3.2.1.2.2. Decide food orientation for assembly line lunch pick-up
3.3.3. Saturday

3.3.3.1. TBD

4. **PARKING:**
   4.1. Parking for Thursday and Friday
      4.1.1. Decide where participants are staying
         4.1.1.1. Pick hotels within the San Luis Obispo Area and block April 18-21
            4.1.1.1.1. Post/email hotel information for participants
            4.1.1.1.2. Based on hotel location, conduct an economic analysis for shuttle and parking on campus
               4.1.1.1.2.1. Get rate from ride-on
               4.1.1.1.2.2. Get rate to rent out a parking lot
               4.1.1.1.2.3. Get rate for guest parking
5. **DATABASE:**
   5.1. Create a database to track the participants at the conference
      5.1.1. Enter Data
         5.1.1.1. Create different tabs based on information to be added
            5.1.1.1.1. Registration
               5.1.1.1.1.1. Create tables to hold Attendees names, emails, and universities
               5.1.1.1.1.2. Create an input form for Attendee information
                  5.1.1.1.1.2.1. Input information for current registers
            5.1.1.1.2. Paper and Speaking Information
               5.1.1.1.2.1. Determine time slots in workshop and scheduling
               5.1.1.1.2.2. Create a time slot table, paper information table, and assigned time slot table
                  5.1.1.1.2.2.1. Input information for attendees regarding their paper and speaking information
            5.1.1.1.3. Payment Form
               5.1.1.1.3.1. Write code and debug to allow attendees to pay on site
               5.1.1.1.3.2. Determine payment amount based on type of member, time of registration and other items members wish to purchase
                  5.1.1.1.3.2.1. Input information for all attendees (after they are entered into the system) regarding their payment information.
            5.1.1.1.4. Print Receipt
               5.1.1.1.4.1. Write code (and debug) that will allow receipts to be printed in a PDF to the desktop
                  5.1.1.1.4.1.1. Create a form as a receipt
                  5.1.1.1.4.1.2. Send receipts to participants upon payment
                  5.1.1.1.4.1.3. Create a Google canned response to send in a receipt email.
                     5.1.1.1.4.1.3.1. Print all receipts to the desktop
            5.1.1.1.5. Lab Tour Management
               5.1.1.1.5.1. After lab tours are assigned, create a form that will allow the user to input a person's preferences of a lab
                  5.1.1.1.5.1.1. Input preferences for each attendee (after they are registered) regarding which lab tours they will attend
      5.1.2. Manage Data (after information is inputted)
         5.1.2.1. Create different management systems for speakers, searching, budget
            5.1.2.1.1. Create a sheet that can export to excel all of the speaker information for posters based on room and time
            5.1.2.1.2. Create an overall sheet to show the cost and revenue from the conference
               5.1.2.1.2.1. Input all revenue into a sponsors table
6. **TECHNICAL SESSION AND WORKSHOP SCHEDULING:**
   6.1. Create a master schedule of all technical sessions and workshops to be held
      6.1.1. Workshops – Thursday
         6.1.1.1. Determine number of slots for Thursday

6.1.1.1.1. Create 2 tracks (8 slots)
6.1.1.1.2. Assign workshops to a slot based on track, room, and theme
6.1.1.1.2.1. Place schedule into the printed documents for review
6.1.2. Technical Sessions – Friday/Saturday
6.1.2.1. Determine number of slots for Friday/Saturday
6.1.2.2. Determine any breaks in the conference (i.e. lunch, breakfast…)
6.1.2.2.1. Combine technical sessions with common themes together
6.1.2.2.1.1. Use a large board to layout technical sessions based on slots available, time constraints, and themes
6.1.2.2.1.1.1. Give every room a theme
6.1.2.2.1.1.2. Give every session block a title
6.1.2.2.1.1.3. Assign each technical session a block
6.1.2.2.1.1.3.1. Place Schedule in the printed documents for review

7. **FUNDING:**

7.1. Expo

7.1.1. Establish a list of expo members to contact from conferences past
7.1.1.1. Contact all potential expo members
7.1.1.2. Create booths for the expo and assign a time for the expo
7.1.1.2.1. Create a large sign honoring all expo members
7.1.1.2.2. Put expo members into all conference literature, website, and merchandise

7.2. Sponsors

7.2.1. Establish a list of possible sponsors to contact from past conferences
7.2.2. Obtain a list of all IAB members who work regularly with the IE department
7.2.2.1. Contact all potential sponsors
7.2.2.1.1. Create a large sign honoring all sponsors
7.2.2.1.2. Put sponsors into all conference literature, website, and merchandise

8. **VOLUNTEERS:**

8.1. Before Event Activities
8.1.1. Prep Room
8.1.1.1. Select and purchase food before weekend

8.2. Catering

8.2.1. Research catering venues in SLO that are available during the event
8.2.2. Negotiate with available catering companies for best contract and offerings at events
8.2.3. Select and finalize contract with one catering company
8.2.4. Meet on-campus with catering manager to give walkthrough of facilities and finalize all necessary numbers
8.2.5. Coordinate with campus catering for servers at cocktail event

8.3. Volunteers

8.3.1. Document creation
8.3.2. Recruit volunteers
8.3.3. Confirmation calls two days before event with all volunteers
8.3.4. E-mail confirmations and answer questions

8.4. Other

8.4.1. Assist team members with manual labor
8.4.2. Assist team members with any other tasks

8.5. Execution Activities

8.6. Setup

8.6.1. Morning finalization of prep-room
8.6.2. Setup/Cleanup of rooms used
8.6.3. Off campus transportation and setup for banquet

8.7. Volunteers

8.7.1. Coordinate on-site volunteers

8.7.2. Handle disruptions (no-shows, emergencies, leaving early)

8.8. Catering

8.8.1. Same-day confirmation

8.8.2. Logistics for arrival times and setup for each food venue

8.8.3. Supervise to be sure catering fulfills contractual obligations

8.8.4. After event call to review contract and payment

9. **PRINTED DOCUMENTS AND MERCHANDISE:**

9.1. **Banquet Program**

9.1.1. Obtain quote from UGS (University Graphics Services) department in Building 21

9.1.1.1. Order 120 copies & pick up order

9.1.1.2. Input total cost into "CostRevenue.xls" document

9.2. **Conference Program**

9.2.1. Obtain quote from UGS (University Graphics Services) department in Building 21

9.2.1.1. Order 120 copies & pick up order

9.2.1.2. Input total cost into "CostRevenue.xls" document

9.3. **Conference Pamphlet**

9.3.1. Obtain quote from UGS (University Graphics Services) department in Building 21

9.3.1.1. Order 120 copies & pick up order

9.3.1.2. Input total cost into "CostRevenue.xls" document

9.3.1.3.

9.4. **Tote Bags**

9.4.1. Obtain quote from J Carroll

9.4.1.1. Order 120 copies & pick up order

9.4.1.2. Input total cost into "CostRevenue.xls" document

9.5. **Folders**

10. **SPONSORS/EXPO:**

10.1. Obtain EXPO Participants

10.1.1. Create an excel document with 100 potential companies (with contact information)

10.1.1.1. Email and call companies about participating at the expo

10.1.1.1.1. Confirm companies and add to confirmed participants to "Company Contact Info.xls" document

10.1.1.1.2. Company Logos

10.1.1.1.2.1. Insert Company logo into "Logos" folder on DropBox

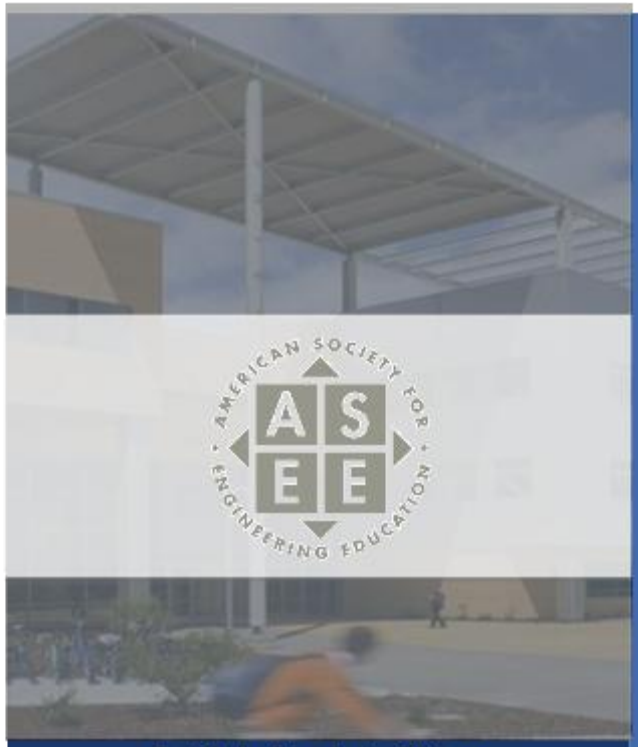
10.2. Obtain Sponsors

10.3. EXPO Facility Design

Meet the Planning Team

The 2012 PSW ASEE Conference was put on with the support of the Industrial and Manufacturing Engineering (IME) Department along with the help of two of its students—Megan McIntyre and Claire Lyles. Both Senior IME students, McIntyre and Lyles embraced the "Learn By Doing" philosophy as they took on the initial planning stages of the ASEE conference in their Project Management class. The pair decided to take on the conference full-time and have worked together in conjunction with the IME Department to ensure a seamless and enjoyable conference.

In the true "Learn by Doing" fashion, these students have not only expanded their knowledge base but have also created a space for professors to discuss "Engagement, Collaboration and Innovation in Engineering Education." The sharing of knowledge between different professors, students and colleges, will help to develop more experiences like those of McIntyre and Lyles. Thank you for attending and supporting this exchange of ideas.



Cal Poly San Luis Obispo
Presents

2012 Pacific Southwest ASEE Conference Banquet

Friday, April 20th
Madonna Inn

Keynote Speaker: Beth Anderson

Beth Anderson
Vice President of
Supplier Management
The Boeing Company

Beth Anderson is the Vice President for Supplier Management & Supply Chain Rate Capability at The Boeing Company.

Prior to her current assignment, Anderson was the Director of the Interiors Responsibility Center (IRC) for Boeing commercial jets, including the all-new Boeing 787 Dreamliner before that she was Modification Services Director for Commercial Aviation Services, which integrates avionics, airframe, propulsion, systems and interiors for airlines' after-market airplanes.

Anderson's aerospace career began in 1985, when she joined McDonnell Douglas Corporation as a customer service engineer. She also worked as a stress engineer before being promoted to management as group leader for both Design Engineering and Technical Services. Anderson has served as business unit manager of Maintenance & Modification Engineering as well as director of Modification Engineering and Airframe, Propulsion & Systems.

Special Thanks

Pacific Southwest Section Board:

Position	Name	University/Company
Chair	Eric Wang	University of Nevada Reno
Past Chair	Jose Macedo	Cal Poly San Luis Obispo
Chair Elect	Amelito Enriquez	Cañada College, Redwood City
VC Faculty Awards	Stacey Breitenbach	Cal Poly San Luis Obispo
VC Student Awards	John Tester	Northern Arizona University
VC New Faculty	David Lanning	Embry-Riddle Aeronautical University, Prescott, AZ
VC Membership	Lizabeth Schlemer	Cal Poly San Luis Obispo
VC Community Colleges	Amelito Enriquez	Cañada College, Redwood City
Treasurer	Allen Plotkin	San Diego State University
Executive Secretary	J. Richard Phillips	Harvey Mudd College, Claremont
Director	Reza Raeisi	California State University Fresno
Director	Walt Loscutoff	California State University Fresno
Director	Reza Abbaschian	University of California Riverside
Director	Thomas Impelluso	San Diego State University
Director	Jesa Kreiner	California State University Fullerton
Director	Amir Rezaei	California State University Pomona
Director	Elizabeth J. Orwin	Harvey Mudd College, Claremont
Director/Webmaster	Sima Parisay	California State University Pomona
Relations w/Industry South	Sean Gallagher	UVP LLC, Upland
Relations w/Industry East	Emmanuel (Manno) Siméus	Raytheon
Relations w/Industry North	Jim Vanides	Hewlett Packard, Palo Alto

Cal Poly Staff & Student Assistants: Megan McIntyre, Claire Lyles, Jake Rucker, Hillary Obye, Mary Reynolds, Dana Azevedo, Miles Clark and Matthew Cottle

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&
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Vice President, Boeing

Anderson has a Bachelor of Science degree in Aeronautical Engineering from California Polytechnic State University in San Luis Obispo; a Master of Science degree in Engineering and Program Management; and a certificate in Logistics Management from West Coast University, Los Angeles. In 2009, she attended the Advanced Management Program at the University of Pennsylvania Wharton School Of Business.

Anderson supports the company and her alma mater as the Boeing executive focal for Cal Poly-SLO. In that role she serves as the Boeing liaison for scholarships and diversity, advisor for senior design and vice chairman of the Engineering Dean's Advisory Council. She is an executive champion for Boeing Women in Leadership and has served as both vice president and director of mentoring for the Amelia Earhart Society. Anderson balances her career at Boeing with a busy home life with her husband and three children.

Program

Friday, April 20th 2012
Madonna Inn, San Luis Obispo

6:00 p.m. Welcome Reception

- Networking Social

7:00 p.m. Dinner & program

- Welcome & Introductions
- Keynote Speaker: Beth Anderson, The Boeing Company
- Awards
- Recognitions

Awards

ASEE PSW Outstanding Teaching Award
Professor Taufik, Electrical Engineering Professor at Cal Poly San Luis Obispo

ASEE PSW Outstanding Community College Educator Award
Professor Dominic J. Dal Bello, Allan Hancock College

ASEE PSW Best Paper
2012 Conference, TBA

ASEE PSW Outstanding Student of the Year Award
Andrea Ferris, Mechanical Engineering student at Cal Poly Pomona.

About Cal Poly College of Engineering

The College of Engineering (CENG) is part of California Polytechnic State University, San Luis Obispo (Cal Poly). The emphasis of the university is "learn by doing" for its more than 18,000+ students.

Cal Poly College of Engineering (CENG) strives to be a leader in engineering education where it promotes project-based learning to link theory with hands-on practice.

Around Town

Take advantage of the beautiful scenery and limitless outdoor activities that San Luis Obispo has to offer. Below is a list of local beaches and recreational activities around town.

Beaches:

- Avila Beach
- Shell Beach
- Pismo Beach

Hiking:

- The Cal Poly "P" Hike
- Madonna Mountain
- Poly Canyon
- For more information, check out: http://polyland.calpoly.edu/places/index.html

About ASEE

ASEE is a non-profit organization, which brings together engineering educators from all of the engineering and engineering technology fields to collaborate on solutions to promote excellence in instruction, research, public service, and practice.

This conference theme is "Engagement, Collaboration and Innovation in Engineering Education". The purpose of this conference is to present and share innovative tools and best practices in engineering education.

Contact The Committee

Web: http://aseepsw2012.calpoly.edu/

Email: jmacedo@calpoly.edu

Cal Poly San Luis Obispo
Presents

2012 Pacific Southwest ASEE Conference

April 19th, 20th & 21st

AMERICAN SOCIETY FOR ENGINEERING EDUCATION
A S E E

Schedule

Thursday, April 19, 2012

- 8am – 12pm Workshops
- 1pm – 5pm Workshops
- 6pm – 8pm Welcome Reception & Registration

Friday, April 20, 2012

- 9 am – 12:30pm Technical Sessions
- 11am – 4pm Ongoing Expo
- 12:30pm – 2pm Poster Sessions
- 2pm – 5pm Technical Sessions
- 6pm – 9pm Banquet & Awards (Madonna Inn – Garden Room)

Saturday, April 21, 2012

- 9am – 1pm Technical Sessions
- 1pm – 2pm ASEE PSW Board Meeting
- 2pm – 4pm Lab Tours

Lab Tours

Aerospace Engineering (AERO): the Aircraft and Spacecraft Design labs will feature various AERO student projects. Students use these labs throughout the year as part of their capstone design experience.

Electrical Engineering (EE): this lab will feature a tour of the EE Radio Frequency (RF) Microwave Communications Lab that supports several upper-division EE classes.

Industrial Manufacturing Engineering (IME): the Electronics Manufacturing and Packaging lab tour features the processes for PCB design and fabrication, surface mount assembly, and electronics packaging. Two additional IME labs will highlight the Netshape Foundry lab and the Manufacturing Lab.

Materials Engineering (MATE): this lab will feature a tour of the Microfab Lab. This clean room houses equipment for deposition, diffusion, patterning (lithography) and etching thin films (conductors & insulators).

Mechanical Engineering (ME): the ME labs will feature two labs. The first consists of Vibrations, Controls, HVAC and the Engines Lab. The second option includes a tour of the Structures, Mechatronics, Robotics and Fluids Labs.

EXPO Details

The Conference Expo provides engineering educators direct access to companies with products and services that facilitate learning. The EXPO will be open from 11am – 4pm on Friday, April 20th in 192-220.

Feel free to enjoy refreshments, snacks and the various exhibitors at your leisure during this time. These exhibitors include: goEngineer, Lab Corporation, McGraw Hill, Pasco Scientific and Pearson.

GoEngineer

LAB CORPORATION

Mc Graw Hill

PASCO

PEARSON

Directions

Directions for conference parking and the banquet have been provided on pages 4 and 5 and the EXPO location is listed on page 12 of the Conference Program.

Appendix I: Registration Forms

ASEE/PSW-2012 Conference - REGISTRATION FORM

Please print this form, fill in the information, and mail or Fax to the address below. Thank you.

Prefix/Title: _____

First Name: _____

Last Name: _____

Email Address: _____

Company/University: _____

Street: _____

City: _____

State and Zip Code: _____

Telephone: _____

Paper ID # (if available please enter) _____

Registration Type (Please circle where appropriate)	**Fee**
ASEE Member (BEFORE March 15)	$100
ASEE Member (AFTER March 15) or Non-Member	$125
Student	$50
Additional Conference proceedings CD (each)	$5
Additional Lunch Tickets (each)	$15
Additional Banquet Tickets (each)	$35

Amount Paid: _____

☐ **Check Payable to:** **Cal Poly – ASEE PSW Conference**

☐ **Credit Card:** ☐ **Visa** ☐ **MasterCard**

Card Number: _____ **Exp. Date:** _____ **3-Digit Sec. Code:** _____

Mail Checks to:
Jose A. Macedo
Industrial and Manufacturing Engineering
Bld. 192, Room 225
Cal Poly State University,
San Luis Obispo, CA 93407

Fax Credit Card Payments to:
Att. Jose A. Macedo
Fax. (805) 756-5439
or
E-Mail: jmacedo@calpoly.edu

ASEE PSW SECTION CONFERENCE
APRIL 19-21, 2012
Cal Poly – San Luis Obispo, CA

Sponsorship Form

The College of Engineering of Cal Poly State University, San Luis Obispo will host the 2012 ASEE PSW Section Conference, April 19-21, 2012. To sponsor this event please complete the information below.

Sponsorship options:

$200 – Session Sponsor: Company logo and/or individual name will appear on conference literature and website.

$600 – Company logo and/or individual name will appear on conference literature and website and Company will be provided with a table in the exhibit hall for both conference days and Company and/or individual Sponsor will receive two (2) Banquet tickets.

Amount Paid - Please check one: $200___ $600___

☐ Check Payable to: Cal Poly – ASEE PSW Conference

☐ Credit Card: ☐ Visa ☐ MasterCard

Card Number: _____ Exp. Date: _____ 3-Digit Sec. Code: _____

Company Name _____

Contact person _____

Address _____

_____

Telephone Fax email

Authorized Signature _____

Mail Checks to:
Jose A. Macedo
Industrial and Manufacturing Engineering
Bld. 192, Room 223
Cal Poly State University,
San Luis Obispo, CA 93407

Fax Credit Card Payments to:
Att. Jose A. Macedo
Fax. (805) 756-5439
or
E-Mail: jmacedo@calpoly.edu

Please complete and submit this form and payment by March 30th, 2012. Thank you.

ASEE PSW SECTION CONFERENCE
April 19-21, 2012
Cal Poly – San Luis Obispo, CA

EXHIBITOR REGISTRATION FORM

Please complete and submit this form and payment by March 31, 2012.

The College of Engineering of Cal Poly State University, San Luis Obispo will host the 2012 American Society for Engineering Education – Pacific Southwest (ASEE PSW) Conference, April 19-21, 2012. To register as an exhibitor to this event please complete the information below.

__ Yes my company will exhibit at the ASEE PSW Section Conference to be held at Cal Poly San Luis Obispo, CA, on April 19-21, 2012.

Company: _____
Address: _____
Contact: _____
Name Email Phone

Please provide a brief description of materials, products, and/or services to be exhibited: _____
_____
_____
_____
_____
_____

Exhibit Fee: $300 Includes: One – 6ft table and electrical outlet if needed

Will you require an electrical outlet? ___ Yes ___ No

Amount Enclosed $_____

☐ Check Payable to: Cal Poly – ASEE PSW Conference

☐ Credit Card: ☐ Visa ☐ MasterCard

Card Number: _____ Exp. Date: _____ 3-Digit Sec. Code: _____

Authorized Signature: _____

Mail Checks to:
Jose A. Macedo
Industrial and Manufacturing Engineering
Bld. 192, Room 223
Cal Poly State University,
San Luis Obispo, CA 93407

Fax Credit Card Payments to:
Att. Jose A. Macedo
Fax. (805) 756-5439
or
E-Mail: jmacedo@calpoly.edu

Appendix J: Conference Merchandise

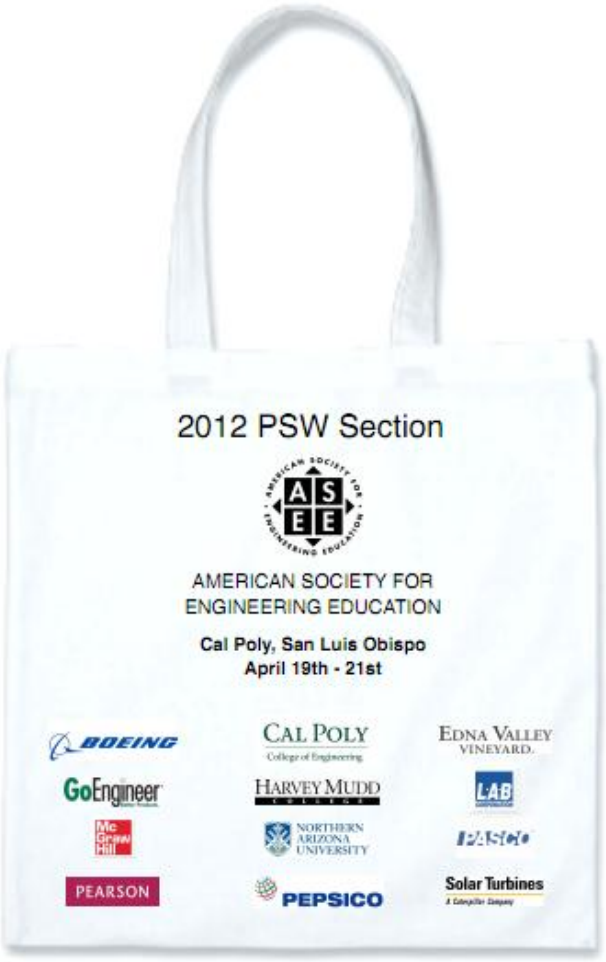

Figure 22: ASEE PSW 2012 Conference tote bag.

Figure 23: front and back of ASEE PSW 2012 volunteer t-shirt.

Figure 24: Conference name card templates with the ASEE and Cal Poly Logo

**Note: must get Cal Poly Public Affairs approval before the printing of the Cal Poly Logo*