

Instructionally Related Activities Report Form

SPONSOR: Brittnee Veldman

PROGRAM/DEPARTMENT: Chemistry

ACTIVITY TITLE: Fall 19 National American Chemical Society Meeting Trip

DATE (S) OF ACTIVITY: August 24-27th 2019

Please submit via email to the IRA Coordinator along with any supporting documentation at david.daniels@csuci.edu within 30 days after the activity. Thank you for your commitment to engaging our students!

(1) PROVIDE A DESCRIPTION OF THE ACTIVITY

Chemistry students engaged in faculty research attended the National American Chemical Society meeting in San Diego. Students met before the trip and prepared CV's, resumes, and cover letters, to be evaluated at professional development workshops. At the conference, students attended talks, training sessions, networking events, and spent three days in the presence of 20,000 other chemists from around the world.

(2) HOW DID THE ACTIVITY RELATE TO A COURSE(S) AND/OR LEARNING OBJECTIVES?

All students on the trip were enrolled in CHEM 494 (independent research with a faculty advisor).

Students were exposed to new research fields outside of the core curriculum, attended talks in their research area, and spoke to and networked with experts other than their professors.

Chemistry actively encourages our students to engage in research to prepare them for their careers in chemistry. The conference allowed students to explore possible graduate advisors, career paths, and research topics to help inform choice about their future.

Students could speak and debate with other chemists, learn about new techniques, and different approaches the projects in their area.

Be exposed to culture of being a chemist.

(3) WHAT DO YOU SEE AS THE STRENGTHS OF THE ACTIVITY?

Students explored the vast professional landscape of chemistry with the support of their fellow students and faculty. Having preparation meetings before the trip, group check-ins during the trip gave a sense of security that allowed students to take full advantage of the conference by reducing the intimidation of navigating a conference with three times more people than CI.

Not having students have to pay for accommodation and registration expenses and then be reimbursed accommodated the diverse needs of many groups of our students

(4) WHAT WOULD YOU SAY ARE/WERE THE ACTIVITY'S WEAKNESSES?

Having to coordinate the trip over summer and the timing of the event (first two days of school). Also, this trip I had three students with "moderate" limited mobility and I thought I had made more than sufficient and redundant plans that were completely inadequate for a smooth trip.

(5) HOW WOULD YOU IMPROVE THIS ACTIVITY FOR NEXT TIME?

I will speak to DASS and try to understand how to assess the amount of help students with mobility or accommodation need and how to plan that in a more integrated way for the next trip. I would also budget for someone to accompany us on the trip to help with unforeseen issues for those students. For example, one student needed an emergency prescription filled but could not go to the pharmacy, so I had to do that. As this trip also served as professional development for all attendees, not having the correct support hindered that process.

(6) WHAT DID YOU LEARN FROM THE PROCESS?

That ACS does have group registration.

That we cannot set up remote billing outside Ventura County.

******That purchasing, procurement, and all of our support staff are excessively over worked to do all the work CI expects them to do with ever few resources. CI needs to treat our Staff better so CI can serve our students better.

Always carry your emergency contact list while on a trip.

(7) WHAT ARE STUDENT RESPONSES TO THE ACTIVITY? ATTACH STUDENT EVALUATIONS OR ASSESSMENTS (IN ACCORDANCE WITH FERPA RESTRICTIONS YOU MUST REMOVE ALL PERSONALLY IDENTIFIABLE STUDENT INFORMATION)

ACS Conference Sunday Reflections

This was my first ACS conference, so I was very nervous and did not know what to expect. I have been to other conferences before but, this one was specific to the field of work I want to get into. However, upon walking in I could already tell it was going to be a good day. As I gathered around my peers and agreed on what workshop we

to build a stronger connection with these individuals and was going to make it to a grad school information workshop. Here I learned about what

schools are looking for and how I could really make my application stand out. This inspired me to 100% commit to applying to grad school. It also sparked the idea in my head that more Channel Island students needed to know this kind of information. I know want to start an ACS student chapter at our school and provide similar workshops to our students. I was excited that it was only my first workshop of the day and I was already being inspired in this way. The next workshop I attended was a networking workshop where I learned how to approach people and make connections and keep them. I really enjoyed this one because, you never know who you'll meet so making a good first impression is important. After attending this workshop, I put what I had just learned to the test. The grad fair opened, and I was giving everyone my elevator pitch. One memorable connection I made was with a recruiter from Baylor University. He gave me tips on when to apply to the school and when I was ready to apply, I could reach out to him and he'd wave all my fees! That made me happy because, school is already something I struggle to afford but make it work. SO the fact that he would be willing to wave the fees made me realize that there are people out there that truly want to see you reach your dreams. At the grad fair, I also connected with the ACS student chapter from costa rica and he gave me tips on how to get students interested in joining an ACS chapter and some of the fun activities that I could do with the students! This gave me more of a drive to establish an ACS chapter at CSU.

Sunday time table

9:30- grad talks

10:30- talks with grads

12:00-lunch with the group

2:00-grad school exhibit

3:00- ice sheets/thermal heating and its properties

4:10-Na batteries

5:30-expo fair

6:30-dindin

9:30 grad talks

The day started off a little slow, as the entire group needed to be together for the initial travel to the convention center and badge collection. After the paperwork and group was accounted for, a large portion including myself decided to head to the grad fair. Not surprisingly we had missed the starting portion of the session, and joined the talk about half of the way through, on the topic of finding the correct grad school and location. Personally, I have not decided on where in life and what topic I would like to focus on after my undergrad. The program gave insights to help narrow down the arduous task of choosing the correct college. While the points covered by the talk did take the confusion out of the process, it was a little scary how many variables go into choosing what research topic, area and school is right for me.

10:30

after the talk, a single graduate sat down at the tables and addressed major questions that we had. This was not as helpful as the initial grad talk but provided useful insights into what I could experience in school. They also did an alright job in providing helpful resources to the students.

2:00

Following the lunch, we resumed the fair by visiting an exhibition of various graduate schools from around the country. By visiting and talking to each of the promoters, it was easy to see who knew their stuff on the school, and who could determine how the different majors would benefit. Other than talking, many promoting materials were taken and emails etc.

3:00

At 3:00 I started attending various talks, first of which was a talk about the heat produced in friction between ice sheets. It was quite interesting, delving into the thermodynamics and properties of water and materials.

4:10

attended a talk on Sodium batteries. Because of the limited use of lithium as the battery anode, sodium is being considered as a safer, cheaper alternative with pros and cons. The presentation covered the total capacity between the industry standard and the proposed batteries. Not only were the new batteries close enough and rising to meet the lithium ones, but hope to remove some potential problems such as cycling diminishing and removing the ability of short outs. The talk also covered the purity of machined material and worked potential improvements into the talk

5:30

Next, down in meeting room C-d we attended the large expo fair. Many employers were licensed to show off their proprietary designs and present. Mainly, a large attraction was the NASA booth, where talks were held every 15mins about the planets health and various topics. From listening to the talks, the speaker informed us about the various ways NASA can pick up information and create meaningful maps. Most instrumentation came from the many satellites from various countries orbiting our planet. Some maps showed the overall movement of around the earth's atmosphere while CO₂ others showed aerosol movement and erosion of places like Africa. After 4 30 min talks we had to head off to dinner.

ACS National Meeting, San Diego 2019

Sunday Reflections

Today's activities:

- From 9:45ish (finding the presentation building and room was tricky) to 12, CINF: Text-Mining & Natural Language Processing for Chemical Information: From Documents to Knowledge
 - o Extraction of polymer-related information in the cheminformatics tool CIRCA
 - o Abstract recommendation system: beyond word-level representations
 - o Current challenges in text-mining for chemical information
 - o MOLVEC: Open source library for chemical structure recognition
- From 1:35 to 5:30, PHYS: Water in the Universe
 - o Water megamaser emission in galaxies
 - o Water vapor in galaxies at high redshift
 - o Chemistry of water in our galaxy and beyond
 - o Influence of water on reactivity in and on icy grain surfaces
 - o Three things you probably didn't know about amorphous solid water
 - o Rotational spectroscopy as a probe for gas-phase products of thermal- and photo-processed ices

Broadly, today I attended hours of presentations aimed at professionals in the fields of chemical informatics and astrochemistry while being an undergraduate proficient in neither. The sensation was invigorating and terrifying, and the notes I took throughout the day are filled with angle brackets – such as <Instanton theory>, <Herschel-ATLAS>, <DeepMeSH>, and <InChI> – which is a shorthand I've developed to mean, in essence, "Peter, you need to learn what these mean, fast, because they seem really important and everyone already knows it."

As well, my notes are riddled with authors-year citations for scientific papers that presenters stressed as important (or that just seemed really interesting), and notes about how presenters tended to structure their presentations, common phrases all presenters used (e.g., "Thank you for your attention," or "... and collaborators [as the verbal way of saying 'et al.'])", etc.), and other meta-analyses of quirks in academia. This incidentally made attending geochemistry on Monday really jarring at first, because I'd been acclimating to the astrochemistry culture and the two worlds are very different.

Chemical informatics is a field which stresses that, for chemists to do novel science or create new syntheses, products, etc., they first need to gather information from the literature... so how can the literature be modernized, better organized, and easier to search? It's a computation- and automation-heavy field, and my experimentation with browser automation, web scraping, and machine learning made the basics of the presentations accessible. It seems like a field I'd find enjoyable and engaging.

All the astrochemistry presentations used quantum mechanical principles and spectroscopy data extensively, and were fascinating for their exploration of familiar compounds in utterly unfamiliar environments, like the interstellar medium bombarded by solar radiation at 10 Kelvins, or an ionized plume within 0.1 parsecs of a black hole. I wanted to attend this conference to really dive into the weeds of chemistry fields I was interested in and/or unfamiliar with, to get an idea of what skills and knowledge are used constantly, to hopefully home in on a region in the landscape of chemistry that calls to me, and to absorb the culture and stylistic conventions of academia. For all of these goals, this conference has been an invaluable experience so far.

ACS Conference 2019 Summary

Sunday agenda

0900: Grad School: the In's and Out's of Getting In

1015: The Grad School Experience: What to Expect

1200: Lunch

1400: Grad School Fair

1610: Where are sodium ion batteries headed? An analysis of their future

1640: Group Picture

1730: Expo

- NASA presentation: Satellite Mapping of Atmospheric Changed

- NASA presentation: Origin of Chiral Specificity in Biology

1830: Dinner

Monday agenda

0805: The Aging of Beer and Spirits

0835: Barrel-aged Compounds Associated with the Brewing Process

0855: Rapid Wood Aging in Beer

0915: Barrel-aged Compounds Commonly Associated with Barrel Substrate

0935: Age-induced Haze Formation in Beer

0955: Beer Aging Panel Discussion

1000: Expo

1200: Lunch

1300: Expo

- NASA presentation: Use of Fixed Wing Aircraft for Atmospheric Sampling

1415: Undergraduate Poster Session

1500: Left for train station

I spent Sunday attending talks on grad school, as well as a grad school fair. Both talks provided useful information. The first was a panel discussion with professors about how they judge applications and the second was a small group discussion with a doctoral candidate. While the panel discussion was helpful, the discussion with the grad student provided hands on information about the process from the students side. After lunch, I attended the graduate school fair, where I met representatives from about a dozen schools. Most schools had at least one professor who could provide a summary of their colleagues and their own research. I was able to put into practice some of the advice from the earlier talks, and ask specific questions and help assess how well the school and program fit my future plans. After the fair, I attended a talk on the future of sodium ion batteries, followed by meeting up with the CI group for a group photo. When the expo hall opened, I attended three presentations at the NASA booth, two of which focused on tracking atmospheric data using satellite instrumentation and using that to direct climate policy.

I spent Monday attending more talks and presentations. Motivated by Dr. Gillespie's fermentation class, I spent the morning attending several talks on beer aging. I found these talks interesting and enlightening, I felt able to understand the information and expand my understanding of several aging processes. After those talks, I revisited the expo hall and spent my time visiting various booths and talking with some professors. After lunch I returned to the expo hall for another presentation by NASA on their intern program using planes to sample specific locations of interests for atmospheric analysis. Before leaving for the train home, I attended the undergraduate poster session to support the CI students with posters up.

Sunday was the first day of the conference. This day was mostly taken up by the grad fair and networking workshops. During the grad fair I met a grad student who is doing research in New Mexico about uranium and cancer rates in Native American reservations. During the networking workshops I designed my elevator pitch and met with many industry and academia professionals.

Sunday, August 25th

Today, I started off the day with back to back talks on "Graduate School: The In's and Out's of Getting In", and "Graduate School: What to Expect". The second talk was really helpful, as it provided me with time to talk with a current grad student and to see their insight into the whole experience.

After lunch, I then attended the Graduate School Fair, and got a good chance to talk with professors and recruiters from a multitude of different universities about what PhD programs they offer. This also was a good opportunity for me to get a better idea about what research field I may want to be apart of.

The rest of the day I spent wandering in and out of various talks, with my favorite being on the development of better sodium batteries and their advantages, and visiting the expo center. At the expo I also had the opportunity to listen to a presentation by NASA about using satellites to track earth's environmental conditions, and how NASA is attempting to detect imbalances in the ratio of certain enantiomers in space as a means to explain life's selectivity for certain isometric configurations over others (L proteins and D sugars).

All in all, it was pretty great.

Today we settled in and made sure we all had passes. We then went to the graduate school talk where we all got the low down on how to apply and how to be a competitive applicant.

ACS Conference Monday Reflections

The second day of the conference, I decided to take more advantage of the career fair and talk to different companies. I talked to so many people from the industry. Although I was not looking for a job, I was asking recruiters what they were looking for in a chemist that made them "hire-able". Here I found out that people in the industry are specifically looking for what you are capable of. They don't care much about your grades, although that does sometimes play a factor in the hiring process. This got me thinking if I was doing what these employers are looking for. As I mentioned before, I want to start a club on campus in order to provide these types of opportunities but, it also got me thinking about my peers. Are we all doing what these employers are looking for? I think attending this conference really helped me reevaluate the type of extracurriculars I am doing. Yes grades are important, but what am I doing for my community and what am I capable of doing in a laboratory? This made me set a new goal for the fall semester. One, I want to start this club on campus and two, I want to do more internships so that I can gain more experience in the laboratory. I truly believe I am capable of this. I just need to manage my time. I have the drive, that's for sure.

Monday time table

8:00- distillation aging and fermentation
10:00- waste water removal and epidemiology
11:00- EXPO
12:00-lunch with the group
1:00- expo
2:00-Undergrad posters
4:00-train

9:30 distillation aging and fermentation

Early in the morning, I attended a session on the distillation of spirits and fermentation. The talk went over the different qualities of aging, how the different levels of acids and such changed in conditions, and how brewers/chemists deal with unfavorable outcomes. While I have not taken the fermentation class yet, the talk still provided me with interesting information about how the industry can circumvent aging processes and what chemicals make beer taste bad or good.

10:30 after the talk, I attended a very interesting talk about how our waste/ water gets treated and handled. Not only is there a massive push for better treating methods, but the large amount of water observed is very important to our civilization.

11:00

At 11:00 the EXPO hall was opened up, I walked around the area talking to booths about the technology or product they came to display. Many advances in GC/MS, FT, and mixers seem to be

1:00

re-entry of the EXPO center, here we returned for the new presentation of NASA's flight documentation. By doing chemistry in an airplane, more measurements accurately can be recorded and the product definitely shows. In the flight plans showed a detailed description of aerosols, tides temperature and much more.

2:00

Next, we attended all the undergrad posters from students across the country. In the limited time I had left it was very nice observing all the subjects undergrads are doing in science. And finally we visited our csuci students.

I attended the ACS Bridge Program seminar for undergraduate students looking to go to grad school. Then I went to a research workshop where they taught us how to network and shared search engines. My group and I were able to explore the Expo and network with different industries. And that evening we were given free Padres tickets. After going to the game we went to the ACS Poster mixer and got to see incredible research by students

Monday reflection

A program that we first attended was the graduate panel. We obtained useful advice from graduate students. One thing that stood out is how well CSU Channel Islands was being recognized. We constantly had our hands up ready to answer questions because everyone was ready to learn and receive advice. I learned from the graduate students that our research is important but knowing who we are working with, is equally as important. I learned that a well-communicated environment is what makes the group thrive.

My understanding about the graduate programs is growing and each time I get a step closer to knowing which school to enroll and apply for. Apart from learning about graduate programs I had the ability to connect with other graduate students and exchange emails to remain connected for future references. I had the ability to branch out and explore other interesting research project such as the microplastic analysis workshop and the organic:

Artificial Intelligence in Organic Synthesis.

If it wasn't for this program, I would have been able to branch out and connect as much as I did on the first day.

ACS National Meeting, San Diego 2019

Monday Reflections

Today's activities:

- From 8:30 to 12, PHYS: Water in the Universe
 - o Water at the dawn of star formation
 - o Water in protostellar systems: Past, present, and future
 - o Water ice observations, from dense clouds to protoplanetary disks
 - o Behavior of OH radical on ice
 - o Activation energy of OH-radical diffusion on water ice surface
 - o Development of a highly sensitive nondestructive mass spectrometer for surface processes on ice at low temperature
 - o Water forming reaction $H_2 + OH \rightarrow H_2O + H$: Atom tunneling, kinetic isotope effects and influence of an ice surface
- From 1:35 to 4:40, GEOC: Water, Ice, & Clathrate Hydrate Geochemistry: Molecular Structures, Microscopic Properties, & Energetics
 - o Water and ionic solutions under pressure investigated with first principles simulations
 - o Hydration structure at mineral-water interfaces
 - o Coherent X-rays capture water dynamics from glassy to ambient conditions
 - o Origin of fast dielectric response of water in electrolytes

- oEnvironmental chemical reactions in frozen solutions
 - oCrystallization of water induced by carbon
- Easily the most memorable presentation from today was from geochemistry:
Environmental chemical reactions in frozen solutions.

Most chemistry is performed in liquid environments, but this explored the unique reaction environment in frozen ice. Solid water at the atomic scale exists as crystalline granules with liquid water channels between them. Impurities like metals are pushed into these channels, creating local hyperconcentrations of these impurities which can dramatically increase the reaction rate. An example used was the conversion of NO_2 to NO_3^- , which in liquid water occurs in a year but takes only five days in frozen water.

The juxtaposition of astrochemistry, which treats water as a sparse, transient molecule often broken into the hydroxide radical and forming “large” molecules like formaldehyde or methanol in the vast emptiness of space, with geochemistry, which deals with water in abundance at high temperatures and pressures reacting with dense crystalline mineral structures composed of exotic elements like silicon, made the first few presentations in geochemistry seem indulgent to the point of being obscene. But the uniqueness of frozen water chemistry – which is fairly easy to perform in a lab setting, requiring only a subzero ice bath and 10 to 15 minutes to freeze the sample – seems relevant in so many other regions of chemistry. Freeze distillation, for example, not only separates solutions more or less by freezing point, but also hastens Maillard reactions and potentially other color- and flavor-relevant reactions in alcoholic beverages. It could also have utility in biofuel production or altering the structure of pollutants or chemical waste. It makes me wonder why professionals at the conference seemed to exclusively attend

talks in their own field, when diving into the other chemical paradigms can be source of new inspiration and perspective.

Attending the geochemistry presentations today, which I'd never considered as a career focus before but which ended up being so engaging, motivated me tomorrow to cast my net wide and attend presentations on biofuel production, on the intersection of Chemistry with Law, and a few presentations from environmental science on sustainability and byproducts related to biofuels.

Monday was full of talks. In room 6f there were many talks on MOFs. One talk concerning water purification was very interesting. During the talks the grad student I met Sunday helped me to understand many of the specifics. I attended one talk on inorganic materials and one about electrosynthesizing chemicals and fuels. The day ended with a resume workshop.

Monday, August 26th

Today I started off listening to a series of talks about the chemistry behind aging beer in/with wood, including what chemical interactions take place, and how chemicals are absorbed from/by the wood.

Next, I paid a visit to the undergrad posters to give support to some of my fellow CI students, and to look at some of the research that was being presented.

Then, by sheer luck, I had an amazing and unexpected experience. Earlier, during the talks on alcohol, I was informed of a networking event for people interested in the subject. I decided to go, and ended up being adopted by a group consisting of two post-docs, a professor, and a DOW employee, who took me to the industry personnel mixer and introduced me to a couple handfuls of their colleagues. I ended up leaving the mixer with a pocket full of business cards, and plenty of insights and advice to consider.

I ended my day by heading over to the sci mixer, and listening to as many posters as I had time for.

Today was the graduate symposium where we talked to graduate schools and got information. I also went to the talk on nuclear salt chemistry talk which is very interesting since our school doesn't go over this topic.

Although our day was much shorter, we were still able to explore the Expo and talk to different representatives. The back section of the Expo had meditation booths, one-on-one interviews, resume workshops, and professional headshots. My group and I got our resumes checked and our headshots taken.

Tuesday Reflection

Words can not describe how magnificent this experience is. The connections that were made through simple conversations were the most impactful. My highlight was being at the ACS conference representing myself, my first-generation students pursuing STEM careers, and my culture. ACS allowed me to have a clearer understanding for what graduate school is and most importantly how to get there.

During the expo fair I was walking around getting to know other programs when suddenly I came across John D. Winnett the executive director for the SACNAS (Society of Advancing Chicanos/Hispanics and Native Americans in Science) Conference. A conference I had previously attended that advocates for cultural diversity in STEM. I told him how amazing it is to see him there and how grateful I am, that there are programs such as SACNAS and ACS that make an impact to us as first-generation students pursuing STEM.

I told him about the SACNAS chapter from CI and how I am vice-president and how every effort that they do, doesn't go unnoticed. We exchange our business cards and I had the opportunity to learn about the collaboration that SACNAS and ACS are in the process of making. Apart from that, I attended resume workshops and Instruments for MS workshops. I gain insight about finding a career path for me and even connected with graduate students to learn about their program and REU to their university. I can truly say attending this conference was a great impact to my success and plan to utilize my resources to use for future plans and to share back with my peers at CI.

ACS National Meeting, San Diego 2019

Tuesday Reflections

Today's activities:

- From 9:30 to 11:00, CHAL: Beyond the Bench: Non-Traditional Careers in Chemistry
 - At 11:30, ENFL: Isolation of bio-oil phenol and cresols through a continuous extraction process
 - From 1:00 p.m. to 2:20 p.m., tried to hop between ENVR: Biochar & Hydrochar for Energy, Environmental & Agricultural Applications and ENFL: Sustainable Biofuels & Bio-Based Products
 - o Effect of pyrolysis temperature on various acidic and basic functional groups on hydrochar [ENVR]
 - o Application of a combine wet in situ transesterification and hydrothermal liquifaction (ITHL) for the catalyst-free production of fuels from non-dried biomass [ENFL]
- I got the impression from the Beyond the Bench panel that the speakers wanted or were expecting a room full of exuberant proto-lawyers, but instead found themselves in a room full of students asking, "What can a non-lab, non-research chemistry career look like?" rather than "What should I do to be appealing for law firm interviews?" But it was still really interesting and valuable for the big takeaway: Chemistry is complex, and many non-chemistry fields need chemistry-trained employees as technical specialists. For law firms in particular, they need lawyers who can read or draft patents for chemical syntheses or techniques and actually understand the science.

It is both liberating and paralyzing that chemistry has value and application in seemingly every corner of the human experience, from business to law to food to anthropology, geology... and even in space. Liberating, in that I might even be able to combine chemistry with an "incongruent" field like linguistics or music and have a career or research focus that's actually viable; paralyzing, in that I can't even rule out linguistics or music as options for a post-education career focus.

One thing that seems incredibly valuable in ACS, once I can narrow my focus down to a few fields, is joining the relevant ACS divisions. The Beyond the Bench panel mentioned how joining CHAL (and even just being a member

of ACS) can set your resume apart from other applicants, and that CHAL does webinars and workshops frequently for its members.

I attended a talk about biofuel production on a whim and was captivated. It's a world centered nobly around sustainability, supported by agriculture, biology, chemistry, physics and engineering, with a lot of research going into reducing byproducts or utilizing them in other contexts. One of the byproducts from switchgrass processing for example is biochar, which can be further processed with water and pressure to hydrochar, which was demonstrated in another talk to have a high electron storage potential due to the abundance of redox-capable functional groups on its surface. If the train had left later, or we had stayed for another day, the overlap between biofuels and environmental science is one I'd have pursued for at least a presentation block or two.

Tough a portion of this day was spent traveling, I attended the liquid salt nuclear chemistry talk for most of the morning which explored some of the pros and cons of using salt as a fail safe for nuclear reactors.

(8) GIVE A SUMMARY OF EXPENSES FOR THE ACTIVITY.

Faculty Registration	190.19	(additional \$365 was covered by other travel funds)
Registration and membership	2158.00	16 students and 2 faculty
Lodging	6147.70	14 students, 2 faculty three nights 8 rooms
Train	1143.87	14 Students, 1 faculty round trip train fair
Rail Pass	289.80	18 light rail passes to go from hotel to conference
Parking	96.00	3 nights one car (total travel expense for one student)
Food	882.62	total food for 16 students and one faculty for 3 days
		Uber ride to hotel from ER, Poster presentation printing,
Incidentals	121.73	vitamin C tabs
Total	\$11029.91	

B. ON SEPARATE DOCUMENT, PLEASE ATTACH ATTENDEE LIST

NC	Faculty
KD	Student
CD	Student
AP	Student
AA	Student
JA	Student
JC	Student
AF	Student
SL	Student
PM	Student
JM	Student
TP	Student
MR	Student
DS	Student
TT	Student
CV	Student
BV	Faculty
MW	Student

C. PLEASE INCLUDE UP TO 6 IMAGES AS ATTACHMENTS TO YOUR SUBMISSION

