

AMERICAN INSTITUTE OF CHEMICAL ENGINEERS
at the UNIVERSITY OF CALIFORNIA, SAN DIEGO
presents

2015-2016 Session I Report

for the
AICHE Projects Program at UC San Diego

9 January 2016

Prepared by
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I. Overview

AIChE Projects Program at UCSD is an American Institute of Chemical Engineers Program at the University of California, San Diego.

Founded in May 2015, the program is the first of its kind and was conceived to simultaneously serve students and the local community. Students are provided technical and leadership experience through the program, while the teams themselves are designed to address urgent and critical issues the environment faces.

The 2015-2016 Session I Report provides a brief programmatic summary of the AIChE Projects Program in its inaugural session. For more details, please see the program website, aicheprojects.org, or contact the founder, Kimberly Nguyen.

II. Timeline

July 2015

OPR, CRE, MCE and VCD submitted Idea Proposals

August 2015

OPR, CRE, MCE and VCD uploaded website bios and are approved to recruit

September 2015

October 2015

All Members attend **AICHe Projects Member Reception I** event

Program **awarded funding from AS**

(award/requested = \$170.00/\$170.00)

November 2015

All Members attend in **Program-wide Work Session** event to write proposal

Workshop Lead conducted **ASPEN Workshop**

Teams **won TESC funding**

(award/requested = \$785.55/\$785.55)

December 2015

Teams **prepared final Proposal & Presentation**

Campus Renewable Energy Team **awarded funding from TGIF**

(award/requested = \$2,000/\$2,000)

January 2016 – *January 1-9 only. Session I ended January 9 2016*

Program **gifted \$1,000** from **National AICHe**

Workshop Lead conducted **COMSOL Workshop**

Teams **competed in AICHe Pitch Festival Session I - 2016**

(awarded \$400 funding from AICHe at UCSD)

Program **awarded \$306.14 funding from AS**

(award/requested = \$306.14/\$306.14)

Composites Engineering Team **awarded funding from TGIF**

(award/requested = \$112.48/\$112.48)

III. Roster

Leadership

- **Projects Program Director (PPD):** Kimberly Nguyen
 - **Assistant Program Director (APD):** Khanh Tran
- **Projects Program Manager (PPM):** Kimberly Nguyen
 - **Assistant Program Manager (APM):** Alejandro Alva
 - **Operations Manager (OM):** Clarence Go
 - **Finance Manager (FM):** Marcus Wada

Project Teams

- **Oceanic Phosphorous Recovery (OPR): 9 Total Count**
 - **PM:** Darren Anthony (Sr)
 - **Members:** Pia Puray (Jr), Raphael Yuan (So), Daniel Bishop (Sr), Charles William (Sr), James Duvall (Sr), Tien Pham (So), Derek Chan (Sr), Daniel Sundahl (Sr)
- **Campus Renewable Energy (SRE): 8 Total Count**
 - **PM:** Maggie Sung (Jr); Joshua Navarro (Jr)
 - **Members:** Khanh Tran (Jr), Chanh Nguyen (Jr), Giahan Nguyen (Jr), Serina Huang (So), Nathaniel De Los Santos (Jr), Alan Tam (Sr)
- **Materials & Composites Engineering (MCE): 4 Total Count**
 - **PM:** Kimberly Nguyen (Sr)
 - **Members:** Alejandro Alva (Jr), Clarence Go (Jr), Marcus Wada (Jr)
- **Vapor Compression Desalination (VCD): 6 Total Count**
 - **PM:** Corey Shono (Sr)
 - **Members:** Nathan Arboleda (Sr), Chris Simons (Sr), Ian Martin (So), Mai Nong (So), Renee Chuang (Sr)
- **Uranium Water Treatment (UWT): 5 Total Count**
 - **PM:** Selene Lopez (Jr), Daniel Sundahl (Sr)
 - **Members:** Cyndi Gonzalez (Jr), Brian Contreras (Jr), Brittany Stump (Jr)

Workshop Leads

- **ASPEN Instructor:** Raymond Voong
- **COMSOL Instructor:** Edwin Chen
- **SOLIDWORKS Instructor:** Cynthia Chan

IV. Project Status

Oceanic Phosphorous Recovery (OPR):	Phase I, 100% Complete Phase II, 0% Complete
Campus Renewable Energy (SRE):	Phase I, 100% Complete Phase II, 0% Complete
Materials & Composites Engineering (MCE):	Phase I, 100% Complete Phase II, 0% Complete
Vapor Compression Desalination (VCD):	Phase I, 100% Complete Phase II, 0% Complete
Uranium Water Treatment (UWT):	Phase I, 0% Complete

Legend

Phase I: Design

1. Defined Problem Statement - 25% complete
2. Sketched design of solution - 50% complete
3. Researched and purchased needed components - 75% complete
4. Submitted Project Proposal - 100% complete

Awarded Certificate of Engineering Design

Phase II: Testing & Development

1. Attempted at assembly & identified problem areas - 25% complete
2. Researched and purchased needed 2nd iteration components - 50% complete
3. Assemble 2nd iteration prototype - 75% complete
4. Showcased 2nd iteration prototype - 100% complete

Awarded Certificate of Engineering Testing & Development

Phase III: Pilot

1. Connect with authority on implementing project - 25% complete
2. Develop prototype and submit re-design - 50% complete
3. Purchased components for medium-scale build - 75% complete
4. Built and showcased pilot - 100% complete

Awarded Certificate of Engineering Design, Testing, and Implementation

V. Learnings & Path Forward

Terminations

- Operations Manager (OM) position proved unnecessary. Will be terminated for '16-'17.
- Finance Manager (FM) position proved unnecessary. Will be terminated for '16-'17.
- Workshops proved to be unnecessary for the program at the moment due to influx in workshops offered by IDEA center. Also feels out of place. Terminated.

Expansions

- Projects Program Manager (PPM) position proved to be more than expected. Will be expanded to a second person for '16-'17.

Selections

- Khanh Tran has been selected to be Projects Program Director (PPD) for '16-'17.
- Alejandro Alva has been selected to be the Projects Program Manager, with focused attention on group x, comprised of OPR, VCD, M&CE (PPM-x) for '16-'17.
- Giahan Nguyen has been selected to be Projects Program Manager with focused attention on group y, comprised of CRE and UWT (PPM-y) for '16-'17.

Evaluations

- Although program evaluations were gathered, none were formal. Will implement formal evaluations this Session II, alongside other forms of qualitative measure.

Action Items

- Lead phase II teams to complete a prototyping showcase by May.
- Document program and send to UC chapters who have expressed interest (UCLA, UCI).
- Ensure all reimbursements are completed by March.

VI. Evaluations

- Informal Program Evaluations are attached. Evaluations are in response to a Facebook message from Kimberly on 13 December 2015:

“hi! i hope your break is going well. i just wanted to check in with how things are going with regards to aiche projects. do you like it? dislike it? are things going too slow-- too fast? any sharing of your thoughts is definitely appreciated”

- Will switch to formal program evaluations this Session II.
- Remarks:
 - I. Vapor Compression Desalination (VCD)
 - Technically most advanced and organized team
 - First to win funding and won **Best Proposal** in AIChE PitchFest 2016
 - Project faced pacing issues with activity slowing down during last half
 - II. Oceanic Phosphorous Recovery (OPR)
 - All members highly recommend PM Darren Anthony and overall team
 - Won **Best Team Dynamic** in AIChE PitchFest 2016
 - Project faced design issues initially, but sped up immensely during last half
 - III. Campus Renewable Energy (CRE)
 - Won **Best Presentation** in AIChE PitchFest 2016
 - Project faced technical, administrative, and design obstacles frequently

Vapor Compression Desalination (VCD):

Nathan Arboleda	i like it! definitely enjoy working with my group, everyones awesome haha. I would say things are on the slow side, but maybe its cause our group works fast
Chris Simons	Hey! Yeah I like aiche projects thus far because it's a fun side project to have that doesn't take up too much time. The timing of it seems reasonable and not too fast or too slow. Overall I think our project and the overall competition is fun
Ian Martin	I'd say I'm enjoying it Our group gets along rather well, and there's always something to do, even for a second year such as myself No issues to note on pacing The whole thing seems appropriately organized as well
Renee Chuang	Hi! I like aiche projects, it's really interesting but I wish we had a little more mentorship. For our group, Corey's advisor is very useful but it might also be more useful for us to get more immediate help. Obviously this is difficult at this level given that many professors don't want to/can't give much time to projects like this. I think the pace might be a little slow, but that is also in respect to our project. I don't know how the pace works for other teams
Mai Nong	I like projects. smile emoticon The team I'm on is really nice and I think the pace is fast enough to keep things going but not unreasonable since things took a backseat during finals week. I liked the comments that were made about people a while ago on a spread sheet. Mine was about me talking more, and I'm still working on it, but overall, I enjoy projects. smile emoticon Thanks for checking in, my break's been nice. I hope yours has been, too.

Oceanic Phosphorous Recovery (OPR):

Pia Puray	<p>Hey Kim ! Sorry I took a long time to reply but I wanted to give you a thorough answer. So I love Darren ! Not just saying that because we're friends. But I felt like he really led the team well. Even though some of our ideas were far fetched, he never invalidated them && even encouraged us to pursue it further. So that was really encouraging. I loved the team I worked with. I enjoyed the team I worked with. Everyone was so committed even though we faced a lot of bumps along the way. Some cons, yeah I did feel like it was too fast. A little more than half way, I started to become confuse. But I think that's because mostly everyone in the group were seniors so they've already/are taking the process design course. Pia Letecia Puray 11:56am Pia Letecia Puray I really appreciated for a new project, how committed + organized the teams are too. And thank you for genuinely showing an interest in us. ^_^</p>
Raphael Yuan	<p>I definitely enjoy doing this project with AICHE because it really means a lot to me. I learned a lot of new thoughts, engineering minds, process design knowledge, etc. I particular want to acknowledge my leader Darren and my awesome teammates. Tbh I never anticipated I can be a part of such an awesome team. I'm so new to ChE and I barely knew anything about basic engineering terms or techniques. But they never laughed at me but offered me help and explained a lot of stuff I had no idea about. They are also very friendly personally, not condescending to a lower classman at all. Also I feel hard to evaluate the pace of project because this quarter everyone was busy and we barely had a clear idea on what to do around week 6-7, so kinda not enough time to finish. But we did finish and that was the result of changing our fundamental plan in the midway. But we got it so I wouldn't say this is too fast or slow. I personally would like to stay in this project for the rest of the year with these wonderful people and you! Only to u, I heard ur story from Darren and some other people that u keep being hardworking even if u r already excellent in classes and activities. I wish one day I can be a similar person like u, full of positive energy. Even if I only started to know u in ur last year here, I really appreciate my boldness to come to AICHE to see these people like u. I find more motivations to keep working! At the end, I wish to see u more next year and early Merry Christmas!</p>
Daniel Bishop	<p>Hey Kim! I think AICHE projects is great! Darren has been a good leader which is at least half of the success...our group works well together and I like that we decided the direction based on what worked best for the overall goal. I think the weekly meetings help to keep the progress at a sufficient level...sometimes chem E car wasn't as organized so that was helpful</p>
Charles William	<p>Hey Kim, my break is going great. I'm in mammoth right now. How's yours going? The Projects are great, and I definitely would recommend hem to anyone else. The pace is pretty good, even with our busy senior schedule. I think our particular group, we have great chemistry. Thanks for arranging all of this! This is the first year, right?</p>
James Duvall	<p>Hi kim, I cant beleive i didnt reply to this haha. I really like aiche projects,and I think the material we were exploring was super interesting. I dont know how relevant it is to the "real world" but in any case I think I'm a better analytical thinker now because of it. The only problem I had with it was because of my work schedule, and I completely understand how that was an issue. It's really hard to organize a binch of people an dexpect them to have similar schedules, but it ended up working out really well.</p>
Tien Pham	<p>I like it. I learned a lot from the seniors.</p>
Daniel Sundahl	<p>Hiya Kim! Winter break is going pretty good and relaxing so far. How about for you? I have thoroughly enjoyed aiche projects. I liked being able to think about designing and stuff and see what chemical engineering is behind the mountain of equations we do in class. I hope that projects keep going for future years. In terms of speed, we had lots of seniors so we maybe sped things up a little fast for some of the members but it was necessary to get to the point we are at now. It has been very good experiance to see how research and collaboration can make a project come to life</p>
Derek Chan	<p>It's been good. Leaving for the east coast next week. I think at least for me, the earlier meetings felt like they moved too slow just because we took weeks figuring out on the direction we were headed but once we had our target set, it went pretty smoothly. We got lotsa things done towards the later weeks and I believe we can reach our goal by next quarter</p>

Campus Renewable Energy (CRE):

Nathaniel de los Santos	Projects has been good! So far it's been a rewarding experience. My team does not have anyone with particular experience in fuel cells, so we have either had to spend large amounts of energy and time into research or find other people to ask. And it's just hard to find committed advisors who will stick with us and be available to answer questions. This is just the way it is though, and we are making due with what we have which hasn't been unmanageable. I really appreciate that the group is willing to work, and each of us are taking different important roles e.g. the supporter who despite being in the background will work hard, the idea guy, the administrative/judicial role, the pusher of team limits, etc. Any experience with people working towards a goal is always valuable to have. I like it. smile emoticon In terms of tempo, I'm not sure how fast is too fast, but personally I'm fine the way the deadlines/workshops have been set. That's all I got for you. Let me know if you have other questions! Have a good break Kim grin emoticon
Khanh Tran	I definitely like the rojects, but for me I feel like some things are going slow. However considering that is a brand new thing and both josh and maggie are still new to this leading thing, it is to be expected. It's just a Lil difficult cause I feel like we should have been where we are now a little earlier in the year.
Chanh Nguyen	Hi Kim! My break is going pretty well. I hope yours is going well also grin emoticon Regarding the aiche projects, I really like it. I like my group, I like what we are doing, I like everything. It's going just right to me, not too fast or slow. With a big group, it's hard to find a time when all members are free but we took care of that by meeting in the weekend so overall everything is good. Thumb up from me smile emoticon
Giahan Nguyen	Hey kim! Thanks for checking in, i hope ur break is going well too smile emoticon I feel like my team is on track. It did feel like we were behind some time in the beginning/mid quarter but bow, i feel like we're making good progress Im really glad that i decided to be a part of the project because i learned a lot in terms of research and working in a team Im lovin it~ Im so grateful that you started it grin emoticon
Alan Tam	Hello Kim! Hope that your break has been going well also! I like aiche projects! I think it's going in the right direction. Based on my experience, I like how members are committed, communicative, and knowledgeable. I personally think it's not too fast; I like how there are manageable deadlines without feeling that there is too much to do in a short period of time.
Serina Huang	Hi Kim! Thanks for checking in with me. I really like solving problems with my team. That's the most valuable skill I've gained so far: pulling my weight, speaking up when necessary, and working with others. Hmm. Something that could be better was receiving some guidance from a faculty member/scholar/industry person who is more knowledgeable than us in the field.

VII. Contact

Session I

President of AIChE (POA):	Rachel Patron	patronrj@gmail.com
Projects Program Director (PPD):	Kimberly Nguyen	kvn016@ucsd.edu
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Session II

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UWT Project Manager (UWT PM):	Selene Lopez	lopez.selene.b@gmail.com
UWT Project Manager (UWT PM):	Daniel Sundahl	dansundahl92@gmail.com

(Does not include contact information of terminated or member positions.)