

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

**Present:** Vladimir Alvarado, David Bagley, Marge Bedessem, David Bell, Korby Bracken (via Zoom), David Dandy, Tom Findlow, Stephen Ftaclas, Joseph Holles, Maribeth Plocek, Aaron Reichl, Jessica Schlicting, Mary Shafer-Malicki, Len Switzer, Mike Thomas and Elyse Johnson (Support Staff).

- Stephen Ftaclas began meeting by asking any members if they felt anything needed to be added or changed on the agenda. No suggestions were made, agenda approved.
- Ftaclas went on to talk about how it has been four years since the split of the Chemical and Petroleum Engineering departments. A lot has changed in that time, and he hopes that the IAB has helped the department. It is amazing how fast the growth has been especially in four years.
- Ftaclas continued by saying that the board is entering another phase. A new Vice Chair needs to be elected. There is a lot of work to be done, but the goal is to keep helping move things along.
  - Alvarado responded that speaking for all colleagues in the department, and himself, the IAB has made a great deal of difference. He feels he made the right choice to move to the Chemical Engineering department when the departments split. The students make the department proud.
- Alvarado began his presentation on the update of the department.
  - The search for the Professor of Practice is in process and the minor has been approved. David Bagley has been the one coordinating all of this. The college approved the minor, and there was too much scrutiny on it, but it is all good and went through. Currently it is in review by Academic Affairs. All the questions are being sorted out. Due to certain situations on campus there is a lot of caution involved, but he thinks it will be approved, Academic Affairs doesn't really have an issue with it. They seemed to be very happy with what was submitted to the college.
  - The 2015 undergraduate curriculum has now been fully executed. There are no longer any traces of the old curriculum.
  - Jacy Busboom and Alex Brown were both awarded awards at the Tau Beta Pi Awards Banquet. They are both great students and do a lot within the college.
  - Faculty have now moved to the EERB building. This includes Patrick Johnson, Katie Li-Oakey, John Oakey, and Karen Wawrousek.
    - Marge Bedessem asked if there are faculty offices in the EERB.
    - Alvarado responded that yes, there are. If the faculty have research in that building there are offices for them, otherwise space would have to be shared.
  - Oakey runs the Bioengineering lab, which is divided between Chemical Engineering and Mechanical Engineering.
  - David Bell and John Oakey went through the process to be promoted to full Professor. Currently the department is waiting to hear from Academic Affairs on whether or not this has been approved. They would start in July with official new rank.
  - Bagley was awarded the 2018 Journal of Environmental Engineering Outstanding Reviewer award.
  - There have been a few changes within the organization. Craig Russow has been recalled to the AG College and will not be working with our department anymore. He will still be going on some fundraising trips, but currently it is unknown who will substitute for him while the hiring process is underway.
  - Saman Aryana has agreed to be the graduate coordinator, and has been working as such this academic year.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Bagley is the Process Control coordinator until the Professor of Practice is hired, but he will still be involved at this point.
- Bagley will also no longer be the coordinator of Environmental Engineering.
  - Bagley added that for the Environmental Engineering program Civil and Architectural Engineering had dropped classes from the schedule without asking. He talked to the Registrar and they said they had been cancelled. The Registrar needs to be talked to about the needs of the two departments together.
  - Bedessem asked who would coordinate the program.
  - Bagley responded probably Mike Urynowicz. If Urynowicz can be the faculty coordinator for the program, he can probably keep working with the Environmental Engineering program and can juggle a bit.
  - Bedessem added that a request for help for this program to the Dean's office is way overdue.
  - Alvarado responded that part of the problem is on campus colleges go through budget challenges, programs seem to be cut, but more VPs are hired. Lots of staff have been lost, therefore support has been lost. Not being able to distribute and receive support makes it difficult for a department; luckily, we now have the accounting core group in the college.
  - Ftaclas added that he can see things are being dragged in many different directions, but it would be a tragedy if the Environmental Engineering ball gets dropped.
    - Alvarado answered that it is not because we don't want it, but because we don't have enough resources.
  - Bagley went on to say that he will still teach Environmental Engineering courses. He agreed with Ftaclas that the program is needed.
    - Ftaclas added that it is important to still have this degree as there are jobs available in that field.
- Alvarado continued by talking about the enrollment numbers. Currently he has been worried about the numbers. The good news is that there are currently forty incoming freshman. The department needs to be careful and attract students. Having Bagley come up with the Process Control minor is one great way to attract students.
  - David Bell asked why the numbers have gone down
  - Alvarado responded that one reason is students have changed majors.
  - Bagley asked about international students.
    - Alvarado answered that there have been fewer and the students who were not doing well have been weeded out.
  - Alvarado went on to say that the department has been attacked for our low enrollment numbers, but when discussion ensues it is seen that the most qualified students come from our department. Our students are performing and doing very well.
  - Bagley added that international students have been fine, but there are students from a certain part of the world who come in not prepared, and don't do well.
    - Bell went on to say that in this instance loopholes have been tightened, so there is no longer an issue with students trying to get through them.
  - Bell continued by saying that in his Senior Design course thirty-nine students are set to graduate, but some may not pass the class.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Dandy responded that nationwide graduation rates for high school students are up.
  - Alvarado added that last year the department had a small incoming freshman class. This year is better.
- Jessica Schlicting asked about how Petroleum Engineering's enrollment numbers have been.
  - Alvarado answered that they have had much lower enrollment.
- Bell went on to say the Mechanical Engineering implemented a success curriculum. The reason their departments numbers are so high is because of this. If a student doesn't get a B they have to take the course again.
- Alvarado continued by saying that the University had gone to a plus or minus grading system, but now is moving back, so the department is trying to figure out what to do.
- Ftacfas asked if there is any opportunity to have gateway courses. He expressed interest in seeing what Mechanical Engineering did.
  - Bell responded that CHE 2005 could be considered a gateway course, and was supposed to be implemented as being a prerequisite. All the paperwork was filed, but there was a failure of follow through, and the registrar didn't implement the changes.
  - Bagley responded that CHE 2005 is a good gateway course. The Registrar failed with making it a prerequisite and students are finding loopholes when taking it.
- Alvarado went on to say that the Academic Advising Center wants to be friendly with the students, and because of this they are trying to work around the complicated cases, but what remains is that the students must meet the department's prerequisites. It will be a process of working with the advisors to get everything to operate adequately. Meeting with them and trying to bridge the gap is important, but we are still getting requests for stuff the department squashed years ago. They don't have bad intentions, they are just learning.
- Reichl continued by saying that Mechanical Engineering is strong at recruitment. Is there anything our department can do more of to recruit?
  - Schlicting added what are they doing that we are not?
  - Alvarado responded that contact with students is helpful, but with only 9 faculty and Elyse it is hard.

Action Item: Reichl responded that a subcommittee could be formed through the IAB for recruitment.

- Bagley and Alvarado agreed this would be helpful.
  - Alvarado went on to say that Mechanical Engineering has great enrollment, but 80-85% of their students leave Wyoming after they graduate. Meanwhile our department serves the state.
  - Dandy added that at his college once a semester they have an event where high school students and their families can come and get general information about the college. They can get information about the different majors and see what they can do with a Chemical Engineering degree. If there are issue with enrollment across the college this is something to consider. Students could come from all over.
- Dean Pishko began giving updates about the college.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Currently the college is trying to recruit more students. Currently there is one staff member doing this, but there are plans to expand and add another individual to increase bandwidth like middle schools. This person can help us connect with the right high school counselors and find opportunities.
- He would like to offer a summer program for students so they can come spend time with our college.
- The college is slated to have a record number of graduates. Everyone is doing a great job at retaining students and having them complete their degree.
- The new building is open and it being outfitted.
- The biggest challenge has been faculty hiring. It was a bit of a challenge finding the money for funding the Professor of Practice position for the Process Control minor. The position was originally funded through a block grant, but that was taken away due to the Academic Affairs budget deficit. One position was open though through tier one funding. The position was re-allocated from Computer Science to Chemical Engineering. This has been a good example of the challenges we face. Losing money on the block grant side has meant moving more of the budget over to the tier one side.
- As the budget moves forward we are asking for an increase in tier one funding. For strategic areas this is important for our state and CEAS. For Chemical Engineering an example is carbon engineering as these materials go directly to the legislature.
- One concern for Chemical Engineering is the drop in student enrollment. Chemical engineering often times is in a lot of people's minds as closely tied to petroleum engineering, so a better job needs to be done of advertising the chemical engineering side out in the energy sector.
- Reichl asked the Dean if the funding from tier one for the Professor of Practice is for one year and renewable, is renewal dependent on tier one funding, and what do we need to do to make sure the department continues to receive funding for the position.
  - The Dean responded that the legislature is very secure and they would have to cut funding significantly for it to affect this position. He is confident that it will continue.
  - Reichl responded that it is important to thank the legislature and to help them understand our situation.
    - Dean Pishko responded that he is doing that and that he takes every opportunity he can to thank them for meeting our needs.
- Craig Russow began talking about fundraising.
  - Russow echoes what the Dean said about doing something significant that impacts the department in a good way. The Process Control minor and certificate is a good example of this. Currently the only thing needed is equipment and faculty capacity to make it a success.
  - There have been many fundraising visits and through all the trips there have been things to take away and decide on what will work for us, which means the definition of the program is still developing. Currently, we can look at how big we want to make this, how to define it, and what our end game is. There is a lot we can do as there is a hunger for graduates in this field right now.
  - There has been lots of interest in the program so we want to make sure we have the resources to make the program work.
  - This all means there is funding available because of the interest.
  - Russow continued by saying he will be moving over to AG, but will be with Chemical Engineering for some time until a new person is in place and trained.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- The Professor of Practice for the Process Control minor will be hired soon and the department will need a facility that has adequate space to start putting equipment.
- With the minor hiring people has come first, and the minor has been clearly defined. Such a good job has been done with this, which brings in mechanisms to help the program work, such as companies donating equipment.
- Alvarado added that a good side effect is students have started asking about the minor, specifically sophomores and this has happened naturally.
  - Bagley responded that he had told some students about the minor, and also had students approach him who were very interested. Bagley went on to say that there will be no problems filling classes. The challenge will be teaching forty students instead of two. The minor cannot be fully offered until it is officially approved though.
  - Alvarado answered that students can still take the electives though without having the minor.
- Russow continued by saying that he has had fun with this and has met a lot of good people along the way. His replacement will work with him to figure out where to go next.
  - Dean Pishko spoke and reiterated what Russow said. Once the program is up and running and the Professor of Practice is hired, we will then be able to look at what is needed in terms of equipment, software, and also in internships and co-op opportunities. The goal is to get a pipeline so we can see where gaps are in what is needed. Dean Pishko added that he is excited like Russow to see the program get started and is excited for how empowering this will be for students as a whole.
- Bagley began talking about the Process Control minor.
  - The minor will be going to Academic Affairs for approval not to the Board of Trustees. The only reason it would need to go to the Board of Trustees would be if it required tenure track faculty.
  - There have been good guidelines and Bagley has spent the summer and fall and gathering information and got a lot of feedback to prepare and send out the proposal. He tried to go through all the feedback and incorporate the great ideas that could meet our needs.
  - The proposal was brought to the faculty for a vote on February 25<sup>th</sup>, the College on March 1<sup>st</sup>, Steve Barrett submitted it to the College Planning Committee on March 4<sup>th</sup>.
  - Anne Alexander submitted the proposal to the Faculty Planning Committee, and they requested a budget and until that came forth they denied the proposal on April 22<sup>nd</sup>. Alexander pointed out that for this type of minor a budget is not required. Currently it is sitting at Academic Planning Committee at the Faculty Senate.
  - Bagley mentioned that he has had some problems with the Faculty Senate. Academic Affairs has been great overall and is looking at what this will do for the state's needs.
  - Dandy asked if this will be a true minor.
    - Bagley responded that, yes, it will.
  - Bagley continued by saying that he will continue to proceed as if the approval has already been granted. The Professor of Practice can be hired as that has been approved. New courses can also be added while the upper administration approves the minor, as students want to take the classes anyways.
  - New course numbers will be developed to help address things that have been heard and wanted. The rationale is that Wyoming industry needs graduates in this field. In the twelve nearby states no one offers a minor such as this.
  - The first rollout of courses will be in spring of 2020 and this summer Bagley will develop course numbers and they will be officially assigned.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- This will allow current sophomores who will be juniors in the fall to graduate with the minor.
  - Schlicting added that lots of students will be interested in this minor, but how will students who are sophomores know about it?
    - Bagley responded that this would be a good thing to look into. One way will be for him to share this in the sophomore class he is teaching in the fall. It can also be put on the website because once it has been formally approved.
    - Alvarado added that CHE 2005 will be a good class to share this in.
    - Russow went on to say that scholarships would also be a good way to have students gravitate towards the program.
      - Bagley agreed this is a good point.
- Schlicting continued by saying that there is such a need for engineers to go into controls.
  - Alvarado responded that when he visited Shell he was surprised that all hiring went through HR, but the engineers don't see the candidates until after the HR interviews.
    - Schlicting answered that this is true, and they would only know the person if they had had an internship.
- Bell added that getting Process Design involved in the minor would help other students from other majors be prepared. For the Process Control minor mass balances are important and they may be scary to some, but students need to be able to use them.
- Bagley continued by saying that paperwork was submitted to get approval to advertise for the position on March 4<sup>th</sup>, and the position was approved and posted. The ad is included in your packet. Reichl is on the search committee. Search committee members can go online and view the advertisement. Elyse will be posting the advertisement to other sites such as AIChE, NSBE and SWE, among others.
  - Reichl asked if it is possible to put a link on his company's website and say that they support this position.
  - Tom Findlow asked what type of person you are looking for to fill the position.
    - Bagley responded that at the minimum a BS and at least 10 year's experience. He decided to keep the experience at 10 years because the department needs someone with practical experience.
    - Findlow added that it would be a good position for someone looking to retire, as it is less stressful and they can do something they enjoy.
      - Bagley responded that, yes, this is correct, but that can't be said openly. If any of the IAB knows of anyone who is at this point in their career, certainly encourage them to apply.
- Dandy asked what the salary of the position is like.
  - Alvarado answered that a number was given and he worked with the Dean to make it attractive. The Dean will work to make sure the salary is right.
  - Bagley added that HR put the minimum salary in the advertisement, but that is too low, so we know we will need to go up when we hire someone.
- Len Switzer asked if Russow has approached anyone about obtaining equipment.
  - Bagley responded that he has a preliminary list to work on over the summer. The Professor of Practice will help us decide on the right equipment to get.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Alvarado went on to say that Amy Banic vacated her lab to move to the EERB, and her old lab in the Engineering building would be a very nice space for us. In June we should have a floorplan for equipment.
- Bagley closed his talk by thanking the IAB for all of their help.
- President Nichols came and spoke with the department and IAB.
  - She began by thanking the IAB for being here for our department. She got to spend an hour with the department in February and it was a great visit. Everyone was very candid and open.
  - Bagley added that President Nichols attended the SWE breakfast in March. SWE is now an official chapter, and will get a house. They need 60 members, but currently have 27.
    - Nichols responded that the University is trying to get more housing on Greek Row.
  - Reichl thanked the President Nichols for supporting Process Control. This will help industry in our state.
  - President Nichols continued by saying that she saw how much our department cares for its students. She thinks the department is doing a great job and she relates to us, as she is student centered as well.
  - Mary Shafer-Malicki asked if there is anything she could tell us on where we should put our emphasis on from around the University.
    - Nichols responded to continue to look candidly at what we're doing and don't hold back with feedback. As innovative ideas come forward and are spot on, tell us. Having industry support is huge.
- David Bell began talking about the undergraduate curriculum.
  - There is now a professional advising model and staff have been hired to specifically be advisors. The University launch was last June, all new students will be advised by these advisors. The people hired do not have technical background and don't understand our curriculum rules very well. The department is having to be straight forward on what our rules are. There have been a few issues, but the good thing is there is more consistency in enforcing prerequisites and other policies. Some students have slipped through the cracks in the past, so it is important to define what the rule set is.
  - The curriculum has been stable and hasn't changed since the required courses were updated in 2015. Currently eighteen credit hours of electives are required and three must be in Chemical Engineering. Having concentration areas has sort of dissolved over time.
  - Currently what the department expects is an upper division STEM course must be taken in either the junior or senior year. Starting January 2018 this was redefined to meet a technical elective, and another route is a minor in a STEM discipline. For option two all courses in concentration areas are preapproved and many are STEM. Others are handled on a case by case basis.
    - Shafer-Malicki added that it sounds like cases are being examined more closely.
      - Bell responded that, yes, systematically the department is watching for when students play games and take courses elsewhere to avoid harder classes.
  - Bell continued by saying that with minors come a new set of requirements that are enforceable and they do appear on the students transcript so they get credit for their work. Minors used to be non-existent in CEAS. Currently the minors our program has or will possibly have are Process Control, Biomedical, and Material Science Engineering. All these will put a strain on our teaching capacity.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Schlicting asked if it is usual to have minors as an option.
- Dandy responded that, yes, it is. Examples are chemistry, math, and biomedical.
- Schlicting continued by asking if around sixty or seventy percent of students graduate with a minor.
- Dandy answered, yes.
- Alvarado added that chemistry is an easy minor to add to our degree, but you must get both degrees at the same time.
- Bell went on to talk about ABET. Joe Holles is currently the coordinator. It is being determined if we are covered by ABET's new requirement to have a course in linear algebra and statistics because these subjects are covered in some of our classes.
- The Senior Design showcase is taking place tomorrow. Out of eight groups two are mentored by IAB members, Wyatt Keller and Mary Beth Plocek. The department would like more industry members to mentor student groups so if you know of anyone encourage them to be one for the department. Students get really excited. Early August and September is when ideas are developed.
  - Bagley asked how it has been for Plocek
    - Plocek responded that it has been very good. She participated in teleconferences, and if she were to do it again she would want to go deeper with information.
  - Bagley added that field trips would be helpful. This could help with students who don't have an intuitive background on how things work.
- Ftaclas asked if ABET's linear algebra requirement will be satisfied by what is taught in Process Analysis, or does it have to be a whole new course.
  - Bell responded that he doesn't know.
  - Aryana added that it is taught in CHE 2060.
  - Alvarado continued by saying we need to make sure it is regularly taught. And it is important that it is documented, such as examples of exams and homework.
- John Oakey began to talk about the Biomedical minor he has been working on.
  - Oakey is trying to roll the biomedical concentration into a minor. Students must take technical electives, but they get nothing to show for them.
  - The list of courses required for the minor we currently offer, so this would simply be a repackaging of what we already do with no more effort when it comes to classes offered.
    - This would involve a sequence of 4 technical electives, and then would include the minor curriculum, and be rounded out by undergraduate research.
  - One key feature of the minor is that it will consist of at least 18 credits, which as a department we are already doing this it will just be moved to a minor instead of a concentration. This will help the Chemical Engineering department be a hub for Biomedical Engineering.
  - CHE 4160 and CHE 4165 will rotate on a two year basis.
  - Oakey continued by saying that one of the frustrations when a search is done for Biomedical Engineering at UW the top three finds all lead you to Electrical Engineering. Chemical Engineering loses a lot of students because they are advised to go to Electrical Engineering if they are interested in Biomedical, or students go elsewhere because we don't have a definite program. There is no clear catchall to recruit and advise.
    - The goal would be when a search is done through UW for Biomedical Engineering one page for our minor would show up.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Our classes are needed to obtain the minor so they can be directed to us, but if not they still need Chemical Engineering classes so they are always drawn back to us.
- Ftacfas responded that he liked the layout of the minor, and how they are always directed back to us. Could it be called Bioengineering?
  - Alvarado answered that he worries if someone says bioengineering they may end up being referred elsewhere.
- Schlicting asked what Electrical Engineering thinks about the minor.
  - Oakey responded that he has worked closely with them and they fully approve. He worked early enough with their department and with the right people so he gained their support.
- Bagley added that this could be more attractive due to the ABET requirements.
- Bedessem went on to say that it will be great if people go for it, but should remain being named Biomedical Engineering as it ends confusion.
  - Oakey agreed and said that it is a great umbrella, biomedical covers everything, and provides a good cross section.
- Reichl asked about naming the minor Biochemical instead as it seems to cover more.
  - Alvarado responded that if we wait for the perfect name we may wait forever. We need to try it and then see if it needs to be renamed.
- Bagley continued by saying that the minor and changing the department name haven't been approved yet. This is just a step to make sure the program sticks. The key is to attract mainly engineering students, but doesn't preclude students who are doing math either.
- Oakey went on to say that biomedical engineering is changing and looking at data he thinks we are missing out in our program. We also have the potential to shift the gender balance in our department by attracting more women students with this minor. It could shift the balance in the University as well.
- Shafer-Malicki asked what next steps need to be taken, and what can we do to help?
  - Oakey responded that this is a good question and the he is working on the departmental politics, making sure everything is as ironed out as possible and he doesn't anticipate any resistance.
  - Bagley added that the minor approval process begins with the department, then Alvarado sends it to the college so they can meet and provide thoughts and suggestions. Bagley said that he feels if this went to the college they wouldn't reject it.
  - Alvarado went on to say that it still needs a little more refinement.
  - Bagley responded that once it gets to the college the critique may be more strenuous, but he feels it will be approved.
    - Schlicting highly agreed.
- Saman Aryana started talking about the graduate program.
  - Currently the Chemical Engineering department has a Masters plan A and Plan B program and a PhD program.
  - For PhD there was a course in mathematics that was a requirement that was just removed.
  - Currently there are assessment forms for committee members to give feedback on defenses, and a student needs to meet with their committee once a year to give a progress report and get feedback on their progress.
  - Currently there is a robust website describing our graduate program.
  - There are nine faculty who all have research focuses in different areas.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Currently in the graduate program there are thirty-seven students, and the program size has been steady.
  - Dandy asked if any of these are joint appointments.
  - Alvarado responded that there are none, but they may be co-advised.
- Aryana continued by saying that this year the department has gotten funding from Academic Affairs for recruiting efforts, and the hope is to get promising students to visit our department. This funding can also be used for recruiting trips.
- A prospective student came to visit, and Dr. Bell accepted her to his group for the fall 2019 semester.
- A trip to the South Dakota School of Mines was a lot of fun for the students who went to recruit. They put together a list of selling points for UW, which were: a gym on campus, good food, and getting to live in Wyoming.
- Aryana concluded his talk by saying that GA allotment is important in the development of our graduate program.
- Engineers Without Borders Update
  - During this last academic year the group has gone through three different initiatives.
    - One was within our local community by working with a solar based charging station during the fall semester.
    - A trip to Guatemala was also done over J-Term. The group worked on a water distribution pipeline and they re-retrofitted a new pipeline system. A total of ten students were sent for this trip. It was very exciting to see community members be so happy to have running water.
    - The new initiative that will be focused on is working on putting in a new water system in the San Marcos water supply to allow more water to reach 150 households. Another goal is to have a water purification system done at the same time. Currently the project is in its adoption phase.
    - Currently within the chapter lead positions are being filled and establishing more members. They are also working on building a project binder to keep track of all the work they have done and are doing.
- SWE Update
  - Within the first week of the fall semester SWE took part in a conference for middle school girls throughout Wyoming called WOMENgineering. This is the second conference held. School girls from all over the state came and took part in the workshops. There was a workshop from each department throughout the College. Currently SWE is planning the next one to be held during the 2019-2020 school year.
  - During October of 2018 was the SWE National Conference. There were a lot of workshops. One of the workshops is how Brittney Endsley got her job. There is also a large job fair. Many members got jobs at the job fair. One younger member found a co-op and will be starting in the fall. Emily Lynch had an onsite interview at the job fair and was hired by Boeing.
  - Madison Vitt will be the president for the 2019-2020 school year.
  - In March 2019 SWE had a breakfast fundraiser, and \$1,000 was raised. Also, in March was a Planetarium Showing of Dream Big event.
  - In April 2019 the 6<sup>th</sup> annual SWE Student-Faculty Banquet was held. This is a good time for students, faculty, and industry to network.
- Joe Holles began talking about ABET.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Seth Harris and Jacy Busboom were present as the current and incoming presidents of the AIChE student chapter and represented constituency #3, Current BS CHE Students.
- Saman Aryana was present and represents constituency #4a, Graduate Program Director.
- David Bell was present and represents constituency #4b, Undergraduate Program Director.
- The IAB members present represents constituencies #1 and 2, Employers of Graduates, and Graduates.
- Years 2018 and 2019 are assessment years for each of our courses. All of the fall classes have been completed and now spring is being worked on. Then all of the assessments will be gone through for the year. Then assessments can be made on what needs to change. Next year will be an improvement year. Changes will be made according to the assessments and what ABET wants.
- Now ABET is on an A-K Criteria instead of 1-7. This will involve changing assessment mapping, and developing new assessment tools which involves the department getting together and coming up with a big plan.
- Holles attended an ABET seminar in Dallas, and learned information on how to asses these challenges.
- For the switch from 1-7 to A-K criteria words will need to be formulated to described how things have changed for this cycle and to add statistics and linear algebra. We will need to look and see if we offer enough of these subjects in classes already taught, so we don't necessarily have to add a new course.
- Years 2020-2021 we will have an audit. Holles feels we are in good shape because of David Cooney and Bagley, but inevitably there could be some hiccups.
- The Program Education Objectives (PEOs) Bagley found to be too specific when he was ABET coordinator, and these were simplified which ABET liked.
  - Having these objectives assessed was difficult because it is near impossible to assess what students do when they graduate. These have been backed away from but will still be required to be periodically reviewed by constituencies such as Aryana (for the graduate coordinator,) Bell (for the undergraduate coordinator,) members of AIChE, and the faculty. They need to be reviewed every two years. This was discussed at a recent faculty meeting and it was specified that the department doesn't have to agree with them, and better ones can be come up with. All unanimously agreed with them as they are. If they are not reviewed by all of the constituencies here, we will be dinged.
    - Schlicting asked if these are philosophical objectives, and is ABET happy with them?
      - Holles responded that, yes, ABET was, but they may change their mind.
  - Holles asked for a vote to see if all PEOs should remain the same.
    - Unanimous vote in favor.
  - Bagley asked if in the fall meeting will there be a presentation on all that has been evaluated.
    - Holles responded that yes, there would be and then recommendations can be made for new classes.
- AIChE Update

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- During the fall semester the chapter went to the AIChE National Conference in Pittsburgh. Guest speakers also came and talked with students. Plocek also invited the students out to take a tour of the Sinclair Refinery in Casper, WY.
- At the national conference twelve students attended. The chapter participated in different workshops. Two students participated in the poster competition. Emily Lynch and Thomas Christensen took 3<sup>rd</sup> place in this event.
- During the spring semester the chapter attended the SWE Rocky Mountain Regional Conference in Golden, CO. More guest speakers also came and spoke with students. ChemE Jeopardy night was also done to prepare for nationals. The students also took part in an Altitude Brewery Tour. Officer elections also took place. A dinner for underclassman will be held soon as well.
- The chapter took 21 students to the Regional Conference. Students participated in ChemE Jeopardy, the poster competition and ChemE Car competition. The chapter placed seventh overall in the competition and second in the poster competition.
- The chapter's goals for next year are to bring in more industry speakers, and have more site tours and networking events. They would also like to hold another research dinner for undergraduates.
- Anne Jones began to talk about career services.
  - A University initiative has been started by President Nichols to have career data coming in to one source so it can be accessed nationwide. For the collective data over the last eleven months, there has been a part-time person scouring sites such as LinkedIn, etc. to see where students go to work and this information will be on the institutional analysis page for all to access. This will include information for all grades.
  - Jones wants data collected over an eleven month period. This provides a better graphic, and since it will be online it is easily accessible to all.
  - Different career treks have been given. Jacy Busboom and Seth Harris have gotten alumni involved in this. Shafer-Malicki helped organize and she did a great job. Five treks were given total. Three were specifically for engineering students, the other two were integrated. One student received a job offer at a career trek.
    - Trips have been made to other communities within Wyoming, Sweetwater was one. Riverton, Thermopolis, and Campbell County are other examples.
    - The feedback so far has been great. The experience has been good for students to dive into a community and work with employees to see the economic diversity. Exposing students to Wyoming Communities isn't about growing up here, but about what is going on in a community. This may encourage out of state students to consider to stay in Wyoming, so it is good exposure.
    - Costs are split between departments for these trips.
    - Jones is getting great reviews about getting students involved.
  - An experiential education co-op was just approved and a plan will be developed to get students engaged in experiential work. The Dean wants 85% of students when they graduate to have some sort of experiential education. This is an opportunity for the student to see what this looks like.
  - Sometimes classes are only offered once a year, so a student might miss out on another year so some employers would like a longer co-op opportunity. The goal is to see if a co-op opportunity could be extended to a year.
    - The bigger part of this is that there needs to be an avenue put in place for employers that can would like to help with this.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Alvarado went on to say that when employers ask for names of good students, we simply can't just give names out.
  - Jones responded that this is because of FERPA. It doesn't happen often, but sometimes a company may ask for the top three candidate's names, but releasing private names goes against FERPA and the Equal Opportunity Act.
  - Employers can put in specific requests to Jones. She will post the position on the website, board, and email about it.
  - When students update their profile on Handshake they can be sent opportunities, but it is up to them to update their profile.
  - The good thing about Handshake is that it makes it public, and employers can see it.
  - When employers are looking for niche type students they can look for these specifics on Handshake and reach out to students.
  - Alvarado asked if there is training available for Handshake.
    - Jones responded that, yes there is, for students but rarely employers.
- The career Everywhere Task Force is asking other departments about career opportunities and about 80% said they are looking for employees or want something specific. This is enlightening to know with career development to have something more structured to work on developing employer connections.
  - Alvarado added that this is part of the Center for Student Success. Most times students aren't prepared for their advising appointments, so where does career development fit in?
  - Jones answered that advisors will go to job fairs and talk to people in industry.
- IAB Committee Reports
  - Fundraising
    - Shafer-Malicki began by talking about how she had met with Russow, Alvarado and Dean Pishko to talk about finishing up fundraising for the Process Control minor.
    - A meeting should also be done to talk about potential scholarships for the program and where to get funding for them.
    - Shafer-Malicki continued by saying that Alvarado had ideas about potential endowment opportunities, and that she would be back in June to meet about these.
    - Ftaclas responded that we should take this big idea and go for it.
      - Alvarado answered that a real proposal needs to be made with a list of actionable items. This should include small actionable items, but also larger ones. Alvarado continued by saying that he had learned about the process from Russow and he could look at excellence funds that could cover costs.
      - Shafer-Malicki added that what we need needs to be exactly defined and taken to Russow.
        - Alvarado agreed and said Russow helps give it shape.
      - Ftaclas went on to say that similarly small donors can make donations and the Foundation could open an account just for endowment. By fall we need to have gauges and metrics.
  - Professional Development
    - Korby was not available through Zoom for this portion.
  - Strategic Development

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Len Switzer began by saying that he had nothing to report. He relooked at what Mike had put down originally and found that it aligns with the strategic plan.
  - Alvarado added that the department currently has a committee that is working on guidelines for T&P so we have metrics, and because we now have to have bylaws.
- Switzer continued by saying that recruitment should still be the main theme. Also, pushing the Process Control minor through is important, and this includes not just finding donations for equipment, but help with funding in general.
- Ftaclas added that it is important to align with the strategic plan, and currently there is no deadline on this, but when it is required there will be a tight turnaround.
- Alvarado went on to say that his first year brewing seminar was delayed, as well as the newsletter. Many new things have been happening that we have been putting resources towards. The changes to HCM have been horrible. The target is by fall to have gauges and metrics. Aryana, Bagley, and Patrick Johnson will hopefully have something in place before we leave for the semester.
- Findlow asked if all of these plans will change with the implementation of a new president.
  - Switzer responded that he will need a draft of all of this will be needed from the department.
    - Alvarado agreed that this is important.
  - Ftaclas added that looking at the department's resource constraints and also looking at the University's should be noted and put towards what this means for the department plan.
    - Findlow added that there is still value in drafting something now, even if it has to be redone.
  - Ftaclas asked how the IAB can add the most value.
  - Alvarado responded that the IAB can be editors of the plan and metrics.

Action Item: IAB will wait for committee to draft a document.

- Alvarado added that the college is better, but doesn't have a big plan.
- Ftaclas responded that goals can help us build some of that.
- Alvarado answered that once the committee drafts something faculty feedback will be gathered and the department will take the first stab at it.
- Recihl continued by saying that the minors should be completed and an endowed position put in place, which is all within the strategic plan. This can be something to pursue with Russow's replacement.
  - Shafer-Malicki responded that Russow was on board and is looking at how to get funding, and some is already there. The ball is in our court, not Russow's. Russow has been talked to about the Process Control minor, but not about an endowed position.
  - Dandy added that endowment money is hard to get. Donors want to give something that helps students directly. They don't begrudge faculty, but want to see where the money goes. It can be a long process. Dandy inquired about starting an all online graduate program.
    - Alvarado responded that there is no funding in place for this, and it would be difficult in how to place a limit on how to spend student fees.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Switzer added that this sounds like it would almost be bigger to pursue than an endowed position.
- Alvarado continued by saying that the Dean should be approached to get clear answers on where money would go.
- Ftaclas went on to say that other programs who have such a program should be looked at to see if it is a legitimate option.
- Alvarado continued by saying that Russow said it is best to focus on the Process Control minor first. The Foundation needs to be talked to and told that the department still needs Russow.
  - Shafer-Malicki responded that from talking to Russow he isn't leaving just yet.
- Reichl went on to say that a list needs to be made and narrowed down on what to pursue and what to move forward on.
- Alvarado added that something beneficial and important to do would be to have a celebration where alumni could come and see what has been done in the department.
  - Shafer-Malicki responded that a step between all of this is to identify what we want (Process Control, money,) then develop a list of things to work on, and then meet with Alvarado and Russow to polish things up.
  - Alvarado confirmed that in June he will go over this with Shafer-Malicki.
- Dandy asked the other IAB members if they think companies will know about the need for the Process Control program, or if they will need to be informed about it.
  - Switzer responded they will know.
  - Dandy added that this is not a very prominent minor so it will generate people willing to donate.
- Ftaclas continued by saying that the strategic public partnerships are very vague, is there anything actionable to move forward on.
  - Findlow answered that he sees the framework of what it is, and next it needs to be seen where the subgroups fit in, which will provide direction and show the overall progress.
- Reichl offered to be the chair on a subcommittee on recruitment. This is something students can see there is an opportunity in.
- Ftaclas added that there is low hanging fruit all over the state. Some students come from community colleges, and when they are finishing their Associate degrees is the best time to recruit them.

**Action Item: All agreed a subcommittee for recruitment should be formed.**

- Board Administrative Business:
  - Move to invite Dandy and Reichl to serve for a second term on the IAB. All voted in favor.
    - Ftaclas continued by saying that Dandy and Reichl have done a great job at helping understand difficulties.

**Action Item: Another faculty member should be sought for a seat on the IAB as Dandy has missed some meetings.**

- Move to invite Schlicting and Shafer-Malicki for a second term. All in favor.
- Move to invite Ftaclas and Kevin Milliman for a second term. All in favor.
- Move to invite Elyse Johnson as Support Staff. All in favor.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Move to vote in a new Vice Chair.
  - Ftaclas nominated Milliman, but if anyone else was interested he was open to suggestions.
  - Alvarado asked when Ftaclas' term will end.
    - Ftaclas responded that Bedessem will be the new Chair in the fall meeting. If anything is needed over the summer he is available.
- Alvarado added that he plans to stay on as Department Head for one more year to see the Process Control minor through, and he told the Dean a new Department Head will need to be looked for. It has been great to be Department Head, but he is not sure if he can add value anymore. We need to optimize the department so he doesn't know if filling the position from within is a good option.
  - Shafer-Maliki responded that it is great Alvarado is staying another year because he has the experience we currently need.
  - Alvarado went on to say that our department does not have the same problems that other departments do, we are here for the students, and are a great group. He accepted the position as Department Head for continuity, and has learned a lot.
  - Ftaclas added that Alvarado's leadership has been very good, and he has done a good job at managing people who don't like to be managed. They would rather work on research.
  - Alvarado continued by saying that a problem at this University is micromanaging. He is starting to get desperate for resources. He is willing to work with anyone to get this, but the message isn't getting through. He has told Dean Pishko to give him what he needs or he will step down. Alvarado went on to say that he is struggling to find time for his research plus being Department Head. He doesn't have a solution, but one way the IAB can help is to talk to Dean Pishko and see if you can get the department the resources they need.
- Move to elect Milliman as next Vice Chair. All in favor, motion carries.
- Alvarado asked about a meeting time for the next meeting.
  - Ftaclas asked to do it earlier than normal, such as in September. In the fall students can give feedback, and in the spring faculty can.
- Wrap Up:
  - Alvarado continued by saying that the department is just too small. Anything we can do to get an Endowed Chair is important. If the IAB can communicate with Dean Pishko this would help and hold more weight.
  - When a new Department Head is hired and if another person can be hired for Process Engineering they can both be extra faculty members.
    - Reichl asked if this is in addition to the Professor of Practice.
      - Alvarado responded, yes, they could work in tandem with the Professor of Practice.
      - Reichl asked if a Process Engineering faculty member was hired, why would a Professor of Practice need to be hired as well.
      - Alvarado answered that the Professor of Practice is to lead the minor, the other position would be in development of Process Engineering which students are asking about.

## Chemical Engineering Advisory Board Meeting Minutes

---

April 26<sup>th</sup>, 2019

- Alvarado responded that at this point a Department Head position would be easiest to fill.
  - Reichl agreed.
  - Switzer added that the person wouldn't be a Department Head forever and then would move on into the department.
- Dandy went on to say that it would not be a threat to approach the Dean about this, and it would be unfair to junior faculty to expect them to volunteer for leadership. This needs to be done strategically.
- Alvarado continued by saying that there are not a lot of choices in this situation, and that he likes the idea about a conversation about a new Department Head with the Dean.
  - Bagley agreed and said pushing for a new Department Head position is a thoughtful approach. He knows the Dean isn't against it, so it is worth talking about again.
- Ftaclas ended the meeting by saying the big picture is the department is doing great with the Process Control minor as well as the proposed Biomedical Engineering minor. He is still disappointed that the Environmental Engineering program is still in limbo, and that he would love to see a solution just like the Biomedical minor.
- Meeting adjourned.