

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

Present: Vladimir Alvarado, Marge Bedessem, Wayne Buck, Tom Findlow, Stephen Ftaclas, Kevin Milliman, Maribeth Plocek, Jessica Schlichting, Len Switzer, Mike Thomas and Elyse Johnson (Support Staff).

- Marge Bedessem called the meeting to order.
- Vladimir Alvarado went over the agenda with the IAB.
 - Bedessem asked the IAB if there were any major things missing from the agenda. No one responded that anything was missing. Bedessem moved to approve the agenda, all in favor.
- Ann Jones and Tyler Grabner began to speak about career services.
 - Jones began by introducing Grabner who is the new internship coordinator.
 - Grabner went on to talk about what he is working on. Currently he is preparing a one-credit self-study course about building resumes and cover letters.
 - Grabner is also meeting with students about internships, and is building an internship panel of students.
 - Jones added that if the course is successful the center will look into making it a regular meeting class.
 - The course is going through the approval process and is currently at the course committee for review. Once it is approved it will be promoted to sophomores.
 - If the course becomes an official class it would be a structured program meaning that if students didn't participate in class they could possibly fail. This could provide motivation to students, and also get them prepared for career development.
 - Jessica Schlichting asked if it is just geared towards engineering students, or if other students all across campus could take it.
 - Jones responded that, yes, it is geared towards engineering students, but other students could take it as well.
 - Bedessem asked if there was a technical writing class where there could be overlap with the things taught in this course.
 - Jones responded that yes, there is a little overlap, but our course is more intensive and teaches more strategy of what employers want to see on resumes. It's more about polishing and fine tuning resumes and cover letters.
 - Jones continued by talking about the results of the 2017 and 2018 first destination survey.
 - The survey was conducted by the Office of the Registrar and was done at cap and gown pickup. It was also sent out via email.
 - The salary of students who were graduating and had jobs lined up were gathered from this survey.
 - By looking at the data the College of Engineering looks like there is a low starting salary. Every salary was accounted for because it is data. One young man graduated and went on to work for a non-profit, so this affected the data.
 - For the 2018 survey companies were called that made job offers to the college's students, and data was collected. The job offers are not broken up by major. If there is ever an employee relations person this could encourage stronger relationships with industry and help them to engage more with our students.
 - Jones went on to talk about the companies that were registered to come to campus and represent themselves for the business industry government (BIG.) Sixty-five companies are coming to the one day job fair for the college.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- Jones went on to say that the center for student success is doing renovations all through October so their office will be displaced while this happens.
- Alvarado asked Jones to make a comment about if an opportunity would arise for an IAB member wants to recommend a student for an internship how would we go about this.
 - Jones answered that if an employer wants a list of the best students, or students meeting a certain criteria, she can't send them a list because it violates FERPA.
 - How an opportunity would be handled instead is the employer would be asked what they are looking for.
 - Kevin Milliman asked with the criteria that the employers specify of what they are looking for in a student, do you send the internship opportunity to everyone and just tell them they must meet the criteria?
 - Jones responded, yes, this is how it is done.
- Milliman asked about the survey results and how on the hiring side there was a large difference in the graduating class between 2017 and 2018 and their salary. Was there a reason why for this?
 - Bedessem added was it because of the size of the classes graduating or was it the number of people that responded to the survey?
 - Jones responded that it is based on the surveys returned, not on class size. The data is self-reported so the results are based on what responses they get.
- Jones added that the one-credit course they are working on is a great way to have a selection of resumes from students who actively engaged in the course to show employers. Employers can be told that these students were motivated and took initiative.
 - Alvarado continued by saying that it can be challenging for some employers to get the information they need about students when it comes directly from faculty, such as they are a getter. Alvarado asked if a letter could be written for a student showing their traits and recommending them for a position, all while not implying they should choose that student.
 - Jones responded that she thought this would be just fine if faculty members have the time to do so.
- Steve Ftaclas continued by saying that he can see the virtue in the format of the one credit course, but one thing that is a concern and that he cautions against is that it could end in a part-time student having to pay a few hundred bucks to take the course, and this could make it like they have to pay for success.
 - Jones added that this thought has come up before. She continued by saying that all that is taught in the course they can also do without a classroom environment.
 - Schlicting asked if the course checks off a requirement for graduation.
 - Jones responded that she doubts that the course would ever be considered for an elective.
 - Bedessem asked that if companies hired students as interns could this class be something that employers could have the students take.
 - Jones replied that this is something to start thinking about, and is something that could be done. The class hasn't been approved yet, but this is something she hopes for.
 - Jones added that she has even had employers offer to come speak at the class.
 - Schlicting asked about how students have been dressing to attend job fairs.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- Jones replied that she has seen a shift in this. The posters advertising the event say to dress professionally. Not only is this good for potential employers to see, but it also makes the student feel professional. Business suits are good apparel to wear, or slacks and a button down shirt and tie.
- Ftaclas asked if going over how to professionally dress is in the class curriculum.
 - Jones responded that no it was not, but it will be because company culture is important.
- Jones continued by saying that when job fairs are held at the Gateway Center there was a smaller number of people to attend, but they were all very qualified candidates. For a recent job fair the Gateway Center was booked, so it was held in the Student Union. When it is held in the Student Union there are more drop by students, so often times their dress is much more casual.
- Jones went on by saying that Grabner did a panel on internships. The students that participated gave a lot of great stories, but only seven students showed up to listen to the panel, so many more students could have really benefited from attending the panel.
- Ftaclas asked that as employers, what do we do wrong or what do we do that is inconvenient?
 - Jones responded that she can't think of anything, except for maybe making too slow or too quick of decisions on hiring students.
- Patrick Johnson brought up co-ops and how they don't currently work with our curriculum because students have to end up staying longer to complete their degree.
 - Jones responded that she has had a push from employers to have co-ops, in fact they would prefer it. But in this instance a student could miss a prerequisite and be put behind.
 - Findlow added that some companies want a junior because they are more experienced, but these students are almost done with their degree, so the employer may need to consider someone more junior because they may be more willing to give up a year and be a bit behind in school. From a student standpoint this isn't fair.
 - Jones went on to say that if a student is going into that they should know they are on a co-op track, so they are prepared
 - Schlicting responded that as freshman though, do they know what they want to do?
 - Jones responded that this is a good point.
 - Alvarado added that the earlier in their student career this is done the more flexible time is.
 - Ftaclas continued by saying that as employers we need to make sure we are flexible with co-ops, but with Hathaway scholarships the students only get money for four years, so this is something to look at.
 - Alvarado added that the acting University President is pushing for students to be graduated in four years, which is hard for engineering. This isn't something you can dictate.

Action Item: Bedessem suggested in the spring meeting discussing the co-op experience.

- Alvarado continued by giving the department update.
 - The Professor of Practice search for the Process Control and Instrumentation minor is complete. Recommendations from the search committee have been received, and Alvarado made the decision on who to hire. He has given his recommendation and expressed what is needed to get started.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- The minor is fully approved, and is currently in the bureaucratic process.
- Space was requested a year ago, but the department hasn't heard anything yet about whether or not we have received it.
 - Two more spaces have been requested, and one would be perfect for the simulation space. Hopefully the space will be given to us and not Computer Science.
- The space we lost in the Unit Operations lab has been gained back.
- Dean Pishko is stepping down as of October 1st. Pishko will be telecommuting for the rest of the fall, then will be on sabbatical in the spring. Then he will be coming back to the department in the fall of 2020.
 - Bedessem asked if Pishko will be brought back into teaching coursework.
 - Alvarado answered that, yes, he would, in the fall of 2020.
- Bedessem asked if the new Process Control person agrees to take the position, will they start in the spring.
 - Alvarado answered that they would start this fall.
- Ftacfas asked about the experience of the candidate for the Professor of Practice position.
 - Alvarado responded that he has a MS in Chemical Engineering, he ran a machine shop for a long period of time, and then obtained his PhD in Chemical Engineering. He has the knowledge to teach any of our classes and is very qualified and has plenty of experience. He is not a full professor in Process Control, but is qualified.
 - Findlow asked if he was retired.
 - Alvarado answered that the company he was with before shut down.
 - Johnson added that the situation is a little bit backwards, he has the experience before he had the schooling.
- Alvarado continued by saying that a Professor from Electrical and Computer Engineering is a candidate for interim Dean, but has had no leadership experience here. He has been on many committees though.
 - Bedessem asked how long the person will be the interim Dean.
 - Alvarado responded that there is a search committee being put together right now. The interim Dean will stay until early summer 2020, so around 9 months. The search will be ongoing but it is hopeful to select someone for Dean by March. The interim president is also very involved in the search.
- Alvarado went on by saying that John Oakey and David Bell became full Professors on July 1st. This makes our faculty varied currently with two Assistant Professors, three Associate Professors, and 4 full Professors.
- Alvarado continued by saying that AG has been struggling and this affected us because Craig Russow was moved from our department to AG.
- Alvarado went on by covering the roles of people in the office. Elyse Johnson is the Office Associate Senior, David Bell is the Undergraduate Coordinator, Joseph Holles is the ABET Coordinator, and Saman Aryana is the Graduate Coordinator and he created the Rocky Mountain chapter of SIAM and is the chair.
- Alvarado proceeded by saying that a system is being put together to keep our graduate students on track, and it will also assist with how we manage and attract graduate students.
- Alvarado continued by saying the Bagley is no longer the Process Control coordinator. John Ackerman, our adjunct faculty member, is currently the carbon engineering champion. Teddi Freedman is now our Foundation contact, but Russow is still working with our department while Freedman learns all that she needs to.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- Alvarado went on by saying the department was applauded for its high freshman enrollment this year, but not all students came. He is not unhappy with the composition, but the news of the president leaving and higher tuition prices didn't help. With all of the uncertainties at the university, overall enrollment dropped for all of our college's departments.
 - Schlicting inquired about the graph on Alvarado's slide and asked if all of the seniors would be graduating.
 - Alvarado responded that this is calculated by credits, so some that may be classified as seniors aren't in fact ready to graduate.
 - Schlicting asked how many of the seniors he thought would be graduating.
 - Alvarado answered probably around 40.
- Alvarado proceeded by talking about how there is no newsletter yet, but there will be soon and it will be sent out to the IAB.
- Alvarado ended by saying that fundraising has not changed since the spring meeting. The department still needs more faculty. There needs to be a focus on fundraising and fine-tuning of the program. Steadier enrollment is needed.
- Teddi Freedman introduced herself to the IAB.
 - She is the new foundation person for the department and will be moving into Craig Russow's position. He will be helping her transition into this role because he has long-time relationships with people and didn't want to leave Freedman on her own.
 - Freedman had been doing K-12 outreach for the Engineering College in which she encouraged students to go into engineering.
 - Freedman is excited to have new initiatives, and is also excited about what this means for our department.
 - She continued by talking about the scholarship that has been set up in memory of Don Stinson. They are hoping to reach \$25,000 in funds so the scholarship can become endowed. Currently funding is at \$4,000.
 - Russow arrived and began to talk about how he has enjoyed being involved with the Process Control and Instrumentation minor, and that everyone needs to keep rallying around it and to give it more definition so it can be successful going forward.
 - The passion for the minor in Rock Springs is big, as is with Shell. Students will have opportunities to go lots of different places. Simplot also wants to get in on discussions about the minor.
- Joseph Holles began talking about ABET
 - 2018-2019 was an assessment year. All of the assessments have been gathered and a report compiled this past summer. Continuous improvement is being focused on, and the goal is to address all of the things addressed in the assessments this year.
 - This year is an improvement year.
 - ABET decided to change from an A-K model, to a 1-7 model. There are fewer things to evaluate as they all got smashed together. This has involved the department in mapping things differently on assessments and also in developing new assessments.
 - The goal is to figure out what improvements need to be made this fall, so they can be implemented and ready for the assessment year next year.
 - The academic year 2020-2021 will be an assessment year along with the year of record. During fall of 2021 ABET will be here for a visit.
 - Currently the department is in pretty decent shape. This year Holles is focusing on remapping and there needs to be a department wide discussion. First the curriculum committee will look at

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- it, then they will put it together and bring it to the department for approval. Holles will bring this in the spring to show the IAB. They don't need to approve it, but an update should be given.
- Holles continued by saying that for all disciplines in the college ABET is adding a statistics and linear algebra requirement. There doesn't need to be an assessment on this, but the department has to show that we have a sufficient amount of this content taught in our classes.
 - Faculty have been told to approach Holles and let him know if they teach these subjects in their classes, and to detail exactly how much so he can write it up in the ABET report.
 - The outcome will determine if what is taught is sufficient, or not enough, so a class will need to be added. Holles doesn't think this will be the case though. The department may need to add a little more of each subject, which could be achieved by adding another lecture.
 - One of the ways to show ABET that we have a sufficient amount of statistics and linear algebra being taught in classes is after feedback is received from faculty on which classes they are teaching this in, and then go back and edit the course catalog and change the descriptions to reflect this.
 - Holles is hoping to show ABET that students are being exposed to this in 2000 level classes, and to also show that in higher level classes students are applying this material and have an understanding of it.
 - Alvarado added that the department needs to consistently show that we are teaching these things.
 - Holles continued by saying that the only thing the IAB needs to help with in the case of ABET is approving PEOs officially, as they are considered a constituent and must be involved in this.
 - The IAB should also be involved in talking about the big picture of the curriculum, and then at that point the department could make decisions on adding courses or changing assessments.
 - Alvarado added that we need to show the constraints of the curriculum. If a new required class has to be added, and we don't have some background, things could get complicated without there being an understanding.
 - Bedessem added that in her company they hire graduates from the Environmental Engineering program, and statistics are important, and would be good to have as a technical elective.
 - Holles added that this is good feedback, and that it would be good to talk to Bagley as he is one that teaches these courses. This would be a good way to see if the department needs to expand on the statistics and linear algebra subject.
 - Alvarado added that the department doesn't see everything that people in industry see, so it is good to get this feedback.
 - Wayne Buck asked if risk analysis is covered.
 - Alvarado responded that, not, it is not covered much, but would be good to cover more.
 - Holles added that risk analysis is covered in senior design, but is not the same type of risk analysis Buck is talking about.
 - Buck added that there are charts that can help teach this fast, and it doesn't matter where it is taught, but it is a good thing to cover.
 - Ftacilas continued by asking what sorts of classes are offered for materials science.
 - Alvarado responded that there are none currently, but Holles covers a little in one class, but not a lot.
 - Schlichting added that there could be a lot of value in doing something like this, but could see where it could put a lot of stress on the current faculty.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- Alvarado added that he is open to more discussions on this.

Action Item: If you have more you would like to discuss with Dr. Alvarado on material science please email him.

- Bedessem asked if there needed to be an ABET or curriculum committee built within the IAB.
 - Alvarado added that someone said our curriculum is outdated, which he was not happy about. The department has gone through a painful review of our curriculum, but we have continued to clean it up.
 - Alvarado continued by saying that currently the department has to decide about whether or not D's or C's are sufficient for prerequisites as the University has done away with the plus minus system.
 - Holles added that the goal is to keep ABET happy, and keep work to a minimum.
 - Alvarado responded that the department needs grounding and the IAB can help with that.
 - Alvarado continued by talking about the professor of practice. The term is for one year, then the position can be renewed.
 - The person will have four classes to teach, but won't have many this spring. Having this allows for the department to consider teaching electives we don't currently teach.
 - The department has the opportunity to review and enhance the curriculum taught, and having the Professor of Practice position allows this.
 - The Professor of Practice's job is also to keep up with industry partners on fundraising so he provides the foundation for what the department wants to do.
 - If a couple more faculty are brought in things will be a lot different and better.
 - Alvarado mentioned that the only reason Environmental Engineering is still going is because Bagley is teaching overload.
 - Schlicting added that she can see adding one or two electives being taught could make more people come to our department.
 - Ftaclas responded that the number of electives is enticing and it is a draw having six.
 - Alvarado added that this makes a difference for students because if they don't like a certain elective and don't do well in it, more variety is good. To choose some key electives to be taught every semester would be a huge draw.
 - Bedessem asked how Alvarado would envision a subcommittee working to give feedback without it getting in the way of ABET.
 - Alvarado answered that the subcommittee could work with the curriculum committee and have an update when we meet here in the spring. If the department goes to the college with changes and says they are backed by the IAB, it makes a big difference.
 - Bell added that continuous improvement is required, so the IAB can help us keep focus on what we need to be doing.
 - Alvarado agreed and said that this puts all of our constraints in balance.
 - Ftaclas added that we need to make sure the university plan fits the college and department plan.
 - Milliman moved to approve a subcommittee to look at the curriculum and to allocate resources, and suggested to have Findlow be the chair of the committee
 - All in favor

Action Item: Findlow will work with the department and will come together with the IAB to implement a strategic plan that will dictate how the committee operates.

- Bedessem asked how this will be done. For example by quarterly conference calls, etc.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- Alvarado responded that a process needs to be put in place, like touching base quarterly, or when there are new implementations like a minor to do a conference call. It is important to make this part of the process so whoever is on the curriculum committee and whoever the Department Head is they will have an official process.
 - Findlow agreed and said that we need to come up with a process and stick with it. The process needs to support both the regular curriculum committee as well as ABET feedback.
 - Bedessem asked if the committee should commit to a conference call so this can be decided upon today.

Action Item: Findlow agreed to hold quarterly conference calls until a process gets going. Findlow will also set ground rules for a temporary process, and to elect members.

- Alvarado added that whatever the department can do to support the process, please let us know.
- The IAB began talking about the committee reports.
 - Findlow began by saying that nothing has happened with the strategic planning committee since the last IAB meeting.
 - Findlow suggested that the committee would like to collaborate and develop goals with faculty on the strategic plan. It may be too late for this, but it is just an idea.
 - Bedessem asked what the status of the strategic plan is within the department.
 - Alvarado responded that he has asked the committee to start looking at the expectations, but currently the department has no guidelines with T&P, and he hasn't heard anything.
 - Alvarado continued by saying that there can be a push this semester to prepare a bare bones strategic plan, and he can hopefully try to show the IAB this at the spring meeting.
 - Findlow added that the goal of the committee is to make sure the focus isn't only on how business is being run.
 - Milliman answered that as the IAB we can inform the department on what they see as an industry person, but our primary role is not research. This means that the IAB can look at goals and plans from an industry perspective, but he wants the department to understand we are not the only voice.
 - Bedessem continued by asking that if during the building of the agenda in the spring would a session held simultaneously on the strategic plan be a good idea. Would this allow enough time to give feedback to faculty and staff?
 - Alvarado responded that he thinks whatever has happened before the spring IAB meeting is good.
 - Findlow added that the IAB has to pick what committees fit best, and can bring the most bang for the buck. There can only be so many committees in the group.
 - Alvarado suggested on just focusing on the goals for the year.
 - Bedessem responded that at least we have gotten what committees will be there and what their focuses should be, and how some will take the forefront or the backseat.
 - Milliman continued by saying that membership committee has a foundational document, and has the right folks on the committee, but there needs to be talk about the plans going forward because so far there has been strong membership.

Action Item: Elyse Johnson will add committee member information onto the IAB roster.

- Bagley began talking about Process Control.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- The minor has been fully approved, and John Tatarko has been offered the Professor of Practice position.
- Equipment is being looked at and equipment from US Didactic is being pursued for the spring of 2020.
 - Alvarado added that if the department starts to struggle with the cost to set up equipment for the Process Control minor, some money from program fees can be used. Each program has different costs associated with it, and a modest fee is collected from each student in each program.
 - Bagley added that it is around \$6 dollars per credit hour across every course for professional advising, and on top of that there is a \$25 dollar per credit hour fee for engineering courses which can help the department buy lab equipment and supplies. A lot of these funds were used for the bioengineering lab, as well as buying supplies for the Unit Operations lab.
- Bagley continued by saying that he hopes to have the equipment in place by January 2020.
- Advertising needs to be developed for the minor as well, especially for the spring 2020 class.
- Bedessem asked how many classes the department plans on offering.
 - Bagley responded that there will be five required classes.
 - Students are also encouraged to do internships or participate in undergraduate research.
 - Freedman asked if the internships are paid or unpaid.
 - Bagley responded that for internships they will most likely be paid, but the students have to do reports each week which is extra work, but we aren't saying they can't be paid. Undergraduate research is unpaid, but a student can get credit for the course.
 - Alvarado added that research should be preapproved, so the research is meaningful and can be tracked. Research also can't be more than three credits.
 - Bagley added that he has a student participating in research this fall, and that students have to check-in with the faculty they are doing research with.
 - Bedessem asked if the research is graded as pass or fail.
 - Bagley responded it is graded as satisfactory or unsatisfactory.
 - Milliman asked how many students are interested in the Process Control minor.
 - Bagley responded that he had three students come to him and asked about it before the minor was even approved. Ten students are needed for the course to be taught, so the goal is to pursue getting at least that many students to take the course.
- Freedman began talking about fundraising.
 - Freedman is the new Director of Development for the Foundation and the College of Engineering.
 - One of her responsibilities is to raise money and participate in the role of stewardship, and to make lasting relationships with donors.
 - Freedman is learning about the connection with people and traveling to find ways to connect the interests of donors with those in the college. A good example of this is the Process Control minor.
 - Freedman continued by saying that it will be helpful to get to know the IAB and all of their areas of expertise. She would like to get to know the members as a person from industry.
 - Freedman is often on the road by herself fundraising, but it is helpful to bring experts in the field along.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

Action Item: If any IAB members are interested in meeting with potential donors, please reach out to Freedman.

- Freedman continued by saying she is grateful for Alvarado and his vision for the department.
- Bedessem asked for the equipment being purchased, how does maintenance work?
 - Bagley responded that program fees have been hugely helpful with this.
 - Alvarado responded that the department receives around \$50,000 per year in program fees.
 - Bagley added that this is enough for maintenance, but not new equipment.
 - Alvarado added that for equipment being purchased for Process Control cheaper equipment could have been chosen, but higher end equipment will be bought, which is more robust, and will last longer.
 - Bagley responded that it is nice to have that money there, and to show students where the fees they pay go.
 - Alvarado continued by saying that it is important to still fundraise so we don't have to dip into precious department funds. Sometimes it is a challenge, it's a balancing act between budgets. Program fees cannot be used to pay people.
 - Milliman responded that perhaps there could be a fundraising opportunity for equipment maintenance.
 - Alvarado answered that most chemical engineering departments have an AP, but instead we use faculty. This is expensive, sometimes things don't work, and it can be stressful. Maintenance is a problem because when buying equipment the department has to get an extended maintenance contract. In this case there is funding to pay the shop to fix it, but if out of contract then the department has to cover the expense and this can be very expensive.
 - Bedessem mentioned if equipment is donated it doesn't come with a maintenance contract. This means that the department can't use the latest and greatest equipment if it doesn't work.
 - Findlow added that it is important to show donors the importance of this.
 - Alvarado continued by saying that him and Bagley have found that they will need about \$300,000 to complete the labs and have them be top notch.
 - Alvarado has been waiting for the Professor of Practice to start to begin purchasing equipment.
- Bedessem began talking about the committee reviews. She expressed that it is important to not spread ourselves too thin.
 - Bedessem asked the fundraising committee for an update.
 - Thomas began by saying that Shafer-Malicki, who is the chair of the committee, wasn't present. The committee had planned on going over targets to approach, but they never got around to it.
 - Alvarado continued by saying that he wants to foster relationships and keep the connection alive. He wants to make sure things don't go obsolete.
 - Thomas responded that this means we can do fundraising in phases. Getting fundraising for Process Control could be one of the easiest things we can do.
 - Bedessem added that it sounds like the committee is forward thinking on Process Control and what types of things we need to ask for.
 - Thomas responded that Process Control and endowed chair are the biggest fundraising opportunities to pursue.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- Alvarado answered that instead of an endowed chair it is more of a professorship, which could leave to an endowed professorship and eventually to an endowed chair.
- Thomas asked what amount it would take to get a professorship.
 - Alvarado responded that it would take five million to get an endowed chair, or for a professorship fifty-thousand. If there are doubts on this contact Freedman. With a professorship this is a great perk to help continue with research.
- Thomas responded that he will work with Shafer-Malicki and Freedman on this.
- Bedessem continued by asking the membership committee for an update.
 - Milliman began by saying that committee's focus should be on building out what a pipeline might look like, and look at the time frame of those serving on the board.
 - The committee will also work on seeing who needs to be renewed. Some will be due for renewal this year.

Action Item: Ftacfas added that the committee should also look at other faculty members who could take place if David Dandy is unable to attend a meeting.

- Milliman continued by saying that the committee is planning a roadmap for balance and representation.
- Bedessem asked about what members have dropped out of the board.
 - Alvarado responded that Ravi Ravikiran is no longer on the board.
- Switzer responded that he worked with someone that could be a good fit for the board. He is a Wyoming native, and currently lives in Denver.
- Bedessem added that the board needs more faculty members on it, or to get a substitute for Dandy.
 - Alvarado responded that the question is where to bring faculty from. He said that Department Head's deal with a lot so they are a great resource. Even a retired Department Head could be good.
- Bedessem continued by asking for an update from the student development committee.
 - Maribeth Plocek began by saying Korby Bracken is the chair of this committee, but wasn't present.
 - Plocek continued by saying that they are working on getting a Process Control speaker to spark interest in our program. She could also arrange a plant tour at Sinclair, which is a much more complex refinery. Plocek had also been a project coordinator for the department's Process Design class.
- Bedessem continued by asking the strategic planning committee for an update.
 - Switzer began by saying that about a month ago he looked at his notes, and was confused. He and Findlow need to get together with professors and some people from the community and ask them what they see as adding value.
 - Schlichting asked about the timeframe of everything that has been discussed about the strategic plan over this meeting. A lot of this will take more than an academic year to achieve.
 - Alvarado responded that he agrees with all that has been discussed, and it is right on the money. We need to grow as a department, but focus on what we can achieve this year.
 - Schlichting added that she wanted to know why he wanted to grow the department.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- Alvarado responded that the goal is to reach critical mass because that is when everything happens. The goal is to have 12 faculty, which would then allow the department to handle around 240 students, and people can't say they can't do things.
- Alvarado continued by saying that every year there is a review done on student to faculty ratio, and we have the highest. We are the only department in the college where every faculty member has a research program (research-active). Currently when professors are asked to be on committees, the department has to find one, but with our faculty numbers we are always tapped out. The more professors we have, the better. Once we reach 12 faculty we become linear because there can be more research, which means funding increases because nicely crafted proposals are being produced.
- Schlicting added that it is frustrating that this can't progress more because there are so many administrative tasks.
- Bedessem added that it sounds like there are some good goals, now there just needs to be a timeline for the department and the IAB. Bedessem suggested that the IAB could sit in with faculty and engage with them about the strategic plan.
- Findlow added that there just needs to be a bare bones plan, which can then feed into further plans.
- Findlow went on to say that the IAB can be there to talk with faculty and facilitate and Alvarado can just be present. There needs to be a system in place on how to facilitate
- Alvarado added that the first target to focus on is on what we want to focus on long-term to ultimately stabilize the department. We can contribute in so many areas, but have to be given the opportunity. He would prefer that we do things on a smaller scale ourselves, which may be imperfect, but doable, rather than have things get messy by administration dictating what to do.
- Ftaclas added that how the goals are stated is important and makes it clear on what is needed and how we will get there.
- Schlicting agreed and said we need to focus on the outcome.
- Bedessem continued by talking about administrative business.
 - She welcomed Wayne Buck to the board.
 - Bedessem moved to approve the meeting minutes from the spring meeting.
 - Ftaclas added that a decision needs to be made on how the minutes will be reviewed for future meetings.
 - Bedessem suggested in the email when the minutes are sent out the action items can be put in the body of the email, and who is responsible for them will be specified.
 - Elyse Johnson agreed to do this.
 - Alvarado suggested having electronic approval of the meeting minutes before the meeting. Before it is sent out to the IAB it can be sent to Bedessem and Milliman so they can look at it and approve.
 - Bedessem agreed.

Action Item: Elyse will send the meeting minutes and a summary of the action items to Bedessem and Milliman for approval before they are sent out to the whole board and feedback will be asked for before the next meeting.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- Bedessem moved to approve meeting minutes from last meeting, and the new methodology for sending out the minutes.
 - Unanimously approved.
- Bedessem asked Milliman if a conference call should be done to discuss all of the plans between meetings.
 - Findlow agreed that, yes, it would. There needs to be a method on working on issues outside of the IAB meetings. This meeting shouldn't be a working session.
 - Milliman responded that subcommittees could do this, so goals can be worked on. For things that are more general, and that encompass the whole board, this could be done, but doesn't have to.
 - Bedessem continued by saying that if meeting mid-year a call is sufficient to keep everyone on account and on track.
 - Milliman added that an email could also be sufficient if there isn't a heavy workload.
 - Findlow added that the strategic committee may have to have a couple of phone calls, but others could be handled by email.

Action Item: Bedessem asked that if emails are sent by the subcommittees to make sure to CC her on the message and also make sure she gets an invite for any subcommittee meetings.

Action Item: Bedessem asked that if any of the committees chair's aren't able to attend a meeting another committee members needs to be recruited to give an update.

- Bedessem continued by saying for any website updates make sure to send them to Elyse. Elyse can make the website nicer and more visible since Bedessem couldn't find the IAB webpage.
 - Milliman asked about the recruitment committee.
 - Alvarado said let's table this for now.
- Bedessem began the wrap up for the meeting.
 - Alvarado began by saying for the next meeting the student chapters will give updates, and perhaps a lunch meeting could be done with the committees.
 - Schlicting added that a faculty lunch is important as well.
 - Milliman agreed saying that it gives the IAB a rounder perspective by meeting with the faculty.
 - Ftaclas added when an interim head is in place, there could be complaints, so it is good to keep in touch.
 - Findlow went on to say that it is important to talk to freshman as well as to why they chose to go into chemical engineering. He was shocked when his own son told him he had chosen that major, and he wants to know why others chose that so he can foster that intent.
 - Schlicting agreed by saying that it is important to understand so we can see why they wanted to come into chemical engineering, and so we can know for recruitment reasons.
 - Ftaclas continued by saying that visiting CHE 1005 in the spring would be a good idea.
 - Alvarado responded that there could be a panel done in CHE 1005 and there could be a Q&A session.
 - Ftaclas responded that he is interested in the data set empirically as to what is attracting students into chemical engineering.
 - Findlow added that the IAB needs to let the students know who they are. Having meetings with smaller groups would be good.
 - Alvarado suggested having lunch at the April meeting with the IAB and freshman.
 - Milliman suggested that there be a meeting with faculty and freshman at the spring meeting.

Chemical Engineering Advisory Board Meeting Minutes

September 27th, 2019

- Switzer added that he doesn't feel it has to be all the IAB members present at each meeting.
- All of IAB agreed

Action Item: If any IAB members are interested in meeting with freshman email Switzer.

- Findlow suggested having lunch split. One group will meet with faculty and the other with some students.

Action Item: Alvarado will put the agenda together early for this.

- Milliman asked Buck as a newly joined member what sort of comments he had about today.
 - Buck responded that it is important for the IAB to understand what the department needs from us. Engineers tend to be fixers, so let's make sure we are fixing where our expertise is most needed. Keeping it focused and keeping it simple is important.
 - Alvarado added that whether it happens spontaneously or not, we do what's in our own boundaries.
 - Buck agreed and said you can't wait for the University.
- Bedessem continued by saying that sometimes there is so much on the agenda there isn't time to cover everything, and she felt that with the agenda this time there was plenty of time to discuss. She thought it was a good balance.
 - Ftaclas suggested more frequent and longer breaks for the next meeting.
- Bedessem asked about the Environmental Engineering program.
 - Alvarado suggested she talk to Bagley, and perhaps Alvarado can talk to Tony Denzer, Civil and Architectural Engineering's department head about perhaps coming up with a solution to an Environmental Engineering minor. He added that that department has 6 disciplines to have accredited, so he isn't sure what sort of bandwidth the department has to add another minor.

Action Item: Add Environmental Engineering update to the spring agenda, whether the news is good or bad.

- Ftaclas continued by saying that Thomas and Billy Lew need to be renewed as their term expires this semester.
 - Findlow added that Lew hasn't been to many meetings, so he was wondering if his term should be renewed.

Action Item: Milliman will talk to Lew about this.

- Milliman made a motion to ask Thomas to serve for another 4 year term.
 - All voted in favor.

Meeting adjourned