

Surveying Engineering
Meeting Minutes
September 25, 2015

I. **CALL TO ORDER**

- A. John Fenn called the meeting to order at 8:11.

II. **ROLE CALL**

- A. Don Lowell conducted a role call and the following people were present:

John Fenn, Steven Johnson, Chris Lamus, Donald Lowell, Matthew Nawrocki, Rick Sauve, Michael Stanoikovich, Gilbert Barish, Robert Burtch, Rick Mushing, Khagendra Thapa, Carl Shangraw, Gabor Barsai, Sagar Deshpande, Debbie Dawson, Larry Schult, Dalton Bischoff, Katy Moore, James O'Conner.

III. **ANNOUNCEMENTS**

- A. Committee elections will be available for change later in the meeting.
B. The Committee structure isn't working – we will be looking for ideas to improve this.
C. We need to stay on topic for this meeting.
D. Debbie announced that Karen Lerew will be here to speak with us and Bill Bitzinger will be here to take photographs.
E. Acceptance of the spring 2015 meeting minutes – D. Lowell
F. Chris Lamus made a motion to approve the minutes. Gil Barish 2nd the motion, motion carried.

IV. **WELCOME AND REMARKS – DEAN, L. SCHULT**

- A. Debbie introduced Dean Larry Schult. Larry gave an introductory salutation to the Committee.
B. Larry reported that the Engineering/Surveying class is up to 72 students. There are approximately 2,100 students in the School of Technology.
C. Larry updated the Committee on expansion plans. There is a \$30 million expansion project that is shovel ready. Ferris is awaiting a State grant whereby Ferris would put up \$7.5 million, with the remainder provided by the State – whenever the State makes the grant – hopefully this will be within the next year.

Committee goals:

- Complete assigned tasks
Scholarships
Software License Accessibility

V. INTRODUCTIONS

- A. Introduction of New Committee Members Introduced by Debbie Dawson:
Bob Burtch, Retired Ferris State University Professor; Rick Mushing Former KCTC Professor and STEM Consultant; Jeffrey Wood, PS., Spicer Group.

VI. REPORTS

A. **COMPUTERS/SOFTWARE/LICENSES** – S. Agarwal, S. Johnson, D. Lowell, C. Shangraw

1. Carl reported that there is currently \$1,500 in the funding to buy new computers for the lab, not including John Fenn's matching commitment. The funding effort will close at the end of the meeting today, so commitments are requested from members today to meet the request.
2. Sagar Deshpande reported that remote access is beyond our control. Steve Johnson echoed that they have the same issues at Purdue. It was suggested that Citrix might be a possible solution.
3. Software compatibility in labs:
 - a. Carl outlined issues with software compatibility within the department.
 - b. Dr. Thapa reported the following:
 - i. Room 206 computers were replaced last year.
 - ii. Room 201 computers were ordered, and replacements will include dual monitors.
 - iii. Buying 2 or 3 new computers for Carl's projects (point clouds, etc.) with help from donations and John Fenn's matching commitment.
 - iv. Chairs were replaced in the labs at a cost of \$30,000.
4. Software licensing issue – S. Johnson, D. Lowell
 - a. Matt questioned the functionality of this committee.
 - b. Don explained that it simply wasn't working.
 - c. Dr. Thapa updated the Committee on software costs & updates, etc.
 - d. Rick Mushing will join this licensing group.

B. **INDUSTRY PARTNERSHIPS** – G. Barsai, need volunteer(s)

1. Replace D. VanKoten as coordinator – J. Fenn
2. Senior mentors – G. Barsai
3. Gabor discussed industry partnerships and outlined potential partners involved such as Leica, Trimble, etc. Having good industry involvement is not an issue at this time.

C. **MARKETING/RECRUITING** – S. Deshpande, M. Nawrocki, M. Stanoikovich

1. Status of program video
 - a. A video was already made.
 - b. Matt released the video on his corporate Facebook account which has been viewed 19,412 times.
 - c. Gabor & Sagar made a video.
 - d. Chris Lamus used the videos in his teaching and has received good feedback.

- e. Gil shared the videos with an interested party while vacationing in Alaska, and received very positive feedback.
 - f. Bob Burtch questioned where the video was on the FSU website.
 - g. Matt suggested that the videos should be 2 minutes or less. The videos are a powerful tool, and with UAV's incorporated will be even more influential.
 - h. Dr. Thapa suggested that FSU TV production will be updating the program video.
2. Recruiting activities
- a. Katy sends out packets to potential students. She feels that paper letters are generally unread, and she applauds the electronic efforts to recruit. Katy suggests having our students reach out to their hometown school, starting at the Junior High level.
 - b. Matt suggested using USB thumb drives that would include videos and other relevant information to STEM students.

D. JOB OUTLOOK AND SALARIES – M. Stanoikovich

- 1. Matt outlined ongoing efforts, and stressed staying updated to current accepted standards.
- 2. John noted that Michigan Tech graduates report an average starting salary of \$61,000.
- 3. Chris Lamus suggested a range of \$45,000 to \$52,000 for new graduates.
- 4. Matt questioned publishing the average salaries.
- 5. Matt also asked about the job outlook in Michigan, and reported that it is great in Colorado.
- 6. Chris Lamus reported that he can't find enough good people.
- 7. Katy doesn't have enough room to post all of the openings.
- 8. FSU currently has 100% placement with most students having secured their jobs in December.
- 9. Dr. Thapa outlined the competition of starting salaries between the Engineering/Surveying graduates compared to those in Welding or Plastics programs.

E. SOCIAL MEDIA – S. Deshpande, S. Agarwal

- 1. Discussions included Linked-in and YouTube accounts.
- 2. Sagar is sending that out via email to potential students.
- 3. Bob Burtch questioned having Twitter and similar accounts.

F. SCHOLARSHIPS – J. Fenn, K. Lerew, D. Lowell, C. Shangraw, K. Thapa

- 1. Advisory Committee Scholarship – K. Lerew
- 2. Katy talked about offering a 1-week full ride scholarship to a High School student on surveying in the summer.
 - a. 15 to 18 student's maximum for this program.
 - b. It was suggested that local residents would be targeted so housing wouldn't be an issue.
 - c. Sagar would teach this course.
 - d. John suggested that Rick Sauve would be a good resource for this.
 - e. Rick suggested starting with pointed visits with local students, visiting the High School math classes.

1. Scholarship summary – K. Lerew
 - a. Karen Lerew reported that the Surveying-Engineering school is the best group in the school at providing scholarships.
 - b. Karen spoke about the Ferris Foundation, and how they are trying to provide a greater culture of philanthropy.
 - c. Various other campaigns outside of the Surveying-Engineering program were outlined.
2. Scholarship timeline – K. Lerew
 - a. Karen told the group that one new program scholarship will be coming in this year, and that all scholarship amounts should be known by the first of March, 2016.
 - a. Karen announced that Katy Moore will be endowing her scholarship as of 2016.
 - b. Dr. Thapa told the Committee that there are several scholarships that may not continue – he is working with those individuals involved to see if they will continue. He will report back on this.

G. **TASKMASTER** – M. Nawrocki, need volunteer(s)

1. Matt is uncomfortable with his role and resigned.
2. Rick Sauve will be taking over this role.
3. John explained that we will revisit the Subcommittees later.
4. Matt felt that there is a need to redefine them.

H. **SUBCOMMITTEE DISCUSSION**

1. Interim conference calls (leadership calls).
 - a. There was considerable discussion regarding committees and whether to continue them.
 - b. There seems to be too much detail, and we are only an advisory group.
2. Steve suggested the elimination of the computer/software subcommittee.
3. We need to have measurable/achievable goals – 2 or 3 items each year.
4. The committee decided to change the “computers” subcommittee to “Emerging Technologies” and will be chaired by Bob Burtch, and will include Mike, Sagar, Chris, and Steve Johnson.
5. The Committee decided to eliminate the “Industry Partnerships” subcommittee.
6. The Committee decided to keep “Marketing/Recruitment” and Matt will be the chair.
7. The Committee decided to keep “Scholarships” and to add Dr. Thapa.
8. Dr. Thapa suggested a subcommittee “Retention”.
 - a. There was considerable discussion on this topic, with Bob Burtch suggesting the formation of a subcommittee to see if there is a problem and then report back.
 - b. It was decided to keep this with Chris Lamus as chair, with Bob Burtch, Katy, and Dr. Thapa being a part of the subcommittee.

VII. PROGRAM REPORTS

I. ENROLLMENT & RETENTION NUMBERS – K. Thapa

1. Dr. Thapa reported that enrollment has increased from 52 students in 2012, 59 students in 2013, 63 students in 2014, and 74 students in 2015.
2. Rick Bushing questioned the capacity of the program and the faculty.
3. Dr. Thapa shared that the capacity was 80 students with the current faculty of 4.
4. Bob Burtch questioned the idea of students leaving due to difficult math classes. He asked whether they are being encouraged to finish the Bachelor program after completing the first 2-years.
5. Dr. Thapa said that they were being encouraged to complete the B.S. program.
6. Rick said that there aren't that many 2-year graduates.
7. Chris Lamus reported a huge demand for the 2-year graduates, and not enough to fill the need.
8. Bob Burtch suggested that those students unable to handle the higher math should be encouraged to get the associate degree.

J. UAV – S. Deshpande

1. Sagar is working on the planning for a Certificate program with NMC.
2. Two courses would be at FSU and two at NMC.
3. Remote Sensing and Photogrammetry would be at FSU.
4. Sagar hopes to get this done in the next 6-months.
5. Introduction to UAV's and more instruction on using UAV's is intended to train students with some background but not all.
6. Gil & Bob asked if FSU is incorporating UAV technology into the photogrammetry classes.
7. Some of this is being taught now, but more will be incorporated as the industry progresses.

K. TWIST – C. Shangraw

1. MSPS Chair on TWIST is Bob Burtch.
2. MTU has proposed a training program for TWIST in the summer of 2016.
3. A meeting is planned within the next week to further these plans.
4. Rick Sauve reported that "GRACE", a national program is being taught at CMU – it is a program teaching GIS similar to TWIST.

L. CAPSTONE 2016 – G. Barsai

1. Gabor reported on upcoming presentations, including high water mark in Muskegon, Campus vertical control points, and creating a GIS application for iPhone and Android for reporting wild game numbers on the fly for the Michigan DNR website.

VIII. STUDENT REPORTS

M. NEWSLETTER – D. Lowell

1. Don presented the October 2014 newsletter he received via US Mail.
2. Evidently only a few people received this edition, and nobody knew of its origin.
3. Don suggested having a newsletter created and emailed out twice a year.
4. Steve Johnson agreed.
5. There were suggestions to send this out to High School offices, STEM students, etc.

N. MSPS ANNUAL CONFERENCE student presentation report – C. Shangraw

1. Carl updated the group on the 2015 project
 - a. The project included a laser scan of a large boat, and a graphic presentation.
 - b. The team included new freshmen, and was headed up by Forest G. and Cory.
2. Andrew Murphy of Gourdie-Fraser will provide a bottom hydro laser scan. The project is on schedule and will be presented at the 2016 conference.

O. STUDENT FEEDBACK – J. Fenn

1. John welcomed the students and committee members.
2. 12 students were present for the Thursday evening event, consisting of 3 seniors, 2 juniors, 4 sophomores, and 3 freshmen. Committee members included Rick Sauve, John Fenn, Bob Burtch, and Don Lowell.
3. A variety of topics were discussed, including the following:
4. The importance of differential equations.
 - a. The committee reinforced the need for this and other high level math courses and stressed the overall importance of committing to a strong math foundation.
 - b. The possibility of a dendrology course included in the program.
 - c. There is currently no room for any additional courses in the program. Students could consider this course as an elective or using another educational source.
5. What potential is there for obtaining a math minor?
 - a. This is possible but there are questions about the number of credits and courses allowed to be transferred from the Surveying/Engineering curriculum into the math minor.
 - b. This needs to be checked and verified and made a viable choice for students.
 - c. Dr. Thapa reported that the issue of a math minor is in the Senate now. He would suggest approval of including all surveying courses.
 - d. Included in the required courses were 8 credits of calculus, 3 credits for linear algebra, and 3 credits for differential equations.
 - e. Bob Burtch contributed comments to clarify details of the possible program.

6. How critical or important is having a foreign language in the future?
 - a. The Committee stressed that any foreign language would have value, and that nobody can predict what future skills will have value.
7. The students asked what potential “certificates” are options as a part of this degree program, i.e. GIS, Hydro.
8. Issues about classroom communication were discussed in some detail, including the use of all available technology, communication of appropriate and relevant examples of the subject matter, and more cutting edge applications of the subject matter.
9. Also, the focus on the student’s needs to be emphasized more, along with the student’s development, progression, education & knowledge, ultimately the professional future of each student.
10. Regarding course scheduling/prerequisites, it was discussed that possible credit be given for classes students took from another institution that were similar or identical to the FSU class.
11. While ABET criteria was cited as the main reason for strict interpretation and enforcement, more consideration and petition by the faculty was requested by the students.
12. What does the Committee want to see done with the program & what is important, moving forward?
 - a. Knowing the mathematics behind the machine is where it’s at. As well as, the technology and industry standards now are not likely to be significant to the final career paths of the current students.
 - b. Dr. Thapa suggested that any course credit other than the Capstone allows for a student to take a competency test to “clep” out.
 - c. Carl noted that the professors have control of the Surveying courses but not those outside of the program specific.
 - d. Dr. Thapa indicated that FSU will be retooling the general education and this may affect future coursework.
 - e. Carl reported that dendrology used to be a class. Perhaps a seminar would be useful, and also mentioned that there is an APP for this for smartphones.
 - f. Bob Burtch noted that he could see a disconnect between the faculty and the students.

P. **BURT & MULLETT** – G. Barsai, A. Cowley, C. Lamus, D. Lowell, R. Sauve

1. Organization updates – R. Sauve, A. Cowley
 - a. James O’Conner reported that Burt & Mullett had a record year at the golf outing, collecting over \$2,000.
 - b. The ice fishing event went well and expects a better future for this event.
2. Website development– C. Lamus
 - a. Link between Burt & Mullet and MSPS websites.
 - b. Gabor told the Committee that the website is almost done. A link will be emailed to Committee members – this will include a calendar of events.

- Q. **LAMBDA SIGMA** – *D. Bischoff, S. Johnson, C. Shangraw*
1. Organization updates – *S. Johnson, D. Bischoff*
 - a. Steve Johnson discussed that Lambda-Sigma started in 1974 at Purdue.
 - b. Steve believes that there are five current programs at colleges.
 - c. He would like to tighten the Lambda-Sigma program up – perhaps have a parenting group for oversight.
 - d. He also suggested that the FSU faculty get involved in “SAGIS”.
 - e. Dalton spoke about the organization – they have 8 new members this year.
 - f. They are scheduling a sample test as a fundraiser.
 - g. Carl pitched that the 20th anniversary of Lambda-Sigma is spring, 2016. He is planning a black tie event for this to be held in Grand Rapids at \$50.00 - \$100.00 per couple. Date and location to be determined and forwarded to everyone.
 - h. *D. Bischoff* gave the following details for the Wild Game Dinner: For the wild game dinner, “Mackinac” Bob will be the guest speaker. \$20.00 per ticket.
 - i. *D. Bischoff* also reported that the Tuesday meetings have had great attendance.

IX. **OLD BUSINESS**

R. **HANDBOOK** – *D. Dawson*

1. Debbie reported that the handbook is finished – photos are just being inserted and then it will be circulated to all Committee members.

S. **EXIT INTERVIEWS** – *J. Fenn*

1. John outlined exit interview procedures.
2. He passed out the final draft version for review and comment.
3. This will be handled electronically.
4. Chris asked what will happen to the data.
5. Principle input for this group and for the ABET report?
6. Steve Johnson suggested using this format and see how it goes – possibly revise as needed.
7. Several minor revisions were suggested.
8. Gil suggested shortening this form.
9. Carl suggested marking up this version with any comments and returning to Debbie for the final draft.

X. **NEW BUSINESS**

T. **ELECTIONS**

1. John announced that this Committee is open to new nominations.
2. No changes were made, and Gil made a motion to keep things as they are. 2nd by Matt.

U. ALUMNI RELATIONS

1. John related his recent visits to MTU.
 - a. John & Lynda were honored as Honorary Alumni.
 - b. There was a 3-day event that included various honors and awards.
 - c. Alumni groups raise money and give it to the college.
 - d. One group gave \$50,000. It seemed to be a competition.
2. Rick Mushing added that he is involved in several alumni groups and that fund raising is a normal part of that.
3. Matt suggested getting Advancement Operations involved in this process.
4. Matt will get John involved with Jeremy Mishler and Luke Wyckoff and will report back.

V. MEETING UPDATES

1. Advisory committee meeting was announced to be April 22, 2016.
2. Time and date of next Lambda Sigma meeting to be announced.
3. Tentative plan for the spring 2016 advisory committee meeting is as follows:
Friday, April 22, 2016
8:30 – noon: Advisory committee meeting
Noon – 1:00: Awards luncheon
1:00 – 2:00: Scholarship awards
2:00 – 5:00: Advisory committee meeting resumes – capstone projects?
6:00 – 8:00: Lambda Sigma dinner
4. Chris Lamus and Matt questioned the Thursday evening meeting with students. After discussion the group decided to leave it as it is for now and we could possibly change it at a later date.
5. Gil reported on the NCEES annual meeting, and noted a new scholarship starting in 2016.
6. Gil discussed the new NCEES testing procedures, and explained that out of 30 schools, FSU is #1 for 1st time success in taking the test.
7. Rick Sauve gave a salute to the students and faculty!

XI. ROUND TABLE

- W. Rick Sauve: Enrollment is up and things are more positive for numerous reasons. Success is breeding success and things are going in the right direction.
- X. Katy: Thank you for including her in the Committee's activities.
- Y. Sagar: Thank you for everybody's contribution and commitment.
- Z. Gabor: This is all good input. There are positive movements in the student's activities.
- AA. Chris Lamus: Glad that we have redefined the group to be better focused on our charges and duties.
- BB. Dr. Thapa: Did a show & tell on 3-D ellipsoid. Thank you for involvement and the computer donations.
- CC. Matt: Enjoy coming back to mingle with the Committee members. Gil & Chris, John & Lynda are a fantastic benefit to the program. Kudos to Katy for her scholarship and donations.
- DD. Bob Burtch: Started in 1979 after receiving degree at Ohio State. Spoke about Navistar and how that evolved into GPS. The faculty isn't always on the cutting edge, and we need "Emerging Technologies" subcommittee to keep FSU current and relevant. It is important to keep pushing.

- EE. Rick Mushing: Good to see what's going on here and is looking forward to bringing students to FSU.
- FF. Steve Johnson: Good discussions and involvement – sees good progress here.
1. Accreditation: We should be setting outcomes, enlisting input from industry, and encouraging further education.
 2. Resources: Scholarships do help – we should encourage this support. We need to review our lab resources and stay current.
 3. Long range planning and trends: We need to keep our pulse on what industry needs, plan for skills for the future, and for the skills for professional practice and leadership.
 4. Curriculum review: We need to monitor any changes and advise on the content of the program.
 5. Review: Graduate exit questionnaires should be done and placement data should be compiled and available for review.
 6. Alumni questionnaires should be done at rational intervals, along with employer's questionnaires, and licensing & registration data.
- GG. Carl: A sincere thank you for the financial resources pledged for the computers.
- HH. Gil: Pleased with the faculty direction. Believes that promoting joint certificates is good. Looking forward to seeing TWIST move forward at FSU.
- II. Mike: Enjoy being involved here. It is good to see the enrollment increasing. We need to look outside of Michigan for more prospective students. Enjoys the interaction with the students. He changed his career path after 30 years and cited the professors as making the difference for him. Looking forward to the spring 2016 meeting.
- JJ. Don: Good progress was made today in many areas. Optimistic with the potential moving forward.
- KK. Debbie: Thanks to everyone for an exciting group and experience.
- LL. John: Thanked Gil for his report on FSU being the #1 school for testing success. Thanked everyone for all of the computer donations and noted that everyone present is a super addition to this Committee. Looking forward to future conference calls and newly restructured subcommittees.

XII. **ADJOURNMENT**

- A. Motion to adjourn by Matt, 2nd Gil at 3:21. Meeting adjourned.