

NMSU
Mechanical & Aerospace Engineering (MAE) Academy
Working Meeting Summary
Nov. 1 - 2, 2023

Meeting Purpose:

The MAEA 2-day working meeting focused on improvements to the Aggie Innovation Space facility, the Learning Communities conditions and usage, new membership recruiting process, the Treasure's report, Mr. Tim Thompson's Scholarship setup process update, and the Industry Advisory Committee (IAC) Role and Structure.

Aggie Innovation Space Tour:

Members toured the Aggie Innovation Space which included various manufacturing capabilities; vertical lathes, Computer Manufacturing (CM) machines, laser-based inspection machines, and additive manufacturing. These Departmental capabilities will allow current and future students to have a good understanding of companies' development and production processes.

Update and ongoing support of Learning Communities:

Ms. Jimi Ickes gave the Academy an update on the Communities usage. 2022 fall semester usage was 1092 students, for 2023 fall semester, so far, usage is 1053 students, with many repeat users. Facility usage is required for scholarship students. There are 28 undergrad and 6 graduate student tutors working up to 20 hours per week. Ms. Ickes stated that she and her staff appreciate the Academy's financial support.

The College of Engineering has established three Calculus 1 and two Calculus 2 classes for engineers only, with a 70% success rate compared to a 40% success rate of relative classes taught by the Math Dept. Plans are in the works for establishing Calculus 3 classes.

New membership recruiting process:

The Academy discussed its process of how to identify and recommend qualified members. The membership has decided to allow non-MAE alumni to become MAE Academy members. It was proposed that the annual donation of \$500.00 be a "suggested" amount.

MAEA website update:

The old website was not functioning, the last time this website was active was in 2011. The website will change from a "calendar" year to the "Academic" year with respect to the inclusion of updated information. The Academy membership process will also be posted. The link to the MAEA donation sheet will be readdressed for inclusion onto the website. The IAC will post its information on the "chat" page of the website.

State of the MAE Department:

Dr. Young Lee, the Associate Department head presented the State of the MAE Department. Dr. Qiong Liu was welcomed as a professor of Aerospace Engineering. The current faculty consists of 4 full professors, 8 associate professors, one professor of practice (POP), 4 assistant POPs. The department is geared to hire two Aerospace professors, 2 ME POP, using recently legislated funding. 2023 fall semester enrollment decreased a bit.

State of the Engineering College:

Dean Reddi welcomed the group and thanks us for our dedication to the College. The Thomas & Brown Building \$25M obligation bonds were approved. The overall design and construction effort are \$10M short so, either the building design is cut, or more money is asked for from the State, mostly for building interiors. The University will ask for more money. Accreditation Board for Engineering and Technology (ABET); our college has done very well previously, and Dr. Reddi doesn't see any problems with the upcoming Oct. 2024 visit. Commitment to online programs; data shows a clear demand for online classes such as Engineer Management, Systems Engineer, and others.

The State of New Mexico assigned NMSU the “Global” responsibility (\$10M) to initiate certification classes to supplement engineer degrees. Dr. Reddi wants to move forward with accelerated MS degree programs with a focus in System Engineering, now part of the Industrial Engineering department and growing. Chatgpt; the College is struggling with this massive issue. The question is; what do colleges do to enhance brick and mortar environment vs. Chatgpt? Cheating is one of the major focuses of any college. Dr. Reddi suggested that knowing that Chatgpt can come up with answers to various questions, what if the student is given an answer relative to their studies (class work) so the student needs to can come up with the question, to get “test” credit?

The Tim Thompson Scholarship:

Mr. Thompson has established scholarships to entice engineering students to stay at NMSU for graduate school and maybe even stay within the State for their follow-on employment. NMSU & UNM will receive \$10K each, \$5K per semester, for 4 students. Preference to be given to New Mexico students.

Treasure’s Report:

As of October 2023, we have received \$20K of donations this year, biggest yet for the Academy. Average Academy’s annual funding commitment is approximately \$13k.

Industry Advisory Committee role & Structure:

- IAC supports ABET and represents the Academy to the ABET Engineering Accreditation Commission (EAC).
- The Student Appreciation Dinner questionnaire construct to abide with the ABET criteria.
- IAC membership: Candidates should be active within a company/organization. The IAC does not have a formal membership process that needs addressing.

Student organizations:

Atomic Aggies (Rocketry team), Baja Buggy (ATV Team), and Design-Build-fly (RC aircraft Team) are competition teams that compete against national and international Colleges. The focus is on teaching students research, design, manufacturing, reporting, business skills, competition, etc. It can also be a pathway for future employment. Each team presented an update of their designs and status of the competition activities.