

Inspiring Young Aerospace Professionals – The USC AIAA Process to Educate, Engage, and Retain

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I. Summary

Being a member of the AIAA is a valuable experience for young aerospace professionals to develop and grow their skills and network. However, the USC AIAA branch has struggled from a lack of initiative among members to participate in club activities and low membership numbers in recent years since the pandemic. As such, the decision was made to pivot on how club activities are structured, how to encourage membership, how to engage with and retain members, and how to source organizational funding. At the center of the organizational restructuring, a 5-year plan was established to base each of the coming semesters around for the activity and project planning, with the goal of launching the university's first Cube Satellite.

To encourage club membership, the first meeting of the fall 2023 semester was dedicated to talking about the benefits of membership. A strong focus was put on the scholarships available to undergraduate students, something that would far outweigh their \$30 investment into joining the national organization should they receive one. We took a daring approach to not charge anything for local club dues, which in the past had been \$20. This was because we wanted to stress the importance of national membership for both the student and the organization. In addition, an application and resume workshop were held for all to learn how to better their soft skills in applications. This proved to be a good hook for students to join, as this resulted in the largest USC membership drive ever of 30 new members.

Building on the 5-year plan, students needed skills for projects that they do not learn fast enough or in detail at USC, based on curriculum standards. We decided to permanently supplement this through the implementation of a semester long series of connecting workshops teaching students hard skills. These workshops started with manufacturing and testing composite laminates which are critical to aerospace structures. Students then learned beginner level skills within CATIA V5 CAD software which leads the industry and how to access it. Lastly, students learned how to design and simulate within Ansys CFD and how to validate results within a wind tunnel. While this year was a trial run, they will be implemented as mandatory courses for new members to attend to provide greater value to the organization and also receive value in return from their work on various projects. With the workshops being easily scalable, perfect for every growing aerospace first-year class of currently over 100 students, the skills learned through this process provide a jumpstart on helping students compete in AIAA's Design Build Fly.

With a goal of active engagement and retention, members were ensured heavy involvement in conversations and events at all times. In the past, USC AIAA only used GroupMe as the primary form of communication for events and meetings. However, people will put groups on mute for various reasons, decreasing the club's user involvement. Since we want to reach the most dedicated members, we made use of two other services: GarnetGate and Microsoft Teams. GarnetGate is a USC-hosted website for all student organizations, and allows for easy access to roster management, funding requests, and email announcements. Teams, while it is not used for peer-to-peer communications here, is a great software for recording meetings. All three of these software suites are used to announce and spread awareness of meetings, information, or previous meeting recordings to be as inclusive as possible for all students.

Membership retention was found to be heavily tied to financial incentives for students. This included free food, such as what was provided at the workshops, and free activities, like the AIAA Region II Conference. However, these things are difficult without membership dues. To solve this problem, we began making use of the connections available to the club through both the school and externally. Using industry partnerships, we have secured manufacturing materials like carbon fibers from Hexcel, and equipment to use for our workshops for which we do not charge members. Within USC, the student government finance committee exists to appropriate thousands of dollars to student organizations for activities. Multiple requests were sourced through them for event catering and attending the 2023 Small Sat conference at KSC. Similarly, complete funding for students to attend the Region II Conference was secured through the USC mechanical engineering department, meaning the largest cohort of USC students ever in attendance. These strategies implemented have, so far, proved highly beneficial to the club's survival and growth.

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