AIAA SDSU Student Branch History

Parham Khodadi,[a] Ava Cook,[b] Yuichiro Tobita,[c] and Xiaofeng Liu[d]
San Diego State University, San Diego, CA, 92182

The purpose of this paper is to convey the history of the American Institute of Aeronautics and Astronautics (AIAA) student branch at San Diego State University (SDSU) and to pay tribute to all those who made an impact on the club. The SDSU AIAA branch was founded in Spring 1963. AIAA has played a vital role in advancing the aerospace industry, promoting innovation, and fostering professional development and collaboration within the field. In San Diego, a city known for its rich aerospace and defense legacy, AIAA's presence has been particularly significant. Specifically, the SDSU AIAA chapter serves as a hub for students, engineers, researchers, professors, and industry professionals, supporting collaboration among members and with major aerospace companies. By organizing technical symposia, technical projects, student competitions, networking events, and educational outreach, AIAA at SDSU strengthens the region's leadership in aerospace technology and contributes to the development of a skilled and forward-thinking workforce. This student branch has faced many challenges over its long history on campus, and this paper highlights the people, events, and projects that have kept it going.

I. Nomenclature

AE	=	Aerospace Engineering
AIAA	=	American Institute of Aeronautics and Astronautics
SDSU	=	San Diego State University
SDSC	=	San Diego State College (later became SDSU)
SD	=	San Diego
ARS	=	American Rocket Society
IAS	=	Institute of the Aerospace Sciences
UCSD	=	University of California, San Diego
SDASM	=	San Diego Air & Space Museum

Fig. 1 Current AIAA SDSU Logo

[a]External Professional Outreach Officer, AIAA SDSU Student Section, Aerospace Engineering student, AIAA Student Member
[b]Social Outreach Officer, AIAA SDSU Student Section, Aerospace Engineering student, AIAA Student Member
[c]Graduate Coordinator, AIAA SDSU Student Section, Aerospace Engineering student, AIAA Student Member
[d]Associate Professor, Department of Aerospace Engineering, SDSU. AIAA Associate Fellow. Corresponding email: Xiaofeng.Liu@sdsu.edu

II. Introduction

The American Institute of Aeronautics and Astronautics (AIAA) is the world's largest aerospace technical society, representing more than 30,000 engineers, scientists, and students across government, academia, and industry. It was founded in 1963 through the merger of the American Rocket Society (ARS) and the Institute of the Aerospace Sciences (IAS), creating a unified platform for technical collaboration and research across the aerospace field. Since then, SDSU has been part of that journey. AIAA is deeply invested in student development. With more than 260 student branches worldwide [1], it offers opportunities for technical growth, networking, and leadership. These chapters support hands-on engineering through aircraft design competitions, rocket teams, conference attendance, and industry mentorship.

A. San Diego's Aerospace History

San Diego's contributions to American aerospace go back further than many realize. The city's aviation history began in March of 1884, when John J. Montgomery flew the first ever controlled flight in the United States from the rim of Otay Mesa [2–4]. In 1911, aviation pioneer Glenn Curtiss established a flying school at Naval Air Station North Island (NAS or NAVAIR), where he trained both Navy and Army pilots. His actions laid the foundation for the eventual designation of NAS North Island as the "Birthplace of Naval Aviation" [5].

In 1927, a San Diego-based company, Ryan Aeronautical, built the aircraft that Charles Lindbergh flew across the Atlantic. The airplane was called "the Spirit of St. Louis" [6, 7]. San Diego's aviation industry accelerated in the 1930s when Reuben H. Fleet moved Consolidated Aircraft from Buffalo, New York, to San Diego in 1935, beginning construction on the new plant two years earlier in 1933. The company later became known as Convair and played a significant role in American aviation history with aircraft such as the B-24 Liberator [8]. Over the decades, San Diego evolved into a major aerospace and defense center, home to military installations such as Naval Air Station North Island and companies including Rohr Industries (now Collins Aerospace), General Atomics Aeronautical Systems, Inc., and Northrop Grumman. These entities continue to shape the local aerospace workforce. SDSU has been closely tied to this legacy. Since 1964, its Aerospace Engineering program has trained generations of engineers who have gone on to work in both local and national aerospace sectors [9]. Organizations like AIAA help bridge the gap between university and industry by connecting students to this broader ecosystem.

B. AIAA

The merger of ARS and IAS in 1963 brought together expertise in aeronautics and astronautics, forming AIAA as a comprehensive professional society. In addition to advancing research and hosting technical conferences, AIAA has prioritized outreach to students through its global branch network [1]. These societies support extracurricular engineering experiences, such as Design/Build/Fly (DBF), participation in AIAA SciTech, and technical workshops. Many students engage with real-world aerospace work for the first time through these programs, gaining practical skills and exposure to the professional community.

C. AIAA San Diego

The history of the AIAA San Diego Section dates back to the early 20th century. The San Diego Section of the Institute of Aerospace Sciences (IAS) was likely established in 1940, with Stanley H. Evans serving as its first chair. In 1955, a separate San Diego Section of the American Rocket Society (ARS) was formed under the leadership of Krafft A. Ehricke [10].

In 1944, Reuben H. Fleet, then President of IAS, led fundraising efforts that enabled the San Diego Section to acquire its own building. This space later served as a shared venue for both IAS and ARS meetings until shortly after the organizations merged to form AIAA in 1963. The building was sold soon after the merger, but the professional section continued to grow and support the local aerospace community [11].

Interview insights from longtime AIAA San Diego Section leader Chris Root (Ref. V.B.7) show that the professional section had grown large and structured by the 1980s. He recalls the AIAA San Diego Section peaking at roughly 1,500 members, with volunteers spending evenings folding, stamping, and hand-labeling paper flyers at local restaurants such as Gordon Biersch before mailing them. Root noted that aspiring section chairs typically advanced through four or five officer roles—such as Secretary, Treasurer, Vice Chair–Technical, and Vice Chair–Planning—over six to seven years, under the informal guidance of an "Old Dead Chairs" council of past section chairs who advised current leadership and helped recruit future officers. He also observed that company affiliation sometimes influenced who was encouraged to run for chair. Beyond governance, Root recalled multi-month technical lecture series on topics such as advanced

manufacturing and CNC machining that offered continuing-education credit and were often company-sponsored, as well as periodic alumni panels featuring engineers five to ten years out of school who answered student questions about hiring and early-career training. Another alumnus, Dave Bradley (Ref. V.B.9), noted that by the late 1980s or early 1990s, five of the six officers on the AIAA San Diego Section executive committee were SDSU alumni, underscoring how deeply SDSU graduates had come to shape the region's professional aerospace community.

Today, the AIAA San Diego Section continues to play a vital role in connecting academic institutions with local aerospace professionals and companies. It supports student branches at SDSU and the University of California, San Diego (UCSD) by hosting technical talks, industry panels, and outreach events. The section has also provided mentorship and logistical support to SDSU's DBF and Rocket Project (RP) teams and continues to help students engage with national- and local-level AIAA activities. Recent student leaders such as Yuichiro Tobita have emphasized the importance of maintaining this connection. While serving as AIAA SDSU chair, Tobita re-established regular contact with the section by reconnecting with its officers at the 2023 Miramar Air Show, which in turn led to joint efforts. Tobita and his peers also sought to strengthen ties with the AIAA student branch at UC San Diego, coordinating shared events and competitions in the San Diego area which further broadened SDSU students' professional and social networks.

III. Founding & History

The AIAA student branch at San Diego State University (SDSU) took shape shortly before the Aerospace Engineering Department was founded in 1964. (Ref. III.A) The AE department was founded as part of the newly formed College of Engineering at SDSU. The available records suggest that AIAA SDSU emerged as a natural extension of SDSU's growing connection to the local aerospace industry [12, 13]. Our information was gathered from many sources, notably our interviews with individuals and *the Daily Aztec* archives [14].

A. Launch Era (1963-1980)

It is important to note that from 1935 to 1972, the university's official name had been San Diego State College (SDSC) [15]. In 1958, William H. (Bill) Shutts (Fig. 3) was voted professor of the year at the University of Texas at Austin. That same year, he was hired by SDSC to help usher in a new era [16]. By 1960, with help from the Rohr Aircraft Corporation, Bill Shutts masterminded the creation of the wind tunnel laboratory. This lab operated a closed-loop low-speed wind tunnel (Fig. 2) and a blow-down supersonic wind tunnel, and it was founded in the same year as the building that hosts it, the SDSC Engineering building [13]. The AIAA was then established nationally on 31 January 1963 [17] (Ref. II.B).

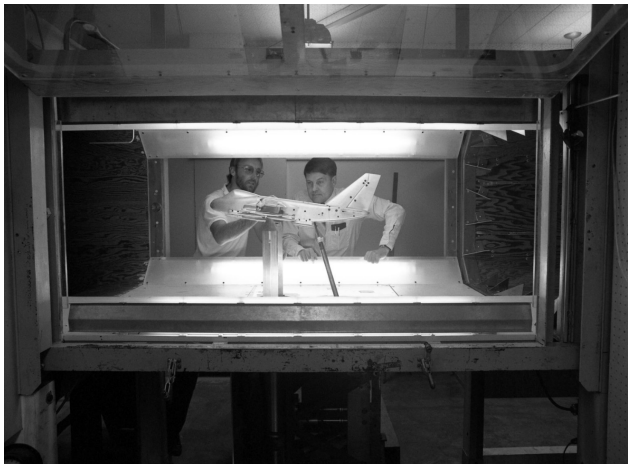


Fig. 2 SDSU Wind Tunnel (Image Property of SDSU)

The oldest evidence of the AIAA student branch at SDSU that we were able to find is surprisingly from the SDSU student-run newspaper issued on 7 May 1963.[a] In that newspaper, the AIAA SDSU student branch advertised a public screening of the film "Aeronautical Oddities." Although amusing to note that the student branch had to announce that the film was in color, more impressively, it mentioned an AIAA Auditorium in San Diego. The auditorium referred to here was likely in the ex-IAS building in San Diego that was sold in 1965 [17]. The newspaper article also mentions that the student branch will hold a student officer election at the same event. We believe this perfectly embodies the essence of the AIAA SDSU student branch in this early era—a student organization focused on professional development and on building a community.

The student branch operated for 1.5 school years before a significant new era began at SDSC in 1964. That year, the College of Engineering was formed with four departments. The Aerospace department was founded by Chairman Bill Shutts, together with professors John Conly and Sangiah Nadar Dharmarajan [13]. The conditions were perfect, and this was prime time.

[a] *The Daily Aztec*: Volume 42, Number 119

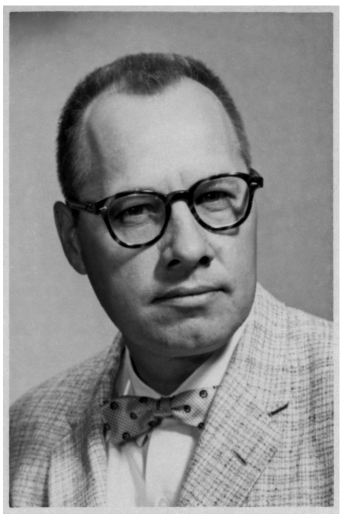


Fig. 3 Portrait of William H. Shutts, Engineering, 1960 (Image Property of SDSU)

Meanwhile, during the 65-66 school year, things were very much in motion for AIAA SDSC. Randy Seaver, who attended SDSU from 61 to 66, recalls being a student officer in this year (Ref. V.B.1). *The Daily Aztec*'s archives indicates interesting guest speaker events such as a talk by F. X. Marshall from Convair on the Lunar Landing Program[a] and Phil Bono, Assistant Program Manager for large launch systems at Douglas Aircraft Co., speaking on "Hypersonic Rocket Transportation - Beyond the SST?".[b] In the summer of 1966, undergraduate students Hermann Altmann (Ref. V.B.2) and Dwight Woolhouse (Ref. V.B.3) conducted flow field surveys over the low-speed wind tunnel, which resulted in the 1967 addition of flow conditioning screens within the tunnel chamber. They were both members of the AIAA SDSU student branch [18]. Hermann Altmann recalls that he and Russ Gustin were chosen to visit Stanford University to get acquainted with its AIAA student branch—the AIAA SD professional section paid for the flight.

The guest speakers and fun events continued. In October 1967, Alex Kiriaze of Ryan Aeronautical Co. spoke on composite materials and their aerospace application.[c] Later that same month, guest speaker Steve Tyler of General Dynamics Convair talked about "Low Speed Wind Tunnel Testing."[d] In Spring 1968, AIAA SDSU went on a field trip to design facilities at General Dynamics Convair.[e] At the end of the 67-68 school year, Bill Shutts stepped down as AE Department Chair, succeeded by John Conly [13]. Dr. John Conly (Fig. 4) was also elected Vice Chairman of the AIAA SD Professional Section for 1969-1970. Dr. Conly's summer gig was research and development for General Dynamics in San Diego.

The Fall of 1969 was a hectic semester for these students. AIAA SD professional section's 1969-1970 monthly membership indicates SDSC student count to be zero from May-Sep and 30 on Oct-May. An eight-person SDSC delegation of faculty and student leaders attended the AIAA Annual Meeting and Technical Display in Anaheim, CA. Wernher von Braun was a notable speaker at the event.[f] The SDSU AIAA student branch was very active that year: sending delegations to conferences, organizing technical writing contests, attending San Diego section dinners, and making field trips to aerospace installations like Edwards AFB. The faculty advisors of the student organization, John Conly and Robert McGhie (Ref. V.A.2), emphasized how AIAA membership gave students affordable access to professional events and industry leaders, while the branch maintained close ties to the 600-member AIAA San Diego professional section. Later that year, Assistant Professor Howard H. Chang spoke about the water table (Fig. 5).[g] The water table was funded by Rohr corporation to research in 2D thrust reversers for them. In November, sixteen SDSU aerospace students and two faculty (led by Dr. Robert McGhie and assisted by Dr. Andrew Crooker) visited Edwards Air Force Base as part of the AIAA Southern California regional meeting.[h] They examined the Lockheed C-5A transport and the Boeing 747 during flight tests, noting both their unprecedented size and engineering sophistication; they also saw newer military aircraft such as the F-111 and A-7D. These students wouldn't stop, as they came back and watched a film showcasing the General Dynamics F-111 Aardvark[i] and then another film showcasing the Boeing 747, alongside free coffee and doughnuts.[j] It is important to mention that coffee and doughnuts appear to make up the bulk of the complimentary refreshments in this era.

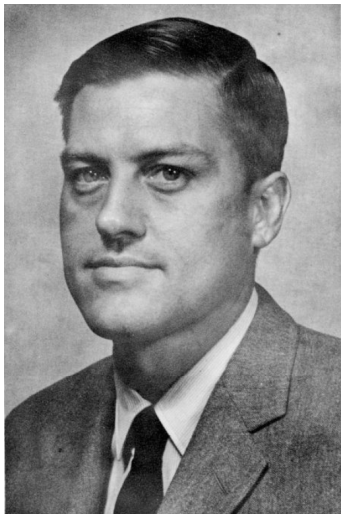


Fig. 4 Portrait of John F. Conly, Aerospace Engineering, 1980 (Image Property of SDSU)

[a] *The Daily Aztec*: Volume 45, Number 20; Issued: October 21st, 1965
[b] *The Daily Aztec*: Volume 45, Number 34; Issued: November 18th, 1965
[c] *The Daily Aztec*: Volume 47, Number 14; Issued: October 10th, 1967
[d] *The Daily Aztec*: Volume 47, Number 21-22; Issued: October 20th and 24th, 1967
[e] *The Daily Aztec*: Volume 47, Number 97; Issued: April 23rd, 1968
[f] *The Daily Aztec*: Volume 49, Number 22; Issued: October 28th, 1969
[g] *The Daily Aztec*: Volume 49, Number 33; Issued: November 18th, 1969
[h] *The Daily Aztec*: Volume 49, Number 40; Issued: December 3rd, 1969
[i] *The Daily Aztec*: Volume 49, Number 45; Issued: December 11th, 1969
[j] *The Daily Aztec*: Volume 49, Number 56; Issued: January 14th, 1970

A guest speaker from the Pratt & Whitney Aircraft Company spoke in February, a joint event with ASME on campus.[a] The crew finished the school year strong with films of Cape Kennedy Spaceport and a general meeting to discuss club projects and activities.[b]

Fig. 5 Engineering water table test. Howard Chang, Assistant Professor of Aerospace Engineering on the right. The table is on loan from Rohr Corporation as part of an industry/school co-op project. (Image Property of SDSU)

The following school year (1970-71), they hosted another speaker jointly with ASME, where the topic of "American Manned Space Exploration, Skylab/Space Shuttle" was discussed.[c] Then the students watched "Transonic Flight" and "Beyond the Speed of Sound".[d] In Spring of 1971, the Student Engineering Research Committee (SERC) at SDSU organized a successful fundraiser, thanking faculty (notably Dr. Howard Y. Chan), staff, student engineering societies (ASME, SAE, AIAA, ASCE, IEEE), and the campus community for their support.[e] They raised about $800 above the cost of the car used in the fundraiser; the proceeds were pledged for student grants and projects through SERC. The committee emphasized that the event's success was due to broad participation from faculty, students, organizations, and donors, reinforcing the culture of collaboration between AIAA and other engineering societies at SDSU. The end of the 1970-71 school year marked the succession of John Conly by Nadar Dharmarajan as AE department chair [9]. Dr. Dharmarajan was passionate about teaching aircraft structures, especially energy methods. He taught energy methods one summer to Ryan Aeronautical engineers. AIAA SD professional section's 1970-1971 Monthly Membership data lists SDSC student count to be 30 during May-Oct, 31 during Nov-Feb, and 15 during Mar-May.

In the year 1972, with the induction of President Brage Golding, SDSC became California State University, San Diego, and then San Diego State University (SDSU) two years after [15]. Later, at the end of the 1972-73 school year, Professor Howard H. Chang switched to the Civil Engineering department. In his time in the AE department from 1967 to 1973 [9], Dr. Chang contributed immensely to both AIAA SDSU and AIAA SD professional section (Ref. V.A.1).

In 1974, Robert McGhie became the AE department chairman. Among Dr. McGhie's most notable accomplishments, it was during his time as chair that the AE undergraduate program at SDSU became accredited [9]. The student section once again lured students to an organizational meeting with complimentary coffee and doughnuts.[f] AIAA San Diego Professional Section Membership sheet from 1974 mentions SDSU faculty Dr. Robert D. McGhie (Publicity & Community Relations Officer), Dr. Balbir Narang (SDSU Facility Representative), and William H. Shutts. SDSU student members were also listed: Sergio Carrion, Tsvi Z. Gassner, Albert P. Klukas, James Newhall, William W. Wood, Wallace S. Halliday, David W. Peters, and Michael V. Stratton.

The Spring term of 1977 was eventful. *The Daily Aztec* archives show our first indication of a technical project by the club. The students even had designated workdays when they met to work on the project.[g] The chapter undertook the task of completing a partially built wooden Turner T-40A two-seat airplane that had been donated to the department by retired aircraft mechanic Conrad Klement.[h] Students worked step-by-step under the technical guidance of Ladislao Pazmany (part-time instructor and well-known aircraft designer), adding controls, engine mounts, wings, and landing gear, with plans for later avionics and instrumentation. The project was open to all interested students (no prior aeronautical experience required - just woodworking skills and enthusiasm), reflecting AIAA's role in giving students hands-on construction and design experience beyond the classroom. This two-seat airplane, however, was only a glimpse of the

[a] *The Daily Aztec*: Volume 49, Number 66; Issued: February 20th, 1970
[b] *The Daily Aztec*: Volume 49, Number 116A; Issued: May 6th, 1970
[c] *The Daily Aztec*: Volume 50 Number 30 & 31; Issued: November 6th & 10th, 1970
[d] *The Daily Aztec*: Volume 50 Number 39; Issued: November 25th, 1970
[e] *The Daily Aztec*: Volume 50 Number 91; Issued: April 2nd, 1971
[f] *The Daily Aztec*: Volume 54 Number 17; Issued: September 27th, 1974
[g] *The Daily Aztec*: Volume 56 Number 67; Issued: February 2nd, 1977
[h] *The Daily Aztec*: Volume 56 Number 71; Issued: February 9th, 1977

technical future of AIAA SDSU.

1978 was a lively year for the AE department, and AIAA SDSU felt its effects. John Conly returned to his role as the Department Chair in 1977 [9]. Due to the number of Engineering Mechanics courses offered, the AE department was renamed to the "Department of Aerospace Engineering and Engineering Mechanics." Notably, CAPT George Faulkner joined the department to teach Design and Flight Mechanics. During World War II, CAPT Faulkner completed his degree in an intensive two-year program that effectively ran like an academic "boot camp," condensing the curriculum and eliminating many traditional General Education requirements. Nils Sedano (Ref. V.B.18) emphasized that Faulkner's student days reflected an older academic model built around hands-on work and informal apprenticeships; students might spend hours in a machine shop while simultaneously learning theory in the classroom. This structure had largely disappeared by the 1980s. Everyone we interviewed who was at SDSU while CAPT George Faulkner was here also spoke highly of him. He is a legend for AIAA SDSU and the AE department, and he deserves a proper biography (Ref. V.A.4).

Fig. 6 Unidentified members of AIAA SDSU pose outdoors for a group portrait. (Image Property of SDSU)

Overall, AIAA SDSU was core part of the AE department experience in the 1970s, as can be seen in Fig. 6.

B. Altitude Ceiling Era (1980-1992)

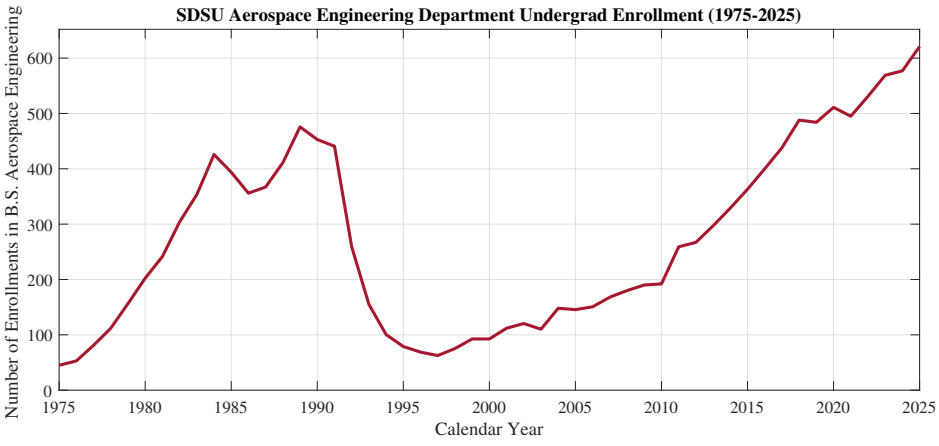


Fig. 7 Student enrollment in the AE department. The 1980s were a local peak for the AE department at SDSU, which is why AIAA SDSU's participation was also bolstered. A dip in enrollment, then a steady climb, can be observed from the 1990s onwards.

The department showed growth in the 1980s, as is evident by its undergraduate enrollment in Fig. 7. Former AIAA SDSU student member Chris Root (Ref. V.B.7) recalls that the early 1980s were filled with monthly or lunchtime

student branch meetings with industry speakers. They provided critical exposure to developments in aerospace before the Internet era. Upperclassmen leaders like Doug Fronius (Ref. V.B.4) and Alfredo Ramirez (Ref. V.B.5) mentored younger members and helped organize events. A notable technical project is when the Sigma Gamma Tau Aerospace honors society built a 12-foot wingspan Remotely Piloted Vehicle (RPV).[a] Chris Root remembers AIAA and Sigma Gamma Tau students gathering in the wind-tunnel lab in the Engineering Building to work on the RPV, underscoring how tightly intertwined the honor society and AIAA SDSU were at the time. Christine Probett (Ref. V.B.8), who later served as president of Sigma Gamma Tau, recalled that much of her formal leadership energy went into the honor society, even as its activities and membership overlapped heavily with those of AIAA SDSU. They received direct support from NASA officials, who provided technical guidance and shared knowledge from their own RPV program. The support enabled students to visit Edwards AFB to see the Space Shuttle *Challenger* land and tour aerospace facilities. Fronius traced his own job offer from NASA's Dryden Flight Research Center (now Armstrong) directly to contacts made during that AIAA trip to Edwards, illustrating how student branch activities could translate into immediate early-career opportunities. Alfredo Ramirez was involved in this project, and Doug Fronius recalls leading the project. The project produced an AIAA paper that they presented at an AIAA conference, possibly in Los Angeles. This RPV effort is now regarded as a predecessor to SDSU's Design/Build/Fly (DBF) tradition; now officially known as SDSU Aztec Aerospace Design. Doug Fronius recalls that joining AIAA "seemed like the thing to do" for an engineering student interested in Aerospace.

The Spring of 1983 was eventful for the AIAA SDSU student branch and the SD professional section. SDSU hosted the AIAA Region VI Student Conference.[b] Roughly 80 students from CA, WA, OR, and AZ presented their research papers. The conference provided students, especially AIAA SDSU students, with opportunities to network with professionals from major aerospace companies. Local AIAA chapter president Lowell Mitch highlighted how the conference provided students with professional exposure, though he noted that SDSU students faced tougher job prospects and curriculum concerns. The event was co-sponsored by San Diego AIAA and industry partners (General Dynamics, Rohr, Lockheed, Rockwell, Douglas, etc.), each of which contributed funds. Chris Root also recalled memorable talks from a Lockheed Skunk Works engineer on SR-71 thermodynamics and a speaker on the C-17 transport program, which gave students a rare window into cutting-edge aircraft under development. The valuable talks showcased the strong student–professional–industry partnership.

At the end of the 82-83 school year, the Reuben H. Fleet scholarship began. It was managed by the AIAA SD Professional Section, which provided financial support to students in the region. The program was named after San Diego Air & Space Museum (SDASM) Hall of Fame inductee and American aviation pioneer, Reuben H. Fleet [19]. The San Diego Foundation managed it. The earliest SDSU recipient of this award was Brian Trexel. Brian attended SDSU in the early 1980s, received the scholarship for the 82-83 school year, and graduated with a Master's degree in Mechanical Engineering. The scholarship is still administered by the San Diego Foundation and awarded each year by the AIAA SD professional section. (Full list found on Appendix C)

In the same era, AIAA SDSU also worked on a hands-on project. There is evidence of a two-seat gyrocopter project underway. In *the Daily Aztec* of Fall 1983, Vice President Roger Thomas of AIAA SDSU was hopeful that it would be completed, as it was already a multi-semester project at that point.[c] They were encouraging students from all majors to participate. Club president Remo Ottone was also promoting field trips and projects as ways to make engineering "fun" and break stereotypes, all while connecting students with industry. That same term, AIAA hosted an unnamed guest speaker from General Dynamics to discuss Manned Military Aircraft.[d] Related to General Dynamics, this is the semester when Geoffrey Butler, then an Engineering Specialist at General Dynamics' Convair Division, started his Master's in AE at SDSU as a working professional. He recalls joining AIAA SDSU and attending guest lectures, though his heavy work commitments limited his involvement. He has since been an active AIAA member and was a chairman of AIAA's Missile Systems Technical Committee, in which he remains an active member [20] (Ref. V.A.11).

Spring 1984 brought many new things for AIAA SDSU. The student branch held a lecture on "Potential Roles for Tethering in Space".[e] In late February '84, guest speaker Bill Chana held a lecture on General Aviation Design.[f] Bill Chana is an important figure in San Diego aeronautical history, receiving the AIAA National Distinguished Service Award in 1973 and being named an AIAA Fellow in 1993. He is honored in the SDASM Hall of Fame [21]. They

[a] *The Daily Aztec*: Volume 64, Number 51; Issued: April 12th, 1983
[b] *The Daily Aztec*: Volume 64, Number 60; Issued: April 25th, 1983
[c] *The Daily Aztec*: Volume 65, Number 29; Issued: October 6th, 1983
[d] *The Daily Aztec*: Volume 65, Number 34; Issued: October 13th, 1983
[e] *The Daily Aztec*: Volume 66, Number 8-10; Issued: January 31st-February 2nd, 1984
[f] *The Daily Aztec*: Volume 66, Number 22; Issued: February 21st, 1984

finished the year off strong with guest speaker Frank Eckhart from NASA Aeronautical Research,[a] a trip to Rutan Aircraft Factory (now known as Scaled Composites) in Mojave, CA,[b] guest speaker Tom Price from Eipper Ultralight Company,[c] and an unnamed guest speaker from NASA.[d]

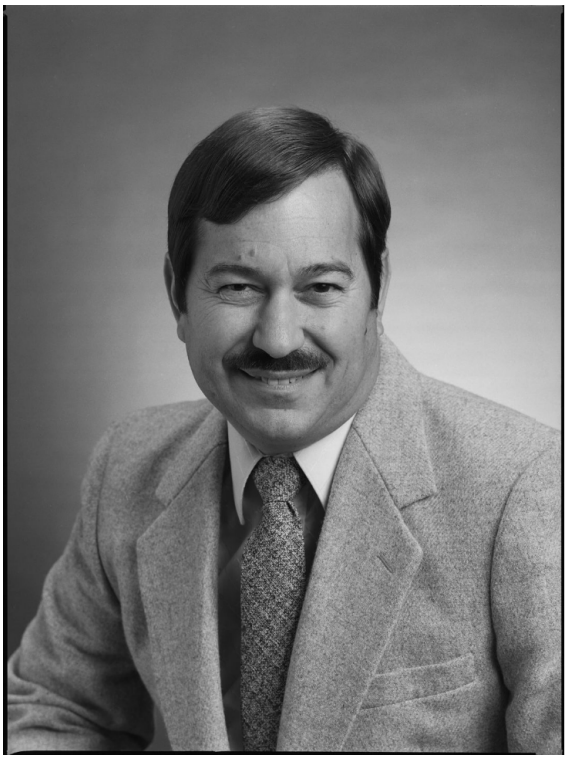
The fall semester of 1984 was alright as well. The semester began with an annual "Take-off" party.[e] There were really no other mentions of a take-off party, but calling it annual indicates that this school year starter party might have occurred in other years. There was also an unnamed guest speaker from the Lockheed Corporation in November.[f]

Dave Bradley (Ref. V.B.9) recalled when he attended SDSU from 1982 to 1988, the Aerospace department was an impacted program. Students were forced to "crash" classes due to limited scheduling systems. Despite these numbers, Christine Probett (Ref. V.B.8) recalled that most Aerospace students were still connected to AIAA SDSU. It wasn't all that bad, though, as most people we interviewed from this era (namely Chris Root, Christine Probett, and Dave Bradley) recall Friday keggers, pizza gatherings, and burger grilling in the lot behind the Engineering building. Bradley recalled that the engineering college received explicit permission from the administration to serve kegs at these Friday events because, in their view, the engineers were "the most responsible ones," in contrast to the business students. During the Burger Burns, students staged an annual egg-drop competition, in which teams designed carriers to protect a fresh egg dropped from the roof of the Engineering building. Chris Root (Ref. V.B.7) described these informal gatherings as a social anchor for the program. He also recalled a Top Gun-themed AIAA T-shirt fundraiser in which students held a design contest featuring F-14s (Fig. 8). Chris Root's artwork ultimately appeared on the back of the shirt, while his friend Greg Finch designed the front.

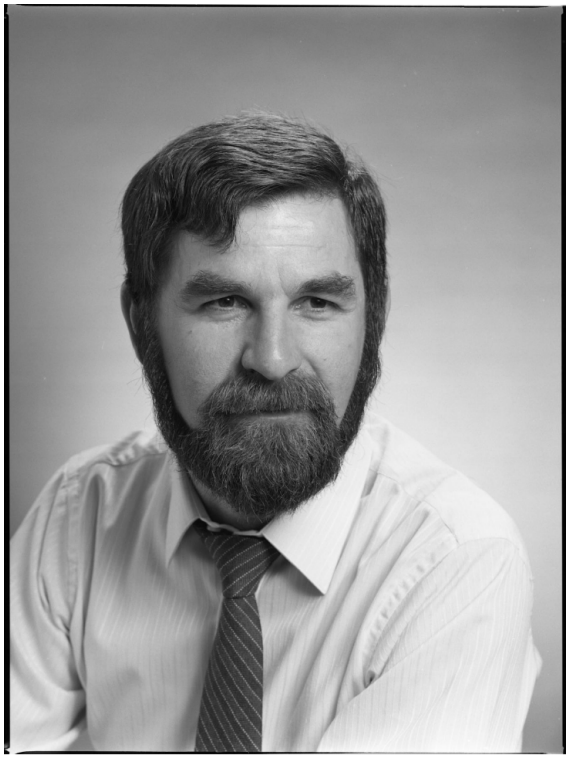
Fig. 8 AIAA T-shirt designs

At the peak of the Cold War, the Aerospace industry was thriving, including San Diego and its Aeronautical significance. Rich Gunderson (Ref. V.B.12) recalls that CAPT George Faulkner began advising the student chapter in the mid-1980s. CAPT Faulkner would regularly attend AIAA SD professional section meetings, bringing AIAA SDSU officers with him. Chris Root recalled that CAPT Faulkner treated guest-speaker coordination as a business interaction: students were expected to make the initial phone call themselves, follow up with a formal invitation letter, and then host the speaker for lunch using club funds. This ritual both thanked the speaker and gave students structured practice in professional communication and networking. Although AIAA SDSU was already linked to AIAA SD, CAPT Faulkner tightened the relationship so well that we still feel his impact today. Around the same time, in 1985, the Aerospace department selected Allen Plotkin, (Fig. 9a) an established fluid dynamics professor from the University of Maryland, as the next chair [9]. Traditionally, department chairs rotated internally before him. Dr. Plotkin was one of the first chairs hired from the outside. One year later, in 1986, Joseph Katz, (Fig. 9b) then a Senior Research Associate at NASA Ames, was hired as an AE professor (Ref. V.A.8). He has not only been an invaluable resource for AE at SDSU but has also had a considerable impact on NASA, motor racing, and AIAA.

[a] *The Daily Aztec*: Volume 66, Number 37; Issued: March 13th, 1984
[b] *The Daily Aztec*: Volume 66, Number 49; Issued: March 29th, 1984
[c] *The Daily Aztec*: Volume 66, Number 63; Issued: April 26th, 1984
[d] *The Daily Aztec*: Volume 66, Number 67A; Issued: May 3rd, 1984
[e] *The Daily Aztec*: Volume 67, Number 8; Issued: September 12th, 1984
[f] *The Daily Aztec*: Volume 67, Number 48; Issued: November 8th, 1984



(a) Allen Plotkin, Aerospace Engineering, 1987



(b) Joseph Katz, Aerospace Engineering, 1987

Fig. 9 (Images Property of SDSU)

In 1987, Stig Johansson (Ref. V.A.10) was hired as the Technician for the AE department [9]. He proved to be an irreplaceable asset to the university and a resource for the students, being able to "design and build anything mechanical, electronic, or computer-driven" [13]. Also in 1987, Professor Joe Katz (Ref. V.A.8) upgraded the wind tunnel lab and, with the same grant, purchased the first AE department computer [13]. The MicroVAX computer, paired with the Scanivalve DAQ, recorded wind tunnel data acquisition from 1988 until 2002, which proved an invaluable resource to students writing papers for AIAA at the time. Fronius, who worked at Scanivalve Corporation during his graduate studies, noted that the pressure-scanning equipment installed in SDSU's tunnel was essentially the same system he had helped develop, further tightening the link between local industry and the campus laboratory.

Guest speakers remain the highlight of AIAA SDSU's professional development opportunities in 1987. They hosted Stewart Cochran, who spoke on Experimental Aircraft Association activities.[a] Waynor Rogers, fighter aircraft pilot of the U.S. Marine Corps, was a guest speaker as well.[b] SDSU and AIAA SDSU alumni, Doug Fronius and Alfredo Ramirez, returned to talk about Teledyne Ryan.[c] And for the space enthusiasts, Gregory Ruffon spoke on "The Challenge of Interstellar Flight".[d]

The late 80s were a local peak of the AE department enrollment (Figure 7). In 1988, a freshman at SDSU named Jordan P. Evans heard about AIAA SDSU in AE 123, the introduction class to professional aerospace engineering. He was a member for all five years he spent at SDSU (Ref. V.B.11). He recalls that AIAA students supported faculty projects, such as Professor Katz's ground-effect project for the Mazda GTP. They also assisted wind-tunnel instrument calibrations for America's Cup sailing competition teams. Finally, in the 89-90 school year, SDSU started the joint Ph.D. in Aerospace Engineering program with UCSD [13].

In the early 90s, Jordan Evans recalls small cohorts of about 15-20 graduates from the AE department. Demand for Aerospace Engineering then declined following the end of the Cold War. Low job availability led to a sharp decline in enrollment, evident in Figure 7. Only two students received job offers immediately after graduation in 1993. Dr. Mike

[a] *The Daily Aztec*: Volume 71, Number 43; Issued: October 28th, 1987
[b] *The Daily Aztec*: Volume 71, Number 51A; Issued: November 9th, 1987
[c] *The Daily Aztec*: Volume 71, Number 58; Issued: November 18th, 1987
[d] *The Daily Aztec*: Volume 71, Number 66-67; Issued: December 2nd-3rd, 1987

Vest similarly noted that when he completed his B.S. in 1991, the aerospace downturn was so severe that he could not find an industry job, which pushed him into SDSU's graduate program rather than directly into the workforce. Jordan Evans recalled that AIAA SDSU and Sigma Gamma Tau also organized informal co-ed flag football games on Friday mid-afternoons, often followed by pizza at the original Woodstock's near campus, which extended that same sense of community beyond the engineering courtyard. He also remembers that in 1992, roughly 10 to 15 SDSU students carpooled to the AIAA Region VI student conference at the University of Arizona in Tucson to present papers, showing that the branch remained active on the regional stage even as the job market softened. On a separate note, AIAA SD Membership sheet mentions the following SDSU professors: Dr. Asfaw Bayene, Dr. John F. Conly, CAPT D. G. Faulkner Jr., Dr. Constantin S. Lyrintzis, Dr. Robert D. McGhie, Dr. Balbir S. Narang, Dr. Nagy S. Nosseir, Dr. Mauro Pierucci, and Prof. Kuo C. Wang. That shows faculty involvement in the local section.

C. "Houston We Have a Problem" Era (1992-2000)

Fig. 10 Students and Faculty protesting. ***More info in supplemental material.***

1992 marked the beginning of a rough period for the Department of Aerospace Engineering at San Diego State University. In fact, many believed it would be the end of our beloved department. In May of this year, it was announced that the AE department would no longer exist. Due to massive budget cuts, President Thomas B. Day, SDSU president of the time, alongside Dean of Engineering George Craig, decided to eliminate the AE department along with 183 faculty members,[a] which included all of the AE faculty. This was supposed to take effect the following year, allowing the seniors at the time to earn enough credits to graduate. During this anxious period of waiting for the inevitable end, many began standing alongside the AE department, trying to persuade President Day to reconsider his decision. Management of the local aerospace industries and naval bases, alumni and other faculty members, AIAA national and Region VI officers, and even the present mayor, as well as regional and state legislators, supported the efforts to reverse the President's decision and keep the SDSU AE department alive. Students like Jordan Evans recall being at protests

[a]Found in a letter from Dr. Nagy Nosseir to Mr. Terry Stockham

against the closure and carrying banners reading “Aerospace Will Not Fall” (Ref. V.B.11 and Fig. 10 & 11). By the end of 1992, President Day finally rescinded the layoff call and the elimination of the AE department [13]

Fig. 11 Mural painted by AE students and faculty in protest.

However, this initial decision and all the ruckus it created were truly devastating for the department. The drive and spirit of the group were dimmed, and the prospect of the AE department’s future elimination was not encouraging to new students. In fact, it wasn’t until 1994 that the program admitted new students. Dr. Mike Vest (Ref. V.B.10) recalls that his own 1991 graduating class in Aerospace Engineering was incredibly small. Still, by 1992–1993 (when Dr. Vest was at grad school), he remembers the AE graduating cohort shrinking, as many classmates were scared out of aerospace engineering altogether. Enrollment dropped from hundreds to fewer than 100 students in the matter of a few years. Many thought that, from 1994 onward, the AE department would begin its recovery journey and hopefully return to the golden years it once experienced. However, the College of Engineering faced yet another hardship. August 15, 1996, would be another day to remember as it was the day three beloved engineering professors were shot and killed by Frederick Davidson, a graduate student in the ME department, who was preparing his thesis defense [22]. This tragedy affected the entire university and many families. (Fig. 12) The tragic loss of Costas Lyrintz, an AE professor, was a major setback for the department of aerospace engineering. Due to the 16-year hiring gap [9], he was the only junior faculty member at the time.

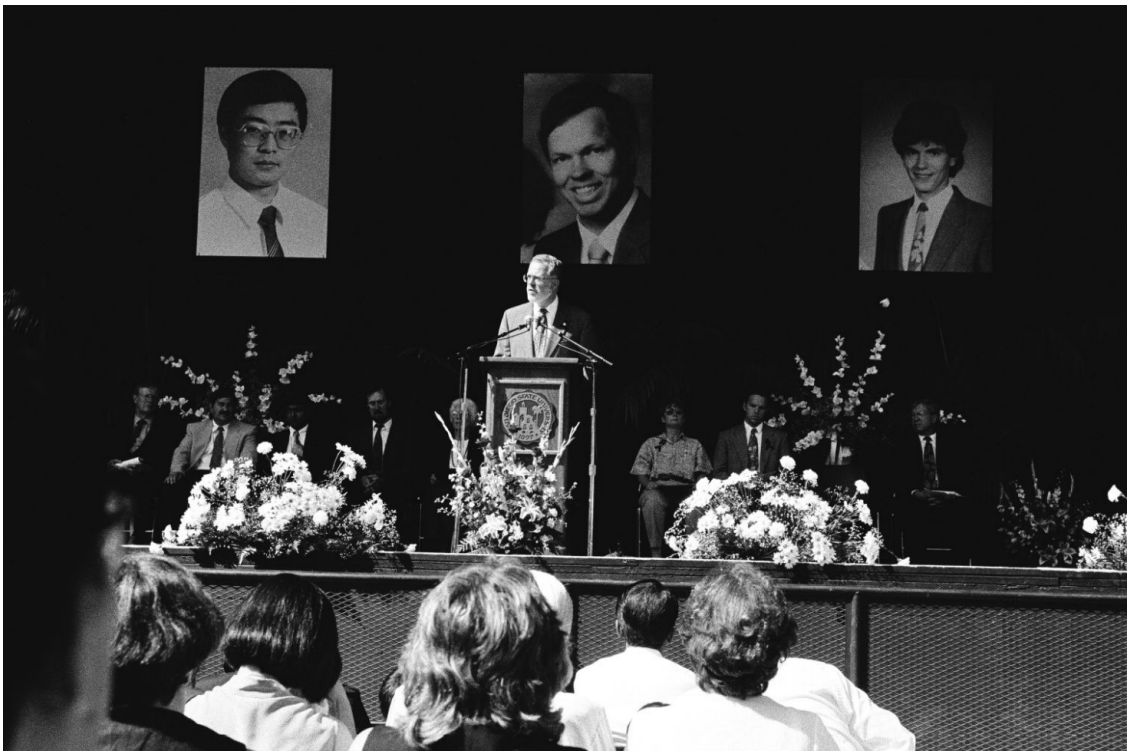


Fig. 12 Campus Memorial Service for doctors Liang, Lowery, and Lyrintzis, 1996 (Image Property of SDSU)

Throughout all of this chaos and hardship, AIAA remained. Although small due to the loss of student admissions, AIAA stood together as a close-knit group, and the meetings became the near entirety of the aerospace engineering department. Throughout these years, the student branch persevered and, in fact, under the leadership of (now Dr.) Mike Vest, the SDSU branch, earned an Outstanding Student Branch Award.[a] (AIAA SDSU also won other awards in this

[a]AIAA Region VI Awards, 1994-1995

decade, photographed in Fig. 13) Mr. Vest even claims that AIAA served as a conduit linking students, faculty, alumni, and industry professionals to support activism, sustain morale, and provide visibility. It remained the default hub for nearly all aerospace students and truly created a community during such hard times. While it originally served as a professional/social club, it became the program's lifeline during this time. Continuing to foster hands-on projects and regional conferences, AIAA kept students motivated and in higher spirits. By the late 1990s, the department appeared to be making a recovery, especially with the help of faculty such as Dr. Katz, Dr. Plotkin, and CAPT Faulkner, who remained strong mentors to students. Dr. Katz and Plotkin are both taking charge and serving as the Chairs of AE, leading the aerospace department on a new path. Meanwhile, CAPT Faulkner, although already retired, served as the bridge between the SD professional AIAA section and the students. By 2000, the efforts of everyone in the AE department and the AIAA had built enough momentum and morale for the department to begin recovering.

(a) AIAA SD Outstanding Contribution to AIAA Region VI Award (1999–2000)

(b) AIAA Outstanding Student Branch of Region VI Award (2000–2001)

Fig. 13 Some awards given to AIAA SDSU student branch.

D. Recovery Era (2000-2015)

Although many people thought that the calendar turning from 1999 to 2000 would bring chaos and catastrophic events, for AIAA and the AE department, 2000 brought new beginnings and signs of growth. We finally seemed not only to be digging ourselves out of the rut the previous years put us in, but also for AIAA and its aerospace students to be working incredibly hard to rebuild the SDSU AE name. This year marked AIAA's transition from survival guide to national competitiveness. Efforts led by Rich Gunderson, student chair for 1999/2000, Chad Berman, 2000/2001 chair, and Tim Lo, 2001/2002 chair, would bring the 2000 AIAA Region VI student paper competition to Old Town, San Diego, for April 7-9. (Ref. V.B.12, V.B.13, V.B.16) The second time SDSU would host such an event, it was a big event for AIAA at the time, as it brought participation from schools across AIAA Region VI and provided visibility for the newly recovering aerospace department, as Chad Berman stated. These students worked closely with the San Diego branch and collaborated with the SDASM, thereby renewing ties between students and professionals. Gunderson notes that classmate Tim Lo took the lead on much of the conference legwork and recalls a welcome event at the SDASM

where visiting students were allowed to wander the exhibits after hours while the museum was otherwise closed to the public—a memorable way to showcase both San Diego's aerospace heritage and the revitalized SDSU branch. During this same period, Berman recalls grilling burgers and selling sodas outside the Engineering Building to raise funds for AIAA activities, sponsoring an on-campus egg-drop competition, and even helping organize a social ski trip to Big Bear that doubled as both a fundraiser and a way to strengthen the AIAA community. Beyond the convention SDSU hosted, our students were encouraged to keep writing and submitting AIAA papers. Many even began winning regional and national AIAA paper competitions, including Chad Berman, who placed first at the 2003 AIAA Foundation International Student Conference Awards for his paper on Static Thrust Study of an Airboat Propeller [23]. While presenting this work at the AIAA student conference in Reno in 2003, Berman had the opportunity to meet Dr. John D. Anderson, author of *Fundamentals of Aerodynamics*. In the AIAA SD meeting notes,[a] AIAA SDSU student chair Katherine Miller states that most student activities were canceled due to the Cedar Fire that started on October 25, 2003 [24]. Miller told the meeting that AIAA SDSU members were helping organize food and goods programs for fire victims.

It's important to mention that the early to mid-2000s were a time of active recovery. Nils Sedano (Ref. V.B.18), who graduated in the late 2000s, recalled that his Aerospace Engineering graduating class consisted of only eleven or twelve students, meaning that AIAA membership covered a substantial fraction of the cohort. That constraint sometimes produced strange academic sequences: Sedano noted that, due to scheduling difficulties, he was forced to take AE 123, the introductory Aerospace Engineering course, during his senior year. When Dr. Gustaaf Jacobs (Ref. V.A.13) and Dr. Satchi Venkataraman (Ref. V.A.12) began teaching 300-level courses, there were fewer than 10 students per class and only two M.S. program students. Meanwhile, Dr. Joe Katz was supervising two Ph.D. students jointly with UCSD. When the stock market crashed in 2008, the AE department coincidentally saw a surge in student enrollment. Luckily, Dr. Luciano Demasi (Ref. V.A.14) was hired that same year [9], and he helped the program further. Finally, by the time Dr. Xiaofeng Liu (Ref. V.A.15) arrived at SDSU in 2014, Dr. Jacobs recalls that the junior class had grown to at least 40 students, along with a "critical mass" of Master's students. The program grew exponentially, so that by the time Dr. Ping Lu (Ref. V.A.16) was hired as the AE department chairperson in 2016, there were 80 junior-level students. By this time, many faculty members had retired (notably Dr. Nagy Nosseir in 2015), pushing the department to revitalize the program through younger hires and to champion research.

Fig. 14 Alumni Chris Root leading an AIAA SDSU tour of NAVAIR while serving as Field Trip Coordinator for AIAA SD.

This wasn't only an era of recovery for the AE department, but it was also an era of revitalization for SDSU's DBF group. The SDSU's DBF team was founded in 1997 after the inaugural Design Build Fly competition in 1996, but after failing to qualify for the 1998 competition in Wichita, the team entered a short lull [25]. There seemed to be no team or intent to submit a design for the next couple of years. That was until the Fall of 2000, when members of the AIAA Chapter at SDSU decided to take part in the Design Build Fly competition once again. Fundraising began, designs were underway, and, with the help of Chad Berman, the SDSU DBF project secured a spot in the next competition. Berman later recalled that when some of the 2001 senior leaders briefly walked away from the project, he feared DBF might never regain donor trust or funding—an anxiety that pushed him to rally younger students, keep building the airplane, and make sure SDSU showed up on the flight line. This resurgence of effort truly marked the start of one of SDSU's strongest engineering clubs. The AIAA SDSU chapter invited many guests to give talks to the students. Among those were Bill Chana, who spoke about experimental general-aviation projects—including his tiny "Wee Bee" airplane, which he described as being ridden almost like a motorcycle—and later about his Triphibian Project. Other speakers included a Top Gun instructor pilot; a young, energetic NASA-affiliated scientist who also advised Hollywood

[a]AIAA SD Minutes, November 12th, 2003

Fig. 15 SDSU AIAA student body 2009

productions such as Star Trek on orbital mechanics; and several NASA engineers, among others. The chapter also organized a field trip to Naval Air Station North Island (Fig. 14) and a visit to AeroVironment, Inc., with an emphasis on their flying-wing ring drone. Motivation was high, and the team's newfound strong leadership led to first place in the 2003 DBF competition (Ref IV).

After the addition of DBF, SDSU welcomed the founding of the Rocket Project in 2003 (Ref. IV). Rocket Project brought a lot of excitement for engineering students and another opportunity for hands-on experience. Alongside this new addition, SDSU had a wave of new faculty hires. While speaking with Dr. Katz and Dr. Plotkin, we learned that the 16-year hiring freeze ended in 2002. Between 2002 and 2016, the school brought in Dr. Gustaaf Jacobs, Dr. Satchi Venkataraman, Dr. Luciano Demasi, Dr. Xiaofeng Liu, and Dr. Ping Lu (Ref. V.A.16), which helped to reinvigorate courses, labs, and design projects. (Ref. V.A.8, V.A.7) These new hires were a positive counterpoint to the recent past of the aerospace department, and, as a result, classes that once had eight students now had over 100 (e.g., AE 440, per faculty interviews). As AIAA membership at SDSU was nearly synonymous with being an aerospace engineering student, the new growth allowed the AIAA hubs to flourish.

This new era brought many new awards and scholarships to our AIAA faculty and students. Notably, we can recognize Professor Plotkin, who was selected to receive the 2005 John Leland Atwood Award, which was co-sponsored by the AE division of ASEE and the AIAA branch, and is given to a leader who has made a lasting impact and significant contributions to aerospace engineering education.[a] This school year was also a big one for Mr. Nils Sedano (Ref. V.B.18), as it was the year he was sponsored by AIAA SD through the California Space Grant to visit NASA Glenn Research Center to help start the technical relationship for the SDSU Rocket Project. His involvement in AIAA and the Rocket Project, along with his hard work, led to this opportunity. Continuing, AIAA SDSU held multiple trips, many technical symposia with around 5-10 speakers, and opportunities to earn scholarships. From 2000 to 2015, 30+ SDSU

[a]2005-2006 AIAA SD Newsletter

students were awarded a Reuben H. Fleet scholarship through AIAA. (Fig. 17) In 2010, a team of SDSU AIAA students earned third place nationally and a $1000 award in the 2009/2010 AIAA Space Transportation Design Competition for their proposal titled Human Exploration and Reconnaissance of a Massive Extraterrestrial Space-born Object (HERA). Advised by Dr. Nagy Nosseir, the team designed a spacecraft concept that would enable astronauts to land on a nearby asteroid and return safely to Earth. Competing against top engineering schools such as Virginia Tech and Arizona State University, the SDSU students were recognized for the technical content, originality, and feasibility of their design. Placing in the top 3 was a proud achievement not only for the student but also for the school, as it highlighted SDSU's growing reputation in aerospace engineering.[a] AIAA SDSU membership was healthy in 2009, as is evident by Fig. 15.

As a result of faculty encouraging participation in AIAA Conferences in 2010, the SDSU student branch was asked to once again host the AIAA Region VI student paper conference in 2011. As previously stated, SDSU last hosted this event in 2000. The event was held in March 2011 and was entirely student-led and run by Alejandrina Nuno, Samantha Stoneman, and Cesar Martin. SDSU AIAA continued to expand student participation by supporting DBF and the Rocket Project. SDSU AIAA pursued a long-overdue refresh of hallways on the 3rd floor of the Engineering Building by partnering with Sigma Gamma Tau and painting a mural to commemorate the Aerospace Engineering Department. Furthermore, community service projects were a key focus to ensure we continued to spread the importance of aerospace in STEM; notably, we hosted students from underserved communities to learn about model rocketry and showcased a STEM booth at the Centennial of Naval Aviation (2011). Otherwise, student tours continued at NASA (Fig. 16), JPL, GA-ASI, NAVAIR North Island, MCAS Miramar, and Edwards AFB.

Fig. 16 AIAA SDSU trip to NASA JPL (August 26, 2010)

Keeping active in these student competitions, in 2012, members from the student branch earned second place nationally in the AIAA Undergraduate Space Transportation Design Competition, receiving a $1,500 award from the AIAA Foundation. The winning team—Evan Johnson, Jesse Cuevas, Tuan Luong, and project leader Samantha Stoneman — was advised by Dr. Nagy Nosseir (Fig. 18) and tasked with designing a commercial space transportation system capable of carrying paying passengers to orbit at a cost-effective rate. Their project, the Hydrogen Oxygen Platform Experiment (HOPE), proposed an orbital fueling station using liquid hydrogen/oxygen to extend spacecraft lifetimes and enable future missions to the Moon or Mars..[b] Reaching second place reinforced AIAA's student organization's continued success in national competitions. Alongside these competitions, our organization continued to hold guest speaker events. One notable event was a talk by former NASA astronaut Joseph Tanner at the Parma Payne Goodall Alumni Center in December of 2013. Tanner, a University of Illinois graduate, began his career as a Navy research pilot before joining NASA in 1984 as a pilot and aerospace engineer. Selected as a NASA astronaut in 1992, he served until 2008, completing seven spacewalks and logging over 1,000 hours in space during his distinguished career.[c] Bringing these industry professionals to speak to students has been the backbone of AIAA SDSU's work. It not only inspires students but also, by hearing from these professionals with amazing experience, helps them realize which paths they are interested in. These events are the purpose of AIAA on campus: to provide students with the resources they need to find their passion and network.

[a] *The Daily Aztec*: Volume 96, Number 29; October 18th, 2010
[b] *The Daily Aztec*: Volume 97, Number 68; February 6th, 2012
[c] *The Daily Aztec*: 12/10/2013

Fig. 17 2011 Reuben H. Fleet Scholarship Ceremony.

Fig. 18 Faculty in 2011. Left to Right; Top Row: Dr. Joseph Katz, Dr. Luciano Demasi, Dr. Gustaaf Jacobs, Dr. Nagy Nosseir; Bottom Row: Dr. Satchi Venkataraman, Emon Downhour, Dr. Balbir Narang, and Dr. Allen Plotkin.

IV. Wings of Innovation

Given the American Institute of Aeronautics and Astronautics' strong influence within the aerospace community, many specialized clubs have formed under its umbrella to focus on distinct areas of the field. This structure is mirrored at AIAA SDSU, where technical teams such as Design/Build/Fly and Rocket Project, along with professional organizations like Women of Aeronautics and Astronautics (WoAA) and Sigma Gamma Tau, operate in close connection with the student branch.

A. AIAA Lounge

Although not precisely a "wing" of innovation, AIAA has historically had a dedicated room on campus. Since at least the late 80s, it has been E-122A, located between the two wind tunnels in the engineering building, and, up until recently, it was the HQ of Aerospace Engineering students and was managed by AIAA SDSU. Nicknamed the "Aero lounge", (Fig. 19) this room was great for small meetings and often served as the AIAA SDSU officer meeting location. Dr. Allen Plotkin is responsible for E-122A becoming the dedicated AIAA SDSU space. The room notably held bookshelves of donated books and reference material, and they still exist right outside of Paul Ahlers' office today. Students also had access to refreshments for sale at a subsidized price, in proximity, unlike in other markets farther away.

Additionally, students had access to computers and printers, which allowed them to print reports or homework at the last minute before they were due. Notably, the same MicroVAX computer (Ref. III.B) mentioned earlier. For nearly five decades, this "Aero lounge" served as an actual living room for aerospace students, with couches, a conference table, and a refrigerator, making it a natural hangout between classes. According to recent student chair Yuichiro Tobita, the space remained reserved for AIAA-affiliated undergraduates until the onset of the COVID-19 pandemic, when campus space constraints and safety protocols led to its closure as a lounge and eventual reassignment as a graduate-student workspace, effectively ending its long run as a dedicated AIAA room.

Fig. 19 The "Aero lounge"

B. Design/Build/Fly (now Aztec Aerospace Design)

AIAA started a student competition in 1996 through the Applied Aerodynamics, Aircraft Design, Design Engineering, and Flight Test Technical Committees as an opportunity for university students to gain hands-on experience in aircraft design by allowing them to test and validate their analytical work in a practical, real-world setting [26]. This competition focuses on designing and building a radio-controlled, electric-powered aircraft in accordance with a specific mission and rules set by the AIAA DBF Organizing Committee each year. The judging criteria have changed annually to match that year's exact mission. The final score is based on both a design report and the aircraft's performance during the

flight portion of the competition. In 1997, this competition gave rise to a student club on campus called SDSU DBF (now known as Aztec Aerospace Design). Led by Victor Hugo, AIAA SDSU student chapter president in 1997–1998, the newly formed team set out to design an aircraft for the Design/Build/Fly competition. That year's challenge required creating a plane capable of carrying 7.5 pounds of steel and completing as many laps as possible within seven minutes. The team engineered a canard-style aircraft to meet the requirements but faced challenges optimizing its center of gravity. Although the team completed the aircraft, it became clear that they would be unable to travel to Wichita for the 1998 competition and would instead be evaluated solely on their design report. Despite this setback, their efforts paved the way for SDSU's future participation in the Design/Build/Fly competition and laid the foundation for the program's long-standing success [25].

Despite the DBF team having just been formed, the following years were a lull, with no official SDSU entries submitted to the national competition. This early setback, however, did not mark the end of the program. In 2000, renewed discussions about competing led a group of students to organize fundraising efforts to secure the necessary financial backing, efforts that proved successful (Fig. 20). Rich Gunderson (Ref. V.B.12) notes that when those efforts still fell short, he contributed some of his own savings to purchase hardware for the first renewed DBF aircraft, underscoring how personally invested students were in getting the team to the flight line. (Fig. 20) When progress stalled again, Chad Berman, president of the SDSU AIAA branch in 2001–2002, stepped in to ensure the team honored its commitments to donors and ultimately completed the project. While Victor Hugo is credited with founding SDSU's DBF program, it was Chad Berman's leadership, along with Greg Marien and Andy Bechtel's determination, and the help of Dr. Katz that truly set the team in motion and established the foundation for its continued success. Rich Gunderson recalls that when the team finally reached Wichita, no one fully understood how to place the center of gravity on a canard aircraft; the first test flight immediately pitched into a tight "10-ft loop" and ripped the landing gear off on landing. However, that team, which also included Tim Lo, Ryan Call, Thao Tran, and Leonel Rios-Reyes, worked hard to overcome the many challenges. In the 2001 competition, the team earned 20th place after completing the Full Monty design. Following that year, the SDSU DBF Project grew in popularity as a highlight of the AIAA SDSU Chapter, which continued to host industry events, competitions, and tours. In 2002, building on lessons from the previous competition, the team approached the project with renewed focus and higher standards.

CAPT George Faulkner, an SDSU aerospace professor with ties to Northrop Grumman, connected the team with company engineers who were impressed by their work. SDSU DBF was invited to present its design in a Preliminary Design Review at Northrop's San Diego facility, earning its first industry sponsorship. This partnership became an annual tradition for years to come. Fronius, who by then was a manager at Northrop Grumman, recalled that during this period the company recruited more engineers from SDSU than from any other university and regularly hosted SDSU DBF design reviews at its Rancho Bernardo facility, deepening Northrop's investment in the program and its students. 2002 was a great success, as the team earned sixth place, and even greater success in 2003, when SDSU DBF received first place under the leadership of Greg Marien. (Ref. V.B.17) Following these years, DBF faced many trials and errors; however, they have managed to keep at it and even "...has placed within the top 25th percentile 6 times" [25].

Fig. 20 Top Right: Ryan Call; Bottom Right: Victor Hugo ; Bottom Left: Rich Gunderson

In 2015, DBF formally separated from AIAA SDSU to become an independent Recognized Student Organization (RSO), allowing for greater financial and administrative autonomy while maintaining close ties to the department [25]. Today, under its own organization and a new name, Aztec Aerospace Design, the team continues to provide students with valuable hands-on experience through these AIAA national design competitions. The club offers students passionate about aeronautics the opportunity to specialize, innovate, and collaborate in a supportive learning environment. Serving as both a creative outlet and a network to industry professionals, Aztec Aerospace Design strengthens SDSU's presence in the aerospace community. Through its ongoing success and collaborative spirit, the organization continues to reflect AIAA's legacy of teamwork, design

innovation, and mentorship in aerospace engineering.

C. Rocket Project

Even though San Diego State's collegiate rocketry team, Rocket Project, was not founded under AIAA like DBF was, it is worth mentioning, as it has truly paved the way for many students to gain valuable experience in the aerospace field. So to take it back to the beginning, Rocket Project roots sprouted "In 1999, [when] Dr. Steve Harrington (founder of Flometrics and an SDSU doctoral student at the time) found a Rocketdyne LR-101 in the basement of the low-speed wind tunnel lab. An LR-101 is a liquid bi-propellant rocket engine used as a vernier thruster on NASA's Atlas and Delta rockets dating back to the 1950s" [27]. Dr. Steve Harrington began using the rediscovered LR-101 liquid rocket engine in his advanced thermodynamics lectures, sparking the interest of graduate students, especially Carl Tedesco. They began working together, borrowing the engine and, with support from Flometrics in Solana Beach, began developing and testing liquid-fueled rockets, a very uncommon pursuit in academia at the time. After several years of experimentation, a few more students joined the effort, collaborating with Carl and Dr. Harrington to attempt a demonstrator rocket capable of reaching 100 miles in altitude. Their partnership and increased student interest led to the Rocketdyne LR-101 being returned to SDSU and the official founding of the SDSU Rocket Project in 2003 under Carl Tedasco. This marked SDSU as one of only two universities in California, alongside CSU Long Beach, with an active liquid rocketry program, sparking a spirited intercollegiate rivalry.

In September of 2003, 9 months after SDSU Rocket Project's inception, the team attempted to launch *Machezuma* from Reaction Research Society (RRS), an essential launchpad for many inspirational engineers in the Mojave Desert. Although it didn't go entirely to plan, it was a foot in the right direction for the group. 6 months after *Machezuma*, *Phoenix I* was ready to launch and was taken to RRS for Rocket Project's 2nd attempt at flying a liquid rocket. This launch was considered much better than the first, as it successfully cleared the launch rail. Still not an entirely successful run, but yet again, another step in the right direction.

During an interview with Kevin Burns, who was on the AIAA SD section council at the time, it emerged that safety and liability concerns nearly ended the SDSU Rocket Project in its early years. CAPT George Faulkner, the AIAA SDSU advisor, grew increasingly concerned about student work with rocket propellants and stated he could not remain responsible for such activities under the student branch. From the professional-section side, Chris Root recalled that this triggered an intense debate within the AIAA San Diego Council over liability, risk, and insurance. To preserve the project and retain CAPT Faulkner as Advisor, Burns consulted AIAA Headquarters and met with Dean Westermo to craft a path forward. The result was a University-issued Memorandum of Agreement (MoA) [28] (Ref. F) under which the San Diego Professional AIAA Section would continue sponsorship of the Rocket Project (including accepting donations on the students' behalf). In contrast, San Diego State University accepted liability. Administratively, the project was removed from the Student Branch, though participants remained AIAA Student Branch members. With CAPT Faulkner's blessing, this arrangement kept the Rocket Project alive while aligning responsibilities between the University and the AIAA San Diego Section.

Today, Rocket Project, its own RSO as of 2025, is thriving and has successfully built 15 rockets [29]. To accomplish all that they do while also providing many students with incredible opportunities and excellent technical skills is of extreme value to SDSU. Rocket Project is not only a leading force at SDSU, but it is also an excellent addition to the entirety of the San Diego aerospace legacy. This group, throughout all the years it's been established, has achieved many accomplishments and overcome numerous challenges. From failed launches to setting school records, they have truly paved the way for many students to follow and gain valuable experience.

D. Women of Aeronautics & Astronautics

Women of Aeronautics and Astronautics (WoAA) is another significant group within SDSU's aerospace community. Nationally founded in 2018 as a committee under AIAA, the SDSU section has a unique origin story that began under a different organization altogether. During an interview with Kaylin Borders, an SDSU alumnus and SDSU WoAA founder, it was stated that in Fall 2019, Borders' sophomore year, she was approached by Sarah Gomez and another founding member about launching a new chapter of the Society of Women in Space Exploration (SWISE), an organization affiliated with Students for the Exploration and Development of Space (SEDS). They started this club at SDSU in Fall 2019; however, the onset of COVID-19 soon brought most activities to a halt.

During the pandemic, Gomez proposed a strategic rebranding: transitioning the group to Women of Aeronautics and Astronautics (WoAA), a branch under the established professional umbrella of AIAA. This shift promised greater institutional support, resources, and professional connections. The group rebranded under WoAA, began hosting

virtual events, and slowly built up its officer board despite the challenges of remote engagement, eventually returning to in-person activities in Fall 2021.

Since then, WoAA has been intentional about hosting at least one event per month and has grown into a hub for both professional development and community building. This commitment reflects their mission of aiming to be "...a student organization that strives to promote and encourage women and minorities to pursue careers that support space exploration efforts" [30]. They have organized conference trips, including sending roughly 15 members to a conference in Washington, D.C., in Fall 2022, as Borders recalled, as well as internship panels and resume workshops, often supported by funding such as the Student Success Fund grant. They have also hosted an array of technical and outreach events, including their "Women in Aerospace" panel in Spring 2023, which featured alumni and industry speakers and drew 40–50 attendees, as well as astronomy shows and collaborative activities with other organizations. Alongside these professional events, WoAA has cultivated a community through social gatherings such as movie nights (including renting out the school's theater to watch Top Gun: Maverick), cookie decorating, club and lab tours, and merch sales. In recent years, they have also added level-one rocketry workshops, further complementing the hands-on experience students gain through competition teams.

WoAA's doors are open to all students, but the organization has been especially impactful in building a strong, supportive community for women and minorities in aerospace at SDSU. By working closely with the SDSU AIAA branch, and alongside competition teams like DBF and Rocket Project, WoAA shifts the focus from competition to mentorship, networking, visibility, and belonging. In doing so, the Women of Aeronautics and Astronautics at SDSU has become a cornerstone of inclusion and community within the aerospace program, representing a modern expansion of AIAA's influence that extends beyond engineering design to embrace broader professional and cultural engagement across the aerospace community. The rise of WoAA around 2019–2020 shifted several social and outreach activities that had once run primarily through AIAA SDSU—including movie nights and conference trip organizing—to this newer organization.

E. Sigma Gamma Tau

Sigma Gamma Tau (SGT) [31], the national aerospace engineering honor society, has long served as a symbol of academic excellence and leadership within SDSU's aerospace community. Historically, most AIAA members were also involved in SGT, and because the aerospace department was small, the two groups effectively operated as "one big people group." As several alumni recalled, AIAA and SGT shared a common culture, held joint activities, including informal events such as flag football, and maintained a tightly connected student community.

Throughout the 1980s and into the early 1990s, SGT played a significant role on campus. One of its most notable contributions was leading the 12-foot RPV project under the direction of SGT member Doug Fronius (Ref. V.B.4). Although the project later appeared as an AIAA conference paper, Fronius clarified that it was formally chartered under Sigma Gamma Tau. Because the same core group of students ran both organizations at the time, he recalled that the distinction "really didn't matter"; SGT and AIAA functioned as one entity with shared goals and shared people. Despite the RPV's technical ambition, the department offered virtually no institutional support. Students were periodically removed from workspaces due to composite odors, reinforcing Fronius's sense that non-classroom engineering "didn't count" in the department culture of the era.

However, as the aerospace program entered its significant downturn in the mid-1990s, a period during which the department nearly closed, Sigma Gamma Tau at SDSU gradually disappeared. Alumni interviews help pinpoint this decline: Rich Gunderson did not recall any active SGT chapter during his time, and the society's absence by the 1997–1998 school year aligns with our knowledge that Jordan Evans (class of 1995) was one of the last SDSU students to participate in the organization. This confirms that Sigma Gamma Tau became inactive at SDSU sometime before the late 1990s.

There were later signs of revival. By 2002, SDSU alumnus Leo Rios-Reyes was inducted into Sigma Gamma Tau, suggesting a brief return of the chapter. Another resurgence occurred around 2011, led by student Samantha Stoneman. This effort was notably successful: the chapter secured an updated charter, obtained funding, and provided graduation stoles, marking a short-lived but meaningful re-establishment of the society. Additional documentation, such as the 03/20/2011 College of Engineering spotlight featuring Racha Lwali, confirms student involvement in AIAA, DBF, and Sigma Gamma Tau during this period.

Despite these revival attempts, Sigma Gamma Tau eventually became inactive once again. Today, society no longer operates at SDSU. Its legacy, however, remains an essential chapter in the history of AIAA's academic community on campus. . . one that reflects the shared culture, collaboration, and evolving identity of aerospace engineering at SDSU.

V. Faculty and Alumni

The achievements of AIAA SDSU are closely tied to the faculty and alumni who have shaped its direction. This section offers a preliminary look at some of those individuals. Additional names and stories will be added as interviews and archival research continue.

Our sincerest apologies to any alumni or current/former faculty member who is not mentioned in this paper. We had limited time and were focusing on our own schoolwork in parallel, so we were unable to include everyone. Thus, our criteria for faculty were those who had a significant relationship to AIAA at any level, and our criteria for alumni were those who were most readily available.

A. Faculty Support

SDSU's Aerospace Engineering Department has benefited from faculty whose dedication helped shape both the program and its student community. Former departments were also instrumental in guiding the department through key stages of its academic development.

1. Howard H. Chang

Dr. Howard H. Chang (Born November 12th, 1939; Fig. 21) was among the early faculty members who helped solidify the foundation of San Diego State College's Aerospace Engineering Department during its formative years. Dr. Chang received his Ph.D. in Civil Engineering, with an emphasis on Hydraulics, Hydrology, and Sedimentation, from Colorado State University in 1967. Joining SDSC in the same year, he was part of the department's second wave of hires alongside figures such as Robert McGhie, expanding the program's expertise into fluid dynamics and civil engineering applications. Chang's interdisciplinary background made him a key contributor to the young department's research in experimental aerodynamics and applied fluid mechanics.

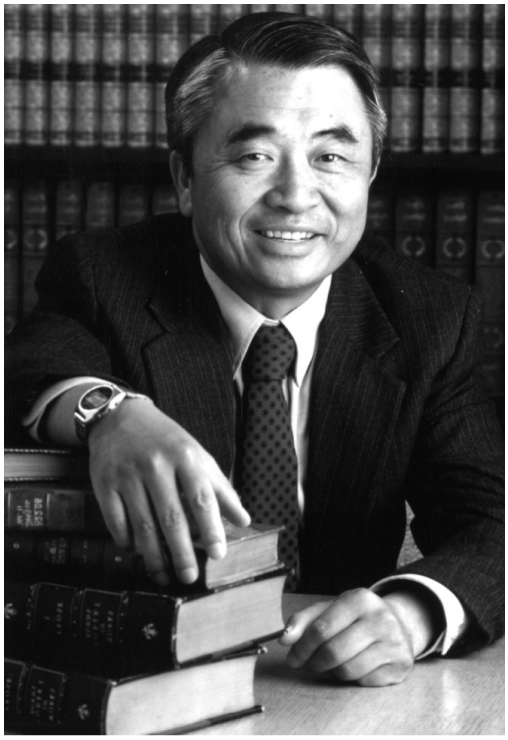


Fig. 21 Portrait of Howard H. Chang, Civil Engineering, 1994 (Image Property of SDSU)

Within the broader campus community, Dr. Chang was also recognized for his active support of engineering student societies, particularly through AIAA SDSU and related interdisciplinary initiatives. In January 1969, Dr. Chang presented his paper called "A Mathematical Model for the Behavior of Thrust Reversers" at AIAA's 7th Aerospace Sciences Meeting in New York. Archival issues of The Aztec student newspaper show him participating in AIAA-linked campus events between 1969 and 1971, including a technical lecture on the water table and a student engineering fundraiser that united AIAA, ASME, SAE, IEEE, and other societies under the Student Engineering Research Committee (SERC) (Ref. III.A). His involvement reflected an early culture of faculty mentorship and collaboration across engineering disciplines, reinforcing AIAA's professional presence at SDSU.

Professor Chang left the Aerospace Engineering Department in 1973 to join the Civil Engineering Department (perhaps due to declining aerospace enrollments during the post-Vietnam era) [9]. He's a Professor Emeritus of Civil & Environmental Engineering at San Diego State University, with university records listing his SDSU service from 1967–2003. Chang is widely recognized for work in fluvial hydraulics and river engineering (flood-plain mapping, channel design, erosion/sedimentation, and watershed analysis). His 39-page CV indicates he authored 100+ technical papers, several river-morphology models, and the textbook Fluvial Processes in River Engineering (Wiley; later reprinted by Krieger).

Howard H. Chang's early guidance helped shape the department's applied research culture and its engagement with AIAA's mission of professional development and industry connection. AIAA SD has awarded him with the Outstanding Contribution to Aerospace Engineering Award (for research achievements in fluid dynamics and aerodynamics) in May 1970, and the Outstanding Contribution to the Institute at the Sectional Level (for outstanding services) in May 1973. Dr. Chang is consistently remembered as one of the pioneering faculty who bridged disciplines and advanced the AIAA

student branch's formative activities, ensuring that aerospace education at SDSU remained grounded in both theory and real-world engineering practice.

2. Robert D. McGhie

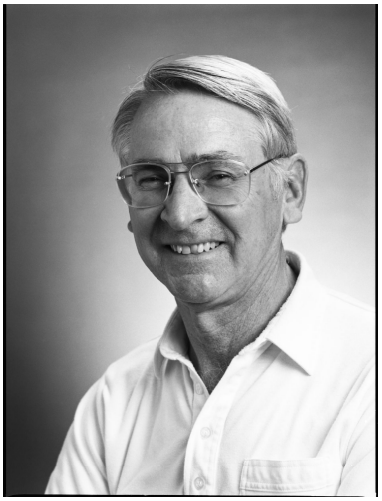


Fig. 22 Portrait of Robert D. McGhie, Engineering, 1987 (Image Property of SDSU)

Dr. Robert D. McGhie (Fig. 22) was a pivotal figure in the development of the Aerospace Engineering program at SDSC (later SDSU), joining the department in 1967 during a formative period of growth and modernization. Hired alongside Howard Chang, McGhie introduced and established the discipline of Flight Mechanics, helping to broaden the department's focus beyond aerodynamics and structures [9]. His arrival marked the beginning of a significant expansion in both faculty and curriculum, as the department sought to meet the needs of San Diego's booming aerospace industry during the late 1960s. He contributed to the design of the Coronado Bridge. His design was that in case of war a span section was bombed it would sink to the bottom of bay such that ship traffic was not impeded.

McGhie served as AE Department Chair from 1974 to 1977, succeeding John Conly, and played an instrumental role in stabilizing and advancing the program amid fluctuating enrollment and changing national priorities. His tenure coincided with the Cold War era's high demand for skilled aerospace engineers and with the department's continued partnership with regional industry leaders such as Rohr and General Dynamics. Beyond administration, McGhie's teaching and research in flight dynamics and control left a lasting imprint on generations of students who would go on to hold key technical positions throughout the aerospace field.

Within the AIAA San Diego Section, McGhie was intensely active, serving as Publicity and Community Relations Officer in 1974—a role that helped bridge the gap between academia and the professional aerospace community. His dual dedication to engineering education and professional outreach reflects SDSU's long-standing commitment to applied, industry-relevant instruction. McGhie retired in 1992, leaving behind a legacy of academic leadership and mentorship that helped solidify SDSU's reputation as a major contributor to the Southern California aerospace ecosystem. Robert McGhie was also a professor of Civil and Environmental Engineering, listed as an emeritus faculty member there. Dr. Robert McGhie, a resident of El Cajon, California, passed away on June 29, 2020.

3. Balbir S. Narang

Dr. Balbir S. Narang (Fig. 23) joined SDSU's AE faculty in 1968, during the department's formative years when it was building strength in experimental aerodynamics and compressible flow [9]. Katz's departmental history identifies him as the hire who assumed responsibility for the high-speed aerodynamics area, complementing existing strengths in wind-tunnel technology, structures, and flight mechanics as the program moved toward ABET accreditation in the early 1970s [9]. Over the next five decades, Narang taught core courses in compressible aerodynamics and fluid mechanics and supervised supersonic wind-tunnel and fluid-mechanics laboratories for generations of SDSU students. University and archival records now list him among the department's emeritus faculty and note continuous service in aerospace engineering from 1968 until his retirement in 2021, making his career one of the longest in the program's history and underscoring the stability he provided through multiple cycles of enrollment growth and contraction.

Within AIAA, Narang functioned as a key liaison between SDSU and the San Diego professional section. A 1974 AIAA San Diego Section membership roster listed him as the SDSU Facility Representative alongside department chair Robert D. McGhie and wind-tunnel specialist William W. Shutts, formalizing his role in coordinating between the campus and the local section. In that capacity, he helped channel professional-section programming, speakers, and scholarship opportunities toward SDSU students and reinforced a culture in which faculty treated AIAA

Fig. 23 Portrait of Balbir S. Narang, Aerospace Engineering (Image Property of SDSU)

engagement as part of their educational mission. Narang also maintained a visible profile in the AIAA research community through technical publications, including an *AIAA Journal* article on the buckling of open cylindrical shells under combined compression and bending stress and a 1994 AIAA Fluid Dynamics Conference paper on transonic flow over a wavy wall, contributions that reflected his expertise in both structural stability and high-speed aerodynamics and extended SDSU's footprint within AIAA's technical forums [32, 33].

4. CAPT Doc George Faulkner Jr.

Fig. 24 CAPT Faulkner at the 2003 AIAA Region VI student conference hosted by AIAA SDSU.

Navy Captain "Doc" George Faulkner Jr. (September 15th, 1926 - October 5th, 2009; Fig. **??**) was a retired U.S. Navy pilot who became one of San Diego State University's most beloved aerospace instructors in the late 1970s–early 1990s, teaching stability & control, flight mechanics, and senior design [9, 34, 35]. Before coming to SDSU, Faulkner served as an Aerospace Engineering Duty Officer (AEDO) in the U.S. Navy, flew aircraft such as the F8F Bearcat, and taught in the Aerospace Engineering Department at the U.S. Naval Academy while still on active duty. Alumni remember him as "everybody's dad": a steady mentor who organized meetings, brought in speakers, and personally nudged students toward opportunities like the Reuben H. Fleet Scholarship. Nils Sedano (Ref. V.B.18) recalled that Faulkner sometimes spoke about flying carrier-based fighters such as the F6F Hellcat. He began advising the AIAA SDSU student branch around 1984–85 and, even after the aerospace major was briefly canceled in 1992, he kept volunteering as the branch's advisor.

Fig. 25 Portrait of D. George Faulkner, Aerospace Engineering, 1985 (Image Property of SDSU)

Faulkner was the connective tissue between students, the department, and the professional AIAA San Diego Section. He's on the 1991 AIAA-SD membership rolls under "San Diego State University," and he was still listed as AIAA SDSU faculty advisor in 2003. This is an example of the practical, service-minded culture he modeled. Students referred to him as CAPT Faulkner, and Dr. Joe Katz calls that a demonstration of how students viewed the professor title compared to the Navy ranking. Alumni credit him with reinforcing a professional review cadence that later became SDSU's Northrop-backed preliminary design review tradition in Design/Build/Fly,

due to his personal connections with Northrop Grumman [25]. Rich Gunderson (Ref. V.B.12) remembers that although he never took a formal course from Faulkner, “he was always just kind of around,” intentionally spending time in student spaces simply to talk, listen, and mentor. Mike Vest (Ref. V.B.10) similarly remembers Faulkner dropping by to trade stories about his long bike rides around San Diego, using those conversations about routes and mileage as another informal way to check in on students and build rapport.

He cared deeply about safety and initially opposed on-campus rocketry. Years later, as an example of his pragmatic mentorship, a 2005 Memorandum of Agreement (MoA) he signed set guardrails thatfinally allowed Rocket Project activities at SDSU (Ref. Appendix F). In the broader record, AIAA histories describe him as a “full-time part-time” faculty mainstay from 1978–1992, the SDSU digital collections list him teaching through 1983–1992. After his passing in 2009, the AIAA San Diego Section created the D. G. Faulkner Scholarship (2010) and honored him with its Lifetime Achievement Award (2009). Together, those threads capture why CAPT Doc George Faulkner Jr. remains a touchstone for the AIAA SDSU community. After his passing, CAPT Faulkner’s family donated his personal library to the "Aero lounge." The last class he taught was AE 123 in Fall 2005.

5. Mauro Pierucci

Dr. Mauro Pierucci (Fig. 26) is Professor Emeritus of Aerospace Engineering at San Diego State University, where he taught from 1979 to 2011 and became a pillar of the department’s “good years” [9]. A structural dynamics and acoustics specialist, he was also an early champion of computer-aided teaching and web-based instruction that modernized how SDSU delivered coursework in the discipline. His long tenure is reflected in faculty rosters and department histories that place him at the center of SDSU Aerospace Engineering’s rise, alongside colleagues such as George Faulkner, Allen Plotkin, and Joe Katz.

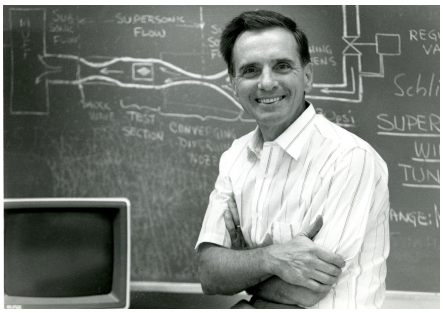


Fig. 26 Portrait of Mauro Pierucci, Aerospace Engineering (Image Property of SDSU)

In 2024, the AIAA San Diego Section honored Dr. Pierucci with its Lifetime Achievement Award, recognizing a career of sustained contributions to aerospace engineering and to the local professional community. The section promoted a campus event celebrating the award in partnership with SDSU’s Aerospace Engineering Department. Even in retirement, Pierucci has continued to invest in SDSU’s aerospace ecosystem. In April 2023, he provided seed funding to start an SDSU student space club [36], underscoring his ongoing commitment to hands-on learning and to cultivating the next generation of engineers. Alumnus Rich Gunderson (Ref. V.B.12), who took multiple dynamics courses from him, remembers those classes as “always really entertaining,” a reflection of Dr. Pierucci’s ability to make rigorous material approachable.

6. Nagy S. Nosseir

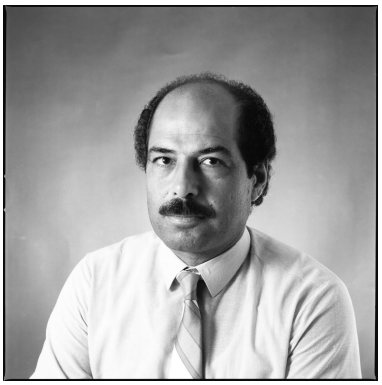


Fig. 27 Nagy S. Nosseir, 1990 (Image Property of SDSU)

Dr. Nagy S. Nosseir (Fig. 27) is an emeritus professor of Aerospace Engineering at San Diego State University whose technical lineage runs through the Southern California experimental-fluids community. He completed his doctoral work at the University of Southern California under Prof. Chih-Ming Ho, who later became prominent at UCLA for innovative work in turbulence, unsteady jets, and systems approaches to fluid mechanics [37]. Nosseir brought that training to SDSU at a moment when the Aerospace Engineering program was strengthening its laboratory base and preserving the experimental culture documented in Katz’s history of the department [9]. His presence added a faculty member who could both design and operate carefully instrumented flow facilities — water tunnels, impinging/jet-type experiments, and student-friendly lab setups — rather than relying solely on classroom instruction.

At SDSU, Nosseir was among the faculty who quietly enabled the next generation. He helped assemble the “start-up package” that allowed Dr. Xiaofeng Liu to join SDSU, which in practice meant there was an existing, functioning experimental environment — space, equipment lineage, and especially a water tunnel capability — that a new fluids/diagnostics hire could build on immediately.

That kind of continuity is a recurring theme in the department's development, where modest but consistent laboratory investments kept SDSU AE attractive to students, competitive in regional projects, and visible to the local aerospace community [9]. At the same time, he was an active member of the AIAA SD professional section. Nosseir maintained an active relationship with the AIAA SD section and the SDSU student branch, leading or supporting trips and ensuring that AIAA served as the connector between coursework, laboratories, and practicing engineers.

A signature element of his service was his support for AIAA national design competitions, notably the Space Transportation Design Competition [38]. In 2010, he advised the SDSU team that was awarded the Human Exploration and Reconnaissance of a Massive Extraterrestrial Space-borne object (HERMES) concept, demonstrating that SDSU could execute a complete exploration-class mission study on par with much larger programs. He later guided the Hydrogen Oxygen Platform Experiment (HOPE) team, which also earned national recognition from AIAA, reinforcing SDSU's reputation in student space-transportation projects. Together, HERMES and HOPE illustrate why Nosseir's AIAA connection mattered: he did not simply encourage students to enter; he structured faculty-backed, lab-informed, systems-aware entries that showcased SDSU's experimental strengths, thereby extending the department's hands-on, competition-facing culture that Katz identifies as one of its enduring advantages [9].

7. Allen Plotkin

Dr. Allen Plotkin (Fig. 28) is a distinguished figure [39] in aerospace engineering and a cornerstone of SDSU's AE Department. He received his Ph.D. from Stanford University. During a 54-year teaching career, Plotkin spent 37 years at SDSU, helping shape the department's academic identity and mentoring generations of engineers. He served as the Department Chair for 12 years across four terms, guiding the program through periods of growth and transformation [9]. He received the AIAA Sustained Service Award in 2003 [40]. Plotkin's scholarly reputation extends beyond SDSU: he was an Associate Editor of the AIAA's Journal of Aircraft for 24 years. He received the AIAA San Diego Lifetime Achievement Award in 2019 [41], recognizing his decades of service to the field and to the Institute. Fun fact: Dr. Plotkin applied to San Diego State College (SDSC) in the mid-to-late 1960s, but they showed no interest, leading him to accept a position at the University of Maryland.

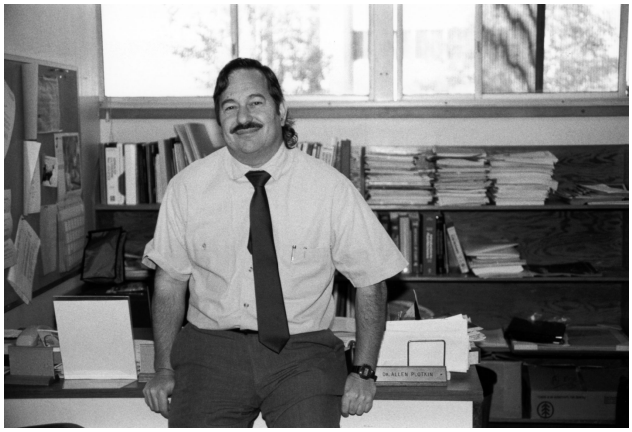


Fig. 28 Allen Plotkin, Aerospace Engineering, 1994 (Image Property of SDSU)

Beyond his administrative and editorial roles, Plotkin made seminal contributions to aerospace education. He co-authored the graduate-level textbook Low-Speed Aerodynamics with Joseph Katz, a work widely regarded as a standard reference for students and professionals in the field. Plotkin also played a central role in shaping SDSU's curriculum, helping introduce and refine core courses such as AE 301 (Low-Speed Aerodynamics), AE 340 (Fluid Mechanics), and AE 403 (Senior Design), which became an Accreditation Board for Engineering and Technology (ABET) model for integrating theoretical and hands-on instruction. His emphasis on experimental validation and physical intuition helped define SDSU's applied engineering culture, complementing its strong theoretical foundation.

Throughout his career, Dr. Plotkin remained deeply involved in the AIAA at both the university and professional levels. He was instrumental in encouraging student participation in AIAA's national programs, viewing the organization as vital for professional development and technical networking. His guidance and advocacy contributed to SDSU's long-standing success in AIAA student competitions such as Design/Build/Fly (DBF), and his leadership earned him the AIAA/ASEE John Leland Atwood Award in 2005 [42], honoring his outstanding contributions to aerodynamics education and research. Dr. Plotkin's legacy endures not only in the courses he built and the students he mentored, but also in the lasting bond between SDSU's aerospace program and AIAA's professional community. Dr. Plotkin retired in the summer of 2022.

8. Joseph Katz

Fig. 29 Joe Katz, 1996 (Image Property of SDSU)

Dr. Joseph Katz (Fig. 29) is a distinguished Professor of Aerospace and Mechanical Engineering at San Diego State University, with a research career spanning over four decades. He has authored or co-authored 65 AIAA publications, contributing significantly to the fields of aerodynamics, fluid mechanics, propulsion, and experimental flow diagnostics. Over the years, Katz has explored an impressively broad technical portfolio, from internal combustion engine cooling and drag reduction to post-stall aerodynamics, unsteady hydrodynamics, and wind tunnel measurement techniques (including laser Doppler anemometry). He has held teaching responsibilities across thermodynamics, viscous flow, stability & control, numerical methods, and related core subjects.

Our Dr. Joseph Katz at SDSU is different than the Dr. Joseph Katz at Johns Hopkins University. Similar to his longtime colleague and friend, Dr. Allen Plotkin, Katz served as the department chair for 12 years. Together with Dr. Plotkin, Dr. Katz "invented" the A E 403 class specifically to ensure the department sailed through ABET smoothly by demonstrating the integration of all courses. When exit surveys showed students complained they wanted more hands-on experience, as chair of the AE department, Dr. Katz converted the 403 class to be more hands-on, while 460 became more paper-oriented.

Katz's impact is also recognized through major honors from the AIAA San Diego Section. In 2007, he was awarded the AIAA San Diego Outstanding Contribution to Aerospace Education (a major accolade acknowledging his influence on students). Most recently, in 2024, he received the AIAA San Diego Lifetime Achievement Award for his enduring dedication to aerospace education, research, and community service. In the SDSU engineering news release, he is celebrated for his "outstanding dedication and passion" and is cited for influencing aerospace, aerodynamics, and mechanical engineering broadly throughout his career. Joseph Katz is also a well-published textbook author: among his works are *Low-Speed Aerodynamics: From Wing Theory to Panel Methods* (with Dr. Allen Plotkin), *Race-Car Aerodynamics*, *Introduction to Fluid Mechanics*, and *Automotive Aerodynamics*.

Putting this together, Katz stands as both a scholar and an institution builder. Beyond his published scholarship, he has chronicled SDSU's aerospace heritage in works like "The History of Aerospace Engineering at SDSU," weaving in stories of founding faculty, wind tunnel development, and institutional evolution. In doing so, he has preserved the memory of key figures (Shutts, Conly, Dharmarajan) and made sure future generations know how the SDSU program weathered fluctuations in enrollment, administrative changes, and industry cycles. The combined legacy as researcher, teacher, and historian makes Joseph Katz an iconic figure in the story of AIAA SDSU.

9. Costas Lyrintzis

Fig. 30 Dr. Costas Lyrintzis, 1987 (Image Property of SDSU)

Dr. Constantinos S. "Costas" Lyrintzis (Fig. 30) was born on 22 September 1960 in Greece, earned a Diploma in Civil Engineering from the National Technical University of Athens in 1983, and then completed his M.S. and Ph.D. degrees in Engineering Mechanics at Columbia University in 1984 and 1987, respectively. He joined the faculty of the Department of AE & Engineering Mechanics at SDSU, where he rose to the rank of Associate Professor. He became a member of the AIAA in 1987 and built a strong research program in structural dynamics, vibrations, and aero-acoustics/semi-analytical techniques. Several of his papers appeared in the AIAA Journal and the Journal of Aircraft. On 15 August 1996, Dr. Lyrintzis was tragically killed while participating in a Master's thesis defence at SDSU — his untimely death cut short a promising academic career. His colleagues and former students remember him as a gentle, caring mentor always ready with a smile, and his presence is sorely missed [43]. Former students such as Jordan Evans recalled encountering him as a young, "super high energy" professor who lived just across Montezuma Road and walked to campus every day, which made him feel more like a fellow student in the AE hallway.

In his research, Lyrintzis made substantial contributions to the understanding

of random parametric excitations in single-degree-of-freedom systems. They applied semi-analytical methods to problems in structural vibrations and acoustics. His ability to guide both undergraduate and graduate students in these challenging fields, teach clearly, and foster an active research culture left a lasting impact at SDSU and within the AIAA technical community. His life and work continue to inspire aero-mechanical engineers advancing vibration and acoustics in aerospace structures.

10. Stig Johansson

Stig Johansson (passed away in 2011) served as the master technician and technical director in the San Diego State University Aerospace Engineering department from 1987 until his 2010 retirement. Hired during a pivotal growth period, he became the department's go-to problem-solver—"one of the most important hiring decisions," remembered for being able to design and build "anything mechanical, electronic, or computer-driven." Day to day, he ran the low-speed wind tunnel and small machine shop, mentored students on fabrication and testing, and supported extensive hands-on projects across aerodynamics and design. Department rosters and photos list him as "technical director Johansson," and technician rolls record his start in 1987 [9]. Alumni such as Jordan Evans recall that Johansson lived in Ocotillo Wells and would commute to SDSU, often staying with his daughter in San Diego during the work week.

It is essential to mention that Stig Johnasson's workspace was the "Aero Lounge" (Ref. IV) and was shared with AIAA SDSU. Paul Ahlers, the current technician, eventually inherited that space. Johansson's influence was deeply personal for generations of students. Alumni recall him staying late to teach practical skills, helping craft models for wind-tunnel work with Dr. Katz, and even photographing the department. He retired in 2010 after more than two decades of service. The following academic year, he was recognized by the AIAA San Diego Section with its Outstanding Contribution to Aerospace Education award, citing his close work with students on senior projects and wind-tunnel experiments. He was also crucial to the 1992 "Aerospace Will Not Fall" protest era.

11. Geoffrey Butler

Fig. 31 Geoffrey Butler

Geoffrey S. Butler (Fig. 31) is the Senior Director of the Office of Airworthiness at General Atomics Aeronautical Systems, Inc. (GA-ASI), where he oversees military and civil airworthiness certification activities across GA-ASI's fleet and serves as a liaison to certification authorities, including participation in the U.S. Air Force's Airworthiness Defense Industry Advisory Group (ADIAG). He brings 30+ years of experience spanning subsonic cruise missiles, single-stage-to-orbit concepts, hypersonic vehicles, and unmanned air, ground, and surface systems. Butler holds an M.S. in Aerospace Engineering from San Diego State University, an M.S. in Aerospace Systems from West Coast University, and a B.S. in Aerospace Engineering from the University of Florida. His SDSU M.S. thesis involved a CFD solution for high-Mach-number flow over a specialized wing shape. Although he told us he was not very involved at AIAA SDSU, he did attend guest speakers as a student. Fun fact: Geoffrey Butler's son attended SDSU's Mechanical Engineering 4+1 program.

Butler's industry career began at Lockheed Missiles & Space (1981–83), where his work included launch vehicle performance analysis for the Trident D4 submarine launch ballistic missile. Then his work at General Dynamics Convair (1983–92) involved hypersonics, explicitly addressing the engineering problem of weapon separation at Mach 10ish. He also worked at Horizons Technology (1992–95) and BAE Systems GEOINT-ISR (1995–2012) before joining GA-ASI in 2012. In parallel, he has been a longtime Adjunct Faculty in SDSU's Aerospace Engineering Department (1987–91; 1996–present; The gap is due to the department troubles discussed in III.C), teaching cornerstone courses in dynamics, astrodynamics, aircraft stability & control, design, and graduate topics (e.g., AE 220/320/440/460/520/540). It is essential to note that he began teaching at SDSU while pursuing his Master's degree in the 1980s. Geoffrey Butler explained that he started officially teaching at SDSU by substituting for his boss (who worked at Convair) whenever the boss traveled. When the boss later took a job at Boeing, Geoffrey Butler officially started teaching one course.

An active AIAA member and advocate for professional engagement, Butler chaired the AIAA Missile Systems Technical Committee (2001–2003) and remains an active member; he has authored 20+ technical publications on UAV systems, mission planning, hypersonics, and weapons effects. He also represents GA-ASI on ADIAG panels and has been involved with the San Diego chapter of the Association for Uncrewed Vehicle Systems International (AUVSI).

12. Satchi Venkataraman

Dr. Satchi Venkataraman (Fig. 32) is a Professor of Aerospace Engineering at SDSU (since 2002 [9]) whose work focuses on the analysis and design of aerospace structures, with emphasis on structural optimization, progressive failure of composites, uncertainty quantification, and reliability-based design. He earned his Ph.D. in Engineering Mechanics from the University of Florida and has published extensively on failure modeling and robust design of composite structures while advising student researchers who have gone on to roles across industry and academia. At SDSU, he regularly teaches core structures and optimization courses and has been recognized repeatedly for teaching and mentorship. His work was crucial to the revitalization and growth of the Master's program in the 2000s.

Fig. 32 Dr. Satchi Venkataraman

Within AIAA, Dr. Venkataraman is an Associate Fellow and a long-time contributor to the San Diego aerospace community. The AIAA San Diego Section has honored him with the Outstanding Contribution to Aerospace Education Award (2009 and 2024) and the Outstanding Contribution to Aerospace Research Award (2016), reflecting both his classroom impact and his research leadership [44]. He is currently the faculty advisor of AIAA SDSU [25].

At SDSU, Dr. Venkataraman has supported AIAA-connected student programs for years, including mentorship around Design/Build/Fly (DBF) and collaboration with AIAA SDSU as student project organizations matured. During the 2010s transition when DBF separated into its own recognized student organization, he was among the senior faculty considered to advise the team—underscoring his standing with AIAA SDSU's hands-on design culture.

13. Gustaaf B. Jacobs

Dr. Gustaaf B. Jacobs (Fig. 33) is a faculty member in the Department of Aerospace Engineering at SDSU, where he has served as a professor since 2006. He earned his M.Sc. in Aerospace Engineering from Delft University of Technology (with the Honor Propaedeuse) and later completed his Ph.D. in Mechanical Engineering at the University of Illinois at Chicago. Before joining SDSU in 2006, he held research and academic appointments at Delft University, Brown University, and the Massachusetts Institute of Technology [45].

Fig. 33 Dr. Gustaaf Jacobs

Professor Jacobs is internationally recognized for his research in computational multiphase and multiscale flow physics, with applications in particle-laden flows, flow separation in complex geometries, and plasma-based flow control for drag reduction and combustion enhancement. His work bridges theory and computation, emphasizing the development of high-order numerical methods for modeling fluid dynamics and plasma interactions. Over his career, he has received numerous honors, including the AFOSR Young Investigator Award in 2009 (the first in SDSU history) and election as an Associate Fellow of the AIAA in 2013 [46]. In 2022, the AIAA San Diego Section recognized him with the Outstanding Contribution to Aerospace Research Award, honoring his sustained research excellence and mentorship [47].

14. Luciano Demasi

Dr. Luciano Demasi (Fig. 34) is a Professor of Aerospace Engineering at SDSU and a graduate advisor affiliated with SDSU's Computational Science Research Center. He earned his Ph.D. in Aerospace Engineering in 2004 at the Politecnico di Torino, followed by a postdoctoral fellowship at the University of Washington. [48] He has been a professor at SDSU since 2008 [9]. In 2019, he was inducted as an Associate Fellow of the AIAA [49], and he currently serves the AIAA San Diego Section as Technical Vice-Chair.

Fig. 34 Dr. Luciano Demasi

Demasi's research spans unsteady aerodynamics, aeroelasticity, composite structures, and joined-wing configurations; his group develops multifidelity aerodynamic–structural–aeroelastic analysis capabilities for advanced flight systems. He is the author of the 2024 Springer textbook Introduction to Unsteady Aerodynamics and Dynamic Aeroelasticity, [50], and his scholarly work has accrued more than 3,000 citations, reflecting broad influence across aeroelasticity and flight-vehicle design. He received the AIAA Outstanding Contribution to Aerospace Research in 2023 [51]. Beyond research, Dr. Demasi contributes substantially to SDSU and the regional aerospace community through graduate mentoring, curriculum leadership, and professional service. He also served as the interim chair in the 2023-24 school year. In 2025, Dr. Luciano Demasi received the Northrop Grumman Excellence in Teaching Award. Current student leaders also credit Demasi as one of the key faculty supporters of AIAA SDSU in the 2020s, particularly during the post-COVID rebuilding period.

15. Xiaofeng Liu

Fig. 35 Dr. Xiaofeng Liu

Dr. Xiaofeng Liu (Fig. 35) joined the faculty of the Department of Aerospace Engineering at SDSU in 2014. Since July 2020, he has also served as the AE graduate advisor for the Master of Science in Aerospace Engineering program. He earned his Ph.D. in aerospace engineering from the University of Notre Dame and previously held positions at Johns Hopkins University, first as a postdoctoral fellow and subsequently an assistant research scientist before joining SDSU. He received his Bachelor and Master degrees in aerodynamics from Beijing University of Aeronautics and Astronautics. His early academic career also included lecturing at Tsinghua University. Before joining the Tsinghua faculty, he was a project manager at the Division of International Cooperation of the China Academy of Launch Vehicle Technology, working on projects related to international satellite launch services, especially the INTELSAT VII-A /LM-3B Project, from its inception to its early stage of contract implementation.

Dr. Liu is internationally recognized for his expertise in experimental fluid dynamics, with a particular emphasis on high-lift aerodynamics, turbulent shear layers and wakes, vortex dynamics, cavitation, bubble dynamics, advanced flow diagnostic techniques, and data assimilation. He pioneered the development of the non-intrusive pressure measurement technique (e.g., the Omni-Directional Integration and the Green's Function Integral methods and their applications, etc.). His research also extends to fluid–structure interactions and acoustics generated by turbulent flows. Over the years, Dr. Liu has published extensively on these topics, contributing new methodologies and experimental insights into flow physics.

Throughout his career, Dr. Liu's professional service and scholarly accomplishments have been recognized with multiple honors. He has been an AIAA Associate Fellow since October 17, 2013 [52]. He is the recipient of the Best Faculty Award in 2017, the Most Influential Faculty Award in 2019, and the Outstanding Faculty Award in 2025

from SDSU; and the Outstanding Contribution to Aerospace Education Award from the AIAA San Diego Section in 2022 [53], respectively. In recognition of his leadership in student professional development, he received an AIAA Special Service Citation in 2006 for establishing the Johns Hopkins University AIAA Student Branch. He is the Invited Keynote Speaker at the ASME FED 2024 Summer Meeting in Anaheim, California. As Chair of the Organizing Committee, he successfully organized ISPIV 2023 (15th International Symposium on Particle Image Velocimetry, June 19-21, San Diego State University, CA, USA), which is the first time that this premier symposium on PIV has ever been held on the campus of SDSU. He also initiated and organized the inaugural SDSU annual comprehensive technical reviews of the DBF Competition and the Rocket Project hosted by the SDSU AE Department on August 29 and September 5, 2025, respectively.

He has served as the faculty advisor to the SDSU DBF team since 2015 and as the inaugural faculty advisor to the Aztec Council on Systems Engineering (ACOSE) since 2021. He is currently a member of both the AIAA Aerodynamic Measurement Technology Technical Committee (2015 -present) and the AIAA History Technical Committee (2022-present). He has been appointed as an ONR Summer Faculty Fellow since 2016, first working at the Naval Surface Warfare Center Carderock Division from 2016 to 2022, and subsequently conducting summer research at the U.S. Naval Research Laboratory as an ONR Senior Faculty Fellow from 2024 to present.

16. Ping Lu

Dr. Ping Lu, (Fig. 36) who received his Ph.D. from the University of Michigan, currently serves as Distinguished Professor and Chair of the AE department at SDSU. Under his leadership since 2016, the SDSU AE department has expanded its faculty, tripled the number of research awards, and established a strong presence in space programs. His AIAA-affiliated accomplishments are a core part of his professional identity.

Fig. 36 Dr. Ping Lu

Within the AIAA community, Dr. Lu has held several prominent roles and received numerous high honors. He was appointed Editor-in-Chief of the Journal of Guidance, Control, and Dynamics (a flagship AIAA journal) in 2013, after serving as an associate editor since 1996 [54]. Under his editorial leadership, JGCD became one of the highest-impact journals in guidance and control and among the largest in submission volume among AIAA publications [55, 56]. He also served on the AIAA Guidance, Navigation, and Control Technical Committee (1994–2001) and as treasurer of the Iowa AIAA section (1993–1998) [54]. His service recognition includes the AIAA Sustained Service Award (2006) [55] and the Outstanding Contribution to AIAA at the National Level from AIAA's San Diego Section (2018) [55]. Dr. Lu received the Albert W. Johnson University Research Lectureship award in 2025.

On the technical side, his AIAA recognitions reflect his profound impact in guidance, control, and flight mechanics. He was elected an AIAA Fellow in 2016 "for outstanding contributions in theory, methodology, and algorithms for advanced guidance, particularly in entry and ascent flight of space transportation systems" [55]. Earlier, he received the AIAA Mechanics and Control of Flight Award in 2008 "for contributions in advanced guidance algorithms for entry and ascent flight" [55]. His research portfolio includes numerous AIAA conference papers on entry guidance, powered descent, and trajectory optimization, e.g., his Predictor-Corrector Entry Guidance for Low-Lifting Vehicles paper in 2008 [57], his work on gliding guidance of high L/D hypersonic vehicles [58], and many others presented at AIAA conferences.

17. Gary B. Fogel

Fig. 37 Gary Fogel receiving the 2019 AIAA SD Outstanding Contribution to Aerospace Education Award from Kimberly Painter. (This Figure was Updated.)

Dr. Gary Fogel (Fig. 37) is Adjunct Faculty in the Department of Aerospace Engineering at SDSU as well as with the SDSU Computational Science Research Center [59, 60]. He earned his Ph.D. in biology from the University of California, Los Angeles, and has a 30-year history of applied AI across industry, medicine, and defense as Chief Executive Officer of Natural Selection, Inc. in San Diego. These efforts include applications to aerospace engineering problems. He is a Fellow of the IEEE and has over 150 publications and 11 patents [61].

Dr. Fogel is also an expert on model aircraft of many types. He has set numerous national and world records in radio-controlled aeromodeling and is a Fellow of the Academy of Model Aeronautics and a member of the AMA Hall of Fame. Dr. Fogel also enjoys researching and writing about aviation history, focusing mainly on the history of flight in California and the West. He has authored 50 publications and four award-winning books in this area, serves as a member of the AIAA History Committee, and is an AIAA Associate Fellow [62].

As adjunct faculty, Dr. Fogel has taught a freshman introductory course in aerospace engineering (AE 123) at SDSU for nearly 15 years, inheriting it from Dr. Nagy Nosseir. Given his multidisciplinary background, the course includes lessons on ornithology, biomimicry, aviation history, and AI, along with a popular hands-on model airplane project throughout the semester. These efforts also help stress the importance of teaming and of participation in AIAA-SDSU and other engineering clubs on campus. Dr. Fogel helps connect AIAA-SDSU and AIAA-SD with regional aeromodelling clubs for additional mentoring opportunities. These efforts were recognized in 2025 with a national AIAA Outstanding Achievement Award, Section–Student Branch Partnership Award, First Place, Medium Category. His efforts to help elevate AE123 have earned several awards from the AIAA San Diego Section, including the 2023 Outstanding Contribution to Aerospace Education Award, 2019 Outstanding Contribution to Aerospace Education Award [63], 2016 Outstanding Contribution to the Community Award [64], and 2015 Outstanding Enhancement of the Image of the Aerospace Profession Award [65]. The model airplane component of Dr. Fogel's AE123 course at SDSU has been adopted by the National Free Flight Society as an annual nationwide student contest (called "AE-24") for free flight model duration [66].

B. Notable Alumni

Graduates of SDSU Aerospace Engineering have taken on leadership roles in industry, government, and research. Many of them are also AIAA or AIAA SDSU-affiliated.

1. Randall J. Seaver (Ref. Appendix A)

Randall J. "Randy" Seaver graduated from SDSU in 1966 with a degree in Aerospace Engineering, part of the program's first generation of graduates during the department's formative years under Dr. William Shutts. While at SDSU (then SDSC), Seaver was an active member and student officer of the newly founded AIAA SDSU Student Branch, which had launched in 1963. He attended professional section meetings hosted by AIAA San Diego, where students could meet industry professionals from companies like Convair and Rohr. This early exposure to technical talks and the local aerospace community reflected the department's strong connection with the region's expanding aviation industry. Seaver's participation in AIAA helped foster the bridge between SDSU's academic environment and San Diego's thriving aerospace companies, a relationship that continues to define the student branch today.

After graduating, Seaver joined Rohr Industries, one of San Diego's key aerospace firms, where he built a successful engineering career. Randy Seaver worked at Rohr Industries with Robert "Bob" Weidner (SDSU '68) and Dr. Mike Vest (Ref. V.B.10), both AIAA SDSU alumni. In the 1980s, he served as Membership Chair of the AIAA San Diego section, promoting professional engagement across the region's aerospace community. His service extended nationwide as a member of the AIAA National Membership Committee, where he attended conferences across the United States

and strengthened the organization's outreach and retention efforts. Seaver's dedication to both student and professional branches exemplifies the continuity of AIAA's mission, from fostering student enthusiasm at SDSU in the 1960s to supporting national membership decades later. This cemented his role as a vital contributor to AIAA's San Diego legacy.

2. Hermann Altmann (Ref. Appendix A)

Hermann Altmann earned both his Bachelor's (1968) and Master's (1969) degrees in AE from SDSU during a formative period for the department. While at SDSU, he was an AIAA student member and a teaching assistant for professors Dr. Nadar Dharmarajan and Dr. Robert McGhie. He recalls that his cohort was small, only about eleven aerospace students. However, students were deeply involved in the university's early aeronautics efforts. Altmann collaborated closely with fellow student Dwight Woolhouse (Ref. V.B.3) on airflow characterization tests in SDSU's newly built low-speed wind tunnel under the guidance of founding chair Dr. William Shutts [18]. These early projects helped establish SDSU's experimental foundations in aerodynamics and fluid mechanics. Mr. Altmann also received an MBA at National University, and continuing education courses at SDSU, UCSD, UCLA, and Management Courses at Boein Military Aircraft Co.

After graduating, Altmann embarked on a distinguished industry career spanning over four decades, contributing to the design, systems integration, and management of major aerospace programs. Known in the industry as a "fixer," he earned a reputation for leading engineering teams through technically challenging programs with a focus on quality and accountability. His leadership included extensive work on high-altitude, long-endurance unmanned aerial vehicles, including the Global Hawk program, for which he delivered AIAA lectures approved by Northrop Grumman on advanced systems engineering and global reconnaissance architectures. Altmann's broad technical expertise and mentorship of younger engineers positioned him as a respected figure within San Diego's aerospace community, where he collaborated with luminaries such as Dr. Joseph Katz and Greg Marien of Northrop Grumman. As chief engineer for Northrop Grumman's Ryan Aeronautical Center in San Diego, he won the AIAA Aircraft Design Award for 1999 for his leadership on the Global Hawk unmanned aerial vehicle program [67]. He also lectured with Dan Raymer on UAV's and taught Linear Algebra at Barstow College while in the U.S. Marine Corps.

Although Altmann describes himself as "a lifelong AIAA member rather than a chair or officer," his commitment to the profession and his alma mater has been lasting. He has maintained close ties to SDSU faculty and alumni, supporting AIAA student initiatives and offering insights into the department's early culture and development. He currently advises the Aztec Aerospace Design (Formerly AIAA DBF) team at SDSU. His recollections highlight both the humble beginnings and enduring spirit of the SDSU aerospace program. He recalls working in the wind tunnel, early collaborations with the AIAA San Diego Section, and the excitement surrounding the College of Engineering's accreditation in the 1960s. Reflective and modest, Altmann prefers to let his work and colleagues speak for his legacy; one defined by dedication, technical excellence, and lifelong loyalty to the advancement of aerospace engineering. Altmann received many awards: AIAA Aircraft Design Award (1999) for Global Hawk, AIAA Associate Fellow, AIAA Lifetime Achievement (2010), AIAA Distinguished Lecturer, and two General Dynamics awards (one for outstanding math in high school and one for work on NATO Cruise Missile Design).

3. Dwight Woolhouse

Dwight Woolhouse (B.S. Aerospace Engineering, SDSU '68) is an aerospace engineer whose formative work at San Diego State University helped shape the department's hands-on identity. His career contributions span NASA's Space Shuttle Program. As an undergraduate, Woolhouse collaborated closely with classmate Hermann Altmann in the summer of 1966 to survey the flow field in SDSU's newly built low-speed wind tunnel under founding chair Prof. William Shutts [18]. Their measurements led directly to the 1967 installation of settling-chamber screens, cutting the test-section turbulence factor from about 2.0 to 1.27, which was an early, student-driven upgrade that strengthened SDSU's experimental foundations in aerodynamics. He and Altmann were active in the AIAA SDSU student branch, reflecting the program's early culture of student–industry engagement.

After SDSU, Woolhouse entered the nation's emerging space era through industry roles supporting NASA programs. He first joined McDonnell-Douglas, contributing to Skylab systems work, then was hired by Rockwell in 1972 as the Shuttle moved from concept to detailed design. Over the decades, he served on the orbiter's original design team, took on hardware responsibilities (including the side hatch and a primary flight-control actuator), and ultimately managed orbiter development—leading hundreds of engineers as the program matured. Contemporary accounts and interviews place him in quality and development leadership during the construction of Endeavour, [68], and as a long-tenured Shuttle engineer from the program's earliest years through its final flights.

Woolhouse's SDSU roots remained visible in how his early AIAA-linked lab work became part of the program's institutional memory: his and Altmann's 1966–67 wind-tunnel upgrades are cited in department histories, and Woolhouse appears in AIAA SDSU's alumni rolls as a notable graduate of the late-1960s cohort. That formative student experience—AIAA branch activity tied to real laboratory improvements—mirrors SDSU's long-standing emphasis on applied aerodynamics and student leadership within the AIAA ecosystem that bridges the campus and San Diego's professional section.

4. Doug Fronius (Ref. Appendix A)

Doug Fronius is a retired aerospace engineering executive and aircraft development consultant whose 45+ year career spans management, design, development, and flight test across manned and unmanned systems. Over 33 years at Ryan Aeronautical and later Northrop Grumman, he led technical development on programs ranging from small cruise missiles to strategic aircraft. His final role was Chief Engineer for Aircraft Programs, providing technical leadership for multiple contracts and IRAD concept and development efforts across manned and autonomous vehicles. Earlier, he served as Chief Engineer of Advanced Concepts; as Director of Tactical Unmanned Systems, he led development of the MQ-8B Fire Scout; he directed the Targets program (BQM-74 and Chukar families) for the U.S. Navy and international customers; and he managed initial development of the Global Hawk HALE system. He continues consulting on aircraft development and remains active restoring and flying vintage sailplanes.

Growing up in El Cajon, Fronius was initially steered away from aerospace; his father warned him that aerospace careers rose and fell with contract wins and losses, bringing waves of layoffs. Instead, Fronius poured his energy into music. He credits serious trumpet study beginning in junior high with transforming him from a mediocre student into an honors student, and music became the vehicle for his academic turnaround. He chose SDSU largely because he could afford to live at home and commute, often biking roughly forty minutes each way from El Cajon to campus with his friend John Beach—usually faster than driving in traffic. To secure pre-registration and a semester of paid tuition, he joined the Aztec marching band and, almost by default, declared a music major. For roughly a decade, he taught trumpet privately, and after obtaining his teaching credential, he spent three years teaching kindergarten through second grade in public schools. He jokes that those years in a K–2 classroom are where he really learned how to 'manage engineers.' Fronius' pathway into aerospace included a nontraditional start: he completed a B.A. in Music (1975) before earning a B.S. in Aeronautical Engineering (1985)—both at San Diego State University (SDSU). He also holds FAA pilot and mechanic ratings, and has participated in the design of several personal aircraft, reflecting a lifelong engagement with aviation technology and history. There is also a named space on campus, the "Doug and Mae Fronius Innovation and Collaboration Room."

Even before his formal return to engineering, Fronius had slipped into the heart of the aerospace program as a music major. In the 1970s, at a time when the post-Vietnam downturn had left the Aerospace department 'virtually collapsed' and senior design seats unfilled, he was allowed to enroll in AE 460A/B, the capstone aircraft design sequence. Under part-time instructor and aircraft designer Ladislao 'Laci' Pazmany, he designed two hang-glider/sailplane concepts, including a large two-seat glider intended to give rides off the Torrey Pines cliffs. He recalls Pazmany's uncompromising emphasis on drafting quality—so strict that Pazmany would sometimes snap students' pencils if their line work were not up to standard. At SDSU, Fronius was active in the AIAA SDSU during the early 1980s, where he and Alfredo Ramirez (Ref. V.B.5) organized speaker meetings and mentored younger members. Notably, Fronius and Ramirez, through the Sigma Gamma Tau Aerospace Honors Society, built a 12-ft-span RPV from foam and fiberglass. They wrote an AIAA paper and presented it at an AIAA conference in Los Angeles. Through close ties to the AIAA San Diego Section, they helped reinforce a mentorship tradition that continued to shape AIAA SDSU's activities in later decades. Fronius is currently the chair of the Industry Advisory Board of the SDSU AE Department.

5. Alfredo Ramirez

Alfredo Ramirez is an SDSU Aerospace Engineering alumnus (Class of '85) who now serves as Sr. Manager, Subcontracts Administration at Northrop Grumman Aeronautics Systems. In his previous role as Vice President, Engineering, he led the site's engineering functional organization by providing the people, processes, and resources that support multiple divisions and programs across the campus. He previously led the San Diego Autonomous Design Center of Excellence, strengthening the site's infrastructure to support program execution. He was also recently on the SDSU College of Engineering Dean's Advisory Board [69].

Over a 30-plus-year career focused on unmanned airborne systems, Ramirez has held Director and Chief Engineer posts within the Autonomous Systems Division and played technical leadership roles on major programs, including

RQ-4 Global Hawk (since its 1995 inception), MQ-4 Triton, and NATO Alliance Ground Surveillance; he has also advised other efforts such as the MQ-8 Fire Scout and Firebird. He completed the Executive Program for Scientists and Engineers at UC San Diego, along with Northrop Grumman's Integrated Systems Program Management Conference. This career arc exemplifies how SDSU alumni translate their strong undergraduate foundations into leadership across San Diego's unmanned systems ecosystem. He is also a key part of the career arcs of other SDSU alumni.

6. Edward Bachelder

Edward N. Bachelder (Class of 1986) is an SDSU AIAA alumnus whose career has spanned Navy helicopter operations, rotorcraft flight dynamics, and human–machine systems. After graduating from SDSU, he served as a U.S. Navy helicopter pilot flying SH-60B Seahawks, an experience that later informed his research on pilot performance in degraded visual environments [70]. Bachelder went on to complete his Ph.D. in Aeronautics and Astronautics at the Massachusetts Institute of Technology in 2000, in the Humans and Automation Division, with a dissertation titled "Perception-Based Synthetic Cueing for Night-Vision Device Rotorcraft Hover Operations" [71]. His thesis combined rotorcraft flight dynamics, human perception, and display design, investigating how carefully designed synthetic visual cues overlaid on night-vision imagery can help pilots safely perform precision hover and landing tasks when natural visual references are sparse or misleading [71].

Following his doctoral work, Bachelder completed a postdoctoral appointment in MIT's Software Engineering Research Lab under Nancy Leveson, contributing to methods for graphically describing and probing complex system behavior to prevent operator mode confusion and automation-related hazards [72]. He subsequently joined Systems Technology, Inc. in Hawthorne, California, where he served as a principal research engineer and technical director for the "Fused Reality" program, helping to pioneer mixed-reality systems that superimpose virtual aircraft, refueling tankers, and mission scenarios into real flight and parachute-training environments [70, 73]. In recent years, Bachelder has transitioned to the San José State University Research Foundation, working in the Human Systems Integration Lab in close collaboration with NASA Ames and the U.S. Army Aviation Development Directorate as a senior research engineer [74, 75]. His recent work includes isomorphic spatial visual–auditory cueing for obstacle avoidance in degraded visual environments and applications of the SCOPE (Spare Capacity Operator Estimator) framework to predicting pilot workload, performance, and handling qualities, reflecting a career at the forefront of pilot–vehicle systems, handling qualities, and human-centric flight-control research [74, 75].

7. Chris Root (Ref. Appendix A)

Chris Root (B.S. Aerospace Engineering, SDSU 1987; Fig. 38 & 44) is a veteran Navy systems engineer and consultant whose four-decade career bridges hands-on aircraft work, innovation management, and professional service to the aerospace community. After joining the Naval Air Systems Command, he advanced through maintenance and modification programs for Navy aircraft before concluding his civil-service career as the command's Innovation Lead for advanced technology. Since retiring in 2020, he has operated AeroRoot21 LLC in San Diego, advising companies on flight-test, sustainment, and workforce development initiatives. Root's early engineering and leadership foundation was shaped by SDSU's immersive, project-driven culture—he joined AIAA as an undergraduate in 1985. He quickly gravitated toward professional engagement, reflecting the department's emphasis on bridging academia and industry.

Fig. 38 Chris Root (right) awarding Dr. Joe Katz with the AIAA SD Lifetime Achievement Award in 2024.

His fascination with aircraft began early, when his father's job with Pacific Southwest Airlines (PSA) in San Diego gave him rare childhood access to the cockpit of a Boeing 727. As an undergraduate, Root was immersed in one of AIAA SDSU's most active eras. Chris Root credits the environment created by faculty and older students for the section's involvement in AIAA SD and AIAA national. After completing the senior design course (AE 460B), Chris Root and his team presented their design paper, the "T-23 Bluebelly" navy jet trainer, to an AIAA Region VI Student Conference. It is interesting to note that their design closely resembles the

McDonnell Douglas T-45 Goshawk. By 1989, he had become one of the youngest AIAA San Diego Section chairs (at age 28), demonstrating how the SDSU student branch produced professionals ready for leadership within the broader AIAA network.

Throughout the 1990s and 2000s, Root remained an anchor between AIAA San Diego and SDSU. He has long served on the AIAA San Diego Council as Honors & Awards Officer and Reuben H. Fleet Scholarship Coordinator, supporting student paper contests, banquets, and section-level recognition programs that continue the traditions he experienced as a student. He also advises the SDSU Aerospace Engineering Department through its Advisory Board and College of Engineering Board, helping align curricula with industry needs. In interviews, Root has emphasized reviving joint student-professional events—such as distinguished-lecturer evenings and informal networking sessions—to strengthen the generational pipeline that once defined AIAA SDSU. His career and volunteerism embody the enduring partnership between SDSU and AIAA San Diego, demonstrating how the organization continues to connect education, industry, and community in the region.

8. Christine Probett (née Beckner) (Ref. Appendix A)

Christine Probett (Fig. 44) is a notable SDSU alumna whose career bridges aerospace engineering, business leadership, and education. While at SDSU, she earned degrees in both History ('85) and Aerospace Engineering ('87), and later completed an MBA ('97) whose tuition was fully sponsored by her employer, ROHR, through a competitive internal program; support she credited as instrumental to her success in management and leadership roles. She also came from an SDSU family, noting that her father had earned three degrees from SDSU, which made the campus feel like a natural academic home. When she first started college, she imagined becoming a teacher. Still, her experiences in the AE program, AIAA, and her NASA co-op gradually broadened her view of what an engineering career could look like. As a student, Christine was not only involved in AIAA but also served as President of the Aerospace Engineering Honor Society (Sigma Gamma Tau), which frequently collaborated with AIAA on professional events and networking opportunities. She recalled that Sigma Gamma Tau often took up most of her formal leadership time, giving her a slightly different vantage point on the AIAA student community, even as the two groups worked closely together.

Her early career began with a four-year NASA co-op at the Dryden Flight Research Center (now Armstrong) in the Mojave Desert, in which she alternated fall semesters on campus with spring and summer terms working full-time in flight test. Her first assignment involved helping an engineer build and wire electrical connectors—meticulous work she later joked was 'boring'—but the rotation soon moved her into more advanced instrumentation and analysis. For one experiment, she even secured a back-seat ride in a T-38 jet so she could 'see how it looks in the air,' and she admitted that the flight was so exhilarating she had to work hard to stay focused on the data; the experience ultimately solidified her passion for aerospace. She later joined ROHR Industries in Chula Vista, focusing on aerodynamics and flight-condition modeling using early computer systems and supporting flight-test campaigns that often ran through the night, since vendors had access to the airplane only when everyone else was off shift. She eventually rose to become president of a company division in Phoenix, commuting there weekly from San Diego and joking that flying out on Monday mornings and home on Friday afternoons made it 'the easiest commute in the world' because she was rarely stuck in traffic.

Christine then returned to SDSU and taught for 18 years at the College of Business, educating more than 9,000 students across 91 courses. Her final course, AE 123, marked a symbolic return to her aerospace roots. Now teaching a class half full of women, she was joyed by the striking contrast to the small number of women in her cohort decades earlier. As one of only a handful of women in her original aerospace cohort, she remembered feeling highly visible: strong performance drew supportive attention, but any misstep risked reinforcing broader doubts about whether women could do engineering.' That experience informed the way she later mentored younger generations and made the gender balance in her AE 123 classroom especially meaningful to her. Beyond the school, she served as President of the AIAA San Diego Section, maintaining strong ties between the professional chapter and SDSU's student branch by ensuring that student representatives regularly participated in professional meetings and networking events. She also described the practical challenges of teaching AE 123 in an 8:00 a.m. Monday time slot—the 'worst classroom time slot' in her words—which made it challenging to persuade industry guest speakers to drive to campus at the very start of their workweek. Many of her 'aerospace buddies' declined the invitation, and she credits fellow alumnus Chris Root as one of the few who consistently made that early-morning trip to speak to students. In the years 2001-2002, she won the outstanding contribution to aerospace management award through AIAA.[a] Mrs. Probett's career exemplifies the interdisciplinary spirit, mentorship, and lifelong connection to AIAA that continue to shape SDSU's aerospace legacy.

[a]2001-2002 AIAA SD Newsletter

9. Dave Bradley (Ref. Appendix A)

David "Dave" Bradley is a distinguished SDSU Aerospace Engineering alumnus (Class of 1988) whose career and service reflect both the technical and professional legacy of AIAA SDSU. As a student during the 1980s, Bradley experienced the program at a time when aerospace engineering at SDSU was highly impacted, requiring students to "crash" classes due to limited enrollment systems. He recalls studying under foundational professors such as Dr. Pierucci and Dr. Allen Plotkin, and was heavily influenced by CAPT George Faulkner, who brought industry speakers to campus and strengthened student connections with the professional aerospace community through AIAA.

After graduating, Bradley originally hoped to work on advanced aircraft at Lockheed's Skunk Works in Burbank. Still, a hiring freeze there redirected him to General Dynamics Space Systems in San Diego, where he ended up working on launch vehicles. At the time, General Dynamics was the largest private employer in San Diego County, with roughly 27,000 employees across multiple divisions, making it a natural landing spot for SDSU aerospace graduates. When General Dynamics consolidated its rocket work in Denver, Bradley briefly shifted "from building rockets to building boats" at National Steel and Shipbuilding (NASSCO) before joining McDonnell Douglas as one of the first engineers hired on the Delta IV launch vehicle program. Over the course of his career, he ultimately became program manager for classified National Reconnaissance Office (NRO) launch missions at Boeing and joked that he was "acquired" by five different companies as the industry consolidated. His professional journey later spanned Boeing, SAIC, Orbital ATK (now Northrop Grumman), and General Dynamics Mission Systems. Today, he serves as Vice President at Leonardo DRS in Cypress, California.

Although Bradley later returned to SDSU to begin an MBA, he ultimately completed the degree at the University of Southern California (USC). Bradley emphasized the importance of professional networking, noting, "I've never gotten a professional job without a personal connection." His involvement in AIAA extended beyond SDSU; he served as an officer in the AIAA San Diego Section, helped evaluate student papers, and became a key figure nationally as Chair of the Young Professionals Committee, where he was a key component to the *Young Professionals' Aerospace Career Handbook* written by Kenneth Speicher and Russell Hunter. He also helped found the Systems Engineering Technical Committee (c. 1992–1993) and regularly represented SDSU at national AIAA conferences.

Today, while his professional focus has shifted toward national security organizations such as NDIA (National Defense Industrial Association) and NSSA (National Security Space Association), Bradley remains closely connected with fellow SDSU AIAA alumni, continuing the tradition of mentorship, community, and professional excellence that has defined his career. He is the mayor of Rancho Palos Verdes in California.

10. Mike Vest (Ref. Appendix A)

Dr. Michael "Mike" Vest (Fig. 39) is a highly accomplished SDSU aerospace engineering alumnus whose leadership, innovation, and research helped lay the foundation for many of the department's modern student programs, most notably the Design/Build/Fly (DBF) team. He began his college education at Grossmont College. Vest earned his B.S. (1991), M.S. (1993), and Ph.D. (1996) in Aerospace Engineering from SDSU, becoming one of the first three graduates of the university's new aerospace Ph.D. program. (He noted that he was technically the third ever SDSU Ph.D. in Aerospace Engineering, as two others had done their dissertations before him.) As AIAA SDSU Student Branch President, during his master's program years, he initiated some of SDSU's first RC airplane design/build projects, which directly evolved into today's nationally recognized DBF team. Beyond AIAA, Vest was also heavily involved with the campus ASME chapter and participated in a human-powered vehicle competition focused on designing an aerodynamic bicycle fairing, illustrating how student design culture flowed across multiple engineering societies at SDSU. He recalls that their earliest RC airplane concept explored a joined-wing, blended-body configuration, an ambitious layout that reflected the willingness of AIAA SDSU students to experiment with unconventional geometries even before the formal DBF competition existed. Seed funding for those first RC aircraft came from the AIAA San Diego professional section, which provided small grants that allowed students to purchase materials and hardware and directly linked the emerging design/build culture on campus to the

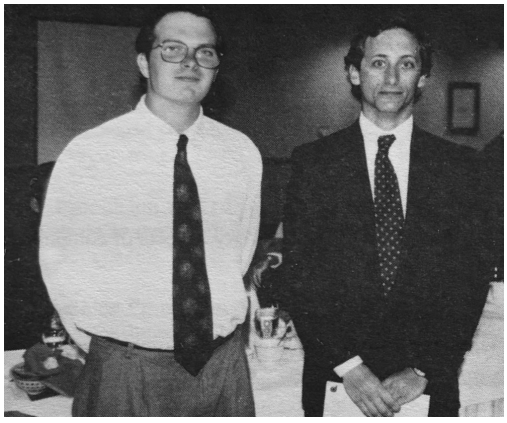


Fig. 39 Justin Fleet presents scholarship check to Mike Vest (right) in 1993

local professional community.

His academic work reflected both creativity and technical depth, with his master's research focusing on scramjet fuel injectors with Nagy Nosseir, while his Ph.D. dissertation under Dr. Joe Katz and Dr. Allen Plotkin explored the unsteady aerodynamics of bird flight; this included the construction of a mechanical pigeon model for wind tunnel experiments and complementary CFD simulations. He was also recognized by the AIAA San Diego Section for academic merit in 1993, 1994, and 1995 by being awarded the Reuben H. Fleet scholarship (Ref. Appendix C).

Professionally, Vest's career spanned major aerospace firms as he contributed to wind tunnel testing of Delta rockets at McDonnell Douglas/Boeing, worked on engine nacelle design at ROHR Industries (now Goodrich Aero Structures), and joined Northrop Grumman on the Global Hawk UAV program. Later, at General Atomics, he worked extensively on the Predator UAV, describing the early GA environment as "the wild wild west" for its fast-paced innovation and autonomy. He illustrated that atmosphere with stories from flight-test campaigns: in one case, an avionics technician at an airport near Palmdale cut a hole in a fairing with a sawzall to relieve an electronics cooling issue during testing; in another, the team kept avionics warm during Alaska flights by wrapping components in a Mylar thermal blanket and installing a small battery-powered heater. For Vest, these improvised fixes captured the improvisational, 'wild wild west' culture of early Predator development. Dr. Vest also founded a company focused on autonomous ground vehicles—early work on self-driving car technology—and a second business developing light-rail vehicle inspection systems for operators such as the San Diego Trolley, using automated sensors and laser scanners to measure overhead wire wear and thickness.

He retired from General Atomics around 2021–2022 and now resides primarily in Oregon. Throughout his career, Vest has emphasized the lasting impact of AIAA and SDSU's alumni network, noting that he "never got a job through a want ad". Each opportunity stemmed from personal and professional connections made through AIAA. Even after stepping back from AIAA leadership, he continued to advocate for student participation in professional societies such as AIAA and ASME during his later years teaching at SDSU. His legacy endures as a bridge between academic research, professional practice, and the student-led innovation culture that defines SDSU Aerospace today.

11. Jordan Evans (Ref. Appendix A)

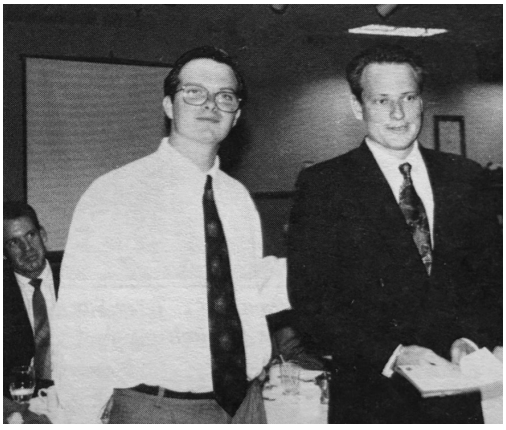


Fig. 40 Justin Fleet presents scholarship check to Jordan Evans (right) in 1993

Jordan Evans' (Fig. 40) fascination with aerospace began in the mid to late 1970s, inspired by NASA's Viking Mars landings and the launches of Voyager 1 and 2, as well as by Star Wars. Drawn to both engineering and music, Evans chose SDSU for its strong Aerospace Engineering program and exceptional jazz studies program, where he played upright and electric bass, sousaphone, and pep band bass. His SDSU roommate was also a musician and aerospace engineering major, and the two even played together in a Rush cover band during the 1980s. Beginning his undergraduate studies in 1988, Evans became involved in the AIAA SDSU student branch almost immediately and remained active throughout all five years of his undergraduate education. He contributed to events, mentorship, and the organization's professional activities that closely tied students to the AIAA SD section. To afford his education, Evans worked two jobs while attending SDSU and even sold his car to pay for school, going without one until his fourth year.

Graduating in 1993 as the top aerospace student in his class, Evans secured a competitive NASA Goddard internship during his studies. This was a rare achievement amid the early 1990s hiring slowdown. Because campus email access was still limited, he recalls using the College of Engineering dean's office fax machine to stay in touch with his NASA Goddard mentor after returning to SDSU, a reminder of how analog communication remained in the early 1990s. Following graduation, he joined Northrop Corporation, where he worked on flight control system tests for the first two B-2 Stealth Bombers. This early experience with control systems, testing, and interdisciplinary teamwork prepared him for a lifelong career advancing the reliability and performance of flight and space vehicles. His trajectory from an AIAA SDSU member to an aerospace industry leader exemplifies the organization's impact on career readiness and professional networking.

Today, Jordan Evans is a senior leader at NASA's Jet Propulsion Laboratory (JPL), where he has held key roles in Mars missions and mechanical systems leadership. He has continued his AIAA involvement. Notably, for the past two

years, he served as a track organizer for the AIAA International Technical Excellence (ITE) Aerospace Conference in Big Sky, Montana. He is also on the SDSU College of Engineering Dean's Advisory Board [76]. Evans' journey reflects the enduring legacy of AIAA SDSU in being a launch pad for impactful careers, if used right.

12. Richard Gunderson (Ref. Appendix A)

Fig. 41 Rich Gunderson as SDSU AIAA chair in 1999/2000

Richard "Rich" Gunderson (Fig. 41) is an SDSU Aerospace Engineering alumnus (Class of 2000) who played a pivotal role in revitalizing student involvement in the AIAA SDSU Chapter during the late 1990s. Serving as Student Chapter Chair in the 1999-2000 school year, Gunderson joined AIAA shortly after entering the program in 1997, drawn by its newfound strong sense of community and its multitude of opportunities to learn from upperclassmen. He had initially started his studies in mechanical engineering at the University of Utah. Still, he decided to transfer to SDSU after, as he joked, "drawing a line on the map" and looking for a place that "doesn't snow." He took a semester off to work and establish California residency. Under his leadership, AIAA began rebuilding momentum after a decade of decline, organizing many social and professional events, including the AIAA Region VI Student Conference (hosted by SDSU) in April 2000.

During his time at SDSU, Gunderson worked closely with Dr. Joe Katz, contributing to a Northrop Grumman research project and completing his senior design (AE 403) on Global Hawk wind tunnel optimization; an experience that directly led to his first job at Northrop Grumman. Once there, Gunderson found himself back in a San Diego wind tunnel working with the very same Global Hawk model he had used for AE 403—this time in a larger industrial facility; an experience he described as bringing his undergraduate project "full circle." Gunderson also recalls a distinctive AE 460 senior design course taught by visiting professor Asher Seagal from the Technion in Israel. Instead of the usual close-air-support jet concepts, Seagal required teams to conduct market research and design a 90-passenger regional jet, reinforcing the program's emphasis on both technical analysis and real-world mission needs. He also developed a close mentorship with CAPT George Faulkner, AIAA's long-time faculty advisor, whom he described as a kind and encouraging mentor who treated students as equals. He was also recognized by the AIAA San Diego Section for academic merit in 1998-1999 and 1999-2000 by being awarded the Reuben H. Fleet scholarship (Ref. Appendix C).

Professionally, Mr. Gunderson went on to build a distinguished career in the aerospace industry. In 2005-2006, Gunderson completed an M.B.A. through one of Arizona State University's pioneering online programs. Around the same time, he briefly considered leaving aerospace after receiving an offer from Deloitte Consulting in Atlanta that would have had him traveling roughly fifty weeks a year. Fellow alumnus Mike Vest encouraged him instead to speak with his manager at General Atomics. This conversation ultimately led Gunderson to remain in San Diego's aerospace community rather than pivot into full-time management consulting. After working at Northrop Grumman (2000–2007), he joined General Atomics, where he now serves as Senior Director of Flight Technologies, leading a team of about 120 engineers specializing in guidance, navigation, control, aerodynamics, CFD, and thermal analysis. He continues to maintain close ties with SDSU, visiting the campus several times a year and supporting student recruitment and mentorship through AIAA, DBF, and the aerospace program.

13. Chad Berman (Ref. Appendix A)

Chad Berman (Fig. 42) first attended Moorpark College, initially enrolling as a business major before discovering aerospace engineering and switching into AE. Berman then transferred to SDSU in 1999 and dove straight into AIAA SDSU, quickly becoming a core student leader as the program rebounded from a difficult decade in the 1990s. He was the AIAA SDSU student chair in 2000-01. He also helped bring the AIAA Region VI Student Paper Conference to San Diego from April 7-9, 2000, alongside Rich Gunderson (Ref. V.B.12) and Timothy Lo (Ref. V.B.16), as well as AIAA SD and the SDASM. This event re-energized the recovering department and student body. His graduating cohort was about 21 students, but AIAA served as a near-universal hub for them by combining technical events, fundraising, and speaker nights that linked students with alumni and industry.

Fig. 42 Chad Berman (dark blue shirt) at an AIAA field trip to Navair, North Island

Berman is best known for "resurrecting" SDSU's Design/Build/Fly (DBF) program after an early-2001 leadership collapse—rallying a new team, finishing the aircraft *Full Monty*, and getting SDSU back to the AIAA competition (20th in 2001). The team leveraged that experience to place 6th with *Monty's Revenge* in 2002 and, building on the momentum he helped create, captured 1st place internationally in 2003 with *The Spirit of Monty*. These seasons also seeded enduring ties with mentors like CAPT George Faulkner and Northrop Grumman engineers who hosted the team's design reviews, illustrating how AIAA SDSU's community and DBF's hands-on culture reinforced one another. Academically, Berman turned his senior project into a peer-reviewed AIAA conference paper, *Static Thrust Study of an Airboat Propeller* (AIAA-2003-0113), winning first place in the National AIAA Undergraduate Paper Competition in 2003 [23, 77]. He was also recognized by the AIAA San Diego Section for academic merit in 1999/2000, 2000/2001, and 2001/2002 by being awarded the Reuben H. Fleet scholarship (Ref. Appendix C).

Chad Berman has built a distinguished career in the aerospace and defense sector, serving for more than two decades in the U.S. Department of Defense flight operations, test programs, and program management roles. Early in that career, he completed a master's degree at the Air Force Institute of Technology (AFIT) and spent two years as a systems engineer focused on aircrew systems and survivability equipment—including oxygen systems (OBOGS), helmets, night-vision goggles, and ejection seats. His background includes 6 years as a US Navy Test Pilot and Instructor, underpinning a technical and operational perspective in managing complex aerospace systems. More recently, he works as an Experimental Test Pilot at Robinson Helicopter in Torrance, CA, working on experimental eVTOL systems.

14. Thao T. Tran-Ngo

Thao T. Tran-Ngo is an SDSU alumnus (class of 2002) who helped shape the early days of AIAA DBF (now Aztec Aerospace Design). In 2002, Tran was named one of six San Diego students to receive the Reuben H. Fleet scholarship from AIAA SD (Ref. Appendix C). She received her Ph.D. in Aerospace Engineering from Georgia Institute of Technology in 2008. Thao Tran has worked at the Naval Air Warfare Center Weapons Division since 2008, focusing on basic science research of energetic materials and their individual components. Her current research focuses on combustion instabilities in solid rocket motors, as well as on insensitive munition technology and testing for missile systems. She is currently a member of the SDSU AE department's industry advisory board.

15. Leonel Rios-Reyes

Leonel Rios-Reyes is an SDSU alumnus (class of 2002). He was recognized by the AIAA San Diego Section for academic merit in 2002 by being awarded the Reuben H. Fleet scholarship (Ref. Appendix C). He was inducted into the Sigma Gamma Tau Aerospace Engineering Honor Society in 2002. He also received his Ph.D. in Aerospace Engineering from the University of Michigan in 2006. [78] Leonel Rios-Reyes published many papers, notably *Trajectory Control for General Solar Sails* [79] and *Solar-Sail Navigation: Estimation of Force, Moments, and Optical Parameters* [80], both through the AIAA Guidance, Control, and Dynamics committee. After completing his studies, he began working at The

Aerospace Corporation, where he has performed guidance and navigation analysis for space launch vehicles, assisted the Government in independent assessments of suborbital launch vehicles and payloads, and designed and executed numerous suborbital experiments.

16. Timothy Lo

Timothy (Tim) Lo was a highly active and influential AIAA SDSU student leader in the early 2000s, best known for his energy, organization, and leadership in revitalizing both the Design/Build/Fly (DBF) program and broader AIAA student engagement at San Diego State University. Serving as Student Branch Chairman around 2001–2002, Lo was described as "hyperactive" not from energy drinks but from pure drive and enthusiasm—qualities that propelled the chapter into one of its most dynamic periods. Under Tim's leadership, the AIAA student branch entered a new era of activity and visibility. He organized a dedicated student task force to compete in the AIAA Design/Build/Fly competition, overseeing not only the technical design and fabrication of the aircraft but also a successful fundraising campaign that raised over 3,000 dollars. His efforts helped cement DBF's future role as a cornerstone of SDSU aerospace education and student involvement.[a]

In collaboration with Rich Gunderson, Chad Berman, and CAPT George Faulkner, Tim Lo also played a leading role in organizing the 2000 AIAA Region VI Student Paper Competition, hosted by SDSU in Old Town and at the SDASM, a significant milestone for the student branch. Known for being "regimented and thorough," Lo managed much of the logistical groundwork for the event, coordinating with multiple universities and professional members (Ref. V.B.13 & V.B.12). He was also recognized by the AIAA San Diego Section for academic merit in 2001/2002 and 2002/2003 by being awarded the Reuben H. Fleet scholarship (Ref. Appendix C).

Through his leadership, professionalism, and enthusiasm, Timothy Lo helped transform AIAA SDSU into a vibrant, visible, and technically active organization, laying the groundwork for the chapter's continued success in competitions, outreach, and student development.

17. Greg Marien

Greg Marien is a distinguished SDSU Aerospace Engineering alumnus and a key early contributor to the university's AIAA Design/Build/Fly (DBF) program. As a student, Marien worked closely with Doug Fronius, an SDSU alumnus and mentor who later hired him at Northrop Grumman, where Marien became a leading engineer in the company's Unmanned Systems division V.B.4. During his time at SDSU, he played an essential collaborative role in developing the early DBF teams, helping lay the technical and organizational groundwork that shaped the competition's long-term success V.B.13.

Professionally, Greg Marien became an active member and leader in the AIAA San Diego Section, where he was recognized for his exceptional service. He received the Outstanding Contribution to the AIAA San Diego Section Award (2006–2007) for his "superior leadership and modernization of the section's operations while continuing successful activities".[b] The following year (2007–2008), he was honored for his Outstanding Contribution to the Community,[c] and under his leadership, the section earned the National Outstanding Section Award two years in a row in 2006/2007 and 2007/2008.[d]

Marien's career and volunteer service reflect his enduring commitment to advancing aerospace education, professional engagement, and community outreach—continuing the legacy of collaboration and innovation that began during his involvement with AIAA at SDSU. In 2003, SDSU won 1st place in the international Design/Build/Fly competition, and Greg Marien was part of that team. After graduating, Greg Marien also taught AE 460 (aircraft design) as a lecturer at SDSU; Northrop Grumman manager Doug Fronius, who worked closely with the team, singled Marien out as the one student leader whose name 'jumps out' from his years of mentoring SDSU DBF.

18. Nils Sedano (Ref. Appendix A)

Nils Sedano is an SDSU AE alumnus (class of 2008) who played a key role in strengthening the technical and institutional foundations of the SDSU Rocket Project during its formative years. As part of a small cohort of roughly a dozen students, Nils became an early leader in the Rocket Project, helping to formalize the group's connections with the broader aerospace community. Through the California Space Grant Consortium, and with sponsorship from the AIAA

[a] 2001-2002 AIAA SD Newsletter
[b] 2006/2007 AIAA SD Newsletter
[c] 2007/2008 AIAA SD Newsletter
[d] 2006/2007 AIAA SD Newsletter

San Diego Section, Sedano was selected to visit NASA Glenn Research Center, where he helped establish a technical partnership that advanced SDSU's liquid propulsion research and gave the Rocket Project national visibility. He was also deeply involved in AIAA leadership, serving as a student representative to the AIAA San Diego professional council, where he attended section meetings alongside CAPT George Faulkner and even participated in faculty interview panels, meeting future SDSU professors like Dr. Gustaaf Jacobs. He was also recognized by the AIAA San Diego Section for academic merit in 2003/2004 and 2004/2005 by being awarded the Reuben H. Fleet scholarship (Ref. Appendix C). In particular, Sedano served as the AIAA student section representative on the faculty interview panel that recommended the hire of Professor Gustaaf Jacobs, giving the student branch a literal seat at the table to shape the next generation of leadership in the department.

Sedano's early career path underscored how vulnerable new graduates can be to shifting national priorities. He initially had an offer to join a lunar lander propulsion team through NASA Glenn, but the program was canceled just as he was graduating, and his resume was instead forwarded to the Air Force side. Nils Sedano went on to work in rocket propulsion at the Air Force Research Laboratory (AFRL) and later with the U.S. Space Force at Edwards Air Force Base, maintaining an active pipeline between SDSU students and advanced aerospace R&D opportunities. Known for his belief that "coursework is the foundation, but you learn engineering by doing and networking," Sedano continues to exemplify AIAA's values of mentorship, practical experience, and professional collaboration that shaped his own path from SDSU to national aerospace leadership.

19. Cesar Martin

Cesar Martin (class of 2011) did not show immediate interest in AIAA until realizing the benefits of attending technical talks and networking events with both the Student Branch at SDSU and the AIAA San Diego Section. While a student at SDSU, he held multiple positions in the student chapter and was active in DBF between 2009 and 2011. Upon graduating from SDSU, Martin remained active in the AIAA San Diego Section, serving in various appointed roles, including Public Policy, Region 6 delegate, and Young Professionals chair. His time in AIAA San Diego also included elected officer positions, including Secretary, Vice Chair (Long Range Planning), and Section Chair. While at SDSU, Cesar Martin held various internships in the private and civil sectors. Upon graduation, Martin chose to maintain his commitment to civil service by becoming an Aerospace Engineer with Naval Air Systems Command (NAVAIR) at NAS North Island. While at NAVAIR, Martin has provided fleet/depot support, repair design, stress analysis, troubleshooting, engineering investigations, and mishap investigation support for various US Navy aircraft and weapon systems. Martin now resides in Texas, where he oversees a team of over 100 engineers located around the world that provide direct in-service engineering and logistics support for the F-35 Lightning II.

20. John Blaske

John Blaske (class of 2017) is an excellent example of the modern, post-2000 AIAA SDSU cohort, blending non-traditional backgrounds with hands-on aircraft and UAV work. Before arriving at SDSU, he served as an artilleryman (MOS 0844) in the United States Marine Corps, then transitioned into engineering and completed his aerospace degree with honors. As a freshman, he interned with 3D Robotics, working on a waterproof quadcopter capable of taking off from and landing on water—an early prototype known as Iris AQ (Aqua Quad) that was demonstrated in collaboration with Unmanned Aerial Solutions at the College of Engineering's 2014 Design Day. Within the AIAA SDSU student branch and its Design/Build/Fly ecosystem, Blaske gravitated toward industry-sponsored flight-vehicle projects: he was listed as the student member on the 3DR/UVS Iris AQ collaboration in 2014 and later served on the AE 460 "Dank Squad" team that designed Sanik X, a next-generation supersonic business-jet concept advised and sponsored by Northrop Grumman for the 2017 Design Day. That combination of UAV development, supersonic conceptual design, and AIAA-linked project work placed him at the center of SDSU's culture of applied aeronautics and student–industry engagement in the 2010s.

After SDSU, Blaske moved directly into advanced aircraft work in the defense sector. He began his career as a structural engineer and now serves as a Sr. Principal Structural Engineer in Northrop Grumman's Advanced Programs organization in Palmdale, California, where he works on classified air-vehicle programs and helps recruit new engineers into mission-critical vehicle and survivability roles. He has described the arc from Marine Corps artilleryman to structural engineer on "some pretty remarkable aircraft."

21. Kimberly Painter

Kimberly "Kim" Painter (Fig. 43) is a Flight Controls and Hydraulics Systems Lead for the E-2/C-2 Fleet Support Team at Naval Air Systems Command. Painter graduated from SDSU in 2017 with her B.S. in Aerospace Engineering. During her academic career, Painter was mentored by renowned AIAA legend Jordan Evans and instructed by local AIAA pioneers Greg Marien and Gary Fogel. Painter dedicated significant volunteer efforts to the SDSU AIAA Student Chapter and the Rocket Project's solid-fuel rocket program.

Painter's leadership journey began in 2015 when she was elected as Secretary of the SDSU AIAA Student Chapter. At the time, the chapter faced engagement challenges following the separation of Design/Build/Fly (DBF) and Rocket Project from AIAA. However, after the local student council revitalized the "Aero Lounge," it became a critical turning point for community involvement and rebuilding chapter momentum. The chapter not only stabilized but also expanded its outreach by supporting the establishment of a new AIAA international student chapter at the Universidad Autónoma de Baja California in Tijuana, Mexico. Painter played a key role in increasing the chapter's social media presence, event tours, strengthening networking opportunities for students, and advising the 2016-2017 council through which efforts earned her the SDSU AIAA Student Chapter Award at the 2017 AIAA San Diego Section Awards.

Fig. 43 2017 Reuben H. Fleet Scholarship Recipient Kimberly Painter.

Throughout her undergraduate AIAA networking events, Painter met her future boss, mentor, and lifelong friend, Cesar Martin. Painter began working for Martin in July 2017 and succeeded him in his role in January 2022, which she continues to hold.

From the beginning of her professional career, Painter remained as an active and engaged professional member with the AIAA San Diego Chapter. She served as the section's newspaper editor from 2017 to 2018. In summer 2018, she was elected Vice Chair for Long Range Planning, and by winter 2018, at only 25 years old, she assumed the position of Chair of the AIAA San Diego Section. Despite her young age, Painter applied her leadership skills to address challenges in membership engagement and chapter growth, organizing prestigious events that strengthened local community enthusiasts. Painter also notably led the section through the challenging times at the start of the COVID-19 pandemic, when a transition to digital engagement was necessary during social distancing. Painter served as Chair until summer 2021 and subsequently transitioned to Treasurer for the AIAA SD professional chapter.

22. Michael Stromecki

Michael "Mike" Stromecki is an SDSU Aerospace Engineering alumnus (B.S. 2019; M.S. 2023 in Guidance, Navigation, and Controls) whose time on campus was defined by hands-on technical work, mentorship, and student leadership. Throughout his years at SDSU, he assisted many other students' projects in small but critical ways, helping teams complete their goals. His support ranged from setting up both the low- and high-speed wind tunnels for laboratory and project testing to troubleshooting tests and educating students on composite manufacturing techniques while assisting them with their composite builds. He regularly instructed students on shop machine safety and proper use, machined parts for others, and demonstrated various other manufacturing techniques. In addition, he helped students learn multimeter operation and use cases and provided similar practical guidance across a wide range of lab tasks. Stromecki also served as the first AE lab technician assistant on record at SDSU, formalizing much of this informal support role. Beyond his direct work in the labs, he and several friends helped start other student organizations on campus, including a drone racing club. He and several classmates received scholarships such as the Reuben H. Fleet scholarship, which he notes was a great assistance to each recipient. Building on this foundation, Stromecki led SDSU Team Icarus as the team's second project manager after its founder, overseeing the design, build, and flight of a Mach 1.9 boosted-dart vehicle that was on track to reach its simulated maximum altitude of 45,000 ft before a telemetry-unit issue triggered drogue deployment at approximately 22,000 ft and Mach 1.0. Under his leadership, Team Icarus also

designed, built, and tested a roughly 950 lbf, 4 in × 4 ft small O-class solid rocket motor with plans for a larger successor. The team characterized a solid propellant formulation that supported both Team Icarus efforts and his senior project work. After years of close collaboration, Team Icarus ultimately integrated with the SDSU Rocket Project; along the way, Team Icarus members aided the Rocket Project liquids team on design, build, testing, and flight activities, while the liquids team, in turn, supported Team Icarus with college and organizational space and resources. Stromecki now works at Northrop Grumman as a Guidance, Navigation, and Controls (GNC) engineer on aircraft programs.

Within AIAA SDSU, Michael Stromecki served as Secretary of the student chapter from 2017 to 2018, during which time the chapter continued and expanded upon past AIAA goals. As part of this leadership cohort, club members attended meetings with the AIAA San Diego Professional Section, participated in lectures by AIAA members on niche aerospace topics, and toured nearby aerospace industry facilities. Students were also able to purchase exclusive SDSU AIAA merchandise such as custom shirts and "Remove Before Flight" keychain flags, apply for AIAA-exclusive scholarships, and volunteer at STEM introduction events for middle- and high-school students held at museums and organized through AIAA. Lecture topics during this period included fascinating and technically rich subjects such as the KH-9 satellite program and protection strategies against lightning strikes for composite structures, among others. Stromecki and his peers made extensive use of AIAA's expansive trove of technical documents as students, drawing on these resources for coursework and various projects, and they continue to use those same references in their professional work. He emphasizes that having an active SDSU AIAA student chapter opened many doors for him and his classmates, and he remains grateful for the opportunities and experiences that AIAA provided.

23. Bradley J. Zelenka

Bradley J. Zelenka (SDSU M.S. AE '21) is a Senior Test & Evaluation Engineer at Supernal whose early career was shaped by deep involvement with AIAA through research and competition. As a graduate student under the supervision of Prof. Xiaofeng Liu, he authored and presented multiple AIAA papers on Prandtl-D aerodynamics and SDSU wind-tunnel research, including contributions to SciTech in 2021 and 2022. A presentation by Bradley Zelenka and Aldair Herreion-Andrade about the wind tunnel aerodynamic force balance calibration, Wind Tunnel Force Balance Calibration at the San Diego State University Low Speed Wind Tunnel, won 2nd Place in the Master's Category at the AIAA Region VI student conference in April 2021 [18] with Prof. Xiaofeng Liu as his advisor. Today, Zelenka applies that test discipline to advanced eVTOL programs at Supernal.

Fig. 44 1987 AE460 Senior Design Team: The Bluebellies; left to right: Alex Hlavacek, Darren Lovato, Christine Probett (née Beckner), Christopher Root, William Rickles

VI. Cultural and Professional Impact

SDSU's AIAA chapter has created valuable opportunities for aspiring aerospace students while actively building an inclusive and supportive community. Culturally, it has helped instill a strong sense of identity and pride within the local aerospace community, contributing to the ongoing effort to uphold San Diego's reputation as a center of aerospace innovation. (AIAA SDSU even painted the AE department mural, Fig. 45) On a professional level, AIAA offers essential resources for career growth, networking, and collaboration through events such as technical conferences, workshops, and competitions.

Fig. 45 Mural completed by AE students in the Engineering building. (c. 2011)

A. Events Hosted

SDSU AIAA has organized numerous events to enrich the student experience. These have included tours of local aerospace companies and military bases, intercollegiate glider competitions, and hands-on workshops—such as guiding students through building and launching their own Level 1 amateur rocketry rockets. Through these activities, SDSU AIAA has provided engineering students with valuable opportunities to gain practical experience, expand their knowledge, and connect with professionals in the aerospace industry.

- **Technical/Guest Speakers** - Various technical professionals, entrepreneurs, and subject matter experts have given technical speeches to the students to give insight of the industry/subject field.
- **Tours** - Numerous students have had the opportunity to travel to NAVAIR North Island, General Atomics, Edwards AFB, MCAS Miramar base, NASA JPL (Fig. 46), and many other companies to ask questions, learn about possible pathways and opportunities, and gain the opportunity to network and hand in resumes to professionals.
- **Community building** - Although the technical and professional aspects of this club remain very important, the social and community aspects are just as crucial. AIAA has organized many social events to bring the aerospace community together, such as movie nights and an annual gathering at the Miramar Air Show. These events have helped promote a community among young aerospace engineering students, which, in turn, prepares them not just technically but also socially for the collaborative nature of the aerospace industry.

- **L1 Rocket Workshops** - Another significant event, and one that AIAA SDSU is very proud of, is the building and launching of level 1 rockets. Each year, the club works to gather a group of students, around 10-15, and teaches them how to assemble the rocket and understand its technical workings before they are taken out to the desert to launch. At the end of the day, the majority of these students are not only L1 certified, but they also go home inspired and motivated to move on to the next level and succeed in something greater (Fig. 47).
- **Student Competitions** - Torrey Pines Gliderport, located atop the cliffs of La Jolla in San Diego, holds a significant place in aviation history [81]. Established as a soaring site in 1930, it has been a hub for gliding, hang gliding, paragliding, and radio-controlled model aircraft. Recently, the Torrey Pines Gulls RC glider club hosted a joint RC glider competition between AIAA-SDSU and AIAA-UCSD at the Torrey Pines Gliderport to encourage interest in rapid prototyping and this local historic aviation resource.

Fig. 46 AIAA Student Branch with two faculty, Balbir Narang and CAPT George Faulkner, on a field trip to JPL in either Fall 1986 or Spring of 1987.

B. Legacy on Campus

AIAA has made a lasting impact at SDSU by strengthening the sense of community among aerospace students and connecting them with industry professionals, from its early days before the College of Engineering was founded, to the AIAA room between the two wind tunnels that hosted two old Macintosh computers for student members to use. The organization has united passionate students from various engineering-focused clubs, including Rocket Project, Aztec Electric Racing, and Aztec Aerospace Design (DBF), and the Aztec Council on Systems Engineering (ACOSE). Through tours, networking events, and industry outreach, AIAA has provided students with valuable opportunities to share their resumes, secure interviews, and land internships or even full-time positions.

Fig. 47 Level One Amateur Rocketry collaboration with WoAA in 2025

VII. Present Day

Since 2015, many events have shaped the present-day AIAA. Starting with the subsidization of DBF and the founding of WoAA, AIAA SDSU also faced challenges brought on by the coronavirus pandemic in 2020 and the subsequent post-pandemic recovery to the present day. Let us examine what happened at our student branch in its latest era.

A. Post-Recovery Subsidization Era (2015 - 2019)

Fig. 48 The 2017 Reuben H. Fleet Scholarship Recipients.

Since its founding, AIAA SDSU has historically represented the physical presence of aerospace professional organizations on campus. In the spring of 2014, a new mandatory Student Success Fee (SSF) was approved, effective Fall 2014 [82]. This new funding source helped expand project-based learning opportunities across engineering and led to a gradual reorganization of student teams. By 2015, the Design/Build/Fly (DBF) team formally separated from AIAA SDSU to operate as an independent RSO, with Dr. Xiaofeng Liu as faculty advisor. Around 2016, AIAA SDSU also helped start a student branch at Universidad Autónoma de Baja California in Tijuana, Mexico (Fig. 49). The Reuben H. Fleet scholarship has also been ongoing since it was founded in 1980 (Fig. 48). When the Engineering and Interdisciplinary Sciences (EIS) complex opened in 2018, DBF and other hands-on teams gained a dedicated workspace, marking a new phase of institutional support.

In the fall of 2019, WoAA SDSU was founded by Kaylin Borders, offering a dedicated aerospace community for women, minorities, and allies to support aerospace professional development. Consequently, AIAA SDSU transitioned toward a greater focus on professional development, networking, and inter-club collaboration. During this period, the student branch strengthened its ties with the AIAA San Diego Section and local industry, hosting alumni speakers,

Fig. 49 Universidad Autónoma de Baja California in Tijuana, Mexico.

networking nights, and professional panels. Alumni and faculty encouraged expanding collaboration with the professional section through the AIAA Distinguished Lecturer Program and informal events designed to attract both students and industry professionals.

These efforts helped AIAA SDSU preserve its legacy as the primary professional hub for aerospace students, even as many project-based teams (such as DBF and Rocket Project) became separately governed. Oral histories from student leaders add texture to this era. Michael Stromecki (a two-time recipient of the Reuben H. Fleet scholarship) recalls the AIAA lounge (Ref. IV) in the AE machine shop. He remembers that weekly meetings, study sessions, and informal collaboration took place there.

B. Pandemic Era (2020 - 2022)

In March 2020, the COVID-19 Pandemic was officially declared, prompting the closure of schools and moving all school functions, such as classes, social engagements, and administrative work, entirely online. The campus closure posed an unprecedented challenge for all on-campus organizations, halting in-person events and reducing engagement. As AIAA SDSU traditionally relied on guest speakers, tours, and outreach activities, the pandemic brought a noticeable decline in participation. As AIAA student member Yuichiro Tobita recalled, during the fully online period, there was "pretty much nothing happening" beyond occasional Zoom seminars or guest speakers; the informal conversations and in-person gatherings that had long defined AIAA life essentially vanished.

The pandemic also led to the end of the E-122A AIAA lounge, which was repurposed into a graduate student work area. During this time, the Aerospace Lab was occupied by Jose Moreto, Mohamed Amine Abassi, and Brad Zelenka. To preserve the written history of AIAA SDSU and the Aerospace Department, Stromecki led the lounge cleanup and stored many AIAA SDSU documents under the sink cabinet. The AIAA library was preserved by Paul Ahlers, the lab technician, and added to the Aerospace Lab library. Many small furnishings were absorbed into the lab; however, larger furniture, such as the couch, which many students have grown fond of as a sleeping spot, was thrown out to make room for the office.

One event, however, stood out during the pandemic: the inauguration of end-of-semester movie nights. This event was first hosted by WoAA in December 2019, with "Hidden Figures" as the movie. The movie nights launched a series of traditions that expanded its involvement to AIAA SDSU, Rocket Project, Aztec Aerospace Design, NSBE, SWE, etc. The movies that were shown since then were "Gravity" in Spring 2021, "Top Gun: Maverick" in Fall 2022, "Interstellar" in Spring 2023, "The Martian" in Fall 2023, "Apollo 13" in Spring 2024, "Top Gun (1986)" in Fall 2024, and returning to "Hidden Figures" in Spring 2025. The movie night created a new tradition among these generations of college students to celebrate the end of the semester with aerospace-themed movies, initially hosted online and, when in-person events returned, at the SDSU Student Union Theater.

At the same time, as pandemic remote communication went into full swing, the students' communication methods adapted over time as well. AIAA SDSU's communication method has shifted away from legacy tools such as

Fig. 50 First Post-Pandemic Event, Miramar Airshow 2022

Facebook—which had dominated earlier undergraduate years—toward Instagram and Discord as its primary channels for reaching students during and after the pandemic. Nevertheless, the branch demonstrated resilience by pivoting to virtual meetings and continuing to support WoAA, DBF, and Rocket Project.

We must commend the efforts of the AIAA SDSU chairs (Ref. B), officers, and affiliated faculty since the start of the coronavirus outbreak. They have worked tirelessly to revitalize this student organization — particularly by reintroducing old traditions, strengthening ties with other student clubs, and creating new traditions and connections. This is a formal thank you to all of you for your efforts!

C. Present Day and Current Office (2023 – Present)

By the fall of 2022, the COVID pandemic era had officially subsided. AIAA SDSU once again found itself in the position of reconstruction. While most events, such as technical speakers and tours, were still being held online or in hybrid formats, by the fall of 2023, in-person events slowly returned to normalcy. AIAA SDSU during this time saw a steady return from the absence it experienced during the pandemic era, and events and speakers were sporadic at best. Membership of the organization was also hampered, especially with the loss of the AIAA lounge.

In the fall of 2024, Yuichiro Tobita took the presidency of AIAA SDSU, having been a student at SDSU since 2017. Determined to restore the organization's relevance established pre-pandemic, AIAA SDSU forged a new path towards recovery. Signature activities in this post-pandemic period include reviving on-campus speaker series and significant social events such as museum visits, faculty award nights, and the annual Miramar Air Show trip (Fig. 50) Communications with UCSD AIAA and AIAA SD were also reestablished to promote synergy with out-of-campus AIAA organizations. Along with the return of historical AIAA events, new hands-on programs were also piloted to promote project skills for student members. Events like the RC glider contest hosted by Torrey Pine Gulls and the Level-1 amateur rocketry workshop co-hosted by WoAA served as an extension/revival of the hands-on experience offered by AIAA before the subsidization of Aztec Aerospace Design and Rocket Project described in Section IV.

AIAA SDSU regained momentum by returning to entirely in-person speakers and events, rebuilding its programming

and alumni connections, and reaffirming its mission to unite the department's various technical teams under a common professional identity. In an effort to reflect the changing dynamics of how organizations are run, the club reviewed a reorganization of officer roles to strategize better how to provide students with the best possible opportunities. AIAA SDSU has a president, vice president, secretary, treasurer, external professional outreach, internal professional outreach, social outreach, organizational coordinator, project coordinator, marketing officer, and, lastly, a graduate coordinator.

In the Spring of 2025, the graduate workspace area (formerly the AIAA lounge) was renovated again to become the technician's office. During the cleanup, the historical AIAA documents were uncovered from the sink cabinet. Parham Khodadi (a co-author of this paper) found them when helping Paul Ahlers and Yuichiro Tobita clean the space for remodeling. The rediscovery of these historical documents is what led to this AIAA SDSU student branch history paper.

Today, AIAA SDSU takes pride in its role as a representative of the Aerospace Engineering Department and the university. Our officers are working tirelessly to continue the legacy (Fig. 51). Our mission continues to support students' professional development and community building while maintaining the best way to stay organized in such a hectic field. As we grow and face the new generations of aerospace engineers and leaders, the AIAA SDSU history continues to be written for a new story to tell in the future.

Fig. 51 Left to right, Top Row: Brenna Rao, Kim Sorianos, Benjamin Torres, Ava Cook, and Noah Ervin; Bottom Row: Yuichiro Tobita, Mason Carter, Mohammed Haneef, and Parham Khodadi.

VIII. Conclusion

The American Institute of Aeronautics and Astronautics at San Diego State University has had a profound impact on AIAA national, San Diego's professional aerospace community, San Diego State University itself, and, most notably, the students. This group has helped prove SDSU's engineering integrity and visibility through its success in student competitions and technical papers. It has served as a link between SDSU and the aerospace industry through its collaboration with Northrop Grumman, General Atomics, NASA centers, and military bases. The student branch has maintained the AIAA mission of connecting academia, industry, and research across the nation while simultaneously being the backbone of the aerospace student experience, especially during periods of hardship. Student branch leaders successfully cultivated a community that fosters creativity and encourages networking, as well as offering leadership opportunities that bridge academic learning with real-world engineering. Providing hands-on, team-based experience, mentorship, and social outings, AIAA SDSU served its students in so many ways. Many even credit AIAA directly, getting their foot into the industry. The soft skills learned were essential, but the networking and outreach from this group are invaluable. To go from a small student branch to becoming the central pillar of aerospace education and professional development, the impact this student branch had on the aerospace engineering family will never be forgotten. However, looking back at this history also reveals opportunities for future generations to strengthen what has been built. Periods of uncertainty demonstrated how essential consistent documentation, leadership continuity, and durable industry relationships are to maintaining momentum. Expanding mentorship pipelines, broadening technical opportunities, and keeping outreach active, even during academic or global challenges, will help preserve the resilience that once kept the department alive. Ultimately, the future of AIAA SDSU depends on students who not only uphold its traditions of collaboration, innovation, and community, but also adapt them to new challenges. So with its strong roots and now its influence extending beyond campus, we hope that AIAA SDSU will continue to empower generations of future students to become innovators, leaders, collaborators, and, most importantly, friends within the aerospace community.

Fig. 52 AIAA SDSU Logo in the 2010s and early 2020s. ***More in Appendix E.***

IX. Acknowledgements

We would like to thank Mr. Kevin Burns for helping us every step of the way.

We would like to thank Chris Root, Dr. Gary Fogel, Dr. Allen Plotkin, Dr. Joseph Katz, Geoffrey Butler, Dave Bradley, Christine Probett, Mike Vest, Randy Seaver, Chad Berman, Doug Fronius, Nils Sedano, Jordan Evans, Richard Gunderson, Hermann Altmann, and all others who were involved in shaping this historical account.

We would also like to thank Paul Ahlers, whose office's remodeling resurfaced old AIAA SDSU documents, and thus was the catalyst for this paper.

Appendix

A. Who We Spoke To

During the course of writing this paper, we interviewed some persons of interest. They are listed here.

Table 1 Interviews Conducted

Name	Method of Interview	Date of Interview
Chris Root	In person	06-06-2025
Dr. Allen Plotkin	In person	06-18-2025
Dr. Joseph Katz	In person	06-18-2025
Geoffrey Butler	In person	06-19-2025
Dave Bradley	Online	06-23-2025
Christine Probett	Online	06-23-2025
Dr. Mike Vest	Online	06-23-2025
Chad Berman	Online	06-27-2025
Doug Fronius	Online	08-14-2025
Nils Sedano	Online	08-14-2025
Jordan Evans	Online	08-19-2025
Richard Gunderson	Online	08-22-2025

Table 2 Other Contacts

Name	Method of Contact	Date of Contact
Randy Seaver	Email	07-03-2025
Hermann Altmann	Email	09-18-2025
Michael Stromecki	Email	10-20-2025
Kimberly Painter	Email	10-20-2025
Cesar Martin	Email	10-20-2025
Dr. Gustaaf Jacobs	Email	10-21-2025
Timothy Lo	Email	10-21-2025
Thao Tran	Email	10-24-2025
Leonel Rios-Reyes	Email	10-28-2025

B. AIAA SDSU Chairs

This list is sourced from various documents. It is incomplete.

1980-81 Cynthia Wilson
1982-83 Mitch Lowell
1984-85 Peter Martini
1989-90 Jim Kotecki
1995-96 Chris Foster
1997-98 Victor Hugo
1998-99 Charles Smith
99-2000 Richard Gunderson
2000-01 Chad Berman
2001-02 Timothy Lo
2002-03 Matthew McGregory
2003-04 Katherine Miller
2004-05 Nils Sedano
2005-06 Nick Grela
2006-07 Sofia Calica
2007-08 Alejandro Aquirre
2008-09 Richard Krutop
2009-10 Daniel Nelson
2010-11 Alejandro Nuno
2019-20 Diego Chavez
2021-22 April Thongrivong
2022-23 Emma Topolcsik
2023-24 Steven Nikolov
2024-25 Yuichiro Tobita
2025-26 Benjamin Torres

C. Reuben H. Fleet Scholarship Recipients

This is sourced from various AIAA SD documents.

1982-83 Wendy Wool and Brian Trexel.
1983-84 Christian DeBates and Ted Rechenmacker.
1984-85 Deborah A. Lazerson, John D. McPherson, Heather M. Rockholt, and Michael J. Topolovac.
1985-86 Christine H. Mills, Norbert N. Carte, Karen L. Soltmann, and Angela L. Yen.
1986-87 Brian Nguyen and Ivan Ramirez.
1987-88 David E. Teckel and Christine M. Youngs.
1988-89 Brian C. Carr, Erik R. Bunham, and David C. Lasich.
1989-90 Donald E. Huntington, William M. Shih, Darren E. Whittermore, and Steven A. Yon.
1990-91 Cliff Mantzke, Glen Seymore, Glen Stout, and James Strayer.
1991-92 David Medeires, LoriSeaver, and Steve Yon.
1992-93 Daniel Cunningham, Jordan P. Evans, and Michael Vest.
1993-94 Gregory Casey, Daniel Cunningham, Annie Kaplan, and Michael Vest.
1994-95 Gregory Casey, Zuneir Darugar, Michael Vest, and Bryan Wajcik.
1995-96 Mary Christine Foster, Olubukola Afolayan-Jejeloye, and Zuheir S. Darugar.
1996-97 Duane Dimngo, Andrew Funk, and Olubukola Afolayan-Jejeloye.
1997-98 Charles Jones, Katie Ann Jacikas, William Dunbar, and Victor Hugo.
1998-99 Charles S. Smith, Richard J. Gunderson, Katie Ann Jacikas, and Christian C. Durand.
99-2000 Chad M. Berman, Richard J. Gunderson, Katie Ann Jacikas, and Joshua T. Hu.
2000-01 Chad M. Berman, Ryan Call, Adelbert Lagoy, and Timothy Lo.
2001-02 Chad M. Berman, Jameel S. Khalfan, Timothy Lo, Leonel Rios-Reyes, Kirstin Harper-Smith, and Thao T. Tran.
2002-03 Andrew J. Bechtel, Joey D. Brown, Matthew D. Gregory, Christopher J. Roberts, and Toru Yamasaki.
2003-04 Andrew J. Bechtel, Joey D. Brown, Mark W. Jeffrey, Alif S. Khalfan, Katherine M. Miller, and Nils M. Sedano.
2004-05 Joey D. Brown, Sofia I. Calica, Sarah F. Houts, Mark W. Jeffrey, Akasha Kaur khalsa, Katherine M. Miller, Alanna D. Milner, and Nils M. Sedano.
2005-06 Sofia I. Calica, Nadia G. Cheng, Nickolas S. Grela, Mark W. Jeffrey, David J. Klein, Melissa Lind, Chad S. Smith, and Stephanie Sukhram.
2006-07 Karthik Balakrishnan, Sofia I. Calica, Monique Fine, Barry G. Hawkins, Richard L. Krutop, Chad A. McCoy, Ryan G. Nascimento, Timothy R. Palmer, and Chad S. Smith.
2007-08 Steven Floyd, Thomas Hong, Zeena Khalfam, Richard L. Krutop, Pablo S. Mendez, Timothy R. Palmer, Brian Preedanon, Jennifer D. Rhymer, Raquel M. Weitl, and Ian Yates.
2008-09 Monique Fine, Jason Hale, Richard Krutop, Jerami Martin, Jared Myers, Daniel Nelson, Octavio Ortiz, Tim Palmer, Brian Preedanon, Jennifer D. Rhymer, and Raquel Weitl.
2009-10 Evan W. Ainslie, Michael A. Corson, Monique Fine, James L. Hroza, Alexander Ortiz, Jeri Y. Perez, Brandon D. Pollack, Julia R. Stalder, and Raquel M. Weitl.
2010-11 James Hroza, Joohyun Hwang, Cesar Octavio Martin, Brandon W. Maryatt, Alexander Ortiz, and Octavio Ortiz.
2011-12 Daniel Nelson, Alexander Weiss, Sean Davis, and Himanshu Waidya.
2012-13 Juan Avila, Robert Bertino, Rauno Cavallaro, Sean Davis, Robin Felver, Jack Goodwin, Scott James, Steven Tran, Alexander Weiss, and Matthew Breg-Johnson.
2013-14 Juan Avila, Deepak Alyam, Jin Oh, Jennifer Wood, Robin Felver, and Robert Bertino.
2014-15 Man-Yeung Tsay, Sean Davis, Deepak Alyam, Enrico Santarpia, Benjamin Martins, Racel Rybarczyk, Bryan Martin, Adrienna Yan, Laura Andersen, Haley Antoine, and Brianna MacNider.
2015-16 Michael Maher, Enrico Santarpia, Nicholas Johnson, Graham Root, Rachel Rybarczyk, Bryan Martin, Man-Yeung Tsay, and Benjamin Martins.
2016-17 Bashar Qashat, Jae Yoon Kim, Paulina Diaz-Montiel, Enrico Santarpia, Benjamin Martins, and Michael Stromecki.
2017-18 Bryan Martin, Paulina Diaz-Montiel, and Thomas Bogott II.
2018-19 Alexis Cordova Aidava, Sean Angelo Delos-Santos, Paulina Diaz-Montiell, Luis Escalona-Galvis, Andrea Fontanelli, Graham Root, Enrico Santarpia, Michael Stromecki, and Reiley Weekes.
2019-20 Diego Chavez, Paulina Diaz-Montiel, Luiz Scalona, Ian Jackson, Eric Maravilla, David Markov, Laurra Morejon-Ramirez, and Reiley Weekes.
2020-21 Christopher Davami, David Markov, Ian Jackson, and Reiley Weekes.
2021-22 Zachary Pyle, Ignatius Widjaja, NFN Bhavana, Kaylin Borders, Bryan Cheng, and Nathalia del Callejo.
2022-23 Zachary Pyle, Nathalia del Callejo, Alexander Anderson, Evan Pruitt, Emma McPherson, Cheuk Hin Bryan Cheng, Tanner D. Nelson, Emma Rae Topolcsik, NFN Bhavana, and Adrian Rivera.
2023-24 Seth McLaughlin, Brandon Chan Vin, Zachary Pyle, Sherry Tao, Oliver Whelan, Trevor Krumrey, and NFN

Bhavana.

2024-25 Evan Clauss, Trevor Krumrey, Leonardo Garcia, Oliver Whelan, Jordan Brown, Austin MacGowan, Benjamin Torres, NFN Bhavana, Yuichiro Tobita, and Wesley Bantugan.

D. Other Scholarship Recipients

Some families would create one-time scholarships in remembrance of their loved ones. This occurred at least twice in AIAA San Diego's history.

A. William F. Chana Memorial Scholarship (2011)

Given to Daniel A. Nelson and Tim A. Wheeler.

B. CAPT Doc George Faulkner Jr. Memorial Scholarship (2011)

Given to Alejandrina Nuño.

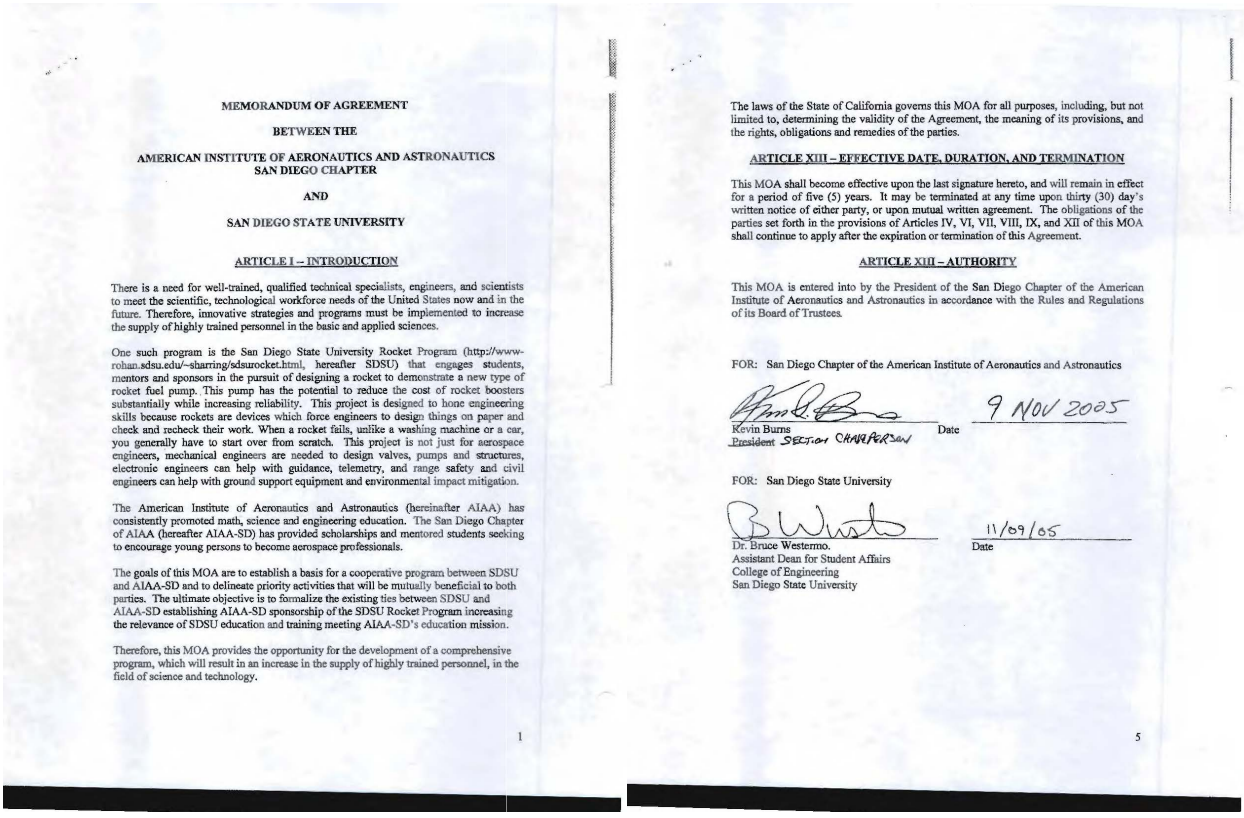
E. Past Logos

Here are some of the logos we've used over the years. Although not comprehensive, they all seem to merge SDSU and AIAA into a distinct AIAA SDSU identity.

Fig. 53 (Technically an emblem.)

F. Memorandum of Agreement – AIAA SDSU Rocket Project (2003)

The following document is the first and last page of the original Memorandum of Agreement (MoA) signed in 2003 between the AIAA San Diego Section and San Diego State University, outlining the governance structure for the SDSU Rocket Project [28]. You may find the full version in the supplemental material.



MEMORANDUM OF AGREEMENT

BETWEEN THE

AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS
SAN DIEGO CHAPTER

AND

SAN DIEGO STATE UNIVERSITY

ARTICLE I – INTRODUCTION

There is a need for well-trained, qualified technical specialists, engineers, and scientists to meet the scientific, technological workforce needs of the United States now and in the future. Therefore, innovative strategies and programs must be implemented to increase the supply of highly trained personnel in the basic and applied sciences.

One such program is the San Diego State University Rocket Program (http://www-rohan.sdsu.edu/~sharring/sdsurocket.html, hereafter SDSU) that engages students, mentors and sponsors in the pursuit of designing a rocket to demonstrate a new type of rocket fuel pump. This pump has the potential to reduce the cost of rocket boosters substantially while increasing reliability. This project is designed to hone engineering skills because rockets are devices which force engineers to design things on paper and check and recheck their work. When a rocket fails, unlike a washing machine or a car, you generally have to start over from scratch. This project is not just for aerospace engineers, mechanical engineers are needed to design valves, pumps and structures, electronic engineers can help with guidance, telemetry, and range safety and civil engineers can help with ground support equipment and environmental impact mitigation.

The American Institute of Aeronautics and Astronautics (hereinafter AIAA) has consistently promoted math, science and engineering education. The San Diego Chapter of AIAA (hereafter AIAA-SD) has provided scholarships and mentored students seeking to encourage young persons to become aerospace professionals.

The goals of this MOA are to establish a basis for a cooperative program between SDSU and AIAA-SD and to delineate priority activities that will be mutually beneficial to both parties. The ultimate objective is to formalize the existing ties between SDSU and AIAA-SD establishing AIAA-SD sponsorship of the SDSU Rocket Program increasing the relevance of SDSU education and training meeting AIAA-SD's education mission.

Therefore, this MOA provides the opportunity for the development of a comprehensive program, which will result in an increase in the supply of highly trained personnel, in the field of science and technology.

1

The laws of the State of California governs this MOA for all purposes, including, but not limited to, determining the validity of the Agreement, the meaning of its provisions, and the rights, obligations and remedies of the parties.

ARTICLE XIII – EFFECTIVE DATE, DURATION, AND TERMINATION

This MOA shall become effective upon the last signature hereto, and will remain in effect for a period of five (5) years. It may be terminated at any time upon thirty (30) day's written notice of either party, or upon mutual written agreement. The obligations of the parties set forth in the provisions of Articles IV, VI, VII, VIII, IX, and XII of this MOA shall continue to apply after the expiration or termination of this Agreement.

ARTICLE XIII – AUTHORITY

This MOA is entered into by the President of the San Diego Chapter of the American Institute of Aeronautics and Astronautics in accordance with the Rules and Regulations of its Board of Trustees.

FOR: San Diego Chapter of the American Institute of Aeronautics and Astronautics

Kevin Burns — Date: 9 NOV 2005
President SECTION CHAIRPERSON

FOR: San Diego State University

Dr. Bruce Westermo. — Date: 11/09/05
Assistant Dean for Student Affairs
College of Engineering
San Diego State University

5

(a) Page 1 **(b) Page 5**

Fig. 54 Memorandum of Agreement

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