Praveen Shankar, Ph.D.
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Education

Ph.D., Aeronautical and Astronautical Engineering (2007), The Ohio State University
M.S., Aeronautical and Astronautical Engineering (2004), The Ohio State University
Bachelor of Mechanical Engineering (1999), Bangalore University, India

Academic Appointments

2023 - 2024	Interim Associate Dean for Research and Graduate Studies, College of Engineering, California State University, Long Beach, CA
2022 - Date	Professor (Tenured), Department of Mechanical and Aerospace Engineering, California State University, Long Beach, CA
2017 - 2022	Associate Professor (Tenured), Department of Mechanical and Aerospace Engineering, California State University, Long Beach, CA
2015 – 2020	External Graduate Faculty Member, Department of Electrical and Computer Engineering, University of Maine, Orono
2011 - 2017	Assistant Professor (Tenure-Track), Department of Mechanical and Aerospace Engineering, California State University, Long Beach, CA
2007 – 2011	Lecturer, School for Engineering of Matter, Transport and Energy, Arizona State University, Tempe, AZ

Administrative and Leadership Activities

Interim Associate Dean for Research and Graduate Studies, College of Engineering
Key Responsibilities & Accomplishments
Research
- Provided support to faculty for interdisciplinary, cross-college Research Scholarly Creative Activities (RSCA) endeavors
- Managed the reviewed and internal clearance of all COE grant proposals
- Supervised COE Research Centers
- Established bi-semester faculty research networking event
- Mentored junior faculty in proposal preparation and post-award management of funds
- Managed review of proposals for internal RSCA grants
- Managed the review process of the Boeing Endowed Professorship

Budget
- Oversaw the Research Foundation accounts and resolved related issues
- Managed review and approval of Instructionally Related Activities (IRA) fund, Student Excellence Fee – Technology and Lottery fund proposals and budget expenditures
- Reviewed and approved new faculty startup budget expenditures
- Supported COE budget office in responding to an expenditure audit from federal sponsor

- Reviewed and approved requests for funds from COE Research Stimulation accounts
- Managed the allocation of internal RSCA funds to winning faculty proposals

Graduate Programs

- Managed graduate program admissions, curriculum and course offerings
- Reviewed and approved international students' curricular and optional practical training activities
- Managed the review of COE applications for Graduate Equity Fellowships

Facilities

- Performed a comprehensive review of COE facilities, equipment and faculty research laboratories
- Worked with Beach Building Services and Design and Construction to plan the renovation of engineering laboratories
- Reviewed and allocated requests from COE faculty for laboratory space and equipment

University Research Advisory Committee

- Reviewed applications for Summer Student Research Assistantship
- Reviewed nominations for University Student Research Awards
- Reviewed proposals to the ORED Multidisciplinary Research Grant solicitation

Chair, Engineering Faculty Council (EFC)

Key Responsibilities & Accomplishments

- Scheduled and conducted monthly and annual all-faculty meetings
- Served as a representative of the faculty council at Dean's cabinet meetings
- Worked with the Provost and EFC to appoint Interim Dean and Interim Associate Dean of Academic Programs of the College of Engineering
- Worked with the EFC and Provost's Office to establish COE Dean Search Committee
- Led the update of the College of Engineering Constitution
- Supported the Dean's office in responding to COVID-19 pandemic disruptions

Chair, College of Engineering Dean Search Committee

Key Responsibilities & Accomplishments

- Worked with Academic Search and Faculty Affairs to finalize position description, advertisement, and recruitment process
- Led the establishment and implementation of an application review process for initial screening, selection of semi-finalists and finalists
- Worked with the search committee to make recommendations of candidates to the Provost
- Worked with search committee and search firm to compile recommendations for each finalist to the Provost

Vice Chair, Academic Senate

Key Responsibilities & Accomplishments

- Served on the Executive Committee to set agenda for Academic Senate Meetings
- Assisted the Chair of Academic Senate in development of task forces, university-wide elections, and evaluation of requests from campus community
- Served as Chair's representative at California Faculty Association, Student Fee Advisory Board and Graduate Studies Advisory Committee

Honors, Fellowships and Awards

2022 President's Award for Outstanding Faculty Achievement, CSULB
2019 Faculty Research Program, Jet Propulsion Laboratory (sabbatical leave)
2021 Distinguished Faculty Award for Mentoring and Advising, CSULB
2017 Department of Defense Faculty Fellow Research Team Program, Army Research Lab
2016 Orange County Engineering Council Outstanding Faculty Award
2015 Outstanding Faculty Mentor for Student Engagement in Research, Scholarly & Creative Activity, CSULB
2007 Orville and Wilbur Wright Graduate Award ($10,000), AIAA Evolution of Flight Campaign

Research, Scholarly, and Creative Activities

A. Technical Publications

1. Sarmiento, D., Nguyen, V., Dugue, V., Vu, K., Strybel, T., Battiste, V., Shankar, P., & Marayong, P. (2025). Evaluating simple vibrotactile feedback for manual glideslope landings in urban air mobility simulation. In Human factors in design, engineering, and computing (AHFE Open Access, Vol. 199). AHFE International.
2. Chen, J. C. M., Liao, G. Y., Lo, R. C., & Shankar, P. (2024). Workshop development for new frontier of mechatronics for mobility, energy, and production engineering. ASEAN Journal of Engineering Education, 8(2), 81–89.
3. Strybel, T., Battiste, V., Vu, K.-P. L., Marayong, P., Ahuja, S., Schmitz, M., Cheung, J., Culver, C., Alfaroarevalo, A., & Shankar, P. (2024, July). Evaluation of voice vs. text communication modes in simulated UAM operations. In Proceedings of the International Conference on Applied Human Factors and Ergonomics.
4. Ahuja, S. M., Strybel, T. Z., Vu, K. L., Marayong, P., Shankar, P., & Battiste, V. (2023). Development and validation of a virtual UAM. In Proceedings of the 22nd International Symposium on Aviation Psychology (p. 47).
5. Zakeri, R., & Shankar, P. (2023, November). Kinematics-based joint-torque estimation using Bayesian particle filters. In Proceedings of the International Conference on Informatics in Control, Automation and Robotics.
6. Gadhvi, T., & Shankar, P. (2023, October). Autonomous vehicle guidance using neural network and random forest model. In Proceedings of the ASME International Mechanical Engineering Congress and Exposition.
7. Shankar, P., Marayong, P., Strybel, T., Battiste, V., Nguyen, H., Cheung, J., & Viramontes, J. (2022, October). Urban air mobility: Design of a virtual reality testbed and experiments for human factors evaluation. In Proceedings of the ASME International Mechanical Engineering Congress and Exposition.
8. Zakeri, R., & Shankar, P. (2022, October). A neural network-augmented Bayesian approach to uncertain parameter estimation in nonlinear dynamic systems. In Proceedings of the ASME International Mechanical Engineering Congress and Exposition.
9. Taherian, B., & Shankar, P. (2022, October). On the stability analysis of a double-link inverted pendulum subject to an oscillatory tilted excitation. In Proceedings of the ASME International Mechanical Engineering Congress and Exposition.

10. Koblick, D., Xu, S., & Shankar, P. (2020). Enhancing debris tracking missions in geostationary orbit with advanced solar photon thrusters. Journal of Spacecraft and Rockets, 57(3), 528–538.
11. Swaney, T., Shankar, P., Prince, T., Crisantes, J., Chaing, O., Ulrich, E., & Oberto, B. (2020, November). Design of a payload spin stabilization system for an all-rotating aerial vehicle. In Proceedings of the ASME International Mechanical Engineering Congress and Exposition.
12. Martinez, M., Shankar, P., Marayong, P., & Krishnan, V. (2020, November). A virtual physical therapy lab to simulate a balance perturbation assessment setup. In Proceedings of the ASME International Mechanical Engineering Congress and Exposition.
13. Chen, J. C. M., Liao, G. Y. J., Lo, R. C., & Shankar, P. (2020). Workshop development for new frontier of mechatronics for mobility, energy, and production engineering. In Proceedings of the ASEE Virtual Annual Conference (Paper No. 29955).
14. Marayong, P., Shankar, P., Wei, J., Nguyen, H., Strybel, T., & Battiste, V. (2020, March). Urban air mobility system testbed using CAVE virtual reality environment. In Proceedings of the IEEE Aerospace Conference (Big Sky, MT, United States).
15. Shankar, P., Labonte, L., & Abedi, A. (2019, October). Gain margin of a first order system with two delayed sensors. In Proceedings of the IEEE International Conference on Wireless for Space and Extreme Environments (Ottawa, Canada).
16. Selvaraj, S., & Shankar, P. (2019, January). Three-dimensional interplanetary hybrid trajectory optimization of solar sails. In Proceedings of the AIAA SciTech Forum: Guidance, Navigation, and Control Conference (San Diego, CA, United States).
17. Capobianco, V., Jiang, M., & Shankar, P. (2019, January). Effect of slot height variation on the aerodynamic performance of a circulation control airfoil: A CFD analysis. In Proceedings of the AIAA SciTech Forum (San Diego, CA, United States).
18. Zakeri, R., & Shankar, P. (2018). Estimating joint torques of a robotic arm based on kinematics using neural networks. Paper accepted for presentation at the IEEE Green Energy and Systems Conference, Long Beach, CA, United States.
19. Honkawa, D., Acosta, C., Ceballos, E., Debus, T., Wong, J., Shankar, P., & Yoozbashizadeh, M. (2018). Design and test of LOX–CH4 launch vehicles towards high altitude flight. In Proceedings of the Joint Propulsion Conference (AIAA Propulsion and Energy Forum) (Cincinnati, OH, United States).
20. Nguyen, N., Ong, V., Villanueva, A., Hsu, D., Dhillon, N., & Shankar, P. (2018). Design and testing of solid propellant rockets towards NASA student launch and intercollegiate rocket engineering competitions. In Proceedings of the Joint Propulsion Conference (AIAA Propulsion and Energy Forum) (Cincinnati, OH, United States).
21. Gramajo, G., & Shankar, P. (2017). An efficient energy constraint based UAV path planning optimization for search and coverage. International Journal of Aerospace Engineering, 2017, Article 8085623.
22. Labonte, L., Abedi, A., & Shankar, P. (2017). Feedback control challenges with wireless networks in extreme environments. In Wireless sensor systems for extreme environments: Space, underwater, underground, and industrial. John Wiley & Sons.

23. Koblick, D., Xu, S., Fogel, J., & Shankar, P. (2016). Low thrust minimum time orbit transfer nonlinear optimization using multi-impulse discretization via the modified Picard–Chebyshev method. CMES: Computer Modeling in Engineering & Sciences, 111(1), 1–28.
24. Rustrian, W., & Shankar, P. (2016). Modeling of a small remotely operated underwater vehicle for autonomous navigation and control. In Proceedings of the ASME International Mechanical Engineering Congress and Exposition (Phoenix, AZ, United States).
25. Gramajo, G., & Shankar, P. (2016). Path-planning optimization for an unmanned aerial vehicle with energy constraint in a search and coverage mission. In Proceedings of the IEEE Green Energy and Systems Conference (Long Beach, CA, United States).
26. Shankar, P., & Venugopal, S. (2015). A self-organizing neural network for neuromuscular control [Abstract]. BMC Neuroscience, 16(Suppl. 1), 277.
27. Koblick, D., Xu, S., Fogel, J., & Shankar, P. (2015, July 20–24). Low thrust minimum time orbit transfer nonlinear optimization using multi-impulse discretization via the modified Picard–Chebyshev method. In Proceedings of the International Conference on Computational & Experimental Engineering and Sciences (Reno, NV, United States).
28. Shankar, P., Chung, W.-T., Wells, V., & Husman, J. (2015). Evaluation of a novel software framework for teaching aircraft dynamics and control. Computer Applications in Engineering Education, 23(1), 63–71.
29. Koblick, D., & Shankar, P. (2015). Evaluation of the modified Picard–Chebyshev method for high-precision orbit propagation. Journal of Aerospace Engineering, 28(5), Article 04014125.
30. Sclafani, R., & Shankar, P. (2015, January 5–9). Variable memory recurrent neural networks for launch vehicle attitude control. In Proceedings of the AIAA SciTech Forum: Guidance, Navigation, and Control Conference (Kissimmee, FL, United States).
31. Rezaei, R., Ghabrial, F., Besnard, E., Shankar, P., Castro, J., Labonte, L., Razfar, M., & Abedi, A. (2013, November 7–9). Determination of elastic mode characteristics using wirelessly networked sensors for nanosat launch vehicle control [Poster presentation]. IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE), Baltimore, MD, United States.
32. Labonte, L., Abedi, A., Castro, J., Besnard, E., Razfar, M., Shankar, P., Ghabrial, F., & Rezaei, R. (2013, November 7–9). Wireless sensor and actuator networks with delayed noisy feedback (WiSAN). In Proceedings of the IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE) (Baltimore, MD, United States).
33. Razfar, M., Castro, J., Labonte, L., Rezaei, R., Ghabrial, F., Shankar, P., Besnard, E., & Abedi, A. (2013, November 7–9). Wireless network design and analysis for real time control of launch vehicles [Poster presentation]. IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE), Baltimore, MD, United States.
34. Shankar, P. (2013, August 19–22). Characterizing trim points of an aircraft using

continuation methods and bifurcation analysis. In Proceedings of the AIAA Guidance, Navigation, and Control Conference (Boston, MA, United States).

35. Koblick, D., Poole, M., & Shankar, P. (2012, November 12–16). Parallel high-precision orbit propagation using the modified Picard–Chebyshev method. In Proceedings of the ASME International Mechanical Engineering Congress and Exposition (Houston, TX, United States).
36. Shankar, P., Yedavalli, R. K., & Burken, J. J. (2011). Adaptive flight control using self-organizing radial basis function networks. Journal of Guidance, Control, and Dynamics, 34(3), 783–794.
37. Shankar, P., Chung, W.-T., Wells, V., & Husman, J. (2011). Innovative instruction for undergraduate aircraft dynamics and control. In Proceedings of the ASEE Annual Conference and Exposition (Vancouver, Canada).
38. Wells, V., Chung, W.-T., Shankar, P., & Husman, J. (2011). Revised aerodynamics curriculum and instruction for improved student outcomes. In Proceedings of the ASEE Annual Conference and Exposition (Vancouver, Canada).
39. Shankar, P., & Yedavalli, R. K. (2009). A neural network based observer for turbine engine parameter estimation. Proceedings of the Institution of Mechanical Engineers, Part I: Journal of Systems and Control Engineering, 223(6), 821–832.
40. Shankar, P., Yedavalli, R. K., & Burken, J. J. (2006, August 21–24). An adaptive flight controller using growing and pruning radial basis function network. In Proceedings of the AIAA Guidance, Navigation, and Control Conference (Keystone, CO, United States).
41. Shankar, P., & Yedavalli, R. K. (2006, May 8–11). A neural network based adaptive observer for turbine engine parameter estimation. In Proceedings of the ASME Turbo Expo: Power for Land, Sea and Air (Barcelona, Spain).
42. Yedavalli, R. K., Shankar, P., Siddiqi, M., & Behbahani, A. (2005, July 10–13). Modeling, diagnostics and prognostics of a two-spool turbofan engine. In Proceedings of the AIAA/ASME/SAE/ASEE Joint Propulsion Conference (Tucson, AZ, United States).
43. Kulathumani, V., Shankar, P., Kim, Y. M., Arora, A., & Yedavalli, R. K. (2005, September 24–28). Reliable control system design despite byzantine actuators. In Proceedings of the ASME International Conference on Multibody Systems, Nonlinear Dynamics and Controls (Long Beach, CA, United States).
44. Shankar, P., Yedavalli, R. K., & Doman, D. B. (2004a, August 11–14). Dynamic inversion via state dependent Riccati equation approach: Application to hypersonic vehicles. In Proceedings of the AIAA Guidance, Navigation, and Control Conference (Austin, TX, United States).
45. Shankar, P., Yedavalli, R. K., & Doman, D. B. (2004b, August 16–19). Stability domain estimation for dynamic inversion embedded SDRE flight controller. In Proceedings of the AIAA Guidance, Navigation, and Control Conference (Providence, RI, United States).
46. Yedavalli, R. K., Shankar, P., & Doman, D. B. (2003). Robustness study of a dynamic inversion based indirect adaptive control system for flight vehicles with uncertain model data. In Proceedings of the American Control Conference (pp. 1005–1010)..

B. <u>Funded Research Grants, Student Projects, and Contracts</u>

1. Title: Development of Enabling Technologies for a Novel All-Rotating UAV
   Organization: NASA
   Role: Co-PI
   Date: October 2022 – October 2023
   Funding Amount: $50,000
   Collaborations: Evan Ulrich and Ricardo Dao (Aeroseed, LLC)
2. Title: ECR: PEER: New frontier of mechatronics for mobility, energy, and production engineering
   Organization: National Science Foundation
   Role: Co-PI
   Date: August 2019 – September 2021
   Funding Amount: $44,753
   Collaborations: Jimmy Ching-Ming Chen (PI, Wayne State University), Roger Lo (Chemical Engineering, CSULB)
3. Title: Efficacy of CAVE virtual reality system for Urban Air Mobility concepts
   Organization: CSULB ORSP Multidisciplinary Research Award
   Role: PI
   Date: July 2020 – December 2021
   Funding Amount: $15,000
   Collaborations: Thomas Strybel (Psychology, CSULB), Panadda Marayong (Mechanical and Aerospace Engineering, CSULB)
4. Title: Design, Fabrication and Testing of a Robotic System for Maintenance of Wind Turbine Blades – Phase III
   Organization: Edgewind (Robowind) Corporation
   Role: Co-PI
   Date: June 2019 – January 2020
   Funding Amount: $154,524
   Collaborations: Mahdi Yoozbashizadeh (PI, Mechanical and Aerospace Engineering, CSULB)
5. Title: Robotic Task Cooperation and Resiliency
   Organization: The Aerospace Corporation
   Role: Co-PI
   Date: June 2019 – December 2019
   Funding Amount: $50,000
   Collaborations: Oscar M Ponce (PI, Computer Engineering and Computer Science, CSULB)
6. Title: Design, Fabrication and Testing of a Robotic System for Maintenance of Wind Turbine Blades – Phase II
   Organization: Edgewind Corporation
   Role: PI
   Date: October 2018 – June 2019
   Funding Amount: $114,821
   Collaborations: Mahdi Yoozbashizadeh (Mechanical and Aerospace Engineering, CSULB)
7. Title: AEROSEED: Payload stabilization and pointing for an all-rotating aerial vehicle
   Organization: The Aerospace Corporation
   Role: PI
   Date: October 2018 – June 2019

Funding Amount: $25,000

8. Title: Finger tracker with tactile feedback for immersive virtual environment interaction
   Organization: NIH-BUILD Midsize Equipment Grant Program
   Role: PI
   Funding Amount: $14,189
9. Title: Rocket Laboratory
   Organization: National College Resource Foundation
   Role: Co-PI
   Date: September 2018 – December 2018
   Funding Amount: $35,000
   Collaborations: Mahdi Yoozbashizadeh (PI, Mechanical and Aerospace Engineering, CSULB)
10. Title: Design of a Robotic System for Maintenance of Wind Turbine Blades – Phase I
    Organization: Edgewind Corporation
    Role: PI
    Date: December 2017 – July 2018
    Funding Amount: $96,203
    Collaborations: Mahdi Yoozbashizadeh (Mechanical and Aerospace Engineering, CSULB)
11. Title: AeroCube: Autonomous Formation Control and Tracking
    Organization: The Aerospace Corporation
    Role: PI
    Date: January 2017 – June 2017
    Funding Amount: $25,000
    Collaborations: Oscar M Ponce (Computer Engineering and Computer Science, CSULB)
12. Title: Development of a Simulation Testbed to Evaluate Intelligent Decision-Making Systems
    Organization: Northrop Grumman Company
    Role: PI
    Date: January 2017 – June 2017
    Funding Amount: $50,000
    Collaborations: Mehrdad Aliasgari (Computer Engineering and Computer Science, CSULB)
13. Title: MRI – Acquisition of Dynamic Immersive Virtual Environment for Research in Human-Machine Interaction
    Organization: National Science Foundation
    Role: Co-PI
    Date: October 2016 – September 2018
    Funding Amount: $381,075
    Collaborations: Panadda Marayong (Mechanical and Aerospace Engineering, CSULB), Emel Demircan (Biomedical Engineering, CSULB), Vennila Krishnan (Physical Therapy, CSULB), Jim Miles (Psychology, CSULB)
14. Title: Laboratory for Remote Operation of Cooperative Robotic Manipulators in Manufacturing Tasks
    Organization: Faculty Small Grant, CSULB
    Role: PI
    Date: July 2015 – June 2016
    Funding Amount: $5,000
15. Title: Simplified flight simulator developed with a Blender 3D and its Python programming language

Organization: Northrop Grumman Company
Role: PI
Date: September 1, 2014 – May 31, 2015
Funding Amount: $8,000

16. Title: Low-Cost Autonomous Underwater Vehicle for Port Monitoring Operations
Organization: Raytheon
Role: PI
Date: October 1, 2014 – May 31, 2015
Funding Amount: $15,000
17. Title: Laboratory for Manufacturing Robotics Education and Training
Organization: DENSO Foundation
Role: PI
Date: June 1, 2014 – May 31, 2015
Funding Amount: $50,000
Collaborations: Mohammad Mozumdar (Electrical Engineering, CSULB)
18. Title: Development of a Low-Cost Autonomous Underwater Vehicle for Estuarine Research
Organization: CSULB ORSP Multidisciplinary Research Award
Role: PI
Date: July 1, 2014 – June 30, 2015
Funding Amount: $9,300
Collaborations: Chris Lowe (Biological Sciences, CSULB)
19. Title: California Launch Vehicle Education Initiative Student Projects
Organization: California Space Grant Consortium
Role: Co-I
Date: June 1, 2014 – December 31, 2014
Funding Amount: $8,000
Collaborations: Eric Besnard (PI, Mechanical and Aerospace Engineering, CSULB)
20. Title: Future Flight Cockpit Human Interface Study, Phase II
Organization: Northrop Grumman Company
Role: Co-PI
Date: January 1, 2014 – September 30, 2014
Funding Amount: $50,000
Collaborations: Forouzan Golshani (PI, Dean of College of Engineering, CSULB)
21. Title: Investigation of Indicator Bacteria's growths at the Inner Cabrillo Beach using Spatial and Temporal Analysis
Organization: CSULB College of Engineering Research Initiation and Seed Grant
Role: Co-PI
Date: January 1, 2014 – August 31, 2014
Funding Amount: $5,000
Collaborations: Rebekah Sultana & Pitiporn Asvapathanagul (Civil Engineering and Construction Engineering Management, CSULB)
22. Title: BR & T Automated Sealing Development for 2013
Organization: Boeing Company
Role: PI
Date: January 1, 2013 – December 31, 2013
Funding Amount: $82,000

23. Title: Orbit Propagation Using Multi-Core Parallel Computing Environment
    Organization: CSULB College of Engineering Research Initiation and Seed Grant
    Role: PI
    Date: January 1, 2013 – August 31, 2013
    Funding Amount: $5,000
24. Title: Wireless Network Applications in Aerospace Control
    Organization: University of Maine, Orono and Maine Space Grant Consortium
    Role: Co-PI
    Date: April 1, 2012 – March 31, 2015
    Funding Amount: $99, 973
    Collaborations: Ali Abedi (PI, University of Maine, Orono), Eric Besnard (Mechanical and Aerospace Engineering, CSULB)
25. Title: Comprehensive transformation of junior-year aeronautics instruction based on active/strategic learning and via innovative utilization of modern computational tools
    Organization: NASA
    Role: Co-PI, @Arizona State University (ASU)
    Date: February 1, 2009 – December 31, 2011
    Funding Amount: $389,712
    Collaborations: Valana Wells (PI) and Kyle Squires (Mechanical and Aerospace Engineering, ASU)

University, Professional & Community Service Activities

A. University Committees

1. COE Representative, Curriculum and Education Policy Council (2022-25)
2. College of Engineering (COE) Senator, Academic Senate (2017-2023)
    i. Vice-Chair, Academic Senate (Spring 2021)
    ii. Member-at-Large, Executive Committee, Academic Senate (Fall 2020)
3. COE Representative to Nominating Committee, Academic Senate (2017-20)
    i. Vice-Chair, Nominating Committee, Academic Senate (2019-20)
4. Academic Senate Chair Representative, Graduate Studies Advisory Committee (Spring 2021)
5. Academic Senate Chair Representative, Student Fee Advisory Board (Spring 2021)
6. Academic Senate Chair Representative, California Faculty Association (Spring 2021)
7. Member, Review Committee for Academic Administrator (Spring 2021-Fall 2021)
8. COE Representative, University Resources Council (2018-20)
    i. Secretary of URC (Fall 2018-Fall 2019)
9. Founding Member, Unmanned Aerial Systems Evaluation Board (2015-Date)
10. COE Alternate, Academic Senate (2016-17)
11. COE Representative, University Resources Council (2015-18)
12. COE Representative, University Honors Program Advisory Council (2015-17)
13. Member, Committee on Athletics (2015-17)
14. Member, University Library Committee (2013-2015)

B. College of Engineering Committees

1. Chair, College of Engineering RTP Committee (2025-26)
2. MAE Representative, Engineering Faculty Council (2017-21)

i. Chair, Engineering Faculty Council (Spring 2020-Spring 2021)
ii. Vice-Chair, Engineering Faculty Council (Fall 2020)

3. Chair, College of Engineering Dean Search Committee (2020-21)
4. MAE Representative, COE Sabbatical Leave Committee (2020-2023)
5. MAE Representative, College of Engineering Curriculum Committee (2017-18)
6. Member, Grade Appeals Committee (2014-2015)
7. Alternate for MAE on Engineering Faculty Council (2013-2014)

C. <u>Department of Mechanical and Aerospace Engineering Committees</u>

1. Member, MAE RTP Committee (2017-2021, 2024-25)
2. Member, Chemical Engineering RTP Committee (2020-21)
3. Member, MAE Tenure-Track Faculty Search Committee (2014-2015, 2017-18, 2019-20, 2021-22)
    i. Chair, MAE TT Faculty Search Committee (2016-17, 2017-18, 2019-20)
4. Member, MAE Curriculum Committee (2017-Date)
    i. Chair, MAE Curriculum Committee (2017-2018)
5. Graduate Advisor, MS Aerospace Engineering (2019-2023)
6. Undergraduate Advisor, BS Aerospace Engineering (2017-2019)
7. BSME Program Coordinator, Antelope Valley Engineering Program (2014-2024)
8. ABET Assessment Coordinator, Aerospace Engineering (2017-2026)
9. Chair, MAE Tenure-Track Faculty Search Committee (2016-17)
10. Chair, MAE Curriculum Committee (2015-2017)
11. Member, Lecturer Review Committee (2015-2017, 2025-2026)
12. Member, MAE Tenure-Track Faculty Search Committee (2014-15)
13. MAE Advisor, Engineering Honors Program (2014-2017)
14. Undergraduate Advisor, Aerospace Engineering (2012-2017)
15. Member, MAE Curriculum Committee (2011-2017)
16. Member, MAE Grade Appeals Committee (2011-2014)

D. <u>Professional Community Activities</u>

Workshop/Conference

1. Organized and conducted NSF-sponsored Frontier of Mechatronics for Alternative Energy and Aerospace Engineering, September 2021
2. Session Chair – Sensors: Design, Fabrication and Systems, IEEE WiSEE Conference 2019

Professional Affiliations and Scientific/Technical Committees

1. Senior Member, American Institute of Aeronautics and Astronautics (AIAA)
2. Regular Member, AIAA Guidance, Navigation and Control Technical Committee (2013-16)

Editorial Memberships

1. Associate Editor, American Control Conference, 6-8 July 2016, Boston, MA
2. Technical Co-Chair, 2016 AIAA Guidance, Navigation and Control Conference
3. Associate Editor, ASME Dynamic Systems and Control Conference, 28-30 Oct 2015, Columbus, OH
4. Technical Co-Chair, 2015 AIAA Guidance, Navigation and Control Conference
5. Associate Editor, American Control Conference, 4-6 June 2014, Portland, OR
6. Journal of Aeronautics and Aerospace Engineering, OMICS Group (2012-2014)

Reviewer

1. NSF SBIR/STTR Phase I Proposals: Space Technologies

2. Elsevier Journal of Aerospace Science and Technology
3. The Journal of Astronautical Sciences
4. PLOS One
5. IEEE Access
6. AIAA Guidance, Navigation and Control Conference (SciTech Forum)
7. Elsevier Journal of Aerospace Science and Technology
8. ASME Journal of Dynamic Systems, Measurement and Control
9. AIAA Journal of Guidance, Control and Dynamics
10. AIP Journal of Renewable and Sustainable Energy
11. Neural Computing and Applications (Springer Journal)
12. Journal of Astronautical Sciences
13. IMechE Journal of Aerospace Engineering
14. IEEE Conference on Decision and Control
15. American Control Conference
16. ASME Dynamic Systems and Control Conference

E. Other Contributions

1. BUILD Pre-Professor Program Mentor
2. American Institute of Aeronautics and Astronautics Faculty Advisor
3. California Mathematics and Science Partnership STEM Professional Learning Initiative
4. HSI STEM Summer Faculty Mentor
5. UROP Faculty Mentor
6. NIH-BUILD Faculty Mentor
7. Sigma Gamma Tau Aerospace Engineering Honor Society CSULB Chapter Faculty Advisor

Teaching Activities

A. Current Teaching Assignment

Department of Mechanical and Aerospace Engineering

B. Areas of Teaching

1. Analysis and Design of Control Systems
2. Aircraft and Spacecraft Dynamics and Control
3. Orbital Mechanics and Astrodynamics
4. Aerospace Systems Design

C. Student Mentoring

1. Babak Taherian, (Expected: Summer 2027) PhD Dissertation Advisor
   Dissertation Topic: Bifurcation Analysis of Dynamic Systems Controllability
2. Roja Zakeri, (Fall 2020) PhD Dissertation Chair
   Dissertation Title: A Neural Network-Augmented Bayesian Approach to Uncertain Parameter Estimation in Nonlinear Dynamic Systems
3. Darin Koblick, (Fall 2017) PhD Dissertation Chair
   Dissertation Title: Re-Purposing the Advanced Solar Photon Thruster as a Constellation of Solar Reflectors to Track Debris in Geosynchronous Earth Orbit
4. Oliver Chaing (Fall 2023), MSAE Thesis Committee Chair
   Thesis Topic: Simulation and Control Design of a Payload Mount System for a Unique Rotorcraft

5. Jeffrey Bonsall (Spring 2021), MSME Thesis Committee Chair
   Thesis Title: Prioritization of Collision Avoidance Above Stabilization Criteria for Autonomous Vehicles
6. Tirth Gadhvi (Expected: Fall 2021), MSME Thesis Committee Chair
   Thesis Title: Autonomous Vehicle Guidance using Neural Network and Random Forest Model
7. Sandhya Selvaraj (Summer 2019), MSAE Thesis Committee Chair
   Thesis Title: Interplanetary Trajectory Optimization of Solar Sails
8. Ahmad Shalaby (Summer 2019), MSAE Thesis Committee Chair
   Thesis Title: Evaluation of the Performance of a Rocket under Oscillatory Thrust
9. Jeffrey Won (Spring 2019), MSME Thesis Committee Chair
   Thesis Title: An Observer for State Estimation in the Presence of Multiple Measurement Delays
10. Juan Gonzales (Fall 2018), MSAE Thesis Committee Chair
    Thesis Title: Spacecraft Formation Control: Adaptive PID-Extended Memory Recurrent Neural Network Controller
11. Phoebe Dedman (Summer 2018), MSAE Thesis Committee Chair

    Thesis Title: Design of a Multi-Objective Landing Trajectory using Artificial Neural Networks
12. Andrew Blackney (Spring 2018), MSAE Thesis Committee Chair
    Thesis Title: Real-time Determination and Inversion of Vibration Modes for Control of Elastic Inverted Pendulum
13. Vincent Capobianco (Fall 2017), MSAE Thesis Committee Chair
    Thesis Title: Effect of slot height variation on the aerodynamic performance of a circulation control airfoil: a CFD analysis
14. Deepak Reddy (Fall 2016), MSAE Thesis Committee Chair
    Thesis Title: Temperature Sensor Based Thermal Soaring of an Unmanned Aerial Vehicle
15. Wilmer Rustrian (Spring 2016), MSME Thesis Committee Chair
    Thesis Title: Modeling and Control of an Autonomous Underwater Vehicle
16. Javed Iqbal (Spring 2016), MS Project Advisor
    Topic: Smart Surface-Water Vehicle
17. Ganesh Kudlepannavar (Summer 2015), MSEE Thesis Committee Co-Chair
    Thesis Title: Real Time Target Allocation for Cooperative Unmanned Aerial Vehicles
18. German Gramajo (Summer 2014), MSAE Thesis Committee Chair
    Thesis Title: Guidance Control of Small UAV with Energy and Maneuverability Limitations for a Search and Coverage Mission
19. Rodolfo Sclafani (Fall 2013), MSAE Thesis Committee Chair
    Thesis Title: Variable Memory Recurrent Neural Networks for Launch Vehicle Control
20. Darin Koblick (Summer 2012), MSAE Thesis Committee Chair
    Thesis Title: Parallel High-Precision Orbit Propagation Using Modified Picard- Chebyshev Method
21. John Nguyen (Spring 2012), MS Project Advisor
    Project Title: Strategy to Determine Dominant Modes of a Nanosat Launch Vehicle
22. Kaori Emerson-Shurilla (2020) - BSAE Honors Thesis Chair
    Undergraduate Honors Thesis Title: Aeroseed: Design of a Gimbal Payload for an All-Rotating Aerial Vehicle Presentation
23. Tanner Prince (2020) - BSAE Honors Thesis Chair
    Undergraduate Honors Thesis Title: System level performance analysis and testing of a high-

power rocket

24. Thomas Swaney (2020) - BSAE Honors Thesis Chair
    Undergraduate Honors Thesis Title: AEROSEED: Design of a payload spin stabilization system for an all- rotating aerial vehicle
25. Riley Dunn (2018) BSME Honors Thesis Chair
    Undergraduate Honors Thesis Title: Multidisciplinary design optimization of spacecraft electronics
26. Nicholas Regnier (2017) BSME Honors Thesis Chair
    Undergraduate Honors Thesis Title: Formation Control and Path Planning of Multiple Rovers Using Kalman Filters
27. David Gaskins (2015) – BSCS Honors Thesis Chair
    Undergraduate Honors Thesis Title: Application of the Open-Source Blender Platform for the Simulation of Engineering Systems

D. <u>Mentored Student Accomplishments</u>

1. Babak Taherian, PhD student was selected for the California State University Long Beach Research Fellowship for Summer 2021. He was awarded $6000 towards his research.
2. Mia Koss, BSAE student received the Sigma Gamma Tau Annual Undergraduate Award ($250) for Southern Pacific Region in 2021
3. Lunabotics Team (2020-21) ranked first in the state and 13th nationwide among 52 teams in NASA Robotic Mining (Lunabotics) Competition.
4. Long Beach Rocketry Team (2020-21) ranked 6th nationwide in NASA Student Launch Initiative Competition.
5. Long Beach Rocketry Team (2020-21) ranked 1st nationwide in Project Review and Best-Looking Rocket categories at NASA Student Launch Initiative Competition.
6. Long Beach Rocketry Team (2019-20) ranked 3rd nationwide in Project Review category at NASA Student Launch Initiative Competition.
7. Long Beach Rocketry received $1,500 award from California Space Grant Consortium to support team's competition activities.
8. Long Beach Rocketry Team (2018-19) ranked 5th nationwide in NASA Student Launch Initiative Competition.
9. Long Beach Rocketry Team (2018-19) ranked 3rd nationwide in Payload Design category at NASA Student Launch Initiative Competition.
10. Long Beach Rocketry Team (2017-18) ranked 4th nationwide in NASA Student Launch Initiative Competition.
11. Hernan Blas, BSME student was selected for the California State University Long Beach Research Fellowship for Summer 2016. He was awarded $4000 towards his research.
12. Wilmer Rustrian, MSME student, was awarded Best Thesis, Mechanical Engineering, 2015-16
13. D. Koblick, Ph.D. Student was awarded "Young Engineer Award", by Orange County Engineering Council, 2016
14. A. Blackney presented "Modeling and Simulation of Wirelessly-Networked Sensors and Control of an Elastic Inverted Pendulum" at the CSULB Annual Student Research Competition, 2016
15. RASC-AL Robo-Ops (2014-15) Team was awarded "Outstanding Student Project" by Orange County Engineering Council, 2016
16. W. Rustrian presented "Modeling and Control Of An Autonomous Underwater Vehicle" at the

CSULB Annual Student Research Competition, 2016
17. Darin Koblick, Ph.D. student was awarded 1st Place in CSULB Annual Student Research Competition, 2015.
18. D. Koblick presented "Evaluation of the Modified Picard Chebyshev Method to Common Astrodynamic Initial Value Problems and Boundary Value Problems" at the CSULB Annual Student Research Competition, 2015
19. J. Vega presented "Development of Autonomous Vehicle Platforms for Implementation and Verification of Cooperative Control Tasks" at the CSULB Annual Student Research Competition, 2015
20. Joaquin Martinez, BSME student was awarded the prestigious NASA Aeronautics Scholarship for 2014-2016. He will receive a scholarship of $15000 per year for his research.
21. Andrew Blackney, MSAE student, was awarded the CSULB Graduate Research Fellowship for 2015-2016. He received a scholarship of $9000 for his research
22. Darin Koblick, Ph.D. student, was awarded the CSULB Graduate Research Fellowship for 2014-2015. He received a scholarship of $9000 towards his research.
23. Jorge Vega, BSME student was selected for the California State University Long Beach Research Fellowship for Summer 2014. He was awarded $3200 for his research.
24. Jorge Vega, BSME student, was selected for the California State University LSAMP Scholarship in Summer 2014. *Declined due to alternate scholarship (see above)*
25. Ganesh Kudlepannavar, MSEE student was granted a travel award of $1200 to the 2014 Unmanned Aerial Vehicles ACM MobiHoc workshop on "Airborne Networks and Communications in Philadelphia, PA.
26. Fady Ghabrial, MSAE student, was awarded the CSULB Graduate Research Fellowship for 2013-2014. He received a scholarship of $9000 towards his research.
27. Abd Al Rahman Chamas, BSAE student was granted a travel award of $1200 to the 2013 Infotech@AIAA Conference in Boston, MA.
28. Andrew Blackney, BSAE student, was selected for the California State University LSAMP Scholarship in Summer 2013. *Declined due to internship*

E. Extra-Curricular Student Projects and Competitions

1. Faculty Advisor, NASA University Student Launch Initiative Team (Long Beach Rocketry), 2015-2021
2. Faculty Advisor, NASA Robot Mining Competition Team (Lunabotics), 2018-2022
3. Faculty Advisor, RASC-AL Mars Ice-Drilling Student Competition, 2016-2017
4. Faculty Advisor, RASC-AL Robo-Ops Student Competition, 2014-2016
5. Faculty Advisor, AIAA Design, Build, Fly Student Competition, 2014-16