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EDUCATION

- 2006 | **Ph.D. in Aerospace Engineering**, University of Michigan, Ann Arbor, Michigan
- 2005 | **M.S. in Mathematics**, University of Michigan, Ann Arbor, Michigan
- 2003 | **M.S.E. in Aerospace Engineering**, University of Michigan, Ann Arbor, Michigan
- 2002 | **B.S.E. in Civil & Environmental Engineering**, Duke University, Durham, NC

PROFESSIONAL EXPERIENCE

- 2023 – Present | **Department Chair**, Department of Mechanical and Aerospace Engineering, University of Kentucky, Lexington, Kentucky
- 2022 – 2023 | **Director of Graduate Studies**, Department of Mechanical and Aerospace Engineering, University of Kentucky, Lexington, Kentucky
- 2021 – Present | **Professor**, Department of Mechanical and Aerospace Engineering, University of Kentucky, Lexington, Kentucky
- 2019 – Present | **Donald and Gertrude Lester Professor**, Department of Mechanical and Aerospace Engineering, University of Kentucky, Lexington, Kentucky
- 2016 – 2021 | **Associate Professor**, Department of Mechanical Engineering, University of Kentucky, Lexington, Kentucky
- 2010 – 2016 | **Assistant Professor**, Department of Mechanical Engineering, University of Kentucky, Lexington, Kentucky
- 2009 – 2010 | **Postdoctoral Research Fellow**, Department of Aerospace Engineering, University of Michigan, Ann Arbor, Michigan
- 2008 – 2009 | **Engagement Manager**, McKinsey & Company, Chicago, Illinois
- 2006 – 2008 | **Associate**, McKinsey & Company, Chicago, Illinois
- 2003 – 2006 | **National Defense Science & Engineering Graduate Fellow**, Department of Aerospace Engineering, University of Michigan, Ann Arbor, Michigan
- 2003 – 2005 | **Space Scholar**, Air Force Research Laboratory, Albuquerque, New Mexico
- 2002 | **Teaching Assistant**, Department of Civil & Environmental Engineering, Duke University, Durham, North Carolina
- 2001 – 2002 | **Pratt School of Engineering Undergraduate Research Fellow**, Duke University, Durham, North Carolina
- 2000 | **Summer Research Assistant**, Georgia Institute of Technology, Mid-American Earthquake Center, Atlanta, Georgia

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BOOKS

1. **J. B. Hoagg**, W. M. Haddad, and D. S. Bernstein, *Linear-Quadratic Control: Theory and Methods for Continuous-Time Systems*, (in preparation; 450 pages drafted; working with a publisher).

ARCHIVAL JOURNAL PUBLICATIONS († Student)

1. P. Rabiee† and **J. B. Hoagg**, “Soft-minimum and soft-maximum barrier functions for safety with actuation constraints,” *Automatica*, (under review; submitted 2023).
2. M. Kamaldar† and **J. B. Hoagg**, “Lyapunov-like functions for almost global convergence in discrete-time systems,” *Systems & Control Letters*, (under review; submitted 2023).
3. S. Koushkbaghi, S. A. S. Mousavi†, E. Hellström, M. Jankovic, M. A. Santillo, T. M. Seigler, and **J. B. Hoagg**, “Impact of relaxed command-following objectives on human-in-the-loop control behavior,” *IEEE Transactions on Human-Machine Systems*, (under review; submitted 2023).
4. P. Rabiee†, S. A. S. Mousavi†, A. J. S. Sheffler†, E. Hellström, M. Jankovic, M. A. Santillo, T. M. Seigler, and **J. B. Hoagg**, “The impact of reference-command preview on human-in-the-loop control behavior,” *IEEE Transactions on Human-Machine Systems*, (under review; submitted 2023).
5. M. Kamaldar†, S. A. U. Islam, **J. B. Hoagg**, and D. S. Bernstein, “Real-time implementation of state-feedback controllers,” *International Journal of Control*, (under review; submitted 2023).
6. R. Chavan†, T. M. Seigler, and **J. B. Hoagg**, “Small-satellite attitude consensus using limited-stroke oscillating-mass actuators with continuous sinusoidal controls,” *Aerospace Science and Technology*, vol. 142 Part A, article 108611, pp. 1–11, 2023. DOI: [10.1016/j.ast.2023.108611](https://doi.org/10.1016/j.ast.2023.108611).
7. C. Heintz†, S. C. C. Bailey, and **J. B. Hoagg**, “Formation control for autonomous fixed-wing air vehicles with strict speed constraints,” *Autonomous Robots*, 2023. DOI: [10.1007/s10514-023-10126-4](https://doi.org/10.1007/s10514-023-10126-4)
8. R. Chavan†, T. M. Seigler, and **J. B. Hoagg**, “Small-satellite attitude control using continuous sinusoids with strict amplitude constraints,” *IEEE Transactions on Control Systems Technology*, vol. 31, no. 2, pp. 707–721, 2023. DOI: [10.1109/TCST.2022.3201191](https://doi.org/10.1109/TCST.2022.3201191)
9. Z. Abbasi, **J. B. Hoagg**, and T. M. Seigler, “Decentralized electromagnetic formation flight using alternating magnetic field forces,” *IEEE Transactions on Control Systems Technology*, vol. 30, no. 6, pp. 2480–2489, 2022. DOI: [10.1109/TCST.2022.3158587](https://doi.org/10.1109/TCST.2022.3158587)
10. M. Kamaldar†, S. A. U. Islam, **J. B. Hoagg**, and D. S. Bernstein, “Demystifying enigmatic undershoot in setpoint command following,” *IEEE Control Systems*, vol. 42, no. 1, pp. 103–125, 2022. DOI: [10.1109/MCS.2021.3122270](https://doi.org/10.1109/MCS.2021.3122270)
11. M. Kamaldar† and **J. B. Hoagg**, “Centralized and decentralized adaptive harmonic control for sinusoidal disturbance rejection,” *Control Engineering Practice*, vol. 112, article 104814, pp. 1–17, 2021. DOI: [10.1016/j.conengprac.2021.104814](https://doi.org/10.1016/j.conengprac.2021.104814)
12. Z. S. Lippay† and **J. B. Hoagg**, “Formation control with time-varying formations, bounded controls, and collision avoidance,” *IEEE Transactions on Control System Technology*, vo. 30, no. 1, pp. 261–276, 2022. DOI: [10.1109/TCST.2021.3062824](https://doi.org/10.1109/TCST.2021.3062824)
13. S. Koushkbaghi, **J. B. Hoagg**, and T. M. Seigler, “The impact of static output nonlinearities on the control strategies that humans use in command-following tasks,” *Journal of the Franklin Institute*, vol. 358, no. 6, pp. 2964–2986, 2021. DOI: [10.1016/j.jfranklin.2021.02.007](https://doi.org/10.1016/j.jfranklin.2021.02.007)
14. M. Kamaldar† and **J. B. Hoagg**, “Time-domain adaptive higher harmonic control for rejection of sinusoidal disturbances,” *Journal of Dynamic Systems, Measurement, and Control*, vol. 143, no. 5, article 051007, pp. 1–23, 2021. DOI: [10.1115/1.4049016](https://doi.org/10.1115/1.4049016)
15. T. Kirven† and **J. B. Hoagg**, “Autonomous quadrotor collision avoidance and destination seeking in a GPS-denied environment,” *Autonomous Robots*, vol. 45, no. 1, pp. 99–118, 2021. DOI: [10.1007/s10514-020-09949-2](https://doi.org/10.1007/s10514-020-09949-2)

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16. S. A. S. Mousavi[†], F. Matveeva[†], X. Zhang[†], T. M. Seigler, and **J. B. Hoagg**, “The impact of command-following task on human-in-the-loop control behavior,” *IEEE Transactions on Cybernetics*, vol. 52, no. 7, pp. 6447–6461, 2022. DOI: [10.1109/TCYB.2020.3024892](https://doi.org/10.1109/TCYB.2020.3024892)
17. X. Zhang[†], T. M. Seigler, and **J. B. Hoagg**, “The impact of nonminimum-phase zeros on human-in-the-loop control systems,” *IEEE Transactions on Cybernetics*, vol. 52, no. 6, pp. 5098–5112, 2022. DOI: [10.1109/TCYB.2020.3027502](https://doi.org/10.1109/TCYB.2020.3027502)
18. S. A. S. Mousavi[†], X. Zhang[†], T. M. Seigler, and **J. B. Hoagg**, “Characteristics that make linear time-invariant dynamics systems difficult for humans to control,” *IEEE Transactions on Human-Machine Systems*, vol. 51, no. 2, pp. 141–151, 2021. DOI: [10.1109/THMS.2020.3046164](https://doi.org/10.1109/THMS.2020.3046164)
19. S. A. S. Mousavi[†], X. Zhang[†], T. M. Seigler, and **J. B. Hoagg**, “Subsystem identification of feedback and feedforward systems with time delay,” *Results in Control and Optimization*, vol. 1, article 100002, pp. 1–15, 2020. DOI: [10.1016/j.rico.2020.100002](https://doi.org/10.1016/j.rico.2020.100002)
20. C. Heintz[†] and **J. B. Hoagg**, “Formation control for agents modeled with extended unicycle dynamics that include orientation kinematics on $SO(m)$ and speed constraints,” *Systems & Control Letters*, vol. 146, article 104784, pp. 1–13, 2020. DOI: [10.1016/j.sysconle.2020.104784](https://doi.org/10.1016/j.sysconle.2020.104784)
21. R. Chavan[†], S. Wang, T. M. Seigler, and **J. B. Hoagg**, “Consensus on $SO(3)$ with piecewise-continuous sinusoids,” *Automatica*, vol. 122, article 109262, pp. 1–12, 2020. DOI: [10.1016/j.automatica.2020.109262](https://doi.org/10.1016/j.automatica.2020.109262)
22. S. C. C. Bailey, C. A. Canter, L. F. Pampolini, Z. S. Lippay, T. J. Schuyler, J. D. Hamilton, S. B. MacPhee, I. S. Rowe, C. D. Sanders, V. G. Smith, C. N. Vezzi, H. M. Wight, **J. B. Hoagg**, M. I. Guzman, M. P. Sama, and S. W. Smith, “University of Kentucky measurements of wind, temperature, pressure and humidity in support of LAPSE-RATE using multi-site fixed-wing and rotorcraft UAS,” *Earth System Science Data*, vol. 12, pp. 1759–1773, 2020. DOI: [10.5194/essd-12-1759-2020](https://doi.org/10.5194/essd-12-1759-2020)
23. M. Kamaldar[†] and **J. B. Hoagg**, “Adaptive harmonic control for rejection of sinusoidal disturbances acting on an unknown system,” *IEEE Transactions on Control Systems Technology*, vol. 28, pp. 277–290, 2020. DOI: [10.1109/TCST.2018.2873283](https://doi.org/10.1109/TCST.2018.2873283)
24. M. Kamaldar[†], S. A. U. Islam, S. Sanjeevini, A. Goel, **J. B. Hoagg**, and D. S. Bernstein, “Adaptive digital PID control of sampled-data systems with first-order-lag-plus-dead-time dynamics and sensor/actuator nonlinearities,” *Advanced Control for Applications: Engineering and Industrial Systems*, vol. 1:e20, 2019. DOI: [10.1002/adc2.20](https://doi.org/10.1002/adc2.20)
25. S. Wang, **J. B. Hoagg**, and T. M. Seigler, “Orientation control on $SO(3)$ with piecewise sinusoids,” *Automatica*, vol. 100, pp. 114–122, 2019. DOI: [10.1016/j.automatica.2018.11.007](https://doi.org/10.1016/j.automatica.2018.11.007)
26. Z. Li[†], **J. B. Hoagg**, A. Martin, and S. C. C. Bailey, “Retrospective cost adaptive Reynolds-averaged Navier-Stokes $k-\omega$ model for data-driven unsteady turbulent simulations,” *Journal of Computational Physics*, vol. 357, pp. 353–374, 2018. DOI: [10.1016/j.jcp.2017.11.037](https://doi.org/10.1016/j.jcp.2017.11.037)
27. A. H. Ghasemi, **J. B. Hoagg**, and T. M. Seigler, “Decentralized filtered feedback linearization for uncertain nonlinear systems,” *International Journal of Robust and Nonlinear Control*, vol. 28, no. 4, pp. 1496–1506, 2018. DOI: [10.1002/rnc.3928](https://doi.org/10.1002/rnc.3928)
28. X. Zhang[†], S. Wang, **J. B. Hoagg**, and T. M. Seigler, “The roles of feedback and feedforward as humans learn to control unknown dynamic systems,” *IEEE Transactions on Cybernetics*, vol. 48, no. 2, pp. 543–555, 2018. DOI: [10.1109/TCYB.2016.2646483](https://doi.org/10.1109/TCYB.2016.2646483)
29. B. J. Wellman[†] and **J. B. Hoagg**, “A flocking algorithm with individual agent destinations and without a centralized leader,” *Systems & Control Letters*, vol. 102, pp. 57–67, 2017. DOI: [10.1016/j.sysconle.2017.01.006](https://doi.org/10.1016/j.sysconle.2017.01.006)
30. Z. Li[†], H. Zhang, S. C. C. Bailey, **J. B. Hoagg**, and A. Martin, “A data-driven adaptive Reynolds-averaged Navier-Stokes $k-\omega$ model for turbulent flow,” *Journal of Computational Physics*, vol. 345, pp. 111–131, 2017. DOI: [10.1016/j.jcp.2017.05.009](https://doi.org/10.1016/j.jcp.2017.05.009)

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31. M. Kamaldar[†] and **J. B. Hoagg**, “Adaptive harmonic steady-state control for rejection of sinusoidal disturbances acting on a completely unknown system,” *International Journal of Adaptive Control and Signal Processing*, vol. 31, no. 9, pp. 1308–1326, 2017. DOI: [10.1002/acs.2766](https://doi.org/10.1002/acs.2766)
32. X. Zhang[†] and **J. B. Hoagg**, “Subsystem identification of multivariable feedforward and feedback systems,” *Automatica*, vol. 72, pp. 131–137, 2016. DOI: [10.1016/j.automatica.2016.05.027](https://doi.org/10.1016/j.automatica.2016.05.027)
33. J. Mullen[†], S. C. C. Bailey, and **J. B. Hoagg**, “Filter dynamic inversion for altitude control of fixed-wing unmanned air vehicles,” *Aerospace Science and Technology*, vol. 54, pp. 241–252, 2016. DOI: [10.1016/j.ast.2016.04.013](https://doi.org/10.1016/j.ast.2016.04.013)
34. A. H. Ghasemi, **J. B. Hoagg**, and T. M. Seigler, “Decentralized vibration and shape control of structures with colocated sensors and actuators,” *Journal of Dynamic Systems, Measurement, and Control*, vol. 138, no. 3, article 031011, pp. 1–11, 2016. DOI: [10.1115/1.4032344](https://doi.org/10.1115/1.4032344)
35. X. Zhang[†] and **J. B. Hoagg**, “Frequency-domain subsystem identification with application to modeling control strategies used by humans,” *Systems & Control Letters*, vol. 87, pp. 36–46, 2016. DOI: [10.1016/j.sysconle.2015.10.009](https://doi.org/10.1016/j.sysconle.2015.10.009)
36. A. A. Ali, **J. B. Hoagg**, M. Mossberg, and D. S. Bernstein, “On the stability and convergence of a sliding-window variable-regularization recursive-least-squares algorithm,” *International Journal of Adaptive Control and Signal Processing*, vol. 30, no. 5, pp. 715–735, 2016. DOI: [10.1002/acs.2634](https://doi.org/10.1002/acs.2634)
37. **J. B. Hoagg** and T. M. Seigler, “Decentralized filtered dynamic inversion for uncertain minimum-phase systems,” *Automatica*, vol. 61, pp. 192–200, 2015. DOI: [10.1016/j.automatica.2015.08.012](https://doi.org/10.1016/j.automatica.2015.08.012)
38. J. D. Polston[†] and **J. B. Hoagg**, “Decentralized adaptive command following and disturbance rejection for subsystems with local full-state feedback,” *International Journal of Adaptive Control and Signal Processing*, vol. 29, no. 5, pp. 581–602, 2015. DOI: [10.1002/acs.2490](https://doi.org/10.1002/acs.2490)
39. B. J. Wellman[†] and **J. B. Hoagg**, “Quadratically parameterized root locus analysis,” *IEEE Transactions on Automatic Control*, vol. 59, no. 7, pp. 1803–1817, 2014. DOI: [10.1109/TAC.2014.2314519](https://doi.org/10.1109/TAC.2014.2314519)
40. **J. B. Hoagg** and T. M. Seigler, “Filtered feedback linearization for nonlinear systems with unknown disturbance,” *Systems & Control Letters*, vol. 62, no. 8, pp. 613–625, 2013. DOI: [10.1016/j.sysconle.2013.04.002](https://doi.org/10.1016/j.sysconle.2013.04.002)
41. T. M. Seigler and **J. B. Hoagg**, “Filtered dynamic inversion for vibration control of structures with uncertainty,” *ASME Journal of Dynamic Systems, Measurement, and Control*, vol. 135, no. 5, pp. 041017-1–16, 2013. DOI: [10.1115/1.4023670](https://doi.org/10.1115/1.4023670)
42. **J. B. Hoagg** and T. M. Seigler, “Filtered-dynamic-inversion control for unknown minimum-phase systems with unknown-and-unmeasured disturbances,” *International Journal of Control*, vol. 86, no. 3, pp. 449–468, 2013. DOI: [10.1080/00207179.2012.738938](https://doi.org/10.1080/00207179.2012.738938)
43. **J. B. Hoagg** and D. S. Bernstein, “Retrospective cost model reference adaptive control for non-minimum-phase systems,” *Journal of Guidance, Control, and Dynamics*, vol. 35, no. 6, pp. 1767–1786, 2012. DOI: [10.2514/1.57001](https://doi.org/10.2514/1.57001)
44. J. Yan, **J. B. Hoagg**, R. E. Hindman, and D. S. Bernstein, “Longitudinal aircraft dynamics and the instantaneous acceleration center of rotation,” *IEEE Control Systems*, vol. 31, no. 4, pp. 66–92, 2011. DOI: [10.1109/MCS.2011.941250](https://doi.org/10.1109/MCS.2011.941250)
45. D. S. Bernstein, A. M. D’Amato, **J. B. Hoagg**, and M. A. Santillo, “Comments on ‘Output feedback adaptive command following and disturbance rejection for nonminimum phase uncertain dynamical systems’,” *International Journal of Adaptive Control and Signal Processing*, vol. 25, pp. 374–378, 2011. DOI: [10.1002/acs.1235](https://doi.org/10.1002/acs.1235)
46. **J. B. Hoagg**, M. A. Santillo, and D. S. Bernstein, “Discrete-time adaptive command following and disturbance rejection with unknown exogenous dynamics,” *IEEE Transactions on Automatic Control*, vol. 53, no. 4, pp. 912–928, 2008. DOI: [10.1109/TAC.2008.920234](https://doi.org/10.1109/TAC.2008.920234)

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47. **J. B. Hoagg**, M. A. Santillo, and D. S. Bernstein, “Internal model control in the shift and delta domains,” *IEEE Transactions on Automatic Control*, vol. 53, no. 4, pp. 1066–1072, 2008. DOI: [10.1109/TAC.2008.921526](https://doi.org/10.1109/TAC.2008.921526)
48. **J. B. Hoagg** and D. S. Bernstein, “Direct adaptive dynamic compensation for minimum phase systems with unknown relative degree,” *IEEE Transactions on Automatic Control*, vol. 52, no. 4, pp. 610–621, 2007. DOI: [10.1109/TAC.2007.894512](https://doi.org/10.1109/TAC.2007.894512)
49. **J. B. Hoagg** and D. S. Bernstein, “Direct adaptive command following and disturbance rejection for minimum phase systems with unknown relative degree,” *International Journal of Adaptive Control and Signal Processing*, vol. 21, pp. 49–75, 2007. DOI: [10.1002/acs.945](https://doi.org/10.1002/acs.945)
50. **J. B. Hoagg**, J. Chandrasekar, and D. S. Bernstein, “On the zeros, initial undershoot, and relative degree of collinear lumped-parameter structures,” *ASME Journal of Dynamic Systems, Measurement, and Control*, vol. 129, pp. 493–502, 2007. DOI: [10.1115/1.2719764](https://doi.org/10.1115/1.2719764)
51. **J. B. Hoagg** and D. S. Bernstein, “Nonminimum-phase zeros: Much to do about nothing,” *IEEE Control Systems*, vol. 27, no. 3, pp. 45–57, 2007. DOI: [10.1109/MCS.2007.365003](https://doi.org/10.1109/MCS.2007.365003)
52. **J. B. Hoagg** and D. S. Bernstein, “Lyapunov-stable adaptive stabilization of non-linear time-varying systems with matched uncertainty,” *International Journal of Control*, vol. 80, no. 6, pp. 872–884, 2007. DOI: [10.1080/00207170601185988](https://doi.org/10.1080/00207170601185988)

ARCHIVAL PEER-REVIEWED CONFERENCE PUBLICATIONS († Student)

1. P. Rabiee† and **J. B. Hoagg**. “Composition of control barrier functions with differing relative degree for safety under input constraints,” *Proc. Amer. Contr. Conf.*, Toronto, Canada, July 2024 (submitted).
2. A. Safari† and **J. B. Hoagg**. “Time-varying soft-maximum control barrier functions for safety in an *a priori* unknown environment,” *Proc. Amer. Contr. Conf.*, Toronto, Canada, July 2024 (submitted).
3. P. Panja, **J. B. Hoagg**, and S. Baidya. “Control barrier function based UAV safety controller in autonomous airborne tracking and following systems,” *Proc. IEEE Int. Conf. Robotics Autom.*, Yokohama, Japan May 2024 (submitted).
4. S. Sinha†, R. Fui, S. C. C. Bailey, **J. B. Hoagg**, and A. Martin. “Utilizing a retrospective cost adaptation control (RCAC) algorithm to achieve data-driven, adaptive, real-time (DART) precision meteorological forecasts,” *Proc. AIAA SciTech*, Orlando, FL January 2024 (accepted).
5. P. Rabiee† and **J. B. Hoagg**. “Soft-minimum barrier functions for safety-critical control subject to actuation constraints,” *Proc. Amer. Contr. Conf.*, San Diego, CA, May–June 2023.
6. P.-B. J. C. Bentinck, D. M. Pool, K. van der El, **J. B. Hoagg**, and M. Mulder. “Identifying human preview control behavior using subsystem identification,” *Proc. IFAC Symposium Analysis Design and Evaluation of Human Machine Syst.*, pp. 172–177, San Jose, CA, September 2022. DOI: [10.1016/j.ifacol.2022.10.251](https://doi.org/10.1016/j.ifacol.2022.10.251)
7. R. Fui, S. Sinha†, C. T. Barrow, J. F. Maddox, **J. B. Hoagg**, and A. Martin. “A data-driven approach for real-time estimation of material properties,” *Proc. AIAA AVIATION Forum*, AIAA 2022-3728, Chicago, IL, June 2022. DOI: [10.2514/6.2022-3728](https://doi.org/10.2514/6.2022-3728)
8. R. Chavan†, T. M. Seigler, and **J. B. Hoagg**. “Small-satellite attitude control using stroke-limited vibrating-mass actuators with piecewise constant control signals,” *Proc. Amer. Contr. Conf.*, pp. 1127–1132, Atlanta, GA, June 2022. DOI: [10.23919/ACC53348.2022.9867744](https://doi.org/10.23919/ACC53348.2022.9867744)
9. M. Kamaldar and **J. B. Hoagg**. “Lyapunov-like functions for almost global convergence in discrete-time systems,” *Proc. Amer. Contr. Conf.*, pp. 152–157, Atlanta, GA, June 2022. DOI: [10.23919/ACC53348.2022.9867478](https://doi.org/10.23919/ACC53348.2022.9867478)
10. R. Chavan†, T. M. Seigler, and **J. B. Hoagg**. “Small-satellite attitude control using piecewise-sinusoidal controls in the presence of disturbance torques,” *Proc. Amer. Contr. Conf.*, pp. 2974–2979, New Orleans, LA, June 2021. DOI: [10.23919/ACC50511.2021.9483374](https://doi.org/10.23919/ACC50511.2021.9483374)

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11. R. Chavan[†], T. M. Seigler, and **J. B. Hoagg**. “Small-satellite attitude consensus on $SO(3)$ using continuous but only piecewise-continuously differentiable sinusoidal controls,” *Proc. Amer. Contr. Conf.*, pp. 4255–4260, New Orleans, LA, June 2021. DOI: [10.23919/ACC50511.2021.9483055](https://doi.org/10.23919/ACC50511.2021.9483055)
12. C. Heintz[†] and **J. B. Hoagg**. “Formation control for fixed-wing UAVs modeled with extended unicycle dynamics that include attitude kinematics on $SO(m)$ and speed constraints,” *Proc. Amer. Contr. Conf.*, pp. 883–888, Denver, CO, July 2020. DOI: [10.23919/ACC45564.2020.9148001](https://doi.org/10.23919/ACC45564.2020.9148001)
13. R. Chavan[†], T. M. Seigler, and **J. B. Hoagg**. “Small-satellite attitude control using continuous but only piecewise-continuously differentiable sinusoidal controls,” *Proc. Amer. Contr. Conf.*, pp. 4932–4937, Denver, CO, July 2020. DOI: [10.23919/ACC45564.2020.9147913](https://doi.org/10.23919/ACC45564.2020.9147913)
14. Z. Abbasi, A. Sunny[†], **J. B. Hoagg**, and T. M. Seigler. “Relative-position formation control of satellites using electromagnetic actuation with piecewise-sinusoidal controls,” *Proc. Amer. Contr. Conf.*, pp. 4951–4956, Denver, CO, July 2020. DOI: [10.23919/ACC45564.2020.9147724](https://doi.org/10.23919/ACC45564.2020.9147724)
15. Z. S. Lippay[†] and **J. B. Hoagg**. “Leader-following formation control with time-varying formations and bounded controls for agents with double integrator dynamics,” *Proc. Amer. Contr. Conf.*, pp. 871–876, Denver, CO, July 2020. DOI: [10.23919/ACC45564.2020.9147567](https://doi.org/10.23919/ACC45564.2020.9147567)
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89. **J. B. Hoagg** and D. S. Bernstein, "Robust stabilization of discrete-time systems," *Proc. Conf. Dec. Contr.*, pp. 2346–2351, Paradise Island, The Bahamas, December 2004. DOI: [10.1109/CDC.2004.1428745](https://doi.org/10.1109/CDC.2004.1428745)
90. **J. B. Hoagg** and D. S. Bernstein, "Direct adaptive dynamic compensation for minimum phase systems with unknown relative degree," *Proc. Conf. Dec. Contr.*, pp. 183–188, Paradise Island, The Bahamas, December 2004. DOI: [10.1109/CDC.2004.1428627](https://doi.org/10.1109/CDC.2004.1428627)
91. H. Palanthandalam-Madapusi, **J. B. Hoagg**, and D. S. Bernstein, "Basis-function optimization for subspace-based nonlinear identification of systems with measured-input nonlinearities," *Proc. Amer. Contr. Conf.*, pp. 4788–4793, Boston, MA, June 2004.
92. **J. B. Hoagg**, S. L. Lacy, R. S. Erwin, and D. S. Bernstein, "Subspace identification with lower bounded modal frequencies," *Proc. Amer. Contr. Conf.*, pp. 867–872, Boston, MA, June 2004.
93. **J. B. Hoagg**, S. L. Lacy, R. S. Erwin, and D. S. Bernstein, "First-order-hold sampling of positive real systems and subspace identification of positive real models," *Proc. Amer. Contr. Conf.*, pp. 861–866, Boston, MA, June 2004.
94. **J. B. Hoagg**, S. L. Lacy, R. Venugopal, and D. S. Bernstein, "Adaptive control of a flexible membrane using acoustic excitation and optical sensing," *Proc. AIAA Guid., Nav., Contr. Conf.*, AIAA-2003-5430, Austin, TX, August 2003. DOI: [10.2514/6.2003-5430](https://doi.org/10.2514/6.2003-5430)

CONFERENCE PUBLICATIONS | NOT PEER REVIEWED

1. **J. B. Hoagg** and D. S. Bernstein, "Discrete-time adaptive feedback disturbance rejection using a retrospective performance measure," *Proc. ACTIVE 04*, Williamsburg, VA, September 2004.
2. H. P. Gavin, **J. B. Hoagg**, and M. Dobossy, "Optimal design of MR dampers," *Proc. US-Japan Workshop on Smart Structures for Improved Seismic Performance in Urban Regions*, pp. 225–236, Seattle, WA, August 2001.

EXTRAMURAL FUNDING AWARDED

	Title	<i>PFI (MCA): Autonomous Unmanned Aerial Vehicles for Remote Sensing of the Arctic</i>
	Investigators	C. Richards (PI); J. B. Hoagg (Collaborative Partner)
[1]	Agency	National Science Foundation (2219008)
	Amount	\$500,000
	Subaward	Investigator: J. B. Hoagg (PI) Amount: \$28,506
	Duration	September 1, 2022 to August 31, 2025
	Title	<i>RII Track-1: Kentucky Advanced Manufacturing Partnership for Enhanced Robotics and Structures</i>
	Investigators	R. J. Andrews (PI); J. B. Hoagg (Senior Personnel); et al.
[2]	Agency	National Science Foundation (OIA-1849213)
	Amount	\$20,000,000
	Scope Award	Title: <i>Cooperative Human-Robotic Control Systems</i> Investigator: J. B. Hoagg (PI) Amount: \$455,108
	Duration	July 1, 2019 to June 30, 2024

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[3]	Title <i>Direct Adaptive Control of Nonlinear Systems with Uncertain Unstable Zero Dynamics</i> Investigators D. S. Bernstein (PI); J. B. Hoagg (co-PI and University of Kentucky PI) Agency Air Force Office of Scientific Research Amount \$691,743 (Share: \$258,291) Duration January 15, 2020 to January 14, 2024
[4]	Title <i>CPS: Medium: Data-Driven Adaptive Real-Time (DART) Flow-Field Estimation Using Deployable UAVs</i> Investigators J. B. Hoagg (PI); S. C. C. Bailey (co-PI); A. Martin (co-PI); M. P. Sama (co-PI) Agency National Science Foundation (CNS-1932105) Amount \$1,199,150 (Share: \$390,934) Duration October 1, 2019 to September 30, 2023
[5]	Title <i>Coordinated Position and Attitude Control for Formations of Small Satellites</i> Investigators T. M. Seigler (PI); J. B. Hoagg (co-PI); S. W. Smith (Management PI) Agency National Aeronautics and Space Administration (80NSSC17M0040) Amount \$1,050,000 (\$750,000 from NASA and \$300,000 from Kentucky EPSCoR) (Share: \$500,000) Duration October 1, 2017 to September 30, 2022
[6]	Title <i>NRI: INT: Autonomous Unmanned Aerial Robots for Livestock Health Monitoring</i> Investigators J. B. Hoagg (PI); J. J. Jackson (co-PI); M. P. Sama (co-PI); R. Yang (co-PI) Agency U.S. Department of Agriculture (2018-67021-27416) awarded through the National Robotics Initiative Amount \$899,907 (Share: \$310,000) Duration February 15, 2018 to February 14, 2022
[7]	Title <i>Autonomous Multi-UAV System for COVID-19 Body Temperature Monitoring of Crowds</i> Investigators X. Jin (PI); J. B. Hoagg (co-PI) Agency NASA Kentucky Space Grant Amount \$40,000 (Share: \$5,000) Duration August 1, 2020 to July 31, 2021
[8]	Title <i>Sampled-Data Formation Control of Fixed-Wing UAVs for Measuring Atmospheric Turbulence</i> Investigators J. B. Hoagg (PI); S. C. C. Bailey (co-PI) Agency NASA Kentucky Space Grant (NNX15AR69H) Amount \$44,998 (Share: \$44,998) Duration January 1, 2019 to September 30, 2020
[9]	Title <i>Predictive Driver Models for Improved Automotive Control Systems</i> Investigators J. B. Hoagg (PI) Agency Ford Motor Company Amount \$140,000 Duration September 1, 2017 to August 31, 2020

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|------|---------------|---|---|
| | | Title | <i>RII Track-2 FEC: Unmanned Aircraft Systems for Atmospheric Physics</i> |
| | Investigators | S. W. Smith (PI); S. C. C. Bailey (co-PI); M. I. Guzman (co-PI);
J. B. Hoagg (co-PI); M. Sama (co-PI) | |
| | Agency | National Science Foundation (OIA-1539070) | |
| [10] | Amount | \$1,400,000 (subaward to University of Kentucky; total award of \$5,995,869 to Oklahoma State University; PI: J. D. Jacob) | |
| | Scope Award | Title: <i>Cooperative Control of SUAS Formations for Distributed Measurements</i>
Investigator: J. B. Hoagg (PI)
Amount: \$304,259 | |
| | Duration | August 1, 2015 to July 31, 2020 | |
| | Title | <i>Autonomous Aerial Robot Formations for Imaging Livestock for Health Monitoring</i> | |
| [11] | Investigators | J. B. Hoagg (PI); T. M. Seigler (co-PI) | |
| | Agency | NASA Kentucky Space Grant (NNX15AR69H) | |
| | Amount | \$44,998 (Share: \$44,998) | |
| | Duration | January 1, 2019 to May 31, 2020 | |
| | Title | <i>Development of Aerospace Engineering Undergraduate Curriculum</i> | |
| [12] | Investigators | M. Renfro (PI); S. C. C. Bailey (co-PI); C. Brehm (co-PI); J. B. Hoagg (co-PI);
T. M. Seigler (co-PI) | |
| | Agency | NASA Kentucky Space Grant (NNX15AR69H) | |
| | Amount | \$25,000 (Share: \$4,000) | |
| | Duration | October 1, 2019 to January 31, 2020 | |
| | Title | <i>Orientation Control of Microrobots</i> | |
| [13] | Investigators | T. M. Seigler (PI); J. B. Hoagg (co-PI); C. A. Trinkle (co-PI) | |
| | Agency | National Science Foundation (CMMI-1538782) | |
| | Amount | \$429,782 (Share: \$143,300) | |
| | Duration | August 1, 2015 to July 31, 2019 | |
| | Title | <i>A Control-Systems Approach to Understanding Human Learning</i> | |
| [14] | Investigators | J. B. Hoagg (PI); T. M. Seigler (co-PI) | |
| | Agency | National Science Foundation (CMMI-1405257) | |
| | Amount | \$249,457 (Share: \$124,700) | |
| | Duration | August 1, 2014 to July 31, 2018 | |
| | Title | <i>Fixed-Wing UAV Formations for Measuring Atmospheric Turbulence</i> | |
| [15] | Investigators | J. B. Hoagg (PI); S. C. C. Bailey (co-PI) | |
| | Agency | NASA Kentucky Space Grant (NNX15AR69H) | |
| | Amount | \$44,961 (Share: \$33,700) | |
| | Duration | January 1, 2017 to July 31, 2018 | |
| | Title | <i>Data-Driven Adaptive Reynolds-Averaged Navier-Stokes $k - \omega$ Models for Unsteady Turbulent Flow</i> | |
| [16] | Investigators | J. B. Hoagg (PI); S. C. C. Bailey (co-PI) | |
| | Agency | NASA Kentucky EPSCoR (NNX15AK28A) | |
| | Amount | \$37,248 (Share: \$18,600) | |
| | Duration | June 1, 2017 to May 31, 2018 | |

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| [17] | Title
Investigators
Agency
Amount
Duration | <i>A Cyber-Physical Approach to Wind Field Estimation with Application to Pollutant Dispersion</i>
S. C. C. Bailey (PI); A. Martin (co-PI); J. B. Hoagg (Senior Personnel)
Kentucky Science and Engineering Foundation (KSEF-3396-RDE-018)
\$30,000 (Share: \$10,000)
July 1, 2015 to June 30, 2017 |
| [18] | Title
Investigators
Agency
Amount
Duration | <i>Assistive Learning for Human-Machine-Interaction Systems</i>
J. B. Hoagg (PI); T. M. Seigler (co-PI)
Kentucky Science and Engineering Foundation (KSEF-3453-RDE-018)
\$30,000 (Share: \$15,000)
July 1, 2015 to December 31, 2016 |
| [19] | Title
Investigators
Agency
Amount
Duration | <i>Kentucky Re-Entry Universal Payload System: Heat Shield Material Selection, Sizing and Design</i>
A. Martin (PI); J. M. Cooper (co-PI); J. B. Hoagg (co-PI)
NASA Kentucky Space Grant (NNX15AR69H)
\$10,000 (Share: \$500)
January 1, 2016 to December 31, 2016 |
| [20] | Title
Investigators
Agency
Amount
Duration | <i>Adaptive Harmonic Steady-State Control for Disturbance Rejection in Helicopter Applications</i>
J. B. Hoagg (PI)
LORD Corporation
\$89,000
May 1, 2014 to December 31, 2015 |
| [21] | Title
Investigators
Agency
Amount
Duration | <i>Formation Flying for a Dense Cluster of Autonomous Spacecraft</i>
J. B. Hoagg (PI)
NASA Kentucky Space Grant (NNX10AL96H)
\$29,985
January 1, 2015 to December 31, 2015 |
| [22] | Title
Investigators
Agency
Amount
Duration | <i>Experimental Demonstration of Flocking with Multiple Autonomous Air Vehicles</i>
J. B. Hoagg (PI); R. Yang (co-PI)
NASA Kentucky Space Grant (NNX10AL96H)
\$14,982 (Share: \$14,200)
January 1, 2015 to December 31, 2015 |
| [23] | Title
Investigators
Agency
Amount
Duration | <i>KRUPS: Qualification and Testing</i>
A. Martin (PI); J. B. Hoagg (co-PI)
NASA Kentucky Space Grant (NNX10AL96H)
\$10,000 (Share: \$500)
January 1, 2015 to December 31, 2015 |
| [24] | Title
Investigators
Agency
Amount
Duration | <i>Annual IAE Wing Design Competition</i>
J. B. Hoagg (PI); S. C. C. Bailey (co-PI)
NASA Kentucky Space Grant (NNX10AL96H)
\$60,609 (Share: \$30,300)
January 1, 2012 to December 31, 2014 |

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	Title	<i>Discrete-Time Linear-Quadratic Control: An Algebraic Approach</i>
	Investigators	J. B. Hoagg (PI)
[25]	Agency	NASA Kentucky Space Grant (NNX10AL96H)
	Amount	\$3,000
	Duration	January 1, 2014 to December 31, 2014
	Title	<i>Curriculum Development: Algebraic Approach to Linear-Quadratic Control</i>
	Investigators	J. B. Hoagg (PI)
[26]	Agency	NASA Kentucky Space Grant (NNX10AL96H)
	Amount	\$3,000
	Duration	May 1, 2013 to July 31, 2014
	Title	<i>A Dynamic Systems Approach to Understanding Human Learning</i>
	Investigators	T. M. Seigler (PI); J. B. Hoagg (co-PI)
[27]	Agency	Kentucky Science and Engineering Foundation (KSEF-148-502-12-288)
	Amount	\$49,999 (Share: \$25,000)
	Duration	June 1, 2012 to December 31, 2013
	Title	<i>The Accuracy and Efficiency of Viscosity Models for High Temperature Gas: Application to Charring Ablation</i>
	Investigators	A. Martin (PI); J. B. Hoagg (co-PI)
[28]	Agency	NASA Kentucky Space Grant (NNX10AL96H)
	Amount	\$6,000 (Share: \$300)
	Duration	January 1, 2013 to December 31, 2013
	Title	<i>Development of a Reduced Model of Homogeneous Kinetic Reactions for the Decomposition of Phenol</i>
	Investigators	A. Martin (PI); J. B. Hoagg (co-PI)
[29]	Agency	NASA Kentucky Space Grant (NNX10AL96H)
	Amount	\$6,000 (Share: \$300)
	Duration	January 1, 2013 to December 31, 2013
	Title	<i>Kentucky Wing Design Competition Educational Modules</i>
	Investigators	J. B. Hoagg (PI); S. C. C. Bailey (co-PI)
[30]	Agency	NASA Kentucky Space Grant (NNG05GH07H)
	Amount	\$49,005 (Share: \$24,500)
	Duration	October 1, 2010 to March 31, 2011

INVITED LECTURES

1. University of Louisville, Louisville Automation & Robotics Research Institute (LARRI), March 2023; “Unconventional Attitude and Formation Control Technology for Small-Satellite Swarms”
2. Air Force Office of Scientific Research, Dynamics and Control Program Annual Review, August 2022; “Lyapunov-Like Functions for Almost Global Convergence in Discrete-Time Systems”
3. University of Kentucky, Department of Mechanical Engineering, April 2022; “Unconventional Attitude and Formation Control Technology for Small-Satellite Swarms”
4. Michigan State University, Robotics and Control Seminars, April 2022; “Unconventional Attitude and Formation Control Technology for Small-Satellite Swarms”
5. Air Force Office of Scientific Research, Dynamics and Control Program Annual Review, September 2021; “Lyapunov-Like Functions for Demonstrating Almost Global Convergence in Discrete-Time Systems”
6. Ford Motor Company, October 2020; “Understanding and Modeling Driver Behavior”

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7. Air Force Office of Scientific Research, Dynamics and Control Program Annual Review, August 2020; "Direct Adaptive Control of Nonlinear Systems with Uncertain Unstable Zero Dynamics"
8. Air Force Research Laboratory, Space Vehicles Directorate, August 2018; "Orientation Control on SO(3) Using Piecewise-Continuous Sinusoids: Application to Microrobots and Small Satellite Swarms"
9. University of North Carolina at Charlotte, Mechanical Engineering and Engineering Science Department, March 2018; "How Do Humans Learn to Control Engineered Systems?"
10. University of Michigan, Control Seminar Series, February 2018; "Orientation control on SO(3) using piecewise-continuous sinusoids with application to microrobots and small satellite swarms"
11. Georgia Institute of Technology, School of Aerospace Engineering, January 2018; "Feedback or Feedforward? How Do Humans Learn to Control Aerospace Systems?"
12. Air Force Office of Scientific Research, Dynamics and Control Program Annual Review, September 2017; "Discrete-Time Flocking for Sampled-Data Systems"
13. University of Minnesota, Department of Aerospace Engineering and Mechanics, March 2017; "Feedback or Feedforward? How Do Humans Learn to Control Aerospace Systems?"
14. Vibro-Acoustics Consortium 2016 Meeting, University of Kentucky, May 2016; "Active Noise and Vibration Control for Highly Uncertain Systems"
15. University of Maryland, Department of Aerospace Engineering, April 2016; "Feedback or Feedforward? How Do Humans Learn to Control Aerospace Systems?"
16. University of Michigan, Department of Aerospace Engineering, February 2016; "Feedback or Feedforward? How Do Humans Learn to Control Aerospace Systems?"
17. Duke University, Department of Mechanical Engineering & Material Science, October 2015; "A Systems-Theory Approach to Studying Human Learning"
18. 3M Company, November 2014; "Feedback Control for Active Vibration Suppression"
19. University of Michigan, Control Seminar Series, September 2014; "Control-Systems Approach to Modeling Human Control Strategies and Human Learning"
20. LORD Corporation, March 2014; "Vibration Control for Uncertain Dynamic Systems"
21. University of Michigan, Control Seminar Series, February 2013; "Decentralized Controllers for Uncertain Linear Systems"
22. Air Force Institute of Technology, Department of Aeronautics & Astronautics, November 2011; "Surrogate Performance Adaptive Control for Continuous-Time and Discrete-Time Systems"
23. University of Kentucky, Department of Mathematics, November 2011; "Surrogate Performance Adaptive Control for Continuous-Time and Discrete-Time Systems"
24. University of Kentucky, Department of Mechanical Engineering, April 2010; "Retrospective Cost Adaptive Control: Theory and Applications"
25. University of Florida, Department of Mechanical and Aerospace Engineering, March 2010; "Retrospective Cost Adaptive Control and Its Applications"
26. Duke University, Department of Civil and Environmental Engineering, October 2009; "Discrete-Time Adaptive Control using a Retrospective Performance"
27. Michigan State University, Department of Electrical and Computer Engineering, September 2009; "Discrete-Time Adaptive Control using a Retrospective Performance: Theory & Applications"
28. University of Michigan, Control Seminar Series, September 2009; "Discrete-Time Adaptive Control using a Retrospective Performance and its Applications to Fluids and Structures"
29. Air Force Research Laboratory, Space Vehicles Directorate, June 2005; "What Do You Need to Know to Reject Tonal Disturbances? A Comparison of Techniques for Adaptive Disturbance Rejection"
30. Air Force Research Laboratory, Space Vehicles Directorate, August 2004; "Gain-Monotonic Direct Adaptive Control"
31. Air Force Research Laboratory, Space Vehicles Directorate, July 2003; "System Identification"

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CONFERENCE PRESENTATIONS († Student, ‡ Presenter)

1. P. Rabiee^{†‡} and **J. B. Hoagg**. “Soft-minimum barrier functions for safety-critical control subject to actuation constraints,” Amer. Contr. Conf., San Diego, CA, June 2023.
2. P.-B. J. C. Bentinck, D. M. Pool[‡], K. van der El, **J. B. Hoagg**, and M. Mulder. “Identifying human preview control behavior using subsystem identification,” IFAC Symposium Analysis Design and Evaluation of Human Machine Syst., San Jose, CA, September 2022.
3. R. Fui[‡], S. Sinha[†], C. T. Barrow, J. F. Maddox, **J. B. Hoagg**, and A. Martin. “A data-driven approach for real-time estimation of material properties,” AIAA AVIATION Forum, Chicago, IL, June 2022.
4. R. Chavan[†], T. M. Seigler, and **J. B. Hoagg**[‡]. “Small-satellite attitude control using stroke-limited vibrating-mass actuators with piecewise constant control signals,” Proc. Amer. Contr. Conf., Atlanta, GA June 2022.
5. M. Kamaldar[‡] and **J. B. Hoagg**. “Lyapunov-like functions for almost global convergence in discrete-time systems,” Proc. Amer. Contr. Conf., Atlanta, GA June 2022.
6. R. Chavan^{†‡}, T. M. Seigler, and **J. B. Hoagg**. “Small-satellite attitude control using piecewise-sinusoidal controls in the presence of disturbance torques,” Amer. Contr. Conf., New Orleans, LA, June 2021 (virtual).
7. R. Chavan^{†‡}, T. M. Seigler, and **J. B. Hoagg**. “Small-satellite attitude consensus on SO(3) using continuous but only piecewise-continuously differentiable sinusoidal controls,” Amer. Contr. Conf., New Orleans, LA, June 2021 (virtual).
8. R. Chavan^{†‡}, T. M. Seigler, and **J. B. Hoagg**. “Small-satellite attitude control using continuous but only piecewise-continuously differentiable sinusoidal controls,” Amer. Contr. Conf., Denver, CO, July 2020 (virtual).
9. Z. Abbasi[‡], A. Sunny[†], **J. B. Hoagg**, and T. M. Seigler. “Relative-position formation control of satellites using electromagnetic actuation with piecewise-sinusoidal controls,” Amer. Contr. Conf., Denver, CO, July 2020 (virtual).
10. C. Heintz^{†‡} and **J. B. Hoagg**. “Formation control for fixed-wing UAVs modeled with extended unicycle dynamics that include attitude kinematics on SO(3) and speed constraints,” Amer. Contr. Conf., Denver, CO, July 2020 (virtual).
11. Z. S. Lippay^{†‡} and **J. B. Hoagg**. “Leader-following formation control with time-varying formations and bounded controls for agents with double integrator dynamics,” Amer. Contr. Conf., Denver, CO, July 2020 (virtual).
12. **J. B. Hoagg**[‡], J. J. Jackson, M. P. Sama, and R. Yang. “Autonomous unmanned aerial robots for livestock health monitoring,” 2020 National Robotics Initiative Principal Investigator’s Meeting, Arlington, VA, February 2020.
13. Z. Abbasi[‡], **J. B. Hoagg**, and T. M. Seigler. “Decentralized position and attitude formation control for satellite systems with electromagnetic actuation,” AIAA Guid., Nav., Contr. Conf., Orlando, FL, January 2020.
14. C. Heintz^{†‡} and **J. B. Hoagg**. “Formation control in a leader-fixed frame for agents with extended unicycle dynamics that include attitude kinematics in SO(3),” Conf. Dec. Contr., Nice, France, December 2019.
15. Z. S. Lippay^{†‡} and **J. B. Hoagg**. “Leader-following formation control in a rotating frame for agents with double-integrator dynamics: Generalized stability results and experiments,” Conf. Dec. Contr., Nice, France, December 2019.
16. A. J. S. Sheffler[†], S. A. S. Mousavi[†], E. Hellström, M. Jankovic, M.A. Santillo, T. M. Seigler, and **J. B. Hoagg**[‡]. “Effects of reference-command preview as humans learn to control dynamics systems,” IEEE Int. Conf. Syst., Man, Cyb., Bari, Italy, October 2019.

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17. M. Kamaldar[†] and **J. B. Hoagg**[‡]. “Decentralized adaptive harmonic control for rejection of sinusoidal disturbances acting on an unknown system,” Amer. Contr. Conf., Philadelphia, PA, July 2019.
18. C. Heintz^{†‡}, S. C. C. Bailey, and **J. B. Hoagg**. “Formation control of fixed-wing unmanned aircraft: theory and experiments,” AIAA Guid., Nav., Contr. Conf., San Diego, CA, January 2019.
19. Z. Abbasi[‡], **J. B. Hoagg**, and T. M. Seigler. “Decentralized position and orientation control for electromagnetic formation flight,” AIAA Guid., Nav., Contr. Conf., San Diego, CA, January 2019.
20. S. A. S. Mousavi[†], E. Hellström, M. Jankovic, M.A. Santillo, T. M. Seigler, and **J. B. Hoagg**[‡]. “Effects of time delay as humans learn to control dynamic systems,” IEEE Int. Conf. Syst., Man, Cyb., Miyazaki, Japan, October 2018.
21. R. Chavan^{†‡}, S. Wang, T. M. Seigler, and **J. B. Hoagg**. “Consensus SO(3) using piecewise-continuous sinusoids,” Amer. Contr. Conf., Milwaukee, WI, June 2018.
22. M. Kamaldar^{†‡} and **J. B. Hoagg**. “Time-domain adaptive harmonic control for rejection of sinusoidal disturbances,” Amer. Contr. Conf., Milwaukee, WI, June 2018.
23. S. Wang[‡], R. Chavan[†], **J. B. Hoagg**, and T. M. Seigler. “Attitude control on SO(3) with sinusoidal torques,” Amer. Contr. Conf., Milwaukee, WI, June 2018.
24. R. Chavan^{†‡}, S. Wang, T. M. Seigler, and **J. B. Hoagg**. “Consensus on SO(3) using piecewise-continuous sinusoidal angular-velocity control with application to small-satellite swarms,” AIAA Dayton-Cincinnati Aerospace Sciences Symposium, No. 43DCASS-031, Dayton, OH, February 2018.
25. C. Heintz^{†‡}, S. C. C. Bailey, and **J. B. Hoagg**. “Formation control of fixed-wing UAVs for measuring atmospheric turbulence,” AIAA Dayton-Cincinnati Aerospace Sciences Symposium, No. 43DCASS-051, Dayton, OH, February 2018.
26. M. Kamaldar^{†‡} and **J. B. Hoagg**. “Adaptive harmonic control for rejection of sinusoidal disturbances: Theory and application to aerospace systems,” AIAA Dayton-Cincinnati Aerospace Sciences Symposium, No. 43DCASS-026, Dayton, OH, February 2018.
27. S. A. S. Mousavi^{†‡}, T. M. Seigler, and **J. B. Hoagg**. “Effects of system time delay as humans learn to control aerospace systems,” AIAA Dayton-Cincinnati Aerospace Sciences Symposium, No. 43DCASS-048, Dayton, OH, February 2018.
28. B. J. Wellman[†] and **J. B. Hoagg**[‡]. “Sampled-data flocking with application to unmanned rotorcraft,” AIAA Guid. Nav. Contr. Conf. Kissimmee, FL, January 2018.
29. **J. B. Hoagg**[‡], J. J. Jackson, M. P. Sama, and R. Yang. “Autonomous unmanned aerial robots for livestock health monitoring,” 2017 National Robotics Initiative Principal Investigator’s Meeting, Washington, DC, November 2017.
30. M. Kamaldar^{†‡} and **J. B. Hoagg**. “Time-domain adaptive harmonic control for rejection of sinusoidal disturbances acting on an unknown system,” Amer. Contr. Conf., Seattle, WA, May 2017.
31. M. Kamaldar^{†‡} and **J. B. Hoagg**. “Adaptive rejection of sinusoidal disturbances with unknown frequency acting on an unknown system,” Amer. Contr. Conf., Seattle, WA, May 2017.
32. B. J. Wellman^{†‡} and **J. B. Hoagg**. “A sampled-data flocking algorithm for agents with double-integrator dynamics,” Amer. Contr. Conf., Seattle, WA, May 2017.
33. S. Wang[‡], **J. B. Hoagg**, and T. M. Seigler. “Steering on SO(3) with sinusoidal inputs,” Amer. Contr. Conf., Seattle, WA, May 2017.
34. M. Kamaldar^{†‡} and **J. B. Hoagg**. “Adaptive control for rejection of sinusoidal disturbances acting on an unknown system: Theory and application to aerospace systems,” AIAA Dayton-Cincinnati Aerospace Sciences Symposium, No. 42DCASS-032, Dayton, OH, March 2017.
35. T. Kirven^{†‡} and **J. B. Hoagg**. “Autonomous destination seeking and obstacle avoidance for rotorcraft: A backstepping model-reference controller,” AIAA Dayton-Cincinnati Aerospace Sciences Symposium, No. 42DCASS-072, Dayton, OH, March 2017.

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36. Z. Li^{†‡}, S. C. C. Bailey, **J. B. Hoagg**, and A. Martin. “Retrospective cost adaptive Reynolds-averaged Navier-Stokes $k - \omega$ models for unsteady turbulent flow,” AIAA Dayton-Cincinnati Aerospace Sciences Symposium, No. 42DCASS-076, Dayton, OH, March 2017.
37. S. A. S. Mousavi^{†‡}, F. Matveeva[†], X. Zhang[†], T. M. Seigler, and **J. B. Hoagg**. “On the effects of system characteristics and reference command as humans learn to control aerospace systems,” AIAA Dayton-Cincinnati Aerospace Sciences Symposium, No. 42DCASS-054, Dayton, OH, March 2017.
38. S. Wang^{†‡}, **J. B. Hoagg**, and T. M. Seigler. “Noncommutative attitude control of small satellites,” AIAA Dayton-Cincinnati Aerospace Sciences Symposium, No. 42DCASS-082, Dayton, OH, March 2017.
39. B. J. Wellman^{†‡} and **J. B. Hoagg**. “A discrete-time flocking algorithm with application to autonomous unmanned air vehicles,” AIAA Dayton-Cincinnati Aerospace Sciences Symposium, No. 42DCASS-033, Dayton, OH, March 2017.
40. F. Matveeva[†], S. A. S. Mousavi^{†‡}, X. Zhang[†], T. M. Seigler, and **J. B. Hoagg**. “On the effects of changing reference command as humans learn to control dynamic systems,” Conf. Dec. Contr., Las Vegas, NV, December 2016.
41. M. Kamalidar^{†‡} and **J. B. Hoagg**. “Multivariable adaptive harmonic steady-state control for rejection of sinusoidal disturbances acting on an unknown system,” Amer. Contr. Conf., Boston, MA, July 2016.
42. Y. Rahman[†], A. Xie, **J. B. Hoagg**[†], and D. S. Bernstein[†]. “A tutorial and overview of retrospective cost adaptive control,” Amer. Contr. Conf., Boston, MA, July 2016.
43. S. A. S. Mousavi[†], X. Zhang^{†‡}, T. M. Seigler, and **J. B. Hoagg**. “Characteristics that make dynamic systems difficult for a human to control,” Amer. Contr. Conf., Boston, MA, July 2016.
44. Z. Li^{†‡}, H. Zhang, **J. B. Hoagg**, S. C. C. Bailey, and A. Martin. “Turbulent flow field prediction using numerical gradient data-driven adaptive $k - \omega$ model,” AIAA Dayton-Cincinnati Aerospace Sciences Symposium, No. 41DCASS-037, Dayton, OH, March 2016.
45. Z. Li^{†‡}, H. Zhang, **J. B. Hoagg**, S. C. C. Bailey, and A. Martin. “Turbulence simulation using direct gradient adaptive $k - \omega$ model,” AIAA Aerospace Sciences Meeting, San Diego, CA, January 2016.
46. X. Zhang^{†‡}, T. M. Seigler, and **J. B. Hoagg**, “Modeling the control strategies that humans use to control nonminimum-phase systems,” Amer. Contr. Conf., Chicago, IL, July 2015.
47. X. Zhang^{†‡}, S. Wang, T. M. Seigler, and **J. B. Hoagg**, “Frequency-domain observations on how humans learn to control an unknown dynamic system,” Amer. Contr. Conf., Chicago, IL, July 2015.
48. B. J. Wellman^{†‡} and **J. B. Hoagg**, “Flocking algorithms for multi-vehicle systems with applications to autonomous air and space vehicles,” 2015 Kentucky EPSCoR Annual Conf., Lexington, KY, May 2015.
49. X. Zhang[†], S. Wang, T. M. Seigler, and **J. B. Hoagg**[†], “A subsystem identification technique for modeling control strategies used by humans,” Amer. Contr. Conf., Portland, OR, June 2014.
50. J. D. Polston[†] and **J. B. Hoagg**[†], “Decentralized adaptive disturbance rejection for relative-degree-one local subsystems,” Amer. Contr. Conf., Portland, OR, June 2014.
51. S. W. Smith[†], **J. B. Hoagg**, S. C. C. Bailey, and W. T. Smith, “An aircraft design competition for high school STEM improvement,” AIAA Structures, Structural Dynamics, and Materials Conf., National Harbor, MD, January, 2014.
52. J. Mullen[†] and **J. B. Hoagg**[†], “Wind turbine torque control for unsteady wind speeds using approximate-angular-acceleration feedback,” Conf. Dec. Contr., Florence, Italy, December 2013.
53. B. J. Wellman^{†‡} and **J. B. Hoagg**, “Root locus for a controller class that yields quadratic gain parameterization,” Amer. Contr. Conf., Washington, DC, June 2013.
54. B. J. Wellman^{†‡} and **J. B. Hoagg**, “Root locus for a controller class that yields cubic gain parameterization,” Amer. Contr. Conf., Washington, DC, June 2013.
55. J. Yan, A. M. D’Amato, D. Sumer, **J. B. Hoagg**, and D. S. Bernstein[†], “Adaptive control of uncertain Hammerstein systems using auxiliary nonlinearities,” Conf. Dec. Contr., Maui, HI, December 2012.

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56. D. Sumer[‡], **J. B. Hoagg**, and D. S. Bernstein, “Broadband disturbance rejection using retrospective cost adaptive control,” ASME Dyn. Sys. and Contr. Conf., Ft. Lauderdale, FL, October 2012.
57. **J. B. Hoagg**[‡], “Multi-input multi-output direct model reference adaptive control for systems with known nonminimum-phase zeros,” Amer. Contr. Conf., Montreal, CA, June 2012.
58. M. Isaacs^{†‡}, **J. B. Hoagg**, I. Hussein, and D. Olinger, “Retrospective cost adaptive control for a ground tethered energy generation system,” Conf. Dec. Contr., Orlando, FL, December 2011.
59. M. Isaacs^{†‡}, **J. B. Hoagg**, A. V. Morozov, and D. S. Bernstein, “A numerical study on controlling a nonlinear multilink arm using a retrospective cost model reference adaptive controller,” Conf. Dec. Contr., Orlando, FL, December 2011.
60. **J. B. Hoagg**[‡], “Model reference adaptive control for nonminimum-phase systems using a surrogate tracking error,” Conf. Dec. Contr., Orlando, FL, December 2011.
61. D. Sumer, A. M. D’Amato[‡], A. V. Morozov, **J. B. Hoagg**, and D. S. Bernstein, “Robustness of retrospective cost adaptive control to Markov-parameter uncertainty,” Conf. Dec. Contr., Orlando, FL, December 2011.
62. A. M. D’Amato[‡], E. D. Sumer, K. S. Mitchell, A. V. Morozov, **J. B. Hoagg**, and D. S. Bernstein, “Adaptive output feedback control of the NASA GTM model with unknown nonminimum-phase zeros,” AIAA Guid., Nav., Contr. Conf., Portland, OR August 2011.
63. **J. B. Hoagg**[‡] and D. S. Bernstein, “Retrospective cost model reference adaptive control for nonminimum-phase discrete-time systems, part 1: The adaptive controller,” Amer. Contr. Conf., San Francisco, CA, June 2011.
64. **J. B. Hoagg**[‡] and D. S. Bernstein, “Retrospective cost model reference adaptive control for nonminimum-phase discrete-time systems, part 2: Stability analysis,” Amer. Contr. Conf., San Francisco, CA, June 2011.
65. **J. B. Hoagg**, A. A. Ali, M. Mossberg, and D. S. Bernstein[‡], “Sliding window recursive quadratic optimization with variable regularization,” Amer. Contr. Conf., San Francisco, CA, June 2011.
66. B. J. Coffey, **J. B. Hoagg**[‡], and D. S. Bernstein, “Cumulative retrospective cost adaptive control of systems with amplitude and rate saturation,” Amer. Contr. Conf., San Francisco, CA, June 2011.
67. A. V. Morozov[‡], A. M. D’Amato, **J. B. Hoagg**, and D. S. Bernstein, “Retrospective cost adaptive control for nonminimum-phase systems with uncertain nonminimum-phase zeros using convex optimization,” Amer. Contr. Conf., San Francisco, CA, June 2011.
68. Y.-C. Cho[‡], **J. B. Hoagg**, D. S. Bernstein, and W. Shyy, “Retrospective cost adaptive flow control using a dielectric barrier discharge actuator with parameter-dependent modeling,” 49th AIAA Aerospace Science Meeting, Orlando, FL, January 2011.
69. **J. B. Hoagg**[‡] and D. S. Bernstein, “Retrospective cost adaptive control for nonminimum-phase discrete-time systems, part 1: The ideal controller and error system,” Conf. Dec. Contr., Atlanta, GA, December 2010.
70. **J. B. Hoagg**[‡] and D. S. Bernstein, “Retrospective cost adaptive control for nonminimum-phase discrete-time systems, part 2: The adaptive controller and stability analysis,” Conf. Dec. Contr., Atlanta, GA, December 2010.
71. A. A. Ali, **J. B. Hoagg**, M. Mossberg[‡], and D. S. Bernstein, “Growing window recursive quadratic optimization with variable regularization,” Conf. Dec. Contr., Atlanta, GA, December 2010.
72. A. V. Morozov, **J. B. Hoagg**[‡], and D. S. Bernstein, “Retrospective cost adaptive control of a planar multilink arm with nonminimum-phase zeros,” Conf. Dec. Contr., Atlanta, GA, December 2010.
73. A. V. Morozov[‡], **J. B. Hoagg**, and D. S. Bernstein, “A computational study of the performance and robustness properties of retrospective cost adaptive control,” AIAA Guid., Nav., Contr. Conf., Toronto, Canada, August 2010.

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74. B. J. Coffer, **J. B. Hoagg**[‡], and D. S. Bernstein[‡], “Retrospective cost adaptive control of the NASA GTM model,” AIAA Guid., Nav., Contr. Conf., Toronto, Canada, August 2010.
75. R. Fuentes[‡], **J. B. Hoagg**, B. Anderton, and D. S. Bernstein, “Cumulative retrospective cost adaptive control for missile application,” AIAA Guid., Nav., Contr. Conf., Toronto, Canada, August 2010.
76. **J. B. Hoagg**[‡] and D. S. Bernstein, “Cumulative retrospective cost adaptive control with RLS-based optimization,” Amer. Contr. Conf., Baltimore, MD, June 2010.
77. A. M. D’Amato[‡], **J. B. Hoagg**, and D. S. Bernstein, “Hybrid retrospective-cost-based adaptive control using concurrent parameter estimation,” Amer. Contr. Conf., Baltimore, MD, June 2010.
78. M. A. Santillo, **J. B. Hoagg**[‡], and D. S. Bernstein, “Adaptive static-output-feedback stabilization using retrospective cost optimization,” Amer. Contr. Conf., Baltimore, MD, June 2010.
79. E. D. Sumer[‡], J. Lu, D. P. Filev, **J. B. Hoagg**, and D. S. Bernstein, “Adaptive road-following preview control using radius of curvature data,” Amer. Contr. Conf., Baltimore, MD, June 2010.
80. Y.-C. Cho[‡], **J. B. Hoagg**, D. S. Bernstein, and W. Shyy, “Retrospective cost adaptive control of low-Reynolds number aerodynamics using dielectric barrier discharge actuator,” AIAA Flow Contr. Conf., Chicago, IL, June 2010.
81. M. A. Santillo, M. S. Holzel, **J. B. Hoagg**[‡], and D. S. Bernstein, “Adaptive control using retrospective cost optimization with RLS-based estimation for concurrent Markov-parameter updating,” Conf. Dec. Contr., Shanghai, China, December 2009.
82. M. S. Fledderjohn[‡], Y.-C. Cho, **J. B. Hoagg**, M. A. Santillo, W. Shyy, and D. S. Bernstein, “Retrospective cost adaptive flow control using a dielectric barrier discharge actuator,” AIAA Guid., Nav., Contr. Conf., Chicago, IL, August 2009.
83. M. S. Holzel[‡], M. A. Santillo, **J. B. Hoagg**, and D. S. Bernstein, “Adaptive control of the NASA generic transport model using retrospective cost optimization,” AIAA Guid., Nav., Contr. Conf., Chicago, IL, August 2009.
84. H. P. Gavin[‡] and **J. B. Hoagg**, “Control objectives for seismic simulators,” Amer. Contr. Conf., St. Louis, MO, June 2009.
85. M. A. Santillo[‡], **J. B. Hoagg**, D. S. Bernstein, and K. D. Powell, “Adaptive disturbance rejection for flow in a duct with time-varying upstream velocity,” Amer. Contr. Conf., New York, NY, July 2007.
86. M. A. Santillo[‡], **J. B. Hoagg**, and D. S. Bernstein, “CFD-based adaptive flow control for steady flow field modification,” Conf. Dec. Contr., San Diego, CA, December 2006.
87. **J. B. Hoagg** and D. S. Bernstein[‡], “Discrete-time adaptive command following and disturbance rejection with unknown exogenous dynamics,” Conf. Dec. Contr., San Diego, CA, December 2006.
88. M. Rizzo, M. A. Santillo[‡], A. Padthe, **J. B. Hoagg**, S. Akhtar, D. S. Bernstein, and K. G. Powell, “CFD-based adaptive flow control using ARMARKOV disturbance rejection,” Amer. Contr. Conf., Minneapolis, MN, June 2006.
89. S. Akhtar[‡], **J. B. Hoagg**, and D. S. Bernstein, “Discrete-time trailing horizon direct adaptive disturbance rejection,” Amer. Contr. Conf., Minneapolis, MN, June 2006.
90. **J. B. Hoagg**[‡] and D. S. Bernstein, “Deadbeat internal model control for command following and disturbance rejection in discrete-time systems,” Amer. Contr. Conf., Minneapolis, MN, June 2006.
91. **J. B. Hoagg**[‡] and D. S. Bernstein, “On the zeros, initial undershoot, and relative degree of lumped-mass structures,” Amer. Contr. Conf., Minneapolis, MN, June 2006.
92. **J. B. Hoagg**[‡], S. L. Lacy, V. Babuška, and D. S. Bernstein, “Sequential multisine excitation signals for system identification of large space structures,” Amer. Contr. Conf., Minneapolis, MN, June 2006.
93. **J. B. Hoagg**[‡] and D. S. Bernstein, “Direct adaptive command following and disturbance rejection for minimum phase systems with unknown relative degree,” Conf. Dec. Contr., Seville, Spain, December 2005.

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94. **J. B. Hoagg**[‡], S. L. Lacy, and D. S. Bernstein, “Broadband adaptive disturbance rejection for a deployable optical telescope,” Amer. Contr. Conf., Portland, OR, June 2005.
95. **J. B. Hoagg**[‡] and D. S. Bernstein, “Lyapunov-stable adaptive stabilization of nonlinear systems with matched uncertainty,” Amer. Contr. Conf., Portland, OR, June 2005.
96. H. Palanthandalam-Madapusi[†], S. L. Lacy, **J. B. Hoagg**, and D. S. Bernstein, “Subspace-based identification for linear and nonlinear systems,” Amer. Contr. Conf., Portland, OR, June 2005.
97. J. Chandrasekar, **J. B. Hoagg**[‡], and D. S. Bernstein, “On the zeros of asymptotically stable serially connected structures,” Conf. Dec. Contr., Paradise Island, The Bahamas, December 2004.
98. **J. B. Hoagg**[‡] and D. S. Bernstein, “Robust stabilization of discrete-time systems,” Conf. Dec. Contr., Paradise Island, The Bahamas, December 2004.
99. **J. B. Hoagg**[‡] and D. S. Bernstein, “Direct adaptive dynamic compensation for minimum phase systems with unknown relative degree,” Conf. Dec. Contr., Paradise Island, The Bahamas, December 2004.
100. **J. B. Hoagg** and D. S. Bernstein[†], “Discrete-time adaptive feedback disturbance rejection using a retrospective performance measure,” ACTIVE 04, Williamsburg, VA, September 2004.
101. H. Palanthandalam-Madapusi, **J. B. Hoagg**[‡], and D. S. Bernstein, “Basis-function optimization for subspace-based nonlinear identification of systems with measured-input nonlinearities,” Amer. Contr. Conf., Boston, MA, June 2004.
102. **J. B. Hoagg**[‡], S. L. Lacy, R. S. Erwin, and D. S. Bernstein, “Subspace identification with lower bounded modal frequencies,” Amer. Contr. Conf., Boston, MA, June 2004.
103. **J. B. Hoagg**[‡], S. L. Lacy, R. S. Erwin, and D. S. Bernstein, “First-order-hold sampling of positive real systems and subspace identification of positive real models,” Amer. Contr. Conf., Boston, MA, June 2004.
104. **J. B. Hoagg**, S. L. Lacy, R. Venugopal[†], and D. S. Bernstein, “Adaptive control of a flexible membrane using acoustic excitation and optical sensing,” AIAA Guid., Nav., Contr. Conf., Austin, TX, August 2003.
105. H. P. Gavin[†], **J. B. Hoagg**, and M. Dobossy, “Optimal design of MR dampers,” US-Japan Workshop on Smart Structures for Improved Seismic Performance in Urban Regions, Seattle, WA, August 2001.

CONFERENCE POSTER PRESENTATIONS ([†] Student, [‡] Presenter)

1. **J. B. Hoagg**[‡], S. C. C. Bailey, A. Martin, and M. P. Sama. “Data-driven adaptive real time (DART) flow-field estimation using deployable UAVs,” 2022 Cyber-Physical Systems Principal Investigator’s Meeting, Crystal City, VA, November 2022.
2. **J. B. Hoagg**[‡], S. C. C. Bailey, A. Martin, and M. P. Sama. “CPS: Medium: Data-driven adaptive real time (DART) flow-field estimation using deployable UAVs,” 2021 Cyber-Physical Systems Principal Investigator’s Meeting, June 2021 (virtual).
3. **J. B. Hoagg**[‡], J. J. Jackson, M. P. Sama, and R. Yang. “NRI: INT: Autonomous unmanned aerial robots for livestock health monitoring,” 2020 National Robotics Initiative Principal Investigator’s Meeting, Arlington, VA, February 2020.
4. **J. B. Hoagg**[‡], S. C. C. Bailey, A. Martin, and M. P. Sama. “CPS: Medium: Data-driven adaptive real time (DART) flow-field estimation using deployable UAVs,” 2019 Cyber-Physical Systems Principal Investigator’s Meeting, Crystal City, VA, November 2019.
5. **J. B. Hoagg**[‡], J. J. Jackson, M. P. Sama, and R. Yang. “NRI: INT: Autonomous unmanned aerial robots for livestock health monitoring,” 2018 National Robotics Initiative Principal Investigator’s Meeting, Crystal City, VA, October 2018.

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6. S. Koushkbaghi, S. Wang, T. M. Seigler, and **J. B. Hoagg**[‡]. “Modeling the control strategies that humans use to control dynamic systems with nonlinearity,” IEEE Int. Conf. Syst., Man, Cyb., Miyazaki, Japan, October 2018.
7. M. Kamaldar^{†‡} and **J. B. Hoagg**. “Adaptive harmonic steady-state control for rejection of sinusoidal disturbances acting on an unknown system,” Amer. Contr. Conf., Boston, MA, July 2016.
8. B. J. Wellman^{†‡} and **J. B. Hoagg**, “Flocking algorithms for multi-vehicle systems with applications to autonomous air and space vehicles,” 2015 Kentucky EPSCoR Annual Conf., Lexington, KY, May 2015.
9. X. Zhang^{†‡}, S. Wang, **J. B. Hoagg**, and T. M. Seigler, “A dynamic systems approach to understanding human learning,” 9th Kentucky Innovation and Entrepreneurship Conf., Lexington, KY, August 2013.

CONFERENCE ATTENDANCE

1. 2023 American Control Conference, San Diego, CA, May–June 2023
2. 2022 NFS Cyber-Physical Systems Principal Investigator’s Meeting, Crystal City, VA, November 2022
3. 2022 AFOSR Dynamics and Control Program Annual Review, Niceville, FL, August 2022
4. 2022 American Control Conference, Atlanta, GA, June 2022
5. 2021 AFOSR Dynamics and Control Program Annual Review, September 2021 (virtual conference)
6. 2021 American Control Conference, May 2021 (virtual conference)
7. 2021 NFS Cyber-Physical Systems Principal Investigator’s Meeting, June 2021 (virtual conference)
8. 2020 AFOSR Dynamics and Control Program Annual Review, August 2020 (virtual conference)
9. 2020 American Control Conference, July 2020 (virtual conference)
10. 2020 National Robotics Initiative Principal Investigator’s Meeting, Arlington, VA, February 2020
11. 58th IEEE Conference on Decision and Control, Nice, France, December 2019
12. 2019 NFS Cyber-Physical Systems Principal Investigator’s Meeting, Crystal City, VA, November 2019
13. IEEE International Conference on Systems, Man, and Cybernetics, Bari, Italy, October 2019
14. 2019 American Control Conference, Philadelphia, PA, July 2019
15. 2019 AIAA SciTech Forum, San Diego, CA, January 2019
16. 57th IEEE Conference on Decision and Control, Miami, FL, December 2018
17. 2018 National Robotics Initiative Principal Investigator’s Meeting, Crystal City, VA, October 2018
18. IEEE International Conference on Systems, Man, and Cybernetics, Miyazaki, Japan, October 2018
19. 2018 American Control Conference, Milwaukee, WI June 2018
20. 2018 AIAA SciTech Forum, Kissimmee, FL, January 2018
21. 2017 National Robotics Initiative Principal Investigator’s Meeting, Crystal City, VA, November 2017
22. 2017 AFOSR Dynamics and Control Program Annual Review, Arlington, VA, September 2017
23. 2017 American Control Conference, Seattle, WA, May 2017
24. 55th IEEE Conference on Decision and Control, Las Vegas, NV, December 2016
25. 2016 American Control Conference, Boston, MA, July 2016
26. 2015 American Control Conference, Chicago, IL, July 2015
27. 2015 Kentucky EPSCoR Annual Conference, Lexington, KY, May 2015
28. 2014 American Control Conference, Portland, OR, June 2014
29. 52nd IEEE Conference on Decision and Control, Florence, Italy, December 2013
30. 9th Kentucky Innovation and Entrepreneurship Conference, Lexington, KY, August 2013
31. 2013 American Control Conference, Washington, DC, June 2013
32. 51st IEEE Conference on Decision and Control, Maui, HI, December 2012
33. 2012 American Control Conference, Montreal, CA, June 2012

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34. 50th IEEE Conference on Decision and Control, Orlando, FL, December 2011
35. 2011 American Control Conference, San Francisco, CA, June 2011
36. 49th IEEE Conference on Decision and Control, Atlanta, GA, December 2010
37. AIAA Guidance, Navigation, and Control Conference, Toronto, Canada, 2010
38. 2010 American Control Conference, Baltimore, Maryland, June 2010
39. 48th IEEE Conference on Decision and Control, Shanghai, China, December 2009
40. AIAA Guidance, Navigation, and Control Conference, Chicago, IL, 2009
41. 2009 American Control Conference, St. Louis, MO, June 2009
42. 2006 American Control Conference, Minneapolis, MN, June 2006
43. 44th IEEE Conference on Decision and Control, Seville, Spain, December 2005
44. 2005 American Control Conference, Portland, OR, June 2005
45. 43rd IEEE Conference on Decision and Control, Paradise Island, Bahamas, December 2004
46. 2004 American Control Conference, Boston, MA, June 2004

GRADUATE STUDENT SUPERVISION | DOCTOR OF PHILOSOPHY

1. Xingye Zhang
Currently with Inceptio
Ph.D. in Mechanical Engineering, University of Kentucky, 2015
Ph.D. Dissertation: *A Subsystem Identification Approach to Modeling Human Control Behavior and Studying Human Learning*
Committee: **J. B. Hoagg** (Chair), T. M. Seigler, S. W. Smith, B. L. Walcott, R. J. Adams
2. Brandon J. Wellman
Currently with RFA Engineering
Ph.D. in Mechanical Engineering, University of Kentucky, 2017
Ph.D. Dissertation: *Advances in Multi-Agent Flocking: Continuous-Time and Discrete-Time Algorithms*
Committee: **J. B. Hoagg** (Chair), J. E. Lumpp, T. M. Seigler, S. W. Smith, M. P. Sama
3. Zhiyong Li
Currently with Southern University of Science and Technology
Ph.D. in Mechanical Engineering, University of Kentucky, 2017
Ph.D. Dissertation: *Data-Driven Adaptive Reynolds-Averaged Navier-Stokes $k-\omega$ Models for Turbulent Flow-Field Simulations*
Committee: S. C. C. Bailey (Co-chair), **J. B. Hoagg** (Co-chair), A. Martin (Co-chair), J. Fox, J. M. McDonough, J. Nardolillo
4. Mohammadreza Kamaldar
Currently with Department of Aerospace Engineering, University of Michigan
Ph.D. in Mechanical Engineering, University of Kentucky, 2018
Ph.D. Dissertation: *Discrete-Time Adaptive Control Algorithms for Rejection of Sinusoidal Disturbances*
Committee: **J. B. Hoagg** (Chair), D. W. Herrin, T. M. Seigler, O. Thibault, Y. M. Zhang
5. Seyyed Alireza Seyyed Mousavi
Currently with Department of Electrical Engineering and Computer Science, U. California-Irvine
Ph.D. in Mechanical Engineering, University of Kentucky, 2019
Ph.D. Dissertation: *The Effects of System Characteristics, Reference Command, and Command-Following Objectives on Human-in-the-Loop Control Behavior*
Committee: **J. B. Hoagg** (Chair), T. M. Seigler, S. W. Smith, H. Thapliyal, B. L. Walcott

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6. Roshan Chavan
Currently with Nexteer Automotive
Ph.D. in Mechanical Engineering, University of Kentucky, 2021
Ph.D. Dissertation: *Attitude Control and Consensus on SO(3) Using Sinusoids: Theory and Application to Small-Satellites*
Committee: **J. B. Hoagg** (Chair), T. M. Seigler, S. W. Smith, C. A. Manon, B. L. Walcott
7. Zachary S. Lippay
Currently with Verus Research
Ph.D. in Mechanical Engineering, University of Kentucky, 2022
Ph.D. Dissertation: *Formation Control with Bounded Controls and Collision Avoidance: Theory and Application to Quadrotor Autonomous Unmanned Air Vehicles*
Committee: **J. B. Hoagg** (Chair), S. C. C. Bailey, D. Murrugarra, T. M. Seigler, M. P. Sama
8. Christopher Heintz
Currently with Honda Motor Company
Ph.D. in Mechanical Engineering, University of Kentucky, 2022
Ph.D. Dissertation: *Formation Control with Collision Avoidance for Fixed-Wing Unmanned Air Vehicles With Speed Constraints*
Committee: **J. B. Hoagg** (Chair), S. C. C. Bailey, U. Nagel, T. M. Seigler, M. P. Sama
9. Pedram Rabiee
Anticipated Graduation Date: August 2024
Committee: **J. B. Hoagg** (Chair), H. Poonawala, T. M. Seigler, B. L. Walcott
10. Sumit Kamat
Anticipated Graduation Date: December 2024
Committee: **J. B. Hoagg** (Chair), H. Poonawala, T. M. Seigler, B. Xie, Y. M. Zhang
11. Amirsaeid Safari
Anticipated Graduation Date: May 2025
Committee: **J. B. Hoagg** (Chair), H. Poonawala, X. Jin, M. P. Sama, T. M. Seigler
12. Ricardo Gutierrez
Anticipated Graduation Date: May 2026
13. Felipe Arenas Uribe
Anticipated Graduation Date: December 2027

GRADUATE STUDENT SUPERVISION | MASTER OF SCIENCE

1. Brandon J. Wellman
M.S. in Mechanical Engineering, University of Kentucky, 2012
M.S. Thesis: *Root Locus Techniques with Nonlinear Gain Parameterization*
Committee: **J. B. Hoagg** (Chair), T. M. Seigler, B. L. Walcott
2. J. Daniel Polston
M.S. in Mechanical Engineering, University of Kentucky, 2013
M.S. Thesis: *Decentralized Adaptive Control for Uncertain Linear Systems: Techniques with Local Full-State Feedback or Local Relative-Degree-One Output Feedback*
Committee: **J. B. Hoagg** (Chair), J. M. Parker, T. M. Seigler
3. Jon Mullen
M.S. in Mechanical Engineering, University of Kentucky, 2014
M.S. Thesis: *Filtered-Dynamic-Inversion Control for Fixed-Wing Unmanned Aerial Systems*
Committee: **J. B. Hoagg** (Co-chair), S. C. C. Bailey (Co-chair), T. M. Seigler

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4. Thomas Kirven
M.S. in Mechanical Engineering, University of Kentucky, 2017
M.S. Thesis: *Autonomous Quadrotor Collision Avoidance and Destination Seeking in a GPS-Denied Environment*
Committee: **J. B. Hoagg** (Chair), T. M. Seigler, S. W. Smith
5. Ajin Sunny
M.S. in Mechanical Engineering, University of Kentucky, 2019
M.S. Thesis: *Single-Degree-of-Freedom Experiments Demonstrating Electromagnetic Formation Flying for Small Satellite Swarms Using Piecewise-Sinusoidal Controls*
Committee: **J. B. Hoagg** (Chair), T. M. Seigler, S. W. Smith
6. Sumit Kamat
M.S. in Mechanical Engineering, University of Kentucky, 2020
M.S. Thesis: *Filtered-Dynamic-Inversion Control for Unknown Minimum-Phase Systems with Unknown Relative Degree*
Committee: **J. B. Hoagg** (Chair), H. Poonawala, T. M. Seigler
7. Ethan Howell
M.S. in Mechanical Engineering (non-thesis), University of Kentucky, 2021
Committee: **J. B. Hoagg** (Chair), A. Martin, S. W. Smith
8. Keith Russell
M.S. in Mechanical Engineering (non-thesis), University of Kentucky, 2022
Committee: **J. B. Hoagg** (Chair), H. Poonawala, T. M. Seigler
9. Amelia Sheffler
M.S. in Mechanical Engineering, University of Kentucky, 2022
M.S. Thesis: *The Effects of Reference-Command Preview on the Strategies that Humans Use in Command-Following Tasks*
Committee: **J. B. Hoagg** (Chair), T. M. Seigler, S. W. Smith
10. Grayson Woods
M.S. in Mechanical Engineering, University of Kentucky, 2022
M.S. Thesis: *Experimental Comparison of Two Sampled-Data Adaptive Control Algorithms for Rejecting Sinusoidal Disturbances*
Committee: **J. B. Hoagg** (Chair), D. W. Herrin, T. M. Seigler
11. K. Ryan Lush
M.S. in Mechanical Engineering, University of Kentucky, 2022
M.S. Thesis: *Small-Satellite Attitude Control Using Sinusoidal Actuator Motion: Experiments on the International Space Station*
Committee: **J. B. Hoagg** (Chair), T. M. Seigler, S. W. Smith
12. Casey Busch
Anticipated Graduation Date: December 2023

UNDERGRADUATE STUDENT RESEARCH SUPERVISION

1. Matthew Isaacs. September 2010 to December 2010. Enrolled in ME395 for one semester.
Project: Performance of retrospective cost adaptive control on a multilink pendulum
2. Brandon J. Wellman. January 2011 to May 2011. Enrolled in ME395 for one semester.
Project: Developing nonlinear extensions to classical affine root locus.
3. J. Daniel Polston. September 2011 to December 2011. Enrolled in ME395 for one semester.
Project: Developing a retrospective-cost-adaptive-control Matlab toolbox

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4. Jon Mullen. January 2012 to August 2012. Enrolled in ME395 for one semester.
Project: Wind turbine torque control using approximate-angular-acceleration feedback
5. William Perkins. January 2013 to May 2013. Enrolled in ME395 for one semester.
Project: Modeling multilink robotic walkers using hybrid dynamics
6. Jonathan Hoke. August 2014 to December 2014.
Project: Experiments to improve wind turbine energy capture through torque control
7. Michael Blum. January 2015 to May 2015. Enrolled in ME395 for one semester.
Project: Design of a rotocraft experimental testbed
8. Gustavo Eiterer. June 2015 to December 2015. Enrolled in ME395 for 2 semesters.
Project: Experiments to improve wind turbine energy capture through torque control
9. Faina Matveeva. August 2015 to May 2016. Enrolled in ME395 for 2 semesters.
Project: Human learning experiments to examine the effects of prediction and generalization
10. Galvin Greene. August 2017 to May 2018. Enrolled in ME395 for 2 semesters.
Project: Translational control of small satellite formations using electromagnetic actuation
11. Katie Grimes. January 2018 to May 2018. Enrolled in ME395 for one semester.
Project: Experiments using noncommutative-attitude-control actuation for small satellites
12. Jordyn Tucker. January 2017 to December 2018. Enrolled in ME395 for 2 semesters.
Project: Formation flying experiments using fixed-wing UAVs
13. Piper Cannon. August 2019 to May 2021. Enrolled in ME395 for one semester.
Project: Flight experiments with UAVs
14. Faith Makumbi. January 2021 to May 2021. Enrolled in ME395 for one semester.
Project: Experimental testbed for electromagnetic formation flying
15. Elizabeth Howard. January 2023 to May 2023.
Project: Construction of a 3-degree-of-freedom small satellite testbed
16. Cade Byer. January 2023 to present. Enrolled in ME395 for one semester.
Project: Design and construction of a 3-degree-of-freedom small satellite testbed
17. Judah Ford. May 2023 to present.
Project: Design and testing of a multi-UAV system

POSTDOCTORAL SUPERVISION

1. Haoyue Weng. July 2017 to July 2018.
2. Mohammadreza Kamaldar. February 2020 to August 2022.

COMMITTEE MEMBERSHIP FOR DOCTOR OF PHILOSOPHY DEGREE

1. Bo Fu
Ph.D. in Computer Science, University of Kentucky, 2015
Ph.D. Dissertation: *Virtualized Welding: A New Paradigm for Tele-Operated Welding*
Committee: R. Yang (Chair), F. Cheng, L. Hassebrook, **J. B. Hoagg**, N. Jacobs, Y. Zhang
2. Joseph D. Rounsaville
Ph.D. in Biosystems & Agricultural Engineering, University of Kentucky, 2018
Ph.D. Dissertation: *Relative XTE Calculations in ASABE/ISO 12188-2:2012 and Power/Energy Analysis using a 20 HP Tractor on a Fully Electric Drivetrain*
Committee: J. Dvorak (Chair), J. Heath, **J. B. Hoagg**, M. Montross, T. Stombaugh

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3. Shaoqian Wang
Ph.D. in Mechanical Engineering, University of Kentucky, 2018
Ph.D. Dissertation: *Attitude Control on $SO(3)$ with Piecewise Sinusoids*
Committee: T. M. Seigler (Chair), **J. B. Hoagg**, S. W. Smith, B. L. Walcott, Y. Zhang
4. Sarah K. Lami
Ph.D. in Electrical Engineering, University of Kentucky, 2020
Ph.D. Dissertation: *Selective Electron Beam Etching of Materials Using Liquid Reactants*
Committee: J. T. Hastings (Chair), B. S. Guiton, **J. B. Hoagg**, J. K. Lumpp, V. Singh
5. Ryan Kalinoski
Ph.D. in Biosystems & Agricultural Engineering, University of Kentucky, 2020
Ph.D. Dissertation: *Characterizing and Predicting the Antimicrobial Properties of Lignin Derivatives*
Committee: J. Shi (Chair), M. Flythe, **J. B. Hoagg**, M. Montross, S. Nokes, Q. Shao
6. Hunter Blanton
Ph.D. in Computer Science, University of Kentucky, 2021
Ph.D. Dissertation: *Revisiting Absolute Pose Regression*
Committee: N. Jacobs (Chair), B. Harrison, **J. B. Hoagg**, D. Lau, R. Yang
7. Gabriel A. Z. Abdulai
Ph.D. in Biosystems & Agricultural Engineering, University of Kentucky, 2021
Ph.D. Dissertation: *The Response of Beef Cattle to Disturbances from Unmanned Aerial Vehicles*
Committee: J. Jackson (Co-chair), M. Sama (Co-chair), B. Barnett, **J. B. Hoagg**, M. Montross
8. Sajad Koushkbaghi
Ph.D. in Mechanical Engineering, University of Kentucky, 2022
Ph.D. Dissertation: *Modeling Human Control Behavior in Command-Following Tasks*
Committee: T. M. Seigler (Chair), **J. B. Hoagg**, D. Y. Kim, S. W. Smith, B. L. Walcott
9. Loiy Al-Ghussain
Ph.D. in Mechanical Engineering, University of Kentucky, 2023
Ph.D. Dissertation: *Utilization of Uncrewed Aircraft Systems Towards Investigating the Structure of the Atmospheric Surface Layer*
Committee: S. C. C. Bailey (Chair), P. D. Hislop, **J. B. Hoagg**, A. Martin, M. Sama
10. Supreeth Mysore Shivanandamurthy
Ph.D. in Electrical and Computer Engineering, University of Kentucky, 2023
Ph.D. Dissertation: *A Phase Change Memory and DRAM Based Framework For Energy-Efficient and High-Speed In-Memory Stochastic Computing*
Committee: I. G. Thakkar (Chair), K. Donohue, **J. B. Hoagg**, D. Ionel, A. Patwardhan, S. A. Salehi
11. Karla Ladino
Ph.D. in Biosystems & Agricultural Engineering, University of Kentucky, 2023
Ph.D. Dissertation: *Unmanned Aircraft Systems for Precision Meteorology: An Analysis of GNSS Position Measurement Error and Embedded Sensor Development*
Committee: M. Sama (Chair), **J. B. Hoagg**, J. Jackson, M. Montross, J. M. Shockley
12. Sujit Sinha
Ph.D. in Mechanical Engineering, University of Kentucky, in progress
Committee: A. Martin (Chair), S. C. C. Bailey, **J. B. Hoagg**, M. Sama, S. Smith
13. Pouya Samanipour
Ph.D. in Mechanical Engineering, University of Kentucky, in progress
Committee: H. Poonawala (Chair), **J. B. Hoagg**, T. M. Seigler, Y. M. Zhang
14. Benton Clark
Ph.D. in Mechanical Engineering, University of Kentucky, in progress
Committee: H. Poonawala (Chair), **J. B. Hoagg**, T. M. Seigler, M. Sama

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15. Charles Clark
Ph.D. in Electrical Engineering, University of Kentucky, in progress
Committee: B. Xie (Chair), **J. B. Hoagg**, M. Johnson, M. Sama
16. Zhongjun Hu
Ph.D. in Mechanical Engineering, University of Kentucky, in progress
Committee: X. Jin (Chair), **J. B. Hoagg**, H. Poonawala, T. M. Seigler, Y.M. Zhang
17. Vijay Mohan Ramu
Ph.D. in Aerospace Engineering, University of Kentucky, in progress
Committee: S. Poovathingal (Chair), Q. Cheng, **J. B. Hoagg**, A. Martin

COMMITTEE MEMBERSHIP FOR MASTER OF SCIENCE DEGREE

1. Jonathan Lubbers
M.S. in Mechanical Engineering, University of Kentucky, 2011
M.S. Thesis: *Perch Landing Maneuvers and Control for a Rotating-Wing MAV*
Committee: T. M. Seigler (Chair), **J. B. Hoagg**, S. W. Smith
2. Michael Thamann
M.S. in Mechanical Engineering, University of Kentucky, 2012
M.S. Thesis: *Aerodynamics and Control of Deployable Wing UAVs for Autonomous Flight*
Committee: S. W. Smith (Co-chair), S. C. C. Bailey (Co-chair), **J. B. Hoagg**
3. Brandon Witte
M.S. in Mechanical Engineering, University of Kentucky, 2016
M.S. Thesis: *Development of an Unmanned Aerial Vehicle for Atmospheric Turbulence Measurement*
Committee: S. C. Bailey (Chair), **J. B. Hoagg**, S. W. Smith
4. Luis Felipe Pampolini
M.S. in Biosystems and Agricultural Engineering, University of Kentucky, 2020
M.S. Thesis: *An Assessment of 2D and 3D Spatial Accuracy of Photogrammetry for Livestock Health Monitoring*
Committee: M. P. Sama (Chair), **J. B. Hoagg**, J. J. Jackson
5. Josh Ashley
M.S. in Electrical Engineering, University of Kentucky, 2022
M.S. Thesis: *Developing Reactive Distributed Aerial Robotics Platforms for Real-Time Contaminant Mapping*
Committee: B. Xie (Chair), **J. B. Hoagg**, M. Sama

HONORS AND AWARDS

- College of Engineering Excellence in Research Award, University of Kentucky, 2020
- Donald and Gertrude Lester Professor of Mechanical Engineering, University of Kentucky, 2019
- ASME Bluegrass Chapter Outstanding Teacher Award, Department of Mechanical Engineering, University of Kentucky, 2016
- Best Presentation in Session, 2015 American Control Conference: “Frequency-domain observations on how humans learn to control an unknown dynamic system”
- Best Presentation in Session, 2014 American Control Conference: “A subsystem identification technique for modeling control strategies used by humans”
- ASME Bluegrass Chapter Outstanding Teacher Award, Department of Mechanical Engineering, University of Kentucky, 2013

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- Best Presentation in Session, 2011 American Control Conference: “Retrospective Cost Model Reference Adaptive Control for Nonminimum-Phase Discrete-Time Systems, Parts 1 and 2”
- Best Presentation in Session, 2011 American Control Conference: “Cumulative Retrospective Cost Adaptive Control of Systems with Amplitude and Rate Saturation”
- Best Paper in Session, 2010 American Control Conference: “Cumulative Retrospective Cost Adaptive Control with RLS-Based Optimization”
- Best Paper in Session, 2006 American Control Conference: “Sequential Multisine Excitation Signals for System Identification of Large Space Structures”
- Best Paper in Session, 2006 American Control Conference: “Deadbeat Internal Model Control for Command Following and Disturbance Rejection in Discrete-Time Systems”
- Special Service Award, The Department of the Air Force, 2005
- Special Service Award, The Department of the Air Force, 2004
- National Defense Science and Engineering Graduate Fellowship, The Department of Defense, 2003–2006
- Special Service Award, The Department of the Air Force, 2003
- Colonel Jesse G. Vincent Memorial Fellowship, 2002 (University of Michigan)
- University of Michigan College of Engineering Fellowship, 2002
- Magna Cum Laude, Duke University, 2002
- Graduation with Departmental Distinction, Duke University, 2002
- Eric I. Pas Award for Most Outstanding Independent Study Project, Duke University, Department of Civil and Environmental Engineering, 2002
- American Society of Civil Engineers Outstanding Senior Prize, 2002 (Duke University)
- Star Student for *CE NEWS* magazine, December 2001 issue
- American Society of Civil Engineers North Carolina Section Scholarship, 2001
- J.A. Jones Scholarship, 1998–2002 (Duke University)
- Mark Steven Ehrlich Memorial Scholarship, 1998–2001 (Duke University)

TEACHING ACTIVITIES

1. ME 340 Introduction to Mechanical Systems. 6 semesters; 450 total students
2. ME/AER 440 Control Systems Design. 8 semesters; 418 total students
3. ME/AER 645 Advanced Control Systems Analysis. 4 semesters; 25 total students
4. ME/AER 672 Nonlinear Systems & Control. 6 semesters; 47 total students
5. ME/AER 674 Robust Control. 4 semesters; 25 total students
6. ME395 Independent Work in Mechanical Engineering. 16 semesters; 14 total students

A summary of student reviews for these courses is provided in the table below.

PROFESSIONAL ACTIVITIES AND AFFILIATIONS

Editorial Experience

- Associate Editor, *IEEE Transactions on Control Systems Technology*, 2018–present
- Associate Editor, IEEE Control Systems Society, Conference Editorial Board, 2013–2018

Conference Organization Experience

- Best Student Paper Award Committee, 2017 American Control Conference

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Course	Semester	Enrollment	Value of Course (1-5)			Quality of Teaching (1-5)		
			Course Average	College Average	Diff.	Course Average	College Average	Diff.
ME 340	Fall 2017	80	4.4	3.9	+0.5	4.6	4.2	+0.4
	Fall 2015	85	4.0	3.9	+0.1	4.2	4.0	+0.2
	Spring 2015	83	4.4	3.9	+0.5	4.6	3.9	+0.7
	Spring 2013	67	4.6	4.1	+0.5	4.8	4.1	+0.7
	Fall 2012	65	4.2	4.0	+0.2	4.7	4.0	+0.7
	Spring 2012	70	4.1	4.0	+0.1	4.5	4.1	+0.4
ME/AER 440	Fall 2018	101	4.3	3.9	+0.4	4.7	4.2	+0.5
	Fall 2016	65	4.4	3.8	+0.6	4.6	4.1	+0.5
	Spring 2016	72	4.3	3.9	+0.4	4.6	4.1	+0.5
	Fall 2014	30	4.5	4.0	+0.5	4.8	4.0	+0.8
	Fall 2013	39	4.7	4.1	+0.6	4.8	4.1	+0.7
	Fall 2011	14	4.5	4.0	+0.5	4.8	4.0	+0.8
	Spring 2011	53	4.4	4.1	+0.3	4.8	4.1	+0.7
	Fall 2010	44	4.4	4.0	+0.4	4.8	4.0	+0.8
ME/AER 645	Spring 2023	6	4.0	3.9	+0.1	4.3	3.9	+0.4
	Spring 2021	6	4.0	3.9	+0.1	4.3	3.9	+0.4
	Spring 2015	6	4.0	3.9	+0.1	4.3	3.9	+0.4
	Spring 2014	10	3.9	4.1	-0.2	3.9	4.3	-0.4
ME/AER 672	Spring 2022	6	4.5	4.0	+0.5	4.7	4.2	+0.5
	Spring 2020	14	4.6	4.1	+0.5	4.7	4.2	+0.5
	Spring 2018	6	4.5	4.0	+0.5	4.7	4.2	+0.5
	Fall 2016	11	4.2	3.8	+0.4	4.3	4.1	+0.2
	Spring 2014	3	4.6	4.1	+0.5	5.0	4.3	+0.7
	Spring 2013	7	5.0	4.1	+0.9	5.0	4.1	+0.9
ME/AER 674	Fall 2021	9	4.7	4.1	+0.6	5.0	4.2	+0.8
	Fall 2020	4	4.8	4.0	+0.8	4.8	4.2	+0.6
	Fall 2018	4	4.8	4.0	+0.8	4.8	4.2	+0.6
	Spring 2017	8	4.8	4.0	+0.8	4.8	4.2	+0.6
Average (Weighted by Enrollment)			4.4	4.0	+0.4	4.6	4.1	+0.5

Technical Session Organization and Chair

1. Chair, "Cooperative Control I", 2020 American Control Conference
2. Co-chair, "Aerospace Systems II", 2020 American Control Conference
3. Chair, "Cooperative Control II", 2019 Conference on Decision and Control
4. Co-chair, "Output Regulation", 2019 American Control Conference
5. Co-chair, "Uncertain Systems", 2018 American Control Conference
6. Chair, "Nonlinear Systems", 2017 American Control Conference
7. Organizer and co-chair, "Application and Recent Developments in Retrospective Cost Adaptive Control", 2016 American Control Conference
8. Co-chair, "Human-in-the-Loop Control", 2016 American Control Conference
9. Chair, "Adaptive Control", 2016 American Control Conference
10. Chair, "Human-in-the-Loop Control", 2015 American Control Conference
11. Co-chair, "Adaptive Control", 2014 American Control Conference
12. Co-chair, "Human-in-the-Loop Control", 2014 American Control Conference
13. Co-chair, "Energy Systems", 2013 Conference on Decision and Control

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14. Chair, “Adaptive Control”, 2012 American Control Conference
15. Chair, “Energy Systems”, 2011 Conference on Decision and Control
16. Chair, “Adaptive Systems”, 2011 Conference on Decision and Control
17. Chair, “Adaptive Control”, 2010 Conference on Decision and Control
18. Chair, “Adaptive Control”, 2010 American Control Conference
19. Co-chair, “Adaptive Control”, 2010 American Control Conference
20. Co-chair, “Direct Adaptive Control”, 2006 American Control Conference

Journal and Conference Reviewer

- *AIAA Journal of Aerospace Information Systems*
- *AIAA Journal of Guidance, Control, and Dynamics*
- *ASME Journal of Dynamic Systems, Measurement and Control*
- *Acta Automatica Sinica*
- *Automatica*
- *IEEE Transactions on Automatic Control*
- *IEEE Transactions on Control Systems Technology*
- *IEEE Control Systems Magazine*
- *International Journal of Adaptive Control and Signal Processing*
- *International Journal of Control*
- *International Journal of Systems Science*
- *Journal of Aerospace Information Systems*
- *Journal of the Franklin Institute*
- *SIAM Journal on Control and Optimization*
- *Systems & Control Letters*
- The American Control Conference
- The Conference on Decision and Control

Panel Service

1. National Science Foundation; Foundational Research in Robotics; Fall 2022
2. National Science Foundation; CMMI; Mind, Machine and Motor Nexus; Fall 2022
3. United States Department of Agriculture, National Institute of Food and Agriculture; Fall 2021
4. National Science Foundation; Foundational Research in Robotics; Spring 2021
5. National Science Foundation; CMMI; Mind, Machine and Motor Nexus; Fall 2020
6. United States Department of Agriculture, National Institute of Food and Agriculture; Fall 2020
7. National Science Foundation; Cyber-Physical Systems; Summer 2020
8. National Science Foundation; CISE; National Artificial Intelligence Research Institutes; Spring 2020
9. United States Department of Agriculture, National Institute of Food and Agriculture; Fall 2019
10. National Science Foundation; CMMI; Dynamics, Control, and System Diagnostics; Fall 2019
11. National Science Foundation; National Robotics Initiative; Summer 2019
12. National Science Foundation; Cyber-Physical Systems; Summer 2018
13. National Science Foundation; National Robotics Initiative; Summer 2018
14. National Science Foundation; CMMI; Dynamics, Control, and System Diagnostics; Fall 2017
15. National Science Foundation; CMMI; Sensors, Dynamics, and Control; Spring 2016
16. National Science Foundation; CMMI; Sensors, Dynamics, and Control; Fall 2014

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Professional Affiliations

- Senior Member, Institute of Electrical and Electronics Engineers (IEEE)
- Member, American Institute of Aeronautics and Astronautics (AIAA)

UNIVERSITY SERVICE

- Pigman College of Engineering Executive Committee, University of Kentucky, 2023–present
- Director, Graduate Studies Committee, Department of Mechanical and Aerospace Engineering, 2022–2023
- Engineering Faculty Advisory Council, College of Engineering, 2022–2023
- Graduate Council, University of Kentucky, 2022–2023
- Chair, Academic Planning and Priorities Committee, University Senate, University of Kentucky, 2022–2023
- Aerospace Faculty Search Committee, Department of Mechanical and Aerospace Engineering, 2022–2023
- Senator, University Senate, University of Kentucky, 2021–2023
- Chair, Autonomy, Robotics, and Controls Area Committee, Department of Mechanical and Aerospace Engineering, 2019–2023
- Aerospace Faculty Search Committee, Department of Mechanical Engineering, 2021–2022
- Chair, Aerospace Faculty Search Committee, Department of Mechanical Engineering, 2020–2021
- Graduate Studies Committee, Department of Mechanical Engineering, 2020–2021
- Chair, Aerospace Faculty Search Committee, Department of Mechanical Engineering, 2019–2020
- Aerospace Degree Program Committee, Department of Mechanical Engineering, 2019–2020
- Strategic Plan Implementation Committee, Department of Mechanical Engineering, 2018–2020
- Chair, Autonomy, Robotics, and Controls Faculty Search Committee, Department of Mechanical Engineering, 2018–2019
- Autonomy, Robotics, and Controls Faculty Search Committee, Department of Mechanical Engineering, 2017–2018
- Chair, Strategic Plan Implementation Committee, Department of Mechanical Engineering, 2016–2018
- Aerospace Committee, Department of Mechanical Engineering, 2011–2018
- Autonomy, Robotics, and Controls Faculty Search Committee, Department of Mechanical Engineering, 2016–2017
- Department Policy Committee, Department of Mechanical Engineering, 2015–2017
- Strategic Planning Committee, Department of Mechanical Engineering, 2015–2016
- Freshman Curriculum Development Committee, College of Engineering, 2015–2016
- Graduate Studies Committee, Department of Mechanical Engineering, 2011–2016
- Department Chair Search Committee, Department of Mechanical Engineering, 2014–2015
- Budget Committee, Department of Mechanical Engineering, 2013–2014
- Activities Committee, Department of Mechanical Engineering, 2010–2011

PUBLIC SERVICE AND POPULAR PRESS

- **BBC News Article.** “The Drones Watching Over Cattle Where Cowboys Cannot Reach”. By Daliah Singer. January 14, 2021. <https://www.bbc.com/future/ bespoke/ follow-the-food/ drones-finding-cattle-where-cowboys-cannot-reach.html>

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- **Spectrum News 1 Report.** “Drone Research at The University of Kentucky Could Rescue Cattle Industry”. By Crystal Sicard. March 8, 2020. <https://spectrumnews1.com/ky/lexington/news/2020/03/08/drones-save-cows->
- **WKYT News Report.** “UK Researchers Using Drones to Solve Billion Dollar Cattle Industry Problem”. By Adam Burniston. January 29, 2020. <https://www.wkyt.com/content/news/UK-researchers-working-to-solve-billion-dollar-cattle-industry-problem-with-drones-567397761.html>
- **CNET Documentary and News Article.** ”Drones on the farm: Using facial recognition to keep cows healthy”. By Molly Price. August 22, 2019. <https://www.cnet.com/news/drones-and-facial-recognition-could-help-keep-cows-healthy/>
- **Wing Design Competition.** The Wing Design Competition (WDC) is a unique opportunity for high-school students to gain hands-on engineering experience while simultaneously learning STEM. Through WDC, students work in teams to design, build, and fly model aircraft wings. J. B. Hoagg collaborated with the National Air & Space Education Institute and NASA Kentucky to initiate this competition in 2011. WDC has annual participation from over 300 high-school students from over 20 high schools across Kentucky and Tennessee. The competition provides students with a hands-on engineering experience and showcases potential career opportunities in STEM.
- **Rise Above Aerospace Documentary.** Featured in 30-minute documentary *Rise Above: A New Generation of Aeronautics Research*, which covers aerospace engineering research at the University of Kentucky. Video aired on Kentucky Educational Television in January 2014.
- **University of Kentucky Articles on Research and Outreach Activities.**
 - <https://uknow.uky.edu/research/could-drones-save-cows-why-uk-research-team-thinks-so>
 - <https://www.engr.uky.edu/news/2019/09/hoagg-awarded-12-million-grant-applied-uav-research>
 - <https://uknow.uky.edu/research/nasa-kentucky-epscor-program-receives-850000-new-awards>
 - <https://uknow.uky.edu/research/science-technology/nsf-awards-6-million-uk-and-three-partner-schools-develop-weather>
 - <https://uknow.uky.edu/campus-news/wing-design-competition-challenge-teens-engineering-skills>
 - <https://uknow.uky.edu/campus-news/wing-design-competition-be-held-lake-cumberland-regional-airport>
 - <https://uknow.uky.edu/campus-news/uk-holds-wing-design-competition-high-school-students>