Marcus J Holzinger, Ph.D., Associate Professor, H. Joseph Smead Faculty Fellow
Smead Aerospace Engineering Sciences, University of Colorado Boulder
Associate Chair for Graduate Studies, Associate Director - Colorado Center for Astrodynamics Research
marcus.holzinger@colorado.edu

I. Experience (excluding graduate student positions)

8/2018 - present	**University of Colorado Boulder**, Smead Aerospace Engineering Sciences *Associate Professor, H. Joseph Smead Faculty Fellow*	Boulder, CO
8/2012 - 8/2018	**Georgia Institute of Technology**, School of Aerospace Engineering *Assistant Professor*	Atlanta, GA
4/2011 - 7/2012	**Texas A&M University**, Department of Aerospace Engineering *Senior Postdoctoral Research Associate* (advisor: K. Terry Alfriend)	College Station, TX
8/2005 - 7/2008	**Northrop Grumman Space Technology**, Controls Department *Member of the Technical Staff III*	Redondo Beach, CA
6/2003 - 2/2005	**Aerojet, Redmond Operations**, Systems Engineering Group *Development Engineer*	Redmond, WA

II. Awards & Honors (selected)

2019	Elected AIAA Associate Fellow
2018	H. Joseph Smead Faculty Fellow
2018	Grainger Foundation Award, administered by the National Academy of Engineering
2017	Advisor to 'Best Student Paper' at the IAA 1st Int. Conf. on Space Situational Awareness (ICSSA)
2017	National Academy of Engineering *US Frontiers of Engineering Symposium* Selectee
2017	AFOSR Young Investigator Award, Dynamic Data-Driven Application Systems
2016	AIAA Journal of Guidance, Control, and Dynamics 'Excellent Reviewer'
2015	Advisor of AIAA SmallSat Conference Student Paper Competition Finalist
2014	ASEE Air Force Summer Faculty Fellow, AFRL/RDS
2014	AIAA Journal of Guidance, Control, and Dynamics 'Excellent Reviewer'
2011	AIAA GNC Conference Graduate Student Paper Competition Finalist
2010	Air Force Research Laboratory Space Scholar Fellowship, AFRL/RVSV
2008	Northrop Grumman Space Technology Innovation Award (79 awardees, 9,730 employees)

III. Education

2011	Ph.D., Aerospace Engineering Sciences, University of Colorado, Boulder
2005	M.S. Aeronautics & Astronautics, University of Washington, Seattle
2003	B.S. Aeronautics & Astronautics, minor in Mathematics, University of Washington, Seattle

IV. Professional Membership & Service (selected)

Service	AIAA General Chair, AAS/AIAA Astrodynamics Specialist Conference, Big Sky, MT, August 2020
	Associate Editor, IEEE Transactions in Aerospace and Electronic Systems (2018-present)
	AAS Technical Chair, Spaceflight Mechanics Meeting, held jointly with AIAA SPACE 2014
	Guest Editor, Journal of the Astronautical Sciences (JAS) Special Issue from the RPI Workshop on Image-Based Modeling and Navigation for Space Applications, (expected 2020).
	Guest Editor, Space Domain Awareness Special Issue in the AIAA Journal of Guidance, Control, and Dynamics (published January 2018)
	Organizer & Moderator, *Models and Algorithms for Space Situational Awareness*, Space Commerce Workshop, Department of Commerce, Boulder, CO, September 12, 2019.,
	Session chair at 18 conferences
Committees	AIAA, Astrodynamics Technical Committee (2017- present)
	AAS Space Surveillance Technical Committee, Chair (2019-present), Secretary (2015-2018)
	AAS Spaceflight Mechanics Technical Committee (2011-2016)
Memberships	AIAA Associate Fellow, IEEE Member, AAS Member, ASEE Member

V. Patents, Publications, and Invited Talks

Journal Articles	32 total (28 published, 4 submitted), including AIAA JGCD, AIAA JSR, IEEE TAES, IEEE TAC, Elsevier ASR, and others
Conferences	72 conference papers (7 at conferences with less than 50% acceptance rates)
Invited Talks	29 seminars / invited talks at various universities, Northrop Grumman, and Kirtland AFB, amongst others

VI. Selected Recent Publications (2016-2019)

Student names in **bold**

- **A. D. Jaunzemis**, K. Feigh, M. J. Holzinger, D. Minotra, M. Chan, *Cognitive Systems Engineering Applied to Decision Support in Space Situational Awareness*, Journal of Cognitive Engineering and Decision Making, September 26, 2019. doi: https://doi.org/10.1177/1555343419872050
- **A. D. Jaunzemis**, M. J. Holzinger, M. Chan, P. Shenoy, *Evidence Gathering for Hypothesis Resolution through Judicial Evidential Reasoning*, Journal of Information Fusion, Vol. 49, pp. 26-45, September 2018. doi: https://doi.org/10.1016/j.inffus.2018.09.010
- **T. S. Murphy**, M. J. Holzinger, K. K. Luu, C. Sabol, *Generalized Minimum-Time Follow-up Approaches Applied to Electro-Optical Sensor Tasking*, AIAA Journal of Guidance, Control, and Dynamics (submitted March, 2018).
- **J. L. Worthy**, M. J. Holzinger, D. J. Scheeres, *An Optimization Approach for Observation Association with Systemic Uncertainty Applied to Electro-Optical Systems*, Advances in Space Research, Vol. 61, No. 11, pp. 2709-2724. doi: https://doi.org/10.1016/j.asr.2018.02.041
- **J. Brew**, M. J. Holzinger, *Probabilistic Resident Space Object Detection Using Archival THEMIS Fluxgate Magnetometer Data*, Advances in Space Research, Vol. 61, No. 9, pp. 2301-2319. doi: https://doi.org/10.1016/j.asr.2018.01.045
- **A. D. Jaunzemis**, M. J. Holzinger, K. K. Luu, *Sensor Tasking for Spacecraft Custody Maintenance and Anomaly Detection Using Evidential Reasoning*, AIAA Journal of Aerospace Information Systems, Vol. 15, No. 3, pp. 131-156. doi: https://doi.org/10.2514/1.I010584
- **R. D. Coder**, M. J. Holzinger, R. Linares, *Three-Degree-of-Freedom Estimation of Agile Space Objects Using Marginalized Particle Filters*, AIAA Journal of Guidance, Dynamics, and Controls, Vol. 41, No. 2, pp. 388-400, February, 2018. doi: https://doi.org/10.2514/1.G001980
- **T. S. Murphy**, M. J. Holzinger, B. Flewelling, *Visual Tracking Methods for Improved Sequential Image-Based Object Detection*, AIAA Journal of Guidance Dynamics, and Control, Space Domain Awareness Special Issue, Vol. 41, No. 1, pp. 74-87, January 2018. doi: https://doi.org/10.2514/1.G002238.
- **A. D. Jaunzemis**, D. Minotra, M. J. Holzinger, K. M. Feigh, M. W. Chan, P. P. Shenoy, *Judicial Evidential Reasoning for Decision Support Applied to Orbit Insertion Failure*[1], 1st IAA Conference on Space Situational Awareness, Orlando, FL, November 13-15, 2017.
- **T. S. Murphy**, M. J. Holzinger, B. Flewelling, *Particle and Matched Filtering Using Admissible Regions*, AIAA Journal of Guidance, Dynamics, and Control, Vol. 40, No. 3, pp. 497-509, March, 2017. doi: http://dx.doi.org/10.2514/1.G001934.
- **R. D. Coder**, M. J. Holzinger, *Multi-Objective Design of Optical Systems for Space Situational Awareness*, Acta Astronautica, Springer, Vol. 128, pp. 669-684, 2016. doi: http://dx.doi.org/10.1016/j.actaastro.2016.07.008.
- **A. Snow**, **J. L. Worthy**, **A. den Boer**, **L. Alexander**, M. J. Holzinger, D. Spencer, *Optimization of CubeSat Constellations for Uncued Electro-Optical Space Object Detection and Tracking*, AIAA Journal of Spacecraft and Rockets, Small Satellites Special Issue, Vol. 53, No. 3, 2016. doi: http://dx.doi.org/10.2514/1.A33386.

VII. Other

Panopticon P.I	0.6m f/6.5 Raven-Class SSA telesecope and mosaic 0.3m f/2.2 telescopes (x4) for detecting, tracking, and characterizing space objects in all orbit regimes.
GT-SORT P.I.	0.5m f/6 Raven-Class SSA telescope for detecting & tracking space objects in Earth-orbit regimes
OmniSSA	Omnidirectional Space Situational Awareness (OmniSSA) synthetic image fusion ultra wide field array. Three high-resolution ultra-wide field of view (103 deg) imagers to investigate uncued detection and tracking of all Earth orbit regimes.
Grad. Students	Former Ph.D. students at AFRL Directed Energy, Lincoln Labs, Johns-Hopkins APL, and Applied Defense Systems. Current lab includes 8 Ph.D. students. Graduated 5 Ph.D. and 23 M.S. students.

[1] Best Student Paper Award