THE UNIVERSITY OF TEXAS AT AUSTIN
Cockrell School of Engineering
Resume

FULL NAME: **Moriba Kemessia Jah** **TITLE:** **Associate Professor**

DEPARTMENT: **Aerospace Engineering and Engineering Mechanics**

EDUCATION:

Embry-Riddle Aeronautical University	Aerospace Engineering	B.S.	1999
University of Colorado (Boulder)	Aerospace Engineering Sci	M.S.	2001
University of Colorado (Boulder)	Aerospace Engineering Sci	Ph.D.	2005

PROFESSIONAL REGISTRATION: **Not Registered**

CURRENT AND PREVIOUS ACADEMIC POSITIONS:

Rector-Funded Visiting Fellow, University of New South Wales (Canberra, Australia) May-June 2014
SERC-Funded Visiting Fellow, Royal Melbourne Institute of Technology University (Melbourne, Australia), May 2016 and May 2017
Adjunct Professor, Royal Melbourne Institute of Technology University, School of Science, SPACE Research Centre, 2016 - Preesent
Associate Research Professor, The University of Arizona, College of Enfgineering, January 2016 – April 2017
Associate Professor, The University of Texas at Austin, Department of Aerospace Engineering and Engineering Mechanics, April 2017 – present

OTHER PROFESSIONAL EXPERIENCE:

U.S. Air Force Security Police, October 1988 – October 1992 (Honorably Discharged)
NASA Space Grant Researcher, January 1996 – May 1999
Microcosm Inc., Space Mission Design and Orbital Analyst, May 1997 – May 1999
NASA Jet Propulsion Laboratory, Spacecraft Navigator, May 1999 – August 2006
Oceanit Laboratories, Maui Division, Senior Scientist, August 2006 – October 2007
Air Force Research Laboratory, Directed Energy Directorate, Team Lead, Astrodynamics Program, October 2007 – June 2010
Air Force Research Laboratory, Space Vehicles Directorate, Technical Advisor, Guidance, Navigation, & Control Program, June 2010 - September 2014
Air Force Research Laboratory, Space Vehicles Directorate, Mission Lead, Space Situational Awareness, September 2014 - January 2016

MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES:

Fellow, International Association for the Advancement of Space Safety (IAASS), 2015 - Present
Fellow, American Astronautical Society (AAS), 2004 - Present
Fellow, Royal Astronomical Society (RAS), 2014 – Present
Associate Fellow, American Institute of Aeronautics and Astronautics (AIAA), 1996 - Present
Senior Member, Institute of Electrical and Electronics Engineers (IEEE), 2010 - Present
Member, International Society for Information Fusion (ISIF), 2009 - Present

PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES, EDITORIAL BOARDS, AND CONFERENCES ORGANIZED/CHAIRED:

Outside Committees

Chair, AAS Space Surveillance Technical Committee (2009 – 2016)
Chair, AIAA Astrodynamics Technical Committee (Member 2012 – Present)

Permanent Member, International Academy of Astronautics (IAA) Space Debris Technical Committee (2014 - Present)
Chair, NATO SCI-ET-003 Technical Solutions to a Common Operatin Picutre for Space Domain Awareness Exploratory Team, (2014 – 2015)
Chair, NATO SCI-279-TG Technical Solutions to a Common Operatin Picutre for Space Domain Awareness Task Group, (2015 – Present)
Member, NATO SCI-ET-036 Collaborative Space Domain Awareness Data Collection and Fusion Experiment (2017 – Present)
Member, International Astronautical Federation (IAF) Astrodynamics Technical Committee (2014 - Present)
Member, AAS Space Flight Mechanics Technical Committee (2006 – 2011)
Technical Chair, 21st AAS/AIAA Space Flight Mechanics Meeting (2011)

Conference Activities

Member, NSSDF Technical Committee (2012 – 2015)
Technical Committee Member, International Society of Information Fusion Conference (2010, 2012, 2013)
National Chairperson, Space Debris, 35th Annual AAS Guidance and Control Conference (2012)
Organizer and Moderator, 1st AAS Space Surveillance Workshop, London, UK (2011)

Journal Activities

Associate Editor, Advances in Space Research (Elsevier), Journal of the Committee on Space Research (COSPAR), a Scientific Committee of the International Council for Science (2017 – Present)
Guest Editor, AIAA Journal of Guidance, Control, and Dynamics Special Issue: Space Domain Awareness
Associate Editor, IEEE Transactions on Aerospace and Electronic Systems (2011 – 2017)
Associate Editor, IEEE Aerospace and Electronic Systems Magazine (2011 – 2017)
Review Process Manager, Journal of Information Fusion (Elsevier) (2011 – Present)

OTHER PROFESSIONAL HIGHLIGHTS:

Invited External Reviewer for Montana NASA EPSCoR Research Award Selection (2016)

Current Review Activities:

AIAA *Journal of Guidance, Control, and Dynamics*
IAF *Acta Astronautica (Elsevier)*
COSPAR *Advances in Space Research (Elsevier)*
AFOSR Proposals

UNIVERSITY COMMITTEES/ADMINISTRATIVE ASSIGNMENTS:

Cockrell School of Engineering

Member, Diversity Committee, 2017 – Present

HONORS AND AWARDS:

Senior Airman "Below-the-Zone" promotion, 1990
1990 Strategic Air Command, SP Airman of the Year
National Defense Service Medal (1991)
Honorable Discharge, U.S. Air Force (1992)
2001 *NASA Group Achievement Award* and *Aviation Week & Space Technology Laurel Award* for the superb navigation of the Mars Odyssey spacecraft to Mars
2005 *NASA Group Achievement Award* for the flawless navigation of the Mars Reconnaissance Orbiter to Mars
2007 *NASA Space Act Award* "for the creative development of a scientific contribution which has been determined to be of significant value in the advancement of the space and aeronautical activities of NASA, and is entitled: Inertial Measurements for Aeroassisted Navigation (IMAN)"
2009 *NASA Group Achievement Award* for the Nanosail-D mission support
2009 *AFRL R. Earl Good Award* "for significant team contributions to the AFRL mission or image outside of AFRL and for accomplishments that have had a significant impact and enhanced the creditability of AFRL."

Hayabusa Certificate of Appreciation (2010): "in recognition of your significant contributions to the completion of Hayabusa's round trip space mission in 2010."
Elected to Senior Member of the IEEE, 2010
Elected to Associate Fellow of the AIAA, 2011
2013 *AFRL International Award*
2013 *AFRL/RV Technology Transfer/Transition Achievement Award*
Elected as Fellow of the RAS, 2014
Elected as Fellow of the AAS, 2014
Elected as Fellow of the IAASS, 2015
Elected as Fellow of the Air Force Research Laboratory (AFRL), 2015
University of Colorado Distinguished Engineering Alumni Award (DEAA), 2016
AIAA Momentum Member Spotlight – June 2016 (http://www.aiaa.org/memberspotlightJune2016/)

PUBLICATIONS:

Refereed Journal Publications

1. Antreasian, P. G., Baird, D. T., Border, J. S., Burkhart, P. D., Graat, E. J., **Jah, M. K**., … Portock, B. M. (2005). 2001 Mars Odyssey orbit determination during interplanetary cruise. *Journal of Spacecraft and Rockets*, *42*(3), 394–405. http://doi.org/10.2514/1.15222
2. **Jah, M. K.**, Lisano, M. E., Born, G. H., & Axelrad, P. (2008). Mars aerobraking spacecraft state estimation by processing inertial measurement unit data. *Journal of Guidance, Control, and Dynamics*, *31*(6), 1802–1813. http://doi.org/10.2514/1.24304
3. Wetterer, C. J., & **Jah, M.** (2009). Attitude estimation from light curves. *Journal of Guidance, Control, and Dynamics*, *32*(5), 1648–1651. http://doi.org/10.2514/1.44254
4. Kelecy, T., **& Jah, M.** (2010). Detection and orbit determination of a satellite executing low thrust maneuvers. *Acta Astronautica*, *66*(5–6), 798–809. http://doi.org/10.1016/j.actaastro.2009.08.029
5. Tombasco, J., Axelrad, P., & **Jah, M.** (2010). Specialized coordinate representation for dynamic modeling and orbit estimation of geosynchronous orbits. *Journal of Guidance, Control, and Dynamics*, *33*(6), 1824–1836. http://doi.org/10.2514/1.48903
6. Kelecy, T., & **Jah, M.** (2011). Analysis of high area-to-mass ratio (HAMR) GEO space object orbit determination and prediction performance: Initial strategies to recover and predict HAMR GEO trajectories with no a priori information. *Acta Astronautica*, *69*(7–8), 551–558. http://doi.org/10.1016/j.actaastro.2011.04.019
7. Kelecy, T., **Jah, M.**, & DeMars, K. (2012). Application of a Multiple Hypothesis Filter to near GEO high area-to-mass ratio space objects state estimation. *Acta Astronautica*, *81*(2), 435–444. http://doi.org/10.1016/j.actaastro.2012.08.006
8. DeMars, K. J., **Jah, M. K.**, & Schumacher Jr., P. W. (2012). Initial orbit determination using short-arc angle and angle rate data. *IEEE Transactions on Aerospace and Electronic Systems*, *48*(3), 2628–2637. http://doi.org/10.1109/TAES.2012.6237613
9. DeMars, K. J., & **Jah, M. K.** (2013). Probabilistic initial orbit determination using Gaussian mixture models. *Journal of Guidance, Control, and Dynamics*, *36*(5), 1324–1335. http://doi.org/10.2514/1.59844
10. DeMars, K. J., Bishop, R. H., & **Jah, M. K.** (2013). Entropy-based approach for uncertainty propagation of nonlinear dynamical systems. *Journal of Guidance, Control, and Dynamics*, *36*(4), 1047–1057. http://doi.org/10.2514/1.58987
11. Früh, C., Kelecy, T. M., & **Jah, M. K.** (2013). Coupled orbit-attitude dynamics of high area-to-mass ratio (HAMR) objects: Influence of solar radiation pressure, Earth's shadow and the visibility in light curves. *Celestial Mechanics and Dynamical Astronomy*, *117*(4), 385–404. http://doi.org/10.1007/s10569-013-9516-5
12. Früh, C., **Jah, M.**, (2013). Attitude and Orbit Propagation of High Area-to-Mass Ratio (HAMR) Objects Using a Semi-Coupled Approach. *Journal of the Astronautical Sciences*, pp. 1-19, published 9 July 2014.
13. Früh, C., & **Jah, M. K.** (2014). Coupled orbit-attitude motion of high area-to-mass ratio (HAMR) objects including efficient self-shadowing. *Acta Astronautica*, *95*(1), 227–241. http://doi.org/10.1016/j.actaastro.2013.11.017
14. Wetterer, C. J., Linares, R., Crassidis, J. L., Kelecy, T. M., Ziebart, M. K., **Jah, M. K.**, & Cefola, P. J. (2014). Refining space object radiation pressure modeling with bidirectional reflectance distribution functions. *Journal of Guidance, Control, and Dynamics*, *37*(1), 185–196. http://doi.org/10.2514/1.60577

15. Vishwajeet, K., Singla, P., & **Jah, M.** (2014). Nonlinear uncertainty propagation for perturbed two-body orbits. *Journal of Guidance, Control, and Dynamics*, *37*(5), 1415–1425. http://doi.org/10.2514/1.G000472
16. DeMars, K. J., Cheng, Y., & **Jah, M. K**. (2014). Collision probability with Gaussian mixture orbit uncertainty. *Journal of Guidance, Control, and Dynamics*, *37*(3), 979–984. http://doi.org/10.2514/1.62308
17. Linares, R., **Jah, M. K**., Crassidis, J. L., & Nebelecky, C. K. (2014). Space object shape characterization and tracking using light curve and angles data. *Journal of Guidance, Control, and Dynamics*, *37*(1), 13–25. http://doi.org/10.2514/1.62986
18. Kelecy, T., **Jah, M.,** Baldwin, J., & Stauch, J. (2014). High Area-to-Mass ratio object population assessment from data/track association. *Acta Astronautica*, *96*(1), 166–174. http://doi.org/10.1016/j.actaastro.2013.11.037
19. Linares, R., **Jah, M. K.**, Crassidis, J. L., Leve, F. A., & Kelecy, T. (2014). Astrometric and photometric data fusion for inactive space object mass and area estimation. *Acta Astronautica*, *99*(1), 1–15. http://doi.org/10.1016/j.actaastro.2013.10.018
20. Leve, F., & **Jah, M.** (2014). Spacecraft actuator alignment determination through null-motion excitation. *IEEE Transactions on Aerospace and Electronic Systems*, *50*(3), 2336–2342. http://doi.org/10.1109/TAES.2013.120187
21. Stauch, J., & **Jah, M.** (2015). Unscented schmidt-Kalman filter algorithm. *Journal of Guidance, Control, and Dynamics*, *38*(1), 117–123. http://doi.org/10.2514/1.G000467
22. DeMars, K. J., Hussein, I. I., Frueh, C., **Jah, M. K**., & Erwin, R. S. (2015). Multiple-object space surveillance tracking using finite-set statistics. *Journal of Guidance, Control, and Dynamics*, *38*(9), 1741–1756. http://doi.org/10.2514/1.G000987
23. Psiaki, M. L., Weisman, R., **Jah**, **M.,** (2017). Gaussian Mixture Approximation of the Angles-Only Initial Orbit Determination Likelihood Function. *Journal of Guidance, Control, and Dynamics*, Vol. 40, 2807-2819. https://doi.org/10.2514/1.G002615
24. Coder, R., Holzinger, M., **Jah**, **M.,** (2017). Space Object Active Control Mode Inference Using Light Curve Inversion. *Journal of Guidance, Control, and Dynamics, Special Issue on Space Domain Awareness*, 1-13. https://doi.org/10.2514/1.G002224
25. Coder, R., Wetterer, C., Hamada, K., **Jah**, **M.,** Holzinger, M., (2017). Inferring Active Control Mode of the Hubble Space Telescope Using a Rao-Blackwellized Particle Filter. *Journal of Guidance, Control, and Dynamics, Special Issue on Space Domain Awareness*, 1-7. https://doi.org/10.2514/1.G002223
26. Stauch, J., Bessell, T., Rutten, M., Baldwin**,** J., **Jah**, **M.,** Hill, K., (2017). Joint Probabilistic Data Association and Smoothing Applied to Multiple Space Object Tracking. *Journal of Guidance, Control, and Dynamics, Special Issue on Space Domain Awareness*, 1-15. http://arc.aiaa.org/doi/abs/10.2514/1.G002230

Submitted Refereed Journal Publications

1. **Jah, M.K.**, Mallik, V., (2017). "*Reconciling Space Object Observed and Solar Pressure Albedo-Areas Via Astrometric and Photometric Data Fusion,*" Elsevier Advances in Space Research, Submitted (11/23/2017).
2. Kent, J.T., S. Bhattacharjee, I.I. Hussein, and **M.K. Jah**, (2017) "*Angles-Only Data Association Using Directional Discriminant Analysis*," Journal of the Astronautical Sciences, Submitted (12/01/2017).

Refereed Conference Proceedings

1. **Jah, M.K**., (1998). *Simulated Lunar Design and Modeling Assisted by Satellite Tool Kit (STK)*, 6th International Conference and Exposition on Engineering, Construction, and Operations in Space, held in Albuquerque, NM, April 26-30.
2. **Jah, M.K**., Potterveld, C., Rustick, J., Madler, R. (1999). *Use of Lunar Gravity Assists for Earth Orbit Plane Changes*, Part I, Advances in the Astronautical Sciences, Vol. 102, pp. 95-107, Univelt, San Diego. AAS Paper 99-107.
3. Ely, T. A., Anderson, R., Bar-Sever, Y. E., Bell, D., Guinn, J., **Jah, M**., Kallemeyn, P., Levene, E., Romans, L., Wu, S., (1999). *Mars Network Constellation Design Drivers and Strategies*, Paper AAS 99-301, AAS/AIAA Astrodynamics Specialist Conference, Girdwood, Alaska, August 16-19.
4. Halsell, C. A., Bowes, A. L., Johnston, M. D., Lyons, D. T., Lock, R. E., Xaypraseuth, P., Bhaskaran, S. K., Highsmith, D. E., **Jah, M. K**. (2003). *Trajectory Design for the Mars Reconnaissance Orbiter Mission*, Part III, Advances in the Astronautical Sciences, Vol. 114, pp. 1591-1607, Univelt, San Diego. AAS Paper 03-211.
5. Bowes, A. L., Halsell, C. A., Johnston, M. D., Lyons, D. T., Lock, R. E., Xaypraseuth, P., Bhaskaran, S. K., Highsmith, D. E., **Jah, M. K**. (2003). *Primary Science Orbit Design for the Mars Reconnaissance Orbiter*

Mission, Part III, Advances in the Astronautical Sciences, Vol. 114, pp. 1607-1625, Univelt, San Diego. AAS Paper 03-212.

6. **Jah, M.K**., Lisano, M.E. II (2004). *6-DOF Aerobraking Trajectory Reconstruction by use of Inertial Measurement Unit (IMU) Data for the Improvement of Aerobraking Navigation*, Part II, Advances in the Astronautical Sciences, Vol. 119, pp. 1733-1753, Univelt, San Diego. AAS Paper 04-214.
7. Lock, R., Xaypraseuth, P., Halsell, C. A., Bowes, A. L., Johnston, M. D., Lyons, D., Highsmith, D. E., **Jah, M. K**., You, T. (2004). *The Mars Reconnaissance Orbiter Mission Plan*, Part III, Advances in the Astronautical Sciences, Vol. 119, pp. 2629-2649, Univelt, San Diego. AAS Paper 04-269.
8. Highsmith, D. E., Konopliv, A. S., Han, D., **Jah, M. K**., Craig, D. E. (2004). *Mars Atmospheric Variability Above 250 km Altitude*, 18th International Symposium on Space Flight Dynamics, Germany, Munich, October 11-15.
9. Highsmith, D. E., Konopliv, A. S., Han, D., **Jah, M. K**., Craig, D. E. (2004). *Mars Express Interplanetary Navigation From Launch To Mars Orbit Insertion: The JPL Experience*, 18th International Symposium on Space Flight Dynamics, Germany, Munich, October 11-15.
10. You, T., Halsell, A., Highsmith, D., **Jah, M**., Graat, G., Demcak, S., Higa, E., Long, S., Bhaskaran, S., (2004). *Mars Reconnaissance Orbiter Navigation*, AIAA/AAS Astrodynamics Specialist Conference and Exhibit, Providence, Rhode Island, August 16-19.
11. Highsmith, D. E., You, T., Halsell, A., **Jah, M**., Demcak, S., Higa, E., Long, S. (2005). *Atmosphere Variability at Mars Reconnaissance Orbiter Science Orbit Altitudes Based On Mars Express Reconstructions*, Part II, Advances in the Astronautical Sciences, Vol. 120, pp. 1767-1787, Univelt, San Diego. AAS Paper 05-215.
12. Mottinger, N., You, T., Halsell, A., Highsmith, D., **Jah, M**., Graat, G., Demcak, S., Higa, E., Long, S., Bhat, R. (2006). *Launch Navigation Support for Mars Reconnaissance Orbiter*, Part II, Advances in the Astronautical Sciences, Vol. 124, pp. 1887-1909, Univelt, San Diego. AAS Paper 06-220.
13. **Jah, M.,** Madler, R., (2007). *Satellite Characterization: Angles and Light Curve Data Fusion for Spacecraft State and Parameter Estimation*. Air Force Maui Optical and Supercomputing Site (AMOS) 2007 Conference, Wailea, Maui, Hawaii, September.
14. Halsell, A., You, T., Highsmith, D., **Jah, M**., Graat, G., Demcak, S., Higa, E., Bhat, R., Long, S., Mottinger, N., (2007). *Mars Reconnaissance Orbiter Aerobraking Control*, Part II, Advances in the Astronautical Sciences, Vol. 127, pp. 2071-2088, Univelt, San Diego. AAS Paper 07-243.
15. Demcak, S., You, T., Highsmith, D., **Jah, M**., Graat, G., Halsell, A., Higa, E., Bhat, R., Long, S., Mottinger, N., (2007). *Mars Reconnaissance Orbiter Orbit Determination During Aerobraking*, Part II, Advances in the Astronautical Sciences, Vol. 127, pp. 2103-2118, Univelt, San Diego. AAS Paper 07-245.
16. **Jah, M.,** Kelecy, T., DeMars, K., (2008). *Orbit Determination Strategies Addressing The Search, Acquisition, And Characterization Of Geosynchronous Space Debris Objects*. 59th International Astronautical Congress, Glasgow, Scotland, September 29 – October 3.
17. DeMars, K., **Jah, M.K.,** (2009), *Passive Multi-Target Tracking with Application to Orbit Determination for Geosynchronous Objects*, Part I, Advances in the Astronautical Sciences, Vol. 134, pp. 89-100, Univelt, San Diego. AAS Paper 09-108.
18. DeMars, K., **Jah, M.,** Giza, D., Kelecy, T., (2009). *Orbit Determination Performance for High Area-to-Mass Ratio Space Object Tracking Using an Adaptive Gaussian Mixtures Estimation Algorithm.* 21st International Symposium on Space Flight Dynamics, Toulouse, France, September 28 - October 2.
19. Kelecy, T., **Jah, M.,** (2009). *Analysis of Orbit Prediction Sensitivity to Thermal Emissions Acceleration Modeling for High Area-to-mass Ratio (HAMR) Objects.* Air Force Maui Optical and Supercomputing Site (AMOS) 2009 Conference, Wailea, Maui, Hawaii, September.
20. Giza, D., Singla, P., **Jah, M.**, (2009). *An Approach for Nonlinear Uncertainty Propagation: Application to Orbital Mechanics.* AIAA-2009-6082, 2009 AIAA Guidance, Navigation, and Control Conference, Chicago, Illinois, August 10-13.
21. Kelecy, T., **Jah, M.,** (2009). *Analysis of Orbital Prediction Accuracy Improvements Using High Fidelity Physical Solar Radiation Pressure Models for Tracking High Area-to-Mass Ratio Objects*. 5th European Space Debris Conference, Darmstadt, Germany, March 30 – April 2.
22. Giza, D., Singla, P., **Jah, M.,** (2010). *An Adaptive Gaussian Sum Filtering Approach for Orbit Uncertainty Estimation*, Part I, Advances in the Astronautical Sciences, Vol. 136, pp. 475-488, Univelt, San Diego. AAS Paper 10-132.
23. Hill, K., Sydney, P., Cortez, R., Naho'olewa, D., Houchard, J., Luu, K., **Jah, M.,** Schumacher, P., Jr., (2010). *Covariance-based Network Tasking of Optical Sensors*, Part I, Advances in the Astronautical Sciences, Vol. 136, pp. 769-786, Univelt, San Diego. AAS Paper 10-150.

24. Wetterer, C., **Jah, M.,** Scro, K., (2010). *Kp Forecast Model Using Unscented Kalman Filtering*. Air Force Maui Optical and Supercomputing Site (AMOS) 2010 Conference, Wailea, Maui, Hawaii, September.
25. Linares, R., Crassidis, J., **Jah, M.**, Kim, H., (2010). *Astrometric and Photometric Data Fusion for Resident Space Object Orbit, Attitude, and Shape Determination Via Multiple-Model Adaptive Estimation,* AIAA-2010-8341, 2010 AIAA Guidance, Navigation, and Control Conference, Toronto, Canada, August 2-5.
26. Hill, K., Sydney, Hamada, K., Cortez, R., Luu, K., Schumacher, P., Jr., **Jah, M.,** (2010). *Covariance-based Scheduling of a Network of Optical Sensors*, Advances in the Astronautical Sciences, Vol. 139, pp. 393-406, Univelt, San Diego. AAS Paper 10-325.
27. Leve, F., **Jah, M.,** (2011). *Spacecraft Actuator Alignment Determination through Null Motion Excitation*, 62nd International Astronautical Congress, Cape Town, South Africa, October 2 – October 7.
28. DeMars, K., Bishop, R., **Jah, M.,** (2011). *A Splitting Gaussian Mixture Method for the Propagation of Uncertainty in Orbital Mechanics*, Advances in the Astronautical Sciences, Vol. 140, pp. 1419-1438, Univelt, San Diego. AAS Paper 11-201.
29. DeMars, K., Bishop, R., **Jah, M.,** (2011). *Space Object Tracking in the Presence of Attitude-Dependent Solar Radiation Pressure Effects*, AAS Paper 11-582, 2011 AIAA/AAS Astrodynamics Specialists Conference, Girdwood, AK, July 31 – August 4 .
30. Linares, R., **Jah, M.**, DeMars, K., (2011). *Improved Methods for Tracking and Characterizing Inactive Resident Space Objects,* 28th International Symposium for Space Sciences and Technology, Okinawa, Japan, June 3 – 9.
31. Vallado, D., Kelecy, T., **M. Jah**, (2012). "*Data Integrity in Orbital Data Fusion,"* 63rd International Astronautical Congress. Naples, Italy: International Astronautical Federation, September.
32. Früh, C. Kelecy T. and **Jah, M.**, (2012). *Attitude Dynamics Simulation of MLI Space Debris Objects in Geosynchronous Earth Orbit*, Proc. AIAA/AAS Astrodynamics Specialists Conference, Minneapolis, MN, August.
33. DeMars, K., Hussein, I., **Jah, M.**, Erwin, R.S., (2012). *The Cauchy-Schwarz Divergence for Assessing Situational Information Gain*, 15th International Conference on Information Fusion, Singapore, Singapore, July 9 – July 14.
34. DeMars, K., **Jah, M.,** (2012). *Initial Orbit Determination via Gaussian Mixture Approximation of the Admissible Region*, AAS Paper 12-260, 22nd AAS/AIAA Space Flight Mechanics Meeting, Charleston, SC, January 29 – February 2.
35. DeMars, K., **Jah, M.,** Cheng, Y., Bishop, R., (2012). *Methods for Splitting Gaussian Distributions and Applications within the AEGIS Filter*, AAS Paper 12-261, 22nd AAS/AIAA Space Flight Mechanics Meeting, Charleston, SC, January 29 – February 2.
36. Turnowicz, M., Jia, B., Ming, X., DeMars, K., **Jah, M.,** (2012). *Quadrature Methods for Orbit Uncertainty Propagation Under Solar Radiation Pressure*, AAS Paper 12-265, 22nd AAS/AIAA Space Flight Mechanics Meeting, Charleston, SC, January 29 – February 2.
37. DeMars, K., **Jah, M.,** (2012). *Evaluation of the Information Content of Observations with Application to Sensor Management for Orbit Determination*, Advances in the Astronautical Sciences, Vol. 142, pp. 3169-3188, Univelt, San Diego. AAS Paper 11-606, 2011.
38. Cheng, Y., DeMars, K. J., Früh, C., and **Jah, M. K.,** (2013). *"Gaussian Mixture PHD Filter for Space Object Tracking,"* AAS/AIAA Space Flight Mechanics Meeting, Kauai, Hawaii, February 10-14.
39. C. Früh, D. Ferguson, C. Lin, T. Kelecy, F. Leve, **M. Jah**, (2013). *"The effect of passive electrostatic charging on near-geosynchronous high area to mass ratio objects,"* Proceedings of the International Astronautical Congress.
40. C. Früh, **M. Jah**, (2013). *"Detection Probability of Earth Orbiting Objects Using Optical Sensors in Different Observation Scenarios,"* Proc. AIAA/AAS Astrodynamics Specialists Conference, Hilton Head, August.
41. C. Früh, **M. Jah**, E.Valdez, T. Kelecy, P. Kervin, (2013). *"Initial Taxonomy and Classification Scheme for Artificial Space Objects,"* Proceedings of the 2013 AMOS Technical Conference, Maui, Hawaii.
42. C. Früh, **M. Jah**, (2013). *"Attitude and Orbit Propagation of High Area-to-Mass Ratio (HAMR) Objects using a Semi-Coupled Approach,"* Proc. AAS Space Flight Mechanics Conference, Kauai, HI, February 2013.
43. C. Früh, **M. Jah**, (2013). *"Coupled Orbit-Attitude Motion of High Area-to-Mass Ratio (HAMR) Objects including Self-Shadowing,"* Proc. AAS Space Flight Mechanics Conference, Kauai, HI, February 2013.
44. Hussein, C. Frueh, R. S. Erwin and **M. Jah,** (2013).*"An AEGIS-FISST algorithm for joint detection, classification and tracking,"* AAS/AIAA Space Flight Mechanics Meeting, Kauai, HI, February.
45. Hussein, K. J. DeMars, R. S. Erwin and **M. Jah,** (2013) *"An AEGIS-FISST sensor management approach for joint detection and tracking in SSA,"* AAS/AIAA Space Flight Mechanics Meeting, Kauai, HI, February.

46. Kelecy, T., M. Shoemaker and **M. Jah**, (2013). *"Application of the Constrained Admissible Region Multiple Hypothesis Filter to Initial Orbit Determination of a Break-up,"* 6th European Conference on Space Debris, Darmstadt, Germany, April 22-25.
47. Kelecy, T., **M. Jah**, P. Sydney and P. Kervin, (2013*). "Analysis of Pan-STARRS Photometric and Astrometric Data for Data Association and Physical Consistency Assessment,"* 6th European Conference on Space Debris, Darmstadt, Germany, April 22-25.
48. Payne, T., **M. Jah**, J. Baldwin and T. Kelecy, (2013). *"High Area-to-mass Ratio Object Population Assessment from Data/Track Association,"* 6th European Conference on Space Debris, Darmstadt, Germany, April 22-25.
49. Früh, C., T. Schildknecht, **M. Jah**, T. Kelecy, P. Kervin, D. Hall and E. Valdez, (2013). *"Development of an Initial Taxonomy and Classification Scheme for Artificial Space Objects,"* 6th European Conference on Space Debris, Darmstadt, Germany, April 22-25.
50. D. Koblick, M. Klug, A. Goldsmith, B. Flewelling, **M. Jah**, J. Shanks, R. Piña**,** (2014). "*Ground Optical Signal Processing Architecture for Contributing SSA Space Based Sensor Data*" Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2014 Conference, Wailea, Maui, Hawaii, September.
51. C. Wetterer, R. Hunt, P. Kervin, **M. Jah**, (2014). *"Comparison of Unscented Kalman Filter and Unscented Schmidt Kalman Filter in Predicting Attitude and Associated Uncertainty of a Geosynchronous Satellite,*" Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2014 Conference, Wailea, Maui, Hawaii, September.
52. C. Wetterer, K. Hill, **M. Jah**, (2014). *"Comparison of Radiation Pressure Perturbations on Rocket Bodies and Debris at Geosynchronous Earth Orbit,*" Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2014 Conference, Wailea, Maui, Hawaii, September.
53. M. Wilkins, P. Schumacher, **M. Jah**, (2014). *"Implications of Hierarchies for RSO Recognition, Identification, and Characterization,"* AIAA/AAS Astrodynamics Specialist Conference, San Diego, CA, August, AIAA 2014-4369.
54. J. Stauch, **M. Jah**, J. Baldwin, T. Kelecy, K. Hill, (2014). *"Mutual Application of Joint Probabilistic Data Association, Filtering, and Smoothing Techniques for Robust Multiple Space Object Tracking,"* Invited, AIAA/AAS Astrodynamics Specialist Conference, San Diego, CA, August, AIAA 2014-4365.
55. R. Wiesman, **M. Jah**, (2014). *"Uncertainty Quantification for Angles-Only Initial Orbit Determination,"* AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, January 26-30, AAS 14-434.
56. C. Früh, D. Ferguson, C. Lin, **M. Jah**, (2014). *"Passive Electrostatic Charging of Near-Geosynchronous Space Debris HAMR Objects and Its Effects on the Coupled Object Dynamics"* AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, January 26-30, AAS 14-428.
57. K. Hill, C. Wetterer, **M. Jah**, (2014). *"Comparison of Gravitational, Third-Body, and Radiation Pressure Perturbations in Orbit Propagation"* AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, January 26-30, AAS 14-396.
58. R. Linares, J. Crassidis, **M. Jah.**, (2014). *"Particle Filtering Light Curve Based Attitude Estimation for Non-Resolved Space Objects"* AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, January 26-30, AAS 14-210.
59. Hussein, Z. Sunberg, S. Chakravorty, **M. Jah.**, R. Erwin, (2014). *"Stochastic Optimization for Sensor Allocation Using AEGIS-FISST"* AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM, January 26-30, AAS 14-209.
60. Cheng, Y., DeMars, K. J., Früh, C., and **Jah, M. K.,** (2013). *"Gaussian Mixture PHD Filter for Space Object Tracking,"* AAS/AIAA Space Flight Mechanics Meeting, Kauai, Hawaii, February 10-14.
61. **M. Jah.**, (2015). "*Astrodynamics Collaborative Environment: A Step Toward Data Sharing and Collaboration Via the Air Force Research Laboratory,"* 25th AAS/AIAA Space Flight Mechanics Meeting, Williamsburg, VA, January, AAS 15-449.
62. J. Kent, I. Hussein, **M. Jah**, (2016). *"Directional Distributions In Tracking of Space Debris,"* 19th International Conference on Information Fusion, Heidelberg, Germany, July.
63. R. Furfaro, D. Gaylor, R. Linares, **M. Jah**, R. Walls, (2016). *"Resident Space Object Characterization and Behavior Understanding via Machine Learning and Ontology-based Bayesian Networks"* Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2016 Conference, Wailea, Maui, Hawaii, September.
64. R. Walls, D. Gaylor, V. Reddy, R. Furfaro, **M. Jah**, (2016). *"Assessing the IADC Space Debris Mitigation Guidelines: A Case for Ontology-based Data Mangement"* Advanced Maui Optical and Space Surveillance Technologies (AMOSTech) 2016 Conference, Wailea, Maui, Hawaii, September.
65. D. Slater, R. Ridenoure, D. Klumpar, J. Carrico, **M. Jah**, (2016) *"Light to Sound: The Remote Acoustic Sensing Satellite (RASSat),"* AIAA/USU Small Satellite Conference, Logan, UT July, SSC 16-X1-05.

66. Furfaro, R., R. Linares, **M.K. Jah**, and D. Gaylor, (2016) "*Mapping Sensors Measurements to Resident Space Objects Energy and State Parameters Space via Extreme Learning Machines*," In *Proceedings of the International Astronautical Congress, IAC*.
67. Kent, J.T., S. Bhattacharjee, I.I. Hussein, and **M.K. Jah**, (2017) "*Orbital Error Propagation Analysis Using Directional Statistics for Space Objects*," In *Advances in the Astronautical Sciences*. Vol. 160.
68. Kent, J.T., S. Bhattacharjee, I.I. Hussein, and **M.K. Jah**, (2017) "*Angles-Only Data Association Using Directional Discriminant Analysis*," In *Advances in the Astronautical Sciences*. Vol. 160.

Book Chapters (Authored/Co-Authored, Edited/Co-Edited)

1. Space India 2.0, Space Situational Awareness (2016)
2. Space Domain Awareness, *Space Technology Series, McGraw Hill* (2017-Present)

Notable Position Papers, Reports, and Congressional Testimonies

1. O. Brown, T. Cottom, M. Gleason, M. Hallex, A. Long, E. Rivera, D. Finkleman, T. Hitchens, **M. Jah**, D. Koplow, R. Sedwick, (2016). *"Report on Space Traffic Management Assessments, Frameworks, and Recommendations,"* In Reply To: Public Law No. 114-90, "U.S. Commercial Space Launch Competitiveness Act" Title I, "Spurring Private Aerospace Competitiveness and Entrepreneurship" Section 109, "Orbital Traffic Management", 21 November.
2. **M. Jah**, Congressional Witness, invited by U.S. Senator Ted Cruz (R-Texas), chairman of the Subcommittee on Space, Science, and Competitiveness, to provide testimony at the Reopening the American Frontier: Promoting Partnerships Between Commercial Space and the U.S. Government to Advance Exploration and Settlement, 13 July 2017
3. **M. Jah**, D. Greiman, M. Sengupta, S. Magnus, P. Melroy, S. Helms, M. Brown, "*Space Traffic Management (STM): Balancing Safety, Innovation, and Growth; A Framework for a Comprehensive Space Traffic Management System,*" An Institute Position Paper, The American Institute of Aeronautics and Astronautics, October 2017
4. S. Pagano, with input from **M. Jah et al.,** "*Taking Up (Outer) Space: An Exploration of Definitional Issues: A Virtual Think Tank Report*," Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), December 2017
5. B. Bragg, with input from **M. Jah et al.,** "*Use of the Commercial Space Industry for Military Purposes by Non-Western States: A Virtual Think Tank Report*," Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), December 2017
6. A. Astorino-Courtois, with input from **M. Jah et al.,** "*Space and US Deterrence: A Virtual Think Tank Report*," Produced by **NSI** in the support of the Strategic Multilayer Assessment (SMA) Office (Joint Staff, J39), December 2017

INVITED TALKS/LECTURES:

1. NASA Jet Propulsion Laboratory. November 2007. *Air Force Maui Optical and Supercomputing Site (AMOS)*
2. 19th AAS/AIAA Space Flight Mechanics Meeting, Savannah, GA. February 2009. *Advanced Sciences & Technology Research Institute for Astrodynamics (ASTRIA)*
3. Liceo Militar Pedro Ma. Ochoa Morales, Los Teques, Venezuela. June 2009. *Introduction to Astrodynamics and Orbit Determination*
4. Universidad Simon Bolivar, Caracas, Venezuela. June 2009. *Introduction to Astrodynamics and Orbit Determination*
5. 1st TechHui Conference, O'ahu, Hawai'i. Keynote Speaker. July 2009. *Astrodynamics and the Maui Space Surveillance Systems Branch*
6. University of Bern, Bern, Switzerland. September 2009. *Orbit Determination Performance for High Area-to-Mass Ratio Space Object Tracking Using an Adaptive Gaussian Mixtures Estimation Algorithm*
7. University College London, London, Great Britain. October 2009. *Orbit Determination Performance for High Area-to-Mass Ratio Space Object Tracking Using an Adaptive Gaussian Mixtures Estimation Algorithm*
8. 2011 European Geophysics Union Meeting, Vienna, Austria. May 2011. *Improved Methods for Tracking and Characterizing Inactive Resident Space Objects*
9. 28th International Symposium for Space Sciences and Technology, Okinawa, Japan. June 2011. *Special Panel on Space Debris*

10. 2011 Students for the Exploration and Development of Space (SEDS) conference, Boulder, CO Oct 2011. *Special Panel on Space Debris*
11. 39th COSPAR Scientific Assembly, Mysore, India. July 2012. US Keynote Speaker. *Special Panel on Space Situational Awareness*
12. 2012 AIAA GNC/Astrodynamics Conference, Minneapolis, MN Aug 2012. *Special Panel on Space Situational Awareness*
13. 1st Australian Space Situational Awareness Meeting, Canberra, Australia Apr 2013. US Keynote Speaker
14. 24th AAS/AIAA Space Flight Mechanics Meeting, Santa Fe, NM Jan 2014. *Special Panel on Air Force Space Command's Astrodynamics Innovation Committee*
15. 2nd IAA Conference on Dynamics and Control of Space Systems, Rome, Italy Mar 2014. *Special Panel on Astrodynamics Needs in Space Situational Awareness and the Air Force Space Command's Astrodynamics Innovation Committee*
16. 2nd Australian Space Situational Awareness Meeting, Canberra, Australia Jun 2014. US Keynote Speaker
17. AIAA Space 2014, San Diego, CA Aug 2014. *Mutual Application of Joint Probabilistic Data Association, Filtering, and Smoothing Techniques for Robust Multiple Space Object Tracking"* Co-authors: J. Stauch, J. Baldwin, T. Kelecy, K. Hill
18. TEDxABQ Salon, Albuquerque, NM Aug 2014. *Space Junk: The Unknown Orbital Iceberg Equivalent*
19. Space Situational Awareness 2014, London, UK, Nov. *US Representative Panelist*
20. Short Course on Orbital Mechanics and Space Surveillance, Feb 2015; University of New South Wales/Australian Defence Force Academy [UNSW/ADFA] (Canberra, Australia)
21. Space Security, Wilton Park, West Sussex, UK, Mar 2015. US Space Situational Awareness technical expert
22. Space Situational Awareness 2015, Maryland, May. *Chair, Keynote Speaker, and Panelist*
23. 3rd Australian Space Situational Awareness Meeting, Canberra, Australia Sep 2015. US Keynote Speaker
24. 1st Air Force Research Laboratory (AFRL) Inspire talks, Dayton OH Oct 2015. *Space Junk: The Unknown Orbital Iceberg Equivalent*
25. Institute for Defense Analyses, Science and Technology Policy Institute: Invited lecture on Space Object Behavioral Sciences and Applications to Space Situational Awareness and Space Traffic Monitoring, Jan 2016
26. Martin Luther King Day Invited Speaker: Army Research Laboratory, Adelphi MD, Jan 2016
27. Embry-Riddle Aeronautical University Honors Lecture, Prescott, AZ. Mar 2016
28. 32nd Space Symposium Panelist on Congestion in Space, Colorado Springs CO, Apr 2016
29. Defense Strategies Institute (DSI) 2nd Annual Space Resiliency Summit, Alexandria VA, June 2016. Keynote Speaker
30. NATO SCI-292-LS Lecture Series, Lead Lecturer, Ankara (Turkey), Rome (Italy), Munich (Germany), and Washington D.C.(USA), June-July 2016. *Space Domain Awareness*
31. 2nd Space Technology and Investment Forum, San Francisco CA, July 2016. Keynote Speaker
32. NPR Arizona Science: *Episode 48 Rules of the Road are Needed in Outer Space*, https://radio.azpm.org/arizonascience/, Sep 2016
33. Space Advocates Seminar, US. House Science Committee, Washington, D.C., Oct 2016. *The Role of Academia in Space Situational Awareness and Global Space Traffic Management*
34. International Symposium for Personal and Commercial Spaceflight, Las Cruces NM, Oct 2016. Keynote Speaker
35. TEDxDayton, Dayton, OH, Oct 2016. *Space Traffic and Avoiding the Tragedy of the Commons*
36. The Space Show, http://thespaceshow.com/show/18-oct-2016/broadcast-2796-dr.-moriba-jah, Oct 2016
37. University of Texas at Austin, Aerospace Engineering and Engineering Mechanics Department, 28 Oct 2016. *Space Traffic Management and the Tragedy of the Commons*
38. University of Colorado at Boulder, Aerospace Engineering Sciences Department, 2 Feb 2017. *Adaptive Entropy-based Gaussian-mixture Information Synthesis for Improved Space Situational Awareness*
39. 3rd ORF Kalpana Chawla Space Dialogue, 15-18 Feb 207, New Delhi, India. Invited Speaker and Panelist
40. Future In-Space Operations (FISO) seminar, 1 Mar 2017. *Space Traffic and the Tragedy of the Commons*. http://spirit.as.utexas.edu/%7Efiso/telecon.htm
41. World Space Risk Forum, Panel on Space Debris Challenges and Dangers, 15 June, London, UK. Keynote Speaker
42. 29th International Summer Symposium on Science and World Affairs, Union of Concerned Scientists, 24-31 July 2017, Technical University of Darmstadt, Germany
43. 15th Reinventing Space Conference, Glasgow Scotland, Oct 24-26 2017, Keynote Speaker

44. 1st International Acacdemy of Astronautics (IAA) Conference on Space Situational Awareness, Orlando FL, Nov 2017, Keynote Speaker

ORAL PRESENTATIONS:

1. **Jah, M.K**., (1998). *Simulated Lunar Design and Modeling Assisted by Satellite Tool Kit (STK)*, 6th International Conference and Exposition on Engineering, Construction, and Operations in Space, held in Albuquerque, NM, April 26-30.
2. **Jah, M.K**., Potterveld, C., Rustick, J., Madler, R. (1999). *Use of Lunar Gravity Assists for Earth Orbit Plane Changes*, Part I, Advances in the Astronautical Sciences, Vol. 102, pp. 95-107, Univelt, San Diego. AAS Paper 99-107.
3. **Jah, M.K**., Lisano, M.E. II (2004). *6-DOF Aerobraking Trajectory Reconstruction by use of Inertial Measurement Unit (IMU) Data for the Improvement of Aerobraking Navigation*, Part II, Advances in the Astronautical Sciences, Vol. 119, pp. 1733-1753, Univelt, San Diego. AAS Paper 04-214.
4. **Jah, M.,** Madler, R., (2007). *Satellite Characterization: Angles and Light Curve Data Fusion for Spacecraft State and Parameter Estimation*. Air Force Maui Optical and Supercomputing Site (AMOS) 2007 Conference, Wailea, Maui, Hawaii, September.
5. **Jah, M.,** Kelecy, T., DeMars, K., (2008). *Orbit Determination Strategies Addressing The Search, Acquisition, And Characterization Of Geosynchronous Space Debris Objects*. 59th International Astronautical Congress, Glasgow, Scotland, September 29 – October 3.
6. DeMars, K., **Jah, M.K.,** (2009), *Passive Multi-Target Tracking with Application to Orbit Determination for Geosynchronous Objects*, Part I, Advances in the Astronautical Sciences, Vol. 134, pp. 89-100, Univelt, San Diego. AAS Paper 09-108.
7. Kelecy, T., **Jah, M.,** (2009). *Analysis of Orbit Prediction Sensitivity to Thermal Emissions Acceleration Modeling for High Area-to-mass Ratio (HAMR) Objects.* Air Force Maui Optical and Supercomputing Site (AMOS) 2009 Conference, Wailea, Maui, Hawaii, September.
8. Giza, D., Singla, P., **Jah, M.**, (2009). *An Approach for Nonlinear Uncertainty Propagation: Application to Orbital Mechanics.* AIAA-2009-6082, 2009 AIAA Guidance, Navigation, and Control Conference, Chicago, Illinois, August 10-13.
9. Kelecy, T., **Jah, M.,** (2009). *Analysis of Orbital Prediction Accuracy Improvements Using High Fidelity Physical Solar Radiation Pressure Models for Tracking High Area-to-Mass Ratio Objects*. 5th European Space Debris Conference, Darmstadt, Germany, March 30 – April 2.
10. Giza, D., Singla, P., **Jah, M.,** (2010). *An Adaptive Gaussian Sum Filtering Approach for Orbit Uncertainty Estimation*, Part I, Advances in the Astronautical Sciences, Vol. 136, pp. 475-488, Univelt, San Diego. AAS Paper 10-132.
11. Vallado, D., Kelecy, T., **M. Jah**, (2012). "*Data Integrity in Orbital Data Fusion,"* 63rd International Astronautical Congress. Naples, Italy: International Astronautical Federation, September.
12. Payne, T., **M. Jah**, J. Baldwin and T. Kelecy, (2013). *"High Area-to-mass Ratio Object Population Assessment from Data/Track Association,"* 6th European Conference on Space Debris, Darmstadt, Germany, April 22-25.
13. J. Stauch, **M. Jah**, J. Baldwin, T. Kelecy, K. Hill, (2014). *"Mutual Application of Joint Probabilistic Data Association, Filtering, and Smoothing Techniques for Robust Multiple Space Object Tracking,"* Invited, AIAA/AAS Astrodynamics Specialist Conference, San Diego, CA, August, AIAA 2014-4365.

RESEARCH TOPICS

Astrodynamics
Statistical Orbit Deternination and Prediction
Space Situational Awareness
Space Traffic Management
Spacecraft Navigation
Multi-Source Information Fusion
Space Surveillance and Tracking
Orbital Safety
Long-Term Sustainability of Space Activities

GRANTS AND CONTRACTS

While in rank at The University of Texas at Austin:

1. "Space Domain Awareness Collaborative Research Infrastructure," Air Force Research Laboratory via the University of Arizona, $3,305,073 (Jah's share $1,041,298), Dec 2017 – Dec 2020, Principal Investigator.
2. "Development of a GEO Space Object Catalog," Air Force Research Laboratory via Applied Defense Solutions, $186,000 (Jah's Share $186,000), Jun 2017 – Jun 2018, Principal Investigator.
3. "Multi-INT Analytics to Characterize Space Object Behavior for Space Situational Awareness," Air Force Research Laboratory via BAE Systems, $291,000 (Jah's Share $291,000), Jun 2017 – Jan 2020, Principal Investigator.
4. "Hallmark – Testbed," DARPA via Ball Aerospace, $215,000 (Jah's Share $215,000), Jan 2017 – Jan 2018, Principal Investigator.
5. "Spacecraft Navigation Independent Verification and Validation Analyses via JPL's Monte," NASA Jet Propulsion Laboratory, $100,000 (Jah's Share $100,000), Jun 2017 – Jun 2018, Principal Investigator.
6. "Space Object and Event Knowledge Graph for Space Traffic Management," Federal Aviation Adminsitration via NMSU, $100,000 (Jah's Share $67,000), Nov 2017 – Nov 2018, Principal Investigator.

While at the Air Force Research Laboratory:

1. DARPA Orbit Outlook Program, $10M (Jah's Share $5M), Technical Lead (2014-2015).
2. Various Air Force SBIR/STTR Programs, $15M (Jah's Share $15M), Technical Lead (2010-2015).
3. DARPA Ibex Program, $20M (Jah's Share $1.5M), Technical Lead and PI (2010-2012).
4. Satellite and Missile Systems Center (SMC), $1.5M (Jah's Share $1.5M), PI (2010-2012).
5. Air Force Office of Scientific Research (AFOSR), $1.5M (Jah's Share $1.5M), PI (2009-2013).
6. AFOSR International, $1.5M (Jah's Share $1.5M), Technical Lead (2009-2013).
7. National Research Council (NRC) Research Associateship, $2M (Jah's Share $2M), Adviser (2009-2015).

CONSULTING:

Analytical Graphics, Inc.: Consulted on AGI's Satellite Toolkit training modules, 2014.
SAIC: Consulted on Space Traffic Management technical issues, July – September, 2016.

CONTINUING EDUCATION:

Science and Technology Manager Level III Certification, Defense Acquisition University, 2010.

TEACHING:

Courses Taught:

ASE 372N Satellite-based Navigation (Undergraduate)

ADDITIONAL TEACHING ACTIVITIES:

N/A

PH.D. SUPERVISIONS COMPLETED:

1. Kyle DeMars, University of Texas at Austin (2010).
2. Jill Tombasco, University of Colorado at Boulder (2011).
3. Aaron Rosengren, University of Colorado at Boulder (2014).
4. Richard Linares, University of Buffalo (2014).
5. Antonella Albuja, University of Colorado (2015).
6. Ryan Coder, Georgia Institute of Technology (2016).
7. Vitali Braun, Technische Universitat Braunschweig (2016).

M.S. SUPERVISIONS COMPLETED:

N/A

PH.D. SUPERVISION IN PROGRESS:

1. Vishnuu Mallik [University of Texas at Austin] (2016 – present)

2. Shiva Iyer [University of Texas at Austin] (2018 – present)
3. Samantha Le May [Royal Melbourne Institute of Technology – Australia](2017-present)

M.S. SUPERVISION IN PROGRESS:
1. Justin Spurbeck [University of Texas at Austin] (2017 – present)
2. Marcus Bever [University of Texas at Austin] (2017 – present)
3. Drew McNeely [University of Texas at Austin] (2017 – present)

PH.D. COMMITTEES:
1. Kirsten Tuggle [University of Texas at Austin] (2017 – present)

OTHER STUDENT RESEARCH COMMITTEES (Current):
Ph.D. Committees - 0
M.S. Committees - 0

POST DOCTORAL and FACULTY FELLOW SUPERVISION:
1. Prof. Ronald Madler [Embry-Riddle Aeronautical University]; Summer Fellow (2007).
2. Prof. C. Jack Wetterer [U.S. Air Force Academy]; Sabbatical (2009).
3. Prof. David Geller [Utah State University]; Air Force Summer Faculty Fellowship (2010).
4. Prof. Kyle DeMars [Missouri Univ. of Sci. & Tech.]; National Research Council (2011 – 2013).
5. Prof. Yang Cheng [Mississippi State University]; Air Force Summer Faculty Fellowship (2011 - 2013).
6. Prof. Carolin Früh [Purdue]; National Research Council (2011 – 2013).
7. Prof. Troy Henderson [Virginia Tech]; Air Force Summer Faculty Fellowship (2012).
8. Prof. Dilmurat Azimov [Univ. of Hawaii]; Air Force Summer Faculty Fellowship (2013).
9. Prof. James Turner [Texas A&M]; Air Force Summer Faculty Fellowship (2013).
10. Prof. Mark Psiaki [Cornell]; National Research Council (2014).
11. Dr. Emmanuel Delande; ICES Research Fellow (2017 – Present).

OTHER RESEARCH SUPERVISION:
1. Kyle DeMars [University of Texas at Austin]; Directed Energy Scholars Program (2008, 2009)
2. Daniel Giza [University of Buffalo]; Directed Energy Scholars Program (2009)
3. Jill Tombasco [University of Colorado at Boulder]; NDSEG Fellowship Program (2009, 2010, 2011)
4. Brien Flewelling [Texas A&M]; SMART Fellowship Program (2011)
5. Ryan Weismann [Texas A&M]; SMART Fellowship Program (2011)
6. Matthew Turnowicz [Mississippi State University]; Air Force Summer Faculty Fellowship (2011-2012)
7. Aaron Rosengren [University of Colorado at Boulder]; Space Scholars Program (2011)
8. Robbie Robertson [Virginia Tech]; Air Force Summer Faculty Fellowship (2012)
9. Richard Linares [University of Buffalo]; Space Scholars Program (2010 - 2012)
10. Steve Gehly [University of Colorado at Boulder]; Space Scholars Program (2012)
11. Eamonn Moyer [University of Buffalo]; Space Scholars Program (2012)
12. Antonella Albuja [University of Colorado]; Space Vehicles Intern (2013)
13. Austin Probe [Texas A&M]; Air Force Summer Faculty Fellowship (2013)
14. Yash Sarda [University of Texas at Austin], Undergraduate Assistant (2017 – Present)
15. Yash Kulkarni [University of Texas at Austin], Undergraduate Assistant (2017 – Present)
16. Rodrigo Asdrian [University of Texas at Austin], Undergraduate Assistant (2017 – Present)
17. Christian Barcellos [University of Texas at Austin], Undergraduate Assistant (2017 – Present)
18. Jonathan Markel [University of Texas at Austin], Undergraduate Assistant (2017 – Present)
19. Vivek Desai [University of Texas at Austin], Undergraduate Assistant (2017 – Present)
20. Eddie Esquivel [University of Texas at Austin], Undergraduate Assistant (2017 – Present)

Moriba Jah, Associate Professor

The University of Texas at Austin
Department of Aerospace Engineering and Engineering Mechanics

Dr. Moriba Jah is an Associate Professor in the Aerospace Engineering and Engineering Mechanics Department at the University of Texas at Austin, and directs the ASTRIA research program. His research interests are in non-gravitational astrodynamics and advanced/non-linear multi-sensor/object tracking, prediction, and information fusion. His expertise is in space object detection, tracking, identification, and characterization, as well as spacecraft navigation.

Prior to being at UT Austin, Dr. Jah was the Director of the University of Arizona's Space Object Behavioral Sciences with applications to Space Domain Awareness, Space Protection, Space Traffic Monitoring, and Space Debris research to name a few. Preceding that, Dr. Jah was the lead for the Air Force Research Laboratory's (AFRL) Advanced Sciences and Technology Research Institute for Astronautics (ASTRIA) and a Principal Investigator for Detect/Track/Id/Characterize Program at AFRL's Space Vehicles Directorate. He received his B.S. in Aerospace Engineering from Embry-Riddle Aeronautical University, Prescott, Arizona, and his M.S. and Ph.D. in Aerospace Engineering Sciences from the University of Colorado at Boulder specializing in astrodynamics and statistical orbit determination. Before joining AFRL in 2007, he was a spacecraft navigator for NASA's Jet Propulsion Laboratory (JPL) in Pasadena, CA, serving on Mars Global Surveyor, Mars Odyssey, Mars Express (joint mission with ESA), Mars Exploration Rovers, Hayabusa (joint mission with JAXA), and the Mars Reconnaissance Orbiter. Dr. Jah has served as a member of the U.S. delegation to the United Nations Committee on the Peaceful Uses of Outer Space (UN-COPUOS), provided formal expert testimony to congress, and is the chair of the NATO SCI-279-TG activity on defining a Common NATO Space Domain Awareness Operating Picture. Dr. Jah founded the American Astronautical Society's (AAS) Space Surveillance Technical Committee and is the Chair of the AIAA Astrodynamics Technical Committee. He is a member of the Astrodynamics Technical Committee of the International Astronautical Federation (IAF) and a permanent member of the Space Debris Technical Committee of the International Academy of Astronautics (IAA). Dr. Jah is a Fellow of the International Association for the Advancement of Space Safety (IAASS), the AFRL, the AAS and the Royal Astronomical Society (RAS), as well as an AIAA Associate Fellow, IEEE Senior Member, Associate Editor of Elsevier's Advances in Space Research Journal. Dr. Jah is a world-recognized subject matter expert in astrodynamics-based Space Domain Awareness sciences and technologies with 75+ publications in peer-reviewed journals, conferences, and symposia. He's been an invited lecturer and keynote speaker at many national and international space events, workshops, and fora.