Christopher C. Daniels

Curriculum Vitae

CURRENT AFFILIATION

Professor of Engineering Practice
The University of Akron
Akron, OH 44325-3903

cdaniels@uakron.edu
Phone: (330) 972-5460

EDUCATION

2000	Ph.D.	Mechanical Engineering	The University of Akron
1996	M.S.	Mechanical Engineering	The University of Akron
1994	B.S.	Mechanical Engineering	The University of Akron

PROFESSIONAL EXPERIENCE

2020 – present	Professor of Engineering Practice, Dept. of Mechanical Engineering The University of Akron
2016 – 2020	Associate Professor of Engineering Practice, Dept. of Mechanical Engineering The University of Akron
2009 – 2016	Research Associate Professor, Dept. of Mechanical Engineering The University of Akron
2003 – 2009	Research Assistant Professor, College of Engineering The University of Akron
2000 – 2003	Senior Research Associate Ohio Aerospace Institute
2000	Visiting Assistant Professor, Dept. of Mechanical Engineering The University of Akron

EXTERNAL RESEARCH FUNDING ($13.2+ MILLION AS PRINCIPAL INVESTIGATOR)

	Agency and Title	**Total Award**
2020 – 2027	HX5, LLC ▪ "Research and Engineering Support for Advanced Aerospace Seals Development" ▪ "Research and Engineering Support for Development and Testing of High-Temperature Seals for DARPA High-Speed Vehicle Program" ▪ "Tire Machine Design" ▪ Principal Investigator, 100%	$ 2,856,879 (thru 9/2023)
2013 – 2020	University Space Research Association ▪ "Advanced Research and Technology Support" ▪ Principal investigator, 100%	$3,282,329
2015 – 2018	Vantage Partners, LLC ▪ "Advanced Energetic Materials and Concepts Dev." ▪ Principal investigator, 100%	$86,314

2007 – 2013	National Aeronautics and Space Administration ▪ "Advanced Aerospace Seals Research" ▪ Principal investigator, 85%	$6,559,599
2004 – 2007	National Aeronautics and Space Administration ▪ "Advanced Sealing Technologies Development" ▪ Principal investigator, 50%	$432,980
2003 – 2004	National Aeronautics and Space Administration ▪ "Emerging Sealing Technologies" ▪ Co-principal investigator, 50%	$126,651
2000 – 2003	National Aeronautics and Space Administration ▪ "Advanced Seal Development" ▪ Principal investigator, 100%	$323,829

PATENTS

2019	Issued	Shrouded seal assembly. U.S. Patent No. 10,330,201 B1. 25-Jun 2019.
2018	Issued	Apparatus and method for quantifying gas loss in a closed system. U.S. Patent No. 9,958,353 B2. 01-May 2018.
2016	Issued	Seals having textured portions for protection in space environments. U.S. Patent 9,377,107 B2. 28-Jun 2016.
2012	Issued	Seal with integrated shroud for androgynous docking and berthing in space environments. U.S. Patent 8,172,233 B2. 8-May 2012.

AWARDS

2020	Outstanding Teacher Award	The University of Akron
2019	Passion Award for Teaching Excellence	Omicron Delta Kappa (U. Akron)
2018	Innovation Group Achievement Award	NASA Johnson Space Center Director
2018	Program Manager's Commendation	NASA Orion Exploration Program (NASA JSC)
2018	Outstanding Researcher Award	College of Engineering (U. Akron)
2016	Space Flight Awareness Team Award	NASA Docking System (NASA GRC)
2016	Space Flight Awareness Team Award	Mat. International Space Station Exp. (ISS)
2016	Best Paper Award	ASME Propulsion Division
2016	Winner	NineSigma NASA Challenge: Textile Test
2015	Team Excellence Award	Orion Explore. Docking Hatch (NASA JSC)
2013	Inductee	National Academy of Inventors (U. Akron)
2011	Program Manager's Commendation	Space Shuttle Program (NASA)
2010	Superior Performance Award	Low Impact Docking System (NASA)
2010	Group Achievement Award	MISSE-6 (NASA GRC)
2010	New Technology Award	Patent of Androgynous Seal (NASA)
2007	Group Achievement Award	Low Impact Docking System (NASA JSC)
2007	Mentor of the Year	NASA Glenn Research Center LERCIP
2006	Editor's Choice Paper	*Tribology & Lubrication Technology*

PUBLICATIONS

Refereed Journal Articles

1. **Daniels, C.**, M. Braun, H. Oravec, J. Mather, S. Taylor. 2017. Leak rate quantification method for gas pressure seals with controlled pressure differential. *AIAA Journal of Spacecraft and Rockets*, Vol. 54, No. 6, 1228-1234. doi: 10.2514/1.A33804
2. Garafolo, N., and **C. Daniels**. 2014. The mass point leak rate technique with uncertainty analysis. *Research in Nondestructive Evaluation*. 25 (2): 125-149. doi:10.1080/09349847.2013.861953
3. **Daniels, C.** and N. Garafolo. 2014. Effect of system variables on the uncertainty of the mass point leak rate methodology using first-order regression. *Nondestructive Testing and Evaluation*. 29 (1):14-28. doi:10.1080/10589759.2013.823610
4. Garafolo, N., and **C. Daniels**. 2013. An experimental investigation of leak-rate performance of a subscale composite elastomer-retainer docking seal. *Journal of Spacecraft and Rockets*. 50 (3): 709-714. doi:10.2514/1.A32380
5. Garafolo, N., and **C. Daniels**. 2012. A compressible permeation approach to elastomeric space seal characterization. *Journal of Fluids Engineering*. 134 (5). doi:10.1115/1.4006418
6. **Daniels, C.**, N. Garafolo, M. Bastrzyk, and I. Smith. 2012. Evaluation of a novel seal for space applications. *Journal of Spacecraft and Rockets*. 49 (1):83-90. doi:10.2514/1.A32049
7. Finkbeiner, J., P. Dunlap, B. Steinetz, and **C. Daniels**. 2008. Review of seal designs on the Apollo spacecraft. *Journal of Spacecraft and Rockets*. 45 (5): 900-910.
8. **Daniels, C.**, and M. Braun. 2006. The friction behavior of individual components in a spark-ignition engine during warm-up. *Tribology & Lubrication Technology*. 62 (11): 62.
9. **Daniels, C.**, and M. Braun. 2006. The friction behavior of individual components in a spark-ignition engine during warm-up. *Tribology Transactions*. 49 (2): 166-173. doi:10.1080/05698190500544403
10. Li, X., J. Finkbeiner, G. Raman, **C. Daniels**, and B. Steinetz. 2004. Optimized shapes of oscillating resonators for generating high-amplitude pressure waves. *Journal of the Acoustic Society of America*. 116 (5): 2814-2821.
11. Braun, M., D. Peloso, and **C. Daniels**. 2002. An investigation of the shear and pressure flows interaction in a hydrostatic journal bearing pocket. *International Journal of Applied Mechanics and Engineering*. 7 (3).
12. Braun, M., **C. Daniels**, D. Peloso, and R. Hendricks. 2001. Experimental flow patterns and pressure characteristics in a single hydrostatic pocket of variable depth. *Journal of Flow Visualization and Image Processing*. 8: 1-14.
13. Braun, M., **C. Daniels**, M. Dyko. 2000. An experimental investigation of natural convection in an open ended horizontal annulus using a non-intrusive full flow field visualization method. *Journal of Flow Visualization and Image Processing*. 7: 325-342.
14. Srivatsan, T., S. Sriram, and **C. Daniels**. 1997. Influence of temperature on cyclic stress response and fracture behavior of aluminum alloy 6061. *Engineering Fracture Mechanics*. 56 (4): 531-550.
15. Sriram, S., **C. Daniels**, and T. Srivatsan. 1995. Influence of Al2O3 particulate reinforcement on tensile fracture of an aluminum alloy metal matrix composite. *Metals, Materials, and Processes*. 7 (2): 83-92.
16. Srivatsan, T., S. Sriram, and **C. Daniels**. 1995. The Influence of Al2O3 particulate reinforcement on the cyclic stress response and fracture behavior of 6061 aluminum alloy. *Applied Composite Materials*. 2: 175-198.

Conference Papers with Proceedings

1. Dunlap, P., J. Mather, **C. Daniels**, and H. Oravec. 2018. Evaluations of Candidate Materials for Advanced Space-Rated Vacuum Seals to Explore Space Environment Exposure Limits. *Proceedings of the 30th Space Simulation Conference*, Raleigh, NC.
2. Oravec, H., **C. Daniels**, J. Mather. 2017. Verification of air leak rate requirements utilizing a helium leak detector method. FEDSM2017-69076. *Proceedings of the ASME Fluids Engineering Division Summer Meeting*, Waikoloa, HI.
3. Magradey, J., and **C. Daniels**. 2017. A parametric study of an enhanced leak rate method's uncertainty. FEDSM2017-69075. *Proceedings of the ASME Fluids Engineering Division Summer Meeting*, Waikoloa, HI.
4. **Daniels, C.**, J. Mather, H. Oravec, and P. Dunlap. 2016. Evaluation of a Conductive Elastomer Seal for Spacecraft. AIAA-2016-4923. *Proceedings of the 52st AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, Salt Lake City, UT. doi: 10.2514/6.2016-4923
5. **Daniels, C.**, M. Braun, H. Oravec, J. Mather, and S. Taylor. 2015. Leak rate quantification method for gas pressure seals with controlled pressure differential. AIAA-2015-4231. *Proceedings of the 51st AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, Orlando, FL. ASME Propulsion Best Paper. doi: 10.2514/6.2015-4231
6. Oravec, H., **C. Daniels**, and N. Penney. 2015. Destructive removal of candidate subscale two-piece silicone elastomer docking seals. AIAA-2015-4055. *Proceedings of the 51st AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, Orlando, FL. (ITAR Restricted)
7. Taylor, S., J. Mather, **C. Daniels**, and N. Penney. 2015. Performance evaluation of a candidate full-scale dynamic interface seal for the International Low Impact Docking System. AIAA-2015-4049. *Proceedings of the 51st AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, Orlando, FL. (ITAR Restricted)
8. **Daniels, C.**, J. Mather, H. Oravec, S. Taylor, P. Dunlap. 2015. Elastomer seal performance after terrestrial ultraviolet radiation exposure. AIAA 2015-3323. 7th AIAA Atmospheric and Space Environments Conference, Dallas, TX. doi: 10.2514/6.2015-3323
9. Taylor, S., J. Mather, **C. Daniels**, and D. Dye. 2015. Investigation of the impact of surface blending and ultraviolet radiation exposure on elastomer seal leak rate performance for space seal applications. AIAA 2015-3322. 7th AIAA Atmospheric and Space Environments Conference, Dallas, TX. doi: 10.2514/6.2015-3322
10. Oravec, H. and **C. Daniels**. 2014. Leak rate performance of silicone elastomer O-rings contaminated with JSC-1A lunar regolith simulant. 14th ASCE International Conference on Engineering, Science, Construction and Operations in Challenging Environments, St. Louis, MO.
11. Oravec, H. and **C. Daniels**. 2014. Implementation of statistical process control: Evaluating the mechanical performance of a candidate silicone elastomer docking seal. *Proceedings of the 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, AIAA 2014-3600, Cleveland, OH. doi: 10.2514/6.2014-3600
12. Oravec, H., Garafolo, N., and **C. Daniels**. 2013. The mechanical and sealing performance of an atomic oxygen pretreated subscale candidate silicone elastomer docking seal. *Proceedings of the 49th AIAA/ASME/SEA/ASEE Joint Propulsion Conference and Exhibit*, San Jose, CA. (ITAR Restricted)

13. Garafolo, N. and **C. Daniels**. 2013. Geometrical consideration of permeation in elastomers. *Proceedings of the ASME 2013 Fluids Engineering Division Summer Meeting*, Incline Village, NV. doi:10.1115/FEDSM2013-16059
14. Garafolo, N. and **C. Daniels**. 2012. An empirical investigation of seal-interface leakage of an elastomer face seal. *Proceedings of the ASME 2012 Fluids Engineering Division Summer Meeting*. Rio Grande, PR. The American Society of Mechanical Engineers. doi:10.1115/FEDSM2012-72026
15. Oravec, H., J. Wasowski, and **C. Daniels**. 2012. The effect of temperature and dwell on the adhesion force of silicone elastomer seals. *Proceedings of the 50th AIAA Aerospace Sciences Meeting*, AIAA 2012-0803, Nashville, TN. doi: 10.2514/6.2012-803
16. Garafolo, N., and **C. Daniels**. 2012. An evaluation of the compressible permeation approach for elastomeric space seals. *Proceedings of the 50th AIAA Aerospace Sciences Meeting*, AIAA 2012-0802, Nashville, TN. doi: 10.2514/6.2012-802
17. Garafolo, N. and **C. Daniels**. 2011. The quantification of seal-interface leakage of an elastomer face seal. *Proceedings of the ASME 2011 International Mechanical Engineering Congress & Exposition*, Denver, CO. 1: 245-253. doi:10.1115/IMECE2011-63620
18. Oravec, H., Panickar, M., J. Wasowski, and **C. Daniels**. 2011. Influence of elastomer compound and test temperature on the compression force of candidate space seals: A preliminary study. *Proceedings of the 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2011-5709, San Diego, CA. doi: 10.2514/6.2011-5709
19. M. Conrad, **C. Daniels**, B. Hartzler, and M. Panickar. 2011. Retention failure forces in candidate space docking seals. *Proceedings of the 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2011-5639, San Diego, CA. doi: 10.2514/6.2011-5639
20. **Daniels, C.**, J. Wasowski, M. Panickar, and I. Smith. 2011. Leak rate performance of three silicone elastomer compounds after ground-simulated and on-orbit environment exposures. 3rd AIAA Atmospheric Space Environments Conference, AIAA 2011-3823, Honolulu, HI. doi: 10.2514/6.2011-3823
21. Garafolo, N., and **C. Daniels**. 2011. Contamination simulation of elastomer space seals with foreign object debris. 3rd AIAA Atmospheric Space Environments Conference, AIAA 2011-3674, Honolulu, HI. doi: 10.2514/6.2011-3674
22. Hartzler, B., M. Panickar, J. Wasowski, and **C. Daniels**. 2011. Comparison of adhesion and retention forces for two candidate docking seal elastomers. *Proceedings of the 52nd AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics and Materials Conference*, AIAA 2011-2158, Denver, CO and as NASA/CR-2011-217109. doi: 10.2514/6.2011-2158
23. Panickar, M., J. Wasowski, and **C. Daniels**. 2011. Adhesion of an elastomer seal to metal and its mitigation with atomic oxygen pretreatment. *Proceedings of the 49th AIAA Aerospace Sciences Meeting*, AIAA 2011-426, Orlando, FL. doi: 10.2514/6.2011-426
24. Bastrzyk, M., and **C. Daniels**. 2010. Compression force response and leak rate quantification of candidate static silicone space seals. *Proceedings of the 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA-2010-6908, Nashville, TN. doi: 10.2514/6.2010-6908
25. Dunlap, P., B. Steinetz, **C. Daniels**, J. Wasowski, M. Robbie, G. Drlik, A. Erker, J. Mayer. 2010. Full-scale system for quantifying loads and leak rates of seals for space applications. *Proceedings of the 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2010-6987, Nashville, TN.

26. Garafolo, N., and **C. Daniels**. 2010. An experimental investigation of leak rate performance of a subscale candidate elastomer docking seal. *Proceedings of the 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2010-6907, Nashville, TN and as NASA/CR-2011-216829. doi: 10.2514/6.2010-6907
27. Penney, N., J. Wasowski, and **C. Daniels**. 2010. Temperature and atomic oxygen effects on helium leak rates of a candidate main interface seal. *Proceedings of the 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2010-6986, Nashville, TN. doi: 10.2514/6.2010-6986
28. Bastrzyk, M., J. Wasowski, and **C. Daniels**. 2010. Non-contact compression set testing and dimensional measurements of space seals: An application of laser technology. 4th Japan-US Symposium on Emerging NDE Capabilities for a Safer World, M2-1, Maui, HI.
29. Conrad, M., **C. Daniels**, and R. Martin. 2010. Two nondestructive evaluation techniques for inspection of composite silicone-metal aerospace seals. 4th Japan-US Symposium on Emerging NDE Capabilities for a Safer World, M4-2, Maui, HI.
30. Garafolo, N., and **C. Daniels**. 2010. Comprehensive mass point leak rate technique. Part I: Methodology with uncertainty and experimental error analyzes. 4th Japan-US Symposium on Emerging NDE Capabilities for a Safer World, M4-4, Maui, HI.
31. **Daniels, C.**, and N. Garafolo. 2010. Comprehensive mass point leak rate technique. Part II: Application of methodology and variable influences. 4th Japan-US Symposium on Emerging NDE Capabilities for a Safer World, M4-5, Maui, HI.
32. Bastrzyk, M., and **C. Daniels**. 2010. The mechanical performance of subscale candidate elastomer docking seal. *Proceedings of the 51st AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference*, AIAA 2009-3129, Orlando, FL and as NASA/CR-2010-3129. doi: 10.2514/6.2010-3129
33. Garafolo, N., M. Bastrzyk, and **C. Daniels**. 2010. The effects of atomic oxygen on the sealing and mechanical performance of an elastomer seal. *Proceedings of the 48th AIAA Aerospace Sciences Meeting*, AIAA 2009-1440, Orlando, FL. doi: 10.2514/6.2010-1440
34. **Daniels, C.**, N. Garafolo, M. Bastrzyk, and I. Smith. 2009. Evaluation of a novel seal for space applications. *Proceedings of the 45th AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, AIAA 2009-5250, Denver, CO. doi: 10.2514/6.2009-5250
35. Conrad, M., **C. Daniels**, and M. Bastrzyk. 2009. Experimental investigation of silicone-to-metal bond strength in composite docking system seals. *Proceedings of the 45th AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, AIAA 2009-5318, Denver, CO and as NASA/CR-2010-216886. doi: 10.2514/6.2009-5318
36. Dunlap, P., **C. Daniels**, J. Wasowski, N. Penney, and B. Steinetz. 2009. Pressure decay testing methodology for quantifying leak rates of full-scale docking system seals. *Proceedings of the 45th AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, AIAA 2009-5319, Denver, CO and as NASA/TM-2010-216244. doi: 10.2514/6.2009-5319
37. Wasowski, J., N. Penney, and **C. Daniels**. 2009. Leak rates of a candidate docking interface seal at various temperatures. *Proceedings of the 45th AIAA/ASME/SAE/ASEE Joint Propulsion Conference*, AIAA 2009-5320, Denver, CO. doi: 10.2514/6.2009-5320
38. Garafolo, N. and **C. Daniels**. 2009. Compressible advection through an elastomer seal: A porous media approach to seals for space applications. *Proceedings of the ASME 2009 Fluids Engineering Division Summer Meeting*, Vail, CO, Volume 1: Symposia, Parts A, B and C: 1853-1864. doi:10.1115/FEDSM2009-78067

39. de Groh, H., S. Miller, I. Smith, **C. Daniels**, B. Steinetz. 2008. Adhesion of cured silicone elastomer seals for NASA's Crew Exploration Vehicle. *Proceedings of the 44th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2008-4625, Hartford, CT and as NASA/TM-2008-215433.
40. Smith, I., **C. Daniels**, P. Dunlap, and B. Steinetz. 2007. Performance of sub-scale docking seals under simulated temperature conditions. *Proceedings of the 44th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2008-4713, Hartford, CT and as NASA/TM-2008-215428.
41. Oswald, J., **C. Daniels**, P. Dunlap, and B. Steinetz. 2007. Simulating elastomer seal mechanics for a Low Impact Docking System. *Proceedings of the AIAA SPACE 2007 Conference & Exposition*, AIAA 2007-6206, Long Beach, CA. doi: 10.2514/6.2007-6206
42. **Daniels, C.**, J. Oswald, M. Bastrzyk, I. Smith, P. Dunlap, and B. Steinetz. 2007. Experimental investigation of leakage and compressive load of elastomeric docking seals. *Proceedings of the AIAA SPACE 2007 Conference & Exposition*, AIAA 2007-6197, Long Beach, CA and as NASA/TM-2008-215023. doi: 10.2514/6.2007-6197
43. **Daniels, C.**, H. de Groh III, P. Dunlap, J. Finkbeiner, B. Steinetz, M. Bastrzyk, J. Oswald, B. Banks, J. Dever, S. Miller, and D. Waters. 2007. Characteristics of elastomer seals exposed to space environments. *Proceedings of the 43rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2007-5741, Cincinnati, OH, and NASA/TM-2008- 215005. doi: 10.2514/6.2007-5741
44. Dunlap, P. , **C. Daniels**, B. Steinetz, A. Erker, M. Robbie, J. Wasowski, G. Drlik, M. Tong, and N. Penney. 2007. Full scale system for quantifying leakage of docking system seals for space applications. *Proceedings of the 43rd AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2007-5742, Cincinnati, OH, and as NASA/TM-2007-215024. doi: 10.2514/6.2007-5742
45. Finkbeiner, J., P. Dunlap, Jr., B. Steinetz, **C. Daniels**. 2006. Apollo Seals: A basis for the crew exploration vehicle seals. *Proceedings of the 42nd AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit*, AIAA 2006-5259, Sacramento, CA and as NASA/TM-2006-214372. doi: 10.2514/6.2006-5259
46. **Daniels, C.**, and M. Braun. 2005. The friction behavior of individual components in a spark ignition engine during warm-up. *60th STLE Annual Meeting Conference Proceedings*, Las Vegas, NV.
47. **Daniels, C.**, J. Finkbeiner, B. Steinetz, X. Li, and G. Raman. 2004. Nonlinear oscillations and flow of gas within closed and open conical resonators. *Proceedings of the AIAA 42st Aerospace Sciences Meeting and Exhibit*, AIAA 2004-0677, Reno, NV and as NASA/TM-2004-212902.
48. Li, X., J. Finkbeiner, G. Raman, **C. Daniels**, B. Steinetz. 2003. Nonlinear resonant oscillations of gas in optimized acoustical resonators and the effect of central blockage. *AIAA 41st Aerospace Sciences Meeting and Exhibit*, AIAA 2003-0368, Reno, NV and as NASA/TM-2003-212019.
49. Braun, M., D. Peloso, and **C. Daniels**. 2001. An investigation of the shear and pressure flows interaction in a hydrostatic journal bearing pocket. Second World Tribology Congress, Vienna, Austria.
50. Braun, M., **C. Daniels**, D. Peloso, and R. Hendricks. 2000. Experimental flow patterns and pressure characteristics in a single hydrostatic pocket of variable depth. 8th International Symposium on Transport Phenomena and Dynamics of Rotating Machinery, Honolulu, HI, 2: 1041-1048.
51. Braun, M., **C. Daniels**, M. Dyko, and V. Kyga. 1997. Temperature distribution and flow characteristics of a concentric horizontal cylinder configuration. *Proceedings of the 1997 ASME Fluids Engineering Division Summer Meeting*, Vancouver, British Columbia.
52. Srivatsan, T., **C. Daniels**, and A. Prakash. 1997. Tensile response of high carbon steel wires. 1997 Annual Convention of the Wire Association International, Atlanta, GA: 67-72.

53. Srivatsan, T., **C. Daniels**, and A. Prakash. 1997. High cycle fatigue behavior of high carbon steel wires. 1997 Annual Convention of the Wire Association International, Atlanta, GA: 61-66.
54. **Daniels, C.**, T. Srivatsan, and A. Prakash. 1996. The tensile behavior of high carbon steel wires: Influence of temperature. *Metallurgy, Processing, and Applications of Metal Wires: "State of the Art Technology and Challenges for the Future"*. Eds: H.G. Paris and D.K. Kim. Warrendale, PA: The Minerals, Metals, and Materials Society. 195-218. Presented at TMS/ASM Materials Week '96, Cincinnati, OH.
55. **Daniels, C.**, T. Srivatsan, and A. Prakash. 1996. The cyclic deformation of high carbon steel wires: Influence of temperature. *Metallurgy, Processing, and Applications of Metal Wires: "State of the Art Technology and Challenges for the Future".* Eds.: H.G. Paris and D.K. Kim. Warrendale, PA: The Minerals, Metals, and Materials Society. 219-242. Presented at TMS/ASM Materials Week '96, Cincinnati, OH.
56. Srivatsan, T., **C. Daniels**, S. Sriram, K. Dhana Singh, W. Soboyejo, and D. Konitzer. 1995. The cyclic fatigue and fracture behavior of a niobium-based intermetallic compound. *Fatigue and Fracture of Ordered Intermetallic Materials II*. Eds: W.O. Soboyejo, T.S. Srivatsan, and R.O. Ritchie. Warrendale, PA: The Minerals, Metals, and Materials Society: 287-308. Presented at 2nd International Symposium on Fatigue and Fracture of Ordered Intermetallic Materials, Rosemont, IL.

NASA Technical Memorandum and NASA Contractor Reports

1. Benyo, T., Steinetz, B., Hendricks, R., Martin, R., Forsley, L., **Daniels, C.**, Chait, A., Pines, V., Pines, M., Penney, N., Kamm, T., and Becks, M. 2017. Investigation of deuterium loaded materials subject to x-ray exposure. NASA/TM 2015-218491/Rev1.
2. Hartzler, B., M. Panickar, J. Wasowski, and **C. Daniels**. 2011. Comparison of adhesion and retention forces for two candidate docking seal elastomers. NASA/CR-2011-217109.
3. Garafolo, N., and **C. Daniels**. 2010. An experimental investigation of leak rate performance of a subscale candidate elastomer docking seal. NASA/CR-2011-216829.
4. Bastrzyk, M., Daniels, C., Oswald, J., Dunlap, P., and Steinetz, B. Material properties of three candidate elastomers for space seals applications. NASA/TM 2010-216263 (2010).
5. Bastrzyk, M., and **C. Daniels**. 2010. The mechanical performance of subscale candidate elastomer docking seal. NASA/CR-2010-3129.
6. Conrad, M., **C. Daniels**, and M. Bastrzyk. 2009. Experimental investigation of silicone-to-metal bond strength in composite docking system seals. NASA/CR-2010-216886.
7. deGroh, H., **Daniels, C.**, Dever, J., Miller, S., Waters, D., Finkbeiner, J., Dunlap, P., Steinetz, B. 2010. Space environment effects on silicone seal materials. NASA/TM 2010-216332
8. Dunlap, P., **C. Daniels**, J. Wasowski, N. Penney, and B. Steinetz. 2009. Pressure decay testing methodology for quantifying leak rates of full-scale docking system seals. NASA/TM-2010-216244.
9. Dunlap, P., Steinetz, B., **Daniels, C.**, Wasowski, J., Robbie, M., Erker, A., Drlik, G., and Mayer, J. 2010. Full-scale system for quantifying loads and leak rates of seals for space applications. NASA/TM 2010-216885.
10. de Groh, H., S. Miller, I. Smith, **C. Daniels**, B. Steinetz. 2008. Adhesion of cured silicone elastomer seals for NASA's Crew Exploration Vehicle. NASA/TM-2008-215433.
11. Smith, I., **C. Daniels**, P. Dunlap, and B. Steinetz. 2007. Performance of sub-scale docking seals under simulated temperature conditions. NASA/TM-2008-215428.

12. **Daniels, C.**, J. Oswald, M. Bastrzyk, I. Smith, P. Dunlap, and B. Steinetz. 2007. Experimental investigation of leakage and compressive load of elastomeric docking seals. NASA/TM-2008-215023.
13. **Daniels, C.**, H. de Groh III, P. Dunlap, J. Finkbeiner, B. Steinetz, M. Bastrzyk, J. Oswald, B. Banks, J. Dever, S. Miller, and D. Waters. 2007. Characteristics of elastomer seals exposed to space environments. NASA/TM-2008-215005.
14. Dunlap, P., **C. Daniels**, B. Steinetz, A. Erker, M. Robbie, J. Wasowski, G. Drlik, M. Tong, and N. Penney. 2007. Full scale system for quantifying leakage of docking system seals for space applications. NASA/TM-2007-215024.
15. Finkbeiner, J., P. Dunlap, Jr., B. Steinetz, **C. Daniels**. 2006. Apollo Seals: A basis for the crew exploration vehicle seals. NASA/TM-2006-214372.
16. **Daniels, C.**, J. Finkbeiner, B. Steinetz, X. Li, and G. Raman. 2004. Nonlinear oscillations and flow of gas within closed and open conical resonators. NASA/TM-2004-212902.
17. Li, X., J. Finkbeiner, G. Raman, **C. Daniels**, B. Steinetz. 2003. Nonlinear resonant oscillations of gas in optimized acoustical resonators and the effect of central blockage. NASA/TM-2003-212019.

COURSES TAUGHT

Thermodynamics I
Thermodynamics II
Thermal System Components
Measurements Laboratory
Engineering Analysis

SERVICE ACTIVITIES

2016 – present	Faculty Advisor, Senior Capstone Projects, Mechanical Engineering Dept.
2017 – present	Undergraduate Academic Advisor, Mechanical Engineering Dept.
2019 – present	Accessibility Liaison Committee, College of Engineering and Polymer Science
2019 – present	Lead, Thermo-Fluids Curriculum Development, Mechanical Engineering Dept.
2020 – present	Insider Threat Program Senior Official, The University of Akron
2021 – present	Co-Developer, Zips: Engineered for Success
2022 – present	Faculty Advisor, Math Mondays Student Organization
2022 – present	Co-chair, Mechanical Engineering Curriculum Development
2022	Co-Developer, Math Mondays
2016 – 2021	Faculty Advisor, Zips Baja Student Design Team, College of Engineering

SECURITY CLEARANCE

Active Secret Security Clearance