

PARTIAL PUBLICATION LIST

Partial count: **271**: 82 journal articles, 5 book chapters, and 184 conference papers
Frequency: **13/yr**: 4 journal and 9 conference papers per year during 1997-2017 (20 year avg)

Milestones: Fifteen (15) and sixteen (16) full-length papers at JPC'04 and JPC'10, respectively
Regional: 11 AIAA best student paper awards (advisory role)

National: [2015 AIAA Best Solid Rockets Paper Award](#)
[2015 AIAA Faculty Advisor Award](#)
[2014 AIAA Best Masters Student Paper](#)
[2013 Abe M. Zarem Award](#)
[2005 AIAA Best Solid Rockets Paper Award](#)

Journal Articles

1997

1. [Majdalani, J](#) and Van Moorhem, W K, "A Multiple-scales Solution to the Acoustic Boundary Layer in Solid Rocket Motors," **Journal of Propulsion and Power**, 13 (2), March 1997, pp 186-193. [doi: 10.2514/2.5168](#)

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3. [Majdalani, J](#), "A Hybrid Multiple Scale Procedure for Boundary Layers Involving Several Dissimilar Scales," **Journal of Applied Mathematics and Physics (ZAMP)**, 49 (6), Nov 1998, pp 849-868. [doi: 10.1007/s000330050126](#)

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4. [Majdalani, J](#), "The Boundary Layer Structure in Cylindrical Rocket Motors," **AIAA Journal**, 37 (4), April 1999, pp 505-508. [doi: 10.2514/2.742](#)
5. [Majdalani, J](#), "Asymptotic Formulation for an Acoustically Driven Field Inside a Rectangular Cavity with a Well-defined Convective Mean Flow Motion," **Journal of Sound and Vibration**, 223 (1), May 1999, pp 73-95. [doi: 10.1006/jsvi.1998.2137](#)
6. [Majdalani, J](#), "Vortical and Acoustical Mode Coupling Inside a Two-dimensional Cavity with Transpiring Walls," **Journal of the Acoustical Society of America**, 106 (1), July 1999, pp 46-56. [doi: 10.1121/1.428032](#)

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7. [Majdalani, J](#), Flandro, G A and Roh, T S, "Convergence of Two Flowfield Models Predicting a Destabilizing Agent in Rocket Combustion," **Journal of Propulsion and Power**, 16 (3), May 2000, pp 492-497. [doi: 10.2514/2.5595](#)
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13. Majdalani, J and Roh, T S, "Vorticity Dynamics in Isobarically Closed Porous Channels Part II: Space-reductive Perturbations," **Journal of Propulsion and Power**, 17 (2), March 2001, pp 363-370. [doi: 10.2514/2.5750](https://doi.org/10.2514/2.5750)
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85. Barber, T A, Maicke, B A and Majdalani, J, "Characterization of Gaps, Obstacles, and Technological Challenges in Hypersonic Applications," **International Journal of Aerospace Engineering**. 7378256.v1 (under review)
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Invited Book Chapters

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196. Saad, T and Majdalani, J, "Pressure Integration Rules and Restrictions for the Navier-Stokes Equations," **AIAA-2010-4288**, 40th AIAA Fluid Dynamics Conference and Exhibit, Chicago, IL, June 28-July 1, 2010
197. Majdalani, J, "Asymptotic Methods for Solving Wave Propagation Problems in Porous Tubes, Channels and Spheres," **AIAA-2010-4483**, 40th AIAA Fluid Dynamics Conference and Exhibit, Chicago, IL, June 28-July 1, 2010
198. Majdalani, J and Maicke, B A, "Inversion of the Fundamental Isentropic Expansion Equations in Variable Area Duct Flow," **AIAA-2010-4861**, 40th AIAA Fluid Dynamics Conference and Exhibit, Chicago, IL, June 28-July 1, 2010
199. Maicke, B A and Majdalani, J, "Analytical Methodologies for Hypersonic Propulsion," **AIAA-2010-6553**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
200. Akiki, G and Majdalani, J, "On the Bidirectional Vortex with Arbitrary Endwall Velocity," **AIAA-2010-6652**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
201. Batterson, J W and Majdalani, J, "On the Viscous Bidirectional Vortex. Part 1: Linear Beltramian Motion," **AIAA-2010-6763**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
202. Batterson, J W and Majdalani, J, "On the Viscous Bidirectional Vortex. Part 2: Nonlinear Beltramian Motion," **AIAA-2010-6764**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010

203. Batterson, J W and Majdalani, J, "On the Viscous Bidirectional Vortex. Part 3: Multiple Mantles," **AIAA-2010-6765**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
204. Jankowski, T and Majdalani, J, "Axially Traveling Waves in Porous Tubes with Arbitrary Crossflow Velocity," **AIAA-2010-6801**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
205. Majdalani, J and Maicke, B A, "Modeling Mach Number and Temperature Distributions in Supersonic Nozzle Flow," **AIAA-2010-6844**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
206. Zgheib, N and Majdalani, J, "Axial Waves in Simulated Solid Rocket Motors," **AIAA-2010-6993**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
207. Maicke, B A and Majdalani, J, "Pressure Variations in Rocket Nozzles. Part 1: Direct Asymptotic Predictions," **AIAA-2010-7072**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
208. Maicke, B A, Majdalani, J and Geisler, R L, "Pressure Variations in Rocket Nozzles. Part 2: Analytical Predictions During Blowdown," **AIAA-2010-7073**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
209. Majdalani, J and Maicke, B A, "Pressure Variations in Rocket Nozzles. Part 3: Direct Calculation of the Local Mach Number," **AIAA-2010-7074**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
210. Maicke, B A, Saad, T and Majdalani, J, "On the Compressible Hart-McClure Mean Flow Motion in Simulated Rocket Motors," **AIAA-2010-7077**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
211. Majdalani, J, Xu, H, Lin, Z L and Liao, S J, "Exact HAM Solutions for the Viscous Rotational Flowfield in Channels with Regressing and Injecting Sidewalls," **AIAA-2010-7079**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
212. Akiki, M and Majdalani, J, "Quasi-Analytical Approximation of the Compressible Flow in a Planar Rocket Configuration," **AIAA-2010-7080**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
213. Majdalani, J and Zhou, C, "Boundary Layer Treatment of the Porous Channel Flow with Wall Regression," **AIAA-2010-7157**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
214. Maicke, B A and Majdalani, J, "Evaluation of CFD Codes for Hypersonic Flow Modeling," **AIAA-2010-7184**, 46th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Nashville, TN, July 25-28, 2010
- 2011
215. Majdalani, J, "Asymptotic Waves in Simple Geometric Enclosures with Wall Distributed Injection," **CMMI Paper № 0928762**, Proceedings of the NSF Engineering Research and Innovation Conference, Atlanta, Georgia, January 2011
216. Saad, T and Majdalani, J, "Some Thoughts on Kelvin's Minimum Energy Theorem," **ICARAME'11 Paper № P5**, International Conference on Advanced Research and Applications in Mechanical Engineering, Notre Dame University-Louaize, LB, June 13-15, 2011
217. Akiki, M and Majdalani, J, "Integral Formulation of the Compressible Flow in a Planar Injection Driven Rocket Chamber," **ICARAME'11 Paper № P6**, International Conference on Advanced Research and Applications in Mechanical Engineering, Notre Dame University-Louaize, LB, June 13-15, 2011
218. Batterson, J W and Majdalani, J, "Biglobal Instability of the Bidirectional Vortex. Part 1: Formulation," **AIAA-2011-5648**, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Diego, CA, July 31-August 3, 2011

219. Batterson, J W and Majdalani, J, "Biglobal Instability of the Bidirectional Vortex. Part 2: Complex Lamellar and Beltramian Motions," **AIAA-2011-5649**, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Diego, CA, July 31-August 3, 2011. **Best Paper of the Session in Advanced Propulsion Concepts. Nominated for Best Liquid Rockets Paper Award by Daniel J Levack**
220. Akiki, G and Majdalani, J, "On the Viscous Bidirectional Vortex with Arbitrary Endwall Injection," **AIAA-2011-5692**, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Diego, CA, July 31-August 3, 2011
221. Saad, T and Majdalani, J, "Viscous Flows Revisited in Simulated Rockets with Radially Regressing Walls," **AIAA-2011-5860**, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Diego, CA, July 31-August 3, 2011. **Best Paper of the Session in Solid Rocket Modeling and Simulation I. Nominated for Best Solid Rockets Paper Award by Barbara Leary**
222. Saad, T, Maicke B A and Majdalani, J, "Coordinate Independent Forms of the Compressible Potential Flow Equations," **AIAA-2011-5862**, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Diego, CA, July 31-August 3, 2011
223. Akiki, M and Majdalani, J, "Exact Solutions for the Integral Form of the Compressible Flowfield in a Porous Cylinder," **AIAA-2011-5953**, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Diego, CA, July 31-August 3, 2011. **Best Paper of the Session in Solid Rocket Modeling and Simulation II. Nominated for Best Solid Rockets Paper Award by Mark Langhenry and Douglas Coats**
224. Haddad, C T and Majdalani, J, "Transverse Waves in Simulated Liquid Rocket Engines," **AIAA-2011-6029**, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Diego, CA, July 31-August 3, 2011

2012

225. Akiki, G and Majdalani, J (advisor), "New Framework for Modeling the Bidirectional Vortex Engine Flowfield with Arbitrary Injection," **AIAA-2012-0138**, 50th AIAA Aerospace Sciences Meeting including the New Horizons Forum and Aerospace Exposition, Nashville, TN, January 9-12, 2012
226. Haddad, C T and Majdalani, J, "Transverse Waves in Simulated Liquid Rocket Engines with Variable Headwall Injection," **AIAA-2012-0541**, 50th AIAA Aerospace Sciences Meeting including the New Horizons Forum and Aerospace Exposition, Nashville, TN, January 9-12, 2012
227. Maicke, B A and Majdalani, J, "On the Compressible Bidirectional Vortex. Part 1: A Bragg-Hawthorne Stream Function Formulation," **AIAA-2012-1103**, 50th AIAA Aerospace Sciences Meeting including the New Horizons Forum and Aerospace Exposition, Nashville, TN, January 9-12, 2012
228. Maicke, B A and Majdalani, J, "On the Compressible Bidirectional Vortex. Part 2: A Beltramian Flowfield Approximation," **AIAA-2012-1104**, 50th AIAA Aerospace Sciences Meeting including the New Horizons Forum and Aerospace Exposition, Nashville, TN, January 9-12, 2012
229. Elliott, T S, Batterson, J W and Majdalani, J, "Biglobal Stability of Cylindrically-Shaped Hybrid and Solid Rockets with Injecting or Reactive Headwalls," **AIAA-2012-3810**, 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, July 29-August 1, 2012.
230. Haddad, C T and Majdalani, J, "On the Sidewall Boundary Layer of Transverse Waves in Simulated Liquid Rocket Engines," **AIAA-2012-4086**, 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, July 29-August 1, 2012

2013

231. Barber, T A and Majdalani, J (advisor), "Bidirectional Helical Motion in Tapered Rocket Chambers," **AIAA-2013-0133**, 51st AIAA Aerospace Sciences Meeting including the New Horizons Forum and Aerospace Exposition, Grapevine, TX, January 7-10, 2013

232. Akiki, M, Batterson, J W and Majdalani, J, "Biglobal Stability of Compressible Flowfields. Part 1: Planar Formulation," **AIAA-2013-3865**, 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Jose, CA, July 14-17, 2013
233. Akiki, M, Batterson, J W and Majdalani, J, "Biglobal Stability of Compressible Flowfields. Part 2: Application to Solid Rocket Motors," **AIAA-2013-3866**, 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Jose, CA, July 14-17, 2013.
234. Majdalani, J and Van Horn, E M, "Extension of the Taylor-Culick Profile to Rockets with Noncircular Grain Perforations," **AIAA-2013-3916**, 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Jose, CA, July 14-17, 2013
235. Maicke, B A, Katta, A and Majdalani, J, "Characterization of Particle Trajectories in Solid Rocket Motors," **AIAA-2013-3919**, 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Jose, CA, July 14-17, 2013

2014

236. Fist, A and Majdalani, J (advisor), "Improved Mean Flow Solution for Solid Rocket Motors," **AIAA-2014-0006**, SciTech'14, 52nd AIAA Aerospace Sciences Meeting, National Harbor, Maryland, January 13-17, 2014
237. Maicke, B A and Majdalani, J, "Particle Image Velocimetry in Confined Vortex Flows," XXII International Conference on Spectral Line Shapes (ICSLS 2014), Tullahoma, TN, June 1-6 2014
238. Elliott, T S and Majdalani, J, "Hydrodynamic Stability Analysis of Particle-Laden Solid Rocket Motors," XXII International Conference on Spectral Line Shapes (ICSLS 2014), Tullahoma, TN, June 1-6 2014
239. Godfrey, B M and Majdalani, J, "CFD Modelling of a Quadrupole Vortex Inside a Cylindrical Channel for Research into Advanced Hybrid Rocket Designs," XXII International Conference on Spectral Line Shapes (ICSLS 2014), Tullahoma, TN, June 1-6 2014. **Winner of the Best Poster Award**
240. Batterson, J W and Majdalani, J, "Generalized Scaling Technique for the Solution of the Vortical Wave Eigenfunction Equation," **AIAA-2014-3495**, 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Cleveland, OH, July 28-30, 2014
241. Elliott, T S and Majdalani, J, "Two-Phase Flow Stability of Cylindrically-Shaped Hybrid and Solid Rockets with Particle Entrainment," **AIAA-2014-3611**, 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Cleveland, OH, July 28-30, 2014
242. Barber, T A and Majdalani, J, "New Exact Solution of the Bidirectional Vortex in a Conically-Shaped Cyclonic Chamber," **AIAA-2014-3676**, 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Cleveland, OH, July 28-30, 2014
243. Majdalani, J, "Unified Framework for Modeling Swirl Dominated Helical Motions," **AIAA-2014-3677**, 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Cleveland, OH, July 28-30, 2014.
244. Majdalani, J and Fist, A, "Improved Mean Flow Solution for Solid Rocket Motors with a Naturally Developing Swirling Motion," **AIAA-2014-4016**, 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Cleveland, OH, July 28-30, 2014. **Best Paper of the Session in Simulation and Analysis II. Nominated for Best Solid Rockets Paper Award by B. Leary**
245. Fist, A, Majdalani, J and Saad, T, "Energy Steepened States of the Swirling Mean Flow in a Solid Rocket Motor," **AIAA-2014-4017**, 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Cleveland, OH, July 28-30, 2014
246. Van Horn, E M and Majdalani, J, "Extension of the Taylor-Culick Profile to Rockets with Noncircular Grain Perforations," **AIAA-2014-4018**, 50th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Cleveland, OH, July 28-30, 2014

2015

247. Fleischmann, J and Majdalani, J (advisor), "Complex Lamellar Helical Solution for Cyclonically Driven Hybrid Rocket Engines," **AIAA-2015-0372**, SciTech'15, 53rd AIAA Aerospace Sciences Meeting, Kissimmee, Florida, January 5-9, 2015

248. Marquardt, T and Majdalani, J, "On the Quadrupole Vortex Motion in a Right-Cylindrical Hybrid Rocket Engine," AIAA-2015-3743, 51st AIAA/SAE/ASEE Joint Propulsion Conference, Orlando, FL, July 27-29, 2015
249. Elliott, T S and Majdalani, J, "Effect of Outflow Boundary Conditions on the Stability of Cylindrically-Shaped Hybrid Rockets," AIAA-2015-3744, 51st AIAA/SAE/ASEE Joint Propulsion Conference, Orlando, FL, July 27-29, 2015
250. Cecil, O and Majdalani, J, "On Steady Trkalian High Speed Flows: Swirling Compressible Motion in Rockets with Headwall Injection," AIAA-2015-3788, 51st AIAA/SAE/ASEE Joint Propulsion Conference, Orlando, FL, July 27-29, 2015 **Best Paper of the Session in Solid Rocket Motor Combustion Flow Fields and Instability I. Nominated for Best Solid Rockets Paper Award**
251. Kovacic, P, Batterson, J W and Majdalani, J, "Vorticity Wave Formation in the Presence of Strong Mean Flow Shear Layers," AIAA-2015-3789, 51st AIAA/SAE/ASEE Joint Propulsion Conference, Orlando, FL, July 27-29, 2015
252. Barber, T A, Cecil, O and Majdalani, J, "Complex-Lamellar Cyclonic Vortex in a Cylindrical Chamber with a Hollow Core," AIAA-2015-3848, 51st AIAA/SAE/ASEE Joint Propulsion Conference, Orlando, FL, July 27-29, 2015
253. Maicke, B A and Majdalani, J, "Characterization of Particle Trajectories in the Bidirectional Vortex Engine," AIAA-2015-3849, 51st AIAA/SAE/ASEE Joint Propulsion Conference, Orlando, FL, July 27-29, 2015

2016

254. Cecil, O and Majdalani, J, "On Steady Trkalian High Speed Flows: Swirling Compressible Motion in Solid Rocket Motors," **AIAA-2016-0142**, SciTech'16, 54th AIAA Aerospace Sciences Meeting, San Diego, CA, January 4-8, 2016
255. Majdalani, J and Barber, T A, "Beltramian and Trkalian Vortices in Cyclonic Chambers with Hollow Cores," **AIAA-2016-4580**, 52nd AIAA/SAE/ASEE Joint Propulsion Conference, Salt Lake City, UT, July 25-27, 2016
256. Majdalani, J, Ramesh-Kumar, T, and Akiki, M, "Biglobal Instability of the Compressible Taylor-Culick Solution in Cylindrical Rockets," **AIAA-2016-4792**, 52nd AIAA/SAE/ASEE Joint Propulsion Conference, Salt Lake City, UT, July 25-27, 2016 **Best Paper of the Session in Solid Rocket Combustion Instability. Nominated for Best Solid Rockets Paper Award**
257. Cecil, O M and Majdalani, J, "Generalized Trkalian Flows: Swirling Motion in Rockets with Arbitrary Headwall Injection," **AIAA-2016-5069**, 52nd AIAA/SAE/ASEE Joint Propulsion Conference, Salt Lake City, UT, July 25-27, 2016.

2017

258. Williams, L L, Barber, T A and Majdalani, J, "Development of the Bidirectional Vortex in a Hemispherically-Shaped Rocket Engine," **AIAA-2017-4608**, 53rd AIAA/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, July 10-12, 2017
259. Marquardt, T and Majdalani, J, "Beltramian Solution for Cyclonically Driven Hybrid Rocket Engines," **AIAA-2017-4638**, 53rd AIAA/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, July 10-12, 2017. **Best Paper of the Session in Internal Ballistics and Modeling I. Nominated for Best Hybrid Rockets Paper Award**
260. Sharma, G and Majdalani, J, "Characterization of the Cyclonic Flowfield in a Swirl Driven Combustion Chamber," **AIAA-2017-4667**, 53rd AIAA/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, July 10-12, 2017
261. Cecil, O and Majdalani, J, "The Taylor-Culick Profile for Spinning Rocket Motors," **AIAA-2017-4779**, 53rd AIAA/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, July 10-12, 2017. **Nominated for Best Solid Rockets Student Paper**

2010–present **Twenty-Four Graduate Student Best Paper Nominations/Awards in Seven Years**

1. Marquardt and Majdalani, "[Beltramian Solution for Cyclonically Driven Hybrid Rocket Engines](#)," **AIAA-2017-4638**, 53rd AIAA/SAE/ASEE Joint Propulsion Conference, Atlanta,

- GA, July 10-12, 2017. **Best Paper of the Session in Internal Ballistics and Modeling I. Nominated for Best Hybrid Rockets Paper Award**
2. [Cecil](#) and [Majdalani](#), "[The Taylor-Culick Profile for Spinning Rocket Motors](#)," AIAA-2017-4779, 53rd AIAA/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, July 10-12, 2017. **Nominated for Best Solid Rockets Student Paper**
 3. [Cecil](#) and [Majdalani](#), "[Generalized Trkalian Flows: Swirling Motion in Rockets with Arbitrary Headwall Injection](#)," AIAA-2016-5069, 52nd AIAA/SAE/ASEE Joint Propulsion Conference, Salt Lake City, UT, July 25-27, 2016. **Nominated for Best Hybrid Rockets Student Paper**
 4. [Cecil](#) and [Majdalani](#) (advisor), "[On Steady Trkalian High Speed Flows: Swirling Compressible Motion in Solid Rocket Motors](#)," AIAA-2016-0142, SciTech'16, 54th AIAA Aerospace Sciences Meeting, San Diego, CA, January 4-8, 2016. **Finalist in the International Masters Division Competition**
 5. [Cecil](#) and [Majdalani](#), "[On Steady Trkalian High Speed Flows: Swirling Compressible Motion in Rockets with Headwall Injection](#)," AIAA-2015-3788, 51st AIAA/SAE/ASEE Joint Propulsion Conference, Orlando, FL, July 27-29, 2015 **Best Paper of the Session in Solid Rocket Motor Combustion Flow Fields and Instability I. Nominated for Best Solid Rockets Paper Award by James Hornick**
 6. [Cecil](#), "[On Steady Trkalian High Speed Flows: Swirling Compressible Motion in Solid Rocket Motors](#)," 66th AIAA Southeastern Regional Student Conference, Paper Presentation Awarded **FIRST PLACE in the MASTERS Division**, Savannah, GA, April 9-10, 2015
 7. [Marquardt](#), "[On the Quadrupole Vortex Motion in a Right-Cylindrical Hybrid Rocket Engine](#)," 66th AIAA Southeastern Regional Student Conference, Paper Presentation Awarded **SECOND PLACE in the MASTERS Division**, Savannah, GA, April 9-10, 2015
 8. [Fleischmann](#) and [Majdalani](#) (advisor), "[Complex Lamellar Helical Solution for Cyclonically Driven Hybrid Rocket Engines](#)," AIAA-2015-0372, SciTech'15, 53rd AIAA Aerospace Sciences Meeting, Kissimmee, Florida, January 5-9, 2015. **Finalist in the International Masters Division Competition**
 9. [Fleischmann](#), "[Complex Lamellar Helical Solution for Cyclonically Driven Hybrid Rocket Engines](#)," 65th AIAA Southeastern Regional Student Conference, Paper Presentation Awarded **FIRST PLACE in the MASTERS Division**, Memphis, TN, April 7-8, 2014
 10. [Fist](#) and [Majdalani](#) (advisor), "[Improved Mean Flow Solution for Solid Rocket Motors](#)," AIAA-2014-0006, SciTech'14, 52nd AIAA Aerospace Sciences Meeting, National Harbor, MD, January 13-17, 2014. **Winner of the International Masters Division Competition, to all seven regions of AIAA**
 11. [Fist](#), "[Improved Mean Flow Solution for Solid Rocket Motors](#)," 64th AIAA Southeastern Regional Student Conference, Paper Presentation Awarded **FIRST PLACE in the MASTERS Division**, Raleigh, NC, April 8-9, 2013
 12. [Kavelakis](#), "[Nusselt Number Correlation for Cyclonically-Cooled Liquid Rocket Engines](#)," 64th AIAA Southeastern Regional Student Conference, Paper Presentation Awarded **SECOND PLACE in the MASTERS Division**, Raleigh, NC, April 8-9, 2013
 13. [Barber](#) and [Majdalani](#) (advisor), "[Bidirectional Helical Motion in Tapered Rocket Chambers](#)," AIAA-2013-0133, 51st AIAA Aerospace Sciences Meeting, Grapevine, TX, January 7-10, 2013. **Finalist in the International Masters Division Competition**
 14. [Akiki](#), [Batterson](#) and [Majdalani](#), "[Biglobal Stability of Compressible Flowfields. Part 2: Application to Solid Rocket Motors](#)," AIAA-2013-3866, 49th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Jose, CA, July 14-17, 2013. **Best Paper of the Session on Combustion Instability. Nominated for Best Solid Rockets Paper Award by David Greatrix and Charle Rousseau**
 15. [Barber](#), "[Bidirectional Helical Motion in Tapered Rocket Chambers](#)," 63rd AIAA Southeastern Regional Conference, Paper Presentation Awarded **FIRST PLACE in the MASTERS Division**, Cape Canaveral, FL, April 2-3, 2012
 16. [Haddad](#), "[On the Sidewall Boundary Layer of Transverse Waves in Simulated Liquid Rocket Engines](#)," 63rd AIAA Southeastern Regional Student Conference, Paper Presentation

- Awarded **SECOND PLACE in the MASTERS Division**, Cape Canaveral, FL, April 2-3, 2012. **Winner of the (national) Zarem Award.**
17. Elliott, Batterson and Majdalani, "[Biglobal Stability of Cylindrically-Shaped Hybrid and Solid Rockets with Injecting or Reactive Headwalls](#)," AIAA-2012-3810, 48th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Atlanta, GA, July 29-August 1, 2012. **Best Paper of the Session on Internal Ballistics Modeling II. Nominated for Best Hybrid Rockets Paper Award**
 18. Akiki and Majdalani (advisor), "[New Framework for Modeling the Bidirectional Vortex Engine Flowfield with Arbitrary Injection](#)," AIAA-2012-0138, 50th AIAA Aerospace Sciences Meeting, Nashville, TN, January 9-12, 2012. **Finalist in the International Masters Division Competition**
 19. Akiki, "[New Framework for Modeling the Bidirectional Vortex Engine with Arbitrary Injection](#)," 62nd AIAA Southeastern Regional Student Conference, Paper Presentation Awarded **FIRST PLACE in the MASTERS Division**, Tuscaloosa, AL, April 4-5, 2011
 20. Batterson and Majdalani, "[Biglobal Instability of the Bidirectional Vortex. Part 2: Complex Lamellar and Beltraman Motions](#)," AIAA-2011-5649, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Diego, CA, July 31-August 3, 2011. **Best Paper of the Session in Advanced Propulsion Concepts**
 21. Saad and Majdalani, "[Viscous Flows Revisited in Simulated Rockets with Radially Regressing Walls](#)," AIAA-2011-5860, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Diego, CA, July 31-August 3, 2011. **Best Paper of the Session on Solid Rocket Modeling and Simulation I. Nominated for Best Solid Rockets Paper Award by Barbara Leary**
 22. Akiki and Majdalani, "[Exact Solutions for the Integral Form of the Compressible Flowfield in a Porous Cylinder](#)," AIAA-2011-5953, 47th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, San Diego, CA, July 31-August 3, 2011. **Best Paper of the Session on Solid Rocket Modeling and Simulation II. Nominated for Best Solid Rockets Paper Award by Mark Langhenry and Douglas Coats**
 23. Zgheib, "[Asymptotic Solutions for Longitudinal Waves in Solid Rocket Motors](#)," 61st AIAA Southeastern Regional Student Conference, Paper Presentation Awarded **SECOND PLACE in the MASTERS Division**, Destin, FL, April 8-9, 2010
 24. Akiki, "[Compressible Integral Formulation of the Two-Dimensional Porous Channel Flow](#)," 61st AIAA Southeastern Regional Student Conference, Paper Presentation Awarded **THIRD PLACE in the MASTERS Division**, Destin, FL, April 8-9, 2010
- 2014–2017 **Award Winning and/or Representative Graduate Student Posters (Advisory Role)**
25. Godfrey (presenter) and Majdalani (advisor), "CFD Simulation of a Quadrupole Vortex Inside a Cylindrical Hybrid Rocket Chamber," **BEST POSTER AWARD** for the XXII International Conference on Spectral Line Shapes (ICSLS 2014), June 1-6 2014, Tullahoma, TN
 26. Watson (presenter) and Majdalani (advisor), "CFD Simulations of the Bi-Directional Vortex Liquid Rocket Engine," Overall **HONORABLE MENTION** at the Graduate Engineering Research Showcase, Oct 22, 2015, Auburn, AL
 27. Kovacic (presenter) and Majdalani (advisor), "Designing a Stable Rocket Engine," **BEST POSTER IN AEROSPACE ENGINEERING** at the Graduate Engineering Research Showcase, Oct 22, 2015, Auburn, AL
 28. Ramesh-Kumar (presenter) and Majdalani (advisor), "Towards Safer and More Stable Rocket Launches," **BEST POSTER IN AEROSPACE ENGINEERING** at the Graduate Engineering Research Showcase, Oct 20, 2016, Auburn, AL
 29. Ramesh-Kumar (presenter) and Majdalani (advisor), "Towards Safer and More Stable Rocket Launches," **REPRESENTATIVE POSTER FROM AEROSPACE ENGINEERING** for the Alabama Aerospace Week/NASA Day at the Alabama State House, March 2, 2017, Montgomery, AL
 30. Cecil, O (presenter) and Majdalani (advisor), "Development of Vortex Rocket Engines," **REPRESENTATIVE POSTER FROM AEROSPACE ENGINEERING** for the Alabama Aerospace Week/NASA Day at the Alabama State House, March 2, 2017, Montgomery, AL