

# Jeremy Oliver Marston, Ph.D.

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Department of Chemical Engineering, Texas Tech University,  
Lubbock, TX 79409

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## PROFESSIONAL EXPERIENCE

- 2014 - present: **Assistant Professor**, Department of Chemical Engineering,  
Texas Tech University, Lubbock, TX, USA
- 2009 - 2014: **Research Scientist**, Division of Physical Science and Engineering,  
King Abdullah University of Science and Technology, Saudi Arabia
- 2008 - 2009: **Research Fellow**, Crystallization and Particle Science,  
A-STAR Institute of Chemical and Engineering Sciences, Singapore

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## EDUCATION

- 2007: **Ph.D. in Chemical Engineering**, University of Birmingham, UK  
Thesis: "Hydrodynamic assist, hysteresis and non-uniqueness of instabilities in curtain coating".  
Thesis advisors: Prof. Mark Simmons, Prof. Stephen Decent
- 2004: **M.S. in Mathematical Science**, University of Birmingham, UK  
Dissertation: "Trajectory and stability of spiraling liquid jets".  
Dissertation advisor: Prof. Stephen Decent

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## SUMMARY OF PUBLICATIONS AND CITATIONS (January 2019, Web of Science)

- 52 peer-reviewed publications
- 708 total citations
- Average number of citations per paper: 13.88
- H-index : 14

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## JOURNAL PUBLICATIONS (highlighted = undergraduate student)

### IN PREPARATION

Marston, J.O. & Lacerda, C.M.R

**Characterization of injection efficiency from jet injection into mouse cadavers**

*To be submitted to J. Control. Rel., Spring 2019*

Simmons, J.A., **Davis, J., Thomas, J., Lopez, J., Le Blanc, A., Allison, H., Slook, H., Lewis, P., Holtz, J.**, Fisher, P.,  
Broderick, K. & Marston, J.O.

**Characterization of skin blebs from intradermal jet injection: Ex-vivo studies**

*To be submitted to J. Control. Rel., Spring 2019*

Rane, Y.S., **Thomas, J.**, Fisher, P., Broderick, K. & Marston, J.O.

**Dynamics of impulsively started jets in partial vacuum**

*To be submitted to Exp. Fluids, Spring 2019*

Simmons, J.A., Davis, J., Lewis, P., Meza, C., Tena, A., Rocha, M., Broderick, K. & Marston, J.O.  
**Characterization of jets from impulsively-started needle-free injectors: Influence of fluid properties**  
*To be submitted to J. Control. Rel., Spring 2019*

Simmons, J.A., Davis, J., Thomas, J., Lopez, J., Le Blanc, A., Allison, H., Slook, H., Lewis, P., Holtz, J., Fisher, P., Broderick, K. & Marston, J.O.  
**The effect of viscosity and stand-off on efficiency of intradermal jet injection**  
*To be submitted to J. Control. Rel., Spring 2019*

Rohilla, P. & Marston, J.O.  
**In-vitro studies of jet injection**  
*To be submitted to J. Control. Rel., Spring 2019*

Rane, Y.S. & Marston, J.O.  
**Numerical simulations of fluid flow in tapered micro-orifices for needle-free jet injectors**  
*To be submitted to Phys. Fluids, Spring 2019*

Li, C., Wright, C. & Marston, J.O.,  
**Evaluation of masking algorithms for experimentally-derived apparent contact angles**  
*To be submitted to Colloids & Surfaces A, 2019*

#### **SUBMITTED/ACCEPTED:**

Li, C. & Marston, J.O.  
**Jetting from water vaporization in hot oil**  
*Under Revision for J. Fluid Mech., 2018*

#### **PUBLISHED WHILST AT TEXAS TECH:**

52. Marston, J.O., Toyofuku, G., Li, C., Truscott, T.T. & Uddin, J. (2018)  
**Drainage, rebound and oscillation of a meniscus in a tube**  
*Physics of Fluids, 30, 082103.*
51. Rane, Y., Foster, E., Moradiafrapoli, M. & Marston, J.O. (2018)  
**Compressive deformation of liquid marbles**  
*Powder Technol., 338, 7-16.*
50. Li, E.-Q., Thoraval, M.-J., Marston, J.O. & Thoroddsen, S.T. (2018)  
**Early azimuthal instability during drop impact**  
*J. Fluid Mech., 848, 821-835.*
49. Marston, J.O., Moradiafrapoli, M., Li, C., Lam, T., Razu, M.E. & Kim, J (2018)  
**Footprint of droplets after impact onto paper surfaces with a hydrophobic barrier**  
*Chem. Eng. Res. & Des., 133, 103-110.*
48. Shaikh, S., Toyofuku, G., Hoang, R. & Marston, J.O. (2018)  
**Immiscible impact dynamics of droplets onto millimetric films**  
*Exp. Fluids., 59:7.*
47. Pachecho-Vazquez, F., Tacuma, A. & Marston, J.O. (2017)  
**Craters produced by explosions in a granular medium**  
*Phys. Rev. E., 96, 032904.*
46. Mansoor, M.M., Marston, J.O., Vakarelski, I.U., Truscott, T.T. & Thoroddsen, S.T. (2017)  
**Stable-streamlined and helical cavities following the impact of Leidenfrost spheres**  
*J. Fluid Mech., 823, 716-754*
45. Zepper, E., Pantoya, M., Bhattacharya, S., Marston, J.O., Neuber, A., Heaps, R.J. (2017)  
**Peering through the flames: Imaging techniques of reacting aluminum powders**  
*Appl. Opt., 56, 2535-2541.*

44. Li, C., Simmons, J.A., Moradiafrapoli, M. & Marston, J.O. (2017)  
**Direct visualization of particle attachment to a pendant drop**  
*Soft Matter*, 13, 1444-1454.
43. Supakar, T., Kumar, A. & Marston, J.O. (2017)  
**Impact dynamics of particle-coated droplets**  
*Phys. Rev. E*, 95, 013106.
42. Moradiafrapoli, M. & Marston, J.O. (2017)  
**High-speed video investigation of jet dynamics from narrow orifices for needle-free injection**  
*Chem. Eng. Res. & Des.*, 117, 110-121.
41. Kouraytem, N., Thoroddsen, S.T. & Marston, J.O. (2016)  
**Penetration in bi-modal, polydisperse granular media**  
*Phys. Rev. E*, 94, 052902.
40. Mansoor, M.M., Marston, J.O., Uddin, J., Christopher, G., Zhang, Z. & Thoroddsen, S.T. (2016)  
**Cavitation structures formed during the collision of a sphere with an ultra-viscous wetted surface**  
*J. Fluid Mech.*, 796, 473-515.
39. Marston, J.O., Mansoor, M.M., Thoroddsen, S.T. & Truscott, T.T. (2016)  
**The effect of ambient pressure on ejecta sheets from free-surface ablation**  
*Exp. Fluids*, 57, 61.
38. Marston, J.O., Truscott, T.T., Spiers, N., Mansoor, M.M. & Thoroddsen, S.T. (2016)  
**Crown sealing and buckling instability during water entry of spheres**  
*J. Fluid Mech.*, 794, 506-529.
37. Supakar, T., Moradiafrapoli, M., Christopher, G. & Marston, J.O. (2016)  
**Spreading, encapsulation and transition to arrested shapes during drop impact onto hydrophobic powders**  
*J. Colloid & Interface Sci.*, 468, 10-20.
36. Henry, D., Uddin, J., Marston, J.O. & Thoroddsen, S.T. (2016)  
**Stability of an unsupported multi-layer surfactant laden liquid curtain under gravity**  
*J. Eng. Math.*, 99, 119-136.
35. Bucs, S.S., Valladares-Linares, R., Marston, J.O., Radu, A.I., Vrouwenvelder, J.S. & Piciooreanu, C. (2015)  
**Experimental and numerical characterization of the water flow in spacer-filled channels of spiral-wound membranes**  
*Water Research*, 87, 299-310.
34. Marston, J.O., Mansoor, M.M., Truscott, T.T. & Thoroddsen, S.T. (2015)  
**Buckling instability of crown sealing**  
*Phys. Fluids*, 27(9), 091112 (*Gallery of Fluid Motion Issue*).
33. J.O. Marston & S.T. Thoroddsen. (2015)  
**Laser-induced micro-jetting from armored droplets**  
*Exp. Fluids*, 56, 140.
32. J.O. Marston & S.T. Thoroddsen. (2015)  
**Investigation of granular impact using positron emission particle tracking**  
*Powder Technology*, 274, 284-288.
31. Henry, D., Uddin, J., Marston, J.O., Thoroddsen, S.T., Thompson, J.T. & Blyth, M.G. (2014)  
**Multi-layer film flow down an incline plane: An experimental investigation**  
*Exp. Fluids.*, 55, 1859.

**PUBLISHED BEFORE TEXAS TECH:**

30. Marston, J.O., Thoroddsen, S.T., Thompson, J., Blyth, M., Henry, D. & Uddin, J. (2014)  
**Experimental investigation of hysteresis in the break-up of liquid curtains**  
*Chem. Eng. Sci.*, 117, 248-263.

29. Marston, J.O. & Thoroddsen, S.T. (2014)  
**Ejecta evolution during cone impact**  
*J. Fluid Mech.*, 752, 410-438.
28. Marston, J.O., Riker, P.W. & Thoroddsen, S.T. (2014)  
**Generation of ultrasound during tape peeling**  
*Sci. Reports*, 4, 4326.
27. Mansoor, M.M., Marston, J.O., Vakarelski, I.U. & Thoroddsen, S.T. (2014)  
**Water entry without surface seal: extended cavity formation**  
*J. Fluid Mech.*, 743, 295-326.
26. Mansoor, M.M., Uddin, J., Marston, J.O. & Thoroddsen, S.T. (2014)  
**The onset of cavitation during the collision of a sphere with a wetted surface**  
*Exp. Fluids*, 55, 1648.
25. Marston, J.O., Zhu, Y., Vakarelski, I.U. & Thoroddsen, S.T. (2013)  
**Freezing drops with powders**  
*Phys. Fluids*, 25, 091107.
24. Vakarelski, I.U., Chan, D.Y.C., Marston, J.O. & Thoroddsen, S.T. (2013)  
**Dynamic air layer on textured superhydrophobic surfaces**  
*Langmuir*, 29, 11074-11081.
23. Vakarelski, I.U., Marston, J.O. & Thoroddsen, S.T. (2013)  
**Foam-film-stabilized liquid bridge networks in evaporative lithography and wet granular matter**  
*Langmuir*, 29, 4966-4973.
22. Marston, J.O., Mansoor, M.M. & Thoroddsen, S.T. (2013)  
**Impact of granular drops**  
*Phys. Rev. E*, 88, 010201.
21. Lee, S., Li, E-Q., Marston, J.O., Bonito, A. & Thoroddsen, S.T. (2013)  
**Leaping shampoo glides on a lubricating air layer**  
*Phys. Rev. E*, 87, 061001.
20. Marston, J.O., Sprittles, J.E., Zhu, Y., Li, E.Q., Vakarelski, I.U. & Thoroddsen, S.T. (2013)  
**Drop spreading and penetration into pre-wetted powders**  
*Powder Tech.* 239, 128-136.
19. Vakarelski, I.U., Teramoto, N., McNamee, C.E., Marston, J.O. & Higashitani, K. (2013)  
**Ionic enhancement of silica surface nanowear in electrolyte solutions**  
*Langmuir* 28(46), 16072-16079.
18. Marston, J.O., Vakarelski, I.U. & Thoroddsen, S.T. (2012)  
**Sphere impact and penetration into wet sand**  
*Phys. Rev. E*, 86, 020301(R).
17. Vakarelski, I.U., Patankar, N.A., Marston, J.O., Chan, D.Y.C. & Thoroddsen, S.T. (2012)  
**Stabilization of Leidenfrost Vapour Layer by Textured Superhydrophobic surfaces**  
*Nature* 489, 274-277.
16. Uddin, J., Marston, J.O. & Thoroddsen, S.T. (2012)  
**Squeeze flow of a Carreau fluid induced by sphere impact**  
*Phys. Fluids* 24, 073104.
15. Marston, J.O., Zhu, Y., Vakarelski, I.U. & Thoroddsen, S.T. (2012)  
**Deformed liquid marbles: Freezing drop oscillations with powders**  
*Powder Tech.* 228, 424-428.

14. Marston, J.O., Li, E.Q. & Thoroddsen, S.T. (2012)  
**Evolution of fluid-like granular ejectas generated by sphere impact**  
*J. Fluid Mech.* 704, 5-36.
13. Marston, J.O., Vakarelski, I.U. & Thoroddsen, S.T. (2012)  
**Cavity formation by the impact of Leidenfrost spheres**  
*J. Fluid Mech.* 699, 465-488.
12. Marston, J.O., Vakarelski, I.U. & Thoroddsen, S.T. (2011)  
**Bubble entrapment during sphere impact onto quiescent liquid surfaces**  
*J. Fluid Mech.* 680, 660-670.
11. Vakarelski, I.U., Marston, J.O., Chan, D.Y.C. & Thoroddsen, S.T. (2011)  
**Drag reduction by Leidenfrost vapour layers**  
*Phys. Rev. Lett.* 106, 214501.
10. Marston, J.O., Yong, W., Ng, W.K., Tan, R.B.H. & Thoroddsen, S.T. (2011)  
**Cavitation Patterns formed during the rebound of a sphere from a wetted surface**  
*Exp. Fluids* 50(3), 729-746.
9. Marston, J.O., Thoroddsen, S.T., Ng, W.K. & Tan, R.B.H. (2010)  
**Experimental study of liquid drop impact onto a powder surface**  
*Powder Tech.* 203(2), 223-236.
8. Marston, J.O., Yong, W. & Thoroddsen, S.T. (2010)  
**Direct verification of the lubrication force on a sphere travelling through a viscous film upon approach to a solid wall**  
*J. Fluid Mech.* 655, 515-526.
7. Marston, J.O., Hawkins, V., Simmons, M.J.H. & Decent, S.P. (2009)  
**Influence of surfactant upon air entrainment hysteresis in curtain coating**  
*Exp. Fluids* 46(3), 549-558.
6. Marston, J.O. & Thoroddsen, S.T. (2008)  
**Apex Jets from impacting drops**  
*J. Fluid Mech.* 614, 293-302.
5. Marston, J.O., Simmons, M.J.H., Seville, J.P.K., Cheun, Y-V., Ingram, A. & Decent, S.P. (2008)  
**Granular jetting from solid sphere entry into aerated and fluidised beds**  
*Phys. Fluids.* 20, 023301.
4. Marston, J.O., Decent, S.P. & Simmons, M.J.H. (2008)  
**Experimental evidence of non-unique solutions to a steady non-linear coating flow**  
*IMA J. Appl Math.* 73, 698-702.
3. Marston, J.O., Simmons, M.J.H. & Decent, S.P. (2007)  
**Influence of viscosity and impingement speed on intense hydrodynamic assist in curtain coating**  
*Exp. Fluids* 42(3), 483 - 488.
2. Marston, J.O., Decent, S.P. & Simmons, M.J.H. (2006)  
**Hysteresis and non-uniqueness in the speed of the onset of instability in curtain coating**  
*J. Fluid Mech.* 569, 349 - 363.
1. Marston, J.O., Simmons, M.J.H., Decent, S.P. & Kirk, S.P. (2006)  
**Influence of the flow field in curtain coating onto pre-wet substrates**  
*Phys. Fluids* 18, 112102.

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## INVITED TALKS

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- **“Fluid Mechanics meets Big Pharma”**, Utah State University, June 2016
- **“Experiments on drop impact onto hydrophobic powder: freezing drop oscillations”**, Workshop on the Micromechanics of Wetting & Coalescence, Oxford, UK, Dec 2012.
- **“Drop impact onto powder surfaces”**, KAUST Days in OCCAM, Oxford, UK, June 2012.

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## CONFERENCE PRESENTATIONS

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### (Presenter indicated by \*)

- Rohilla, P\*, Marston, J.O., “In-vitro studies of jet injection dynamics”, APS DFD 2018.
- Rane, Y.S. \*, Marston, J.O., “Investigation of fluid properties and ambient pressure on jet performance for needle-free injections”, APS DFD 2018.
- Marston, J.O. \*, Simmons, J.A., Rane, Y.S., Rohilla, P., “Ex-vivo studies of intradermal jet injection”, APS DFD 2018.
- Marston, J.O.\* , Li, C., Mansoor, M. & Truscott, T., “Out of the frying pan: Explosive droplet dynamics”, APS DFD 2017, Denver.
- Simmons, J.A., Marston, J.O., Broderick, K & Fisher, P., “Hydrodynamics of needle-free intradermal injections”, APS DFD 2017, Denver.
- Marston, J.O.\* , Supakar, T. & Kumar, A., “impact dynamics of liquid marbles”, APS DFD 2016, Portland.
- Marston, J.O.\* & Moradiafrapoli, M., “Irreversible deformation of particle-coated droplets”, APS DFD 2016, Portland.
- Li, C.\* & Marston, J.O., “Snap-in dynamics at curved liquid surfaces”, APS DFD 2016, Portland.
- Marston, J.O.\* & Moradiafrapoli, M., “Irreversible deformation of particle-coated droplets”, AIChE 2016, San Francisco.
- Marston, J.O. & Moradiafrapoli, M.\* , “Hydrodynamics of jets in needle-free injections”, APS DFD 2015, Boston.
- Marston, J.O.\* , Truscott, T.T. & Mansoor, M.M., “Out of the frying pan: Explosive aerosol formation”, AIChE 2015, Salt Lake City.
- Marston, J.O.\* , Truscott, T.T., Mansoor, M.M. & Thoroddsen, S.T., “Crown sealing and buckling instability during sphere impact”, APS DFD 2014, San Francisco.
- Marston, J.O.\* & Thoroddsen, S.T., “Ejecta evolution during cone impact”, APS DFD 2013, Pittsburgh.
- Marston, J.O.\* , Vakarelski, I.U., Zhu, Y. & Thoroddsen, S.T., “Freezing drop oscillations with powder”, APS DFD 2012, San Diego.
- Marston, J.O.\* , Vakarelski, I.U. & Thoroddsen, S.T., “Splashing and sinking of hot balls: Inverted Leidenfrost effect”, EUROMECH 2012, Rome.
- Marston, J.O.\* , Vakarelski, I.U. & Thoroddsen, S.T., “Hot balls splash and sink fast”, APS DFD 2011, Baltimore.
- Marston, J.O.\* , LI, E-Q. & Thoroddsen, S.T., “Evolution of fluidlike granular ejectas”, APS DFD 2010, Long Beach.
- Marston, J.O.\* , NG, W-K., Tan, R.B.H. & Thoroddsen, S.T., “Apex jets from impacting drops” APS DFD 2008, San Antonio.
- Marston, J.O.\* , Simmons, M.J.H. & Decent, S.P., “Hysteresis in curtain coating”, ISCST 2006, Denver.

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## GRANTS FUNDED

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### **At Texas Tech:**

- Fluid dynamics of needle-free intradermal injection. NSF-CAREER, (March 2018 – Feb 2023). Total budget: \$503,000.
- Jet hydrodynamics for needle-free injection, \$235,794, Inovio Pharmaceuticals (Sep 2016 – Aug 2018).

- High-speed video imaging of jet dynamics for needle-free injection devices, **\$2,350**, BioJect (June 2015-Sept 2015).

**Before Texas Tech:**

- High-speed visualization of waterless cleaning for solar panels, **\$250,000**, KAUST Seed grant, Saudi Arabia
- Acquisition of Multi-layer pilot-scale coating platform, **\$125,000**, KAUST Capital Acquisition Program, Saudi Arabia.
- Collision dynamics in wet particulate systems, **\$370,000**, Science and Engineering Research Council (SERC), Singapore.
- 2016. Total budget: **\$123,000**, Rejected.

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**STUDENT & POSTDOC MENTORING**

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- **Ph.D. students (Total = 4):**
  1. Pankaj Rohilla, TTU, 2017-present, project topic: Evaluation of injection site counter-pressure
  2. Yatish Rane, TTU, 2016-present, project topic: Experimental and numerical studies of needle-free injection hydrodynamics.
  3. Mohammad Mansoor, KAUST, 2012-2016, "Cavity dynamics during water entry"
  4. Nadia Kouraytem, KAUST, 2012-2016, "Penetration dynamics in composite granular media"
- **MS students (Total = 8):**
  1. Chao Li, TTU, 2015-2017, project topic: Explosive aerosol formation
  2. Tinku Supakar, TTU, 2014-2016, Thesis title: "Experimental study of liquid marble formation and deformation dynamics"
  3. Sadaf Shaikh, TTU, 2014-2016, non-thesis
  4. Momeneh Moradiafrapoli, TTU, 2015-2017, Thesis title: "Irreversible deformation of liquid marbles"
  5. Abhishek Kumar, TTU, 2015-2017, non-thesis
  6. Mohammed Al-Amari, KAUST, 2012-2014, non-thesis
  7. Ali Al-Gabbani, KAUST, 2012-2014, thesis title: "Micro-drop impact on hydrophobic powders"
  8. Kareem Khalil, KAUST, 2012-2014, thesis title: "Drop impact on powder surfaces"
  9. Ying Zhu, KAUST, 2011-2013, thesis title: "Freezing drops with powders"
- **Undergraduate students (Total = 26):**
  1. Erica Ripley, TTU, spring 2015
  2. Megan Ross, TTU, spring 2015
  3. Ravisha Jayamaha, TTU, spring 2015
  4. Darien Jones, TTU, spring 2015
  5. George Fouad, TTU, summer 2015
  6. Laura Luberski, TTU, summer 2015
  7. Paul Rogers, TTU, fall 2015
  8. Aaron Carver, TTU, fall 2015
  9. Garrett Toyofuku, TTU, spring 2016
  10. Aaron Lambert, TTU, fall 2016
  11. Mohammed Al-Wazir, TTU, fall 2016
  12. Emma Foster, TTU, fall 2016
  13. Clarissa Meza, TTU, spring 2017
  14. Micaela Rocha, TTU, spring 2017
  15. Alejandra Tena, TTU, spring 2017
  16. Caleb Wright, TTU, spring 2017
  17. Ryan Hoang, TTU, spring 2017
  18. Justin Davis, TTU, summer/fall 2017
  19. Paul Lewis, TTU, summer 2017
  20. Joshua Bryant, TTU, summer 2017
  21. Haley Allison, TTU, fall 2017

22. Joshua Holtz, TTU, fall 2017
23. James Thomas, TTU, spring/summer 2018
24. Haley Slook, TTU, spring/fall 2018
25. Andrew Le Blanc, TTU, summer 2018
26. Juan Lopez, TTU, summer 2018

- **Postdoctoral Researchers (Total = 1):**

1. Jonathan Simmons, TTU, 2016-present, “Needle-free injection hydrodynamics”, sponsored by Inovio Pharmaceuticals.

- **Graduate thesis committees (not as principal advisor; advisor’s name in parentheses):**

1. Zhenhuan Zhang, TTU (Gordon Christopher), Ph.D. defense, Fall 2015
2. Ethan Zepper, TTU (Michelle Pantoya), MS thesis defence, Spring 2016
3. Fardin Khabaz, TTU (Rajesh Khare), Ph.D. defense, Summer 2016
4. Christian Shi, TTU (Gordon Christopher), Ph.D. defense, Fall 2016
5. Farzaneh Noghani, TTU (Siva Vanapalli), MS comp. exam, Fall 2016
6. Nadia Sultania, TTU (Brandon Weeks), Ph.D. defense, Summer 2017
7. Syed Rahman, TTU (Gordon Christopher), Ph.D. Qualifier, Summer 2017
8. Mehdi Nekhoui, TTU (Siva Vanapalli), Ph.D defense, Spring 2018
9. Rafikul Islam, TTU (Rajesh Khare), Ph.D Qualifier, Spring 2018
10. Pouria Nourian, TTU (Rajesh Khare), Ph. D Qualifier, Spring 2018
11. Geetanjali Pendayala, TTU (Gregory Fernandes), MS thesis defense, Spring 2018
12. Naureen Suteria, TTU (Siva Vanapalli), Ph.D defense, Fall 2018
13. Songjing Yan, TTU (Danny Reible), Ph.D defense, Summer 2018
14. Pedro Gonzalez, TTU (Harvinder Gill), Ph.D Qualifier, Fall 2018
15. Yerbol Dauletov, TTU (Nurxat Nuraje), Ph.D. Qualifier, Spring 2019

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**TEACHING EXPERIENCE**

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- **Courses taught:**

1. Fluid Mechanics for Chemical Engineering [ChE 3315] (Core, Undergraduate)
2. Experimental Techniques in Fluid Dynamics [ChE 4315] (Elective, Undergraduate & Graduate)
3. Advanced Mathematical Techniques for Chemical Engineers [ChE 5310] (Core, Graduate)
4. Engineering Experimentation [ChE 4372] (Elective, Undergraduate & Graduate)

- **Student teaching evaluations:**

Course (class size)	Semester	Evaluation averages
<b>ChE 3315 (80-112)</b>	Fall 2014	4.8, 4.8, 4.8
	Spring 2015	4.7, 4.5, 4.6
	Spring 2016	4.7, 4.8, 4.8
	Spring 2017	4.9, 4.8, 4.9
<b>ChE 4315/5315 (17)</b>	Fall 2015	4.4, 4.2, 4.1
<b>ChE 5310 (9-26)</b>	Fall 2016	4.8, 4.8, 4.6
	Fall 2017	5, 4.9, 4.8
	Fall 2018	4.9, 4.7, 4.9
<b>ChE 4372/5372 (40)</b>	Spring 2018	4.7, 4.7, 4.5

Scores are mean values (from all sections) for responses to questions 1 (course objectives), 2 (instructor effectiveness) and 3 (overall value), respectively.



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#### PROFESSIONAL SERVICE

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- **Reviewer for various engineering and physics journals:** Journal of Fluid Mechanics, Physics of Fluids, Physical Review E, Experiments in Fluids, Powder Technology, Chemical Engineering Science, Chemical Engineering Research & Design, Journal of Colloid and Interface Science, Colloids and Surfaces A, International Journal of Heat and Mass Transfer, International Journal of Multiphase Flow, Nature Materials, Journal of Visualization
- **Session chair at APS DFD 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018**

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#### INTERNAL SERVICE

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- AICHE Car team advisor (2015-present): advised student teams on issues such as design, safety, fundraising and organizational skills. The team won regionals in spring 2016, competed in nationals in fall 2016, won regionals again spring 2018.
- Grade appeals committee (2017-present): served on committee reviewing grade appeals for the college of engineering.
- Summer camp for Lubbock home-school network (2016-present): Co-organized and ran a two-week introductory engineering workshop for home-school students from ages 14-18.

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#### HONORS GARNERED BY STUDENTS

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- Caleb Wright: third place in research competition at the regional AICHE student conference.
- AICHE Car Team: Won regional competitions in 2016 & 2018.

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#### AWARDS

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- 2017 Lockheed-Martin Teaching Award for excellence in undergraduate and graduate teaching.
- 2018 College of Engineering research growth award
- 2018 NSF CAREER award.