

## Curriculum Vitae

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## Education

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**Ph.D., Massachusetts Institute of Technology**

***Mechanical Engineering and Ocean Engineering, 2009.***

Dissertation: *Cavity dynamics of water entry for spheres and ballistic projectiles.*

Advisor: Prof. Alexandra H. Techet

**B.S., University of Utah, *Mechanical Engineering, 2003.***

## Research Interests

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Experimental fluid flow phenomena

Advanced imaging techniques

Water entry

Collective behavior of animals

## Professional Experience

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**Assistant Professor, Utah State University, Logan, UT** Jan. 2015–Present

**Assistant Professor, Brigham Young University, Provo, UT** Jul. 2010–Dec. 2014

**Research Engineer, Naval Undersea Warfare Center, Newport, RI** June 2009–July 2010

**Research Assistant, MIT, Cambridge, MA** August 2003–June 2009

**Research Assistant, Naval Undersea Warfare Center, Newport, RI** Summers 2005-2008

**Research Supervisor, MIT, Cambridge, MA** 2004 - 2009

**Undergraduate Research Assistant, University of Utah, Salt Lake City, UT** 2003

## 0.1 External Research Grants and Contracts

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This section lists internal and external grants that I have received to support my research. As an assistant professor I have managed 7 major externally funded grants and 2 internal grants totaling \$1,464,592.

Sponsors: NSF, ONR, NUWC, USU, BYU, US synthetic.

Summary of Research Funding:

<b>Funding Category</b>	<b>Total</b>
External USU	\$1,322,290
Internal USU	\$80,000
External BYU	\$738,796
Internal BYU	\$60,000
External (Prior to July 2010 Asst. Prof. appointment)	\$920,000
<b>Total Funded Research</b>	<b>\$2,483,796</b>

### Current Grants

**Office of Naval Research (ONR) University Laboratory Initiative (ULI)**, 07/2018, \$225,000, “Dynamics and Acoustics of Water Entry.” Truscott, T.T. (PI).

Abstract: The proposed research aims to fill in the three identified knowledge gaps through basic experimental studies and complementary physical modeling of sphere and slender body water entry. Additionally, canonical features of water entry - such as the type of cavity formation - will be examined through experimentation at larger scales and speeds than have been previously studied.

**USDA AFRI**, \$454,404, 10/2017 “Understanding bubble dynamics in sonicated edible lipids to improve their physiochemical properties.” Martini, S., Birkin, P., Akoh, C., Truscott, T. & Legako, J. (Co-PI).

Abstract: The goal of this proposal was to use a multidisciplinary approach that combines physics, engineering, and food science to improve our understanding of the physical and chemical phenomena associated with sonication of edible lipids. This knowledge will simplify the optimization of the processing conditions needed to tailor the functional properties of lipids to improve product quality.

**NASA MSFC**, \$120,973, 05/2017 “Heterogeneous Strain Measurement during Hot-Fire Testing of Carbon-Carbon Rocket Nozzles.” Berke, R., Truscott, T. & Whitmore, S. A. (Co-PI).

Abstract: This proposal was aimed at developing and implementing new high temperature testing capabilities to detect heterogeneous deformations and strains during hot-fire engine testing. My portion was mainly focused on imaging materials that emit light and alter the patterns used in DIC measurements because they are heated to such high temperatures.

**USU RGS Equipment Grant**, \$40,000, 02/2017 “Recirculating Subsonic Wind Tunnel.” Graham, J., Truscott, T. & Spall, R. E. (Co-PI).

Abstract: This proposal is was aimed at leveraging funds from the MAE department and College of Engineering to purchase a 100 mph wind tunnel that is used in the MAE 4400 Thermal/Fluids Laboratory and other fluids related courses.

**Office of Naval Research (ONR) Young Investigator Award (YIP)**, 06/2015 \$499,363 , “Natural swarms and crowds: observation and modeling.” Truscott, T.T. (PI).

Abstract: Addresses the question of how individual-group coupling gives rise to the often times mystifying collective behavior of animal groups.

**Office of Naval Research (ONR) University Laboratory Initiative (ULI)**, 08/2015, \$225,000, “Water Surface Skipping of Elastic Bodies.” Truscott, T.T. (PI).

Abstract: Investigates the physics of elastic bodies skipping on the water surface.

**USU Office of Research and Graduate Studies Research Assistantship (RGS)**, 09/2015, \$40,000, “Slender body water entry: augmenting the dynamics and acoustics through geometric, material, and surface properties” Truscott, T.T. (PI), N. Speirs (Student)

Abstract: We aim to uncover the mechanisms by which forces and acoustics are augmented and also to assess how the phenomena scale with object size and impact speed.

## Completed Grants

**Office of Naval Research (ONR) University Laboratory Initiative (ULI)**, \$225,000 , 10/2013 to 10/2016, “Water Surface Skipping of Elastic Bodies.” Truscott, T.T. (PI).

Abstract: Investigate the physics of elastic bodies skipping on the water surface.

**National Science Foundation (NSF)**, \$410,000, 09/2011 to 08/2014, CMMI-1126862 “MRI: Development of a Multi-Camera Synthetic Aperture Technique for Measuring High-Speed, Unsteady, Three-Dimensional Velocity Flow Fields.” Truscott, T.T. (PI), Maynes, D.R. (Co-PI), Solen, K. (Co-PI) & Thomson, S.L. (Co-PI).

Abstract: This Major Research Instrumentation (MRI) grant provides funding to develop a multi-camera synthetic aperture technique for measuring high-speed, unsteady, 3-D velocity flow fields.

**US Synthetic**, \$15,000 , 10/2013 to 10/2014, “Utah Underwater Robotics Outreach Program.” Truscott, T.T. (PI).

Abstract: Outreach program dedicated to underwater robotics for Utah middle schools (450 participants across 15 schools in 2013).

**Office of Naval Research (ONR)**, \$91,296, 01/2012 to 01/2014, N00014-12-1-0267 “Peer-instructive instrumentation development for Seaperch: undergraduates teaching K-12 through hands-on experience.” Truscott, T.T. (PI).

Abstract: In this proposal each of the 60 students in the course begin by building a Seaperch with a local middle school or high school group. The undergraduates then develop a written proposal for an instrument that they want to develop for the platform.

**BYU Mentoring Environment Grant**, \$20,000, 01/2011 to 08/2013, BYU ORCA “Three-dimensional synthetic aperture particle image velocimetry.” Truscott, T.T. (PI).

Abstract: This proposal is aimed at mentoring students while developing a new technology for instantaneous 3D flow measurements in a fluid volume using light field imaging and synthetic aperture refocusing.

**Office of Naval Research (ONR) University Laboratory Initiative (ULI)**, \$37,500, 09/2011 to 09/2012, N000141110872 “Forces and cavity shapes changes on water entry and exit of projectiles due to wetting angle and surface roughness.” Truscott, T.T. (PI).

Abstract: The study focuses on how the cavities are formed and whether or not they can be used to alter the trajectories of streamlined bodies.

## Other Funded Projects

**Recipient of 3 Student ORCA Grants**, Office of Research and Creative Activities, Brigham Young University (BYU) funded. \$7,200, BYU, 2011.

**CIP Scientific Equipment Purchases recipient, PI**, NUWC funded. \$320,000, NUWC, Newport, RI, 2009.

**In-house Laboratory Independent Research Program (ILIR) recipient, PI**, ONR/NUWC funded. \$200,000, NUWC, Newport, RI, 2009 to 2011.

**University Laboratory Initiative (ULI), PI**, for Synthetic Aperture 3DPIV, ONR funded. \$180,000, NUWC, Newport, RI, 2009 to 2012.

**New Professional Bid and Proposal funding recipient, PI**, ONR/NUWC funded. \$40,000, NUWC, Newport, RI, 2009.

**University Laboratory Initiative for water entry study**, Student funding recipient. Tuition and stipend \$180,000, MIT, Cambridge, MA, 2006 to 2009.

## 0.2 Research and Creative Activities

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Summary of Publications and links/pdfs of each article can also be found at <https://splashlab.org/research-2/publications/>

Peer-reviewed journal publications	31
Peer-reviewed short papers and invited papers appearing in journals	11
Peer-reviewed conferences	18
Peer-reviewed posters and videos	38
Conference presentations (abstract only)	49

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\* Indicates a student I advised. Additionally, in my field most of the time the final author is the Principal Investigator.

## 0.2.1 Peer-Reviewed Journal Articles

1. Speirs, N.B., Pan, Z., Belden, J. & Truscott, T.T., “The water entry of multi-droplet streams and jets” *Journal of Fluid Mechanics*, **In Press**
2. Pan, Z., Weyer, F., Pitt, W.G., Vandewalle, N. & Truscott T.T., “Drop on a bent fibre” *Soft Matter*, **Advance Article**, DOI:10.1039/C7SM01729D, March 2018
3. Hurd, R.\*, Belden, J., Jandron, M., Fanning, T.D.\*, Bower, A. & Truscott, T.T., “Water entry of deformable spheres” *Journal of Fluid Mechanics*, **824**, DOI: 10.1017/jfm.2017.365, August 2017.
4. Pan, Z., Kiyama, A., Tagawa, Y., Daily, D.J., Thomson, S.L., Hurd, R.\* & Truscott, T.T., “Cavitation onset caused by acceleration” *Proceedings of the National Academy of Sciences*, **114**, (32), DOI: 10.1073/pnas.1702502114, July 2017.
5. M.M. Mansoor, Vakarelski, I.U., Marston, J.O., Truscott, T.T. & Thoroddsen, S.T., “Stable-streamlined and helical cavities following the impact of Leidenfrost spheres” *Journal of Fluid Mechanics*, **823**, DOI: 10.1017/jfm.2017.337, July 2017.
6. Truscott, T.T., Belden, J., Ni, R., Pendlebury, J.\*, & McEwen, B.\*, “Three-dimensional microscopic light field particle image velocimetry” *Experiments in Fluids*, **58** (16), DOI: 10.1007/s00348-016-2297-3, Feb 2017.
7. Birkin, P. R., Foley, T. M., Truscott, T., Merritt, A.\*, Martini, S., “Cavitation clusters in lipid systems-surface effects, local heating and streamer formation,” *Physical Chemistry Chemical Physics*, **19**, 6785, DOI: 10.1039/c6cp08149e, Feb 2017
8. Truscott, T.T., Epps B.P., & Munns R.H., “Water exit dynamics of buoyant spheres” *Phys. Rev. Fluids*, **1**, 074501, DOI: 10.1103/PhysRevFluids.1.074501, November 2016.
9. Pan, Z.\* Whitehead, J., Thomson, S.T., & Truscott, T.T., “Error propagation dynamics of PIV-based pressure field calculations: How well does the pressure Poisson solver perform inherently?” *Measurement Science and Technology*, **28**, 8, DOI: 10.1088/0957-0233/27/8/084012, July 2016.
10. Pan, Z.\*, Pitt, W.P., Zhang, Y., Wu, N., Tao, Y., & Truscott, T.T., “The upside-down water collection system of *Syntricia Caninervis*” *Nature Plants*, **2:16076**, DOI: 10.1038/nplants.2016.76, June 2016.
11. Belden, J., Hurd, R.C.\*, Jandron, M.A.\*, Bower, A.F., & Truscott, T.T., “Elastic spheres can walk on water” *Nature Communications*, **7:10551**, DOI: 10.1038/ncomms10551, Feb 2016.
12. Marston, J.O., M.M. Mansoor, Truscott, T.T. & Thoroddsen, S.T., “Crown sealing and buckling instability during water entry of spheres” *Journal of Fluid Mechanics*, **794**, DOI: 10.1017/jfm.2016.165, May 2016.
13. Marston, J.O., M.M. Mansoor, Thoroddsen, S.T. & Truscott, T.T., “The effect of ambient pressure on ejecta sheets from free-surface ablation” *Experiments in Fluids*, **57** (5), DOI: 10.1007/s00348-016-2141-9, May 2016.
14. Leete K.\*, Gee K., Neilsen T., & Truscott, T.T., “Mach stem formation in outdoor measurements of acoustic shocks” *Journal of the Acoustical Society of America - Express Letters*, **138**, EL522, DOI:10.1121/1.4937745, Dec 2015.
15. Langley, K\*, Maynes, D. & Truscott, T.T., “Eggs and Milk: Spinning Spheres Partially Immersed in a Liquid Bath” *Physics of Fluids*, **27**, 032102, DOI:10.1063/1.4913574, March 2015.
16. Hurd, R.C.\*, Hacking, K.S.\*, Damarjian, J.L., Wright, G.A., Truscott, T.T., “Underwater robots surface in Utah” *Technology Engineering Teacher*, **74**, n5, p8-16, February 2015.

17. Langley, K.R.\*, Hardester, E.\*, Thomson, S.L. & Truscott, T.T., “Three-dimensional flow measurements on flapping wings using synthetic aperture PIV”, *Experiments in Fluids*, **55**, 1831, DOI:10.1007/s00348-014-1831-4, October 2014.
18. Bodily, K.G.\*, Carlson, S.J.\*, & Truscott, T.T., “The Water Entry of Slender Axisymmetric Bodies.” *Physics of Fluids*, **26** DOI: 10.1063/1.4890832, July 2014.
19. Truscott, T.T., Epps, B.P. & Belden, J., “Water entry of projectiles.” *Annual Review of Fluid Mechanics*, **46**, DOI: 10.1146/annurev-fluid-011212-140753, January 2014.
20. Mazzeo, B.A., Patil, A.N.\*, Hurd, R.C.\*, Klis, J.M., Truscott, T.T. & Guthrie, W.S., “Air-Coupled Impact-Echo Delamination Detection in Concrete Using Spheres of Ice for Excitation.” *Journal of Nondestructive Evaluation (JONE)*, **33**, 3, 317-326, DOI:10.1007/s10921-013-0215-7, December 2013.
21. Wright, M.M.\*, Dropkin, A.\*, Truscott, T.T., “Cavitation of a Submerged Jet.” *Experiments in Fluids*, May 2013, **54**, 1541, DOI: 10.1007/s00348-013-1541-3, May 2013.
22. Belden, J., Jandron, M.\* & Truscott, T.T., “Physics of elastic spheres skipping on water.” *Sports Physics*, edited by Christophe Clanet, May 2013.
23. Truscott, T.T., Belden, J., Nielson, J.R.\*, Daily, D.D. & Thomson, S.L., “Determining 3D Flow Fields Via Multi-camera Light Field Imaging.” *Journal of Visualized Experiments*, **73**, DOI: 10.3791/43252013, March 2013.
24. Killian, T.\*, Klaus, R.\* & Truscott, T.T., “Rebound and jet formation of a fluid-filled sphere.” *Physics of Fluids*, **24**, 122106; DOI:10.1063/1.4771985, December 2012.
25. Belden, J., Ravela, S., Truscott, T.T. & Techet, A.H., “Three-dimensional bubble field resolution using synthetic aperture imaging: application to a plunging jet.” *Experiments in Fluids*, **53**, June 2012.
26. Truscott, T.T., Epps, B.P. & Techet, A.H. “Unsteady forces on spheres during free-surface water entry.” *Journal of Fluid Mechanics*, **704**, pp. 173-210, July 2012.
27. Techet, A.H. & Truscott, T.T., “Water entry of spinning hydrophobic and hydrophilic spheres.” *Journal of Fluids and Structures*, 0889-9746, DOI: 10.1016/j.jfluidstructs.2011.03.014, March 2011.
28. Belden, J., Truscott, T.T., Axiak, M. & Techet, A. H., “Three-dimensional synthetic aperture particle imaging velocimetry.” *Measurement Science and Technology*, **21**, 125403, December 2010.
29. Aristoff, J.M., Truscott, T.T., Techet, A.H. & Bush, J.W.M., “The water entry of decelerating spheres.” *Physics of Fluids*, **22**, 032102 March 2010.
30. Truscott, T.T. & Techet, A. H., “A spin on cavity formation during water entry of hydrophobic and hydrophilic spheres.” *Physics of Fluids*, **21**, 121703 December 2009.
31. Truscott, T.T. & Techet, A.H., “Water-entry of Spinning Spheres.” *Journal of Fluid Mechanics*, **625**, 135-165, 2009.

## 0.2.2 Peer-Reviewed Abstracts and Invited Papers Appearing in Journals

1. Speirs, N.\*, Mansoor, M., Belden, J., Hurd, R.\*, & Truscott, T.T., “Fluted Films”, *Physical Review Fluids*, **In Press**, September 2018.
2. Hurd, R.C.\*, Speirs, N.B. \*, Belden, J., Pan, Z., Lovett, B.\*, Robinson, W.\*, Zamora, M.A., Sharker, S.I.\*, Mansoor, M.M., Merritt, A. \*, & Truscott, T.T. “Shear joy of watching paint dry” *Physical Review Fluids*, **00**, DOI:10.1103/PhysRevFluids.00.000500. September 2017.

3. Hurd, R.\*, Fanning, T.\*, Pan, Z.\*, Mabey, C.\*, Bodily, K.\*, Hacking, K.\*, Speirs, N.\* & Truscott, T.T., “Matryoshka cavity”, *Physics of Fluids*, **27** 091104 DOI:10.1063/1.4930902. September 2015.
4. Marston, J., Truscott, T.T., Mansoor, M. & Thoroddsen, S., “Buckling instability of crown sealing”, *Physics of Fluids*, **27** 091112 DOI:10.1063/1.4931097, September 2015.
5. Truscott, T.T., Belden, J. & Hurd, R.\*, “Water-skipping stones and spheres.” *Physics Today*, **67**, 12, 70, DOI: 10.1063/PT.3.2631, December 2014.
6. Daily, J.\*, Pendlebury, J.\*, Langley, K.\*, Hurd, R.\*, Thomson, S. & Truscott, T., “Catastrophic cracking courtesy of quiescent cavitation.” *Physics of Fluids*, **26**, 091107, DOI:10.1063/1.4894073, September 2014.
7. Bodily, K.\*, Langley, K.\*, Huey, J.\* & Truscott, T.T., “A new angle on water entry.” *Physics of Fluids*, **25**, Iss. 9, DOI: 10.1063/1.4820125 September 2013.
8. Truscott, T.T., Wright, M.M.\*, Langley, K.R.\*, & Belden, J., “Holy balls! Balls that walk on water.” *Physics of Fluids*, **24**, 091103; DOI: 10.1063/1.4746071, September 2012.
9. La Foy, R.R., Belden, J., Truscott, T.T., Shih, A.M. & Techet, A.H., “Oil droplet in alcohol.” *Physics of Fluids*, **22**, 032102, September 2010.
10. Aristoff, J.M., Truscott, T.T., Techet, A.H. & Bush, J.W.M., “The water-entry cavity formed by low bond number impacts.” *Physics of Fluids*, **20**, 091111 September 2008.
11. Truscott, T.T. & Techet, A.H., “Cavity formation in the wake of a spinning sphere impacting the free surface.” *Physics of Fluids*, **18**, 091113, September 2006.

### 0.2.3 Peer-Reviewed Conference Papers

1. Hurd, R. C.\*, Weiss, D. M., Graham, J. J., & Truscott, T. T., “Future time perspective and problem-based learning in a senior thermo-fluids engineering lab,” *ASEE Rocky Mountain Section Conference*, Provo, UT, Sept. 22-23, 2017.
2. Graham, J.J., Z., Hurd, J.,\* & Truscott, T.T., “Adding a New Dimension to a Traditional Conduction Lab” *2016 ASEE Rocky Mountain Section Conference*, Cedar City, UT, October 1, 2016. [direct link](#)
3. Pan, Z.,\* Whitehead, J., & Truscott, T.T., “Error Propagation Dynamics of PIV-based Pressure Field Calculations” *First International Symposium of Image Based Metrology (ISIMet)*, Honolulu, HI, April 2016. [direct link](#)
4. Truscott, T.T. & Belden, J., “Advances in Light Field Imaging for Measurement of Fluid Mechanical Systems” *First International Symposium of Image Based Metrology (ISIMet)*, Honolulu, HI, April 2016. [Direct link](#)
5. Truscott, T.T., Belden, J. & Jafek, A.\* “Light Field Measurement of Reflective Interfaces” *First International Symposium of Image Based Metrology (ISIMet)*, Honolulu, HI, April 2016. [Direct link](#)
6. Wright, G.A., Hurd, R.C., Hacking, K.S. & Truscott, T.T., “A remotely operated vehicle scaffolded activity is increasing student and teacher interest in STEM - a reporting on a three-year study funded by the Office of Naval Research”, *122nd Annual Meeting of the American Society of Engineering Education*, Seattle, WA, June 14-17, 2015.
7. Pendlebury, J.\*, Belden, J., McEwen, B.\* & Truscott, T.T., “Error sources and propagation in three-dimensional microscopic light field particle image velocimetry.” Society of Engineering Science (SES) 51st Annual Technical Meeting, Purdue University, West Lafayette, IN, October 1-3, 2014.

8. Wright, G.A., Hurd, R.C., Hacking, K.S. & Truscott, T.T., “Using ROVs to teach a blended STEM curriculum” *121st Annual Meeting of the American Society of Engineering Education*, Indianapolis, IN, June 15-18, 2014.
9. Belden, J., Truscott, T.T., Pendlebury, J.\* & Jafek, A.\* “Advances in Light Field Imaging for Measurement of Fluid Mechanical Systems.” DyDess Conference@MIT, Boston, MA, 2014.
10. Jandron, M.A., Hurd, R.C.\*, Belden, J.L., Bower, A.F., Fennell, W., & Truscott, T.T., “Modeling of Hyperelastic Water-Skipping Spheres using Abaqus/Explicit.” SIMULIA Community Conference, 2014.
11. Nielson, J.R.\*, Daily, D.J., Truscott, T.T., Luegmair, G., Döllinger, M. & Thomson, S.L., “Simultaneous tracking of vocal fold superior surface motion and glottal jet dynamics.” Proceedings of the ASME 2013 International Mechanical Engineering Congress & Exposition, IMECE2013, November 13-21, San Diego, California, 2013.
12. Nielson, J.R.\*, Truscott, T.T., Daily, D.J., Luegmair, G., Döllinger, M. & Thomson, S.L., “Whole-Field 3D Characterization Of The Glottal Jet Using Synthetic Aperture Particle Image Velocimetry.” ICVPB, 2012.
13. Nielson, J.R.\*, Truscott, T.T., Daily, D.J., Luegmair, G., Döllinger, M. & Thomson, S.L., “Whole-Field 3D Characterization of a Pulsating Jet Using Synthetic Aperture Particle Image Velocimetry.” Rocky Mountain NASA Space Grant Consortium, 2012.
14. Belden, J.\*, Jandron M.A. & Truscott, T.T. “Physics of Elastic Spheres Skipping on Water.” Physics of Sports (European Mechanics Society Colloquium 538), Ecole Polytechnique, Paris, France. April 3-6, 2012.
15. Belden, J., Ravela, S., Truscott, T.T. & Techet, A.H., “Three-dimensional synthetic aperture imaging and resolution of multi-phase flows.” *Proceedings of ASME-JSME-KSME Joint Fluids Engineering Conference 2011 (AJK2011)*, Hamamatsu, Shizuoka, Japan. July 24-29, 2011.
16. Epps, B.P., Truscott, T.T. & Techet, A.H., “Evaluating derivatives of experimental data using smoothing splines.” *3rd Mathematical Methods in Engineering International Symposium (MME’10)*, Coimbra, Portugal. October 21-24, 2010.
17. Truscott, T. T., Beal, D. N. & Techet, A. H., “Shallow angle water entry of ballistic projectiles.” *Proceedings of the 7th International Symposium on Cavitation*, Ann Arbor, Michigan, USA. August 17-22, 2009.
18. Truscott, T. T., Belden, J. & Techet, A. H., “Three dimensional flow field PIV and biological sensing using synthetic aperture.” *Proc. 16th Inter. Symp. Unmanned Untethered Submersible Technology (UUST09)*, Durham, New Hampshire. August 23-26, 2009.
19. Belden, J., Truscott, T. T., & Techet, A. H., “Three dimensional flow fields using synthetic aperture PIV.” *8th International Symposium on Particle Image Velocimetry*, Melbourne, Australia. August 25-28, 2009.

#### 0.2.4 Invited Lectures and Presentations

1. Truscott, T.T., “Urinal dynamics and water music” Université de Liège, Liège, Belgium, October 2017
2. Truscott, T.T., “The art of fluid dynamics” Colorado University, Boulder, CO, October 25, 2016



3. Truscott, T.T., “The upside-down water collection system of a desert moss” Colorado University, Boulder, CO, October 25, 2016
4. Speirs, N. & Truscott, T.T., “Multidroplet impact” Université de Liège, Cool fluids meeting, Liège, Belgium, June 2016.
5. Truscott, T.T., “Quantitative light-field imaging” Texas Tech, Lubbock, TX April 2016.
6. Truscott, T.T., “Quantitative light-field imaging” Penn State, College Station, PA March 2016.
7. Truscott, T.T., “Quantitative light-field imaging” Idaho National Laboratories, Idaho Falls, ID, February 2016
8. Truscott, T.T., “Synthetic aperture imaging workshop and introduction.” Penn State, College Station, PA, July 2015.
9. Truscott, T.T., “Sports, cavitation and toys.” Université Libre de Bruxelles, Bruxelles, Belgium, June 2015.
10. Truscott, T.T., “Sports, cavitation and toys.” University of Liège, Cool fluids meeting, Liège, Belgium, June 2015.
11. Truscott, T.T., “Synthetic aperture imaging workshop and introduction.” KAUST University, Jeddah, Saudi Arabia, May 2015.
12. Truscott, T.T., “Light field imaging and quantitative data extraction.” University of Utah Department of Mechanical Engineering Seminar, Logan, UT, March 2015.
13. Truscott, T.T., “Light field imaging and quantitative data extraction.” Utah State University Department of Mechanical and Aerospace Engineering Seminar, Logan, UT. June 2014.
14. Truscott, T.T. “The cavity dynamics of spheres and bullets after water entry through quantitative imaging.” KAUST University, Jeddah, Saudi Arabia. May 2014.
15. Truscott, T.T., Hurd, R., Jandron, M. & Belden, J., “Water Bouncing Balls: how material stiffness affects water entry.” Department of Mechanical Engineering Shell Lecture, University of Colorado, Boulder, CO. April 2014
16. Truscott, T.T., Hurd, R., Jandron, M. & Belden, J., “Water Bouncing Balls: how material stiffness affects water entry.” American Physical Society, Denver, CO. March 2014
17. Truscott, T.T. “Light field imaging and quantitative data extraction.” Dartmouth University Thayer School of Engineering Jones Seminar, Hanover, NH. September 27, 2013
18. Truscott, T.T. “Light field imaging and quantitative data extraction.” Rochester Institute of Technology, Rochester, NY. September 25, 2013
19. Truscott, T.T. “Spheres, water and imaging.” University of Nevada, Reno. September 30, 2011
20. Truscott, T.T. “3D Flow field PIV using Synthetic Aperture.” McGill University, Montreal, Quebec, Canada. February 21, 2011
21. Truscott, T.T., “The cavity dynamics of spheres and bullets after water entry through quantitative imaging.” Brigham Young University. February 29, 2010
22. Truscott, T.T., “Synthetic Aperture Imaging and Quantitative Data Extraction.” Woods Hole Oceanographic Institute, Woods Hole, MA. July 29, 2009
23. Truscott, T.T., “Modeling the cavity dynamics of water entry for spheres and bullets using quantitative imaging.” Virginia Polytechnic Institute, Blacksburg, VA. April 10, 2009
24. Truscott, T.T., “Modeling the cavity dynamics of water entry for spheres and bullets using quantitative imaging.” Naval Undersea Warfare Center, Newport, RI. March 11, 2009
25. Truscott, T.T., “Modeling the cavity dynamics of water entry for spheres and bullets using quantitative imaging.” Worcester Polytechnic Institute, Worcester, MA. Feb 25, 2009

26. Truscott, T.T., “Water Entry of Spheres and Bullets.” Mathworks Apps Meeting, Natick, MA. October 29, 2008.

### 0.2.5 Conference Presentations

1. Truscott, T., Mansoor, M., Rhaman, R., Sajjad, I., & Belden, J., “Swarm formation characteristics in Black Tetra fish,” *2nd International Symposium on Image Based Metrology (ISIMet)*, Maui, HI, December 2017
2. Mansoor, M., Rhaman, R., Belden, J. & Truscott, T., “Peloton formations: Swarming in cyclists contesting strategically in Tour de France racing events,” *2nd International Symposium on Image Based Metrology (ISIMet)*, Maui, HI, December 2017
3. Pan, Z., Whitehead, J., Richards, G. & Truscott, T., “Error Propagation dynamics: from PIV-based pressure reconstruction to vorticity field calculation,” *2nd International Symposium on Image Based Metrology (ISIMet)*, Maui, HI, December 2017
4. Kiyama, A., Miyazaki, Y., Pan, Z., Mansoor, M., Truscott, T. & Tagawa, Y., “High-speed impact of the focused micro liquid jet onto liquid pool,” *2nd International Symposium on Image Based Metrology (ISIMet)*, Maui, HI, December 2017
5. Speirs, N.\*, Belden, J., Badlissi, G., Pan, Z.\*, Holekamp, S.& Truscott, T. , “The harbingers of water entry” *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017.
6. Hurd, H.\*, Belden, J., Jandron, M., Bower, A., Holekamp, S.& Truscott, T. , “Water walking - an evolution of water surface skipping” *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017.
7. Pan, Z.\*, Whitehead, J., Richards, G. & Truscott, T. , “Error Propagation dynamics: from PIV-based pressure reconstruction to vorticity field calculation” *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017.
8. Kiyama, A., Pan, Z.\*, Daily, J., Thomson, S., Hurd, H.\* & Truscott, T., “Cavitation onset of an accelerating liquid” *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017.
9. Truscott, T., Hurd, H.\*, Belden, J., Merritt, A.\* & Allen, J., “The Water music of Vanuatu” *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017.
10. Marston, J., Li, C., Truscott, T.T. & Mansoor, M., “ Out of the frying pan: Explosive droplet dynamics” *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017.
11. Pan, Z.\*, Whitehead, J. & Truscott, T.T. , “Error Propagation dynamics of PIV-based pressure calculation 2: from Poisson equations to Kirchhoff plates” *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016.
12. Speirs, N.\*, Pan, Z.\*, Belden, J. & Truscott, T.T. , “The water entry of water” *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016.
13. Lovett, B.\*, Merritt, A.\* & Truscott, T.T. , “Droplet impact on a needle” *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016. *Undergraduate Involvement*

14. Robinson, W.\*, Speirs, N.\*, Sharker, S.I.\*, Hurd, R.\*, Williams, B.J.\* & Truscott, T.T. , “Bubble baths: just splashing around” *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016. *Undergraduate Involvement*
15. Hurd, R.\*, Belden, J., Jandron, M., Fanning, T.\* & Truscott, T.T. , “Make water entry great again!” *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016. *Undergraduate Involvement*
16. Mansoor, M., Vakarelski, I., Marston, J., Truscott, T.T. & Thoroddsen, S., “Stable, streamlined and helical cavity formation by the impact of Leidenfrost spheres” *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016.
17. Sharker, S.I.\*, Holekamp, S., Fish, F., Belden, J., & Truscott, T.T., “ Bird beaks bear the brunt of bashing impact” *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016.
18. Truscott, T.T., Pan, Z., Pitt, W.G., Yuanming, Z., Wu, N. & Tao, Y. “The upside-down water collection system of *Syntricia caninervis*” *Biocrust3: 3rd international workshop on biological soil crusts*, Moab, UT September 26-30, 2016.
19. Truscott, T.T., Darbois-Textier, B., Lovett, B., Brandenbourger, M., Maquet, L., Strivay, D., Dorbolo, S., Ewoldt, R., Belden, J., Gilet, T., Sampara, N., Sharker, S.I.\*, Boulenge, B., Marchiori, K., Robinson, W.\*, & Pan, Z.\*, “Unraveling expressionism.” *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015. *Undergraduate Involvement*
20. Pan, Z.\*, Whitehead, J., Thomson, S., & Truscott, T.T., “ Error propagation in PIV-based Poisson pressure calculations” *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
21. Hurd, R.\*, Pan, Z.\*, Merritt, A.\*, Belden, J., & Truscott, T.T., “ Creating a urine black hole” *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015. *Undergraduate Involvement*
22. Belden, J., Hurd, R.\*, Fanning, T.\*, Jandron, M.A., Rekos, J., Bower, A.\*, & Truscott, T.T., “Please comply: the water entry of soft spheres” *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015. *Undergraduate Involvement*
23. Speirs, N.\*, Hurd, R.\*, Sharker, S.I.\*, Pan, Z.\*, & Truscott, T.T., “Leave the seat down: They physics of droplet streams impacting a free surface” *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
24. Truscott, T.T., Belden, J., Pan, Z.\* & Speirs, N.\*, “Why bigger may in fact be better... in the context of table tennis.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. *Undergraduate Involvement*
25. Belden, J., Hurd, R.\*, Jandron, M., Bower, A.\*, & Truscott, T.T., “Oblique impact of water-skipping elastic spheres.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
26. Hurd, R.\*, Truscott, T.T. & Belden, J., “Performance enhancing water skipping: successive free surface impacts of elastic spheres.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. *Undergraduate Involvement*

27. Fanning, T.\*, Hurd, R., Belden, J. & Truscott, T.T., “Water Entry of Deformable Spheres.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
28. Ellis, J.\*, Boyer, M. & Truscott, T.T., “The Effect of Nose Shape on Water-Entry Cavity Formation.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. *Undergraduate Involvement*
29. Smith, Z.\*, Hayden, S.\* & Truscott, T.T., “Flipping over: inversion characteristics of a buoyant cylindrical puck during oblique water impact.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. *Undergraduate Involvement*
30. Daily, J.D.\*, Pendlebury, J.\*, Langley, K. & Truscott, T.T., “Cavitation you can hold in your hand... for a moment.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
31. Pan, Z.\*, & Truscott, T.T., “Bursting the Taylor cone bubble.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. Withdrawn
32. Jafek, A.\*, Belden, J., & Truscott, T.T., “Resolving gas-liquid interface geometry using light field imaging.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
33. Marston, J., Truscott, T.T., Mansoor, M. & Thoroddsen, S., “Crown sealing and buckling instability during sphere impact.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
34. Truscott, T.T. & Munns, R.\*, “Pop up height of buoyant rising spheres.” *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburg, PA. November 24-26, 2013. *Undergraduate Involvement*
35. Hurd, R.\*, Hacking, K.\* & Truscott, T.T., “Urinal dynamics.” *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburg, PA. November 24-26, 2013. *Undergraduate Involvement*
36. Pan, Z.\*, Wu, N., Thomson, S., Pitt, W. & Truscott, T.T., “Moss hair water transport.” *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburg, PA. November 24-26, 2013.
37. Hacking, K.\*, Hurd, R.\*, Wright, G.\* & Truscott, T.T., “Undergraduate ROV outreach.” *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburg, PA. November 24-26, 2013. *Undergraduate Involvement*
38. Hardester, E.\*, Thomson, S. & Truscott, T.T., “Three-dimensional flow measurements of a differentially driven flapping wing mechanism.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012.
39. Bodily, K.\* & Truscott, T.T., “The water entry of streamlined bodies.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012.
40. Pendlebury, J.\*, Tree, D., & Truscott, T.T., “3D reconstruction and velocity fields of a flame.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012.

41. Truscott, T.T., McEwen, B.\* & Belden, J., “Microscopic Light Field Particle Image Velocimetry.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012.
42. Langley, K.\*, Thomson, S. & Truscott, T.T., “Whole-field, time resolved velocity measurements of flow structures on insect wings during free flight.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012.
43. Killian, T.\*, Bryson, J.\*, Huey, J.\*, Bird, J.C., Nave, J-C., & Truscott, T.T., “Self healing: solid spheres impacting soap bubbles.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012. *Undergraduate Involvement*
44. Belden, J., Jandron, M. & Truscott, T.T., “Holy Balls!: Part Deux.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012. *Undergraduate Involvement*
45. Belden, J., Ravela, Sai., Truscott, T.T. & Techet, A.H., “Bubble Fields in 3D (No Glasses Required).” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011.
46. McEwen, B.\*, Belden, J. & Truscott, T.T., “Light field particle image velocimetry.” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011.
47. Langley, K.\*, Hendricks, J.\*, Elverud, M.\*, Maynes, D. & Truscott, T.T., “Eggs in Milk: The conclusion.” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011. *Undergraduate Involvement*
48. Killian, T.\*, Klaus, R. & Truscott, T.T., “Harnessing sloshing as a passive dampener.” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011. *Undergraduate Involvement*
49. Truscott, T.T., Wright, M.\*, Langley, K.\*, Munns, R.\*, & Belden, J., “Holy balls!” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011.
50. Daily, D.J.\*, Truscott, T.T. & Thomson, S.L., “Three-dimensional whole-eld measurements of pulsatile glottal jets using synthetic aperture particle image velocimetry.” *162 Annual Acoustical Society of America Meeting*, Seattle, WA. May 23-27, 2011.
51. Killian, T.\*, Klaus, R.\*, Hendricks, J.\*, Smith, N.\* & Truscott, T.T., “Dynamics of a partially fluid-filled sphere.” *American Physical Society March Meeting*, Dallas, TX. March 23, 2011. *Undergraduate Involvement*
52. Truscott, T.T., Belden, J., Langley, K.\*, Epps, B. & Maynes, D., “Eggs in milk.” *63rd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Long Beach, CA. November 21-23, 2010.
53. Belden, J., Axiak, M., Truscott, T.T. & Techet, A.H., “3D Synthetic Aperture Imaging for Fluid Flows.” *63rd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Long Beach, CA. November 21-23, 2010.
54. Truscott, T.T., “The water exit of buoyant spheres.” *62nd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Minneapolis, MN. November 22-24, 2009.

55. Aristoff, J.M., Truscott, T.T., Techet, A.H. & Bush, J.W.M., “The water entry of decelerating spheres.” *62nd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Minneapolis, MN. November 22-24, 2009.
56. Epps, B.P., Truscott, T.T., La Foy, R.R. & Techet, A.H., “Resolving the unsteady deceleration and forces after water entry by low mass-ratio spheres.” *62nd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Minneapolis, MN. November 22-24, 2009.
57. Belden, J., Truscott, T.T. & Techet, A.H., “See Through the Static: 3D Synthetic Aperture PIV.” *62nd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Minneapolis, MN. November 22-24, 2009.
58. Truscott, T.T. & Techet, A.H., “Shallow-Angle Water Entry of Ballistic Projectiles.” *61st Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Antonio, TX. November 23, 2008.
59. Truscott, T.T. & Techet, A.H., “A New Spin on Wetting Angle.” *60th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Salt Lake City, UT. November 19, 2007.
60. Truscott, T.T. & Techet, A.H., “Cavity Dynamics of Spinning Spheres Impacting the Air-Water Interface at High Velocity.” *59th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Tampa Bay, FL. November 20, 2006.

#### 0.2.6 Peer reviewed Posters and Videos

1. Speirs, N.\*, Mansoor, M., Belden, J., Hurd, R.\*, & Truscott, T.T., “Fluted Films”, *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017. **Milton Van Dyke winner**
2. Kiyama, A., Kawamoto, S., Mansoor, M., Speirs, N.\*, Hurd, R.\*, Truscott, T. & Tagawa, Y., “Liquid-like response of gels”, *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017. DOI: 10.1103/APS.DFD.2017.GFM.P0029
3. Hurd, H.\*, Allen, J., Belden, J., Makanoa, B., Mansoor, M., Speirs, N.\*, Merritt, A.\*, Hayashi, R. & Truscott, T., “Water music of Vanuatu”, *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017. DOI: 10.1103/APS.DFD.2017.GFM.V0071
4. Belden, J., Hurd, H.\*, Makanoa, B., Holekamp, S., Jandron, M., Bower, A., & Truscott, T., “Water Walking”, *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017. DOI: 10.1103/APS.DFD.2017.GFM.V0019
5. Marston, J., Li, C., Truscott, T. & Mansoor, M., “Out of the frying pan: Explosive droplet dynamics”, *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017. DOI: 10.1103/APS.DFD.2017.GFM.V0002
6. Hurd, R.\*, Speirs, N.\*, Belden, J., Pan, Z.\*, Lovett, B.\*, Robinson, W.\*, Boyer, M.\*, Sharker, S.I.\*, Mansoor, M., Merritt, A.\*, & Truscott, T.T., “The shear joy of watching paint dry”, *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016. DOI: 10.1103/APS.DFD.2016.GFM.V0095 **Milton Van Dyke winner**

7. Lovett, B.\*, Merritt, A.\*, Speirs, N.\*, & Truscott, T.T., “Droplets on point”, *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016. DOI: 10.1103/APS.DFD.2016.GFM.V0094
8. Pan, Z.\*, Merritt, A.\*, Hurd, R.\*, Speirs, N.\*, Pitt, W., Wu, N., Zhang, Y. & Truscott, T.T., “Desert Dessert”, *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016. DOI: 10.1103/APS.DFD.2016.GFM.P0038
9. Darbois-Textier, B., Pan, Z., Lovett, B., Brandenbourger, M., Sharker, SI., Maquet, L., Gilet, T., Boulenge, B., Marchiori, K., Belden, J., Dorbolo, S., Strivay, D., Hurd, R., Robinson, W., & Truscott, T.T., “Modern art entanglement: comment s’emmler les pinceaux”, *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
10. Belden, J., Russell, N., & Truscott, T.T., “Rooted in the grounds”, *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
11. Pan, Z., Hurd, R., Merritt, A., Speirs, N., & Truscott, T.T., “Fogged up films”, *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
12. Maquet, L., Darbois-Textier, B., Truscott, T.T. & Dorbolo, S., “Leidenfrost impacts on hot liquid baths”, *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
13. Pan, Z.,\* Whitehead, J., & Truscott, T.T., “Error propagation dynamics of PIV-based pressure field calculation” *11th International Symposium on Particle Image Velocimetry*, Santa Barbara, CA. September 2015. **Invitation to publish in *Measurement Science and Technology***
14. Fanning, T.\*, Mabey, C.\*, Bodily, K.\*, Hurd, R.\*, Pan, Z.\*, Boyer, M.\*, & Truscott, T.T., “Matryoshka cavity”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. **Milton Van Dyke winner**
15. Marston, J., Truscott, T.T., Mansoor, M. & Thoroddsen, S., “Buckling instability of crown sealing”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. **Gallery winner**
16. Clavijo, C., Searle, M., Maynes, D., Crockett, J. & Truscott, T.T., “Sizzling droplets”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
17. Fanning, T.\*, Kinghorn, P.\* & Truscott, T.T., “Varying viscosity droplet impingement”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
18. Ellis, J.\*, Smith, Z.\* & Truscott, T.T., “Antisymmetric cavity formation”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
19. Pendlebury, J.\*, Hurd, R.\*, Pan, Z.\*, Fanning, T.\*, Jafek, A.\* & Truscott, T.T., “Spark induced cavitation”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
20. Pan, Z.\*, Hurd, R.\*, Pendlebury, J.\*, Fanning, Wilcox, B., Boyer, M.\* & Truscott, T.T., “Smoke and bubbles”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.

21. Stoddard, J., Lee, A., Maynes, D., Crockett. & Truscott, T.T., “Breaking droplets: superhydrophobic surface breakup”, 67<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA. November 23-25, 2014.
22. Jesse, D.D.\*, Langley, K.\*, Thomson, S.L. & Truscott, T.T., “Catastrophic cracking courtesy of quiescent cavitation”, 66<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Pittsburg, PA. November 24-26, 2013. **Milton Van Dyke winner**
23. Hurd, R.\*, Mabey, C.\*, Bodily, K.\*, Jafek, Z., Hacking, K.\*, & Truscott, T.T., “Confessions of a Sitzpinkler.” 66<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Pittsburg, PA. November 24-26, 2013. *Undergraduate Involvement*
24. Hurd, R.\*, Bodily, K.\*, Mabey, C.\*, Townsend, E.\*, Belden, J. & Truscott, T.T., “Squishy spheres spawn sinuous sub-surfaces”, 66<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Pittsburg, PA. November 24-26, 2013. *Undergraduate Involvement*
25. Killian, T.\*, Huey, J.\*, Bryson, J.\* & Truscott, T.T., “Self healing soap films”, 66<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Pittsburg, PA. November 24-26, 2013. *Undergraduate Involvement*
26. Bodily, K.\*, Langley, K.\*, Huey, J.\* & Truscott, T.T., “A new angle on water entry.” 65<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Diego, CA. November 18-20, 2012. **Gallery winner** *Undergraduate Involvement*
27. Munns, R.\*, Pendlebury, J.\*, Huey, J.\* & Truscott, T.T., “Sphere uprising.” 65<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Diego, CA. November 18-20, 2012. *Undergraduate Involvement*
28. Belden, J. & Truscott, T.T., “Bubble entrainment by a plunging jet,” 64<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Baltimore, MD. November 20-22, 2011.
29. Jafek, A.\*, Langley, K.\*, Killian, T.\* & Truscott, T.T., “Bouncing in puddles,” 64<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Baltimore, MD. November 20-22, 2011. *Undergraduate Involvement Undergraduate Involvement*
30. Murray, P.\*, Pendlebury, J.\*, Tree, D. & Truscott, T.T., “Flame reconstruction using synthetic aperture imaging,” 64<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Gallery of Fluid Motion Video, Baltimore, MD. November 20-22, 2011.
31. Daily, J., Nielson, J.\*, Thomson, S. & Truscott, T.T., “3D synthetic aperture PIV measurements from artificial vibrating vocal folds” 64<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Gallery of Fluid Motion Video, Baltimore, MD. November 20-22, 2011.
32. Wright, M.\*, Langley, K.\*, Belden, J. & Truscott, T.T., “Holy Balls!” 64<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Gallery of Fluid Motion Video, Baltimore, MD. November 20-22, 2011. **Milton Van Dyke winner**
33. Daily, D.J.\*, Truscott, T.T. & Thomson, S.L., “Three-dimensional whole-field measurements of pulsatile glottal jets using synthetic aperture particle image velocimetry,” 162 Annual Acoustical Society of America Meeting, Seattle, WA, May 23-27, 2011. **Gallery winner**
34. Klaus, R.\*, Killian, T.\* & Truscott, T.T., “Sphere rebound-suppression from sloshing,” 63<sup>rd</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Long Beach, CA. November 21-23, 2010. *Undergraduate Involvement*



35. Langley, K.\*, Hendricks, J.\*, Belden, J., North Attleboro Middle School & Truscott, T.T., “Eggs in milk.” *63rd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Long Beach, CA. November 21-23, 2010. *Undergraduate Involvement*
36. McKown, J.M., Techet, A.H. & Truscott, T.T., “Jet evolution after water entry.” *63rd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Long Beach, CA. November 21-23, 2010.
37. La Foy R.R., Belden, J., Shih, A.M., Truscott, T.T. & Techet, A.H., “Miscible droplet impact and dispersion.” *62nd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Minneapolis, MN. November 2009 **Gallery winner**, *Undergraduate Involvement*
38. Truscott, T.T., Aristoff, J.M. & Techet, A.H., “Dynamics of water entry.” *61st Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion Video, San Antonio, TX. November 2008.
39. La Foy R.R., Truscott, T.T. & Techet, A.H., “Quantitative flow field imaging about a hydrophobic sphere impacting on a free surface.” *61st Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion Video, San Antonio, TX. November 2008.
40. Aristoff, J.M., Truscott, T.T., Techet, A.H. & Bush, J.W.M., “The life of a water-entry cavity at low bond number.” *60th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion, Salt Lake City, UT. November 2007 **Gallery winner**
41. Truscott, T.T. & Techet, A.H., “The Effect of Spin on wetting angle during water-entry.” *60th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion, Salt Lake City, UT. November 2007.
42. Truscott, T.T. & Techet, A.H., “Shallow angle water-entry of high-speed projectiles.” *60th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion, Salt Lake City, UT. November 2007.
43. Truscott, T.T. & Techet, A.H., “Air cavity formation in the wake of a spinning sphere impacting the free surface.” *58th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion, Chicago, IL. November 2005. **Gallery winner**

### 0.2.7 Patents

1. Belden, J., Truscott, T.T. & Techet, A.H., ”Synthetic Aperture Imaging for Fluid Flows” US Patent 8,922,636, awarded August 2014.
2. Belden, J. & Truscott, T.T., Hurd, R.C., Dubois, N.J. & Carlson S.J. “Water-skipping device for surface warfare” Invention Disclosure, Navy Case No. 101799, May 2013.
3. Hurd, R., Merritt, A., Pan, Z. & Truscott, T.T. “Splash prevention apparatus” Provisional Invention Disclosure, USU 16034, May 2016.

### 0.2.8 Software

SAPIV - Synthetic Aperture Particle Image Velocimetry. In particular, we utilize light field imaging techniques to extract three dimensional information from particle laden flow fields. The technique relies on gathering synchronized images from multiple viewpoints and mapping them to

focus on individual focal planes. By recombining each of the focal planes into a stack of images, we can reconstruct the three dimensional flow field and much more. Accommodations for index of refraction and micro systems can be presented. Please browse our website for our current projects, advancements, tutorials, and open source codes. [saimaging.org](http://saimaging.org)

### 0.3 Honors and Awards

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1. **Milton Van Dyke Gallery of Fluid Motion Poster Winner** Speirs, N.\*, Mansoor, M., Belden, J., Hurd, R.\*, & Truscott, T.T., “Fluted Films”, *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017.
2. **Utah Educator of the Year Nominee (SAME Nomination)**, Society of American Military Engineers (SAME) Great Basin Post, Tadd Truscott, January 2017.
3. **Milton Van Dyke Gallery of Fluid Motion Poster Winner**, *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR “The shear joy of watching paint dry”, by Hurd, R.\*, Speirs, N.\*, Belden, J., Pan, Z.\*, Lovett, B.\*, Robinson, W.\*, Boyer, M.\*, Sharker, S.I.\*, Mansoor, M., Merritt, A.\*, & Truscott, T.T., November 20-22, 2016.
4. **Milton Van Dyke Gallery of Fluid Motion Poster Winner**, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA “Matryoshka cavity”, by Fanning, T., Mabey, C., Bodily, K., Hurd, R., Pan, Z., Boyer, M., & Truscott, T.T., November 23-25, 2014.
5. **Gallery of Fluid Motion Video Winner**, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA*, “Buckling instability of crown sealing”, by Marston, Truscott, T.T., Marston, M. & Thoroddsen, S. November 23-25, 2014.
6. **Utah Educator of the Year Nominee (SAME Nomination)**, Society of American Military Engineers (SAME) Great Basin Post, Tadd Truscott, December 2013.
7. **Milton Van Dyke Gallery of Fluid Motion Video Winner**, *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburg, PA. “Catastrophic cracking courtesy of quiescent cavitation.” by Jesse, D.D., Langley, K., Thomson, S.L. & Truscott, T.T., November 24-26, 2013.
8. **Office of Naval Research Summer Faculty Research Fellowship recipient**, Summer 2013.
9. **Gallery of Fluid Motion Poster Winner**, *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. “A new angle on water entry.” by Bodily, K., Langley, K., Huey, J. & Truscott, T.T., November 18-20, 2012.
10. **Office of Naval Research Summer Faculty Research Fellowship recipient**, Summer 2012.
11. **Milton Van Dyke Gallery of Fluid Motion Video Winner**, *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion Video, Baltimore, MD. “Holy Balls!” by Wright, M., Langley, K., Belden, J. & Truscott, T.T., November 20-22, 2011.

12. **Office of Naval Research Summer Faculty Research Fellowship recipient**, Summer 2011.
13. **Poster Gallery Winner**, *162 Annual Acoustical Society of America Meeting*, Seattle, WA. “Three-dimensional whole-field measurements of pulsatile glottal jets using synthetic aperture particle image velocimetry,” by Daily, D.J., Truscott, T.T. & Thomson, S.L., May 23-27, 2011.
14. **Gallery of Fluid Motion Poster Winner**, *62nd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Minneapolis, MN. “Oil droplet in alcohol.” by La Foy R.R., Belden, J., Shih, A.M., Truscott, T.T. & Techet, A.H., Nov 2009. *Undergraduate Involvement*
15. **Finalist** One of four finalists in the MGH-MIT Career Development Postdoctoral Fellowship in Translational Research 2008.
16. **Naval Research Enterprise Intern Program (NREIP) recipient**, participated in research at the Naval Underwater Warfare Center (NUWC) in Newport, RI. Summer 2006 & 2007.
17. **Gallery of Fluid Motion Poster Winner**, *60th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion, Salt Lake City, UT. “The life of a water-entry cavity at low bond number.” by Aristoff, J.M., Truscott, T.T., Techet, A.H. & Bush, J.W.M., Nov 2007.
18. **Gallery of Fluid Motion Poster Winner**, *58th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion, Chicago, IL. “Air cavity formation in the wake of a spinning sphere impacting the free surface.” by Truscott, T.T. & Techet, A.H., Nov 2005.
19. **Best Student Chapter** Marine Technology Society 2004.

#### 0.4 Media Coverage and Press (Partial List)

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**Digital Day** Mirko Spasiano ”Svolta green per i bagni pubblici: arriva il muschio” August 2016, ([url link](#))

**EurekAlert!** “Physicists Create “This desert moss has developed the ultimate water collection toolkit” June 2016, ([url link](#))

**Huffington Post** Casey Williams “This Plant Could Help Keep Pee Off Your Pants” June 2016, ([url link](#))

**The Washington Post** Sarah Kaplan “Moss if a master of mechanical engineering” June 2016, ([url link](#))

**Science News** Helen Thompson “Desert moss slurps water from its leaves, not roots” June 2016, ([url link](#))

**Phys.org** ”This desert moss has developed the ultimate water collection toolkit” June 2016, ([url link](#))

**Science Daily** "The desert moss has developed the ultimate water collection toolkit" June 2016, (url link)

**Science Explorer** Erica Tennenhouse "Desert Plant Sucks Water Right Out of the Air" June 2016, (url link)

**KSL** Carter Williams "BYU, USU researchers study gravity-defying desert plant to improve water availability" June 2016, (url link)

**Health Medicine Network** "This desert moss has developed the ultimate water collection toolkit" June 2016, (url link)

**Newswise** "This desert moss has developed the ultimate water collection toolkit" June 2016, (url link)

**New Scientist** Alice Klein "Desert plant seen drinking fog and mist with its leaves" June 2016, (url link)

**Quartz** Siyi Chen "This desert moss can teach us how to design a cleaner urinal" June 2016, (url link)

**The Verge** Alessandra Potenza "This tiny desert moss could help prevent urine splashback on the men's room floor" June 2016, (url link)

**e! Science News** "This desert moss has developed the ultimate water collection toolkit" June 2016, (url link)

**Nature Asia** "Desert moss seizes mist opportunity" June 2016, (url link)

**Wired Italy** Alice Pace "I trucchi delle piante del deserto per sfuggire alla siccità" June 2016, (url link)

**BECT? Russia** Ivan Zagorski "Desert Moss learned to obtain water from the air" June 2016, (url link)

**Forskning Norway** Ingrid Spilde "Moss used unique tricks to pull water out of air" June 2016, (url link)

**Hirado Hungry** "Desert plant creatively collects water" June 2016, (url link)

**Scinexx Germany** "Moss catches water from the air" June 2016, (url link)

**People.cn** "Desert moss "water," a trick can absorb moisture from the atmosphere" June 2016, (url link)

**Der Standard** "A moss defies the dryness of the desert" June 2016, (url link)

**Spektrum Germany** "Why balls jump so well over the water" May 2016, (url link)

**Fuck Yeah Fluid Dynamics** "A Sphere Falling into Water Generates a Spectacular Crown Splash?" April 2016, (url link)

**Scholastic Science World** Joanna Klein "Skipping-Stone Science" March 2016, ([url link](#))

**New York Times** Joanna Klein "Water is the Real Force Behind Breaking a Bottle With Your Bare Hands" March 2016, ([url link](#))

**Wired** "Scientists have made the perfect skipping stone" February 2016, ([url link](#))

**Discover Magazine** Nathaniel Scharping "Scientists Perfect the Skipping Stone" February 2016, ([url link](#))

**Gizmodo** Esther Inglis-Arkell "Scientists Made the Perfect Skipping Stone and Skipped It Across Their Lab" February 2016, ([url link](#))

**EurekAlert!** "Walking on water: USU researchers unravel science of skipping spheres" February 2016, ([url link](#))

**Live Science** Charles Q. Choi "Physics of Skipping Stones Could Make Bounceable Naval Weapons" February 2016, ([url link](#))

**Slate** Jim Festante "The Secret Behind the World's Best Skipping Stone" February 2016, ([url link](#))

**KSL** Ashley Kewish "'Easily Excited' Utah professor unlocks the secrets of skipping stones" February 2016, ([url link](#))

**The Financial Express** "What's the science behind water skipping spheres" February 2016, ([url link](#))

**The Times of India** "What's the science behind water skipping spheres" February 2016, ([url link](#))

**Siasat Daily** "What's the science behind water skipping spheres" February 2016, ([url link](#))

**China Times** "What's the science behind water skipping spheres" February 2016, ([url link](#))

**Men's Fitness** "Scientists Have Created a Brilliant Urinal Liner that Prevents your Pee from Splashing Back at You" December 2015, ([url link](#))

**Gizmodo** Jennifer Ouellette "Physicists Create "Urine Black Holes" To Solve the Splashback Problem" November 2015, ([url link](#))

**CNET** Michael Franco "Physics whizzes create 'black hole' to stop urinal splash-back" November 2015, ([url link](#))

**DailyMail** Cheyenne Macdonald "The 'urine black hole': Physicists reveal the perfect material to stop urinal splashbacks" November 2015, ([url link](#))

**cbradio** Carol Off (Interview: Tadd Truscott minute 20:00 part 1) "Urine anti-splash" November 2015, ([url link](#))

**Herald Journal** "USU faculty member gets grant for research linking swarms, robots" May 2015, ([url link](#))

**Utah State Today** "USU Engineering Faculty Chosen for Prestigious NAVY Research Program" May 2015, ([url link](#))

**Gizmodo** "Watch Milk Literally Climb Up This Spinning Egg" April 2015, ([url link](#))

**KUER.org** Whitney Evans "Kids Learn STEM by Building Underwater Robots." March 2014. ([url link](#))

**Deseret News** Jeffery Allred "Students demonstrate underwater robots for competition." March 2014. ([url link](#))

**Deseret News** Stephanie Pappas "US Navy Toys With Physics of Bouncy Balls." March 2014. ([url link](#))

**BBC** James Morgan "Physicists probe urination 'splashback' problem." November 2013. ([url link](#))

**Saturday Night Live** "Prevent splash back" November 2013. ([url link](#))

**Popular Science** "Science Addresses The Problem Of Pee Splashback." November 2013. ([url link](#))

**NBS News** "Avoiding pee splash-back is in the aim, distance, scientist says." November 2013. ([url link](#))

**Time** "Wizz Kid Physicists Working to Solve Urine Splashback" November 2013. ([url link](#))

**Business Insider** "Fluid Dynamics Explains Why Your Pee Splashes Out Of The Urinal." November 2013. ([url link](#))

**Men's Health** November 2013. ([url link](#))

**Huffington Post** "This Is How To Pee Into A Urinal Without Getting Splash-Back." November 2013. ([url link](#))

**Gizmodo** "Watching pee in super-slow motion is surprisingly fascinating." November 2013. ([url link](#))

**Salt Lake Tribune** "BYU engineers study male urine 'splashback'." November 2013. ([url link](#))

**Le Monde** "Vespasienne - Vers la fin des éclaboussures dans les urinoirs." November 2013. ([url link](#))

**Physorg** "University physicists study urine splash-back and offer best tactics for men." November 2013. ([url link](#))

**Inside Science** "Splash Lab reveals secret to bottle-exploding trick" May 2013. ([url link](#))

**Physics of Fluids Podcast** “Sloshing Dynamics” May 2013. (url link)

**FYFD** April 2013, (url link)

**CNN, KSL** “See objects spin splash and pop ” March 29, 2013. (CNN url link) (KSL url link)

**Fox 13 News, KSL, BYU News, Deseret News, Daily Herald** “First Utah Sea Perch Competition” March 20, 2013. (url link)

**MIT Technology Review** “Bottle, Bubbles and Breakage” October 17, 2012. (url link)

**SplashLab Christmas** “Slow motion Splash Lab Christmas” Produced by BYU Broadcasting, SplashLab was featured on the BYU homepage, KSL, Deseret News, fmzik.com, grooveyglue and many more, December 2012. (url link)

**BYU Magazine** “You can skip this one,” What’s On, Fall 2012. (url link)

**BYU Magazine** “Flame Fame,” College Buzz, Winter 2012. (url link)

**Daily Universe** “Mechanical engineering is a splash,” by Tom White, Highlights the Splash Lab, September 21, 2012. (url link)

**Live Science** ”Secret to Mysterious Bottle-Exploding Trick Revealed” November 2012, (url link)

**Salt Lake Tribune** “In ‘Splash Lab’, BYU engineers unravel fluid mysteries,” by Brian Maffly of the Salt Lake Tribune, September 4, 2012. (url link)

**BYU TV** “The Splash Lab,” Reporter Jessica Rasmussen for BYUTV highlighted our laboratory. (url link)

**Rock Skipping** video produced by BYU Broadcasting, highlighted our work on rock skipping on the BYU homepage. (url link)

**Science Friday** “Cracking the Egg Sprinkler Mystery”, by Flora Lichtman, May 2012. (url link)

**Provo Daily Herald** “BYU researchers combining toys”, by James Roh, Tech and Highlight section, May 14, 2012. (url link)

**BYU Magazine** “Drops of light,” Spring 2012. (url link)

**BYU Radio** “The science of flames”, BYU Radio, February 29, 2012. (url link)

**New Scientist TV** “How water-bouncing balls mimic skimming stones”, by Caitlin Stier, November 23, 2011. (url link)

**Future of technology on MSNBC** “The why of water bouncing balls”, by John Roach, October 27, 2011. (url link)

**Technology Review: The physics arXiv blog** “Like Stones, Why Some Balls Bounce On Water”, October, 20, 2011. ([url link](#))

**Cosmos magazine** “Fluid Fantastica” by Kate Arneman, Full page introduction to the Annual American Physical Society Division of Fluid Dynamics Gallery of Fluid Motion, in relation to the publication in Physics of Fluids September 2010, published September 2011. ([url link](#))

**Science Friday** “3D Up In Flames,” by Flora Lichtman , October 2011. ([url link](#))

**Popular Mechanics** “Kerplop! The physics of a cannonball splash” by Mike Orcutt, Outdoors section, July 21, 2010. ([url link](#))

**Discovery News (Tech News)** Oil in Alcohol, News entry, February 2010.

**National Geographic Daily News** “Wine Glass Droplet,” News Entry, February 2, 2010. ([url link](#))

**Discovery Channel Time Warp** “Blue Men, Propellers, Big Bangs and Viewer Requests: Blue Man Group visits. The realm of fluid dynamics. The science of propellers. Viewer requests,” Oct. 21, 2009. ([url link](#))

**Discovery Channel Time Warp** “Break-dancing: The destructive force of power tools, the seemingly physics-bending motions of break-dancing, and why a bullet fired underwater goes askew,” Nov. 19, 2008. ([url link](#))

## **0.5 Teaching and Mentorship**

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### **Courses I have taught**

MAE 4400 Thermo-Fluids Laboratory (USU)  
MAE 6410 Advanced Fluid Dynamics (USU)  
Me En 613, Experimental Fluid Mechanics (BYU)  
Me En 412, Applications in Fluid Dynamics (BYU)  
Me En 363, Elementary Instrumentation (BYU)  
Me En 312, Fluid Mechanics (BYU)  
Me En 475 & 476, Capstone Coach (BYU)

### **Qualifying Exams**

Mechanical Engineering Fluid Mechanics: Fall 2010, 2012, 2013, 2014, 2015 and Spring 2011, 2014

Mechanical Engineering Mathematics: Spring 2012

### **Student Advisement**

Summary of Graduate Student Supervision



Completed PhD:	1
Completed MS:	12
Current Post-doctorates:	2
Current PhD:	4
Current MS:	2
Laboratory advised Undergraduates:	29

### **Current Graduate and Post Doctoral Researchers**

1. Mansoor, Mohammad Mujtaba, Post Doctoral Researcher, Utah State University.
2. Speirs, Nathan, Ph.D. Dissertation in progress, Utah State University.
3. Rafid, Syed Ph.D. Dissertation in progress, Utah State University.
4. Rabi, Rafsan Ph.D. Dissertation in progress, Utah State University.
5. Lovett, Ben, M.S. Dissertation in progress, Utah State University.

### **Summary of Graduate Students Advised**

1. Pan, Zhao, "Error propagation dynamics of PIV-based pressure field calculation" Ph.D. Thesis, Brigham Young University, May 2016.
2. Ellis, Jeremy, "The Effect of Projectile Nose Shape on the Formation of the Water Entry Cavity" M.S. Thesis, Brigham Young University, July 2016.
3. Smith, Zachary, "Inversion Characteristics of a Buoyant Cylindrical Puck During Oblique Water Impact" M.S. Thesis, Brigham Young University, April 2016.
4. Hurd, Randy, "On the free surface skipping characteristics of highly deformable elastic spheres" M.S. Thesis, Brigham Young University, April 2015.
5. Hardester, Eric, "Three-Dimensional Flow Measurements Around a Mechanical Flapping Wing" M.S. Thesis, Brigham Young University, March 2015.
6. Pendlebury, Jonathon, "Light Field Imaging Applied to Reacting and Microscopic Flows" M.S. Thesis, Brigham Young University, December 2014.
7. Bodily, Kyle, "The Water Entry of Slender Axisymmetric Bodies: Forces, Trajectories and Acoustics" M.S. Thesis, Brigham Young University, August 2013.
8. Munns, Randy, "Popup Height and the Dynamics of Rising Buoyant Spheres" M.S. Thesis, Brigham Young University, June 2013.
9. Langley, Ken, "Investigations of Partially Immersed Spinning Spheres in a Liquid Bath and Butterfly Flight." M.S. Thesis, Brigham Young University, March 2013.
10. McEwen, Bryce, "Microscopic Light Field Particle Image Velocimetry." M.S. Thesis, Brigham Young University, June 2012.
11. Wright, Michael M., "Cavitation of a Water Jet in Water." M.S. Thesis, Brigham Young University, June 2012.
12. Nielson, Joseph, "Three Dimensional Characterization of Vocal Fold Fluid Structure Interactions." M.S. Thesis, Brigham Young University, June 2012.
13. Bryson, Joshua, "Soap Bubbles and Solid Spheres: Collisions and Interactions." M.S. Thesis, Brigham Young University, June 2011.

### 0.5.1 Undergraduate Mentoring

The USU environment is well suited for undergraduates do remarkable research, especially within the Mechanical Engineering Department. I believe that training graduate students how to utilize undergraduates can significantly improve both the graduate and undergraduate experience. My favorite part of being a professor is mentoring students as we research together. So far 20 undergraduates (listed below) have worked in my lab and I look forward to continued mentoring.

Ken Langley

- Undergraduate Research Assistant from Sept. 2010 to May 2011
- Published a peer reviewed journal paper as an undergraduate
- Presented a conference paper and three Posters
- Won two Gallery of Fluid Motion awards 2011 and 2012 (2011 was the prestigious Milton Van Dyke award)
- Supported by startup funds and ORCA grant
- Prepared and received ORCA grant

Taylor Killian

- Undergraduate Research Assistant from Sept. 2010 to May 2012
- Published a peer reviewed journal paper as an undergraduate
- Presented five conference papers and two posters as an undergraduate
- Supported by NSF IMPACT and ORCA grant
- Prepared and received ORCA grant
- Accepted offer of employment from Lincoln Labs, Lexington, MA

Robert Klaus

- Undergraduate Research Assistant from Sept. 2010 to May 2011
- Published a peer reviewed journal paper as an undergraduate
- Presented two conference papers and a Poster
- Supported by NSF IMPACT and ORCA grant
- Prepared and received ORCA grant
- Accepted offer of employment from Lincoln Labs, Lexington, MA

Joshua Furner

- Undergraduate Research Assistant from Dec. 2010 to May 2012
- Worked for credit 495R, developed a scanning PLIF system for Idaho National Labs (INL)
- Currently employed by INL

Jeffery Hendricks

- Undergraduate Research Assistant from Dec. 2010 to Dec. 2011
- Presented two conference papers and a poster
- Supported by NSF IMPACT Grant.

Alex Jafek

- Undergraduate Research Assistant from Dec. 2010 to Jan 2015

- Presented three conference papers and several Posters as an undergraduate
- Supported by startup funds

#### Mathew Elverud

- Undergraduate Research Assistant from Dec. 2011 to August 2012
- Prepared a conference paper
- Supported by NSF MRI Grant.

#### Eric Hardester

- Undergraduate Research Assistant from Dec. 2011 to August 2012
- Supported by NSF MRI Grant.
- Helped write a grant for removing spent munitions for Strategic Environmental Research and Development Program (SERDP)
- Currently a graduate student under my advisement

#### Randy Hurd

- Undergraduate Research Assistant from March 2012 to May 2012
- Supported by NSF MRI Grant.
- Helped write a grant for removing spent munitions for Strategic Environmental Research and Development Program (SERDP)
- Currently a graduate student under my advisement

#### Jedediah Alvey

- Undergraduate Research Assistant from Dec. 2011 to June 2012

#### Angel Duarte

- Undergraduate Research Assistant from Dec. 2011 to May 2012
- Supported by NSF MRI Grant.

#### Kyle Halgren

- Undergraduate Research Assistant from Dec. 2010 to May 2011
- Supported by startup funds

#### Nicolas Smith

- Undergraduate Research Assistant from Dec. 2011 to May 2012
- Supported by NSF MRI Grant

#### Jordan Huey

- Undergraduate Research Assistant from March 2011 to Sept. 2013
- Presented two posters at conferences
- Won a Gallery of Fluid Motion award 2012
- Supported by NSF MRI Grant

#### Parker Kuklinski

- Collaborating University of Rhode Island Undergraduate Research Assistant summers 2011 & 2012
- Guinness Book of World Record Holder for number of soccer ball taps in under 30 seconds (filmed by Truscott)

Matalyn Cox

- Undergraduate Research Assistant from Sept. 2012 to Dec. 2012
- Supported by Women in Engineering Mentoring Grant

David Robinson

- Undergraduate Research Assistant from Dec. 2012 to Sept. 2013
- Supported by ONR Outreach Grant.

Greg Rumsey

- Undergraduate Research Assistant from Oct. 2012 to Sept. 2013
- Supported by NSF MRI Grant.

Zach Smith

- Undergraduate Research Assistant from Oct. 2012 to Sept. 2013
- Supported by NSF MRI Grant.
- Currently a graduate student under my advisement

Jeremy Ellis

- Undergraduate Research Assistant from Oct. 2012 to Sept. 2013
- Supported by NSF MRI Grant.
- Currently a graduate student under my advisement

Mikkel Hansen

- Undergraduate Research Assistant from Oct. 2012 to Dec. 2012
- Supported by NSF MRI Grant.
- Employed by L3 Communications, Houston, TX.

Kip Hacking

- Undergraduate Research Assistant from Jan. 2013 to Present
- Supported by ONR outreach grant

Nathan Speirs

- Undergraduate Research Assistant from Oct. 2014 to Jan. 2015
- Supported by ONR grant

Madison Boyer

- Undergraduate Research Assistant from Jan. 2014 to Jan 2015
- Supported by SWE

Ben Lovett

- Undergraduate Research Assistant from Jan. 2015 to Present
- Supported by ONR grant and startup

Andrew Merritt

- Undergraduate Research Assistant from Jan. 2015 to Present
- Supported by ONR grant and startup

Nick Russell

- Undergraduate Research Assistant from Jan. 2015 to Present
- Supported by ONR grant and startup

Hunter Klein

- Undergraduate Research Assistant from Jan. 2015 to Present
- Supported by Undergraduate Fellows USU program

### 0.5.2 Graduate Mentoring

I have had the opportunity to work with excellent graduate students. I typically spend 30 to 60 minutes with each one individually each week, in addition to group research meetings. I have advised four M.S. students through completion of their theses and I love working on research projects with them. I require my Graduate students to publish their work in at least one conference proceeding and one archival journal. Two of the graduated students currently have their work under journal review. Currently, I am advising two M.S. students and three Ph.D. students.

#### *Current Graduate Students*

Nathan Speirs

- Ph.D. Research Assistant studying 3D full field velocity measurements of vocal folds – Sept. 2012 to Present
- Funded by RGS USU and ONR NURP
- Published: Fanning, T.\*, Mabey, C.\*, Bodily, K.\*, Hurd, R.\*, Pan, Z.\*, Boyer, M.\*, & Truscott, T.T., “Matryoshka cavity”, *Physics of Fluids*, **27** 091104 DOI:10.1063/1.4930902. September 2015.

Matt Jones

- PhD Research Assistant studying water impact– Sept. 2017 to Present
- Funded by Teaching Fellowship

Ben Lovett

- M.S. Research Assistant studying water impact of droplets onto needles– Sept. 2016 to Present
- Funded by Teaching Fellowship

Rafid Rahman

- Ph.D. Research Assistant studying Natural swarms and crowds – Sept. 2016 to Present

- Funded by ONR YIP award

#### Rafsan Rabbi

- Ph.D. Research Assistant studying water exit and air jets – Sept. 2016 to Present
- Funded by Teaching Fellowship and Department Fellowship

#### Past Graduate Students

##### Randy Hurd

- Hurd, R., “Water surface impact and ricochet of deformable elastomeric spheres,” Ph.D. Thesis, Utah State University, December 2017.
- Speirs, N.\*, Mansoor, M., Belden, J., Hurd, R.\*, & Truscott, T.T., “Fluted Films”, *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017. **Milton Van Dyke winner**
- Hurd, H., Allen, J., Belden, J., Makanoa, B., Mansoor, M., Speirs, N., Merritt, A., Hayashi, R., & Truscott, T., “Water music of Vanuatu”, *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017. DOI: 10.1103/APS.DFD.2017.GFM.V0071
- Belden, J., Hurd, H., Makanoa, B., Holekamp, S., Jandron, M., Bower, A., & Truscott, T., “Water music of Vanuatu”, *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017. DOI: 10.1103/APS.DFD.2017.GFM.V0071
- Belden, J., Hurd, H., Makanoa, B., Holekamp, S., Jandron, M., Bower, A., & Truscott, T., “Water Walking”, *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017. DOI: 10.1103/APS.DFD.2017.GFM.V0019
- Hurd, H.\*, Belden, J., Jandron, M., Bower, A., Holekamp, S. & Truscott, T., “Water walking - an evolution of water surface skipping” *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017.
- Kiyama, A., Pan, Z.\*, Daily, J., Thomson, S., Hurd, H.\* & Truscott, T., “Cavitation onset of an accelerating liquid” *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017.
- Truscott, T., Hurd, H.\*, Belden, J., Merritt, A.\* & Allen, J., “The Water music of Vanuatu” *70th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Denver, CO. November 19-21, 2017.
- Hurd, R.\*, Belden, J., Jandron, M., Fanning, T.D.\*, Bower, A. & Truscott, T.T., “Water entry of deformable spheres” *Journal of Fluid Mechanics*, **824**, DOI: 10.1017/jfm.2017.365, August 2017.
- Pan, Z., Kiyama, A., Tagawa, Y., Daily, D.J., Thomson, S.L., Hurd, R.\* & Truscott, T.T., “Cavitation onset caused by acceleration” *Proceedings of the National Academy of Sciences*, **114**, (32), DOI: 10.1073/pnas.1702502114, July 2017.
- Funded by the Office of Naval Research (ONR) National Undersea Research Program (NURP)
- Helped write a grant for removing spent munitions for Strategic Environmental Research and Development Program (SERDP)
- Was supported by ONR outreach grant

- Published: Fanning, T.\*, Mabey, C.\*, Bodily, K.\*, Hurd, R.\*, Pan, Z.\*, Boyer, M.\*, & Truscott, T.T., “Matryoshka cavity”, *Physics of Fluids*, **27** 091104 DOI:10.1063/1.4930902. September 2015.
- “On the free surface skipping characteristics of highly deformable elastic spheres,” M.S. Thesis, Brigham Young University, April 2015.
- M.S. Research Assistant studying the first impact of a skipping elastic sphere. Sept. 2012 to June 2015
- Developing and organizing the first ever SeaPerch program in Utah. Outreach to middle schools across Utah. Currently 10 schools involved from Davis to Utah Counties. Over 350 participating students.
- Department Fellow
- Helped write a grant for removing spent munitions for Strategic Environmental Research and Development Program (SERDP)
- Helped write Young Investigator Award (Funded)
- Supported by the ONR outreach grant and ONR ULI award
- Awarded NREIP summer fellowship (NUWC, Newport, RI) 5 summers in a row.
- ONR ULI awardee
- Published a peer reviewed journal paper: Fanning, T.\*, Mabey, C.\*, Bodily, K.\*, Hurd, R.\*, Pan, Z.\*, Boyer, M.\*, & Truscott, T.T., “Matryoshka cavity”, *Physics of Fluids*, **27** 091104 DOI:10.1063/1.4930902. September 2015.
- Published a peer reviewed journal paper: Mazzeo, B.A., Patil, A.N., Hurd, R.C.\*, Klis, J.M., Truscott, T.T. & Guthrie, W.S., “Air-Coupled Impact-Echo Delamination Detection in Concrete Using Spheres of Ice for Excitation.” *Journal of Nondestructive Evaluation (JONE)*, **33**, 3, 317-326, DOI:10.1007/s10921-013-0215-7, December 2013.
- Truscott, T.T., Belden, J. & Hurd, R.\*, “Water-skipping stones and spheres.” *Physics Today*, **67**, 12, 70, DOI: 10.1063/PT.3.2631, December 2014.
- Published a peer reviewed journal paper: Daily, J.\*, Pendlebury, J.\*, Langley, K.\*, Hurd, R.\*, Thomson, S. & Truscott, T., “Catastrophic cracking courtesy of quiescent cavitation.” *Physics of Fluids*, **26**, 091107, DOI:10.1063/1.4894073, September 2014.
- Published conference paper: Jandron, M.A., Hurd, R.C.\*, Belden, J.L., Bower, A.F., Fennell, W., & and Truscott, T.T., “Modeling of Hyperelastic Water-Skipping Spheres using Abaqus/Explicit.” SIMULIA Community Conference, 2014.
- Presented at conference: Truscott, T.T., Hurd, R., Jandron, M. & Belden, J., “Water Bouncing Balls: how material stiffness affects water entry.” Department of Mechanical Engineering Shell Lecture, University of Colorado, Boulder, CO. April 2014
- Presented at conference: Truscott, T.T., Hurd, R., Jandron, M. & Belden, J., “Water Bouncing Balls: how material stiffness affects water entry.” American Physical Society, Denver, CO. March 2014
- Presented at conference: Belden, J., Hurd, R.\*, Jandron, M., Bower, A.\*, & Truscott, T.T., “Oblique impact of water-skipping elastic spheres.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
- Presented at conference: Hurd, R.\*, Truscott, T.T. & Belden, J., “Performance enhancing water skipping: successive free surface impacts of elastic spheres.” *67th Annual Meet-*

ing of the American Physical Society Division of Fluid Dynamics, San Francisco, CA. November 23-25, 2014. *Undergraduate Involvement*

- Presented at conference: Fanning, T.\*, Hurd, R., Belden, J. & Truscott, T.T., “Water Entry of Deformable Spheres.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
- Presented at conference: Hurd, R.\*, Hacking, K.\* & Truscott, T.T., “Urinal dynamics.” *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburgh, PA. November 24-26, 2013. *Undergraduate Involvement*
- Presented at conference: Hacking, K.\*, Hurd, R.\*, Wright, G.\* & Truscott, T.T., “Undergraduate ROV outreach.” *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburgh, PA. November 24-26, 2013. *Undergraduate Involvement*
- Poster: Fanning, T.\*, Mabey, C.\*, Bodily, K.\*, Hurd, R.\*, Pan, Z.\*, Boyer, M.\*, & Truscott, T.T., “Matryoshka cavity”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. **Milton Van Dyke winner**
- Poster: Pendlebury, J.\*, Hurd, R.\*, Pan, Z.\*, Fanning, T.\*, Jafek, A.\* & Truscott, T.T., “Spark induced cavitation”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
- Poster: Pan, Z.\*, Hurd, R.\*, Pendlebury, J.\*, Fanning, Wilcox, B., Boyer, M.\* & Truscott, T.T., “Smoke and bubbles”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
- Poster: Hurd, R.\*, Mabey, C.\*, Bodily, K.\*, Jafek, Z., Hacking, K.\*, & Truscott, T.T., “Confessions of a Sitzpinkler.” *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburgh, PA. November 24-26, 2013. *Undergraduate Involvement*
- Poster: Hurd, R.\*, Bodily, K.\*, Mabey, C.\*, Townsend, E.\*, Belden, J. & Truscott, T.T., “Squishy spheres spawn sinuous sub-surfaces”, *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburgh, PA. November 24-26, 2013. *Undergraduate Involvement*

#### Zhao Pan

- Pan, Zhao, “Error propagation dynamics of PIV-based pressure field calculation” Ph.D. Thesis, Brigham Young University, May 2016.
- Pan, Z.\* Whitehead, J., Thomson, S.T., & Truscott, T.T., “Error propagation dynamics of PIV-based pressure field calculations: How well does the pressure Poisson solver perform inherently?” *Measurement Science and Technology*, **28**, 8, DOI: 10.1088/0957-0233/27/8/084012, July 2016.
- Pan, Z.\*, Pitt, W.P., Zhang, Y., Wu, N., Tao, Y., & Truscott, T.T., “The upside-down water collection system of *Syntricia Caninervis*” *Nature Plants*, **2:16076**, DOI: 10.1038/nplants.2016.76, June 2016.
- Hurd, R.\*, Fanning, T.\*, Pan, Z.\*, Mabey, C.\*, Bodily, K.\*, Hacking, K.\*, Speirs, N.\* & Truscott, T.T., “Matryoshka cavity”, *Physics of Fluids*, **27** 091104 DOI:10.1063/1.4930902. September 2015.
- Pan, Z.,\* Whitehead, J., & Truscott, T.T., “Error Propagation Dynamics of PIV-based Pressure Field Calculations” First International Symposium of Image Based Metrology



(ISIMet), Honolulu, HI, April 2016. direct link

- Truscott, T.T., Darbois-Textier, B., Lovett, B., Brandenbourger, M., Maquet, L., Strivay, D., Dorbolo, S., Ewoldt, R., Belden, J., Gilet, T., Sampara, N., Sharker, S.I., Boulenge, B., Marchiori, K., Robinson, W., & Pan, Z., “Unraveling expressionism.” *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015. *Undergraduate Involvement*
- Pan, Z., Whitehead, J., Thomson, S., & Truscott, T.T., “Error propagation in PIV-based Poisson pressure calculations” *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
- Hurd, R., Pan, Z., Merritt, A., Belden, J., & Truscott, T.T., “Creating a urine black hole” *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015. *Undergraduate Involvement*
- Speirs, N., Hurd, R., Sharker, S.I., Pan, Z., & Truscott, T.T., “Leave the seat down: They physics of droplet streams impacting a free surface” *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
- Truscott, T.T., Belden, J., Pan, Z.\* & Speirs, N.\*, “Why bigger may in fact be better... in the context of table tennis.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. *Undergraduate Involvement*
- Pan, Z.\*, & Truscott, T.T., “Bursting the Taylor cone bubble.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. Withdrawn
- Pan, Z.\*, Wu, N., Thomson, S., Pitt, W. & Truscott, T.T., “Moss hair water transport.” *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburg, PA. November 24-26, 2013.
- Darbois-Textier, B., Pan, Z., Lovett, B., Brandenbourger, M., Sharker, S.I., Maquet, L., Gilet, T., Boulenge, B., Marchiori, K., Belden, J., Dorbolo, S., Strivay, D., Hurd, R., Robinson, W., & Truscott, T.T., “Modern art entanglement: comment s’emmler les pinceaux”, *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
- Pan, Z., Hurd, R., Merritt, A., Speirs, N., & Truscott, T.T., “Fogged up films”, *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
- Pan, Z.,\* Whitehead, J., & Truscott, T.T., “Error propagation dynamics of PIV-based pressure field calculation” *11th International Symposium on Particle Image Velocimetry*, Santa Barbara, CA. September 2015. **Invitation to publish in *Measurement Science and Technology***
- Fanning, T.\*, Mabey, C.\*, Bodily, K.\*, Hurd, R.\*, Pan, Z.\*, Boyer, M.\*, & Truscott, T.T., “Matryoshka cavity”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. **Milton Van Dyke winner**
- Pendlebury, J.\*, Hurd, R.\*, Pan, Z.\*, Fanning, T.\*, Jafek, A.\* & Truscott, T.T., “Spark induced cavitation”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
- Pan, Z.\*, Hurd, R.\*, Pendlebury, J.\*, Fanning, Wilcox, B., Boyer, M.\* & Truscott, T.T., “Smoke and bubbles”, *67th Annual Meeting of the American Physical Society Division*

of Fluid Dynamics, San Francisco, CA. November 23-25, 2014.

- Hurd, R., Merritt, A., Pan, Z. & Truscott, T.T. “Splash prevention apparatus” Invention Disclosure, USU 16034, May 2016.
- **Milton Van Dyke Gallery of Fluid Motion Poster Winner**, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA*, “Matryoshka cavity”, by Fanning, T., Mabey, C., Bodily, K., Hurd, R., Pan, Z., Boyer, M., & Truscott, T.T., November 23-25, 2014.
- Funded by NIH grant with Prof. Scott Thomson

Saberul Islam Sharker

- Sharker, Saberul I., “Inversion Characteristics of a Buoyant Cylindrical Puck During Oblique Water Impact” M.S. Thesis, Utah State University, June 2016.
- Hurd, R.C.\*, Speirs, N.B.\*, Belden, J., Pan, Z., Lovett, B.\*, Robinson, W.\*, Zamora, M.A., Sharker, S.I.\*, Mansoor, M.M., Merritt, A. \*, & Truscott, T.T. “Shear joy of watching paint dry” *Physical Review Fluids*, **00**, DOI:10.1103/PhysRevFluids.00.000500. September 2017.
- Robinson, W.\*, Speirs, N.\*, Sharker, S.I.\*, Hurd, R.\*, Williams, B.J.\* & Truscott, T.T. , “Bubble baths: just splashing around?” *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016. *Undergraduate Involvement*
- Sharker, S.I.\*, Holekamp, S., Fish, F., Belden, J., & Truscott, T.T., “ Bird beaks bear the brunt of bashing impact” *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016.
- Truscott, T.T., Darbois-Texier, B., Lovett, B., Brandenbourger, M., Maquet, L., Strivay, D., Dorbolo, S., Ewoldt, R., Belden, J., Gilet, T., Sampara, N., Sharker, S.I.\*, Boulenge, B., Marchiori, K., Robinson, W.\*, & Pan, Z.\*, “Unraveling expressionism.” *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015. *Undergraduate Involvement*
- Speirs, N.\*, Hurd, R.\*, Sharker, S.I.\*, Pan, Z.\*, & Truscott, T.T., “Leave the seat down: They physics of droplet streams impacting a free surface” *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
- Hurd, R.\*, Speirs, N.\*, Belden, J., Pan, Z.\*, Lovett, B.\*, Robinson, W.\*, Boyer, M.\*, Sharker, S.I.\*, Mansoor, M., Merritt, A.\*, & Truscott, T.T., “The shear joy of watching paint dry”, *69th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Portland, OR. November 20-22, 2016. DOI: 10.1103/APS.DFD.2016.GFM.V0095
- **Milton Van Dyke winner**
- Darbois-Texier, B., Pan, Z., Lovett, B., Brandenbourger, M., Sharker, SI., Maquet, L., Gilet, T., Boulenge, B., Marchiori, K., Belden, J., Dorbolo, S., Strivay, D., Hurd, R., Robinson, W., & Truscott, T.T., “Modern art entanglement: comment s’emmler les pinceaux”, *68th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Boston, MA. November 22-24, 2015.
- TA for MAE 4400 Thermo Fluids Laboratory for 2.5 years.
- Supported in part by ONR YIP award and TA Fellowships

Zach Smith

- Smith, Zachary C.S., “Inversion Characteristics of a Buoyant Cylindrical Puck During Oblique Water Impact” M.S. Thesis, Brigham Young University, April 2016.
- Ellis, J.\*, Smith, Z.\* & Truscott, T.T., “Antisymmetric cavity formation”, 67<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA. November 23-25, 2014.
- Smith, Z.\*, Hayden, S.\* & Truscott, T.T., “Flipping over: inversion characteristics of a buoyant cylindrical puck during oblique water impact.” 67<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA. November 23-25, 2014. *Undergraduate Involvement*
- Supported in part by ONR ULI award

#### Jeremy Ellis

- Ellis, Jeremy, “The Effect of Projectile Nose Shape on the Formation of the Water Entry Cavity” M.S. Thesis, Brigham Young University, July 2016.
- Ph.D. Research Assistant studying 3D full field velocity measurements of vocal folds – Sept. 2012 to Present
- Ellis, J.\*, Smith, Z.\* & Truscott, T.T., “Antisymmetric cavity formation”, 67<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA. November 23-25, 2014.
- Ellis, J.\*, Boyer, M. & Truscott, T.T., “The Effect of Nose Shape on Water-Entry Cavity Formation.” 67<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA. November 23-25, 2014. *Undergraduate Involvement*
- Self Funded

#### Eric Hardester

- “Three-Dimensional Flow Measurements Around a Mechanical Flapping Wing,” M.S. Thesis, Brigham Young University, March 2015.
- M.S./MBA Research Assistant studying 3D flow measurements around a flapping wing – Sept. 2012 to May 2015
- Supported by Air Force Office of Scientific Research (AFOSR) grant with Prof. Scott Thomson
- Published peer review journal article: Langley, K.R.\*, Hardester, E.\*, Thomson, S.L. & Truscott, T.T., “Three-dimensional flow measurements on flapping wings using synthetic aperture PIV”, *Exp Fluids*, **55**, 1831, DOI:10.1007/s00348-014-1831-4, October 2014.
- Presented at a conference: Hardester, E.\*, Thomson, S. & Truscott, T.T., “Three-dimensional flow measurements of a differentially driven flapping wing mechanism.” 65<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Diego, CA. November 18-20, 2012.

#### Jonathon Pendlebury

- “Light Field Imaging Applied to Reacting and Microscopic Flows,” M.S. Thesis, Brigham Young University, December 2014.
- Published journal article: Daily, J.\*, Pendlebury, J.\*, Langley, K.\*, Hurd, R.\*, Thomson, S. & Truscott, T., “Catastrophic cracking courtesy of quiescent cavitation.” *Physics of Fluids*,

26, 091107,

DOI:10.1063/1.4894073, September 2014.

- Published peer-review conference: Pendlebury, J.\*, Belden, J., McEwen, B.\* & Truscott, T.T., “Error sources and propagation in three-dimensional microscopic light field particle image velocimetry.” Society of Engineering Science (SES) 51st Annual Technical Meeting, Purdue University, West Lafayette, IN, October 1-3, 2014.
- Published peer-review conference: Belden, J., Truscott, T.T., Pendlebury, J.\* & Jafek, A.\* “Advances in Light Field Imaging for Measurement of Fluid Mechanical Systems.” DyDess Conference@MIT, Boston, MA, 2014.
- Daily, J.D.\*, Pendlebury, J.\*, Langley, K. & Truscott, T.T., “Cavitation you can hold in your hand... for a moment.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
- Presented at conference: Pendlebury, J.\*, Tree, D., & Truscott, T.T., “3D reconstruction and velocity fields of a flame.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012.
- Poster: Pendlebury, J.\*, Hurd, R.\*, Pan, Z.\*, Fanning, T.\*, Jafek, A.\* & Truscott, T.T., “Spark induced cavitation”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
- Poster: Pan, Z.\*, Hurd, R.\*, Pendlebury, J.\*, Fanning, Wilcox, B., Boyer, M.\* & Truscott, T.T., “Smoke and bubbles”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
- Poster: Munns, R.\*, Pendlebury, J.\*, Huey, J.\* & Truscott, T.T., “Sphere uprising.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012. *Undergraduate Involvement*
- Poster: Murray, P.\*, Pendlebury, J.\*, Tree, D. & Truscott, T.T., “Flame reconstruction using synthetic aperture imaging,” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion Video, Baltimore, MD. November 20-22, 2011.

#### Ken Langley

- “Investigations of Spinning Spheres in a Shallow Bath and Butterfly Flight,” M.S. Thesis, Brigham Young University, March 2013.
- SMART Fellow
- Published a peer reviewed journal paper: Langley, K\*., Maynes, D. & Truscott, T.T., “Eggs and Milk: Spinning Spheres Partially Immersed in a Liquid Bath.” *Physics of Fluids*, **27**, 032102, DOI:10.1063/1.4913574, March 2015.
- Published a peer reviewed journal paper: Langley, K.R.\*, Hardester, E.\*, Thomson, S.L. & Truscott, T.T., “Three-dimensional flow measurements on flapping wings using synthetic aperture PIV”, *Exp Fluids*, **55**, 1831, DOI:10.1007/s00348-014-1831-4, October 2014.
- Published a peer reviewed journal paper: Daily, J.\*, Pendlebury, J.\*, Langley, K.\*, Hurd, R.\*, Thomson, S. & Truscott, T., “Catastrophic cracking courtesy of quiescent cavitation.” *Physics of Fluids*, **26**, 091107, DOI:10.1063/1.4894073, September 2014.
- Published a peer reviewed journal paper: Bodily, K.\*, Langley, K.\*, Huey, J.\* & Truscott,

- T.T., “A new angle on water entry.” *Physics of Fluids*, **25**, Iss. 9, DOI: 10.1063/1.4820125 September 2013.
- Published a peer reviewed journal paper: Truscott, T.T., Wright, M.M., Langley, K.R., & Jesse Belden “Holy balls! Balls that walk on water”, *Physics of Fluids*, **24**, 091103; DOI: 10.1063/1.4746071, September 2012.
  - Conference presentation: Daily, J.D.\*, Pendlebury, J.\*, Langley, K. & Truscott, T.T., “Cavitation you can hold in your hand... for a moment.” *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014.
  - Conference presentation: Langley, K.\*, Thomson, S. & Truscott, T.T., “Whole-field, time resolved velocity measurements of flow structures on insect wings during free flight.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012.
  - Langley, K.\*, Hendricks, J.\*, Elverud, M.\*, Maynes, D. & Truscott, T.T., “Eggs in Milk: The conclusion.” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011. *Undergraduate Involvement*
  - Conference presentation: Truscott, T.T., Wright, M.\*, Langley, K.\*, Munns, R.\*, & Belden, J., “Holy balls!” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011.
  - Conference presentation: Truscott, T.T., Belden, J., Langley, K.\*, Epps, B. & Maynes, D., “Eggs in milk.” *63rd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Long Beach, CA. November 21-23, 2010.
  - Poster: Jesse, D.D.\*, Langley, K.\*, Thomson, S.L. & Truscott, T.T., “Catastrophic cracking courtesy of quiescent cavitation”, *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburg, PA. November 24-26, 2013. **Milton Van Dyke winner**
  - Poster: Bodily, K.\*, Langley, K.\*, Huey, J.\* & Truscott, T.T., “A new angle on water entry.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012. **Gallery winner Undergraduate Involvement**
  - Poster: Jafek, A.\*, Langley, K.\*, Killian, T.\* & Truscott, T.T., “Bouncing in puddles,” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011. *Undergraduate Involvement Undergraduate Involvement*
  - Poster: Wright, M.\*, Langley, K.\*, Belden, J. & Truscott, T.T., “Holy Balls!” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion Video, Baltimore, MD. November 20-22, 2011. **Milton Van Dyke winner**
  - Poster: Langley, K.\*, Hendricks, J.\*, Belden, J., North Attleboro Middle School & Truscott, T.T., “Eggs in milk.” *63rd Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Long Beach, CA. November 21-23, 2010. *Undergraduate Involvement*

#### Kyle Bodily

- “The Water Entry of Slender Axisymmetric Bodies: Forces, Trajectories and Acoustics,” M.S. Thesis, Brigham Young University, August 2013.
- Supported by the Office of Naval Research (ONR) University Laboratory Initiative (ULI) and ONR outreach program
- Published a peer reviewed journal paper: Bodily, K.G.\*, Carlson, S.J.\*, & Truscott, T.T.,

“The Water Entry of Slender Axisymmetric Bodies.” *Physics of Fluids*, **26** DOI: 10.1063/1.4890832, July 2014.

- Published a peer reviewed journal paper: Fanning, T.\*, Mabey, C.\*, Bodily, K.\*, Hurd, R.\*, Pan, Z.\*, Boyer, M.\*, & Truscott, T.T., “Matryoshka cavity”, *Physics of Fluids*, **27** 091104 DOI:10.1063/1.4930902. September 2015.
- Published a peer reviewed journal paper: Bodily, K.\*, Langley, K.\*, Huey, J.\* & Truscott, T.T., “A new angle on water entry.” *Physics of Fluids*, **25**, Iss. 9, DOI: 10.1063/1.4820125 September 2013.
- Conference presentation: Bodily, K.\* & Truscott, T.T., “The water entry of streamlined bodies.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012.
- Poster: Fanning, T.\*, Mabey, C.\*, Bodily, K.\*, Hurd, R.\*, Pan, Z.\*, Boyer, M.\*, & Truscott, T.T., “Matryoshka cavity”, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Francisco, CA. November 23-25, 2014. **Milton Van Dyke winner**
- Poster: Hurd, R.\*, Mabey, C.\*, Bodily, K.\*, Jafek, Z., Hacking, K.\*, & Truscott, T.T., “Confessions of a Sitzpinkler.” *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburg, PA. November 24-26, 2013. *Undergraduate Involvement*
- Poster: Hurd, R.\*, Bodily, K.\*, Mabey, C.\*, Townsend, E.\*, Belden, J. & Truscott, T.T., “Squishy spheres spawn sinuous sub-surfaces”, *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburg, PA. November 24-26, 2013. *Undergraduate Involvement*
- Poster: Bodily, K.\*, Langley, K.\*, Huey, J.\* & Truscott, T.T., “A new angle on water entry.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012. **Gallery winner Undergraduate Involvement**

#### Randy Munns

- “Pop up Height and the Dynamics of Rising Buoyant Spheres,” M.S. Thesis, Brigham Young University, June 2013.
- Supported by the NSF MRI Grant
- Truscott, T.T., Epps B.P., & Munns R.H., “Water exit dynamics of buoyant spheres” *Phys. Rev. Fluids*, **1**, 074501, DOI: 10.1103/PhysRevFluids.1.074501, November 2016.
- Conference presentation: Truscott, T.T. & Munns, R.\*, “Pop up height of buoyant rising spheres.” *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Pittsburg, PA. November 24-26, 2013. *Undergraduate Involvement*
- Conference presentation: Truscott, T.T., Wright, M.\*, Langley, K.\*, Munns, R.\*, & Belden, J., “Holy balls!” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011.
- Poster: Munns, R.\*, Pendlebury, J.\*, Huey, J.\* & Truscott, T.T., “Sphere uprising.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012. *Undergraduate Involvement*

#### Bryce McEwen

- “Microscopic light field particle image velocimetry,” M.S. Thesis, Brigham Young University, June 2012.
- Conference presentation: Truscott, T.T., McEwen, B. & Belden, J., “Microscopic Light Field Particle Image Velocimetry.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, San Diego, CA. November 18-20, 2012.
- Conference presentation: McEwen, B., Belden, J. & Truscott, T.T., “Light field particle image velocimetry.” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011.
- This work helped write a grant for an NSF MRI which was awarded in 2011 “MRI: Development of a Multi-Camera Synthetic Aperture Technique for Measuring High-Speed, Unsteady, Three-Dimensional Velocity Flow Fields.”
- Supported by startup funds and NSF MRI grant

#### Michael Wright

- “Cavitation of a water jet in water,” M.S. Thesis, Brigham Young University, June 2012.
- Peer reviewed journal article in press: Wright, M.M., Dropkin, A., Truscott, T.T., “Cavitation of a Submerged Jet.” *Experiments in Fluids*, **In Review**, 2013.
- Published a peer reviewed journal article: Truscott, T.T., Wright, M.M., Langley, K.R., & Jesse Belden “Holy balls! Balls that walk on water”, *Physics of Fluids*, **24**, 091103; DOI: 10.1063/1.4746071, September 2012.
- Conference presentation: Truscott, T.T., Wright, M., Langley, K., Munns, R., & Belden, J., “Holy balls!” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011.
- Poster presentation and award: Truscott, T.T., Wright, M., Langley, K., Munns, R., & Belden, J., “Holy balls!” *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*, Baltimore, MD. November 20-22, 2011. **Winner Milton Van Dyke Award**
- Supported by startup funds

#### Joseph Nielson

- “Three dimensional characterization of vocal fold fluid structure interactions,” M.S. Thesis, Brigham Young University, August 2012.
- Published a peer reviewed journal paper: Truscott, T.T., Belden, J., Nielson, J.R., Daily, D.D. & Thomson, S.L., “Determining 3D Flow Fields Via Multi-camera Light Field Imaging.” *Journal of Visualized Experiments*, **To appear** 2013.
- Conference presentation:
- Nielson, J.R., Truscott, T.T., Daily, D.J., Luegmair, G., Döllinger, M. & Thomson, S.L., “Whole-Field 3d Characterization Of The Glottal Jet Using Synthetic Aperture Particle Image Velocimetry.” ICVPB, 2012.
- Conference presentation: Nielson, J.R., Truscott, T.T., Daily, D.J., Luegmair, G., Döllinger, M. & Thomson, S.L., “Whole-Field 3D Characterization of a Pulsating Jet Using Synthetic Aperture Particle Image Velocimetry.” Rocky Mountain NASA Space Grant Consortium, 2012.
- Conference video: Daily, J., Nielson, J., Thomson, S. & Truscott, T.T., “3D synthetic aperture PIV measurements from artificial vibrating vocal folds” *64th Annual Meeting of*

*the American Physical Society Division of Fluid Dynamics*, Gallery of Fluid Motion Video, Baltimore, MD. November 20-22, 2011.

- Supported by the NASA Consortium and NIH Funding through Prof. Scott Thomson

Joshua Bryson

- “Soap Bubbles and Solid Spheres: Collisions and Interactions.” M.S. Thesis, Brigham Young University, June 2011.
- Conference presentation: Killian, T., Bryson, J., Huey, J., Bird, J.C., Nave, J-C., & Truscott, T.T., “Self healing: solid spheres impacting soap bubbles.” *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*. San Diego, CA. November 18-20, 2012.
- Self funded

### 0.5.3 Graduate Student Awards

This section lists awards won by graduate and undergraduate students under my advisement.

- **Milton Van Dyke Gallery of Fluid Motion Poster Winner**, *67th Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA*, “Matryoshka cavity”, by Fanning, T., Mabey, C., Bodily, K., Hurd, R., Pan, Z., Boyer, M., & Truscott, T.T., November 23-25, 2014.
- **Milton Van Dyke Gallery of Fluid Motion Video Winner**, *66th Annual Meeting of the American Physical Society Division of Fluid Dynamics, Pittsburg, PA*. “Catastrophic cracking courtesy of quiescent cavitation.” by Jesse, D.D., Langley, K., Thomson, S.L. & Truscott, T.T., November 24-26, 2013.
- **Gallery of Fluid Motion Poster Winner**, *65th Annual Meeting of the American Physical Society Division of Fluid Dynamics*. San Diego, CA, “A new angle on water entry.” by Bodily, K., Langley, K., Huey, J. & Truscott, T.T., November 18-20, 2012. **Gallery winner**
- **Milton Van Dyke Gallery of Fluid Motion Video Winner**, *64th Annual Meeting of the American Physical Society Division of Fluid Dynamics*. Gallery of Fluid Motion Video, Baltimore, MD, “Holy Balls!” by Wright, M., Langley, K., Belden, J. & Truscott, T.T., November 20-22, 2011.
- **Poster Gallery Winner**, *162 Annual Acoustical Society of America Meeting*. Seattle, WA, “Three-dimensional whole-eld measurements of pulsatile glottal jets using synthetic aperture particle image velocimetry,” by Daily, D.J., Truscott, T.T. & Thomson, S.L., May 23-27, 2011.

## 0.6 Outreach Activities

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Utah ROV [utahrov.org](http://utahrov.org)

Founded the Utah Chapter of SeaPerch, includes 15 elementary and middle schools in Utah and Davis County. Organized the 1<sup>st</sup> Utah/Intermountain Competition held on March 2013 and the 2<sup>nd</sup> and 3<sup>rd</sup> annual competitions held on March 2014 & 2015. The SeaPerch Program provides



students with the opportunity to learn about robotics, engineering, science, and mathematics (STEM) while building an underwater ROV as part of a science and engineering technology curriculum. Funded by the Office of Naval Research 2012-2013. Funded by US Synthetic 2013-2014. Over 2,000 participants to date! June 2012 - Present.

Regularly present research at local elementary, middle and high schools. June 2012 - Present.

Regularly produce videos and informative posts online regarding fluid dynamics, high speed videos and exciting scientific/engineering information for the general public. June 2010 - Present.

## 0.7 Professional Service

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### Conference Related Service

**Organizing committee:** American Physical Society Division of Fluid Dynamics annual meeting, Denver, CO November 2017.

**DFD Science and Media Relations Committee Member** 3 year appointment (2015-2018). American Physical Society, Division of Fluid Dynamics.

**Session Chair:** "H37 Drops: Impacts with fluid surfaces." Tadd T. Truscott, 69<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Portland, OR. November 21, 2016.

**Co-organizer** 2nd International Symposium on Image based Metrology (ISIMet) conference 2018 - Organized with the 17th ISROMAC conference 2018.

**Co-organizer** First International Symposium on Image based Metrology (ISIMet) conference 2016 - Organized with the 16th International Symposium on Transport Phenomena and Dynamics of Rotating Machinery (ISROMAC) 2016 conference.

**Session Chair:** "M35 Drops: General." Tadd T. Truscott, 68<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Boston, MA. November 24, 2015.

**Session Chair:** "D4 Bubbles: Acoustics and Cavitation." Tadd T. Truscott, 67<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Francisco, CA. November 23, 2014.

**Session Chair:** "L15: Biofluids: Insect Flight." Tadd T. Truscott, 66<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, San Diego, CA. November 19, 2012.

**Session Chair:** "QM: Free Surface Flows: Droplets and Sheets." Tadd T. Truscott, 63<sup>rd</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Long Beach, CA. November 23, 2010.

**Session Chair:** "FC Drops and Bubbles VI." Tadd T. Truscott, 60<sup>th</sup> Annual Meeting of the American Physical Society Division of Fluid Dynamics, Salt Lake City, UT. November 19, 2007.

### Professional Affiliations

American Physical Society (APS) 2005 - Present.

Society of Naval Architects and Marine Engineers (SNAME) 2003 - Present.

Marine Technology Society (MTS) 2003 - Present.

IEEE Oceanic Engineering Society (IEEE OES) 2003 - Present.

## **Journal Paper Reviews**

Manuscript Reviewer, Journal of Fluid Mechanics, 2x 2013, 1x 2014, 2x 2015, 1x 2016.  
Manuscript Reviewer, Physics of Fluids, 2x 2011, 1x 2012, 2x 2013, 1x 2014, 1x 2015, 1x 2016.  
Manuscript Reviewer Journal of Fluid and Structures 1 x 2013, 1x 2014, 1x 2015.  
Manuscript Reviewer Measurement Science and Technology 1 x 2013.  
Manuscript Reviewer, The International Electronic Journal of Optics, 1x 2012.  
Manuscript Reviewer, Ocean Engineering, 1x 2010, 1x 2014.  
Manuscript Reviewer, Langmuir, 1x 2011.  
Manuscript Reviewer, Journal of Hydrodynamics, 1x 2011.  
Manuscript Reviewer, International Society of Offshore and Polar Engineers, 1x 2011.  
Manuscript Reviewer, ASME Journal of Fluids engineering, 2x 2014, 1x 2013.  
Manuscript Reviewer, European Physical Letters, 1x 2014.  
Manuscript Reviewer, Experiments in Fluids, 1x 2015.  
Manuscript Reviewer, Interface, 1x 2015.  
Manuscript Reviewer, International Journal of Engineering Mathematics, 1x 2014.  
Manuscript Reviewer, Journal of Fluids, 1 x 2014.  
Manuscript Reviewer, Journal of Physics Condensed Matter, 1x 2016.  
Manuscript Reviewer, Nature Microgravity, 1x 2016.

## **Other Professional Service**

Science Mathematics and Research Transformation (SMART) Reviewer 2013.  
NSF Graduate Research Fellowship Reviewer 2013.  
Naval Surface Warfare Center Post Graduate Fellowship Reviewer 2012.

## **0.8 Academic Service**

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### **University Assignments**

ORCA Grant Reviewer. November 2010, 2011, 2012, 2013. I reviewed undergraduate student research proposals for the BYU ORCA Grant program.

RGS Fellowship reviewer 2016.

### **Department Service**

Member of Department Graduate Committee, January 2011– Present.  
Graduate Seminar Coordinator, September 2011 – Present.  
Member of Ph.D. Thermodynamics and Fluid Dynamics Qualifying Exam Committee, September 2010 – Present.  
Lab-O-Ween Coordinator and Founder, Oct. 2012.  
Marine Technology Society Advisor and one of the BYU chapter Founders, November 2012.  
Hiring committee 2015 - present  
Graduate committee 2015 - present