

Clayton Byers, Ph.D.

Department of Engineering
Trinity College
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EDUCATION

- Princeton University** Princeton, NJ
Doctor of Philosophy, Mechanical & Aerospace Engineering 2013-2018
Thesis: *Theoretical and Experimental Investigations of Similarity Solutions in Turbulent Flows.*
Adviser: Prof. Marcus Hultmark
- Washington State University** Pullman, WA
Bachelors of Science (summa cum laude), Mechanical Engineering 2004 – 2009

PROFESSIONAL EXPERIENCE

- Assistant Professor, Trinity College** Hartford, CT
Perform research in fundamental fluid dynamics and turbulence studies. Teach core and elective engineering courses. Responsible for academic advising of students, directing student research, and senior design project guidance. 2018 – Present
- Faculty, Bard College** Annandale-On-Hudson, NY
Faculty for Citizen Science program, a three week, 72hr course introducing freshman students to the scientific method, promoting scientific literacy, and community engagement. 2017 – 2018
- Co-Founder & Adviser, Tendo Technologies** Princeton, NJ
Provide technical advice, guidance, and feedback for sensor and system development. 2017 – Present
- Vice President, Tendo Technologies** Princeton, NJ
Founded technology startup focused on development of novel sensing devices for measurements of fluid flows. Primary responsibilities include sensor and electronic system testing and external fund-raising. 2017 – 2018
- Graduate Coordinator, McGraw Teaching and Learning Center** Princeton, NJ
Responsible for overseeing and assisting in the management of the university tutoring program, including designing and running training, interviewing and hiring, staffing and scheduling, and providing mentoring and feedback for 140+ tutors. 2016 – 2018
- Project Manager, United States Air Force** Vandenberg AFB, CA
Managed multiple multi-million dollar projects dealing with modernization and sustainment of the Western Range at Vandenberg AFB. Primary fields of project involvement include backup power systems and communications equipment. 2009 – 2013

AWARDS, GRANTS, AND HONORS

- Trinity College Center for Teaching and Learning Fellow 2019-2020
NASA Connecticut Space Grant Consortium - \$10,000 2018
1st place presentation - MAE Research Day 2017
Honorable mention - Ford Foundation Dissertation Fellowship 2017
Princeton University Engineering Council's Excellence in Teaching Award 2017
The Luigi Crocco Award for Teaching Excellence 2015
Distinguished Graduate, Air Force ROTC 2009
WSU President's Honor Roll (all 10 semesters) 2009
WSU Outstanding Junior in Mechanical Engineering 2008
WSU Outstanding Sophomore in Mechanical Engineering 2007

WSU President's award 2007

TEACHING EXPERIENCE

Trinity College

Hartford, CT

ENGR 337: Engineering Thermodynamics F18,19
ENGR 232: Engineering Materials S19
ENGR 226: Mechanics II (Dynamics) S19
ENGR 225: Mechanics I (Statics) F18,19

Bard College

Annandale-On-Hudson, NY

Citizen Science Program W18

Princeton University

Princeton, NJ

Assistant in Instruction

MAE 553: Turbulence (guest lectures) F16,17
MAE 305: Differential Equations F16,17
MAE 224: Integrated Engineering Science Laboratory S15
MAE 222: Mechanics of fluids S16

The W.E.B. Du Bois Scholars Institute

Princeton, NJ

Intro to Engineering S16

SERVICE

Referee/Reviewer

Physical Review Fluids 2017 – *present*
Physics of Fluids 2017 – *present*
Chemical Engineering Science 2019 – *present*
Experiments in Fluids 2019 – *present*

PUBLICATIONS

Peer-Reviewed Articles

C. P. **Byers**, M. K. Fu, Y. Fan, and M. Hultmark, "Development of instrumentation for measurements of two components of velocity with a single sensing element.", *Meas. Sci. Technol.*, 2018.

C. P. **Byers**, M. Hultmark, and W. K. George, "Two-space, two-time similarity solution for decaying homogeneous turbulence.", *Phys. Fluids*, 2017.

M. K. Fu, Y. Fan, C. P. **Byers**, T.- H. Chen, C. B. Arnold, and M. Hultmark, "Elastic Filament Velocimetry (EFV).", *Meas. Sci. Technol.*, 2016.

Conference Proceedings

C. P. **Byers**, J.F. MacArt, M.E. Mueller, and M. Hultmark, "Similarity Constraints in Decaying Isotropic Turbulence", *11th Int. Symp. on Turbulence and Shear Flow Phenomena*, Southampton, UK, 2019.

C. P. **Byers**, M. K. Fu, Y. Fan, K. Kokmanian, and M. Hultmark, "Advancements in measuring the wall-normal velocity fluctuations in a turbulent boundary layer", *10th Int. Symp. on Turbulence and Shear Flow Phenomena*, Chicago, Illinois, 2017.

PRESENTATIONS

C. P. **Byers**, J.F. MacArt, M.E. Mueller, and M. Hultmark, "Triple-Correlations in Decaying Isotropic Turbulence", *APS Division of Fluid Dynamics Meeting*, (72), 2019.

- C. P. **Byers**, “Turbulence – Extracting Order from Chaos”, *Invited Lecture for Wesleyan University Physics Colloquium*, 2019.
- C. P. **Byers**, J.F. MacArt, M.E. Mueller, and M. Hultmark, “Similarity Constraints in Decaying Isotropic Turbulence”, *11th Int. Symp. on Turbulence and Shear Flow Phenomena*, 2019.
- C. P. **Byers**, J.F. MacArt, M.E. Mueller, and M. Hultmark, “Similarity in decaying isotropic turbulence: functional forms, constraints in single-and two-time evolution, and DNS results.”, *APS Division of Fluid Dynamics Meeting*, (71), 2018.
- M. K. Fu, C. P. **Byers**, Y.F. Fan, and M. Hultmark, “Just my two ‘sense’: A novel sensor design for two-component velocity measurements.”, *APS Division of Fluid Dynamics Meeting*, (71), 2018.
- C. P. **Byers**, “An intersection of biology and fluid dynamics.”, *Conference on Why Science Matters*, Bard College, 2018.
- C. P. **Byers** and M. Hultmark, “Multi-component velocity and temperature measurements in wall bounded turbulent flow utilizing a novel sensor.”, *APS Division of Fluid Dynamics Meeting*, (70), 2017.
- C. P. **Byers**, M. K. Fu, Y. Fan, and M. Hultmark, “Multi-component velocity measurements in wall bounded turbulent flow utilizing a novel sensor.”, *Princeton MAE Research Day*, 2017.
- C. P. **Byers**, M. K. Fu, Y. Fan, and M. Hultmark, “Multi-component velocity measurements in wall bounded turbulent flow utilizing a novel sensor.”, *16th European Turbulence Conference*, 2017.
- C. P. **Byers**, M. K. Fu, Y. Fan, K.A. Kokmanian, and M. Hultmark, “Advancements in measuring the wall-normal velocity fluctuations in a turbulent boundary layer”, *10th Int. Symp. on Turbulence and Shear Flow Phenomena*, 2017.
- C. P. **Byers**, and M. Hultmark, “Scaling analysis of the mean and variance of temperature in a developing thermal boundary layer.”, *APS Division of Fluid Dynamics Meeting*, (69), 2016.
- C. P. **Byers**, M. K. Fu, Y. Fan, and M. Hultmark, “Turbulent temperature measurements in water.”, *24th International Congress of Theoretical and Applied Mechanics*, 2016.
- C. P. **Byers**, M. K. Fu, Y. Fan, T.- H. Chen, and M. Hultmark, “Velocity measurements from a strain-based nano-scale sensor.”, *1000 Islands Fluid Mechanics Meeting*, 2016.
- C. P. **Byers**, and M. Hultmark, “Investigation of the temperature field in a turbulent boundary layer.”, *APS Division of Fluid Dynamics Meeting*, (68), 2015.