CURRICULUM VITAE

Filippo Coletti
Professor of Experimental Fluid Mechanics
Institute of Fluid Dynamics
Department of Mechanical and Process Engineering
ETH Zurich
Sonneggstrasse 3, CH-8092 Zürich, Switzerland
fcoletti@ethz.ch

EDUCATION

Ph.D., Aerospace Engineering	University of Stuttgart, Germany	2010
Diploma, Fluid Mechanics	von Karman Institute, Belgium	2006
M.S., Mechanical Engineering	University of Perugia, Italy	2005
B.S., Mechanical Engineering	University of Perugia, Italy	2003

EMPLOYMENT

ETH Zurich, Zurich, Switzerland — August 2020 – present
Associate Professor

University of Minnesota, Twin Cities, MN, US — August 2020 – present
Adjunct Professor

University of Minnesota, Twin Cities, MN, US — August 2019 – July 2020
Associate Professor

University of Minnesota, Twin Cities, MN, US — Jan 2014 – July 2019
Assistant Professor

Stanford University, CA, US — Jun 2011 – Dec 2013
Postdoctoral research associate

von Karman Institute for Fluid Dynamics, Belgium — Jan 2011 – May 2011
Research engineer

von Karman Institute for Fluid Dynamics, Belgium — Oct 2005 – Dec 2010
Graduate researcher

VISITING POSITIONS

École Normale Supérieure, Lyon, France — June 2018
Visiting Professor

Institute for Fluid Mechanics, Toulouse, France — June 2017
Visiting Professor

Polytechnic University of Madrid, Spain — Oct 2013 – Dec 2013
Adjunct research associate

HONORS AND AWARDS

European Research Council
ERC Consolidator Grant (2022-2027), awarded by Swiss Secretariat for Education, Research & Innovation

University of Minnesota, Office of the Executive Vice President and Provost
McKnight Land-Grant Professorship (2018-2020)

National Science Foundation
CAREER Award (2015-2019)

The 3M Company
Non-Tenured Faculty Award (2015-2017)

American Society of Mechanical Engineers, Wind Energy Committee
Best paper award, ASME Turbo Expo (2014)

Civil, Environmental, and Geo-Engineering Department, University of Minnesota
Graduate Faculty Member (2017-present)

Institute for Engineering in Medicine, University of Minnesota
Faculty Member (2015-present)

Biomedical Engineering Department, University of Minnesota
Graduate Faculty Senior Member (2015-present)

St Anthony Falls Laboratory, University of Minnesota
Faculty Member (2014-present)

Institution of Mechanical Engineers
Arthur Charles Main Prize (2012)

Flemish Research Foundation
International mobility grant (2011)

von Karman Institute
Prize for excellence in experimental research (2006)

University of Perugia and Italian Minister of Education
Excellence scholarship (2000-2005)

RESEARCH FUNDING

Current grants
-*"Frozen Precipitation in the Turbulent Atmosphere: from the Lab to the Field"*
Organization: Swiss National Science Foundation
Total cost: CHF 922,269
Period: 01/01/2023-31/12/2026
Role: PI

-*" EXPAT – Experiments on Particles in Turbulence across Scales and Regimes"*
Organization: European Research Council/Swiss Secretariat for Education, Research & Innovation.
Total cost: € 2,989,264
Period: 12/01/2022-30/11/2027
Role: PI

-*"An experimental platform for investigating the effects of disturbed flow on endothelial and blood cells"*
Organization: Zurich Heart, ETH Foundation
Total cost: CHF 100,000
Period: 01/06/2022-31/05/2024
Role: PI

-*"Transport of plastic particles floating on turbulent waters"*
Organization: Swiss National Science Foundation
Total cost: CHF 566,368
Period: 01/06/2022-31/05/2026
Role: PI

-*"REVERSO – Receiver for concentrated solar power"*
Organization: Swiss Federal Office of Energy
Total cost: CHF 295,768
Period: 01/12/2021-30/11/2024
Role: PI

-*"Two-way momentum coupling between hydrometeors and small-scale air motions: Effects on precipitation and drop size distributions"*
Organization: NASA
Period: 03/16/2020-03/15/2023
Role: co-PI (PI: Zachary Lebo, University of Wyoming)

Previous grants

- *"Collaborative Research: Bridging the Gap Between Particle-Scale Thermal Transport and Device-Scale Predictions"*
Organization: NSF
Period: 06/01/2019 - 05/31/2021
Total cost: $592,689 (of which Coletti controls: $155,634)
Role: co-PI (PI: Jesse Capecelatro, University of Michigan)

- *"Use of DNATrax and high fidelity computational methods to model transport of contaminants in urban environments"*
Organization: National Institutes of Health
Period: 09/15/2018 - 09/15/2020
Total cost: $999,931 (of which Coletti controls $174,480)
Role: co-PI (PI: Anthony Zografos, Safetraces Inc.)

-*"Collaborative Research: Effects of air turbulence and snowflake morphology on snow fall speed"*
Organization: National Science Foundation
Period: 08/01/2018 - 07/31/2021
Total cost: $562,635 (of which Coletti controls $248,00)
Role: co-PI (PI: Michele Guala, University of Minnesota)

- *"Two-way coupling in particle-laden gas turbulence"*
Organization: Army Research Office
Period: 08/01/2018 - 07/31/2021
Total cost: $471,980
Role: PI

- *"Assess and Develop Strategies to Remove Microscopic Plastic Particle Pollution from Minnesota Water Bodies"*
Organization: Legislative-Citizen Commission on Minnesota Resources
Period: 07/01/2018 - 06/30/2021
Total cost: $300,000 (of which Coletti controls $167,947)
Role: PI (co-PI: Lian Shen, University of Minnesota*)*

- *"Dust, sand, and turbulence: Transport and feedback in the near-surface environment"*
Organization: Army Research Office
Period: 10/01/2017- 09/30/2020
Total cost: $614,546 (of which Coletti controls $339,377)
Role: co-PI (PI: David Richter, University of Notre Dame)

- *"Enabling extraction of solar thermal energy in Minnesota"*
Organization: Legislative-Citizen Commission on Minnesota Resources
Period: 07/01/2017 - 06/30/2021
Total cost: $250,000 (of which Coletti controls 123,310)
Role: PI (co-PI's: Lian Shen, Jane Davidson, University of Minnesota)

- *"Control of spray properties by gas flow turbulence"*
Organization: Office of Naval Research
Period: 07/01/2017- 06/30/2021
Total cost: $ 377,763
Role: PI

- *"CAREER: Exploring structure-function relationships in the human airways"*
Organization: NSF (Chemical, Bioengineering, Environmental, and Transport Systems)
Period: 02/01/2015-01/31/2021
Total cost: $509,559
Role: PI

- *"Identifying imaging-based biomarkers of COPD development through virtual inhalation experiments"*
Organization: NIH /NHLBI
Period: 09/15/2015-06/15/2018
Total cost: $398,240
Role: PI (co-PI: Christine Wendt, Dept. of Medicine, University of Minnesota)

- *"Development of intraluminal bronchial stent utilizing patient specific anatomy for the pediatric population - Phase 2"*
Organization: CTSI - ODAT University of Minnesota
Period: 02/01/2017-01/31/2018
Total cost: $45,000
Role: PI (co-PI: Robroy MacIver, Dept. of Surgery, University of Minnesota)

- *"Brain Aneurysm Research Consortium"*
Organization: Institute for Engineering in Medicine, University of Minnesota
Period: 02/01/2017-01/31/2018
Total cost: $45,000
Role: co-PI (PI: Andrew Grande, Dept. of Neurosurgery, University of Minnesota)

- *"A High-Fidelity in Vitro Model of Small Intracranial Aneurysm Hemodynamics"*
Winston and Maxine Wallin Neuroscience Discovery Fund
Period: 01/01/2017-12/31/2017
Total cost: $70,000
Role: co-PI (PI: Bharathi Jagadeesan, Dept. of Radiology, University of Minnesota)

- *"Droplet-turbulence interaction in "cloud-in-a-box" experiments"*
Organization: Grant-in-Aid Program, Office of the Vice President for Research, University of Minnesota
Period: 07/01/2016-1/15/2018
Total cost: $36,419
Role: PI

- *"Design of Intraluminal Bronchial Stent Utilizing Patient Specific Anatomy for the Pediatric Population"*
Organization: CTSI – ODAT, University of Minnesota
Period: 10/01/2015-09/30/2016
Total cost: $50,000
Role: PI (co-PI: Robroy MacIver, Dept. of Surgery, University of Minnesota)

- *"Hemodynamics of Bicuspid Aortic Valve Disease: in vivo, in vitro, and in silico study"*
Organization: Institute for Engineering in Medicine, University of Minnesota
Period: 06/01/2015-05/31/2016
Total cost: $25,000
Role: PI

- *"High-resolution models of human airways for structural and functional studies"*
Organization: Boston Scientific Inc.
Period: 09/19/2015 - 03/18/2016
Total cost: $50,000
Role: PI

- *"Use of DNATrax to model the transport of contaminants in urban environment"*
Organization: DNATREK LLC
Period: 04/01/2015 - 09/30/2015
Total cost: $45,000
Role: Co-PI (PI: Fotis Sotiropoulos, Dept. of Civil, Environmental, and Geo- Engineering, University of Minnesota)

- *"Airway structure-function relationships in COPD"*
Organization: AHC Seed Grants Program, University of Minnesota
Period: 1/01/2015 - 12/31/2015
Total cost: $30,000
Role: Co-I (PI: Christine Wendt, Dept. of Medicine, University of Minnesota)

PUBLICATIONS

Publication legend:

Level of contribution

A = Advisor: My graduate student(s) and/or postdoc(s) performed the majority of the technical work. My main contribution was guiding the research project, defining the problem and co-writing/editing the manuscript.

F = First Author: I performed the majority of the technical work.

C = Collaborator: My collaborators performed the majority of the technical work. My graduate student(s) and/or postdoc(s) and/or I also contributed to the technical work and writing of the manuscript.

R = Review: Review article of the state of the art for a specific domain, which I equally contributed to write together with other coauthor(s). All authors are recognized expert in the field.

Underlined: students and postdocs are highlighted.

Refereed journal articles (58)

A J58. Hassaini R. & Coletti, F. (2022). "Scale-to-scale turbulence modification by small settling particles" *J Fluid Mech*, 949, A30

A J57. Li, Y., Amili, O., Moen, S., Van de Moortele, P. F., Grande, A., Jagadeesan, B., & Coletti, F. (2022). "Flow residence time in intracranial aneurysms evaluated by in vitro 4D flow MRI." *Journal of Biomechanics*, *141*, 111211.

A J56. Li Y., Amili O., Coletti F. (2022) "Experimental study of concentrated particle transport in successively bifurcating vessels." *Phys Rev Fluids*, 7.8 (2022): 083101.

A J55. Baker L.J., Coletti F. (2022) "Experimental investigation of inertial fibres and disks in a turbulent boundary layer", *J Fluid Mech*, 943, A27

R J54. Brandt L. & Coletti F. (2022) "Particle-laden turbulence: progress and perspectives", *Ann Rev Fluid Mech*, 54:159–89

A J53. Fong K.O., Amili O., Coletti F. (2022) "Experimental analysis of particle clustering in moderately dense gas-solid flow", *J Fluid Mech*, 933, A6

A J52. Baker L.J., Qiao Y., Ghaemi S., Coletti F., (2021), "Method to minimize polymer degradation in drag-reduced non-Newtonian turbulent boundary layers", *Meas Sci Tech*, 32, 085303

A J51. Berk T., Coletti F., (2021) "Dynamics of small heavy particles in homogeneous turbulence: a Lagrangian experimental study", *J Fluid Mech*, 917, A47.

A J50. Li C., Lim K., Berk T., Abraham A., Heisel M., Guala M., Coletti F., Hong J. (2021) "Settling and Clustering of Snow Particles in Atmospheric Turbulence", *J Fluid Mech*, 912, A49.

A J49. Baker, L.J, Coletti F. (2021) "Experimental investigation of the particle-fluid-wall interaction in a turbulent boundary layer", *J Fluid Mech*, 908 A39.

A J48. Berk, T., Coletti F., (2020) "Transport of inertial particles in high-Reynolds number turbulent boundary layers", *J Fluid Mech*, 903, A18

A J47. Liu Y., Shen L., Zamansky R., Coletti F. (2020) "Life and death of inertial particle clusters in turbulence", *J Fluid Mech 902, R1*. doi:10.1017/jfm.2020.710

A J46. Carter D., Hassaini R., Eshragi J., Vlachos P., Coletti F., (2020) "Multi-Scale Imaging of Liquid Spray in the Far-Field Region", *Int J Multiphase Flows*, 132, 103430.

C J45. Kizilski S., Amili O., Coletti F., Fazier R., Barocas V. (2020) "Conceptual Framework Development for a Double-Walled Aortic Stent-Graft to Manage Blood Pressure", *J. Design of Medical Devices*, 14(3): 031005.

A J44. Jalal S., Van de Moortele T., Amili O., Coletti F. (2020) "Steady and Oscillatory Flow in the Human Bronchial Tree", *Phys Rev Fluids*, 5, 063101.

C J43. Farghadan, A., Poorbahrami K., Jalal S., Oakes J., Coletti F., Arzani A, (2020) "Particle transport and deposition correlation with near-wall flow characteristic under inspiratory airflow in lung airways", *Comp Biology & Medicine*, 103703.

C J42. Nof E., Heller-Algazi M., Coletti F., Waisman D., Sznitman J., (2020) "Ventilation-induced jet suggests biotrauma in reconstructed airways of the intubated neonate", *J. R. Soc. Interface*, 17: 20190516.

A J41. Amili O., MacIver R., Coletti F. (2020) "Magnetic Resonance Imaging Based Flow Field and Lagrangian Particle Tracking From a Left Ventricular Assist Device", *J. Biomech Eng.*, 142(2): 021007, DOI: 10.1115/1.4043939.

C J40. Farghadan, A., Coletti F., Arzani A, "Topological analysis of particle transport in lung airways: predicting particle source and destination" (2019), *Comp Biology & Medicine*, 115, 103497.

C J39. Wang. G., Fong K.., Coletti F. Capecelatro J., Richter D. (2019), "Inertial particle velocity and distribution in vertical turbulent channel flow: a numerical and experimental comparison", *Int. J. Multiphase Flow*, 120, 103105.

A J38. Fong K.O., Amili O., Coletti F. (2019) "Velocity and spatial distribution of inertial particles in a turbulent channel flow", *J. Fluid Mech.*, 872, 367-406.

A J.37. Amili O., Golzarian, J., Coletti F. (2019) "In Vitro Study of the Transport of Particles in Successively Bifurcating Vessels", *Ann. Biomed. Eng.*, 47(11), 2271-2283

A J36. Baker L. & Coletti F. (2019) Experimental study of negatively buoyant finite-size particles in a turbulent boundary layer up to dense regimes", *J. Fluid Mech.*, 866: 598-629

A J35. Petersen A., Baker L., Coletti F. (2019) "Experimental study of clustering and settling of inertial particles in homogeneous turbulence", *J. Fluid Mech.*, 864: 925-970

C J34. Heisel M., Dasari T., Liu Y., Hong J., Coletti F., Guala M. (2018) "The spatial structure of the logarithmic region in very-high-Re rough wall turbulent boundary layers", *J. Fluid Mech.*, 857:704-747

A J33. Jalal S., Van de Moortele T., Nemes A., Amili O. Coletti F. (2018) "Three-dimensional steady and oscillatory flow in a double bifurcation airway model", *Phys Rev Fluids*, 3, 103101

A J32. Carter D. & Coletti F. (2018) "Small-scale structure and scale interaction in homogeneous turbulence", *J. Fluid Mech.*, 854:505–543

R J31. Discetti S. & Coletti F. (2018). "Volumetric velocimetry for fluid flows". *Measur. Science & Tech.*, 29, 042001

A J30. Amili O., Schiavazzi D., Moen S., Jagadeesan B., Van de Moortele P.F., Coletti F. (2018). "Hemodynamics in a giant intracranial aneurysm characterized by in vitro 4D flow MRI". *PLOS One*, 13(1), e0188323, https://doi.org/10.1371/journal.pone.0188323

A J29. Van de Moortele T., Wendt C., Coletti F. (2018) "Morphological and functional properties of the conducting airways in healthy subjects investigated by in vivo CT and in vitro MRI". *J Appl. Phys.*, 124: 400–413

A J28. Van de Moortele T., Wendt C., Goerke U., Coletti F. (2017) "Airway morphology and inspiratory flow features in the early stages of Chronic Obstructive Pulmonary Disease". *Clinic. Biomech.*, DOI:10.1016/j.clinbiomech.2017.11.005

A J27. Baker L., Frankel A., Mani A., Coletti F. (2017) "Coherent clusters of inertial particles in homogeneous turbulence". *J Fluid Mech.*, 833:364-398.

A J26. Carter D. & Coletti F. (2017). "Scale-to-scale anisotropy in homogeneous turbulence". *J Fluid Mech.*, 827, 250-284.

C J25. Schiavazzi D., Nemes A., Schmitter S., Coletti F. (2017) "The effect of velocity filtering in pressure estimation". *Exp. Fluids.*, 58:50.

A J24. Nemes A., Desari T., Hong J., Guala M., Coletti F. (2017) "Snowflakes in the atmospheric surface layer: observation of particle-turbulence dynamics". *J Fluid Mech*, 814:592-613.

A J23. Carter D., Petersen A., Amili O., Coletti F. (2016) "Generating and controlling homogeneous air turbulence using random jet arrays". *Exp. Fluids*, 57:1-15.

C J22. Zamansky R., Coletti F., Massot M., Mani A. (2016) "Turbulent thermal convection driven by heated inertial particles". *J. Fluid Mech.*, 809, 390-437.

A J21. Jalal S., Nemes A., Van de Moortele T., Schmitter S., Coletti F. (2016) "Three-dimensional inspiratory flow in a double bifurcation airway model". *Exp Fluids*, 57: 148.

C J20. Banko A., Coletti F., Elkins C.J., Eaton, J.K. (2016) "Oscillatory Flow in the Human Airways from the Mouth through Several Bronchial Generations". *Int. J. Heat Fluid Flow*, 61, 45–57.

C J19. Frankel A., Pouransari H., Coletti F., Mani A. (2016) "Settling of heated particles in homogeneous turbulence". *J. Fluid Mech.*, 792, 869- 893.

C J18. Ryan K.J., Coletti F., Elkins C.J., Dabiri J.O., Eaton J.K. (2016), "Three-Dimensional Velocity Measurements Around and Downstream of a Rotating Vertical Axis Wind Turbine". *Exp. Fluids*, 57, 1-15.

C J17. Banko A., Coletti F., Schiavazzi D., Elkins C.J., Eaton J.K (2015), "Three-dimensional inspiratory flow in the upper and central human airways". *Exp. Fluids*, 56, 117

C J16. Zamansky R., Coletti F., Massot M., Mani A. (2014), "Radiation induces turbulence in particle-laden fluid". *Phys. Fluids* 26, 071701

F J15. Coletti F., Muramatsu K., Elkins C.J., Eaton J.K. (2014) "Fluid Flow and Scalar Transport Through Porous Fins". *Phys. Fluids* 26, 055104

F J14. Coletti F., Lo Jacono D., Cresci I., Arts T. (2014) "Turbulent Flow in Rib-roughened Channel Under the Effect of Coriolis and Rotational Buoyancy forces". *Phys. Fluids* 26, 045111

C J13. Schiavazzi D., Coletti F., Iaccarino G., Eaton J.K. (2014), "A Matching Pursuit Approach to Solenoidal Filtering of Three-dimensional Velocity Measurements". *J. Comp. Physics*, 263, 206–221.

F J12. Coletti F., Benson M.J., Sagues A.L., Miller B.H., Fahrig R., Eaton J.K. (2014). "Three-Dimensional Mass Fraction Distribution of a Spray Measured by X-ray Computed Tomography". *J. Eng. Gas. Turb. Power*, 136, 051508

C J11. Ling J.B., Coletti F., Yapa S., Iaccarino G., Eaton J.K. (2013). "Experimentally informed optimization of turbulent diffusivity for a discrete hole film cooling geometry". *Int. J. Heat Fluid Flow*, 44, 348

F J10. Coletti F., Cresci I., Arts T. (2013). "Spatio-temporal Analysis of the Turbulent Flow in a Ribbed Channel". *Int. J. Heat Fluid Flow*, 44, 181

F J9. Coletti F., Benson M., Ling J.B., Elkins C.J., Eaton J.K. (2013). "Turbulent Transport in an Inclined Jet in Cross-Flow". *Int. J. Heat Fluid Flow*, 43, 149

F J8. Coletti F., Elkins C.J., Eaton J.K. (2013). "An Inclined Jet in Crossflow Under the Effect of Streamwise Pressure Gradients". *Exp. Fluids*, 54, 1589

F J7. Coletti F., Verstraete T., Vanderwielen T., Bulle J., Arts T. (2013). "Optimization of a U-bend for Minimal Pressure Loss in Internal Cooling Channels. Part II - Experimental Validation." *J. of Turbomachinery*, 135, 051016

C J6. Verstraete T., Coletti F., Bulle J., Vanderwielen T., Arts T. (2013). "Optimization of a U-bend for Minimal Pressure Loss in Internal Cooling Channels. Part I - Numerical Method." *J. of Turbomachinery*, 135, 051015

F J5. Coletti F., Maurer T., Di Sante A., Arts T. (2012). "Flow Field Investigation in Rotating Rib-Roughened Channel by Means of Particle Image Velocimetry". *Exp. Fluids*, 52, 1043

F J4. Coletti F., Scialanga M., Arts T. (2012). "Experimental Investigation of Conjugate Heat Transfer in a Rib-Roughened Trailing Edge Channel With Crossing-Jets". *J. of Turbomachinery*, 134, 041016

F J3. Coletti F., Arts T. (2011) "Aerodynamic Investigation of a Rotating Rib-Roughened Cooling Channel by means of Time-Resolved Particle Image Velocimetry", *J. of Power and Energy*, 225, 975

F J2. Coletti F., Armellini A., Arts T., Scholtes C. (2011). "Aero-Thermal Investigation of a Rib-Roughened Trailing Edge Channel With Crossing-Jets - Part II: Heat Transfer Analysis". *J. of Turbomachinery*, 133, 031024

C J1. Armellini A., Coletti F., Arts T., Scholtes C. (2010). "Aero-Thermal Investigation of a Rib-Roughened Trailing Edge Channel With Crossing-Jets - Part I: Flow field Analysis". *J. of Turbomachinery*, 132, 011009

Invited book chapters (1)

B1. Coletti F. (2017). "Volumetric Velocimetry". In: *Experimental Aerodynamics*, Discetti S. and Ianiro A. (editors), CRC Press Taylor and Francis Group

Abstracts published in archival journals (4)

4. Kizilski SB, Coletti F, Faizer R, Barocas VH (2020). "4242 Evaluating the effect of a compliant stent-graft prototype on effective stiffness in a cadaveric aorta." *Journal of Clinical and Translational Science* 4 (s1), 7-7.

3. Jagadeesan, B., Toloui, M., Amili, O., Schmitter, S., Moen, S., Ugurbil, K., Grande A., Coletti F. & Van de Moortele, P. (2018). "P-010 Reproducibility of in-vivo sub-millimetric 4D flow MR measurements obtained from small intracerebral aneurysms at 7 Tesla in upscaled 3D printed replicas." *Journal of NeuroInterventional Surgery* 10:A29-A30.

2. Amili, O., Coletti, F., & MacIver, R. (2018). "4D Flow MRI in 3D Printed Models of Aorta Grafted With a Ventricular Assist Device Allows Detailed Embolic Trajectory Analysis." *Journal of Heart and Lung Transplantation*, 37(4), S59.

1. Datta A., Kizilski S.B., Amili O., Coletti F., Faizer R., & Barocas V. (2017). "The Effect of Rigid Stent Grafts on the Propagation of Pressures in Aortic Dissection: A Lumped-Parameter Mathematical Model of Flow Through the Descending Thoracic Aorta". *J Vascular Surgery*, 65(6), 147S-148S.

Patents (2)

2. Fazier R., Barocas, V., Coletti F., Amili, O., Datta A., Kizilski S. (2017). "Compliant Aortic Stents and Grafts and Related Systems and Methods." US Patent #62/491,546.

1. Nemes A., MacIver R., Coletti F. (2017). "Customizable Intraluminal Bronchial Stents and Methods for supporting a bronchus using the same"". US Patent #15/946,901.

Reports and briefs (6)

6. Frankel A., Pouransari H., Coletti F., Mani A. (2014), "Settling of heated inertial particles through homogeneous turbulence". Proceedings of CTR Summer program, Center for Turbulence Research, Stanford University

5. Bodart J., Coletti F., Bermejo Moreno I., Eaton J.K. (2013), "High-fidelity simulation of a turbulent inclined jet in a crossflow". Annual CTR Brief, Center for Turbulence Research, Stanford University

4. Zamansky R., Coletti F., Massot M., Mani A. (2012), "Buoyancy-driven turbulent flow in particle-laden fluid subject to radiation". Annual CTR Brief, Center for Turbulence Research, Stanford University

3. Schiavazzi D., Coletti F., Iaccarino G., Eaton J.K. (2012), "A matching pursuit approach to solenoidal filltering of MRI-based velocity measurements. Annual CTR Brief, Center for Turbulence Research, Stanford University

2. Coletti F., Di Sante A. (2010) "Time-Resolved PIV Measurements in a Rotating Channel" In: Internal Cooling in Turbomachinery, VKI Lecture Series VKI LS 2010-08, von Karman Institute for Fluid Dynamics, Belgium

1. Coletti F., Arts T. (2010). "Experimental Study of Conjugate Heat Transfer in Internal Cooling Channel". In: Internal Cooling in Turbomachinery, VKI Lecture Series VKI LS 2010-05, von Karman Institute for Fluid Dynamics, Belgium

Refereed Conference Proceedings (45)

45. Carter D., Coletti F. (2019) "Analysis of liquid spray with and without homogeneous background turbulence." 11th International Symposium on Turbulence and Shear Flow Phenomena, Southampton, UK

44. Berk T., Coletti F. (2019) "Transport of inertial particles in high-Re turbulent boundary layer." 11th International Symposium on Turbulence and Shear Flow Phenomena, Southampton, UK

43. Petersen A., Coletti F., (2018) "Investigation of dense particle plumes in quiescent and turbulent environments". 19th International Symposium on Application of Laser and Imaging Techniques to Fluid Mechanics, Lisbon, Portugal

42. Heisel M., Dasari T., Petersen A., Liu Y., Hong J., Coletti F., Guala M (2018) "Characterizing turbulent structures in the atmospheric boundary layer with super-large-scale particle image velocimetry". 19th International Symposium on Application of Laser and Imaging Techniques to Fluid Mechanics, Lisbon, Portugal

41. Jalal S., Van de Moortele T., Amili O., Coletti F. (2018) "Magnetic Resonance Velocimetry of inspiratory and expiratory flow in the human lungs". 19th International Symposium on Application of Laser and Imaging Techniques to Fluid Mechanics, Lisbon, Portugal

40. Kizilski S., Amili O., Coletti F., Fazier R., Barocas V. (2018) "Identifying properties for an aortic stent-graft that counteracts hypertension", 2018 Design of Medical Devices Conference, Minneapolis, MN

39. Van de Moortele P-F, Toloui M., Amili O., Moen S., Schmitter S., Schnell S., Markl M., Ugurbill M., Coletti F., Jagadeesan B. (2018), "Sub-millimetric 4D Flow MR in small intracerebral aneurysms at 7 Tesla with experimental verification in upscaled 3D printed replica", Annual Meeting of the International Society for Magnetic Resonance in Medicine (ISMRM), Paris, France

38. Nemes A., Desari T., Hong J., Guala M., Coletti F. (2017) "Lagrangian Trajectories and Settling Velocity of Snowflakes: Observation of Particle-turbulence Dynamics." 10th International Symposium on Turbulence and Shear Flow Phenomena, Chicago, IL, USA

37. Carter D., Baker L., Coletti F. (2017) "Small-scale Anisotropy in Axisymmetric Turbulence." 10th International Symposium on Turbulence and Shear Flow Phenomena, Chicago, IL, USA

36. Petersen A., Carter D., Baker L., Coletti F. (2017). "Experimental Study of Particle-turbulence Interaction in Homogeneous Turbulence." 10th International Symposium on Turbulence and Shear Flow Phenomena, Chicago, IL, USA

35. Nemes A., Jalal S., Van de Moortele T., Coletti F. (2017). "Vorticity Transport in Human Airway Model" 10th International Symposium on Turbulence and Shear Flow Phenomena, Chicago, IL, USA

34. Nemes A., Jalal S., Van de Moortele T., Coletti F. (2016) "Oscillatory flow in a human airway model: MRV and PIV". 18th International Symposium on Application of Laser and Imaging Techniques to Fluid Mechanics, Lisbon, Portugal

33. Coletti F., Toloui M., Fong, K.O., Nemes A., Baker L. (2016) "Volumetric distribution and velocity of inertial particles in a turbulent channel flow". 18th International Symposium on Application of Laser and Imaging Techniques to Fluid Mechanics, Lisbon, Portugal

32. Coletti F., Petersen A., Carter D., Baker L. (2016), "Measurements of particle settling velocity in homogeneous turbulence with no mean flow". International Conference on Multiphase Flows, Florence, Italy.

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22. Zamansky R., Coletti F., Massot M., Mani A. (2013), "Particle clustering in radiation-induced turbulence", 14th European Turbulence Conference, Lyon, France

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20. Coletti F., Muramatsu K., Schiavazzi D., Elkins C.J., Eaton J.K. (2013) "Transport mechanisms in porous fins", 8th International Symposium on Turbulence and Shear Flow Phenomena, Poitiers, France

19. Zamansky R., Coletti F., Massot M., Mani A. (2013) "Analysis of the turbulent forcing in particle-laden flow induced by radiation", 8th International Symposium on Turbulence and Shear Flow Phenomena, Poitiers, France

18. Bodart J., Coletti F., Bermejo-Moreno I., Eaton J.K. (2013) "Numerical investigation of turbulent flow and scalar transport in an inclined jet in crossflow", 8th International Symposium on Turbulence and Shear Flow Phenomena, Poitiers, France

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45. Farghadan A., Poorbahrami K., Jalal S., Oakes J., Coletti F., Arzani A. (2019) "Particle deposition correlates with wall-shear stress divergence in human airways", Summer Biomechanics, Bioengineering and Biotransport Conference, Seven Springs, PA

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40. Fong, K. O., Amili, O., & Coletti, F. (2018). "Transport and Clustering of Inertial Particles in a Turbulent Channel Flow", American Physical Society, 71th Meeting Division Fluid Dynamics, Atlanta, GA

39. Carter, D., & Coletti, F. (2018). "The effect of background air turbulence on liquid spray", American Physical Society, 71th Meeting Division Fluid Dynamics, Atlanta, GA

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36. Amili, O., Moen, S., MacIver, R., Golzarian, J., & Coletti, F. (2018). "Tracking of virtual particles from volumetric velocity measurements: applications to physiological flows", American Physical Society, 71th Meeting Division Fluid Dynamics, Atlanta, GA

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31. Amili O., Toloui M., Van de Moortele, P.-F, Jagadeesan B. & Coletti F. (2017) "In vivo and in vitro measurements of cerebral aneurysm hemodynamics", American Physical Society, 70th Meeting Division Fluid Dynamics, Denver, CO

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29. Carter D., & Coletti F. (2017) "Structure and scale interaction in anisotropic homogeneous turbulence", American Physical Society, 70th Meeting Division Fluid Dynamics, Denver, CO

28. Baker L., & Coletti F. (2017) "Experimental study of dense suspension of large particles in a turbulent boundary layer", American Physical Society, 70th Meeting Division Fluid Dynamics, Denver, CO

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25. Fong, K.O., Toloui M., Amili O., Hong J., Coletti F. (2016) "Turbulence Modulation and Particle Segregation in a Turbulent Channel Flow", American Physical Society, 69th Meeting Division Fluid Dynamics, Portland, OR

24. Coletti F., Nemes A., Dasari T., Hong J., Guala M. (2016) "Snowflakes as inertial particles in turbulence", American Physical Society, 69th Meeting Division Fluid Dynamics, Portland, OR

23. Baker L., Frankel A., Mani A., Coletti F. (2016) "Coherent clusters of inertial particles in homogeneous turbulence", American Physical Society, 69th Meeting Division Fluid Dynamics, Portland, OR

22. Van de Moortele T., Nemes A., Wendt C., Coletti F. (2016) "Effects of lung disease on the three-dimensional structure and air flow pattern in the human airway tree", American Physical Society, 69th Meeting Division Fluid Dynamics, Portland, OR

21. Amili O., Schiavazzi D., Coletti F. (2016) "4D Magnetic Resonance Velocimetry in a 3D printed brain aneurysm", American Physical Society, 69th Meeting Division Fluid Dynamics, Portland, OR

20. Carter D., Coletti F. (2015) “On the relation between spatio-temporal forcing and structure of turbulence”. American Physical Society, 68th Meeting Division Fluid Dynamics, Boston, MA

19. Petersen A., Carter D., Baker L., Coletti F. (2015) “Settling of inertial particles through quiescent, weakly turbulent and strongly turbulent air”. American Physical Society, 68th Meeting Division Fluid Dynamics, Boston, MA

18. Jalal S., Van de Moortele T., Nemes A., Eslam Panah A., Coletti F. (2015) “Three-dimensional flow and vorticity transport in idealized airway model from laminar to turbulent regimes”. American Physical Society, 68th Meeting Division Fluid Dynamics, Boston, MA

17. Nemes A., Jalal S., Van de Moortele T., Coletti F. (2015) "Measurements of the three-dimensional oscillatory flow in a double bifurcation". American Physical Society, 68th Meeting Division Fluid Dynamics, Boston, MA

16. Banko A., Coletti F., Elkins C.J., Eaton J.K. (2014) "Oscillatory Flow in the Human Airways from the Mouth through Several Bronchial Generations". American Physical Society, 67th Meeting Division Fluid Dynamics, San Francisco, CA

15. Coletti F., Frankel A., Pouransari H., Mani A., (2014) "Settling of hot particles through turbulence". American Physical Society, 67th Meeting Division Fluid Dynamics, San Francisco, CA

14. Ryan K.J., Coletti F., Elkins C.J., Eaton J.K. (2014) "Turbulent Mixing of Jet in Crossflow with Compound Angle Injection". American Physical Society, 67th Meeting Division Fluid Dynamics, San Francisco, CA

13. Coletti F., Ryan K.J., Dabiri J.O., Eaton J.K. (2013) "Three-dimensional velocity measurements around a rotating vertical axis wind turbine". American Physical Society, 66th Meeting Division Fluid Dynamics, Pittsburgh, PA

12. Ling J.B., Bodart J., Coletti F., Eaton J.K. (2013) "K-Means Clustering for Data Visualization and Flow Interpretation: Inclined Jet in Crossflow Example". American Physical Society, 66th Meeting Division Fluid Dynamics, Pittsburgh, PA

11. Ryan K.J, Coletti F., Elkins C.J., Eaton J.K. (2013) "Turbulent Mixing of an Angled Jet in Various Mainstream Conditions". American Physical Society, 66th Meeting Division Fluid Dynamics, Pittsburgh, PA

10. Banko A., Coletti F., Schiavazzi D., Elkins C.J., Eaton J.K. (2013) "Steady Flow in Subject-Specific Human Airways from Mouth to Sixth Bronchial Generation". American Physical Society, 66th Meeting Division Fluid Dynamics, Pittsburgh, PA

9. Schiavazzi D., Coletti F., Bodart J., Eaton J.K. (2013) "Divergence-free filtering and pressure determination from 3D velocimetry: applications to flows of industrial and biomedical relevance". American Physical Society, 66th Meeting Division Fluid Dynamics, Pittsburgh, PA

8. Coletti F., Muramatsu K., Elkins C.J., Eaton J.K. (2012) "Transport in Porous Fins From Laminar to Turbulent Regime". American Physical Society, 65th Meeting Division Fluid Dynamics, San Diego, CA

7. Zamansky R., Coletti F., Massot M., Mani A.. (2012) "Radiation-Induced Turbulence in Particle-Laden Flow". American Physical Society, 65th Meeting Division Fluid Dynamics, San Diego, CA

6. Ling J.B., Coletti F., Yapa S., Iaccarino G., Eaton J.K. (2012) "Experimentally Informed Turbulent Diffusivity Modeling for an Angled Jet in Cross-Flow". American Physical Society, 65th Meeting Division Fluid Dynamics, San Diego, CA

5. Coletti F., Mayo Yague I., Arts T. (2011) "Time-Resolved PIV in the Flow Around Cylinders Under the Effect of Coriolis Forces". American Physical Society, 64th Meeting Division Fluid Dynamics, Baltimore, MD

4. Coletti F., Cresci, I., van den Braembussche R., Arts T. (2011) "Turbulent flow in Rotating Ribbed Channel With Coriolis Forces and Centripetal Buoyancy". EUROMECH Colloquium 525: Instabilities and Transition in Three-Dimensional Flows With Rotation, École Centrale de Lyon, France

3. Rossi R., Coletti F., Ryan K., Iaccarino G., Eaton J.K. (2012) "Aero-Thermal Performance Of Lotus-Type Fins For Battery Cooling Applications". UIT Heat Transfer Conference, Bologna, Italy

2. Coletti F., Maurer T., Arts T. (2010). "Etude de l'Ecoulement Turbulent Dans un Canal en Rotation à l'Aide de la PIV Résolue en Temps". 12th Congrès Francophone de Technique Laser, Nancy, France

1. Coletti F., Scialanga M., Arts T. (2009). "Conjugate Heat Transfer in a Turbine Blade Internal Cooling Channel". 8th National Congress on Theoretical and Applied Mechanics, Brussels, Belgium

INVITED LECTURES (59)

59. “Particle transport along the non-wavy free surface above turbulent water”, IRPHE Marseille, France, January 27 2023

58. “Particle transport along the non-wavy free surface above turbulent water”, Mini-symposium on The Fluid Mechanics of Microplastics Transport, APS-DFD 75th Indianapolis, IN, US, November 21, 2022

57. “Particles and snowflakes falling in turbulent air” and “Two-way coupling in homogeneous and wall-bounded turbulence”, Complex Motion in Fluids Summer School, Boekelo, Twente, Netherlands, August 29-30 2022

56. “Particles and snowflakes falling through turbulence”, TU Delft, The Netherlands, June 23, 2022

55. “Experiments on Particles in Turbulence across Scales and Regimes”, Turbulence and Interactions, keynote lecture, Procchio, Isola d’Elba, Italy, 19 May 2022

54. “Particles and snowflakes falling through turbulence”, Seoul National University, Seoul, Republic of Korea, April 27, 2022

53. “Particles and snowflakes falling through turbulence”, International Journal of Multiphase Flow Spotlight Seminar, April 19, 2022

52. “Particles and snowflakes falling through turbulence”, Institute for Atmospheric and Climate Science Kolloquium, ETH Zurich, Switzerland, April 11, 2022

51. “Particles and snowflakes falling through turbulence”, Laboratoire de Mécanique des Fluides de Lille, France, April 6, 2022

50. “Particles and snowflakes falling through turbulence”, Inaugural lecture, ETH Zurich, Switzerland March 7, 2022

49. “Particles and snowflakes falling through turbulence”, SwissMech Seminar, EPFL-ETH joint seminar, Switzerland, February 11, 2021

48. "Particles and snowflakes falling through turbulence", Snow and Avalanche Institute, Switzerland, October 22 2019

47. "Dust, snowflakes and other stories", Portland State University, OR, October 11 2019

46. "Dust, snowflakes and other stories", TU Wien, Vienna Austria, July 11 2019

45. "Dust, snowflakes and other stories", University Erlangen-Nuremberg, Germany, July 9 2019

44. "Dust, snowflakes and other stories", University of Twente, The Netherlands, June 11 2019

43. “Flow Dynamics for Interventional Radiology: What You Should Know”, Global Embolization Symposium & Technologies (GEST), May 9 2019

42. "Dust, snowflakes and other stories", Cornell University, NY, US, April 16 2019

41. "Particles and snowflakes falling through turbulence", March 19 2019, ETH Zurich

40. "Particles and snowflakes falling through turbulence", Johns Hopkins University, MD, US, February 15 2019

39. “Homogeneous anisotropic turbulence”, Ecole Normale Superieur, Lyon, France, July 2 2018

38. “Structure and function of the human airways studied via 3D imaging and 3D printing”, Virginia Commonwealth University, April 6 2018

37. “Tackling Respiratory Disease through Fluid Mechanics”, Curiosity Drives Progress” Lecture Series, University of Minnesota, MN, March 208

36. "Morphological and functional properties of the conducting airways in healthy and diseased lungs", Biostatistics/Statistics Imaging Working Group, School of Public Health, University of Minnesota, Minneapolis, MN, US, January 29 2018

35. "Particles and snowflakes falling through turbulence", Mini-symposium on Fluid Dynamics of Clouds, APS-DFD 70th Denver, CO, US, November 21, 2017

34. "Particles and snowflakes falling through turbulence", Iowa State University, Ames, IA, US, November 9, 2017

33. “Magnetic Resonance Imaging: application to respiratory and cardiovascular flows”, Institut de Mécanique des Fluides de Toulouse, Toulouse, France, June 19 2017

32. "Morphological and functional properties of the conducting airways investigated by in vivo CT and in vitro MRI", Cystic Fibrosis Center, University of Minnesota, Minneapolis, MN, US, May 9 2017

31. "Particles and snowflakes falling through turbulence", Workshop Particles & Fluids, Roscoff, France, April 27 2017

30. "Particles in near-wall flows: exciting and quenching turbulence, The 3M Company, Particle Technology Chapter, St. Paul, Minnesota, MN, US, January 25 2017

29. "4D flow MRI in a 3D printed intracranial aneurysm", Center for Magnetic Resonance Research, Minneapolis, MN, US, Dec 12 2016

28. "Towards novel solar receivers", The 3M Company, Sustainable Energy Chapter, St. Paul, Minnesota, MN, US, November 10 2016

27. "Particles and snowflakes falling through turbulence", Pennsylvania State University, State College, PA, US, Oct 27 2016

26. "Particles and snowflakes falling through turbulence", University Carlos III, Madrid, Spain, July 13 2016

25. “Respiratory flows in realistic and idealized bronchial trees”, Imperial College, London, UK, May 19 2016

24. “Respiratory flows in realistic and idealized bronchial trees”, Institut de Mécanique des Fluides de Toulouse, Toulouse, France, May 18 2016

23. “Studying particle transport with DNA-labeling”, Center for Filtration Research, Minneapolis, Minnesota, MN, US, May 6 2016

22. “The 3D printed lung: how medical imaging, advanced manufacturing, and fluid dynamics may help respiratory health”, Sip of Science, Minneapolis, Minnesota, MN, US, Feb 17 2016

21. “Red hot particles in turbulence”, The 3M Company, Particle Technology Chapter, St. Paul, Minnesota, MN, US, Sept 24 2015

20. “Red hot particles in turbulence”, Mechanical Engineering Dept., University of Minnesota, Minneapolis, MN, US, Apr 29 2015

19. “The 3D-printed lung: investigating structure-function relationships through in vitro experiments”, Biomedical Engineering Dept., University of Minnesota, Minneapolis, MN, US, Dec 8 2014

18. “Magnetic Resonance Imaging as a tool to investigate fluid flows”, University of Kentucky, Lexington, KY, US, Dec 4 2014

17. “The 3D-printed lung: investigating structure-function relationships through in vitro experiments”, Pulmonary Division, University of Minnesota, Minneapolis, MN, US, Jun 10 2014

16. “Aerosol concentration and settling in turbulent radiative environment”, The 3M Company, Particle Technology Chapter, St. Paul, Minnesota, MN, US, May 22 2014

15. “3D printing and 3D imaging to study the human respiratory flow”, Polytechnic University of Madrid, School of Aeronautics, Madrid, Spain, Mar 20 2014

14. “3D printing and 3D imaging to study the human respiratory flow”, University of Iowa, Mechanical and Industrial Engineering, Iowa City, IA, US, Feb 28 2014

13. “Magnetic Resonance Imaging as a tool to investigate fluid flows”, St Anthony Falls Laboratory, University of Minnesota, Minneapolis, MN, US, Jan 28 2014

12. “Towards an Experimental Thermo-fluids Research Program”, Honeywell Inc., Phoenix, AZ, US, Nov 20 2013

11. "Magnetic Resonance Imaging as a Tool to Investigate Fluid Flows and Scalar Transport", University of California Berkeley, School of Engineering, Berkeley, CA, US, Oct 16 2013

10. "Magnetic Resonance Imaging as a Tool to Investigate Fluid Flows and Scalar Transport", Stanford University, Civil and Environmental Engineering, CA, US, Oct 7 2013

9. "Magnetic Resonance Imaging as a Tool for Investigating Fluid Flows", Massachusetts Institute of Technology, Mechanical Engineering, Cambridge, MA, US, April 2 2013

8. "Medical Imaging as a Tool for Investigating Engineering Flows", University of Minnesota, Aerospace Engineering and Mechanics, Minneapolis, MN, US, Feb 25, 2013

7. "Medical Imaging as a Tool for Investigating Engineering Flows", University of Notre Dame, Aerospace and Mechanical Engineering, South Bend, IN, US, Feb 5 2013

6. "Medical Imaging as a Tool for Investigating Fluid Flows", Université de Lorraine, Energetics and Applied Mechanics, Nancy, France, Nov 12, 2012

5. "Magnetic Resonance Imaging: a Tool for Investigating Fluid Flows", École Centrale de Lyon, Fluid Mechanics and Acoustics, Écully, France, Nov 9 2012

4. "Magnetic Resonance Imaging: a Tool for Investigating Fluid Flows", École Centrale Paris, Energetics and Combustion, Châtenay-Malabry, France, Sept 28 2012

3. "Measuring Velocity and Concentration in Fluid Flows by means of Magnetic Resonance Imaging", Universidad Carlos III, Aerospace Engineering and Bioengineering, Madrid, Spain, Jun 28 2012

2. "Turbulent Shear Flows in a Rotating Frame", Stanford University, Mechanical Engineering, Stanford, CA, US, Feb 21 2012

1. "Velocity and Concentration Measurements in Fluid Flows by means of Magnetic Resonance Imaging", Universidad Politécnica de Madrid, School of Aeronautical Engineering, Madrid, Spain, Sept 6 2011

TEACHING

ETH Zurich (2020-present)

Fluid Dynamics (151-0102-00L, 6 credits), Spring 2023

Multiphase Flows (151-1906-00L, 4 credits), Spring 2021, Spring 2022, Spring 2023

Imaging in Fluid Dynamics (151-0105-00L, 4 credits), Fall 2022

University of Minnesota (2014-2020)

Fluid Mechanics (AEM 8201, 3 credits), Fall 2015, Fall 2016, Fall 2017

Aerospace Propulsion (AEM 4203, 4 credits), Spring 2015, Spring 2016, Spring 2017, Spring 2018, Spring 2019, Spring 2020

Aeromechanics Laboratory (AEM 4602W, 4 credits), Fall 2014, Fall 2015, Fall 2016, Fall 2017, Fall 2019

Dynamics (AEM 2012, 3 credits), Spring 2014

Theory of Turbulence (AEM 8211, 3 credits), Spring 2019

Multiphase Flows (AEM 8233, 3 credits), Spring 2020,

ACADEMIC SERVICE

ETH Zurich (2020-present)

Admission in Master Mechanical Engineering Committee
Department of Mechanical and Process Engineering, ETH (2022 – present)

École Polytechnique Fédérale de Lausanne, Faculty Search Committee (2022-2023)

Colloquia Thermo- and Fluid Dynamics (KTF) Seminar Organizer
Institute of Fluid Dynamics, ETH (2021 – present)

Expert Evaluator for hiring of Associate/Full Professor in Fluid Mechanics
Department of Energy and Process Engineering, NTNU, Norway (2020)

Doctoral Committee Member
Department of Mechanical and Process Engineering, ETH (2020 – present)

Sustainability Commission Member
Department of Mechanical and Process Engineering, ETH (2021 – present)

Room Commission Member
Department of Mechanical and Process Engineering, ETH (2021 – present)

Diversity Working Group Member
Department of Mechanical and Process Engineering, ETH (2022 – present)

University of Minnesota (2014-2020)

St. Anthony Falls Laboratory, Faculty Search Committee, 2018-2019

Aerospace Engineering and Mechanics Department, Faculty Search Committee, 2018-2019

St. Anthony Falls Laboratory, Seminar Organizer, Fall 2018 – Fall 2020

Aerospace Engineering and Mechanics Department, Seminar Organizer, Fall 2014 – Spring 2018

Midwest Mechanics Seminar Coordinator, Fall 2014 – Fall 2020

Aerospace Engineering and Mechanics Department, Laboratory Courses Committee Member, 2014 – 2020

Master's Final Exam Committee Member:
Amy Tinklenberg (Aerospace Engineering and Mechanics) 2020
Herni Sanness Salmon (Aerospace Engineering and Mechanics) 2020
Kaeul Lim (Mechanical Engineering) 2020
Yinghui Li (Biomedical Engineering) 2020
Yixuan Li (Aerospace Engineering and Mechanics) 2018
Nathan Lewin (Mechanical Engineering) 2018
Tristan Van de Moortele (Aerospace Engineering and Mechanics) 2017
Jed Overmann (Biomedical Engineering) 2017
Kelsey Devine (Biomedical Engineering) 2017
Ashley Earl (Mathematics) 2017
Ankurita Datta (Biomedical Engineering) 2017
Mahmood Alqefl (Mechanical Engineering) 2016
Nanying Cao (Mechanical Engineering) 2016
Tristan Carlson (Mechanical Engineering) 2016
Bryant Schmitz (Biomedical Engineering) 2015
Peter Ohm (Mechanical Engineering) 2015

Thomas Langer (Aerospace Engineering and Mechanics) 2014
Daniel Krizan (Aerospace Engineering and Mechanics) 2014
Jeshwanth Durga Sagar Kundem (Aerospace Engineering and Mechanics) 2014

Doctoral Defense Committee Member:
Alec Petersen (Aerospace Engineering and Mechanics) 2020
Michael Heisel (Civil, Environmental, and Geo-Engineering) 2020
Xiaoshuang Chen (Mechanical Engineering) 2019
Mirko Musa (Civil, Environmental, and Geo-Engineering) 2019
Kyle Winters (Aerospace Engineering and Mechanics) 2019
Douglas Carter (Aerospace Engineering and Mechanics) 2019
Sahar Jalal (Aerospace Engineering and Mechanics) 2019
Wyatt Horne (Aerospace Engineering and Mechanics) 2018
Mostafa Toloui (Mechanical Engineering) 2016
Ankur Bordoloi (Aerospace Engineering and Mechanics) 2014
Yilmaz Bayazit (Mechanical Engineering) 2014

Preliminary Exam Committe Member:
Scott Hansen (Biomedical Engineering) 2019
Ankit Saini (Mechanical Engineering) 2019
Lucia Baker (Aerospace Engineering and Mechanics) 2018
Xiaoshuang Chen (Mechanical Engineering) 2018
Kee Onn Fong (Aerospace Engineering and Mechanics) 2018
Michael Heisel (Civil, Environmental, and Geo-Engineering) 2018
Shannen Kizilski (Mechanical Engineering) 2018
Yi Hui Tee (Aerospace Engineering and Mechanics) 2018
Krishanu Sen (Aerospace Engineering and Mechanics) 2017
Mirko Musa (Civil, Environmental, and Geo-Engineering) 2017
Casey Chitwood (Biomedical Engineering) 2017
Jose Valdez (Biomedical Engineering) 2017
Douglas Carter (Aerospace Engineering and Mechanics) 2017
Karim Alame (Aerospace Engineering and Mechanics) 2017
Sahar Jalal (Aerospace Engineering and Mechanics) 2017
Alec Petersen (Aerospace Engineering and Mechanics) 2017
Wyatt Horne (Aerospace Engineering and Mechanics) 2016
Yixuan Li (Aerospace Engineering and Mechanics) 2016
Ming Li (Civil, Environmental, and Geo- Engineering) 2016
Anqing Xuan (Mechanical Engineering) 2015

External Committee Member in Doctoral Exams in International Institutions
Rohith Jayaram (NTNU, Norway) 2022
Willem Hogendoorn (TU Delft, Netherlands) 2021
Facundo Cabrera (ENS Lyon, France) 2021
Anna Knutsen (NTNU, Norway) 2020
Kimberley Kueh (University of Adelaide, Australia) 2019
Alexis Barge (Ecole Centrale de Lyon, France) 2018
Claudio Mucignat (University of Udine, Italy) 2012

External Evaluator for Promotion and Tenure in International Institutions
Technion—Israel Institute of Technology, Israel (2020)
Seoul National University, South Korea (2020)

American Physical Society, Division Fluid Dynamics

Diversity & Inclusion Committee (2022-2024)

Frenkiel Award Committee (2023-2025)

ADVISING AND MENTORING

ETH Zurich (2020 – present)

Research associates
- Kelken Chang (2020 – present)
- Isabella Schalko (2022 – present)

Postdoctoral fellows
- Seunghwan Shin (2020 – present)
- Yaxing Li (2020 – present)
- Daniel Ruth (2022 – present)
- Marcel Wedi (2022 – present)
- Pim Bulle (2023 – present)
- Alec Petersen (2020 – 2022)
- Roumaissa Hassaini (2020 – 2022)

PhD students
- Yinghui Li (2020 – present)
- Bernhard Roth (2020 – present)
- Henri Sanness Salmon (2020 – present)
- Anton Hartner (2021 – present)
- Ivan Calic (2022 – present)
- Felix Broß (2022 – present)
- Amy Tinklenberg (2019 – present, affiliated to University of Minnesota)

University of Minnesota (2014-2020)

Postdoctoral fellows
- Andras Nemes (2014 - 2016)
- Omid Amili (2015- 2019)
- Timothy Berk (2018 – present)
- Roumaissa Hassaini (2019 – 2020)
- Seunghwan Shin (2020 – 2020)

Graduated PhD students
- Lucia Baker (2016 - 2021), PhD in Aerospace Engineering & Mechanics
- Kee Onn Fong (2015 - 2021), PhD in Aerospace Engineering & Mechanics
- Alec Petersen (2014 - 2020), PhD in Aerospace Engineering & Mechanics
- Douglas Carter (2014 - 2019), PhD in Aerospace Engineering & Mechanics
- Sahar Jalal (2014 - 2019), PhD in Aerospace Engineering & Mechanics

Graduated Master students
- Yuanqing Liu (2018 – 2020), MS in Mechanical Engineering (co-advised with Prof. Lian Shen)
- Yinghui Li (2019 – 2020), MS in Biomedical Engineering
- Tristan Van de Moortele (2015 - 2017), MS in Aerospace Engineering & Mechanics

Undergraduate students
- Matthew Deutsch (2014)
- Tristan Van de Moortele (2014 - 2015)
- Daniel Bickelhaupt (2014 - 2015)
- Kee Onn Fong (2014 - 2015)
- Aditya Kulkarni (2014 - 2015)
- Nicholas Sloan (2015 - 2016)
- Lucia Baker (2014 - 2016)
- Kyle Fleming (2016)
- Kasey Laurent (2016 - 2017)
- Barbara Sampaio Felix (2017 – 2018)
- Samuel Gantman, Massachusetts Institute of Technology (2018)
- Bilal Ben Haroual, Institute of Fluid Mechanics of Toulouse, France (2018)
- Emily Daniel (2017 – 2019)
- Nicholas Conlin (2019 – 2020)

SERVICE TO THE SCIENTIFIC COMMUNITY

Editor and Organizer
Short Course "Advanced in Dispersed Multiphase Flows: from Measuring to Modeling", International Center for Mechanical Sciences, Udine, Italy, 2019

Lecture Series "Internal Cooling in Turbomachinery", VKI LS 2010-05, von Karman Institute, Belgium, 2010

Conference Advisory Committee
International Symposium on Laser and Imaging Techniques Applied to Fluid Mechanics (2016-present)

Reviewer for Scientific Publications
ASME IGTI Turbo Expo
CRC Press - Taylor & Francis Group
Clinical Biomechanics
Environmental Fluid Mechanics
European Journal of Pharmaceutical Sciences
European Turbomachinery Conference
Europhysics Letters
Experiments in Fluids
Experimental Lung Research
Experimental Thermal and Fluid Sciences
International Journal of Heat and Fluid Flows
International Journal of Heat and Mass Transfer
International Journal of Multiphase Flows
International Journal of Thermal Sciences
Journal of Power and Energy
Journal of Propulsion and Power
Journal of Biomechanical Engineering
Journal of Biomechanics
Journal of Fluid Mechanics
Journal of Applied Physiology
Magnetic Resonance in Medicine
Nature Communications
Nature Physics
Physical Review Fluids
PLOS ONE
Scientific Reports (Nature)
International Conference on Multiphase Flows

Reviewer for National and International Organizations
European Research Council
Italian Science Fund
Netherlands Organization for Scientific Research
US Army Research Office

US National Science Foundation
Referee
Gallery of Fluid Motion, APS Division Fluid Dynamics, San Francisco, CA, 2014

Session Chair
75th APS Meeting, Division Fluid Dynamics, Indianapolis, IN, 2022
74th APS Meeting, Division Fluid Dynamics, Phoenix, AZ, 2021
19th International Symposium Application Laser and Imaging to Fluid Mechanics, Lisbon, Portugal, 2018
9th International Conference on Multiphase Flow, Florence, Italy, 2016
9th International Symposium on Turbulence and Shear Flow Phenomena, Melbourne, Australia, 2015
17th International Symposium Application Laser and Imaging to Fluid Mechanics, Lisbon, Portugal, 2014
67th APS Meeting, Division Fluid Dynamics, San Francisco, CA, 2014

Session Organizer
ASME IGTI Turbo Expo, Dusseldorf, Germany, 2014
10th European Turbomachinery Conference, Lappeenranta, Finland, 2013

OUTREACH

F1 in Schools, Zurich, Switzerland
Supporting the open day activities at Motorworld in Zurich for children aged 6 – 16 (Spring 2022)

ETH Zurich
Acing as mentor and scientific advisor for the Autonomous River Cleanup (ARC) project (https://riverclean.ethz.ch/), launched ETH Zürich students to develop sustainable systems for reducing river-bound plastic waste (Summer 2020 - present)

DeLaSalle High School, Minneapolis, MN
Hosting and mentoring a junior-year student as research assistant several semesters (Fall 2017-Summer 2019).

DeLaSalle High School, Minneapolis, MN
Hosted and mentored a sophomore-year student as research assistant for 8 weeks (Summer 2017).

DeLaSalle High School, Minneapolis, MN
Gave talks on biomedical and environmental fluid dynamics to Physics student (Spring 2017)

DeLaSalle High School, Minneapolis, MN
Organized and guided visit to St. Anthony Falls Laboratory for senior students (Spring 2015)

Washington Technology Magnet High School, St Paul, MN
Hosted and mentored 2 junior-year student as research assistant for 8 weeks (Summer 2015).