

Scott Russell Waitukaitis

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EDUCATION

- Ph.D. in Physics, The University of Chicago, Chicago (USA)** 2007-2013
- Advisor: Heinrich Jaeger
 - Committee: Tom Witten, Wendy Zhang and Henry Frisch
 - Thesis: *Impact-activated solidification of cornstarch and water suspensions*
 - Winner of the Springer Thesis Award
- B.S. in Physics, The University of Arizona, Tucson (USA)** 2004-2007
- Thesis: *Resonant Faraday rotation in a hot lithium vapor*
 - *Summa cum laude*, with Honors
 - *Sigma Pi Sigma* and *Phi Beta Kappa* societies

RESEARCH APPOINTMENTS

- Institute of Science and Technology Austria, Assistant Professor** 2019-present
- NWO Institute AMOLF, Veni grantee and postdoctoral fellow with Martin van Hecke** 2016-2019
- Experiments in strongly coupled fluid-solid systems and simulations of origami-based mechanical metamaterials
 - Joint guest appointment at Leiden University
- The Leiden Institute of Physics at Leiden University, Postdoctoral fellow with Martin van Hecke** 2013-2016
- Simulations of origami-based mechanical metamaterials
- The James Franck Institute at the University of Chicago, Graduate research assistant with Heinrich Jaeger** 2008-2013
- Experiments and simulations involving non-Newtonian fluids and complex systems
- The James Franck Institute at the University of Chicago, Graduate research assistant with Cheng Chin** 2007-2008
- Experimental design and construction of ultra-high vacuum system, Zeeman slower, and magneto-optical trap for lithium atoms
- The Department of Physics at the University of Arizona, Undergraduate research assistant with Alex Cronin** 2005-2007
- Experiments on quantum Faraday rotation with lithium atoms
- The Department of Physics at the Montana State University, Research experience for undergraduates summer internship with Angela des Jardins and Richard Canfield** 2005
- Computational analysis of magnetic and X-ray solar flare data

EXTENDED STAYS

- The Department of Physics at the University of Chile, Visiting scholar in the lab of Nicolas Mújica** 2009
- Experiments on universality in liquid-to-solid phase transition in vibrated granular media

GRANTS

ERC Starting Grant , The European Research Commission	2020-present
<ul style="list-style-type: none">• €1,500,000 / 5 years• Proposal: <i>Tribocharge: A multi-scale approach to an enduring problem in physics</i>	
Veni Research Grant , The Netherlands Organization for Scientific Research	2016-2020
<ul style="list-style-type: none">• €250,000 / 4 years• Proposal: <i>The active dynamics of the elastic Leidenfrost effect</i>	

HONORS

Winner of Fysica Young Speakers Contest , <i>NNV Fysica Congress</i> , Utrecht (NL)	2018
Block Prize for Outstanding Young Researcher , <i>Aspen Center for Physics</i>	2018
C.J. Kok 'Discoverer of the Year' Prize (2nd place) , Leiden University	2017
The Springer Thesis Award , Springer Publishing	2014
<ul style="list-style-type: none">• Thesis published as book by Springer	
The Arts Science Initiative Graduate Fellowship Grant , The University of Chicago	2012-2013
<ul style="list-style-type: none">• \$2000 shared grant with artist Jen Smoose for sculptural project <i>Wishful Permutation</i>• Exhibition at the Logan Center for the Arts, Chicago (USA)	
The Bruce Winstein Prize for Instrumentation , The Department of Physics at the University of Chicago	2012
<ul style="list-style-type: none">• \$1000 award for development of new technique to measure electrostatic charging	
Outstanding Oral Presentation Award , The Electrostatics Society of America	2011
<ul style="list-style-type: none">• Talk title: <i>Direct measurement of size-dependent charging in chemically identical grains</i>	
The Robert A. Millikan Fellowship , The Department of Physics at the University of Chicago	2010-2013
<ul style="list-style-type: none">• Full tuition and research scholarship for 3 years of study	
The Robert G. Sachs Fellowship , The Department of Physics at the University of Chicago	2007-2009
Outstanding Senior Award , The Department of Physics at the University of Arizona	2007
Outstanding Research Presentation Award , The Department of Physics at the University of Arizona	2007

SYNERGISTIC ACTIVITIES

EUSMI Transnational Access Collaboration , Edinburgh (SL)	2018
<ul style="list-style-type: none">• With Dr. Jochen Arlt and Dr. Aidan Brown	
Chair , <i>The Granular Gordon Research Seminar 2018</i> , Easton (USA)	2018
<ul style="list-style-type: none">• With co-chair Cacey Bester and GRC chairs Deveraj van der Meer and Aparna Baskaran	
Organizer , <i>The World in a Grain of Sand: A Symposium on the Collective Behavior of Particles</i> , Chicago (USA)	2017
<ul style="list-style-type: none">• a.k.a. <i>Jaegerfest: A celebration of Heinrich Jaeger's 60th birthday</i>• With co-organizers Eric Corwin, Xiao-Min Lin, Raghuvveer Parthasarathy, Xiang Cheng Leah Roth and Kieran Murphy	
Co-researcher , Experimental Astrophysical Research into Terrestrial Growth (EARTH)	2016-present
<ul style="list-style-type: none">• Winner of the Chilean QUIMAL prize (\$315,000 research grant)• With lead investigator Nicolas Mújica and co-researchers Rodrigo Soto, Simon Casassus, Devin Schrader and Marcos Flores	
Organizer , Soft Matter Seminar at the Leiden Institute of Physics	2013-2014
<ul style="list-style-type: none">• With co-organizers Jayson Paulose and Bryan Chen	
Congress Assistant , <i>MarchCOM Meeting on Complexity</i> , Havana (CU)	2012
<ul style="list-style-type: none">• With direction from organizers Ernesto Altshuler and Jon Otto Fossum	

Workshop Assistant , <i>Fluidity, adaptability, rigidity: Frontiers in pure and applied jamming</i> , Chicago (USA)	2012
• With direction from organizers Heinrich Jaeger, Sidney Nagel and Sean Keller	
Review activity for <i>Nature, Nature Physics, PNAS, Physical Review Letters, Soft Matter, Physical Review E, Physical Review Materials, Review of Scientific Instruments, Nano Energy, Granular Matter, Advanced Materials Interfaces, Journal of Applied Mechanics, Journal of Electrostatics</i>	2009-present,
Tour guide and volunteer , <i>Physics with a bang!</i> at the University of Chicago	2009-2013
Spanish translator and volunteer , <i>Arte no es fácil</i> MacArthur funded art exchange program	2009-2011
Volunteer , SMART outreach program at the University of Chicago	2007
President , The Society of Physics Students at the University of Arizona	2006-2007

LIST OF PUBLICATIONS

(*high impact)

24. **Non-Euclidean Origami**
Scott Waitukaitis, Peter Dieleman, and Martin van Hecke
Physical Review E **103**, 031001(R) (2020).
23. **Quantitatively consistent, scale-spanning model for same-material tribocharging**
Galien Grosjean, Sebastian Wald, Juan Carlos Sobarzo Ponce, and Scott Waitukaitis
Physical Review Materials **4**, 082602 (2020)
22. **Jigsaw puzzle design of pluripotent origami**
Peter Dieleman, Niek Vasmel, Scott Waitukaitis, and Martin van Hecke
Nature Physics **16**, 63-68 (2020).
21. **Microwave induced mechanical activation of hydrogel dimers**
Hamza Khattak, Scott Waitukaitis, and Aaron Slepko
Soft Matter **15**, 5804-5809 (2019).
20. **From bouncing to floating: the Leidenfrost effect with hydrogel spheres**
Scott Waitukaitis, Kirsten Harth Martin van Hecke
Physical Review Letters **121**, 048001 (2018).
19. **Clicks for Doughnuts**
Scott Waitukaitis
Nature Physics **14**, 777-778 (2018).
18. **Collisional charging of individual sub-millimeter particles: using ultrasonic levitation to initiate and track charge transfer**
Victor Lee, Nicole M. James, Scott Waitukaitis, and Heinrich Jaeger
Physical Review Materials **2**, 035602 (2018).
17. **A high-speed tracking algorithm for dense granular media**
Cristobal Navarro, Juan Silva, Scott Waitukaitis, Nicolas Mújica, Nancy Hitschfeld-Kahler and Mauricio Cerda
Computer Physics Communications **227**, 8-16 (2018).
16. **The retention of dust in protoplanetary disks: evidence from agglomeratic olivine chondrules from the outer Solar System**
Devin Schrader, Kazuhide Nagashima, Scott Waitukaitis, Jemma Davidson, Timothy McCoy, Harold Connolly and Dante Lauretta
Geochimica et Cosmochimica Acta **223**, 405-421 (2018).

15. ***Coupling the Leidenfrost effect and elastic deformations to power sustained bouncing** (*Cover*)
Scott Waitukaitis, Antal Zsuzsanna, Anton Souslov, Corentin Coulais and Martin van Hecke
Nature Physics **13**, 1095-1099 (2017).
14. **Origami building blocks: generic and special four-vertices**
Scott Waitukaitis and Martin van Hecke
Physical Review E **93**, 023003 (2016).
13. ***Direct observation of particle interactions and clustering in charged granular streams**
Victor Lee, Scott Waitukaitis, Marc Miskin and Heinrich Jaeger
Nature Physics **11**, 733-737 (2015).
12. ***Origami multistability: from single vertices to metasheets**
Scott Waitukaitis, Rémi Menaut, Bryan Chen and Martin van Hecke
Physical Review Letters **114**, 055503 (2015).
11. **Size-dependent, same-material tribocharging in insulating grains**
Scott Waitukaitis, Victor Lee, James Pierson, Steve Forman and Heinrich Jaeger
Physical Review Letters **112**, 218001 (2014).
10. **Settling into dry granular media in different gravities**
Ernesto Altshuler, Harol Torres, Gustavo Sánchez-Colina, Carlos Pérez-Penichet, Scott Waitukaitis and Raul Hidalgo
Geophysical Review Letters **41**, 3032-3037 (2014).
9. **From nanoscale cohesion to macroscale entanglement: opportunities for designing granular aggregate behavior by tailoring grain shape and interactions**
Heinrich Jaeger, Marc Miskin, and Scott Waitukaitis
Powders and Grains **1542**, 3-6 (2013).
8. **Dynamic Jamming Fronts**
Scott Waitukaitis, Leah Roth, Vincenzo Vitelli, and Heinrich Jaeger
Europhysics Letters **102**, 44001 (2013).
7. **In situ granular charge measurement by free-fall videography**
Scott Waitukaitis and Heinrich Jaeger
Review of Scientific Instruments **84**, 025104 (2013).
6. **Solidificación de una suspensión de maicena y agua**
Scott Waitukaitis and Heinrich Jaeger
Revista Cubana de Física **29**, (2012).
5. ***Impact-activated solidification of dense suspensions via dynamic jamming fronts**
Scott Waitukaitis and Heinrich Jaeger
Nature **487**, 205-209 (2012).
4. **Droplet and cluster formation in freely-falling granular streams**
Scott Waitukaitis, Helge Grütjen, John Royer and Heinrich Jaeger
Physical Review E **83**, 051302 (2011).
3. ***High-speed tracking of rupture and clustering in freely-falling granular streams**
John Royer, D.J. Evans, Loreto Oyarte, Qiti Guo, Matthias Möbius, Scott Waitukaitis and Heinrich Jaeger
Nature **459**, 1110-1113 (2009).
2. **Reconnection in three dimensions: the role of spines in three eruptive flares**
Angela des Jardins, Richard Canfield, Dana Longcope, C. Fordyce and Scott Waitukaitis
Astrophysical Journal **693**, 1628-1636 (2009).

1. **Cover slip external cavity diode laser**
Victoria Carr, Yancey Sechrest, Scott Waitukaitis, John Perrault, Vincent Lonij and Alex Cronin
Review of Scientific Instruments **78**, 106108 (2007).

INVITED TALKS AND SEMINARS

(* high visibility)

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|---|---------------|
| 56. Invited Seminar , Deutsches Zentrum für Luft und Raumfahrt, Cologne (DE)
<i>The Leidenfrost effect and hydrogels</i> | Dec 15, 2020 |
| 55. Invited Seminar , Atominstitut TU Wien (Au)
<i>Rabbits, dust devils, volcanoes, planets: mysteries of granular tribocharging</i> | Nov 27, 2020 |
| 54. Invited Talk , SIAM Conference on Mathematical Aspects of Material Science
<i>(cancelled due to pandemic)</i> | March 2020 |
| 53. Invited Talk , <i>Interdisciplinary Challenges in Non-equilibrium Physics</i> , ESI Vienna
<i>(cancelled due to pandemic)</i> | May 2020 |
| 52. Invited Seminar , LadHyX at École Polytechnique, Palaiseau (FR)
<i>Non-linear dynamics of hydrogels interacting with hot surfaces</i> | June 20, 2019 |
| 51. Invited Seminar , Gulliver lab at ESPCI, Paris (FR)
<i>The Leidenfrost effect and hydrogels</i> | Feb 4, 2019 |
| 50. Invited Talk , Southern Workshop on Granular Materials, Puerto Varas (CL)
<i>Bouncing, active granular matter with the elastic Leidenfrost effect</i> | Dec 5, 2018 |
| 49. Invited Seminar , The School of Physics at the University of Edinburgh, Edinburgh (UK)
<i>Rabbits, dust devils, volcanoes, planets: The surprising physics of granular tribocharging</i> | Oct 1, 2018 |
| 48. Invited Seminar , Physics Department at the University of Chile, Santiago (CL)
<i>The elastic Leidenfrost effect: coupling vapor release and elastic deformations to power sustained bouncing</i> | Aug 16, 2018 |
| 47. Invited Talk , Bessensap, Amsterdam (NL) | June 15, 2018 |
| 46. Invited Talk , Amsterdam Science Now!, Amsterdam (NL) | May 31, 2018 |
| 45. Invited Seminar , MIT Mechanical Engineering, Cambridge (US)
<i>Granular tribocharging: from fundamental mysteries to macroscale self-assembly</i> | Mar 15, 2018 |
| 44. Invited Seminar , UCSD, San Diego (US)
<i>Granular tribocharging: from fundamental mysteries to macroscale self-assembly</i> | Mar 12, 2018 |
| 43. Invited Seminar , IST Austria, Klosterneuburg (AT)
<i>Rabbits, Planets, Volcanoes, Dust Devils: The Surprising Physics of Granular Tribocharging</i> | Feb 28, 2018 |
| 42. Invited Seminar , UMass Amherst Physics Department, Amherst (US)
<i>The elastic Leidenfrost effect: Coupling vapor release and elastic deformations to power sustained bouncing</i> | Feb 16, 2018 |
| 41. Invited Colloquium , Brandeis University Department of Physics, Waltham (US)
<i>The elastic Leidenfrost effect: Coupling vapor release and elastic deformations to power sustained bouncing</i> | Feb 14, 2018 |
| 40. Invited Seminar , Boston University Mechanical Engineering, Boston (US)
<i>Transforming soft materials into engines by coupling the Leidenfrost effect to elastic deformations</i> | Feb 7, 2018 |
| 39. Invited Seminar , Opening Act Van der Waals Colloquium, Leiden University, Leiden (NL)
<i>Out of the lab and into the frying pan: hacking hydrogels to create active matter</i> | Jan 26, 2018 |
| 38. Invited Seminar , Centre de Recherche Paul Pascal, Bordeaux (FR)
<i>Using the Leidenfrost effect and hot hydrogels to make better bouncy balls</i> | Dec 7, 2017 |
| 37. Invited Seminar , Laboratoire Ondes et Matière d'Aquitaine, Bordeaux (FR)
<i>Using the Leidenfrost effect and hot hydrogels to make better bouncy balls</i> | Dec 5, 2017 |
| 36. Invited Seminar , Faculty of Science at the University of Liège, Liège (BE)
<i>Coupling the Leidenfrost effect and elastic deformations to power sustained bouncing</i> | Nov 13, 2017 |
| 35. Invited Seminar , Science Meets Business, Leiden (NL)
<i>YouTube Science: How good ideas can come from anywhere</i> | Nov 9, 2017 |

34. **Invited Seminar**, École Normale Supérieure de Lyon, Lyon (FR) Oct 31 2017
Using the Leidenfrost effect to harness mechanical energy from vaporizable soft solids
33. **Invited Seminar**, The School of Physics at the University of Edinburgh, Edinburgh (UK) Oct 23, 2017
Transforming soft materials into engines by coupling the Leidenfrost effect to elastic deformations
32. **Invited Seminar**, The Lumière Institute at the Claude Bernard University Lyon, Lyon (FR) Oct 13, 2017
Using the Leidenfrost effect and hot hydrogels to make better bouncy balls
31. **Invited Seminar**, The Institute for Physics at the University of Amsterdam, Amsterdam (NL) June 9, 2017
A soft engine powered by a single object and made from a single material
30. **Invited Seminar**, The University of Chicago, Chicago (USA) Mar 8, 2017
A soft engine powered by a single object and made from a single material
29. **Invited Seminar**, Saint-Gobain Recherche, Paris (FR) Dec 15, 2016
Rabbits, Planets, Volcanoes, Dust Devils: The Surprising Physics of Granular Tribocharging
28. **Invited Seminar**, The MSI at the University of Oregon, Eugene (USA) Nov 18, 2016
Rabbits, Planets, Volcanoes, Dust Devils: The Surprising Physics of Granular Tribocharging
27. ***Invited Colloquium**, Deutsches Zentrum für Luft und Raumfahrt, Cologne (DE) Nov 8, 2016
Rabbits, Planets, Volcanoes, Dust Devils: The Surprising Physics of Granular Tribocharging
26. **Invited Talk**, This week's discoveries, Leiden University, Leiden (NL) Oct 25, 2016
Rabbits, Planets, Volcanoes, Dust Devils: The Surprising Physics of Granular Tribocharging
25. ***Invited Short Talk**, The Granular Matter Gordon Research Conference, Easton (USA) Jul 27, 2016
Animating granular matter with the elastic Leidenfrost effect
24. **Invited Seminar**, PMMH Laboratory at the ESPCI, Paris (FR) June 25, 2016
Rabbits, Planets, Volcanoes, Dust Devils: The Surprising Physics of Granular Tribocharging
23. **Invited Seminar**, Department of Physics at the Université Paris Diderot, Paris (FR) June 21, 2016
Rabbits, Planets, Volcanoes, Dust Devils: The Surprising Physics of Granular Tribocharging
22. **Invited Seminar**, Physics Department at Wageningen University, Wageningen (NL) Apr 14, 2016
Rabbits, Planets, Volcanoes, Dust Devils: The Surprising Physics of Granular Tribocharging
21. **Invited Seminar**, Max Planck Institute, Göttingen (DE) Jan 15, 2016
Rabbits, Planets, Volcanoes, Dust Devils: The Surprising Physics of Granular Tribocharging
20. **Invited Seminar**, Leiden University Department of Physics, Leiden (NL) Oct 29, 2015
Rabbits, Planets, Volcanoes, Dust Devils: The Surprising Physics of Granular Tribocharging
19. ***Keynote Talk**, SB9 Planetary Rings, European Planetary Science Congress, Nantes (FR) Oct 1, 2015
Tribocharging and charged interaction in same-material, microscopic grains
18. ***Invited Talk**, European Solid Mechanics Conference, Madrid (ES) Jul 7, 2015
Multishape Origami Metasheets
17. ***Invited Talk**, The Southern Granular Matter Workshop, Santiago (CL) Nov 25, 2015
Tribocharging and charged interactions in same-material, microscopic grains
16. ***Invited Talk**, The 18th Dutch Soft Matter Meeting, Eindhoven (NL) June 3, 2015
Multishape Origami Metasheets
15. **Invited Seminar**, The Otto-von-Guericke-Universität Magdeburg, Magdeburg (DE) June 1, 2015
How to walk on water (and cornstarch)
14. **Invited Seminar**, The Physics Department at UMass Amherst, Amherst (USA) Mar 11, 2015
The delicate dance of charged grains in zero gravity
13. **Invited Seminar**, The Department of Physics at Cornell University, Ithaca (USA) Mar 9, 2015
The delicate dance of charged grains in zero gravity
12. **Invited Seminar**, Leiden University Department of Physics, Leiden (NL) Sept 25, 2014
Multishape Origami Metasheets
11. **Invited Seminar**, The Institute for Physics at the University of Amsterdam, Amsterdam (NL) June 9, 2014
How to walk on water (and cornstarch)
10. **Invited Seminar**, The Physics of Fluids Group at the University of Twente, Enschede (NL) Jan 8, 2014
How to walk (run) on water (and cornstarch)
9. **Invited Seminar**, École Normal Supérieure, Paris (FR) Mar 19, 2014
Why you can walk (run) on water (and cornstarch)
8. **Invited Seminar**, The Soft Matter Seminar, Leiden University, Leiden (NL) Oct 30, 2013
Impact-activated solidification of cornstarch and water suspensions
7. **Invited Colloquium**, The Department of Physics at St. Olaf's College, Northfield (USA) Sept 18, 2013
Why you can run on water (and cornstarch)
6. ***Invited Talk**, 64th Meeting of Arbeitsgemeinschaft Getreideforschung, Detmold (DE) Apr 24, 2013
Impact-activated solidification of a dense cornstarch suspension

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| 5. Panelist , <i>Cabinet on Narrative</i> , The Arts-Science Initiative, Chicago (USA) | Apr 12, 2013 |
| 4. Invited Seminar , The Soft Matter Seminar, Leiden University, Leiden (NL)
<i>Why you can run on water (and cornstarch)</i> | Apr 2, 2013 |
| 3. Invited Seminar , PMMH Laboratory at ESPCI, Paris(FR)
<i>Impact-activated solidification of dense suspensions</i> | Mar 29, 2013 |
| 2. *Invited Talk , March Meeting, Baltimore (USA)
<i>Impact-activated solidification of dense suspensions</i> | Mar 22, 2013 |
| 1. Invited Seminar , The University of Chicago, Chicago (USA)
<i>Same material tribocharging in insulating grains</i> | Mar 6, 2012 |

CONFERENCES, WORKSHOPS & SCHOOLS

(*invited)

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| *Mesoscopic triboelectricity: from patches to planets , Bad Honnef (DE) | Jan 2022 |
| *Southern Granular Matter Workshop , Puerto Varas (CL)
Invited talk: <i>Bouncing, active granular matter with the elastic Leidenfrost effect</i> | Dec 2018 |
| Gordon Granular Matter Research Seminar , Easton (USA)
<i>Conference co-chair with Cacey Bester</i> | Jul 2018 |
| European Solid Mechanics Congress , Bologna (IT)
Contributed talk: <i>Bouncing, screaming, floating: motion control with vaporizable solids</i> | Jul 2018 |
| APS March Meeting , Los Angeles (USA)
Contributed talk: <i>Why won't these balls stop jumping and screeching?</i> | Mar 2018 |
| Fundamental Problems in Active Matter , Aspen Center for Physics, Aspen (USA)
<i>Awarded Block Prize for Outstanding Young Researcher</i> | Jan 2018 |
| Form and Deformation in Solid and Fluid Mechanics , Cambridge (UK)
Contributed talk: <i>Coupling the Leidenfrost effect and elastic deformations to power sustained bouncing</i> | Sep 2017 |
| Programmable Matter Workshop , ESPCI Paris (FR)
Contributed talk: <i>A soft engine embedded into a single object made from a single material</i> | June 2017 |
| 22nd Dutch Soft Matter Meeting , Delft (NL) | May 2017 |
| APS March Meeting , New Orleans (USA)
Contributed talk: <i>Animating soft matter with the elastic Leidenfrost effect</i>
Chair of Focus Session C16: <i>Mechanical Singularities in Soft Matter</i> | Mar 2017 |
| Physics at Veldhoven , Veldhoven (NL)
Contributed talk: <i>Animating soft matter with the elastic Leidenfrost effect</i> | Jan 2017 |
| APS DFD Meeting , Portland (USA)
Contributed talk: <i>Animating impacting spheres with the elastic Leidenfrost effect</i> | Nov 2016 |
| Society of Engineering Science 53 Annual Technical Meeting , College Park (USA)
Contributed talk: <i>Animating soft matter with the elastic Leidenfrost effect</i>
Contributed talk: <i>Geometry driven design of multistable origami metamaterials</i> | Oct 2016 |
| *The Granular Matter Gordon Research Conference , Easton (USA)
Invited talk: <i>Animating granular matter with the elastic Leidenfrost effect</i> | Aug 2016 |
| The Granular Matter Gordon Research Seminar , Easton (USA)
Discussion leader and keynote session chair: <i>Soft granular matter</i> | Aug 2016 |
| 20th Dutch Soft Matter Meeting , Amsterdam (NL) | May 2016 |
| APS March Meeting , Baltimore (USA)
Contributed talk: <i>The role of geometry in 4-vertex origami mechanics</i> | Mar 2016 |
| Physics at Veldhoven , Veldhoven (NL) | Jan 2016 |
| *Southern Granular Matter Workshop , Santiago (CL)
Invited talk: <i>Tribocharging and charged interactions in same-material, microscopic grains</i> | Dec 2015 |
| 19th Dutch Soft Matter Meeting , Utrecht (NL) | Oct 2015 |
| *European Planetary Science Congress , Nantes (FR)
Keynote talk: <i>Tribocharging and charged interaction in same-material, microscopic grains</i> | Oct 2015 |
| Metamorphose: Metamaterials 2015 , Oxford (UK)
Contributed talk: <i>Multishape origami metasheets</i> | Sept 2015 |
| *European Solid Mechanics Conference , Madrid (ES)
Invited talk: <i>Multishape origami metasheets</i> | Jul 2015 |

Designer Matter Workshop , Amsterdam (NL)	June 2015
Contributed talk: <i>Multistable origami metamaterials</i>	
18th Dutch Soft Matter Meeting , Eindhoven (NL)	June 2015
MRS Spring Meeting , San Francisco (USA)	Apr 2015
Contributed talk: <i>Multistable origami metamaterials</i>	
APS March Meeting , San Antonio (USA)	Mar 2015
Contributed talk: <i>Multistable origami metamaterials</i>	
Granular Matter in Low Gravity , Erlangen (DE)	Mar 2015
Contributed talk: <i>Freely-falling granular streams: a zero-g playground for charged grain interactions</i>	
Physics at Veldhoven , Veldhoven (NL)	Jan 2015
Contributed talk: <i>Origami multistability: from single vertices to metasheets</i>	
17th Dutch Soft Matter Meeting , Leiden (NL)	Nov 2014
Soundbyte: <i>Crumpled paper is a metamaterial</i>	
Society of Engineering Science 51st Annual Technical Meeting , Purdue (USA)	Nov 2014
Contributed talk: <i>Designing the energy landscape of folded structures</i>	
The 6th International Meeting on Origami in Science, Mathematics, and Education , Tokyo (JP)	Aug 2014
Guerilla talk: <i>Designing the energy landscape of folded structures</i>	
16th Dutch Soft Matter Meeting , Amsterdam (NL)	May 2014
Soundbyte: <i>Multistability in origami 4-vertices</i>	
Casimir Spring School , Arnemuiden (NL)	May 2014
Contributed talk: <i>Designing the energy landscape of folded structures</i>	
APS March Meeting , Denver (USA)	Mar 2014
Contributed talk: <i>Bad origami</i>	
Physics at Veldhoven , Veldhoven (NL)	Jan 2014
*64th Annual Meeting of Arbeitsgemeinschaft Getreideforschung , Detmold (DE)	Apr 2013
Invited talk: <i>Impact-activated solidification of a dense cornstarch suspension</i>	
*APS March Meeting , Baltimore (USA)	Mar 2013
Invited talk: <i>Impact-activated solidification of dense suspensions</i>	
MarchCOM Workshop on Complex Media , Havana (CU)	Mar 2012
Contributed talk: <i>Why you can walk on a suspension of cornstarch and water</i>	
Electrostatics Society of America Annual Conference , Cleveland (USA)	June 2011
Contributed talk: <i>Direct measurement of size-dependent charging in chemically identical grains</i>	
APS March Meeting , Dallas (USA)	Mar 2011
Contributed talk: <i>Granular electrophoresis: in situ measurement of charge and size in freely-falling grains</i>	
The Granular Matter Gordon Research Conference , Colby College (USA)	June 2010
Poster: <i>Granular electrophoresis: in situ measurement of charge and size in freely-falling grains</i>	
APS DFD Meeting , Minneapolis (USA)	Nov 2009
Contributed talk: <i>Temperature fluctuations in a freely-falling granular stream</i>	
APS March Meeting , Pittsburgh (USA)	Mar 2009
Contributed talk: <i>Clustering in a dense, freely-falling granular streams</i>	
APS DAMOP Meeting , State College (USA)	May 2008
Poster: <i>Combined experimental approach for magneto-optical trapping of Li and Cs atoms</i>	
Midwest Cold Atom Workshop , Madison (USA)	Nov 2007
Poster: <i>Combined experimental approach for magneto-optical trapping of Li and Cs atoms</i>	

IN THE NEWS

(a selection, high visibility*)

Das jahrtausendealte Rätsel der Reibungselektrizität, Die Presse, September (2020)
 Een ongewoon Leidenfrosteffect, Nederlandse Tijdschrift voor Natuurkunde, June (2018)
 Pancake Science, Amsterdam Science, May (2018)

Physicist saw a video on IFLScience and ended up writing a scientific study about it, *IFLS*, October 3 (2017)

* Dancing balls lead to a physics discovery, *Discover*, July 26 (2017)

Springende gelballetjes piepen in de koekepan, *NRC Handelsblad*, July 26 (2017)

Waarom balletjes op een hete plaat piepen en springen, *Engineers Online*, July 26 (2017)

Hüpfendes hydrogel als mikroantrieb, *pro-physik.de*, July 26 (2017)

Waarom deze balletjes gillen en stuiteren in een hete pan, *Kijk Magazine*, July 25 (2017)

* These bouncing balls on a hot pan led to a new physics discovery, *The Washington Post*, July 24 (2017)

Leidenfrost-Effekt lässt weiche Kügelchen hüpfen, *Welt der Physik*, July 24 (2017)

Elastic Leidenfrost enables soft engines, *Phys.org*, July 24 (2017)

* Van grap en YouTube-hit tot Nature-publicatie: waarom hydrogelballetjes stuiteren in een pan, *De Volkskrant*, July 24 (2017)

Screaming gel balls reveal a way to power soft but noisy robots, *New Scientist*, July 24 (2017)

Let's power robots with shrieking balls, *Inverse*, July 24 (2017).

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STUDENTS MENTORED

Juan Carlos Sobarzo Ponce, IST Austria PhD Student

Bas Diphooorn, Eindhoven University of Technology Bachelor's Student

Thesis: *Synthesis of hydrogel bouncing balls*

2019 - present

Summer 2017

Hans Frijters , Leiden University Master's Student Thesis: <i>Metagels</i>	Summer 2017
Antal Zuiderwijk , Leiden University Master's Student Thesis: <i>The Leidenfrost effect in soft solids</i>	Spring 2017
Agustín Iniguez Rabago , Delft University Master's Student Project: <i>Hydrogel fabrication and molding</i>	Summer 2016
Jasper van der Vaart , Leiden University Master's Student Thesis: <i>Determining the effect of bending on origami structures</i>	Winter 2016
Bert Visscher , Leiden University Bachelor's Student Thesis: <i>Auxetic draping</i>	Spring 2015
Rémi Menaut , École Normale Supérieure de Lyon Master's Student Thesis: <i>Multistable metasheet based on origami</i>	Fall 2013
Leah K. Roth , University of Chicago REU student Project: <i>Dynamic jamming in 2D</i>	Summer 2012
Elena Ruyter , Summer high school student Project: <i>Granular streams mini tutorial</i>	Summer 2011
Gustavo Castillo , University of Chile exchange student Project: <i>Granular tribocharging experiments</i>	Winter 2011
Estefania Vidal , University of Chile exchange student Project: <i>Granular tribocharging simulations</i>	Winter 2011
Alison Patteson (Koser) , University of Chicago REU student Project: <i>Granular breakup experiments</i>	Summer 2010
Suomi Ponce Heredia , University of Chile exchange student Project: <i>Granular breakup experiments</i>	Winter 2009

TEACHING EXPERIENCE

Graduate level Course , <i>Statistical Physics Topics in Experimental Soft Matter</i> , IST Austria	Spring 2020
Teaching Assistant with Henry Frisch, The University of Chicago, Honors E&M	Winter 2012
Teaching Assistant with Henry Frisch, The University of Chicago, Honors Waves	Spring 2011
Teaching Assistant with Mark Oreglia, The University of Chicago, Honors Waves	Spring 2010
Teaching Assistant with Ed Blucher, The University of Chicago, Mechanics	Fall 2007
Teaching Assistant with Doug Toussaint, The University of Arizona, Advanced E&M	Winter 2007
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