Oshri Borgman – Curriculum Vitae

Géosciences Rennes (UMR CNRS 6118)
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Education

2012–2018 **Ph.D.** The Department of Soil and Water Sciences, The Hebrew University of Jerusalem
Thesis title: A pore-scale study of the effects of heterogeneity and deformation on fluid displacement in granular media
Supervisor: Dr. Ran Holtzman

2009–2012 **M.Sc.Agr.** Soil and Water Sciences, The Hebrew University of Jerusalem *magna cum laude*
Thesis title: Mobility of pharmaceutical compounds in an agricultural soil: Effects of biosolids application and solution chemistry
Supervisor: Prof. Benny Chefetz

2006–2009 **B.Sc.Agr.** Soil and Water Sciences, The Hebrew University of Jerusalem *magna cum laude*

Professional experience

2019–present **Postdoctoral researcher**, Géosciences Rennes, Université de Rennes 1
Project title: Impact of structural heterogeneity on solute transport and mixing in unsaturated porous media
Supervisors: Dr. Yves Méheust and Dr. Tanguy Le Borgne

2018–2019 **Postdoctoral researcher**, The Department of Environmental Hydrology and Microbiology, Zuckerberg Institute for Water Research, Jacob Blaustein Institutes for Desert Research, Ben-Gurion University of the Negev
Project title: Colloid facilitated transport of radionuclides through fractures in carbonate rocks: A micro-scale study
Supervisors: Prof. Noam Weisbrod and Prof. Avraham Be'er

Publications

Papers in preparation

8. Oshri Borgman, Régis Turuban, Baudouin Géraud, Tanguy Le Borgne, and Yves Méheust, Dispersion enhanced solute mixing in porous media: Experimental study

Papers submitted to peer-reviewed journals

7. Oshri Borgman, Avraham Be'er, and Noam Weisbrod, Impact of surface heterogeneity on colloid transport over a natural fractured rock surface, *pre-print available*

Papers in peer-reviewed journals

6. Oshri Borgman and Ran Holtzman. Impact of matrix deformations on drying of granular materials. *International Journal of Heat and Mass Transfer*, 153:119634, 2020. doi: 10.1016/j.ijheatmasstransfer.2020.119634
JCR2019 IF = 4.947, 10/136, Q1, Mechanics

5. Oshri Borgman, Thomas Darwent, Enrico Segre, Lucas Goehring, and Ran Holtzman. Immiscible fluid displacement in porous media with spatially correlated particle sizes. *Advances in Water Resources*, 128:158–167, 2019. doi: 10.1016/j.advwatres.2019.04.015
JCR2019 IF = 4.016, 11/94, Q1, Water resources.

4. Soumyajyoti Biswas, Paolo Fantinel, Oshri Borgman, Ran Holtzman, and Lucas Goehring. Drying and percolation in correlated porous media. *Physical Review Fluids*, 3:124307, 2018. doi: 10.1103/PhysRevFluids.3.124307
JCR2019 IF = 2.512, 10/34, Q2, Physics, fluids and plasmas.

3. Paolo Fantinel, Oshri Borgman, Ran Holtzman, and Lucas Goehring. Drying in a microfluidic chip: Experiments and simulations. *Scientific Reports*, 7:15572, 2017. doi: 10.1038/s41598-017-15718-6
JCR2019 IF = 3.998, 17/71, Q1, Multidisciplinary sciences.

2. Oshri Borgman, Paolo Fantinel, Wieland Lühder, Lucas Goehring, and Ran Holtzman. Impact of spatially correlated pore-scale heterogeneity on drying porous media. *Water Resources Research*, 53 (7):5645–5658, 2017. doi: 10.1002/2016WR020260
JCR2019 IF = 4.309, 9/94, Q1, Water resources.

1. Oshri Borgman and Benny Chefetz. Combined effects of biosolids application and irrigation with reclaimed wastewater on transport of pharmaceutical compounds in arable soils. *Water Research*, 47 (10):3443–3431, 2013. doi: 10.1016/j.watres.2013.03.045
JCR2019 IF = 9.130, 1/94, Q1, Water resources.

Conferences

Presentations

2021 **Oshri Borgman**, Régis Turuban, Baudouin Géraud, Tanguy Le Borgne, and Yves Méheust, *Impact of flow conditions on pore-scale solute mixing: experiments in heterogeneous 2D porous media* (vPico), EGU General Assembly 2021 (virtual meeting)

2020 **Oshri Borgman** and Ran Holtzman, *Impact of matrix deformation on drying of granular materials*, Israel Society of Soil Science Annual Conference (virtual meeting)

2016 **Oshri Borgman**, Paolo Fantinel, Lucas Goehring, and Ran Holtzman, *Impact of spatial correlation and matrix deformation on drying granular material*, Gordon Research Seminar on Flow and Transport in Permeable media, Girona, Spain

Oshri Borgman, Paolo Fantinel, Wieland Lühder, Lucas Goehring, and Ran Holtzman, *Drying in spatially correlated porous media*, Israel Soil Science Society Annual Conference, Qatzrin, Israel

2015 **Oshri Borgman**, Paolo Fantinel, Lucas Goehring, and Ran Holtzman, *The Impact of Pore-Scale Heterogeneity on Drying Porous Media*, EGU General Assembly, Vienna, Austria

2011 **Oshri Borgman** and Benny Chefetz, *Effects of compost application and solution chemistry on leaching of pharmaceutical compounds in soil columns*, Israel Soil Science Society Annual Conference, BIDR, Sde Boker, Israel

Oshri Borgman and Benny Chefetz, *Behavior of pharmaceutical compounds in soils: effects of biosolids application and soil solution chemistry*, 8th Conference on Active Research by Environmental Science Students, Weizmann Institute of Science, Rehovot, Israel

Posters

2021 **Oshri Borgman**, Francesco Gomez, Tanguy Le Borgne, Yves Méheust, *Impact of heterogeneity on solute transport and mixing in unsaturated porous media: Experimental design and preliminary results*, 2021 Cargèse summer school on Flow and Transport in Porous and Fractured Media, Cargèse, France

2020 **Oshri Borgman**, Avraham Be'er, and Noam Weisbrod, *Impact of surface heterogeneity on colloid transport over a natural fractured rock*, AGU Fall Meeting 2020 (virtual meeting)

2019 **Oshri Borgman**, Avraham Be'er, and Noam Weisbrod, *Direct visualization of colloid transport and deposition in fractures of carbonate rock using fluorescent microscopy*, EGU General Assembly, Vienna, Austria

2018 **Oshri Borgman**, Enrico Segre and Ran Holtzman, *Impact of structured heterogeneity on immiscible displacement in porous media*, Israeli Association for Water Resources Conference, Neve Ilan, Israel

2017 **Oshri Borgman** and Ran Holtzman, *Impact of matrix deformations on drying of granular materials*, Interpore–9th International Conference on Porous Media & Annual Meeting, Rotterdam, The Netherlands

2016 **Oshri Borgman**, Paolo Fantinel, Lucas Goehring, and Ran Holtzman, *Impact of spatial correlation and matrix deformation on drying granular material*, Gordon Research Conference on Flow and Transport in Permeable media, Girona, Spain

2015 **Oshri Borgman**, Paolo Fantinel, Lucas Goehring, and Ran Holtzman, *The Impact of Pore-Scale Heterogeneity on Drying Porous Media: Pore-Network Model Simulations*, Interpore–7th International Conference on Porous Media & Annual Meeting, Padua, Italy

2014 **Oshri Borgman**, Paolo Fantinel, Lucas Goehring, and Ran Holtzman, *The impact of pore-scale heterogeneity on drying porous media*, Israel Soil Science Society Annual Conference, Agricultural Research Organisation, Beit Dagan, Israel

2010 **Oshri Borgman** and Benny Chefetz, *Behavior of pharmaceutical compounds in soils: effects of biosolids application*, Israel Soil Science Society Annual Conference, Beit Dagan, Israel

Invited seminars

02/2021 Porous Medium Tea Time Talk (YouTube link)

07/2020 Environmental Physics and Irrigation, Institute of Soil, Water and Environmental Sciences, Agricultural Research Organization, Israel

02/2018 Géosciences Rennes, Université de Rennes 1, Rennes, France

Department of Civil, Environmental and Geomatic Engineering, ETH Zürich, Zürich, Switzerland

School of Chemical Engineering and Analytical Science, The University of Manchester, Manchester, United Kingdom

Awards and fellowships

2019-2021	Marie Skłodowska-Curie Actions Individual Fellowship 2018, European Commission
	Project title: Impact of structural heterogeneity on solute transport and mixing in unsaturated porous media (UnsatPorMix – 843594)
	Supervisor: Yves Méheust | Mentor: Tanguy Le Borgne
	Total grant amount: €196,707.84
2018-2019	Marcus Postdoctoral Fellowships in Water Sciences, Ben-Gurion University of the Negev
	Fellowship amount: 105,000 ILS (equivalent to €25,000 or $28,000)
2014-2016	The Robert H. Smith Prizes for Excellence in Agriculture
	Awarded amount: 30,000 ILS over three years (equivalent to €7000 or $8000)
2014	Israel Ministry of Science, Technology and Space grant for international training for PhD students
	Granted amount: 7300 ILS (equivalent to €1700 or $2000)
2014	Outstanding teaching assistant, The Faculty of Agriculture, Food and Environment, Rehovot
	3rd place in students' poster competition, Israel Soil Science Society Annual Conference, Agricultural Research Organisation, Beit Dagan, Israel
2010	Winner of students' poster competition, Israel Soil Science Society Annual Conference, Agricultural Research Organization, Beit Dagan

Teaching experience

2021 Cargèse summer school on Flow and Transport in Porous and Fractured Media

Practical course on millifluidic solute transport experiments (with Dr. Joaquín Jiménez-Martínez and Dr. Yves Méheust)

Teaching assistant at the Hebrew University of Jerusalem, Israel

Graduate-level courses

2015, 2017	Advanced Soil Physics

Undergraduate-level courses

2014-2018	Hydraulic Laboratory on Flow in Conduits and Soil
2013-2018	Physics of Soil Water
2010-2012	Fundamentals of Soil Science
2009-2011	Undergraduate physics courses

Other academic activities

Reviewer for journals: *Drying Technology*, *Plant and Soil*; *Advances in Water Resources*; *Water Resources Research*; *Proceedings of the Royal Society A*.

Member of organizing committee and session chair, Water Research in Israel: Graduate Student Research Conference, The Technion, Haifa, Israel, 2016