

# Stanford

---



## Doug Meisenheimer

Lab Manager - Micro-CT Facility, Stanford Doerr School of Sustainability -  
Dean's Office

### Bio

---

#### BIO

Doug manages the operations of the MicroCT (MCT) and Mineralogy & Petrology (M&P) laboratories in the School of Sustainability. He is a research scientist that specializes in collecting, processing, and analyzing micro-computed tomography (microCT) data. His scientific research focuses on utilizing the capabilities of microCT to study the in-situ transport of fluids through porous media with specific interest on environmental and engineered process in the subsurface.

He received his Ph.D. in Environmental Engineering from Oregon State University (OSU) where he also managed the OSU microCT Facility. During his Ph.D. he performed synchrotron work at the Advanced Photon Source at Argonne National Laboratory, optimizing a technique to study fluid flow in a porous medium in near real-time. He was also awarded a NSF Fellowship for the East Asia and Pacific Summer Institutes (EAPSI) program to perform research at The Australian National University.

#### CURRENT ROLE AT STANFORD

Research Scientist and Lab Manager for the MicroCT (MCT) and Mineralogy & Petrology (M&P) shared labs in the Doerr School of Sustainability.

#### EDUCATION AND CERTIFICATIONS

- Ph.D., Oregon State University , Environmental Engineering (2020)

#### LINKS

- MicroCT Lab (MCT): <https://mct.stanford.edu/>
- Mineralogy and Petrology Lab (M&P): <https://minpetlab.stanford.edu/>

### Publications

---

#### PUBLICATIONS

- **Topological evolution: An unexplored aspect of hysteresis for multiphase flow in porous media** *PHYSICS OF FLUIDS*  
Ebadi, M., Meisenheimer, D., Wildenschild, D., McClure, J., Mostaghimi, P., Armstrong, R. T.  
2026; 38 (2)
- **Incorporating bubble evolution and transport in constitutive relationships for quasi- and non-equilibrium two-phase flows in porous media** *FRONTIERS IN WATER*  
Meisenheimer, D. E., Wildenschild, D.  
2023; 5
- **3D zoning of barium in alkali feldspar** *AMERICAN MINERALOGIST*  
Lubbers, J., Kent, A., Meisenheimer, D., Wildenschild, D.

2023; 108 (2): 297-311

- **Contact angle hysteresis: A new paradigm?** *ADVANCES IN WATER RESOURCES*  
Behnoudfar, D., Dragila, M., Meisenheimer, D., Wildenschild, D.  
2022; 161
- **Predicting the Effect of Relaxation on Interfacial Area Development in Multiphase Flow** *WATER RESOURCES RESEARCH*  
Meisenheimer, D. E., Wildenschild, D.  
2021; 57 (3)
- **Characterization of wetting using topological principles** *JOURNAL OF COLLOID AND INTERFACE SCIENCE*  
Sun, C., McClure, J. E., Mostaghimi, P., Herring, A. L., Meisenheimer, D. E., Wildenschild, D., Berg, S., Armstrong, R. T.  
2020; 578: 106-115
- **Exploring the effect of flow condition on the constitutive relationships for two-phase flow** *ADVANCES IN WATER RESOURCES*  
Meisenheimer, D. E., McClure, J. E., Rivers, M. L., Wildenschild, D.  
2020; 137
- **Reduction of 1,2,3-trichloropropane (TCP): pathways and mechanisms from computational chemistry calculations** *ENVIRONMENTAL SCIENCE-PROCESSES & IMPACTS*  
Torralba-Sanchez, T. L., Bylaska, E. J., Salter-Blanc, A. J., Meisenheimer, D. E., Lyon, M. A., Tratnyek, P. G.  
2020; 22 (3): 606-616
- **Optimizing pink-beam fast X-ray microtomography for multiphase flow in 3D porous media** *JOURNAL OF MICROSCOPY*  
Meisenheimer, D. E., Rivers, M. L., Wildenschild, D.  
2020; 277 (2): 100-106
- **Sandy Soil Microaggregates: Rethinking Our Understanding of Hydraulic Function** *VADOSE ZONE JOURNAL*  
Paradis, A., Brueck, C., Meisenheimer, D., Wanzek, T., Dragila, M.  
2017; 16 (9)