**SCOTT T. RETTERER**

Center for Nanophase Materials Sciences Distinguished Staff Scientist & Section Head

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**Education:**

University of Illinois, Chicago B. S. 2000 Mechanical Engineering

Cornell University Ph.D. 2005 Biomedical Engineering

**Professional Experience:**

2020- Present Section Head, Nanomaterial Synthesis and Nanofabrication, CNMS ORNL

2019- 2020 Group Leader, Nanofabrication Research Laboratory, CNMS ORNL

2006–present Research Staff Member (Distinguished Staff Scientist), Biosciences Division and Center for Nanophase Materials Sciences, ORNL

2015-2019 Hierarchical Assembly (formerly Interface Directed Assembly) Theme Lead, Center for Nanophase Materials Sciences, ORNL

2014-2018 UT Bredesen Center Faculty and Academic Coordinator, UT, Knoxville

2011-2017 Adjunct Assistant Professor, University of Tennessee, Knoxville EECS Department

2005–2006 Postdoctoral Fellow, Oak Ridge Associated Universities/ORNL

2000–2005 NSF Graduate Fellow, Cornell University, Ithaca, NY

2003–2004 Microfabrication Consultant/Process Engineer, Center for Innovative Visual Rehabilitation, Boston, MA

1999–2000 Graduate Research Assistant, University of Illinois–Chicago

1999–2000 Branch Engineer Simpson Strong-Tie Company Inc**.**, Addison, IL

1998–1999 UndergraduateResearch Assistant, University of Illinois–Chicago

1997–1998 Mechanical Engineering Co-Op, RR Donnelley & Sons, Dwight, IL

**Professional Activities, Honors, Awards, Funded Proposals:**

PI, Structure-guided Design of Materials to Optimize the Abiotic-Biotic Material Interface, DOE BRaVE, $4M/year for 3 years

NIH Interdisciplinary Molecular Sciences and Technology Review Panel, 2015

Battelle Multi-Scale Toxicology Initiative 2009

**Selected Peer-Reviewed Publication: (Google Scholar User Profile: Scott Thomas Retterer)**

1. Kertesz, V., Khalid, M., Retterer, S.T., Cahill, J.M., Structure-Driven Liquid Microjunction Surface-Sampling Probe Mass Spectrometry. Analytical Chemistry **2023**, DOI: 10.1021/acs.analchem.3c02370
2. Halsted, M., Bible, A.N., Morrell-Falvey, J.L., Retterer, S.T., Quantifying biofilm propogation on chemically modified surfaces, Biofilm, **2022**, DOI: 10.1016/j.bioflm.2022.100088
3. Aufrecht, J.; Khalid, M.; Walton, C. L.; Tate, K.; Cahill, J. F.; Retterer, S. T. Hotspots of root-exuded amino acids are created within a rhizosphere-on-a-chip. *Lab Chip* **2022**. DOI: 10.1039/d1lc00705j.
4. Cregger, M.; Carper, D.; Christel, S.; Doktycz, M.; Labbe, J.; Michener, J.; Dove, N.; Johnston, E.; Moore, J.; Velez, J.; et al. Plant-Microbe Interactions: From Genes to Ecosystems Using Populus as a Model System. *Phytobiomes Journal* **2021**, *5* (1), 29-38, Review. DOI: 10.1094/PBIOMES-01-20-0009-FI.
5. White, D.; Chowdhury, S.; Idikuda, V.; Zhang, R.; Retterer, S.; Goldsmith, R.; Chanda, B. cAMP binding to closed pacemaker ion channels is non-cooperative. *Nature* **2021**, *595* (7868), 606-+, Article. DOI: 10.1038/s41586-021-03686-x.
6. Khalid, M., Doktycz, MJ., Retterer, S. Nano-enabled Chemical Imaging: Mapping Chemical Signals that Drive Dynamic Living Systems (2020)., Wiley Imaging and Microscopy Journal; doi: https://analyticalscience.wiley.com/do/10.1002/was. 000400041
7. Doughty, B., Premadasa, U. I., Cahill, J. F., Webb, A. B., Morrell-Falvey, J. L., Khalid, M., Retterer, S. T. & Ma, Y. Z. Total internal reflection enabled wide-field coherent anti-Stokes Raman scattering microscopy (2020). *Opt Lett* **45**, 3087-3090
8. Yang, D., Mannik, J., Retterer, S. T. & Mannik, J. Role of Molecular Crowding in Compacting Escherichia coli Nucleoid (2019). *Biophysical Journal* **116**, 320a
9. Millet, L. J., Aufrecht, J., Labbé, J., Uehling, J., Vilgalys, R., Estes, M. L., Guennoc, C. M., Deveau, A., Olsson, S. & Bonito, G. Increasing access to microfluidics for studying fungi and other branched biological structures (2019). *Fungal Biology and Biotechnology* **6**, 1
10. Aufrecht, J. A., Fowlkes, J. D., Bible, A. N., Morrell-Falvey, J., Doktycz, M. J. & Retterer, S. T. Pore-scale hydrodynamics influence the spatial evolution of bacterial biofilms in a microfluidic porous network (2019). *PloS one* **14**, e0218316
11. Aufrecht, J.A., Timm, C.M., Bible, A., Morrell-Falvey, J.L., Pelletier, D.A., Doktycz, M.J., Retterer, S.T., (2018) Quantifying the Spatiotemporal Dynamics of Plant Root Colonization by Beneficial Bacteria in a Microfluidic Habitat. *Advanced Biosystems* April 2018 doi: 10.1002/adbi.201800048

**Selected Patents**

1. Strome, S., Fitzpatrick, E., Retterer, S. T., Advincula, R (2023) Breath Collector and Method for Diagnosis and/or Monitoring
2. Cahill, J., Kertesz, V., Retterer, S.T. (2023) Porous Membrane Enabled Mass Spectrometry Characterization of Microfluidic Devices.
3. Retterer, S. T., Doktycz, M. J., and Ut-Battelle, L. (2017) Method for preparing small volume reaction containers.
4. Doktycz, M. J.; Allison, D. P.; Barnett, C. F.; Retterer, S. T.(2014); Ut-Battelle, L. Active Materials for Prevention and Treatment of Fouled Surfaces
5. Retterer, S. T.; Doktycz, M. J. (2012) Method for Preparing Small Volume Reaction Containers.

***Collaborators and Co-Editors***

Yayoi Takamura (U. of California-Davis), Akos Vertes (George Washington University), Sharon Weiss (Vanderbilt University), Jon Wikswo (Vanderbilt University), Danny Ducat (Michigan State University), Gregory Bonito (Michigan State University), Jaan Mannik (University of Tennessee, Knoxville), Jessie Uehling, Oregon State University

***Graduate and Postdoctoral Advisors and Advisees*:**

Graduate Advisors: Michael S. Isaacson, UC Santa Cruz, Jack Baskin School of Engineering

Postdoctoral Advisor: Mitchel J. Doktycz, ORNL

***Thesis Advisor and Postgraduate-Scholar Sponsor*:**

**Graduate Students Advisees**: Brian Sanders (ORNL),Jonathan Sutton (University of Delaware), Peter Shankles (Georgia Tech), Jayde Aufrecht (PNNL), Michelle Halsted (Mobius)

**Postdoctoral Scholars Advisees**: Juan Pablo Hinestrosa (VP of Research, Biological Dynamics), Ryan Hansen (Associate Professor Kansas State, begins June 2015), Elizabeth Vargis (Associate Professor, Utah State), Andrea Timm (Applied Physics Labs, Johns Hopkins), Lavinia Li (Cannon Nanotechnologies), Yi-Syuan Guo (PNNL), Munheeba Khalid (Regeneron Pharmaceutical Inc.)