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Engineering & Scientific Consulting

Julius Reitemeier, Ph.D.

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Professional Profile

Dr. Julius Reitemeier has a multidisciplinary background in bioanalytical chemistry, electrochemistry, material science, semiconductor engineering, and organic chemistry. Dr. Reitemeier's research experience encompasses the design of advanced biosensors utilizing nano-scale fabrication techniques and functional polymers for detection of FDA-regulated impurities in drug formulations. At Exponent, he specializes in registration of pesticide products regulated under EPA's Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and coordinates regulatory support at the federal and state levels, including the preparation of registration packages for new products.

During his graduate studies, Dr. Reitemeier led two industry collaborations with pharmaceutical companies for the development of electrochemical nanosensors to detect impurities in drug formulations. He has further completed his Ph.D. at the University of Notre Dame after receiving the prestigious Dr. Sophie-Bernthsen Award at the University of Heidelberg in 2021. Additionally, he serves as peer-reviewer for multiple chemistry journals, including the Proceedings of the National Academy of Sciences.

Academic Credentials & Professional Honors

Ph.D., Analytical Chemistry, University of Notre Dame, 2025

M.S., Chemistry, Heidelberg University, 2021

B.S., Organic Chemistry, Heidelberg University, 2019

Fellow of The Berthiaume Institute for Precision Health, 2024

The Society for Electroanalytical Chemistry (SEAC) Travel Award, 2024

The Electrochemical Society Outstanding Student Chapter Award, 2023

Dr. Sophie-Bernthsen Award, 2022

DAAD (German Academic Exchange Agency) 1-year Scholarship, 2019

Professional Affiliations

American Chemical Society (ACS)

The Society for Electroanalytical Chemistry (SEAC)

Berthiaume Institute for Precision Health (BIPH)

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The Electrochemical Society (ECS)

Publications

Reitemeier, J.*; Metro, J.*; Fu, K. Nanopore sensing and beyond: electrochemical systems for optically-coupled single-entity studies, stimulus-responsive gating applications, and point-of-care sensors. Sens. Actuators Rep. 2024, 8, 100225.

Reitemeier, J.; Metro, J.; Bohn, P. W. Detection of Aldehydes from Degradation of Lipid Nanoparticle Formulations Using a Hierarchically-Organized Nanopore Electrochemical Biosensor. Biosens. Bioelectron. 2024, 261, 116457.

Du, Y.*; Reitemeier, J.*; Jiang, Q.; Bappy, M. O.; Bohn, P. W.; Zhang, Y. Hybrid Printing of Fully Integrated Microfluidic Devices for Biosensing. Small 2024, 20, 2304966.

Huldin, G. F.; Huang, J.; Reitemeier, J.; Fu, K. X. Nafion Coated Nanopore Electrodes for Improving Electrochemical Aptamer-Based Biosensing. Faraday Discuss. 2024, Advance Article, doi.org/10.1039/D4FD00144C.

Jonsson, A.; Xu, P.; Reitemeier, J., Bohn, P. W.; Fay, P. Wet etch methods to achieve submicron active area self-aligned vertical Sb-heterostructure backward diodes. Mater. Sci. Semicond. Process. 2024, 171, 108036.

Reitemeier, J.; Baek, S.; Bohn, P. W. Hydrophobic Gating and Spatial Confinement in Hierarchically Organized Block Copolymer-Nanopore Electrode Arrays for Electrochemical Biosensing of 4-Ethyl Phenol. ACS Appl. Mater. Interfaces 2023, 15, 39707-39715.

Roß, L.; Reitemeier, J.; Ghalami, F.; Zhang, W.-S.; Gross, J.H.; Rominger, F.; Elbert, S.M.; Schröder, R.; Elstner, M.; Mastalerz, M. Two Dimensional Triptycene End-Capping and Its Influence on the Self-Assembly of Quinoxalinophenanthrophenazines. Chin. J. Chem. 2023, 41, 1198-1208.

Baek, S.*; Cutri, A. R.*; Han, D.*; Kwon, S. R.*; Reitemeier, J.*; Sundaresan, V.*; Bohn, P. W. Multifunctional Nanopore Electrode Array Method for Characterizing and manipulating Single Entities in Attoliter-Volume Enclosures. J. Appl. Phys. 2022, 132, 174501.

Invited Talks

Reitemeier, J.; Baek., S.; Bohn, P. W. International Virtual Nanopore Weekly Meeting, Nanjing University, Jacobs University Bremen, & Northeastern University, Virtual, 2023.

Presentations

Reitemeier, J.; Metro, J; Bohn, P. W. Pittcon Conference and Exposition, San Diego, CA, 2024.

Reitemeier, J.; Liao, Y.; Metro, J; King, E. M.; Zhang, Y.; Bohn, P. W. Center for Bioanalytic Metrology Industry Advisory Board Meeting, Indiana University, Bloomington, IN, 2024.

Reitemeier, J.; Metro, J; Bohn, P. W. 9th Annual Symposium of the Berthiaume Institute for Precision Health, University of Notre Dame, Notre Dame, IN, April 2024.

Reitemeier, J.; Baek., S.; Bohn, P. W. Turkey Run Analytical Chemistry Conference, Marshall, IN, 2023.

Posters

Reitemeier, J.; King, E. M.; Metro, J.; Bohn, P. W. Berthiaume Institute for Precision Health Advisory

Board Meeting, Notre Dame, IN, 2024.

Reitemeier, J.; Metro, J; King, E., Bohn, P. W. Turkey Run Analytical Chemistry Conference, Marshall, IN, September 2024.

Reitemeier, J.; Metro, J; Bohn, P. W. The Society for Electroanalytical Chemistry at Pittcon, San Diego, CA, February 2024.

Reitemeier, J.; Metro, J; Bohn, P. W. Center for Bioanalytic Metrology Industry Advisory Board Meeting, Purdue University, West Lafayette, IN, November 2023.

Reitemeier, J.; Metro, J; Bohn, P. W. Berthiaume Institute for Precision Health 9th Annual Symposium, University of Notre Dame, Notre Dame, IN, April 2023.

Reitemeier, J.; Baek., S.; Bohn, P. W. Center for Bioanalytic Metrology Industry Advisory Board Meeting, Indiana University, Bloomington, IN, November 2022.

Peer Reviews

Proceedings of the National Academy of Sciences, U.S.A.

ACS Omega

ChemElectroChem

Measurement

Electrochimica Act