



Exponent®

Engineering & Scientific Consulting

Skyler Davis, Ph.D.

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## Professional Profile

Dr. Davis is a multidisciplinary materials scientist and chemical and biochemical engineer specializing in materials characterization, material processing, and microstructural development. She has a broad range of technical expertise, and she is well-versed in various laboratory equipment and characterization techniques, including scanning and transmission electron microscopy (SEM and TEM), X-ray diffraction (XRD), focused ion beam (FIB), and Fourier transform infrared spectroscopy (FTIR).

Prior to joining Exponent, Dr. Davis completed her graduate studies at the Colorado School of Mines. Her dissertation focused on how relatively small changes in alloy concentrations affected the deformation-induced microstructure of a distinct stainless steel used for biomedical applications. Her work on the influence of multi-stage deformation processing and stacking fault energy on near-surface slip and martensite formation in austenitic stainless steels included electron backscatter diffraction (EBSD) and X-ray diffraction (XRD) with X-ray line profile analysis (XLPA) to characterize materials deformed via a controlled deformation process and various industrial deformation processes.

During her Ph.D. work, Skyler gained experience in characterizing a wide range of alloy systems (Fe, Ti, Mg, Al, Cu, Pt, and Co-WC) for various applications. She collaborated on projects including heat treatments of copper powders, tungsten carbide tooling failure analysis, and microstructure development of nanostructured titanium, nanostructured aluminum, various stainless steels, and concrete.

## Academic Credentials & Professional Honors

Ph.D., Material Science, Colorado School of Mines, 2023

M.S., Materials Science, Colorado School of Mines, 2018

B.S., Chemical and Biochemical Engineering, Colorado School of Mines, 2017

## Prior Experience

Graduate Teaching Assistant, Colorado School of Mines, 2018-2022

Senior Research Assistant, Colorado School of Mines, 2019-2022

Research Team Operations Manager, Colorado School of Mines, 2022-2023

## Professional Affiliations

ASM International, American Society of Metals (member)

TMS, The Minerals, Metals, and Materials Society (member)

## Publications

Lowe TC, Davis SL, et al. High-speed continuous equal channel angular pressing of 316 LVM stainless steel. Materials Letters vol. 304, 2021.

## Presentations

Davis SL, Lowe TC. Analysis of the evolution of texture and deformation-induced microstructures during rolling, drawing, and sinking of three austenitic stainless steels. Texture and Anisotropy Symposium, Metz, France, 2023.

Davis SL, Ferro KR, Lowe TC. How does deformation processing at high and low temperatures alter oxide characteristics of 304 austenitic stainless steel. Mines at Catalyst Research Symposium, Denver, CO, 2020.

Ferro KR, Davis SL. Inhomogeneous oxide growth on austenitic stainless steel. Poster presentation, Mines Undergraduate Research Symposium, Golden, CO, 2020.