Caroline Trippel is an Assistant Professor (starting September 2020) in the Computer Science Department at Stanford University working in the area of computer architecture. Her work focuses on promoting correctness and security as first-order computer systems design metrics (akin to performance and power). A central theme of her work is leveraging formal methods techniques to design and verify hardware systems in order to ensure that they can provide correctness and security guarantees for the applications they intend to support.

Trippel's research has influenced the design of the RISC-V ISA memory consistency model both via her formal analysis of its draft specification and her subsequent participation in the RISC-V Memory Model Task Group. Additionally, her work produced a novel methodology and tool that synthesized two new variants of the now-famous Meltdown and Spectre attacks.

Trippel's research has been recognized with IEEE Top Picks distinctions. She was also awarded an NVIDIA Graduate Fellowship (2017-2018) and selected to attend the 2018 MIT Rising Stars in EECS Workshop. Trippel completed her PhD in Computer Science at Princeton University and her BS in Computer Engineering at Purdue University.