

Citation for Margaret Zimmer  
Kohout Early Career Award  
Hydrogeology Division, Geological Society of America

It is a privilege to prepare this citation for Margaret Zimmer, who is an intellectual and technical leader in hydrogeologic science, having demonstrated exceptional impact and influence at an early career stage. I am fortunate to have been a faculty colleague with Professor Zimmer, and can attest that she is an exemplary mentor, an outstanding classroom instructor, and a thought leader in curriculum design and creating an open and welcoming climate for the next generation of hydrogeology students and scientists.

Dr. Zimmer explores flows and storage of water and solutes within and below landscapes, and explains and quantifies processes within linked hydrologic and biogeochemical systems. Dr. Zimmer is particularly well known for studies of surface water-groundwater (SW-GW) interactions, and storage and processing of nutrients and carbon below hillslopes and in the critical zone. Several of Dr. Zimmer's first papers focused on SW-GW exchange and chemical responses to changes in channel discharge and transient storage. These early studies highlighted the importance of hydrogeologic "structure" for discharge and geochemical conditions, as shifts in flow magnitude and drivers impact the nature (length, complexity) of pathways and associated chemical reactions and flows. This work comprised detailed studies of experimental field systems, collecting and analyzing water samples and data, focusing on dynamic responses to transient discharge variations.

More recent papers on "zero-flow" readings at stream gauges address a long-standing conundrum: how to interpret streamflow records that include intermittent and/or extended dry periods. From a groundwater perspective, understanding these records is essential for resolving one of the largest, readily measurable inflows to aquifers: stream bed seepage. But to do this effectively, one must understand how to interpret the meaning of a "dry" channel. This topic also has important implications for climate change, shifts in land use, and increased dependence on groundwater resources. Dr. Zimmer is addressing additional topics with big implications for groundwater systems and resource management, including carbon and nutrient transport and fate during SW-GW exchange, tidal influences on nutrient dynamics in coastal wetlands, and the impacts of wildfire on water and solute pathways and flows.

Dr. Zimmer is an accomplished and engaging speaker, amplifying her effectiveness as a scientist and a scientific ambassador to the public at large. She built one of the largest research groups in her department at UCSC, having been primary supervisor for nine graduate students since arriving in 2018. Dr. Zimmer created a new graduate course on the "Hidden Curriculum" in geoscience graduate studies, which was highly beneficial to the current cadre of EPS students at UCSC, and resulted in a student-led publication and a curriculum that has been viewed and download thousands of times.

In summary, Dr. Zimmer is an exceptionally smart, creative, and successful hydrogeologist. It has been humbling to prepare this citation, and I am grateful to the GSA's Hydrogeology Division in recognizing Dr. Zimmer's many achievements. She is an inspiration.

Andrew T. Fisher, Citationist