

## Awards and Citations

# Presentation of the 2018 Schuchert Award of the Paleontological Society to Seth Finnegan

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Seth was my MS and Ph.D. student at the University of California, Riverside. Before arriving at UCR but after he completed his undergraduate degree at the University of Chicago, he—ever so ahead of the curve—was a barista in Seattle before being a barista in Seattle was cool. There, I think, he honed a number of important skills. His ability to multitask, his quantitative toolkit, certainly improved by working the cash register, and of course his geochemical skills mixing all of those specialty coffees with precision! We are lucky that he gave up this line of work to pursue paleontology, but at least he still has something to fall back on.

What is clear is that there are a number of things that really have set Seth apart from other paleontologists of his generation. These include several aspects of Seth's work that every letter writer for his nomination mentioned.

The first is the breadth of Seth's interests. Most of us commonly do fieldwork or mathematical analysis, paleoecology, or geochemistry. Seth does them all, and he does each of them thoroughly and exceptionally well. He glides seamlessly between ecological and evolutionary time scales, and he has the mathematical skills to perform sophisticated numerical analyses of compiled data. He has excellent field skills allowing him to make key observations about fossils in situ ... when his vehicle isn't stuck. Seth has also mastered the challenging technique of clumped isotopes analysis, permitting him to place paleobiological data in the context of temperature history (as long as it's 35°C). Seth is also intellectually fearless, diving into problems that others would consider too hard or complicated.

Another characteristic is his ability to focus. Anyone who has worked with him is familiar with the Seth pace—back and forth and back and forth—hand on chin. His focus can be to the exclusion of all around, be it flights, appointments, or bills. It is the combination of these characteristics that has allowed Seth to produce such innovative and significant work. The range of Seth's interests is mirrored in the large number of co-authors and topics on which he has published. Here, I want to highlight but a few of his achievements to give you a flavor of Seth's breadth and creativity.

At one end of the spectrum is Seth's body-size work. For example, with co-authors, he looked at changes in the energetic demands of marine gastropods across the Mesozoic Marine Revolution (Finnegan et al., 2011b; Smith et al., 2016). Using body-size and abundance data from fossil and living gastropod communities, and metabolic data from living representatives

of major groups, Seth demonstrated that the MMR was associated with at least a three-fold increase in the per-capita energy demands of marine gastropods.

On a very different topic is his work on mass extinctions, and most importantly the end-Ordovician mass extinction. It has long been known that this extinction corresponds with a major ice age, but until Seth's work, the magnitude of climate change and the mechanisms of extinction remained unknown. He has been able to quantify both temperature variations and ice volume of the end-Ordovician glaciation, showing it to be comparable to the great ice age of our recent past (Finnegan et al., 2011a, 2012). But as we all know, there are few marine extinctions associated with recent events. Seth's work has shown how glaciogenic sea level fall would have interacted with paleogeography and pre-glacial continental flooding to generate the observed diversity drop. He has since demonstrated the correlation between end-Ordovician extinction intensity with various environmental and paleogeographic factors (Finnegan et al., 2016, 2017).

Also on the topic of extinctions, Seth has recently been able to adapt his skills to the societally relevant discipline of global climate change with a series of elegant papers using detailed analyses of various aspects of the fossil record to predict extinction risk (Finnegan et al., 2015; Orzechowski et al., 2015). He has also examined the energetic costs of calcification under ocean acidification (Spalding et al., 2017) and the future of biotic interactions with a changing climate (Blois et al., 2013).

Seth also helps bring paleontology to the masses. As my 20 year old tells me, "Mom, you know Seth is very popular on Twitter with a cult following—with everybody wanting to see his opinion on this issue or paper." And on a personal note, speaking of my 20 year old, Seth, along with Bob Gaines and Diana Boyer, were my students during the birth and early toddler years of both of our kids. This was long before this was common to have young children in the field and Seth, along with the rest of the Droser "lavender lounge," would as often as not be seen in field with a kid on his back. I appreciate Seth's keen sense of humor, patience, and willingness to embrace this then, rather unorthodox way of doing field work.

Also on a personal note, a week before Seth was awarded this medal I was at his wedding—by all rights he should have been on his honeymoon, with his new wonderful bride, Erin. So, when you congratulate him on the Schuchert, please be sure and give him a second congratulation on his nuptials.

Mr. President and members of the society, on behalf of all of his nominators, it is my privilege and pleasure to present to you my colleague and very good friend, Seth Finnegan, for the 2018 Charles M. Schuchert award.

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