

# Distinguished Lectures

## Spring 2026



### Dr. Daniel Rockmore

William H. Neukom 1964 Distinguished  
Professor of Computational Science,  
Director of the Neukom Institute for  
Computational Science,  
Professor of Math, Dartmouth College

### Machining the Ghost: Ideating in the Age of AI

Wednesday April 29, 2026  
Reception with Refreshments: 10:30 a.m.  
Lecture: 11:00 a.m. - 12:00 noon  
LSC University Ballroom

### On the Algebra of Moving Window Calculations

Thursday, April 30, 2026  
Lecture: 3:00-4:00PM  
LSC 308-310

Sponsored by Colorado State University's  
Information Science and Technology Center (ISTeC)

In conjunction with Department of Mathematics,  
Department of Statistics, Department of Computer Science and  
Department of Electrical and Computer Engineering  
Seminar Series

#### Abstracts

##### *Machining the Ghost: Ideating in the Age of AI*

Generative AI --- systems that write, draw, code, search, and increasingly act on our behalf --- is changing not only how we work, but how we think. For some, these tools are accelerants for imagination and discovery; for others, they threaten to flatten originality, weaken judgment, and outsource the hard labor from which ideas emerge.

In this talk, I place today's excitement and anxiety in a longer history of cognitive tools, from writing itself to calculators, search engines, and earlier "thinking machines." Along the way, we will ask what creativity really is, what part language plays in thought, and why dialogue, whether with another person, with oneself, or now with a machine, can be so powerful in the making of ideas. What happens to human creativity, education, and intellectual life when the machine becomes a collaborator, a critic, a ghostwriter, and sometimes a very plausible imitation of our own inner voice.

##### *On the Algebra of Moving Window Calculations*

Moving window calculations arise throughout applied mathematics, computer science, and engineering. Familiar examples include moving sums, maxima, and filters, but the same basic problem also appears in more general windowed recurrences. In this talk, we show that a large class of such calculations admits a common algebraic formulation. In the associative setting, moving window calculations can be recast as exponentiation in a semidirect product, bringing efficient powering algorithms to bear. In more general settings, semi-associativity provides the right framework for representing compositions of updates and understanding when efficient computation is still possible. This point of view not only unifies a broad family of examples, but also leads naturally to compact vectorized implementations, making the methods well suited to modern GPU architectures. This is joint work with David Maslen..

#### Speaker Biography

Dan Rockmore is the William H. Neukom 1964 Distinguished Professor of Computational Science, Director of the Neukom Institute for Computational Science, and Associate Dean for the Sciences at Dartmouth College. He holds appointments in two academic departments — math and computer science — and is deeply committed to interdisciplinary study. Rockmore His most recent book is the edited volume *What are the Arts and Sciences? A Guide for the Curious* (UPNE 2018). He is also co-editor of the book *Law as Data*, published in 2019 through SFI Press. In addition to his scientific work he is the co-producer of four documentary films, most recently *The Birth of BASIC* on the origins of the BASIC programming language. His current research interests include the geometry of high-dimensional data and the use of large language models and deep learning to give a mathematical understanding of literature and writing.

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