

# Mechanical Engineering Department Seminar

3:35pm February 4, 2015  
1130 Mechanical Engineering  
111 Church Street SE, Minneapolis, MN 55455

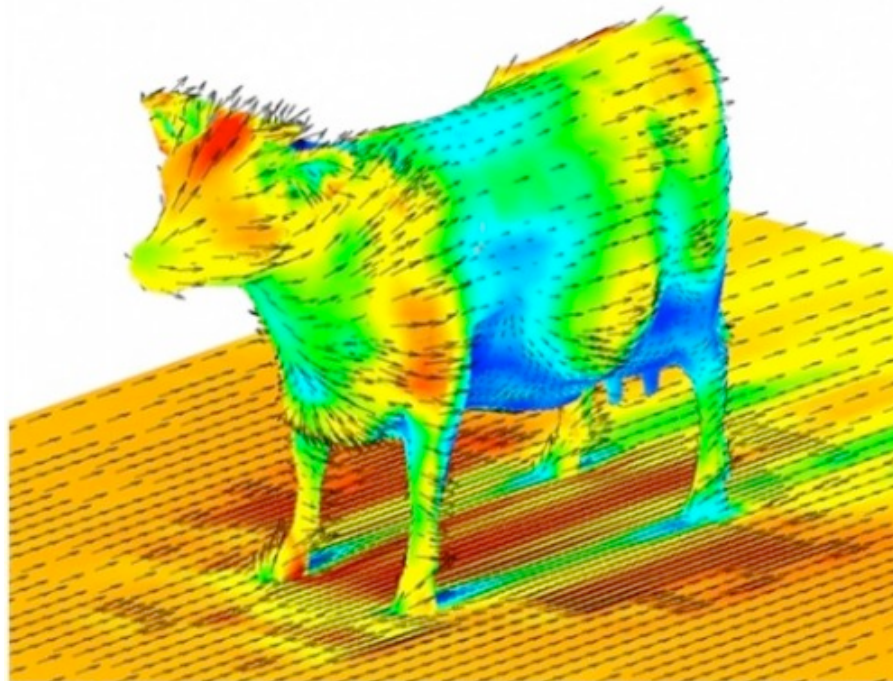
## Code on the Move: How (and why) Computational Fluid Dynamics Came to Predict not only Fluids, but also Weather, Traffic, and Heat

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Computational Fluid Dynamics (CFD) is a remarkably useful and flexible tool for modeling the flow of many different kinds of things. While developed to model aero- and hydro-dynamics, it has subsequently been used to represent everything from changes in weather to traffic jams. This paper will examine the historical development of computational tools to perform fluid dynamic analyses and will look at the ways different engineering communities have shared techniques, tools, and computer code itself. The conclusions drawn analyze the way engineering communities have different social arrangements for sharing “how-to” knowledge and what the effects of these different ad-hoc social structures are. One provocative question that emerges from this study is whether the movement of ideas like CFD can be modeled using CFD.



**Bio:** Ann Johnson is an associate professor at the University of South Carolina with a joint appointment in the departments of history and philosophy. Her research focuses on engineers and the ways they produce knowledge in the process of design. Her first book, *Hitting the Brakes: Engineering Design and the Production of Knowledge* (Duke University Press, 2009) is an account of the design and development of antilock brakes for passenger cars. Her current research looks at the various ways engineers make predictions, particularly examining the role of computation in engineering today.