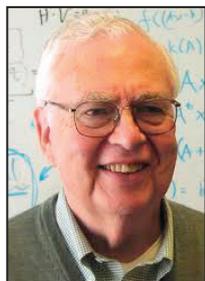


Gene Golub  
g<sup>2</sup>s<sup>3</sup> 2018  
SIAM Summer School

June 17-30, 2018  
Breckenridge, Colorado, USA

**Inverse Problems: Systematic Integration of Data with Models under Uncertainty**



The ninth Gene Golub SIAM Summer School will take place at the Double Tree by Hilton in Breckenridge, Colorado, USA.

The summer school aims to introduce graduate students to the mathematical and computational aspects of inverse problems, particularly modern developments that emphasize the quantification of uncertainty in the inverse solution within the framework of Bayesian inference. The target audience is PhD and appropriate MS students in mathematics and related fields such as computer science, statistics, engineering, and science.

The central question we address is: How do we learn from data through the lens of models? The summer school will feature an integrated and coherent presentation that begins with ill-posedness and regularization, develops the ideas and tools for deterministic inversion via nonlinear least squares optimization, and elaborates formulations and solution methods for the modern Bayesian perspective, building on several of the deterministic tools. The concepts introduced in the morning lectures will be reinforced and put into practice in afternoon hands-on laboratory sessions using open-source software (hippylib, MUQ) implementing state-of-the-art deterministic and Bayesian inversion methods. Students will work together on projects that will be presented on the last day of the school.

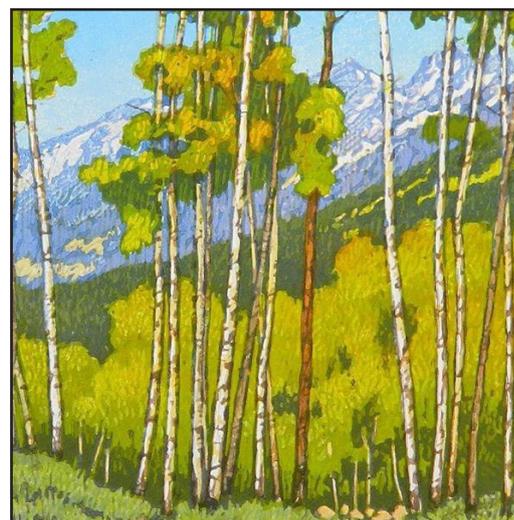
The summer school is being organized by Omar Ghattas (The University of Texas at Austin), Youssef Marzouk (MIT), Matthew Parno (US Army Corps of Engineers), Noemi Petra (University of California, Merced), Georg Stadler (New York University), and Umberto Villa (The University of Texas at Austin).

Applicants selected to participate pay no registration fee. Funding for local accommodations and meal expenses will be available for all participants.

**Application deadline: February 1, 2018**

As information becomes available on how to apply, it will be posted at:

<http://www.siam.org/students/g2s3/>



Aspen Stand, woodcut by Leon Loughridge

*Sponsored by SIAM through an endowment from the estate of Gene Golub.*

*For more information about prior summer schools and Professor Gene Golub go to <http://www.siam.org/students/g2s3/>*

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