David Keyes is Professor of Applied Mathematics and Computational Science and the Director of the Extreme Computing Research Center at the King Abdullah University of Science and Technology (KAUST), having served as the founding Dean of the Division of Mathematical and Computer Sciences and Engineering at KAUST, 2009-2012. Keyes is also an Adjunct Professor and former Fu Foundation Chair Professor in Applied Physics and Applied Mathematics at Columbia University, and a faculty affiliate of several laboratories of the U.S. Department of Energy. He graduated *summa cum laude* in Aerospace and Mechanical Sciences with a certificate in Engineering Physics from Princeton in 1978, and earned a doctorate in Applied Mathematics from Harvard in 1984.

Keyes works at the algorithmic interface between parallel computing and the numerical analysis of partial differential equations (PDEs), with a focus on implicit scalable solvers for power-austere emerging architectures and their use in the many large-scale applications governed by PDEs in energy and environment that demand high performance because of resolution, dimension, high fidelity physical models, or the "multi-solve" requirements of optimization, control, sensitivity analysis, inverse problems, data assimilation, or uncertainty quantification. Newton-Krylov-Schwarz (NKS, 1994), Additive Schwarz Preconditioned Inexact Newton (ASPIN, 2002), and Algebraic Fast Multipole (AFM, 2014) methods are methods he co-introduced and continues to develop.

Keyes was awarded an NSF Presidential Young Investigator Award as an Assistant Professor of Mechanical Engineering at Yale University in 1989. For his algorithmic influence in scientific simulation, Keyes has been recognized as a Fellow of the Society for Industrial and Applied Mathematics (SIAM), a Fellow of the American Mathematical Society (AMS), with the Sidney Fernbach Award of the IEEE Computer Society, and with ACM's Gordon Bell Prize. Author or editor of more than a dozen U.S. federal agency reports and member of several federal advisory committees on computational science and engineering and high performance computing, in 2011, Keyes received the SIAM Prize for Distinguished Service to the Profession.

جامعة الملك عبدالله للعلوم والتقنية
King Abdullah University of Science and Technology

ECRC Extreme Computing Research Center