

CURRICULUM VITAE

FULL NAME: Tan Bui-Thanh **TITLE:** **Associate Professor**

DEPARTMENT: **Aerospace Engineering and Engineering Mechanics, and the Institute for Computational Engineering and Sciences.**

EDUCATION:

Massachusetts Institute of Technology	Aerospace Engineering	Ph.D.	2007
Nanyang Technological University	High Performance Computation	M.Eng.	2003
Ho Chi Minh City University of Technology	Aeronautics	B.Eng.	2001

CURRENT AND PREVIOUS ACADEMIC POSITIONS:

1. Tenured Associate Professor, The University of Texas at Austin, Department of Aerospace Engineering and Engineering Mechanics from 9/2019.
2. Assistant Professor, The University of Texas at Austin, Department of Aerospace Engineering and Engineering Mechanics 8/2013—8/2019.
3. Research Scientist, Center for Computational Geosciences and Optimization, Institute for Computational Engineering and Sciences, University of Texas at Austin 10/2012--8/2013
4. Research Associate, Center for Computational Geosciences and Optimization, Institute for Computational Engineering and Sciences, University of Texas at Austin 9/2010--10/2012
5. Postdoctoral Researcher, Center for Computational Geosciences and Optimization, Institute for Computational Engineering and Sciences, University of Texas at Austin 6/2008--9/2010
6. Postdoctoral Associate, Department of Aeronautics and Astronautics, Massachusetts Institute of Technology, Cambridge, MA 6/2007--6/2008
7. Research Assistant, Aerospace Computational Design Lab, Massachusetts Institute of Technology
8. Cambridge, MA 2/2004--5/2007
9. Research Assistant, Singapore-MIT Alliance, Nanyang Technological University, Singapore 6/2001--6/2003

RESEARCH TOPICS

- Inverse problems
- Uncertainty quantification
- Numerical analysis
- Numerical optimization
- Reduced-order modeling (model order reduction)
- Scientific computing and Parallel computing
- Applied mathematics
- Magnetohydrodynamics
- Scientific Machine Learning
- Big data

HONORS AND AWARDS:

1. Best student, Ho Chi Minh City National University, Vietnam, 1996.
2. Best student, Ho Chi Minh City National University, Vietnam, 1997.
3. ROTring Merit award for top-scorer in the intake examination, Ho Chi Minh City University of Technology, Vietnam, 1998.
4. Silver medal in Fluid Mechanics in national Olympic competition, Vietnam, 1999.
5. Colombo Plan scholarship for excellent student, Ho Chi Minh City University of Technology, Vietnam, 2000.
6. Monthly scholarship for excellent student, Ho Chi Minh City University of Technology, Vietnam, 1996–2001.
7. Singapore-MIT Alliance Scholarship, Singapore, 2001–2003.
8. Institute of High Performance Computing IHPC-SUN Award for the best student in “Introduction to Numerical Simulation”, Singapore, 2002.
9. Defense Science Organization (DSO) National Lab Award for the best master’s thesis, Singapore, 2003.
10. Moncrief Grand Challenges Faculty Award, 2014.
11. Summer Faculty fellowship, Air Force Office of Scientific Research (AFOSR), 2016.
12. **NSF Career Award** (jointly by NSF-OAC and NSF-DMS), 2019.
13. Moncrief Grand Challenges Faculty Award, 2019.
14. Distinguished Research Award, 2019.

KEYNOTE/PLENARY SPEAKER/LECTURER:

1. **Invited lecturer** at international school on “Some Mathematical Problems related to Electromagnetic Waves” at Vietnam Institute for Advanced Studies in Mathematics, 2014
2. **Invited speaker** on “Some Recent Advances in Hybridized Discontinuous Galerkin Methods”, at the workshop on advanced Numerical Methods in the Mathematical Sciences, Texas A&M, 2015.
3. **Invited lecturer** at the International Winter School on UQ, Norway, January 2015
4. **Invited lecturer** at the EU Regional school on UQ, Aachen, Germany, Sep 2015
5. **Invited speaker** at the Oberwolfach workshop, Germany, Sep 2015
6. **Invited lecturer** at Texas Consortium for Computational Seismology, April, 2016
7. **Invited speaker** at the workshop on Uncertainty Quantification, Guanajuato, Mexico, January, 2017
8. **Plenary speaker** at the Ninth Meeting on Numerical Analysis of Partial Differential Equations, Santiago, Chile, June 2017
9. **Plenary speaker** at the VII International Congress on numerical methods, Guadalajara, Mexico, June, 2017
10. **Invited speaker** at the workshop on Uncertainty Quantification and Data-Driven Modeling, Austin, March, 2017
11. **Invited speaker** at the mini Workshop on Bayesian Inverse Problems and Imaging, Shanghai, May, 2017
12. **Plenary speaker** at MATHEMATICS FOR ATMOSPHERIC-BIOSPHERIC SCIENCE conference, Levi, Finland, November, 2017
13. **Invited speaker** at the workshop on Sensor location in Distribution parameter systems, Institute for Mathematics and its Applications, Minnesota, September, 2017
14. **Invited speaker** at Reducing the dimensions and cost for UQ in complex systems, the Isaac Newton Institute for Mathematical sciences, UK, March, 2018.
15. **Invited lecturer** at the "Numerical modeling with hyperbolic equations" workshop, CIMAT, Guanajuato, Mexico, April 2018.

16. **Keynote speaker** at the “International symposium on Big data challenges for predictive modeling of complex systems”, November 2018, Hong Kong.
17. **Invited speaker** at the “Efficient operator splitting techniques for complex systems and large-scale data analysis”, Tsinghua Sanya International Mathematical Forum, January 2019, China.
18. **Keynote speaker** at the “Guanajuato Uncertainty Quantification”, January 2019, Queretaro, Mexico.
19. **Lecturer:** Short course on discontinuous Galerkin Methods, Seoul National University, South Korea, May 2019.

TEACHING ACTIVITIES:

1. Introduction to programming, Fall 2013.
2. Supervised 3 teaching assistants in a course development project for ASE 201K, Fall 2013
3. Supervised 1 teaching assistant in a course development project for ASE 311K, Spring 2014
4. Supervised 1 teaching assistant for ASE 380 I, Fall 2014
5. Engineering Computation, Spring 2014.
6. Mathematical Methods in Applied Mechanics I, Fall 2014.
7. Supervised 1 teaching assistant for ASE 380 I, Spring 2015
8. Mathematical Methods in Applied Mechanics II, Spring 2015
9. Supervised an ASE undergrad for honor thesis 2015
10. Supervised 2 teaching assistants in a course development project for ASE 311K, Spring 2015
11. Mathematical Methods in Applied Mechanics II, Spring 2016
12. Engineering Computation, Fall 2016.
13. Computational Bayesian inverse problems, Fall 2016.
14. Engineering Computation, Spring 2017.
15. Engineering Computation, Fall 2017.
16. Mathematical Methods in Applied Mechanics II, Spring 2018
17. Engineering Computation Lab, Spring 2018.
18. Engineering Computation, Spring 2018.
19. From Bayesian inference to Machine Learning, Fall 2018
20. Mathematical Methods in Applied Mechanics II, Spring 2019

PH.D. SUPERVISIONS COMPLETED:

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Ellen Le (co-supervisor)	CSEM	Spring 2018	Computational Math
Stephen Shannon (supervisor)	CSEM	Fall 2018	Computational Math
Srirammurali Krishnanmurali	ASE/EM	Summer 2019	Computational Mechanics
Shinhoo Kang	ASE/EM	Summer 2019	Computational Mechanics
Nick Alger (<i>co-supervisor</i>)	CSEM	Spring 2019	Uncertainty quantification

M.S. SUPERVISIONS COMPLETED:

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Aaron Myers	CSEM	Spring 2015	Computational Math

PH.D. SUPERVISION IN PROGRESS:

STUDENT	DEPARTMENT	GRAD. DATE	AREA
Aaron Myers (Advanced to candidacy)	CSEM	Fall 2018	Uncertainty quantification

Brad Marvin	CSEM	Fall 2019	Uncertainty quantification
Sheroze Sherifdeen	CSEM	Spring 2020	Uncertainty quantification
Geonyeong Lee	ASE/EM	Spring 2023	Computational Mechanics
Jonathan Wittmer	ASE/EM	Spring 2023	UQ/Machine Learning
Jau-Uei Chen	ASE/EM	Spring 2023	Computational Mechanics
Nicole Nelleson	AICES	Spring 2022	Computational Math

GRANTS AND CONTRACTS:

Summary

Research	In Rank	Career
Number of Externally Funded Projects	13	15
External Funding Level – Total	28,487,662	28,487,662
External Funding Level – Candidate share	3,342,981	3,342,981

Details

Role of Candidate and Co-Investigators	Title	Agency	Project Total	Candidate's Share	Grant Period
Co-PI Omar Ghattas (PI), GEO Georg Stadler (Co-PI), ICES	Scalable Algorithms For Large-Scale Uncertainty Quantification In Inverse Wave Propagation	DOD Air Force	1,825,000	\$76,837	09/30/2012 to 11/30/2015
Co-PI George Biro (PI), ME Omar Ghattas (Co-PI), ME Robert Moser (Co-PI), ME Tinsley Oden (Co-PI), EM	Extreme-Scale Bayesian Inference For Uncertainty Quantification Of Complex Simulations	DOE	1,628,572	340,868	09/01/2013 to 08/31/2016
Sole UT PI Paul Constantine (PI), Colorado School of Mines QiQi Wang (PI), MIT Youssef Marzouk (Co- PI), MIT	Active Subspace Methods For Data- Intensive Inverse Problems	DOE	1,065,000	309,000	01/01/2014 to 12/31/2016
Senior Personnel Omar Ghattas (PI), GEO + many other Co-PIs and PIs at UT, and other Universities	An Integrated Multifaceted Approach to Mathematics at the Interfaces of Data, Models, and Decisions	DOE	5,425,000	111,648	12/15/2012 to 2/14/2018

Co-PI Omar Ghattas (PI), GEO Georg Stadler (PI), NYU	Large-Scale Joint Seismic-- Electromagnetic Inversion with Quantified Uncertainties	KAUST	219,714	99,274	04/01/2016 to 06/30/2017
Sole PI (subcontract) Quoc Nguyen (PI), PGE	Scalable Uncertainty Quantification Approaches for Big- Data-Driven Petroleum Reservoir Characterization and History Matching	Foundation CMG	250,000	102,065	06/01/2016 to 05/31/2017
Sole PI	Scalable hybridized discontinuous Galerkin (HDG) methods for MHD	SNL	\$25,000	\$25,000	06/20/2016 to 09/30/2016
Sole PI	A Scalable High- Order Discontinuous Finite Element Framework for PDEs: with Application to Geophysical Fluid Flows	NSF	150,000	150,000	09/01/2016 to 08/30/2019
Co-PI Omar Ghattas (PI), GEO Clint Dawson (Co-PI), EM George Biros (Co-PI), ME	Large-scale Inverse Problems and UQ for Reservoir Modeling	ExxonMobil- UTEI	1,020,106	218,158	07/01/2017 to 06/30/2020
Sole UT PI John Shadid (PI), SNL, Xianzhu Tang (PI), LANL More details below	Tokamak Disruption Simulation	DOE	15,000,000	500,000	09/01/2017 to 08/30/2022
Co-PI Omar Ghattas (PI), GEO Georg Stadler (PI), NYU	Large-Scale Joint Seismic-- Electromagnetic Inversion with Quantified Uncertainties	KAUST	\$238,140	\$113,287	04/01/2018 to 06/30/2019

Sole UT PI Jean Ragusa (PI), Texas A&M Marvin Adams (Co-PI), Texas A&M, Jim Morel (Co-PI), Texas A&M	Models with multiple levels of fidelity, tractability, and computational cost for nuclear weapon radiation effects	DTRA	\$1,050,000	\$210,000	04/01/2018 to 12/31/2020
Sole UT PI Susana Custodio (PI), University of Lisbon Graca Silveira (Co-PI) University of Lisbon	mOSalc: Atmosphere- Ocean-Solid Earth Coupling: Exploring Innovative Tools to Monitor the Oceans	UT-Portugal Colab	\$75,000	\$75,000	06/01/2018 to 05/31/2019
PI Marcos Capistran (PI), CIMAT	High-level Representation in Magnetic Resonance Elastography	ConTex	\$96,000	\$76,300	09/01/2018 to 08/31/2019
PI Hari Sundar (PI), University of Utah, Salt Lake	CDS&E: Collaborative Research: Strategies for Managing Data in Uncertainty Quantification at Extreme Scales	NSF	\$409,830	\$409,830	09/01/2018 to 05/31/2022
Sole PI	CAREER: Scalable Approaches for Large-Scale Data- driven Bayesian Inverse Problems in High Dimensional Parameter Spaces	NSF	\$525,714	\$525,714	01/01/2019 to 12/31/2023

Details on PIs of the TDS award:

Allen Boozer (Columbia University), Luis Chacon (LANL), Gian Luca Delzanno (LANL), Howard Elman (University of Maryland), Stephane Ethier (Princeton Plasma Physics Laboratory), Zehua Guo (LANL), Ilon Joseph (LLNL), Chris McDevitt (LANL), Edward Phillips (SNL), Barry Smith (ANL), Bhuvana Srinivasan (Virginia Tech), Edward Startsev (Princeton Plasma Physics Laboratory), Weixing Wang (Princeton Plasma Physics Laboratory), Tim Willey (SNL), and Xueqiao Xu (LLNL).

PUBLICATIONS:

Refereed Journal Publications (graduate students Red, postdocs Blue, Green are papers that were published before the assistant professor rank):

1. Bui-Thanh, T., Damodaran, M. and Willcox, K., [“Aerodynamic Data Reconstruction and Inverse Design using Proper Orthogonal Decomposition”](#), AIAA Journal, Vol. 42, No. 8, August 2004, pp. 1505-1516.
2. Bui-Thanh, T., Willcox, K., and Ghattas, O., [“Goal-Oriented, Model-Constrained Optimization for Reduction of Large-Scale Systems”](#), Journal of Computational Physics, Vol. 224, 2007, pp.880–896.
3. Bui-Thanh, T., Willcox, K., and Ghattas, O., [“Parametric Reduced-Order Models for Probabilistic Analysis of Unsteady Aerodynamic Applications”](#), AIAA Journal, Vol. 46, No. 10, pp. 2520-2529, 2008.
4. Bui-Thanh, T., Willcox, K., and Ghattas, O., [“Model Reduction for Large-Scale Systems with High-Dimensional Parametric Input Space”](#), SIAM Journal on Scientific Computing, Vol. 30, No. 6, pp. 3270-3288. 2008.
5. Wadley, H.N.G., Dharmasena, K.P., He, M.Y., McMeeking, R. M., Evans, A. G., Bui-Thanh, T., and Radovitzky, R., [“An Active concept for limiting injuries caused by airblasts”](#), International Journal of Impact Engineering, 37(3), pp. 317–323, 2010.
6. Bui-Thanh, T., and Ghattas, O., [“An Analysis of a Non-conforming hp-Discontinuous Galerkin Spectral Element Method for Wave Propagations”](#), SIAM Journal on Numerical Analysis, 50(3), pp. 1801–1826, 2012.
7. Bui-Thanh, T., and Ghattas, O., [“Analysis of the Hessian for Inverse Scattering Problems. Part II: Inverse Medium Scattering of Acoustic Waves”](#), Inverse Problems, 28, 055002, 2012.
8. Bui-Thanh, T., and Ghattas, O., [“Analysis of the Hessian for Inverse Scattering Problems. Part I: Inverse Shape Scattering of Acoustic Waves”](#), In 2013 Highlight Collection of Inverse Problems, 28, 055001, 2012.
9. Bui-Thanh, T., Ghattas, O., and Higdon, D., [“Adaptive Hessian-based Non-stationary Gaussian Process Response Surface Method for Probability Density Approximation with Application to Bayesian Solution of Large-scale Inverse Problems”](#), SIAM Journal on Scientific Computing, 34(6), pp. A2837– A2871, 2012.
10. Bui-Thanh, T., Burstedde, C., Ghattas, O., Martin, J., Stadler, G., and Wilcox, L., [“Extreme-scale UQ for Bayesian inverse problems governed by PDEs”](#), Proceedings of SC12, Gordon Bell Prize Finalist, 2012.
11. Bui-Thanh, T., Demkowicz, L., and Ghattas, O., [“Constructively Well-Posed Approximation Methods with Unity Inf-Sup and Continuity Constants for Partial Differential Equations”](#), Mathematics of Computation, 82(284), pp. 1923–1952, 2013.
12. Bui-Thanh, T., Ghattas, O., Martin, J., and Stadler, G., [“A computational framework for infinite-dimensional Bayesian inverse problems. Part I: The linearized case”](#), SIAM Journal on Scientific

- Computing, *SIAM Journal on Scientific Computing*, 35(6), pp. A2494--A2523, 2013.
13. Bui-Thanh, T., Demkowicz, L., and Ghattas, O., "[A Unified Discontinuous Petrov-Galerkin Method and its Analysis for Friedrichs' Systems](#)", *SIAM J. Numer. Anal.*, 51(4), pp. 1933--1958, 2013.
 14. Bui-Thanh, T., and Ghattas, O., "[Analysis of the Hessian for Inverse Scattering Problems. Part III: Inverse Medium Scattering of Electromagnetic Waves in Three Dimensions](#)" *Inverse Problems and Imaging*, 7(4), pp. 1139--1155, 2013.
 15. Chan, J., Heuer, N., Bui-Thanh, T., and Demkowicz, D., "[Robust DPG Method for Convection-Dominated Diffusion Problems II: A Natural in Flow Condition](#)", *Computers & Mathematics with Applications*, 67, pp. 771--795, 2014.
 16. Roberts, N., Bui-Thanh, T., and Demkowicz, D., "[The DPG Method for the Stokes Problem](#)", *Computers & Mathematics with Applications*, 67, pp. 966--995, 2014.
 17. Bui-Thanh, T., and Ghattas, O., "[An Analysis of Infinite Dimensional Bayesian Inverse Shape Acoustic Scattering and its Numerical Approximation](#)", *SIAM Journal on Uncertainty Quantification*, 2, pp. 203--222, 2014.
 18. Bui-Thanh, T., and Ghattas, O., "[A PDE-constrained Optimization Approach to the Discontinuous Petrov-Galerkin Method with a Trust Region Inexact Newton-CG Solver](#)" *Comput. Methods Appl. Mech. Engrg.*, 278, pp. 20--40, 2014.
 19. Bui-Thanh, T., and Girolami, M., "[Solving Large-scale PDE-Constrained Bayesian Inverse Problems with Riemann Manifold Hamiltonian Monte Carlo](#)" *Inverse Problems*, special issue, 30, 114014, 2014.
 20. Bui-Thanh, T., and Ghattas, O., "[A Scalable MAP Solver for Bayesian Inverse Problems with Besov Priors](#)", *Inverse Problems and Imaging*, 9(1), pp. 27--53, 2015.
 21. Wilcox, L., Stadler, G., Bui-Thanh, T., and Ghattas, O., "[Discretely Exact Derivatives for Hyperbolic PDE-Constrained Optimization Problems Discretized by the Discontinuous Galerkin Method](#)" *Journal of Scientific Computing*, 63, pp. 138--162, 2015.
 22. Bui-Thanh, T., "[From Godunov to A Unified Hybridized Discontinuous Galerkin Framework](#)", *Journal of Computational Physics*, 295, pp. 114-146, 2015.
 23. Lan, S., Bui-Thanh, T., Christie, M., and Girolami, M., "[Emulation of higher-order tensors in manifold Monte Carlo methods for Bayesian Inverse Problems](#)", *Journal of Computational Physics*, 308, 81--101, March, 2016
 24. Constantine, P.G., Kent, C., and Bui-Thanh, T., "[Accelerating MCMC with active subspaces](#)", *SIAM Journal on Scientific Computing*, 38(5), pp. A2779--A2805, 01 September 2016.
 25. Bui-Thanh, T., "[Hybridized Discontinuous Galerkin Methods for Linearized Shallow Water Equations](#)", *SIAM Journal on Scientific Computing*, 38(6), pp. A3696--A3719, November 2016.
 26. Bui-Thanh, T., and Nguyen, Q. P., "[FEM-Based Discretization-Invariant MCMC Methods for PDE-constrained Bayesian Inverse Problems](#)", *Inverse Problems and Imaging*, 943 - 975, Volume 10, Issue 4, November 2016.

27. [Le, E., Myers, A., Bui-Thanh, T., and Nguyen, Q. P., “A Randomized Misfit Approach for Data Reduction in Large-Scale Inverse Problems”](#), *Inverse Problems*, 33(6), 065003, May, 2017.
28. [Lin, Y., Le, E.B., O'Malley, D., Vesselinov, V.V., and Bui-Thanh, T., “Large-Scale Inverse Model Analyses Employing Fast Randomized Data Reduction”](#), *Water Resources Research*, Pages 6784–6801, Volume 53, Issue 8, August 2017.
29. [Muralikrishnan, S., Tran, M.-B., and Bui-Thanh, T., “iHDG: An iterative HDG Framework for Partial Differential Equations”](#), *SIAM Journal on Scientific Computing*, 39(5), pp. S782–S808, 2017.
30. [Alger, N., Villa, U., Bui-Thanh, T., and Ghattas, O., “A Data Scalable Augmented Lagrangian KKT Preconditioner for Large-scale Inverse Problems”](#), *SIAM Journal on Scientific Computing*, 39(5), pp. A2365–A2393, 2017.
31. [Wang, K., Bui-Thanh, T., and Ghattas, O., “A Randomized Maximum A Posteriori Method for Posterior Sampling of High Dimensional Nonlinear Bayesian Inverse Problems”](#), *SIAM Journal on Scientific Computing*, 40(1), pp. A142–A171, 2018.
32. [Muralikrishnan, S., Tran, M.B., and Bui-Thanh, T., “An improved iterative HDG approach for partial differential equations”](#), *Journal of Computational Physics*, 367, pp. 295–321, 2018.
33. [Lee, J., Shannon, S., Bui-Thanh, T., and Shadid, J., “Analysis of an HDG method for linearized incompressible resistive MHD equations”](#), *SIAM Journal on Numerical Analysis*, 57(4), 1697–1722, 2019.
34. [Kang, S., Giraldo, F.X., and Bui-Thanh, T., “IMEX HDG-DG: a coupled implicit hybridized discontinuous Galerkin \(HDG\) and explicit discontinuous Galerkin \(DG\) approach for shallow water systems”](#), *Journal of Computational Physics*, Accepted, 2019.
35. [Alger, N., Rao, V., Myers, A., Bui-Thanh, T., Ghattas, O., “Adaptive Grid Convolution-product approximation for large-scale matrix-free operator”](#), *SIAM Journal on Scientific Computing*, 41(4), A2296–A2328, 2019.
36. [Kang, S., Bui-Thanh, T., and Arbogast, T., “A Hybridized Discontinuous Galerkin Method for Linear Degenerate Elliptic Equation Arising from Two-Phase Mixtures”](#), *Comput. Methods Appl. Mech. Engrg.*, 350, pp. 315–336, 2019.
37. [Willey, T., Muralikrishnan, S., and Bui-Thanh, T., “Unified Geometric Multigrid Algorithm for Hybridized high-order finite element methods”](#), *SIAM Journal on Scientific Computing*, Accepted, 2019.
38. [Muralikrishnan, S., Bui-Thanh, T., Shadid, J., “A Multilevel Approach for Trace System in HDG Discretizations”](#), *Journal of Computational Physics*, Under Revision, 2019.
39. [Ilona Ambartsumyan, Wajih Boukaram, Tan Bui-Thanh, Omar Ghattas, David Keyes, Georg Stadler, George Turkiyyah, and Stefano Zampini, Hierarchical Matrix Approximations of Hessians arising in Inverse Problems Governed by PDEs, *SIAM Journal on Scientific Computing*, Submitted, 2019.](#)
40. [Myers, A. Thiery, A., Wang, K., and Bui-Thanh, T. “Sequential Ensemble transform for Bayesian inverse problems”](#), submitted, 2019.

41. Zhang, W., Rossini, G., Bui-Thanh, T., and Sacks, M. “The integration of structure and high-fidelity material models in heart valve simulations using machine learning”, submitted, 2019.

BOOK CHAPTERS (AUTHORED/CO-AUTHORED, EDITED/CO-EDITED)

Bui-Thanh, T., From Rankine-Hugoniot Condition to a Constructive Derivation of HDG Methods, in *Lecture Notes in Computational Science and Engineering: Spectral and High Order Methods for Partial Differential Equations ICOSAHOM 2014*, 2015.

REFEREED CONFERENCE PROCEEDINGS:

1. **Bui-Thanh**, T., Damodaran, M. and Willcox, K., “Proper Orthogonal Decomposition Extensions for Parametric Applications in Transonic Aerodynamics”, *AIAA Paper 2003-4213*, presented at *15th Computational Fluid Dynamics Conference, Orlando, FL*, June 2003.
2. **Bui-Thanh**, T., and Willcox, K., “Model reduction for large-scale CFD applications using the balanced proper orthogonal decomposition”, *AIAA Paper 2005-4617*, presented at the *16th AIAA Computational Fluid Dynamics Conference, Toronto, Canada*, June 2005.
3. **Bui-Thanh**, T., Willcox, K., and Ghattas, O., “Parametric Reduced- Order Models for Probabilistic Analysis of Unsteady Aerodynamic Applications”, *AIAA Paper 2007-2049*, presented at the *48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Honolulu, Hawaii*, April 2007.

TECHNICAL REPORTS:

1. Bui-Thanh, T., and Ghattas, O., “Analysis of the Hessian for Inverse Scattering Problems. Part II: Inverse Medium Scattering of Acoustic Waves”, ICES report 11-21, 2011.
2. Bui-Thanh, T., and Ghattas, O., “Analysis of the Hessian for Inverse Scattering Problems. Part I: Inverse Shape Scattering of Acoustic Waves”, ICES report 11-20, 2011.
3. Bui-Thanh, T., Demkowicz, L., and Ghattas, O., “Constructively Well-Posed Approximation Methods with Unity Inf-Sup and Continuity Constants for Partial Differential Equations”, ICES report 11-10, 2011.
4. Bui-Thanh, T., and Ghattas, O., “Analysis of an \mathcal{H}^1 -non-conforming Discontinuous Galerkin Spectral Element Method for Wave Propagation”, ICES report 11-09, 2011.
5. Bui-Thanh, T., Demkowicz, L., and Ghattas, O., “A Relation between the Discontinuous Petrov-Galerkin Method and the Discontinuous Galerkin Method”, ICES Report ICES 11-45, December, 2011.
6. Bui-Thanh, T., Ghattas, O., and Higdon, D., “Adaptive Hessian-based Non-stationary Gaussian Process Response Surface Method for Probability Density Approximation with Application to Bayesian Solution of Large-scale Inverse Problems”, ICES report 11-32, 2011.
7. Bui-Thanh, T., “A Gentle Tutorial on Statistical Inversion using the Bayesian Paradigm”, ICES Report 12-18, 2012.
8. Bui-Thanh, T., and Ghattas, O., “A Scalable MAP Solver for Bayesian Inverse Problems with Besov Priors”, ICES report 12-41, 2012.
9. Bui-Thanh, T., and Ghattas, O., “Analysis of the Hessian for Inverse Scattering Problems. Part III: Inverse Medium Scattering of Electromagnetic Waves in Three Dimensions”, ICES report 12-33, 2012.
10. Bui-Thanh, T., and Ghattas, O., “An Analysis of Bayesian Inverse Shape Acoustic Scatterings with Gaussian priors”, ICES report 12-31, 2012.

11. Bui-Thanh, T., and Ghattas, O., “A Metropolized Adjusted Newton Algorithm for Markov Chain Monte Carlo Simulations”, ICES report 12-25, 2012.
12. Bui-Thanh, T., and Ghattas, O., “A PDE-constrained Optimization Approach to the Discontinuous Petrov-Galerkin Method with a Trust Region Inexact Newton-CG Solver”, ICES report 13-16, 2013.
13. Bui-Thanh, T., “From Godunov to A Unified Hybridized Discontinuous Galerkin Framework” ICES-Report, 2014.
14. Bui-Thanh, T., “On Finite Element Approximation of PDE-constrained Infinite Dimensional Bayesian Inverse Problems”, ICES-Report, 2014.
15. Bui-Thanh, T., and Girolami, M., “Solving Large-Scale PDE-Constrained Bayesian Inverse Problems with Riemann Manifold Hamiltonian Monte Carlo”, ICES report 14-05, 2014.
16. Bui-Thanh, T., “Discretization-Invariant MCMC Methods for PDE-constrained Bayesian Inverse Problems in Infinite Dimensional Parameter Spaces”, ICES report 14-16, 2014.
17. Bui-Thanh, T., and Ghattas, O., “Bayes is Optimal”, ICES report 15-04, 2015.

OTHER PROFESSIONAL EXPERIENCE:

1. Judge for GAIN 2014, The University of Texas at Austin
2. **Judge** for CFD student competition at the AIAA CFD conference, June 2015
3. **Judge** for poster minisymposium at the SIAM Computational Sciences and Engineering conference, February 2017
4. Outstanding Dissertation Review and Selection Committee, The University of Texas at Austin, 2018
5. UT Senate Event: Sandwiches with Professors, February 2018
6. Judge for GAIN 2018, The University of Texas at Austin
7. Judge for the 5th Annual Undergraduate Poster Exhibition, The University of Texas at Austin
8. **Judge** for Texas Datathon, February 2018
9. **Judge** for poster minisymposium at the SIAM Computational Sciences and Engineering conference, February 2019

MEMBERSHIPS IN PROFESSIONAL AND HONORARY SOCIETIES:

1. Member, Society for Industrial and Applied Mathematics (SIAM) 2005-present
2. Senior Member, American Institute of Aeronautics and Astronautics (AIAA) 2003-present

PROFESSIONAL SOCIETY AND MAJOR GOVERNMENTAL COMMITTEES, EDITORIAL BOARDS, AND CONFERENCES ORGANIZED/CHAired:

1. **Co-chair**, Finite Element (FEM) Rodeo at the University of Texas at Austin, 2013, 2019
2. **Organizing committee** for the Meeting of Texas-Louisiana (TX-LA) Section of the Society for Industrial and Applied Mathematics (SIAM), October 5-7, 2018
3. **Vice-Chair** of US National Congress on Computational Mechanics, Austin, July 2019

OUTSIDE COMMITTEES:

Member, AIAA Fluid Dynamic technical committee since 2015

CONFERENCE ACTIVITIES:

1. Organizer of the Minisymposium on “Large-scale Optimization in Inverse Wave Propagation” at the Siam Conference on Computational Science and Engineering, Reno, NV, 2011.
2. Organizer of the Minisymposium on “Large-Scale Full Waveform Inversion” at the SIAM Conference on Computational Science and Engineering, Boston, MA, 2013.
3. Co-chair, FEM Rodeo at UT Austin, 2013
4. Organizer of the Minisymposium on “Recent Advances in High Order Finite Element Methods” at the SIAM Conference on Computational Science and Engineering, Boston, MA, 2013.
5. Organizer of the Minisymposium on “Recent Advances in High Order Discontinuous Galerkin Methods” ICOSAHOM 14, Salt Lake City, Utah, 2014.
6. Organizer of the Minisymposium on “Uncertainty Modeling and High Performance Stochastic Methods for Computationally Intensive Calibrations, Predictions and Optimizations” WCCM 14, Barcelona, Spain, 2014
7. Organizer of the minisymposium on “Theory Implementation and Applications of HDG Methods” at the SIAM Conference on Computational Science and Engineering, Utah, 2015
8. Organizer of the minisymposium on “Recent Advances in High Order Finite Element Methods for Atmospheric Sciences” at the SIAM Conference on Computational Science and Engineering, Utah, 2015
9. Organizer of the minisymposium on “Higher Order Finite Element Discretizations” at the 1st Pan-American Congress on Computational Mechanics, Buenos Aires, 2015
10. Organizer of the minisymposium on “Recent Advances in Higher Order Finite Element Methods” at the 13th US National Congress on Computational Mechanics, San Diego, 2015
11. Organizer of the minisymposium “Advances in MCMC and related sampling methods for large-scale inverse” at the 8th International Congress on Industrial and Applied Mathematics, August, 2015, Beijing, China
12. Organizer of the minisymposium “Inverse Problems meet big data”, at the SIAM Conference on Uncertainty Quantification, Lausanne, April, 2016.
13. Organizer of the minisymposium “Advances in Sampling Methods for Bayesian Inverse Problems”, at the SIAM Conference on Uncertainty Quantification, Lausanne, April, 2016.
14. Organizer of the minisymposium “Advances in Sampling Methods for Bayesian Inverse Problems”, at the SIAM Conference on Uncertainty Quantification, Lausanne, April, 2016.
15. Organizer of the minisymposium “Inverse Problems meet big data”, at the SIAM Conference on Computational Science and Engineering, Atlanta, 2017
16. Organizer of the minisymposium “Efficient Algorithms for Bayesian Inverse Problems Governed by PDE Forward Problems”, at the SIAM Conference on Computational Science and Engineering, Atlanta, 2017
17. Organizer of the minisymposium “Advances in MCMC and Related Sampling Methods for Large-Scale Inverse Problems”, at the SIAM Conference on Computational Science and Engineering, Atlanta, 2017
18. Organizer of the minisymposium “Advances Approaches for PDE-Constrained Bayesian Inverse”, at the SIAM Annual Meeting, Atlanta, July, 2017
19. Organizer of the minisymposium “Advances in Uncertainty quantification for multi-physics applications”, at the SIAM UQ conference, Garden Grove, April, 2018
20. Organizer of the minisymposium “Hybridized Discontinuous Galerkin Methods”, at the ICOSAHOM conference, London, July, 2018
21. Organizer of the minisymposium “High-Order discretizations for Multi-physics”, at the WCCM conference, New York, July, 2018

22. Organizer of the minisymposium “Advances in Uncertainty Quantification for Multi-physics Applications”, at the WCCM conference, New York, July, 2018
23. Organizer of the minisymposium “Inverse Problems and Imaging”, at the SIAM TX-LA meeting, Louisiana, October, 2018
24. Organizer of the minisymposium “High-order Finite element methods for complex and multiphysics applications”, at the SIAM CSE conference, Spokane, February, 2019
25. Organizer of the minisymposium “Exploiting Model Hierarchies, Sparsity, and low rank structure of large-scale Bayesian computation”, at the SIAM CSE conference, Spokane, February, 2019

OTHER PROFESSIONAL HIGHLIGHTS:

Reviewer: National Science Foundation, 2017
 Reviewer: Swiss National Supercomputing Centre, since 2011
 Reviewer: Department of Energy, Advanced Scientific Computing Research (ASCR) since 2013
 Reviewer: Applied Mathematical Modeling, Elsevier
 Reviewer: Computer Methods in Applied Mechanics and Engineering, Elsevier
 Reviewer: Computers and Mathematics with Applications, Elsevier
 Reviewer: Applied Numerical Mathematics, Elsevier
 Reviewer: American Institute of Aeronautics and Astronautics
 Reviewer: Journal of Mathematical Analysis and Applications, Elsevier
 Reviewer: Mathematical Reviews, American Mathematical Society
 Reviewer: Zentralblatt Mathematical Reviews
 Reviewer: Inverse Problems and Imaging
 Reviewer: Mathematical Modeling and Numerical Analysis
 Reviewer: Book Review for Society for Industrial and Applied Mathematics
 Reviewer: SIAM Journal on Scientific Computing
 Reviewer: Statistics and Computing
 Reviewer: Journal of Computational and Applied Mathematics, Elsevier
 Reviewer: Geophysical Journal International
 Reviewer: ACM Transactions on Mathematical Software

UNIVERSITY COMMITTEES/ADMINISTRATIVE ASSIGNMENTS:

Administrative Assignments

1. Graduate Studies Sub-committee: ICES, The University of Texas at Austin 2015—2018
2. Admission committee: ICES, The University of Texas at Austin 2014, 2016, 2017

University

1. **Judge** for GAIN 2014, The University of Texas at Austin
2. **Judge** for the 5th Annual Undergraduate Poster Exhibition, The University of Texas at Austin, 2015
3. **Judge** for Computational Fluid Dynamics (CFD) paper competition at the American Institute of Aeronautics and Astronautics (AIAA) conference, 2015
4. **Judge** for GAIN 2018, The University of Texas at Austin
5. **Judge** for Texas Datathon, February 2018
6. Outstanding Dissertation Review and Selection **Committee**, The University of Texas at Austin, 2018
7. **UT Senate Event:** Sandwiches with Professors, February 2018

Cockrell School of Engineering**Department**

1. Member, Info Technology, ASE/EM department
2. Establishing New Computational Engineering Program in Aerospace Engineering: **Committee member**

ORAL PRESENTATIONS (at conferences and universities):

1. “Scalable Methods for Bayesian Statistical Inference”, US National Congress on Computational Mechanics, Columbus, Ohio, July 19, 2009. (Invited)
2. “Large-Scale Bayesian Inversion for Inverse Wave Scattering”, Informs 2010, Austin, TX, 2010.
3. “A Scalable Algorithm for Solutions of Large-scale Statistical Inversions”, SIAM Conference on Computational Science and Engineering, Reno, NV, 2011. (Invited)
4. “Seismic Inversion Using Discontinuous Galerkin Methods”, SIAM Conference on Mathematical and Computational Issues in Geosciences, Long Beach, CA, 2011. (Invited)
5. “Large-scale seismic inversion: Elastic-acoustic coupling, DG discretization, gradient consistency, adaptivity, uncertainty quantification, and parallel algorithms”, Aerospace Computational Design Lab, Massachusetts Institute of Technology, 2011. (Invited)
6. “A Scalable Method for Large-Scale Statistical Inverse Problems with Uncertain Data”, Conference on Data Analysis (CoDA), Santa Fe, New Mexico, February 29–March 2, 2012 (Invited)
7. “Large-scale seismic inversion: Elastic-acoustic coupling, DG discretization, and uncertainty quantification”, SIAM conference on Uncertainty Quantification, Raleigh, North Carolina, April 2-5, 2012. (Invited)
8. “An Analysis of Infinite Dimensional Bayesian Inverse Shape Acoustic Scattering and its Numerical Approximation”, SIAM conference on Computational Sciences and Engineering, Boston, Massachusetts, Feb 25–March 1, 2013. (Invited)
9. “Scalable approaches to large-scale statistical inverse problems”, Workshop on large-scale statistical inverse problems, Santa Fe, New Mexico, May 22-24, 2013. (Invited)
10. “Scalable approaches to large-scale statistical inverse problems”, Workshop on multiscale inverse problems, Mathematics Institute, University of Warwick, UK, June 17-19, 2013. (Invited)
11. Invited Talk: “A Unified Hybridized Discontinuous Galerkin Method”, ICOSAHOM 14, Salt Lake City, Utah.
12. “Towards Large-scale Computational Engineering and Sciences with Quantifiable Uncertainty”, Colorado School of Mines, Colorado, November, 2013. (Invited)
13. “Towards Large-scale Computational Engineering and Sciences with Quantifiable Uncertainty”, National Center for Atmospheric Research, Colorado, November, 2013. (Invited)
14. “Towards Large-scale Computational Engineering and Sciences with Quantifiable Uncertainty”, University of Colorado at Boulder, Colorado, November, 2013. (Invited)
15. “Hybridized Discontinuous Galerkin Method for Non-Hydrostatic Atmosphere”, National Center for Atmospheric Research, Colorado, February, 2014. (Invited)
16. “A Unified Hybridized Discontinuous Galerkin method”, World Congress on Computational Mechanics, Spain, July, 2014. (Invited)
17. “Towards Large-scale Computational Engineering and Sciences with Quantifiable Uncertainty”, Vietnam Institute for Advanced Studies in Mathematics, August, 2014. (Invited)
18. “Towards Large-scale Computational Engineering and Sciences with Quantifiable Uncertainty”, Ho Chi Minh City University of Technology, August, 2014. (Invited)
19. “A Randomized Map Algorithm for Large-Scale Bayesian Inverse Problems”, SIAM conference on Uncertainty Quantification, Savannah, Georgia, 2014. (Invited)
20. “Towards Large-scale Computational Engineering and Sciences with Quantifiable Uncertainty”, University of California at Berkeley, CA, October, 2014. (Invited)

21. “Towards Large-scale Computational Engineering and Sciences with Quantifiable Uncertainty”, Southern Methodist University, January, TX, 2015. (Invited)
22. “Recent advances in solution of large-scale Bayesian inverse problems”, Finland, Applied Inverse Problem Conference, 2015. (Invited)
23. “Ensemble Methods for Large-Scale PDE-Constrained Bayesian Inverse Problems”, SIAM Conference on Computational Science and Engineering, Utah, 2015. (Invited)
24. “Some Recent Advances in Hybridized Discontinuous Galerkin Methods”, 1st Pan-American Congress on Computational Mechanics, Buenos Aires, 2015.
25. “A hybridized discontinuous Galerkin method for earth system models’ dynamical cores”, Galerkin methods with applications in weather and climate forecasting, Scotland, 2015
26. “DG for Large-Scale Inverse Problems in Time Domain: Opportunities and Challenges”, SIAM Conference on Mathematical and Computational Issues in Geosciences, Stanford, CA, 2015. (Invited)
27. “A Large-Scale Ensemble Transform Method for Bayesian Inverse Problems Governed by PDEs”, 13th US National Congress on Computational Mechanics, San Diego, 2015 (Invited)
28. “An Approach to Big-Data in Large-Scale PDE-Constrained Bayesian Inverse Problems in High-Dimensional Parameter Spaces”, 13th US National Congress on Computational Mechanics, San Diego, 2015 (Invited)
29. “Towards Large-scale Computational Engineering and Sciences with Quantifiable Uncertainty”, John Von Neumann Institute, Vietnam National Universities, 2015. (Invited)
30. “A randomized likelihood method for data reduction in large-scale inverse problems”, 8th International Congress on Industrial and Applied Mathematics, August, 2015, Beijing, China (Invited)
31. “Ensemble-based MCMC methods for exploring large-scale high dimensional Bayesian inverse problems”, 8th International Congress on Industrial and Applied Mathematics, August, Beijing, China (Invited)
32. “A Randomized likelihood approach for data reduction in large-scale inverse problems”, Texas Consortium for Computational Seismology, UT Austin, Fall 2015. (Invited)
33. “An Updated on Hybridized Discontinuous Galerkin Method for Non-Hydrostatic Atmosphere”, PDE on Spheres, Korea, October, 2015.
34. “Towards Large-scale Computational Engineering and Sciences with Quantifiable Uncertainty”, Petroleum and Geosystems Engineering Department, UT Austin, Spring 2016. (Invited)
35. “Particle-based Approximate Monte Carlo approaches for Large-Scale Bayesian Inverse Problems”, 12th International Conference on Monte Carlo and Quasi-Monte Carlo methods in Scientific Computing, Stanford, August, 2016. (Invited)
36. “Towards Large-scale Computational Engineering and Sciences with Quantifiable Uncertainty”, Sandia National Lab, New Mexico, August, 2016. (Invited)
37. “A Partial Domain Inversion Approach for Large-scale Bayesian Inverse Problems in High Dimensional Parameter Spaces”, SIAM UQ conference, Lausanne, April, 2016. (Invited)
38. “A Randomized likelihood approach for data reduction in large-scale inverse problems”, SIAM UQ conference, Lausanne, April, 2016. (Invited)
39. “A Triple Model Reduction for Data-Driven Large-Scale Inverse Problems in High Dimensional Parameter Spaces”, SIAM UQ conference, Lausanne, April, 2016. (Invited)
40. “A fresh look at the Bayesian theorem from information theory”, ICES-Babuska series, seminar, Austin, September, 2016 (invited)
41. “A Randomized Misfit Approach for Data-Driven PDE-constrained Bayesian Inverse Problems”, Workshop on Uncertainty quantification and data-driven modeling, Austin, March 2017 (invited)
42. “Towards Large-Scale Computational Science and Engineering with Quantifiable Uncertainty”, Mini Workshop on Bayesian Inverse Problems and Imaging, May, 2017 (invited)
43. “The upwind hybridized discontinuous Galerkin (HDG) framework: Theory and application to magnetohydrodynamic and atmospheric applications”, Ninth Meeting on Numerical Analysis of Partial Differential Equations, Santiago, Chile, June 2017 (invited)

44. “The upwind hybridized discontinuous Galerkin (HDG) framework: Theory and application to magnetohydrodynamic and atmospheric applications”, VII International Congress on numerical methods, Guadalajara, Mexico, June, 2017 (Invited)
45. “Towards Large-Scale Computational Science and Engineering with Quantifiable Uncertainty”, workshop on Uncertainty Quantification, Guanajuato, Mexico, January, 2017 (Invited)
46. “Some advances in the upwind hybridized discontinuous Galerkin method for dynamical cores”, PDE on Spheres, France, April, 2017
47. “Model Reduction via Domain Truncation for Efficient Monte-Carlo Simulations of Large-Scale Bayesian Inverse Problems”, SIAM Conference on Computational Science and Engineering, Atlanta, March, 2017 (Invited)
48. “A data-scalable randomized misfit approach for solving large-scale PDE-constrained inverse problems”, Vietnam University of Science, Ha Noi, Vietnam, May, 2017 (Invited)
49. “A data-scalable randomized misfit approach for solving large-scale PDE-constrained inverse problems”, John von Neumann Institute, Ho Chi Minh City, Vietnam, June, 2017 (Invited)
50. “A data-scalable randomized misfit approach for solving large-scale PDE-constrained inverse problems”, SIAM conference on mathematical and computational issues in the Geosciences, Erlangen, Germany, September, 2017 (Invited)
51. “The upwind Hybridized discontinuous Galerkin method for dynamical cores”, Mathematics of the Weather, Erquy, France, October, 2017 (Invited)
52. “Reduced-order modeling of parametrized large-scale systems”, ICES-Babuska series, seminar, Austin, January, 2018 (invited)
53. “High-Order Hybridized Discontinuous Galerkin (HDG) Method and a Multigrid solver for Magnetohydrodynamic applications”, the fifteenth copper mountain conference on iterative methods, Copper Mountain, Colorado, March 2018
54. “Multi-reduction MCMC Methods for Bayesian Inverse Problem”, SIAM UQ conference, Garden Grove, California, April, 2018. (Invited)
55. “A Unifying Framework for Randomization Methods for Inverse Problems”, SIAM UQ conference, Garden Grove, California, April, 2018. (Invited)
56. “Fast Methods for Bayesian Optimal Experimental Design”, SIAM UQ conference, Garden Grove, California, April, 2018. (Invited)
57. “The upwind hybridized discontinuous Galerkin (HDG) framework: Theory and application to magnetohydrodynamic and atmospheric applications”, Rutgers University, May, 2018 (Invited)
58. “Regularization for Bayesian Inverse problems using domain truncation and uncertainty quantification”, SIAM Imaging Conference, Bologna, June, 2018 (Invited)
59. “High-Order Hybridized Discontinuous Galerkin (HDG) Method and a Multigrid solver for Magnetohydrodynamic applications”, ECFD, Glasgow, June 2018 (Invited)
60. “An Efficient Sequential Discrete Optimal Transport method for Bayesian inverse problems”, The AIMS conference on dynamical systems and differential equations, Taipei, July, 2018, (Invited)
61. “High-Order Hybridized Discontinuous Galerkin (HDG) Method and a Multigrid solver for Magnetohydrodynamic applications” WCCM conference, New York city, July 2018 (Invited)
62. “Analysis of an HDG method for linearized incompressible resistive MHD equations”, ICOSAHOM conference, UK, July, 2018 (invited)
63. “*Fast Methods for Bayesian Optimal Experimental Design*”, *AMS Sectional Meeting, the University of Arkansas, November 2018 (invited)*.
64. “Towards Large-Scale Computational Science and Engineering with Quantifiable Uncertainty”, the University of Maryland, College Park, November, 2018 (invited).
65. “Scalable Approach for data-driven PDE-constrained Bayesian Inverse Problems”, the University of Hong Kong, November 2018 (invited).
66. “IMEX HDG-DG: A coupled implicit hybridized discontinuous Galerkin and explicit discontinuous Galerkin approach for shallow water systems”, Tsinghua Sanya International Mathematical Forum, January 2019, China.

67. “A Data-consistent Statistical Inversion Framework”, “Guanajuato Uncertainty Quantification”, January 2019, Queretaro, Mexico.
68. “Scalable approaches for data-driven Bayesian inverse problems”, University of Notre Dame, February, 2019 (invited)
69. “Data-Informed Subspace Identification using a data-consistent Bayesian method”, SIAM Conference on Computational Science and Engineering, Spokane, March, 2019 (Invited)
70. “Construction and analysis of HDG methods for Two-phase flows”, SIAM Conference on mathematical and computational issues in the Geosciences, Houston, March, 2019 (Invited)
71. “Multigrid and multilevel HDG approaches for nonlinear single-phase flows”, SIAM Conference on mathematical and computational issues in the Geosciences, Houston, March, 2019 (Invited)
72. “Towards Large-Scale Computational Science and Engineering with Quantifiable Uncertainty”, the University of Utah, Salt Lake City, March, 2019 (invited)
73. “The upwind hybridized discontinuous Galerkin (HDG) framework: Theory and application to magnetohydrodynamic and atmospheric applications”, European Workshop on High-order nonlinear numerical methods for evolution PDEs: theory and applications, April, 2019
74. “Towards Large-Scale Computational Science and Engineering with Quantifiable Uncertainty”, Rensselaer Polytechnic Institute, April, 2019 (invited)
75. “Scalable Approach to data-driven Bayesian Inverse problems”, workshop on math challenges associated with failure of brittle materials, John Hopkins University, May 2019 (Invited).
76. “Scalable Approach to data-driven Bayesian Inverse problems”, Ho Chi Minh City University of Science, June 2019 (Invited).
77. “Scalable Approach to data-driven Bayesian Inverse problems”, Vietnam-German University, June 2019 (Invited).
78. “A Data-consistent Statistical Inversion Framework”, Applied Inverse Problems Conference, Grenoble, France, July 2019. (Invited)
79. “Scalable algorithms for data-driven inverse and learning problems”, The University of Utah, September, 2019. (Invited)
80. “A Data-consistent Statistical Inversion Framework”, AMS sectional Meeting, Wisconsin, September, 2019. (Invited)
81. “Scalable algorithms for data-driven inverse and learning problems”, The University of Utah, September, 2019. (Invited).

POST-DOCTORAL FELLOW SUPERVISION:

1. Kainan Wang from June 2014--September 2014
2. Vishwas Rao from Sep 2015--June 2017
3. Hossein Aghakhani from June 2016—present
4. John Lee from July 2017--present
5. Li Dong from September 1, 2017—present
6. Eldar Khattatov from May 2018—present
7. Ilona Ambartsymyan from May 2018—present
8. Hwan Goh, from June 2019--present

OTHER RESEARCH SUPERVISION:

1. Advised UT ASE student Brad Marvin for an honor thesis: finished Spring 2015
2. Advised UT ASE student Aadil Pappa, towards his computational engineering certificate June 2014-Sept 2015

REFERENCES:

- Professor Andrew Stuart
California Institute of Technology
Email: astuart@caltech.edu
- Professor Bernardo Cockburn
The University of Minnesota, Twin Cities
Email: cockburn@math.umn.edu
- Professor Roland Glowinski
The University of Houston
Email: angelarim@aol.com
- Professor Nicholas Zabaras
The University of Notre Dame
Email: nzabaras@nd.edu
- Professor Omar Ghattas
The University of Texas at Austin
Email: omar@ices.utexas.edu