CURRICULUM VITAE

Giorgio Bornia **September, 2018**

I. GENERAL INFORMATION

Contact Information
1108 Memorial Circle
Department of Mathematics and Statistics, Texas Tech University
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Education
- Ph.D. in Energy, Nuclear and Environmental Control Engineering, University of Bologna, Italy (2012).
- M.S., Energy Engineering, University of Bologna, Italy (2008).
- B.S., Energy Engineering, University of Bologna, Italy (2006).

Current Academic Position
- 2013-present: Assistant Professor, Department of Mathematics and Statistics, TTU.

Prior Academic Positions
- 2012-2013: Visiting Assistant Professor, Department of Mathematics and Statistics, TTU.
- 2012: Post-doctoral fellow, University of Bologna, Italy.
- 2011: Teaching Assistant, University of Bologna, Italy.

II. TEACHING

COURSES TAUGHT

Undergraduate: Calculus III, Differential Equations I, Differential Equations II, Advanced Calculus I, Advanced Calculus II, Linear Algebra. *Graduate*: Numerical Analysis I, Numerical Analysis II, Topics in Numerical Analysis: Finite Element Methods I, Topics in Numerical Analysis: Finite Element Methods II.

TEACHING AWARDS

1. President's Excellence in Teaching Award 2018, Texas Tech University
2. SIAM Professor of the Year 2017-2018, SIAM TTU Chapter, Department of Mathematics and Statistics, TTU
3. KME Professor of the Year 2015, KME TTU Chapter (Kappa Mu Epsilon Mathematics Honor Society), Department of Mathematics and Statistics, TTU

4. MAA Professor of the Year 2015, MAA TTU Chapter (Mathematical Association of America), Department of Mathematics and Statistics, TTU
5. MAA Professor of the Year 2014, MAA TTU Chapter (Mathematical Association of America), Department of Mathematics and Statistics, TTU

RESEARCH MENTORING

Chair of Doctoral Committees

1. Sureka Pathmanathan, *Optimal Dirichlet Control Problems in Incompressible Fluid and Solid Mechanics*, Mathematics & Statistics, TTU.
2. Saikanth Ratnavale, *Boundary Optimal Control Problems with Inequality Constraints*, Mathematics & Statistics, TTU.
3. Thanuja Paragoda, *Willmore and Generalized Willmore Energies in Space Forms*, Mathematics & Statistics, TTU (Co-Chair with Dr. M. D. Toda).
4. Ali Rezaei, *Poroelastic Solutions of Hydraulic Fracturing Problems Using Fast Multipole Boundary Element Method*, Petroleum Engineering, University of Houston (Co-Chair with Dr. M. Y. Soliman).

Member of Doctoral Committees

1. Bimali Jayasinghe, *An analysis of Block Verlet timestepping and lagged force evaluations for the gravitational N-body problem*, Mathematics & Statistics, June 2018.
2. Sara Calandrini, *Fluid-structure interaction simulations for medical applications*, Mathematics & Statistics, March 2018.
3. Giacomo Capodaglio, *Multigrid methods for finite element applications with arbitrary-level hanging node configurations*, Mathematics & Statistics, March 2018.
4. Simon Rush, *Reconstruction of Fluid Flow Using Discrete Data to Determine Wake Location*, Mathematics & Statistics, March 2018.
5. Sonaina Undleeb, *Search for Dark Matter in Monojet Events in Proton-Proton Collisions at* $\sqrt{s}$ *= 13 TeV*, Physics, October 2017.
6. Rangana Jayawardhana, *Iterative learning Control for Discrete-time MIMO Systems and Applications in Cooperative Learning Control*, Mathematics & Statistics, October 2017.
7. Parham Mobed, *Model-Based Sensor Placement for Component Condition Monitoring and Fault Detection in Integrated Gassification Combined Cycle*, Chemical Engineering, April 2016.
8. Janitha Gunatilake, *A nonconforming multigrid method with domain decomposition smoothing for hierarchical finite element bases*, Mathematics & Statistics, May 2014.
9. Brett Hafferkamp, *Expectations and Estimates for Some Conformal Invariants*, Mathematics & Statistics, May 2014.

Member of Ph.D. Qualifying Exam Committees

1. Geoffrey Dillon, *Block Preconditioners for Coupled Physics Problems*, Mathematics & Statistics, February 2014.

Chair of Masters Committees

1. Qing Xu, *Numerical Algorithms for PDE-Constrained Optimal Control Problems*, Mathematics & Statistics, November 2017.

Member of Masters Committees

1. Rohan Korde, *Optimal control of shape-similar multi-agent systems*, Mathematics & Statistics, May 2018.
2. Casey Brito, *Coordinate-Free Formation Control of Mobile Agents in the Complex Plane*, Mathematics & Statistics, April 2018.
3. Neil Dsouza, Masters in Interdisciplinary Studies, October 2017.
4. Shih-Yu Lee, *Adaptive Mesh Refinement for Multigrid Solver*, Mathematics & Statistics, October 2016.
5. Guoyi Ke, *Block Triangular Preconditioners for Linearization Schemes of the Rayleigh-Benard Convection Problem*, Mathematics & Statistics, April 2016.
6. Nathan Conroy, *Comparing Extinction Probabilities of Galton-Watson Processes Using Analytic Methods*, Mathematics & Statistics, March 2015.
7. Anna Krylova, *Modeling and computational study of the impact of the nonlinearity of the flow in fractured porous media*, Mathematics & Statistics, November 2014.
8. Sulanie Perera, *Comparison of Optimal and Geometric Control Methods for regulation of distributed parameter systems*, Mathematics & Statistics, May 2013.

Student Mentoring Activities

1. Supervised Research of visiting Ph.D. Student Simone Bnà, "A MultiLevel Domain Decomposition Solver for Monolithic Fluid-Structure Interaction problems", University of Bologna (September 2012 - June 2014).

III. RESEARCH

PUBLICATIONS [1]

Manuscripts Under Review

1. E. Aulisa, G. Bornia, V. Howle, and G. Ke. Analysis of preconditioners for the Rayleigh-Bénard convection problem. Submitted to *Journal of Computational and Applied Mathematics*, 2018.
2. A. Rezaei, F. Siddiqui, G. Bornia, and M. Soliman. Application of the Fast Multipole Fully Coupled Poroelastic Displacement Discontinuity Method to Hydraulic Fracturing Problems. Submitted to *Journal of Computational Physics*, 2018.

Refereed Articles (appeared/accepted)

1. E. Aulisa, S. Bna', and G. Bornia. A monolithic ALE Newton-Krylov solver with Multigrid-Richardson-Schwarz preconditioning for incompressible Fluid Structure Interaction. *Computers and Fluids*, 2018. accepted for publication.
2. E. Aulisa, G. Bornia, S. Calandrini, and G. Capodaglio. Convergence estimates for multigrid algorithms with SSC smoothers and applications to overlapping domain decomposition. *Applied Numerical Mathematics*, 131:16–38, 2018.
3. A. Rezaei, G. Bornia, M. Rafiee, M. Soliman, and S. Morse. Analysis of Refracturing in Horizontal Wells: Insights from the Poroelastic Displacement Discontinuity Method. *International Journal for Numerical and Analytical Methods in Geomechanics*, 42(11):1306–1327, 2018.

[1] Underlined authors are directed graduate students.

4. G. Ke, E. Aulisa, G. Bornia, and V. Howle. Block triangular preconditioners for linearization schemes of the Rayleigh-Bénard convection problem. *Numer. Linear Algebra Appl.*, 1–17, 2017.

5. B. Athukorallage, G. Bornia, T. Paragoda, and M. Toda. Willmore-type energies and Willmore-type surfaces in space forms. *JP Journal of Geometry and Topology*, 18:93–108, 2015.

6. E. Aulisa, G. Bornia, and S. Manservisi. Boundary Control Problems in Convective Heat Transfer with Lifting Function Approach and Multigrid Vanka-Type Solvers. *Communications in Computational Physics*, 18(3):621–649, 2015.

7. G. Bornia, M. D. Gunzburger, and S. Manservisi. A distributed control approach for the boundary optimal control of the steady MHD equations. *Communications In Computational Physics*, 14(3):722–752, 2013.

8. G. Bornia, A. Cervone, S. Manservisi, R. Scardovelli, and S. Zaleski. On the properties and limitations of the height function method in two-dimensional Cartesian geometry. *Journal of Computational Physics*, 230(4):851–862, 2011.

9. E. Aulisa, G. Bornia, and S. Calandrini. Fluid-structure interaction modeling of artery aneurysms with steady-state configurations. In *VII International Conference on Computational Methods for Coupled Problems in Science and Engineering COUPLED PROBLEMS 2017*, page 12, 2017.

10. E. Aulisa, G. Bornia, and S. Calandrini. Fluid-structure simulations and benchmarking of artery aneurysms under pulsatile blood flow. In *6th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*, page 20, 2017.

11. G. Bornia and S. Ratnavale. Different approaches for Dirichlet and Neumann boundary optimal control. In *AIP Conference Proceedings of the American Institute of Physics*, page 4, 2017.

12. A. Rezaei, M. Rafiee, G. Bornia, M. Soliman, and S. Morse. Protection Refrac: Analysis of Pore Pressure and Stress Change Due to Refracturing of Legacy Wells. In *SPE/AAPG/SEG Unconventional Resources Technology Conference, 24-26 July, Austin, Texas, USA*, page 16, 2017.

13. A. Rezaei, M. Rafiee, F. Siddiqui, M. Soliman, and G. Bornia. The Role of Pore Pressure Depletion in Propagation of New Hydraulic Fractures during Refracturing of Horizontal Wells. In *SPE Annual Technical Conference and Exhibition, 9-11 October, San Antonio, Texas, USA*, page 19, 2017.

14. A. Rezaei, F. Siddiqui, G. Bornia, M. Y. Soliman, M. Rafiee, and S. Morse. A Novel Approach to Efficiently Solve Displacement Discontinuity Problems in Poroelastic Media. In *American Rock Mechanics Association meeting ARMA 2017, San Francisco, USA*, page 9, 2017.

15. B. Athukorallage, E. Aulisa, G. Bornia, T. Paragoda, and M. Toda. New advances in the study of Generalized Willmore surfaces and flow. In *Proceedings of the Sixteenth International Conference on Geometry, Integrability and Quantization, Varna, Bulgaria*, page 11, 2015.

16. E. Aulisa, S. Bnà, and G. Bornia. Multigrid Solver with Domain Decomposition Smoothing for Steady-State Incompressible FSI Problems. In *ECCOMAS Thematic Conference - 5th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering, COMPDYN 2015, 25 - 27 May 2015 Crete Island, Greece*, volume 1, pages 1128–1144. Institute of Structural Analysis and Antiseismic Research School of Civil Engineering National Technical University of Athens (NTUA), 2015.

17. G. Bornia. On a class of constrained boundary control problems treated with a lifting function approach. In *AIP Conference Proceedings of the American Institute of Physics*, volume 1558, page 4, 2013.
18. G. Bornia and M. Toda. Preface - Symposium on Geometric Methods for Integrable Systems and PDE with Applications to Engineering, Biology and Medicine. In *AIP Conference Proceedings of the American Institute of Physics*, page 4, 2013.
19. S. Bnà, S. Manservisi, and G. Bornia. A Penalty-Projection Algorithm for Incompressible Fluid-Structure Interaction. In *Proceedings of the 6th European Congress on Computational Methods in Applied Sciences and Engineering*, pages 1–19, Wien, Austria, September 10–14, 2012.
20. G. Bornia and S. Manservisi. Coupled boundary optimal control problems in thermal fluid dynamics with lifting function approach and Vanka-type solvers. In *Proceedings of the 6th European Congress on Computational Methods in Applied Sciences and Engineering*, pages 1–19, Wien, Austria, September 10–14, 2012.
21. S. Bnà, G. Bornia, and S. Manservisi. A monolithic FEM multigrid penalty-projection solver for incompressible fluid-structure interaction. In *Proceedings of the First ECCOMAS Young Investigators Conference ECCOMAS YIC 2012*, pages 1–14, Aveiro, Portugal, April 24–27, 2012.
22. G. Bornia and S. Manservisi. Three-dimensional computations for boundary optimal control problems in incompressible Magnetohydrodynamics. In *Proceedings of the ECCOMAS Thematic Conference on CFD & Optimization ECCOMAS CFD&OPT 2011*, pages 1–19, Antalya, Turkey, May 23–25, 2011.
23. G. Bornia, A. Cervone, and S. Manservisi. Optimal control for incompressible steady MHD flows via constrained extended boundary approach. In *Proceedings of the V European Conference on Computational Fluid Dynamics (ECCOMAS-CFD 2010)*, pages 1–19, Lisbon, Portugal, June 14–17, 2010.

Non Peer-Reviewed Publications, including Technical Reports

1. F. Bassenghi, G. Bornia, S. Manservisi, R. Scardovelli, F. Donato, C. Lombardo, and M. Polidori. Optimization and validation of the CFD modules in the NURISP platform. CERSE-UNIBO Report RdS 1350, University of Bologna, 2012.
2. G. Bornia, D. Cerroni, S. Manservisi, M. Polidori, and F. Donato. FEM-LCORE code: parallelization, turbulence models and code integration. CERSE-UNIBO Report RdS 1351, University of Bologna, 2012.
3. S. Bnà, G. Bornia, D. Cerroni, S. Manservisi, F. Menghini, and R. Scardovelli. Heat transfer numerical simulations with the four parameter κ- ω - κ_t - ω_t model for low-Prandtl number liquid metals. In *Proceedings of the XXX UIT Heat Transfer Conference*, Bologna, Italy, June 25–27, 2012.
4. F. Bassenghi, G. Bornia, L. Deon, S. Manservisi, P. Meloni, and M. Polidori. Implementation and validation of the NURISP platform. CERSE-UNIBO Report RL 1308, University of Bologna, 2011.
5. G. Bornia, M. Finelli, S. Manservisi, V. Mikhin, M. Polidori, and K. Voukelatou. Development and validation of FEM-LCORE code for the thermal hydraulics of open cores. CERSE-UNIBO Report RL 1307, University of Bologna, 2011.

6. G. Bornia, C. Carraria Martinotti, S. Manservisi, and R. Scardovelli. Validation of heat transfer correlations on single rod data. THINS Project Report - EC FP7, University of Bologna, 2011.
7. S. Bnà, F. Bassenghi, G. Bornia, S. Manservisi, and R. Scardovelli. Thermo-hydraulic analysis of a LFR Generation IV reactor with a porous medium approach. In *Proceedings of the XXIX UIT Heat Transfer Congress*, Turin, Italy, June 20–22, 2011.
8. C. Carraria Martinotti, F. Bassenghi, S. Bnà, G. Bornia, S. Manservisi, and R. Scardovelli. Effects of buoyancy on mixed turbulent heat transfer to heavy liquid metals in vertical annuli. In *Proceedings of the XXIX UIT Heat Transfer Congress*, Turin, Italy, June 20–22, 2011.
9. F. Bassenghi, G. Bornia, A. Cervone, and S. Manservisi. FISSICU platform on CRESCO-ENEA Grid for thermal-hydraulic nuclear engineering. CERSE-UNIBO Report RL 1302, University of Bologna, 2010.
10. F. Bassenghi, G. Bornia, A. Cervone, S. Manservisi, and R. Scardovelli. A comparison between a pressure projection method and a fully coupled multigrid FEM Navier-Stokes solver. In *Proceedings of the XXVIII UIT Heat Transfer Congress*, pages 213–218, Brescia, Italy, June 21–23, 2010.
11. F. Bassenghi, G. Bornia, A. Cervone, S. Manservisi, and R. Scardovelli. Extended boundary approach for optimal control of incompressible steady MHD equations. In *Proceedings of the XXVIII UIT Heat Transfer Congress*, pages 207–212, Brescia, Italy, June 21–23, 2010.
12. G. Bornia, A. Cervone, S. Manservisi, and R. Scardovelli. A study of the approximation of an interface line with the height function method. In *Proceedings of the XXVII UIT Heat Transfer Congress*, pages 239–244, Reggio Emilia, Italy, June 22–24, 2009.

PROFESSIONAL PRESENTATIONS

1. September 13, 2018, *Numerical Aspects of Coupled Problems in Fluid Dynamics*, invited colloquium talk, Department of Mathematics and Statistics, TTU
2. May 16, 2018, *Music is math. Sounds good?*, outreach talk, Emmy Noether High School Day, Department of Mathematics and Statistics, TTU
3. October 25, 2017, *Some questions arising in PDE-constrained optimal control and numerical linear algebra*, invited talk, Texas A&M Numerical Analysis Seminar, College Station, TX
4. September 27, 2017, *Different approaches for Dirichlet and Neumann boundary optimal control*, invited talk, ICNAAM 2017 15th International Conference on Numerical Analysis and Applied Mathematics, Thessaloniki, Greece
5. June 29, 2017, *Field-Of-Values analysis of preconditioned Rayleigh-Benard convection problems*, minisymposium talk, 27th Biennial Numerical Analysis Conference, University of Strathclyde, Glasgow
6. June 15, 2017, *Reactors, computers, theorems, guitars: the important is to be curious*, invited presentation, Rotary Club Imola, Italy
7. May 17, 2017, *Music is math. Sounds good?*, outreach talk, Emmy Noether High School Day, Department of Mathematics and Statistics, TTU
8. April 13, 2017, *The interaction between fluids and solids: modeling, discretization, simulations*, Joint Physics-Math Colloquium Talk, Department of Physics, TTU

9. March 4, 2017, *Fully incompressible Newton-Krylov solver with multigrid-Schwarz preconditioning for Fluid Structure Interaction*, Finite Element Rodeo, University of Houston, TX

10. Aug. 5, 2016, *Fluid-Structure Interaction solvers of Newton-Krylov type with multigrid preconditioning*, contributed talk, Computational Methods in Applied Mathematics (CMAM-7), University of Jyväskylä, Finland

11. May 18, 2016, *The mathematics of magic card tricks*, outreach talk, Emmy Noether High School Day, Department of Mathematics and Statistics, TTU

12. Apr. 20, 2016, *Fixing a regularity mismatch in PDE-constrained boundary control problems*, colloquium talk, Department of Scientific Computing, Florida State University

13. Jan. 14, 2016, *Geometric multigrid and domain decomposition methods for incompressible FSI problems*, contributed talk, International Symposium and Winter-School on Modeling, Adaptive Discretizations and Solvers for Fluid-Structure Interaction, RICAM, Linz, Austria

14. Oct. 11, 2015, *Multigrid and domain decomposition methods for incompressible Fluid Structure Interaction problems*, invited talk, ASCAM Conference - Advances in Scientific Computing and Applied Mathematics, Las Vegas, NV

15. Sept. 2, 2015, *Numerical solution of stationary incompressible FSI problems with multigrid solvers and domain decomposition smoothers*, seminar talk, Seminar in Applied Mathematics, Department of Mathematics and Statistics, TTU

16. May 25, 2015, *Multigrid solver with domain decomposition smoothing for steady-state incompressible FSI problems*, invited talk, COMPDYN-UNCECOMP ECCOMAS Thematic Conference, Crete Island, Greece

17. May 13, 2015, *Cards, Magic, and the Hidden Secrets of Math*, outreach talk, Emmy Noether High School Day, Department of Mathematics and Statistics, TTU

18. Sept. 9, 2014, *On the treatment of boundary controls in PDE-constrained optimization*, invited talk, Sandia National Laboratories, Albuquerque, NM

19. May 14, 2014, *Cards, Magic, and the Hidden Secrets of Math*, outreach talk, Emmy Noether High School Day, Department of Mathematics and Statistics, TTU

20. Sept. 23, 2013, *On a class of constrained boundary control problems treated with a lifting function approach*, invited talk, ICNAAM 2013 International Conference on Numerical Analysis and Applied Mathematics, Rhodes, Greece

21. June 18, 2013, *A multilevel domain decomposition algorithm for fluid-structure interaction in porous media*, invited talk, SIAM GS13 Conference on Mathematical and Computational Issues in the Geosciences, Padova, Italy

22. May 15, 2013, *Let's have fun with paper plates*, outreach talk (with L. Roeger), Emmy Noether High School Day, Department of Mathematics and Statistics, TTU

23. Mar 5, 2013, *Multiphysics and multiscale algorithms with applications to fluid flow control and nuclear reactor modeling*, hiring colloquium talk, Department of Mathematics and Statistics, TTU

24. Oct 27, 2012, *Lifting function approach for boundary optimal control problems in incompressible Magnetohydrodynamics*, invited talk, AMS Fall Western Sectional Meeting, University of Arizona, Tucson, AZ

25. Oct 10, 2012, *Optimal Control for the Incompressible MHD Equations - Part II*, seminar talk, Seminar in Applied Mathematics, Department of Mathematics and Statistics, TTU

26. Sep. 5, 2012, *Optimal Control for the Incompressible MHD Equations - Part I*, seminar talk, Seminar in Applied Mathematics, Department of Mathematics and Statistics, TTU

27. July 10, 2012, *Boundary optimal control problems for the incompressible MHD equations: a theoretical and computational perspective*, seminar talk, MOX Modeling and Scientific Computing Centre, Politecnico di Milano, Milan, Italy

28. May 2011, *Three-dimensional computations for boundary optimal control problems in incompressible Magnetohydrodynamics*, contributed talk, ECCOMAS Thematic Conference CFD & OPTIMIZATION 2011, Antalya, Turkey

29. June 2010, *Optimal control for incompressible steady MHD flows via constrained extended boundary approach*, contributed talk, ECCOMAS CFD 2010 - Fifth European Conference on Computational Fluid Dynamics, Lisbon, Portugal

30. June 2009, *A study of the approximation of an interface line with the height function method*, contributed talk, XXVII UIT National Conference on Heat Transfer, Reggio Emilia, Italy

31. May 2012, *Models for the numerical simulation of physical phenomena in fluid and solid dynamics*, poster at the promotional event "Projects in exhibition: PhD students at UNIBO", Bologna, Italy

32. May 2010, *A finite element code for multiphysics applications in fluid dynamics*, poster at the promotional event "Projects in exhibition: PhD students at UNIBO", Bologna, Italy

CONFERENCE WORKSHOPS ORGANIZED/CONDUCTED

1. Co-organizer of the 17th Red Raider Minisymposium *Current Trends in Numerical Analysis and Scientific Computing*, October 2018.

2. Co-organizer of the Special Session #1100 *Recent Advancements in Differential Geometry and Integrable PDEs, and Their Applications to Cell Biology and Mechanical Systems* (with M. Toda and A. Ibragimov), AMS Spring Central Sectional Meeting, Lubbock, TX, April 2014.

3. Co-organizer of the Minisymposium #29 *Geometric Methods for Integrable Systems and PDE with Applications to Engineering, Biology and Medicine* (with M. Toda), ICNAAM 2013 - International Conference on Numerical Analysis and Applied Mathematics, Rhodes, Greece, September 2013.

FUNDING

External Applications, Accepted

1. NSF-DMS 1412796: *Nonlinear Couplings for Flows in Fractured Porous Media: Analysis and Numerical Algorithms,* E. Aulisa (CoPI), G. Bornia (CoPI), L. Hoang (CoPI) A. Ibragimov (PI) and M. Toda (CoPI). Requested: $318,322. Obtained: $290,001. Period: 2014-2017.

IV. SERVICE

Departmental Service

- 2018, co-organizer of the *XVII Red Raider Minisymposium: Current Trends in Numerical Analysis and Scientific Computing*.
- 2016-present, advisor of the *TTU MAA Legacy Chapter* (Mathematical Association of America).
- 2015-2017, advisor of the *TTU KME Chapter* (Kappa Mu Epsilon Honor Society).
- 2014-present, main organizer of the *Seminar in Applied Mathematics*, Department of Mathematics and Statistics, TTU.
- 2014-present, member of the *Numerical Analysis Preliminary Exam Committee*.
- 2013-present, member of the *Emmy Noether High School Day Committee* for the organization of the Emmy Noether High School Mathematics Days, Dept. Math&Stats, TTU.
- 2017-2018, member of the *Hiring Committee for Computational and Applied Mathematics*.
- 2016-2017, member of the *Hiring Committee for Computational Mathematics*.
- 2015-2017, member of the *Undergraduate Committee*.
- 2015-2016, reviewer of 3 departmental final exams.
- 2016-2017, served twice as course coordinator for *Linear Algebra*.
- 2016-present, class observation and evaluation of teaching assistants.
- 2013-present, written more than 80 letters of recommendation for students and colleagues.

University Service

- Dean's Representative, Doctoral Dissertation Defense, Ali Doosttalab, *Near-Wall Turbulence and its Modulation to the Outer Flow: from Wind Turbine Airfoils to Canonical ZPG*, Mechanical Engineering, March 2018.
- Dean's Representative, Doctoral Dissertation Defense, Harshvardhan Gazula, *Branch-and-cut for cardinality-constrained optimization problems*, Industrial Engineering, October 2016.

Service to the Profession

- Reviewer for
  - *Mathematical Reviews*,
  - *Journal of Computational Methods in Sciences and Engineering*,
  - *Data-Enabled Discovery and Applications*,
  - *International Scholarly Research Notices*,
  - *AIP Conference Proceedings of the International Conference of Numerical Analysis and Applied Mathematics 2013 (ICNAAM 2013)*,
  - *Wiley Book Proposal*,
  - *Willmore Energy and Willmore Conjecture*, book edited by M. D. Toda.
- Session Chair of the Minisymposium #50 *Multiscale-Multiphysics approaches for Engineering Applications*, ICNAAM 2017 - International Conference on Numerical Analysis and Applied Mathematics, Thessaloniki, Greece, September 2017.