Vladislav BUKSHTYNOV

Department of Mathematical Sciences, Florida Institute of Technology
⊠ 150 West University Blvd., Melbourne, FL 32901, US
phone: (321) 674-7157, fax: (321) 674-7412, email: vbukshtynov@fit.edu
URL: http://www.bukshtynov.xyz

PRIMARY RESEARCH INTERESTS

Applied & Computational Mathematics, Scientific Computing
Numerical Optimization, Control Theory
Mathematical Modeling for Industrial Applications
Inverse Problems
Modeling & Analysis of PDEs
Computational Fluid Dynamics

EDUCATION

PhD in Computational Engineering and Science   Jan 2012
McMaster University, Ontario, Canada

MS in Computer Science (with distinction)   Feb 1999
Vitebsk State University, Belarus

BS in Mathematics and Physics   Jun 1997
Vitebsk State University, Belarus

PROFESSIONAL EXPERIENCE

Assistant Professor in Applied Mathematics   Aug 2015 – present
Department of Mathematical Sciences
Florida Institute of Technology, FL, US

Visiting Assistant Professor   Summer 2016, 2017, 2018
Department of Energy Resources Engineering
Stanford University, CA, US

Postdoctoral Research Fellow   Feb 2012 – Aug 2015
Department of Energy Resources Engineering
Stanford University, CA, US
Mentors: Khalid Aziz, Louis J. Durlofsky

Research Assistant   May 2008 – Jan 2012
Department of Mathematics & Statistics
School of Computational Engineering & Science
McMaster University, ON, Canada
Supervisor: Bartosz Protas

Research Assistant   Nov 1999 – May 2002
A.V. Luikov Heat and Mass Transfer Institute, Minsk, Belarus
Supervisors: Zinovii P. Shulman, Alexander Makhanek

PUBLICATIONS

Books & Courseware

- Coleman M. P. and Bukshtynov V. *An Introduction to Partial Differential Equations with MATLAB*, 3rd edition, Chapman and Hall/CRC, ISBN (hardcover) 978-1032639383 (eBook) 978-1032650852 (under contract/in progress, 2024).

- Bukshtynov V. *Computational Optimization: Success in Practice*, Chapman and Hall/CRC, ISBN (hardcover) 978-1032229478 (eBook) 978-1003275169 (2023), 414pp.

- Bukshtynov V. and Polyak E. *Higher Mathematics*, Vitebsk State Medical University Textbook (Calculus with elements of Mathematical Statistics) for the 2nd year students of Pharmaceutical Dept, with instructions and assignment problems, 1st ed. (2002), 2nd ed. (2012), in Russian, available online at https://elib.vsmu.by/handle/123/226

Refereed Journals (*graduate and **undergraduate student coauthors)

- Arbic* P. R. II, Bukshtynov V. *Efficient Gradient-based Optimization for Reconstructing Binary Images in Applications to Electrical Impedance Tomography* (under review at Computational Optimization and Applications, available at arXiv:2304.02601v1)

- Chun* M. M. F. M., Edwards* B. L., and Bukshtynov V. *Multiscale Optimization via Enhanced Multilevel PCA-based Control Space Reduction for Electrical Impedance Tomography Imaging* (under review at Journal of Computational and Applied Mathematics, available at arXiv:2211.06227v1)

- Arbic* P. R. II, Bukshtynov V. *On Reconstruction of Binary Images by Efficient Sample-based Parameterization in Applications for Electrical Impedance Tomography*, International Journal of Computer Mathematics 99(11) (2022), 2272-2289.

- Koolman** P. M., Bukshtynov V. *A Multiscale Optimization Framework for Reconstructing Binary Images using Multilevel PCA-based Control Space Reduction*, Biomedical Physics & Engineering Express 7(2) (2021), 025005.

- Abdulla U. G., Bukshtynov V., Seif* S. *Cancer Detection through Electrical Impedance Tomography and Optimal Control Theory: Theoretical and Computational Analysis*, Mathematical Biosciences and Engineering 18(4) (2021), 4834-4859.

- Abdulla U. G., Bukshtynov V., Hagverdiyev* A. *Gradient Method in Hilbert-Besov Spaces for the Optimal Control of Parabolic Free Boundary Problems*, Journal of Computational and Applied Mathematics 346 (2019), 84-109.

- Volkov O., Bukshtynov V., Durlofsky L.J. and Aziz K. *Gradient-based Pareto Optimal History Matching for Noisy Data of Multiple Types,* Computational Geosciences 22(6) (2018), 1465-1485.

- Bukshtynov V., Volkov O., Durlofsky L.J. and Aziz K. *Comprehensive Framework for Gradient-based Optimization in Closed-Loop Reservoir Management*, Computational Geosciences 19(4) (2015), 877-897.

- Bukshtynov V., Protas B. *Optimal Reconstruction of Material Properties in Complex Multiphysics Phenomena*, Journal of Computational Physics 242 (2013), 889-914.

- Bukshtynov V., Volkov O., Protas B. *On Optimal Reconstruction of Constitutive Relations*, Physica D: Nonlinear Phenomena 240 (2011), 1228-1244.

- Bukshtynov V., Volkov O., Durlofsky L.J. and Aziz K. *A Data Assimilation Procedure for Calibrating Relative Permeability Using Data of Multiple Types* (in preparation)

Proceedings for Conferences and Affiliate Meetings

- Huynh N., Edwards B., Bukshtynov V., and Bashur C. A. *Optimizing Vascularization in 3D Bio-printed Constructs with Computational Modeling*, Proceedings of the Society for Biomaterials SFB 2022 Annual Meeting, , Baltimore, MD, April 2022

- Volkov O., Ye T., Durlofsky L.J., Bukshtynov V., and Aziz K. *Optimization Techniques for Data Assimilation and Constrained Well Placement*, Proceedings of Smart Fields 14th Annual Affiliate Meeting, Stanford University, November 2019

- Volkov O., Bukshtynov V., Durlofsky L.J., and Aziz K. *Data Assimilation using Generalized Adjoint Gradients in AD-GPRS*, Proceedings of SUPRI-B 36th Annual Affiliate Meetings, Stanford University, May 2019

- Volkov O., Bukshtynov V., Durlofsky L.J., and Aziz K. *Multiobjective History Matching*, Proceedings of Smart Fields 13th Annual Affiliate Meeting, Stanford University, November 2018

- Bukshtynov V., Volkov O., Aziz K., and Durlofsky L.J. *Model Update and Calibration via Gradient-based Optimization Framework*, Proceedings of Smart Fields 11th Annual Affiliate Meeting, Stanford University, November 2016

- Volkov O., Padhye N., Bukshtynov V., Aziz K., and Durlofsky L.J. *Simulation-based Optimization and History Matching*, Proceedings of SUPRI-B 33rd Annual Affiliate Meetings, Stanford University, May 2016

- Bukshtynov V., Volkov O., Aziz K., and Durlofsky L.J. *Multiobjective History Matching for Noisy Data of Multiple Types*, Proceedings of Smart Fields 10th Annual Affiliate Meeting, Stanford University, November 2015

- Bukshtynov V., Volkov O., Aziz K., and Durlofsky L.J. *Gradient-based Optimization for Closed-Loop Modeling Using AD-GPRS*, SUPRI-B 32nd Annual Affiliate Meetings, Stanford University, May 2015

- Bukshtynov V., Volkov O., Aziz K., and Durlofsky L.J. *Gradient-based History Matching and Closed-Loop Modeling Using AD-GPRS*, Proceedings of Smart Fields 9th Annual Affiliate Meeting, Stanford University, November 2014

- Bukshtynov V., Volkov O., Aziz K., and Durlofsky L.J. *Gradient-based History Matching and Closed-Loop Modeling Using AD-GPRS: Updates*, Proceedings of SUPRI-B 31st Annual Affiliate Meetings, Stanford University, May 2014

- Bukshtynov V., Volkov O., Aziz K., and Durlofsky L.J. *New Developments in Gradient-based History Matching Using AD-GPRS*, Proceedings of Smart Fields 8th Annual Affiliate Meeting, Stanford University, November 2013

- Bukshtynov V., Volkov O., Aziz K., and Durlofsky L.J. *Gradient-based History Matching Using AD-GPRS*, Proceedings of SUPRI-B 30th Annual Affiliate Meetings, Stanford University, May 2013

- Protas B., Bukshtynov V., Noack B., Morzynski M. *On Optimal Model Identification in Hydrodynamics*, Proceedings of APS 65th Annual DFD Meeting, San Diego, CA, November 2012

- Bukshtynov V., Volkov O., Aziz K., and Durlofsky L.J. *Computational Framework for Performing History Matching Using AD-GPRS*, Proceedings of Smart Fields 7th Annual Affiliate Meeting, Stanford University, November 2012

- Bukshtynov V. and Protas B. *Reconstruction of Temperature-Dependent Material Properties in Complex Thermo-Fluid Problems*, Proceedings of ECCOMAS Thematic Conference: CFD & OPTIMIZATION 2011, Antalya, Turkey, May 2011

Research and Technical Reports

- Bukshtynov V. *Optimization Framework of EIT-OPT.* Department of Mathematical Sciences, Florida Institute of Technology (2020)

- Amezquita E., Bukshtynov V., Ellis S., Farnell E., Ryu H., Tymochko S., and Storey K. *Identifying Patterns in Genomic Tumor Data Using Mapper*, Report for a Collaborative Research Project completed at ICERM's workshop "Applied Mathematical Modeling with Topological Techniques", Brown University (2019)

- Bukshtynov V., Abdulla U.G. Breast Cancer Detection through Electrical Impedance Tomography: Variational Method through Optimal Control Theory, Report for a Collaborative Research Project with Dartmouth Center of Cancer Nanotechnology Excellence (2015)

- Bukshtynov V., Volkov O., Aziz K., and Durlofsky L.J. *Gradient-based Optimization and History Matching Using AD-GPRS*, Research Report for Meeting with Affiliate Members: Schlumberger (2014)

- Volkov O., Kourounis D., Bukshtynov V. *Optimization Module of AD-GPRS.* Department of Energy Reservoirs Engineering, SUPRI-B, Stanford University (2014)

- Voskov D., Zaydullin R., Garipov T., Iskhakov R., Zhou Y., Volkov O., Kourounis D., Semenova A., Bukshtynov V. *Reservoir Simulator AD-GPRS.* User Manual, version 1.0. Department of Energy Resources Engineering, SUPRI-B, Stanford University (2013)

- Bukshtynov V. *Computational Methods for the Optimal Reconstruction of Material Properties in Complex Multiphysics Systems,* PhD Dissertation, McMaster University, Open Access Dissertation and Theses. Paper 6795. http://hdl.handle.net/11375/11859 (2012)

- Atena A., Yapalparvi R., Bukshtynov V., Protas B. *Optimization and Parameter Estimation in MIG Welding – Multi-Objective Framework and Modelling Mass Transfer with Effective Surfaces*, Report #4 for a Collaborative Research Project with GM (2011)

- Atena A., Yapalparvi R., Bukshtynov V., Volkov O., Protas B. *Optimization and Parameter Estimation in MIG Welding – Towards Multi-Objective Framework and Modelling Mass Transfer with Effective Surfaces*, Report #3 for a Collaborative Research Project with GM (2010)

- Volkov O., Yapalparvi R., Bukshtynov V., Protas B. *Modelling, Optimization and Estimation of the Systems Involving Interaction with Plasma Column*, Report #2 for a Collaborative Research Project with GM (2009)

- Volkov O., Bukshtynov V., Protas B. *A Unified Approach to Solving Free-Boundary and Inverse Problems for a Stationary Weld Pool, with Some Notes on the Related Problem of Parameter Estimation*, Report #1 for a Collaborative Research Project with GM (2008)

CONTRACTS AND GRANTS

REU Site: Optimization Principles and Technologies in Applications (OPTA-REU)   2024 – 2026
NSF, PI (MPS, $395,194, to be submitted in 2023)

A Novel Computational Approach to Calibrate State-Dependent Model Parameters in Earth Science Applications   2024 – 2026
ACS, PI (PRF, pending $125,000)

Travel Award to attend 10th International Congress on Industrial and Applied Mathematics ICIAM 2023, Tokyo, Japan   2023
NSF (grant DMS-2233032, $1,750, SIAM)

Enhanced Computational Framework for Early Stage Cancer Detection through Electrical
Impedance Tomography (EIT)   2021
Florida Tech COES Institutional Research Incentive Program, PI $18,959

Topological Methods for Identifying Patterns in Lung Tumor Gene Expression Data   2020
NSF/NIMBioS: Short-term Visits Program, co-PI, 1-week paid visit awarded
Approved for August 2020 (postponed due to COVID-19 pandemic)

REU Site: Partial Differential Equations and Dynamical Systems   2016
NSF (DMS, award #1359074 2014-2016, $258,567, PI U. Abdulla)
Faculty Mentor/Senior Personnel (summer undergraduate research with 3 ISP groups)

PATENTS, INVENTIONS, AND SOFTWARE DEVELOPMENT

EIT-OPT   2015 – present
All-purpose open-structure multifaceted optimization framework for solving numerically
inverse Electrical Impedance Tomography (EIT) problems in 2D

ISP-OPT   2016 – 2019
Comprehensive multifaceted optimization framework for solving numerically inverse
Stefan problems (ISP) in 1D

CONFERENCE PRESENTATIONS AND TALKS

Organizer

- Minisymposium "*Recent development in modeling, control, theoretical and numerical analysis of complex systems with dynamic boundaries*" at SIAM PD15 Conference on Analysis of Partial Differential Equations, AZ, US, December 2015

Invited Presentations

- Minisymposium "Control and Estimation Problems in Fluid Mechanics and Related Fields", 9th International Congress on Industrial and Applied Mathematics ICIAM 2019, Valencia, Spain, July 2019
- Mini-Tutorial "Computational Aspects of Numerical Optimization", NSF-CBMS Conference/workshop "Computational Methods in Optimal Control", Jackson State University, MS, July 2018
- SIAM Chapter Seminar, Dept. of Mathematical Sciences, Florida Institute of Technology, FL, April 2015
- Colloquium, Dept. of Scientific Computing, Florida State University, FL, February 2015
- 2012 Cecil Graham Doctoral Dissertation Prize Plenary Lecture, CAIMS 2013 Annual Meeting, Quebec City, Canada, June 2013
- SUPRI-B Group Seminar, Dept. of Energy Resources Engineering, Stanford University, CA, US, November 2011
- Optimization Group Seminar, School of Industrial Engineering, Purdue University, IN, US, October 2011

Seminar and Contributed Talks

- 10th International Congress on Industrial and Applied Mathematics ICIAM 2023, Tokyo, Japan, August 2023

- Florida Undergraduate Research Conference FURC 2023, Miami, FL, US, February 2023 [3 posters presented by undergraduate students]
- SIAM Annual Meeting AN22, Pittsburgh, PA, US, July 2022
- 2022 Society for Biomaterials Annual Meeting, Baltimore, MD, April 2022
- The Joint Mathematics Meeting JMM 2022, Seattle, WA, US, April 2022 [online]
- The Joint Mathematics Meeting JMM 2021, Washington, DC, US, January 2021 [online]
- ICERM Topical Workshop "Applied Mathematical Modeling with Topological Techniques", Brown University, Providence, RI, US, August 2019
- SIAM Conference on Mathematical and Computational Issues in the Geosciences GS19, Houston, TX, US, March 2019
- Topical workshop "Celebrating 75 Years of Mathematics of Computation", ICERM, Brown University, Providence, RI, US, November 2018
- Advances in Mathematical Optimization, IWR School, Heidelberg University, Germany, October 2018
- SIAM Annual Meeting AN18, Portland, OR, US, July 2018
- SIAM Conference on Mathematical and Computational Issues in the Geosciences GS17, Erlangen, Germany, September 2017
- Mathematical Congress of the Americas MCA 2017, Montreal QC, Canada, July 2017
- SIAM Conference on Computational Sciences and Engineering CSE17, Atlanta, CA, US, March 2017
- Smart Fields 11th, 10th, 9th, 8th, 7th Annual Affiliate Meetings, Stanford University, CA, US, November 2016, 2015, 2014, 2013, 2012
- Minisymposium Talk at SIAM PD15 Conference on Analysis of Partial Differential Equations, AZ, US, December 2015
- SUPRI-B 32nd, 31st, 30th Annual Affiliate Meetings, Stanford University, CA, US, May 2015, 2014, 2013
- SIAM Conference on Mathematical and Computational Issues in the Geosciences GS13, Padua, Italy, June 2013
- 65th Annual American Physical Society Meeting (Division of Fluid Dynamics), San Diego, CA, US, November 2012
- Smart Fields Group Seminar, Department of Energy Resources Engineering, Stanford University, CA, US, October 2012
- 7th International Congress on Industrial and Applied Mathematics ICIAM 2011, Vancouver BC, Canada, July 2011
- Applied Mathematics Perspectives AMP 2011: Complex Fluids and Flows in Industry and Nature, UBC, Vancouver BC, Canada, July 2011
- Challenges in Applied Control and Optimal Designs, Basque Center for Applied Mathematics BCAM, Bilbao, Spain, July 2011
- 2nd New York Conference on Applied Mathematics NYCAM 2011, University at Buffalo, SUNY, Buffalo NY, US, April 2011

- First North American Meeting on Industrial and Applied Mathematics NAMIAM 2010, Universidad del Mar, Huatulco, Oaxaca, Mexico, December 2010
- Applied, Industrial and Financial Mathematics AIMS/Phimac Seminar, McMaster University, November 2010
- Advanced Optimization Laboratory AdvOL Seminar, McMaster University, November 2010
- School of CES Student Symposium Day, McMaster University, November 2010
- Southern Ontario Numerical Analysis Day SONAD, Waterloo ON, Canada, May 2010
- School of CES Student Symposium Day, McMaster University, October 2009
- Southern Ontario Numerical Analysis Day SONAD, London ON, Canada, May 2009
- 2nd Annual Pure and Applied Maths Graduate Student Conference, McMaster University, October 2008

HONORS AND AWARDS

NSF/SIAM Travel Award to attend ICIAM 2023, Tokyo, Japan NSF Grant DMS-2233032 [USD 1,750]	2023
NSF Travel Award to attend Broadening Participation: 2023 MPS Workshop for New Investigators, Alexandria VA, US National Science Foundation [USD 1,245]	2023
NSF/ICERM Travel Award to attend 2019 ICERM Topical Workshop, Brown University, US Institute for Computational and Experimental Research in Mathematics [USD 760]	2019
NSF/ICERM Travel Award to attend 2018 ICERM Topical Workshop, Brown University, US Institute for Computational and Experimental Research in Mathematics [USD 678]	2018
Mobility Program Award to attend 2018 IWR School, Heidelberg University, Germany Interdisciplinary Center for Scientific Computing (IWR) [EUR 1,150]	2018
NSF/CBMS Travel Award to attend 2018 NSF-CBMS, Jackson State University, US Conference Board of the Mathematical Sciences [USD 850]	2018
NSF/SIAM Early Career Travel Award to attend SIAM GS17, Erlangen, Germany Society for Industrial and Applied Mathematics [USD 950]	2017
NSF/AMS Travel Award to attend MCA 2017, Montreal QC, Canada American Mathematical Society [USD 1,350]	2017
IMA Scholarship to attend New Directions Short Course Topics in Control Theory Institute for Mathematics and its Applications, University of Minnesota, US [USD 2,867]	2014
The 2012 Cecil Graham Doctoral Dissertation Award Canadian Applied and Industrial Mathematics Society [CAD 1,000]	2013
Postdoctoral Research Fellowship, Stanford University, US Smart Fields Consortium, Energy Resources Engineering Dept. [USD 207,000]	2012 – 2015
Ontario Graduate Scholarship, Canada (declined with early graduation) Ministry of Training, Colleges and Universities [CAD 15,000]	2011
Scholarship to attend RISM 2011 Summer School, Verbania, Italy Riemann International School of Mathematics [EUR 940]	2011
MITACS Travel Award to attend ICIAM 2011, Vancouver BC, Canada Mathematics of Information Technology and Complex Systems [CAD 550]	2011

2nd Prize - Applied Mathematics Perspectives (AMP 2011) Poster Competition, Canada Canadian Applied and Industrial Mathematics Society [CAD 100]	2011
PIMS Travel Award to attend AMP 2011, Vancouver BC, Canada Pacific Institute for the Mathematical Sciences [CAD 265]	2011
BCAM Scholarship to attend OPTPDE 2011 Summer School, Bilbao, Spain Basque Center for Applied Mathematics [EUR 1,300]	2011
Ontario Graduate Scholarship, Canada Ministry of Training, Colleges and Universities [CAD 15,000]	2010
PIMS Travel Award to attend NAMIAM 2010, Huatulco OA, Mexico Pacific Institute for the Mathematical Sciences [CAD 900]	2010
Travel Award to attend NAMIAM 2010, Huatulco OA, Mexico McMaster University Graduate Students Association [CAD 500]	2010
Scholarship to attend INdAM 2010 Summer School, Catania, Italy Istituto Nazionale di Alta Matematica Francesco Severi (INdAM) [EUR 600]	2010
Graduate Scholarship, McMaster University, Canada School of Graduate Studies [CAD 19,151]	2008 – 2012

STUDENT ADVISING

Dept. of Mathematical Sciences, Florida Institute of Technology
- Advisor, graduate research: Briana Edwards (PhD Applied Math, 2020-2022), Maria Chun (MS Operations Research, 2021-2022), Paul Arbic (MS Operations research, 2019-2020)
- Advisor, MS non-thesis: James Williams (MS Applied Math, 2020-), Fan Xia (MS Operations research, 2018-2019)
- Advisor, undergraduate research: Nico Braukman (2022-2023), Amanda Elliott (2022-2023), Junfu Cheng (2022-2023), Briana Edwards (2019-2020), Priscilla Koolman (2019-2020)
- Co-advisor, graduate research: Saleheh Seif (PhD, 2016-2019), Ali Haqverdiev (PhD, 2016-2019); Robert Feldges (PhD, 2015-2016)
- Co-advisor, undergraduate research: Greta Polo (2016)
- Academic advisor for undergraduate students (Applied Mathematics & Mathematical Sciences majors, Computational Mathematics minor)
- Academic advisor for graduate students (MS & PhD in Applied Mathematics & Operations Research)
- REU-2016 summer research mentoring: Rajendra Beekie (University of Minnesota), Nadab Wubshet (Augustana University), Carlos Seda (University of Puerto Rico), Taylor Spino (North Central College)

Dept. of Energy Resources Engineering, Stanford University
- Graduate student informal advising: Yimin Liu (MS, 2014-2015), Larry Zhaoyang Jin (MS, 2015), Sumeet Trehan (PhD, 2013-2014), Hai Xuan Vo (PhD, 2012-2015), Wenyue Sun (MS, 2012-2013), Mehrdad Gharib Shirangi (PhD, 2012-2013)

TEACHING EXPERIENCE

Dept. of Mathematical Sciences, Florida Institute of Technology
- MTH 6300 Topics in Num/Comp Mathematics: Numerical Optimization, Fall 2021
- ORP 6095 Candidacy Preparation OR, Fall 2016

- MTH 5335 Nonlinear Optimization Models and Methods, Spring 2023
- MTH 5225 Linear Optimization Models and Methods, Fall 2022
- MTH 5051 Applied Discrete Mathematics, Summer 2022, Spring 2022, Spring 2020, Summer 2019
- MTH 5050 Special Topics in Mathematics, Fall 2019, Spring 2016
- MTH 5107 Optimization Models and Methods, Spring 2021, Spring 2019, Spring 2016
- MTH 5007 Introduction to Optimization, Fall 2018, Fall 2015
- MTH 4990 Undergraduate Research, Spring 2023, Fall 2022, Spring 2020, Fall 2019
- MTH 3210 Introduction to PDEs and Applications, Summer 2023, Summer 2022, Summer 2021, Summer 2020, Spring 2019, Fall 2017
- MTH 3200 Honors Differential Equation, Spring 2023, Fall 2021, Spring 2021
- MTH 3107 Optimization, Fall 2019
- MTH 2201 Differential Equations, Fall 2019, Spring 2019, Fall 2018, Spring 2017, Fall 2016, Spring 2016, Fall 2015
- MTH 2001 Calculus 3, Fall 2022, Spring 2018, Fall 2017, Spring 2017, Fall 2016

NEW COURSE DEVELOPMENT

Dept. of Mathematical Sciences, Florida Institute of Technology
- MTH 6300 Topics in Num/Comp Mathematics: Numerical Optimization, Spring 2018
- MTH 5225 Linear Optimization Models and Methods, 2021
- MTH 5335 Nonlinear Optimization Models and Methods, 2021
- MTH 3220 Honors Partial Differential Equations, Spring 2022
- MTH 3200 Honors Differential Equations, Spring 2020

SERVICE FOR UNIVERSITY, COLLEGE, AND DEPARTMENT

Florida Institute of Technology
- COVID-19 COES Task Force (summer & fall 2020)
- Graduate Council (alternate member since fall 2020)
- Undergraduate Curriculum Committee UGCC (since fall 2021)
- Undergraduate Mathematical Sciences Program Coordinator (since fall 2022)
- Faculty Hiring Committee (since spring 2021)
- PhD Admission Committee, Operations Research Program (since 2019)
- PhD Admission Committee, Applied Mathematics Program (since 2020)
- MS Admission Committee, Operations Research Program (2019-2022)
- PhD & MS Applied Mathematics and Operations Research Programs Committee (since 2019)
- PhD & MS Committee Member: Mackenzie Meni (PhD, 2023-), Anthony Stefan (PhD, 2023-; MS, 2021), Bindi Nagda (PhD, 2022-2023), Jiri Kapralek (MS, 2021), Hissah Albaqami (PhD, 2020-; MS 2020), Nandini Rakala (PhD, 2018-2020), Ali Haqverdiyev (PhD, 2016-2020), Saleheh Seif (PhD, 2016-2020), Fan Xia (MS, 2019), Roby Poteau (PhD, 2016-2019), Justin Blackman (MS, 2016-2017)
- External Member: David Busch (MS Mech. Engineering, 2023), Raymond Cromin (MS Mech. Engineering, 2023), Kevin Fernandez (MS Mech. Engineering, 2023), Nicholas Cordoba (MS Mech. Engineering, 2023), Ryan Piersa (MS Aerospace Engineering, 2022), Iwan Broodryk (MS Aerospace Engineering, 2020-2022), Yunpeng Han (MS Mech. Engineering, 2019), Christian Hernandez (PhD Math. Education, 2017), Jonathan Tiede (MS Aerospace Engineering, 2016)

• Tenure Exploration Faculty Senate Committee (2017-2018)
• SIAM Student Chapter Advisor (since 2019)

OTHER ACTIVITIES FOR PROFESSIONAL DEVELOPMENT

NSF Broadening Participation: 2023 MPS Workshop for New Investigators   2023
National Science Foundation (NSF), Alexandria, VA, US

ICERM Topical Workshop "Applied Mathematical Modeling with Topological Techniques"   2019
Institute for Computational and Experimental Research in Mathematics (ICERM), Brown University, Providence, RI, US

ICERM Topical Workshop "Celebrating 75 Years of Mathematics of Computation"   2018
Institute for Computational and Experimental Research in Mathematics (ICERM), Brown University, Providence, RI, US

IWR School "Advances in Mathematical Optimization"   2018
Interdisciplinary Center for Scientific Computing (IWR), Heidelberg University, Germany

NSF-CBMS Conference/workshop "Computational Methods in Optimal Control"   2018
Conference Board of the Mathematical Sciences (CBMS), Jackson State University, MS, US

IMA New Directions Short Course "Topics in Control Theory"   2014
Institute for Mathematics and its Applications (IMA), University of Minnesota, MN, US

History Matching and Conditioning Reservoir Models to Dynamic Data   2013
Society of Petroleum Engineers (SPE) training course, The Woodlands, TX, US

Fundamentals of Reservoir Simulation   2012
Summer Program in Energy Resources Engineering, Stanford University Petroleum Research Institute (SUPRI), Stanford, CA, US

Multiphase and Multiphysics Problems   2011
Summer School, Riemann International School of Mathematics (RISM), Verbania, Italy

Challenges in Applied Control and Optimal Designs   2011
OPTPDE Summer School, Basque Center for Applied Mathematics (BCAM), Bilbao, Spain

High Performance and Technical Computing   2010
SHARCNET Summer School, Sheridan Institute of Technology and Advanced Learning, Oakville, Canada

Analytical and Numerical Problems in Fluid Dynamics and Applications   2010
Intensive Period Summer School, Istituto Nazionale di Alta Matematica Francesco Severi (INdAM), Catania, Italy

REVIEWER

Funding Agencies DOE Office of Science – Advanced Scientific Computing Research Program

Publishing Houses Wiley

Professional Journals Journal of Computational and Applied Mathematics, Computers and Mathematics with Applications (Elsevier); International Journal of Computer Mathematics (Taylor & Francis); Mathematical Geosciences, Computational Geosciences (Springer); Applied Mathematics (Scientific Research Publishing)

Conferences International Congress on Industrial and Applied Mathematics (ICIAM 2023 Tokyo, Japan)

PROFESSIONAL MEMBERSHIP

Society for Industrial and Applied Mathematics (SIAM), American Mathematical Society (AMS)

REFERENCES

Gnana Bhaskar Tenali (gtenali@fit.edu), Florida Institute of Technology, US
Munevver M. Subasi (msubasi@fit.edu), Florida Institute of Technology, US
Louis J. Durlofsky (lou@stanford.edu), Stanford University, US
Khalid Aziz (aziz@stanford.edu), Stanford University, US
Denis Voskov (D.V.Voskov@tudelft.nl), Delft University of Technology, Netherlands
Bartosz Protas (bprotas@mcmaster.ca)**,** McMaster University, Canada