Burak Aksoylu, PhD
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Curriculum Vitae
September 3, 2018

Academic Career Highlights

1. **High quality, in-depth research portfolio**. Produced research articles with comprehensive treatment of technically intensive material in highly active research areas, and published these in prestigious journals.

2. **Solved open problems and initiated frontier research** in nonlocal problems such as Peridynamics, a nonlocal formulation of continuum mechanics. Peridynamics is used in crack propagation. Constructed the first results in nonlocal domain decomposition, sharp conditioning, and incorporation of local boundary conditions into Peridynamics.

3. **Member of editorial board**. Journal of Peridynamics and Nonlocal Modeling.

4. **Strong funding support**. Recipient of 11 research grants summing 880,000 USD support from NSF, European Commission Marie Curie Program, Research Council of Turkey, and LSU.

5. **Plenary speaker** at European Conference on Numerical Mathematics and Advanced Applications (ENUMATH 2015).

6. **Effective team leader and player**. Led and worked with groups in prestigious research institutions such as ARL, CalTech, UC Irvine, UC San Diego, UT Austin, and LSU.

7. **Effective teaching skills**. Advised a total of 9 theses or projects at PhD, MS, and undergraduate levels. Consecutively taught the Mathematics Education Capstone Course for 3 semesters at LSU. Offered a wide variety of courses, 12 in the area of scientific computing.

8. **Member of steering committee**. Executive appointment at Research Council of Turkey, Division for Training of Scientists. Awarded grants and structured training programs for K-12 outreach, undergraduate and graduate scholarships, postdoc fellowships, and foreign visiting faculty.

Education

Ph.D. in Mathematics
University of California, San Diego, 1996–2001. Advisor: Michael Holst.

M.S. in Mathematics
University of California, Irvine, 1994–1996.

B.S. in Mathematics (Double major)
Middle East Technical University (METU), Ankara, Turkey, 1991–1993.

B.S. in Science Education, Mathematics Teaching
METU, Ankara, Turkey, 1989–1993.

Academic Experience

ORAU Senior Fellow Aberdeen Proving Ground	U.S. Army Research Laboratory 2018–present
ORISE Faculty Aberdeen Proving Ground	U.S. Army Research Laboratory 2017–2018
Adjunct Faculty Department of Mathematics	Wayne State University 2014–present
Associate Professor Department of Mathematics	TOBB University of Economics and Technology (ETU) 2011–2016
Assistant Professor Department of Mathematics	TOBB University of Economics and Technology 2010–2011
Visiting Assistant Professor Department of Mathematics	Louisiana State University 2010–2014
Adjunct Research Assistant Professor Department of Mathematics and Statistics	University of New Mexico 2010–2013
Assistant Professor Department of Mathematics Center for Computation and Technology	Louisiana State University 2005–2010 2005–2010
Postdoctoral Fellow Institute for Computational Engineering and Sciences	The University of Texas at Austin 2003–2005
Postdoctoral Scholar Department of Computer Science	California Institute of Technology 2001–2003
Postdoctoral Scholar Department of Biochemistry	University of California, San Diego 2001–2001 (3 months)

Research Area

Numerical analysis, scientific computing, numerical linear algebra.

Focus: Nonlocal problems, peridynamics, local boundary conditions for nonlocal problems, preconditioning for peridynamics, scalable solvers for nonlocal problems.
Preconditioning, iterative solvers, numerical solutions to partial differential equations, multilevel preconditioning, multigrid, preconditioning under adaptive mesh refinement, robust preconditioning for high-contrast heterogeneous media, Krylov subspace solvers.

Application areas: Biophysics, computer graphics, geosciences, numerical relativity, and solid mechanics.

Funded Projects

11. Scientific and Technological Research Council of Turkey (TUBITAK) 1001 program, MFAG 115F473, *Local boundary conditions in nonlocal theories*, 04.15.2016–04.14.2019, PI: Burak Aksoylu *(single investigator)*, Amount: 254,250 TL.

10. Scientific and Technological Research Council of Turkey (TUBITAK) 2221, Fellowship for scientist on sabbatical leave program, 02.20.2014–08.20.2014, host scientist: Burak Aksoylu, visiting scientist: Assoc. Prof. Fatih Celiker of Wayne State University, Department of Mathematics, Amount: 42,200 TL.

9. Scientific and Technological Research Council of Turkey (TUBITAK) 2221, Fellowship for visiting scientist program, 09.09.2013–03.09.2014 and 06.01.2014–12.01.2014, host scientist: Burak Aksoylu, visiting scientist: Prof. Horst R. Beyer of Eberhard Karls Universität Tübingen, Theoretical Astrophysics, Amount: 72,000 TL.

8. Scientific and Technological Research Council of Turkey (TUBITAK) 1001 program, MAG 112M891, *Development of a method to predict strength and failure of layered composites using peridynamic theory*, 05.01.2013–04.30.2015, PI: Mehmet Ali Guler, Co-PI: Burak Aksoylu, Amount: 255,070 TL.

7. Scientific and Technological Research Council of Turkey (TUBITAK) 1001 program, TBAG 112T240, *Solvers for peridynamics applications*, 12.01.2012–11.30.2014, PI: Burak Aksoylu *(single investigator)*, Amount: 146,073 TL.

6. European Commission Marie Curie Career Integration Grant 293978, *Numerical methods for nonlocal problems*, 09.12.2011–09.11.2015, PI: Burak Aksoylu *(single investigator)*, Amount: 100,000 Euro.

5. NSF DMS 1016190, *Numerical methods for heterogeneity and nonlocality*, 08.15.2010–07.31.2014, PI: Burak Aksoylu (*single investigator*), Amount: 180,000 USD.

4. NSF CNS 0540374, *DDDAS–TMPR: DynaCode: A general DDDAS framework with coast and environment modeling applications*, 01.01.2006–12.31.2006, PI: Gabrielle Allen, Co-PIs: Burak Aksoylu, Ivor van Heerden, Gregory Stone Joannes Westerink, Amount: 220,000 USD.

3. NSF LA EPSCoR, *High performance solvers for atomistic-to-continuum modeling*, extended stay at Sandia National Laboratories, summer 2008, PI: Burak Aksoylu, Amount: 3,000 USD.

2. LSU CCT focus areas grant, *Utilizing pseudospectral tools to analyze stability of evolution equations*, 01.01.2007–05.31.2007, PI: Manuel Tiglio, Co-PI: Burak Aksoylu, Amount: 10,000 USD.

1. LSU CCT General Development Program, *Interplay between finite element method and evolution of Einstein's equations*, 01.01.2006–06.30.2007, PI: Burak Aksoylu, Co-PI: Manuel Tiglio, Amount: 40,000 USD.

Publications

Refereed Journal Articles

B. Aksoylu, F. Celiker, and O. Kilicer, *Nonlocal problems with local boundary conditions in higher dimensions*, Advances in Computational Mathematics, (2018), in press, doi.

Burak Aksoylu and Adem Kaya, *Conditioning and error analysis of nonlocal problems with local boundary conditions*, Journal of Computational and Applied Mathematics, 335 (2018), pp. 1-19, doi.

B. Aksoylu and F. Celiker, *Nonlocal problems with local Dirichlet and Neumann boundary conditions*, Journal of Mechanics of Materials and Structures, 12(4) (2017), pp. 425-437, doi.

B. Aksoylu, H.R. Beyer and F. Celiker, *Application and implementation of incorporating local boundary conditions into nonlocal problems*, Numerical Functional Analysis and Optimization, 38(9) (2017), pp. 1077-1114, doi.

B. Aksoylu, H.R. Beyer and F. Celiker, *Theoretical foundations of incorporating local boundary conditions into nonlocal problems* Reports on Mathematical Physics, 40(1) (2017), pp. 39-71, doi

H.R. Beyer, B. Aksoylu and F. Celiker, *On a class of nonlocal wave equations from applications*, Journal of Mathematical Physics, 57(6) (2016), 062902, doi.

B. Aksoylu and Z. Unlu, *Conditioning analysis of nonlocal integral operators in fractional Sobolev spaces*, SIAM Journal on Numerical Analysis, 52 (2014), pp. 653–677, doi.

B. Aksoylu and Z. Unlu, *Robust preconditioners for the high-contrast Stokes equation*, Journal of Computational and Applied Mathematics, 259 (2014), pp. 944–954, doi.

B. Aksoylu, S. Bond, E. Cyr, and M. Holst, *Goal-oriented error estimation and multilevel preconditioning for the Poisson-Boltzmann equation*, Journal of Scientific Computing, 52 (2012), pp. 202–225, doi.

B. Aksoylu and M. L. Parks, *Variational theory and domain decomposition for nonlocal problems*, Applied Mathematics and Computation, 217 (2011), pp. 6498–6515, doi.

B. Aksoylu and Z. Yeter, *Robust multigrid preconditioners for the high-contrast biharmonic plate equation*, Numerical Linear Algebra with Applications, 18 (2011), pp. 733–750, doi.

B. Aksoylu and T. Mengesha, *Results on nonlocal boundary value problems*, Numerical Functional Analysis and Optimization, 31 (2010), pp. 1301–1317, doi.

B. Aksoylu and Z. Yeter, *Robust multigrid preconditioners for cell-centered finite volume discretization of the high-contrast diffusion equation*, Computing and Visualization in Science, 13 (2010), pp. 229–245, doi.

B. Aksoylu and H. R. Beyer, *Results on the diffusion equation with rough coefficients*, SIAM Journal on Mathematical Analysis, 42 (2010), pp. 406–426, doi.

B. Aksoylu and H. R. Beyer, *On the characterization of asymptotic cases of the diffusion equation with rough coefficients and applications to preconditioning*, Numerical Functional Analysis and Optimization, 30 (2009), pp. 405–420, doi.

O. Korobkin, B. Aksoylu, M. Holst, E. Pazos, and M. Tiglio, *Solving the Einstein constraint equations on multi-block triangulations using finite element methods*, Classical Quantum Gravity, 26 (2009) p.145007(28 pp.), doi.

B. Aksoylu and H. Klie, *A family of physics-based preconditioners for solving elliptic equations on highly heterogeneous media*, Applied Numerical Mathematics, 59 (2009), pp. 1159–1186, doi.

B. Aksoylu, I. G. Graham, H. Klie, and R. Scheichl, *Towards a rigorously justified algebraic preconditioner for high-contrast diffusion problems*, Computing and Visualization in Science, 11 (2008) pp. 319–331, doi.

B. Aksoylu and M. Holst, *Optimality of multilevel preconditioners for local mesh refinement in three dimensions*, SIAM Journal on Numerical Analysis, 44 (2006), pp. 1005–1025, doi.

B. Aksoylu, A. Khodakovsky, and P. Schröder, *Multilevel solvers for unstructured surface meshes*, SIAM Journal on Scientific Computing, 26 (2005), pp. 1146–1165, doi.

B. Aksoylu, S. Bond, and M. Holst, *An odyssey into local refinement and multilevel preconditioning III: Implementation and numerical experiments*, SIAM Journal on Scientific Computing, 25 (2003), pp. 478–498, doi.

Book Chapters and Conference Proceedings

B. Aksoylu and George A. Gazonas, *Inhomogeneous local boundary conditions in nonlocal problems*, 6th European Conference on Computational Mechanics (ECCM 6) and 7th European Conference on Computational Fluid Dynamics (ECFD 7), (ECCOMAS2018) 11-15 June 2018, Glasgow, UK.

B. Aksoylu, F. Celiker, and O. Kilicer, *Nonlocal problems with local boundary conditions: An overview*, Handbook of Nonlocal Continuum Mechanics for Materials and Structures, Voyiadjis G. (eds), (2018), pp. 1–38, Springer, Cham, doi.

B. Aksoylu and F. Celiker, *Comparison of nonlocal operators utilizing perturbation analysis*, Springer Lecture Notes in Computational Science and Engineering, Proceedings of the European Numerical Mathematics and Advanced Applications ENUMATH 2015, B. Karasozen et al. (Eds.), 112, (2016), pp. 589–606, doi.

B. Aksoylu and Z. Unlu, *Numerical study of the high-contrast Stokes equation and its robust preconditioning*, Advances in Applied Mathematics and Approximation Theory, Contributions from AMAT2012, Springer Proceedings in Mathematics & Statistics, G.A. Anastassiou and D. Oktay (Eds.), 41, (2013), pp. 237–262, doi.

B. Aksoylu, T. Mengesha, and M. L. Parks, *Variational Theory and Domain Decomposition for Nonlocal Problems*, Extended abstract for 11th US National Congress on Computational Mechanics USNCCM2011, July 25-28, 2011.

B. Aksoylu, I. G. Graham, H. Klie, and R. Scheichl, *A rigorously justified robust algebraic preconditioner for high-contrast diffusion problems*, Extended abstract for the 8th World Congress on Computational Mechanics WCCM2008 and the 5th European Congress on Computational Methods in Applied Sciences and Engineering ECCOMAS2008, June 30-July 4, 2008.

B. Aksoylu and H. Klie, *Physics-based preconditioners for solving PDEs on highly heterogeneous media*, In proceedings of ICIAM 2007, Proc. Appl. Math. Mech. 7 (2007), pp. 1020703-1020704, doi.

Selected Technical Reports and Miscellanea

B. Aksoylu, D. Bernstein, S.D. Bond, and M. Holst, *Generating Initial Data in General Relativity Using Adaptive Finite Element Methods*, tech. rep., LSU CCT-TR-2008-9, (2008), arXiv 0801.3142.

B. Aksoylu, H. Klie, and M. F. Wheeler, *Physics-based preconditioners for porous media flow applications*, tech. rep., UT-Austin ICES Report 07-08, (2007).

B. Aksoylu and M. Holst, *An odyssey into local refinement and multilevel preconditioning II: Stabilizing hierarchical basis methods*, tech. rep., UT-Austin ICES Report 05-04, (2005).

B. Aksoylu and M. Holst, *An odyssey into local refinement and multilevel preconditioning I: Optimality of the BPX preconditioner*, tech. rep., UT-Austin ICES Report 05-03, (2005).

B. Aksoylu, M. Holst, and S. Bond, *Theoretical and implementation aspects of the BPX preconditioner in the three dimensional local mesh refinement setting*, tech. rep., UT-Austin ICES Report 04-50, (2004).

B. Aksoylu, *Adaptive multilevel numerical methods with applications in diffusive biomolecular reactions*, Ph.D. Dissertation, Department of Mathematics, Computational and Applied Mathematics Group, University of California, San Diego, (2001).

N. A. Baker, M. J. Holst, B. Aksoylu, R. E. Bank, J. A. McCammon, D. Sept, and F. Wang, *Toward Computational Cell Biology*, San Diego Supercomputer Center quarterly publication, EnVision, Vol. 16, No. 3, (2000).

Awards

Recipient of the University of Texas at Austin ICES postdoctoral fellowship.
Recipient of the Burroughs Wellcome Fund interdisciplinary LJIS predoctoral fellowship.
Recipient of the Ministry of Education Overseas Higher Education Scholarship given only to 2 students nationwide by the Turkish Government to pursue doctoral studies abroad.

Long Term Research Visits

5. Computational Mathematics Group, Sandia National Laboratories, Albuquerque, New Mexico, one week, November 2014.

4. Department of Mathematics, Louisiana State University, Baton Rouge, Louisiana, five weeks, the summer of 2011.

3. Applied Mathematics and Applications Group, Sandia National Laboratories, Albuquerque, New Mexico, one week, the summer of 2011.

2. Applied Mathematics and Applications Group, Sandia National Laboratories, Albuquerque, New Mexico, seven weeks, the summer of 2009.

1. Applied Mathematics and Applications Group, Sandia National Laboratories, Albuquerque, New Mexico, six weeks, the summer of 2008.

Invited Industry Talks

3. US Air Force Office of Scientific Research, Washington D.C., 06.15.2010,

2. ExxonMobil Corporate Strategic Research, Clinton, New Jersey, 07.02.2009,

1. Object Reservoir, Research and Development Division, Austin, Texas, 01.13.2009.

Conference Organization

5. Minisymposium organizer, European Conference on Numerical Mathematics and Advanced Applications ENUMATH2015, Ankara, Turkey, 09.14.2015,

4. Local organizing committee member, International Conference on Applied Mathematics and Approximation Theory AMAT2012, Ankara, Turkey, 05.17-20.2012,

3. Minisymposium organizer, 7th International Congress on Industrial and Applied Mathematics ICIAM2011, Vancouver, British Columbia, 07.18-22.2011,

2. Minisymposium organizer, SIAM Conference on Mathematical Aspects of Materials Science, Philadelphia, Pennsylvania, 05.23-26.2010,

1. Minisymposium organizer, SIAM Conference of Mathematical and Computational Issues in the Geosciences, Avignon, France, 06.09.2005.

Dissertation and Thesis Directed

3. Orsan Kilicer; MSc, Mathematics, TOBB University of Economics and Technology, **advisor**, graduation date: September 2015, *Extension of nonlocal problems with local boundary conditions from 1 dimension to 2 and 3 dimensions.*

2. Zuhal Unlu; PhD, Mathematics, Louisiana State University, **advisor**, graduation date: August 2014, *Robust preconditioners for the high-contrast elliptic partial differential equations.*

1. Furkan Erden; MSc, Mathematics, TOBB University of Economics and Technology, **advisor**, graduation date: September 2014, *The role of subdomain size in the condition number of nonlocal problems.*

Dissertation and Thesis Committee Member

6. Yunus Emre Muslubas; MS, Aerospace Engineering, Middle East Technical University, committee member, graduation date: October 2015, advisor: Sinan Eyi, *Choice and development of a preconditioner for Newton-GMRES algorithm.*

5. Hamide Hande Keskiner; MS, Computer Engineering, Middle East Technical University, committee member, graduation date: September 2015, advisor: Murat Manguoglu, *Improved physarum polycephalum shortest path algorithm with preconditioned iterative methods.*

4. Bengisen Pekmen; PhD, Mathematics, Middle East Technical University, committee member, graduation date: March 2014, advisor: Munevver Tezer-Sezgin, *DRBEM applications in fluid dynamics problems and DQM solutions of hyperbolic equations.*

3. Sevtap Ozisik; PhD, Mathematics, Middle East Technical University, committee member, graduation date: February 2012, advisors: Songul Kaya Merdan and Beatrice Riviere, Rice University, *Fully computable convergence analysis of discontinuous Galerkin finite element approximation with an arbitrary number of levels of hanging nodes.*

2. Irina Craciun; undergraduate, Mathematics, Louisiana State University, Mathematics, advisor, graduated in S2008 receiving top undergraduate award, Senior Mathematics Award. She presented her work at Louisiana Academy of Science and Sandia National Labs

1. Ernst Nils Dorband; PhD, Physics and Astronomy, Louisiana State University, committee member, graduation date: May 2007, advisor: Manuel Tiglio, *Computing and analyzing gravitational radiation in black hole simulations using a new multi-block approach to numerical relativity.*

Technical Reviewer and Board Duties

26. Member of editorial board, Journal of Peridynamics and Nonlocal Modeling, Springer, 2018–present,
25. Member of editorial board, Bilim ve Teknik (Science and Technology), Turkey's best selling monthly popular science magazine published by the Scientific and Technological Research Council of Turkey, 2012–2014,
24. Member of steering committee, Scientific and Technological Research Council of Turkey, Division for Training of Scientists, 2013–2014,
23. National Science Foundation, Numerical Methods with Applications review panel,
22. National Science Foundation, Computational Mathematics review panel,
21. National Science Foundation, Algorithms for Modern Power Systems review panel,
20. Scientific and Technological Research Council of Turkey, Applied Mathematics review panel,
19. US Department of Energy Advanced Scientific Computing Research early career reviewer,
18. SIAM Journal on Numerical Analysis,
17. SIAM Journal on Scientific Computing,
16. SIAM Multiscale Modeling and Simulation,
15. AMS Mathematics of Computation,
14. Applied Numerical Mathematics,
13. Computer Methods in Applied Mechanics and Engineering,
12. Numerical Functional Analysis and Optimization,
11. Applied Mathematics and Computation,
10. Computational Methods in Applied Mathematics,
9. Communications in Computational Physics,
8. Turkish Journal of Mathematics,
7. Hacettepe Journal of Mathematics and Statistics,
6. Physics Letters A,
5. Journal of Mathematical Imaging and Vision,
4. Digital Signal Processing,
3. Proceedings of European Conference on Numerical Mathematics and Advanced Applications,
2. Proceedings of the Domain Decomposition Methods Conference,
1. Proceedings 7th IEEE International Symposium on Cluster Computing and the Grid.

ETU Teaching History

Mat 102	Calculus II	Smr2016
Mat 495	Project I	Smr2016
Mat 499	Undergraduate Research Topics	Smr2016
Mat 112	Analytic Geometry	S2016
Mat 395	Numerical Analysis	S2016
Mat 496	Project II	S2016
Mat 112	Analytic Geometry	S2015
Mat 101	Calculus I	S2015
Mat 496	Project II	S2015
Mat 521	Graduate Numerical Analysis	F2014
Mat 101	Calculus I	F2014
Mat 562	Graduate Numerical Linear Algebra	Smr2014
Mat 102	Calculus II	Smr2014
Mat 495	Project I	Smr2014
Mat 521	Graduate Numerical Analysis	F2013
Mat 202	Ordinary Differential Equations	F2013
Mat 201	Linear Algebra	Smr2013
Mat 495	Project II	S2013
Mat 561	Graduate Topics in Scientific Computing	S2013
Mat 112	Analytic Geometry	S2013
Mat 102	Calculus II	S2013
Mat 666	Graduate Theoretical Foundations of Finite Element Method	F2012
Mat 215	Ordinary Differential Equations	F2012
Mat 562	Graduate Numerical Linear Algebra	S2012
Mat 112	Analytic Geometry	S2012
Mat 496	Project II	S2012
Mat 521	Graduate Numerical Analysis	F2011
Mat 215	Ordinary Differential Equations	F2011
Mat 495	Project I	F2011
Mat 395	Numerical Analysis	S2011
Mat 496	Project II	S2011
Mat 102	Calculus II	S2011
Mat 495	Project I	F2010
Mat 101	Calculus I	F2010

LSU Teaching History

Math 1550	Analytic Geometry and Calculus I	S2010
Math 4004	Mathematics Education Capstone Course	S2009
Math 4038	Mathematics Methods in Engineering	S2009
Math 4004	Mathematics Education Capstone Course	S2008
Math 4153	Finite Dimensional Vector Spaces	S2007
Math 4004	Mathematics Education Capstone Course	S2007
Math 7390-2	Graduate Scientific Computing	F2006
Math 4066	Numerical Analysis II	S2006
Math 4065	Numerical Analysis I	F2005

Recruitment of Students and Faculty, Service

F2011–S2016, Graduate program committee, ETU Department of Mathematics.
S2011–S2016, Organizer, Departmental research colloquia, ETU Department of Mathematics.
F2007–S2008, Chair, Undergraduate and graduate competitive research program committee, CCT
F2007–S2010, Member, Undergraduate advising committee, Department of Mathematics
F2005–S2010, Member, Scientific computing and numerical analysis undergraduate concentration committee, Department of Mathematics
F2005–S2006, Member, Postdoctoral recruitment committee, CCT

Invited or Conference Presentations

51. Minisymposium presentation, 13th World Congress in Computational Mechanics, New York City, New York, 07.25.2018,

50. Minisymposium presentation, 6th European Conference on Computational Mechanics (ECCM 6) and 7th European Conference on Computational Fluid Dynamics (ECFD 7), (ECCOMAS2018), Glasgow, UK, 06.13.2018,

49. Invited seminar talk, Department of Mathematics, Wayne State University, Detroit, Michigan, 02.20.2017,

48. Invited talk, U.S. Army Research Laboratory, Aberdeen Proving Ground, Maryland, 12.08.2016,

47. Invited talk, Department of Mathematics, University of Maryland at College Park, College Park, Maryland, 11.03.2015,

46. Invited talk, Department of Mathematics, Wayne State University, Detroit, Michigan, 11.02.2015,

45. Invited workshop presentation, Workshop on Nonlocal Models in Mathematics, Computation, Science, and Engineering, Oak Ridge National Laboratory, Oak Ridge, Tennessee, 10.26-28.2015,

44. Plenary talk, European Conference on Numerical Mathematics and Advanced Applications ENUMATH2015, Ankara, Turkey, 09.15.2015,

43. Minisymposium presentation, European Conference on Numerical Mathematics and Advanced Applications ENUMATH2015, Ankara, Turkey, 09.14.2015,

42. Minisymposium presentation, 8th International Congress on Industrial and Applied Mathematics ICIAM2015, Beijing, China, 08.11.2015,

41. Invited talk, Institute for Numerical Simulation, Universitaet Bonn, Bonn, Germany, 04.14.2015,

40. Invited talk, Computational Mathematics Group, Sandia National Laboratories, Albuquerque, New Mexico, 11.17.2014,

39. Contributed workshop presentation, 13th International Workshop on Dynamical Systems and Applications IWDSA2014, TOBB University of Economics and Technology, Ankara, Turkey, 06.14.2014,

38. Contributed conference presentation, 9th Ankara Mathematics Days AMG2014, Atilim University, Ankara, Turkey, 06.12–13,2014,

37. Minisymposium presentation, SIAM Conference on Analysis of Partial Differential Equations, Orlando, Florida, 12.08.2013,

36. Invited seminar talk, Department of Mathematics, Wayne State University, Detroit, Michigan, 07.03.2013,

35. Minisymposium presentation, SIAM Conference on Mathematical Aspects of Materials Science, Philadelphia, Pennsylvania, 06.11.2013,

34. Contributed workshop presentation, Workshop on Nonlocal Models and Peridynamics, Technische Universität Berlin, Berlin, Germany, 11.07.2012,

33. Invited seminar talk, Mathematisches Institut, Tübingen, Tübingen, Germany, 11.02.2012,

32. Invited presentation, Statistical and Applied Mathematical Sciences Institute (SAMSI), Summer Program on Nonlocal Continuum Models for Diffusion, Mechanics, and Other Applications, Research Triangle Park, North Carolina, 06.25-29.2012,

31. Invited talk, Workshop on FEM and BEM, Institute of Applied Mathematics, Middle East Technical University, Ankara, Turkey, 05.26.2012,

30. Invited seminar talk, Institute of Applied Mathematics, Middle East Technical University, Ankara, Turkey, 05.22.2012,

29. Contributed conference presentation, International Conference on Applied Mathematics and Approximation Theory AMAT 2012, TOBB University of Economics and Technology, Ankara, Turkey, 05.19.2012,

28. Invited presentation, Workshop on Peridynamics, Dissipative Particle Dynamics and the Mori-Zwanzig Formulation, Division of Applied Mathematics, Brown University, Providence, Rhode Island, 04.10-11.2012,

27. Invited seminar talk, Department of Mathematics, Istanbul Technical University, Istanbul, Turkey, 08.24.2011,

26. Minisymposium presentation, 11th US National Congress on Computational Mechanics, Minneapolis, Minnesota, 07.26.2011,

25. Minisymposium presentation, 7th International Congress on Industrial and Applied Mathematics ICIAM2011, Vancouver, British Columbia, 07.20.2011,

24. Invited colloquium talk, Department of Mathematics and Statistics, University of New Mexico, Albuquerque, 07.14.2011,

23. Invited seminar talk, Department of Mathematics, Middle East Technical University, Ankara, Turkey, 03.03.2011,

22. Minisymposium presentation, SIAM Conference on Mathematical Aspects of Materials Science, Philadelphia, Pennsylvania, 05.24.2010,

21. Invited colloquium talk, Faculty of Engineering and Natural Sciences, Sabanci University, Istanbul, Turkey, 05.07.2010,

20. Invited colloquium talk, Department of Mathematics and Computer Sciences, Bahcesehir University, Istanbul, Turkey, 05.05.2010,

19. Invited colloquium talk, Department of Mathematics and Statistics, Texas Tech University, Lubbock, Texas, 02.15.2010,

18. Invited colloquium talk, Department of Mathematics, Washington State University, Pullman, 04.29.2009,

17. Invited colloquium talk, Science Programs, Washington State University, Vancouver, 04.27.2009,

16. Invited colloquium talk, Computational Science Program, The University of Texas at El Paso, 02.23.2009,

15. Invited colloquium talk, Department of Mathematics and Statistics, University of New Mexico, Albuquerque, 02.10.2009,

14. Invited colloquium talk, Department of Mathematical Sciences, Michigan Technological University, Houghton, 01.26.2009,

13. Invited talk, Applied Mathematics and Applications Group, Sandia National Laboratories, Albuquerque, New Mexico, 06.11.2008,

12. Invited talk, Applied Mathematics and Applications Group, Sandia National Laboratories, Albuquerque, New Mexico, 02.04.2008,

11. Invited colloquium talk, Department of Mathematical and Statistical Sciences, University of Colorado at Denver, 01.28.2008,

10. Invited talk, Department of Mathematics and Computer Science, Emory University, Atlanta, Georgia, 09.25.2007,

9. Minisymposium presentation, 6th International Congress on Industrial and Applied Mathematics ICIAM2007, Zurich, Switzerland, 07.17.2007,

8. Contributed conference presentation, Conference on Preconditioning Techniques for Large Sparse Matrix Problems in Scientific and Industrial Applications, Toulouse, France, 07.10.2007,

7. Minisymposium presentation, SIAM Conference of Mathematical and Computational Issues in the Geosciences, Santa Fe, New Mexico, 03.20.2007,

6. Plenary talk, Workshop on "Numerical Methods for Differential Equations", Izmir Institute of Technology, Izmir, Turkey, 05.12.2006,

5. Minisymposium presentation, SIAM Conference of Mathematical and Computational Issues in the Geosciences, Avignon, France, 06.09.2005,

4. Contributed conference presentation, 5th International Congress on Industrial and Applied Mathematics ICIAM2003, Sydney, Australia, 07.08.2003,

3. Invited talk, Mathematical Sciences Institute, Australian National University, Canberra, Australia, 07.17.2003,

2. Invited talk, School of Mathematics and Statistics, University of New South Wales, Sydney, Australia, 07.03.2003,

1. Contributed conference presentation, 7th Copper Mountain Conference on Iterative Methods, Copper Mountain, Colorado, 03.29.2002.

Other Scientific Presentations

8. Poster presentation, A Special Conference: Open Problems in Mathematical and Computational Sciences, Istanbul, Turkey, 09.18–20.2013,

7. Contributed presentation, International Conference on Applied and Computational Mathematics, Middle East Technical University, Ankara, Turkey, 10.05.2012,

6. Contributed presentation, 7th International Congress on Industrial and Applied Mathematics ICIAM2011, Vancouver, British Columbia, 07.18.2011,

5. Applied dynamics research group seminar talk, Department of Mathematics, Middle East Technical University, Ankara, Turkey, 05.06.2011,

4. Seminar talk, Department of Mathematics, TOBB University of Economics and Technology, Ankara, Turkey, 10.22.2010,

3. Colloquium talk, Department of Mathematics, Louisiana State University, Baton Rouge, 01.15.2009,

2. Seminar talk, Department of Mathematics, Louisiana State University, Baton Rouge, 10.01.2007,

1. Contributed talk, Industrial Affiliates Meetings, Center for Subsurface Modeling, The University of Texas at Austin, 10.26.2004,

Languages

Turkish (native), English (excellent), German (intermediate).