Curriculum Vitae
Dr. rer. nat. Agnieszka Międlar

EDUCATION

Dr. rer. nat.	2011	Mathematics, Technische Universität Berlin, Germany
Mgr. inż.	2007	Computer Science, Politechnika Wrocławska, Poland

EMPLOYMENT HISTORY

Virginia Tech, Blacksburg

- Associate Professor with Tenure, Department of Mathematics, August 2022 – present

University of Kansas, Lawrence

- Associate Professor with Tenure, Department of Mathematics, August 2021 – August 2022
- Assistant Professor, Department of Mathematics, August 2016 – August 2021

University of Minnesota, Minneapolis

- Postdoctoral Researcher, Department of Computer Science and Engineering, November 2015 – August 2016

Technische Universität Berlin, Germany

- Postdoctoral Research Assistant, European Research Council (ERC) Research Grant Modeling, Simulation and Control of Multi-Physics Systems, Institute of Mathematics, October 2015
- Guest Professor, Institute of Mathematics, April 2015 – September 2015
- Postdoctoral Research Assistant, ERC Research Grant Modeling, Simulation and Control of Multi-Physics Systems, Institute of Mathematics, December 2014 – March 2015
- Postdoctoral Research Assistant, Research Group Modeling, Numerics, Differential Equations, Institute of Mathematics, October 2012 – February 2014
- Postdoctoral Research Assistant, Research Group Modeling, Numerics, Differential Equations, Institute of Mathematics, May 2011 – May 2012

Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

- Postdoctoral Researcher, SB Mathematics Institute of Computational Science and Engineering (MATHICSE), Chair of Numerical Algorithms and High-Performance Computing (ANCHP), March 2014 – November 2014

Technische Universität Braunschweig, Germany

- W2 Deputy Professor (W2 Vertretungsprofessor) for Mathematical Optimization, Carl-Friedrich-Gauß Faculty, April 2012 – September 2012

RESEARCH RECORD

Journal Articles

Submitted

1. H. Al Daas, G. Ballard, P. Cazeaux, E. Hallman, A. Międlar, M. Pasha, T. W. Reid and A. K. Saibaba, *Randomized Algorithms for Rounding in the Tensor-Train Format.* Submitted to *SIAM J. Sci. Comput.* Preprint https://arxiv.org/abs/2110.04393.

Published

1. Z. R. Atkins, C. J. Vogl, A. Madduri, N. Duan, A.K. Międlar, *Distribution System Voltage Prediction from Smart Inverters using Decentralized Regression.* 2021 IEEE Power & Energy Society General Meeting (PESGM), pp. 1–5, 2021. Preprint https://arxiv.org/abs/2101.04816.

2. M. El-Guide, A. Międlar and Y. Saad, *A rational approximation method for solving acoustic nonlinear eigenvalue problem.* Engineering Analysis with Boundary Elements, Vol. 111, pp. 44–54, 2020. Preprint https://arxiv.org/abs/1906.03938.

3. S. Milićević, V. R. Kostić, Lj Cvetković, and A. Międlar. *An implicit algorithm for computing the minimal Geršgorin set.* Filomat 33, no. 13, pp. 4229–4238, 2019.

4. B. Gavin, A. Międlar and E. Polizzi, *FEAST eigensolver for nonlinear eigenvalue problems.* Journal of Computational Science, Vol. 27, pp. 107–117, 2018. arXiv:1801.09794.

5. S. Ubaru, A. Międlar, Y. Saad and and J. R. Chelikowsky, *Formation enthalpies for transition metal alloys using machine learning.* Physical Review B 95, 214102-1–214102-12, 2017.

6. V. R. Kostić, A. Międlar and Lj. Cvetković, *An algorithm for computing minimal Geršgorin sets.* Numerical Linear Algebra with Applications 23(2):272–290, 2016.

7. S. Giani, L. Grubišić, A. Międlar and J. S. Ovall, *Robust error estimates for approximations of non-self-adjoint eigenvalue problems.* Numerische Mathematik, 133(3):471–495, 2016.

8. C. Conrads, V. Mehrmann and A. Międlar, *Adaptive Numerical Solution of Eigenvalue Problems arising from Finite Element Models. AMLS vs. AFEM.* In A Panorama of Mathematics: Pure and Applied, Contemporary Mathematics, eds. da Fonseca et al., 658:197–225, 2016, American Mathematical Society.

9. V. Kostić, A. Międlar and J. Stolwijk, *On matrix nearness problems: distance to delocalization.* SIAM Journal on Matrix Analysis and Applications, 36(2):435–460, 2015.

10. M. Lemke, A. Międlar, J. Reiss, V. Mehrmann and J. Sesterhenn, *Model Reduction of Reactive Processes.* In Active Flow and Combustion Control 2014, ed. R. King, Volume 127 of Notes on Numerical Fluid Mechanics and Multidisciplinary Design, pp. 397–413, Springer International Publishing, Switzerland, 2015.

11. C. Carstensen, J. Gedicke, V. Mehrmann and A. Międlar, *An adaptive finite element method with asymptotic saturation for eigenvalue problem.* Numerische Mathematik, 128(4):615–634, 2014.

12. M. Arioli, J. Liesen, A. Międlar and Z. Strakoš, *Interplay between discretization and algebraic computation in adaptive numerical solution of elliptic PDE problems.* Gesellschaft für Angewandte Mathematik und Mechanik (GAMM) Mitteilungen, Volume 36, pp. 102–129, John Wiley & Sons, 2013.

13. C. Carstensen, J. Gedicke, V. Mehrmann and A. Międlar, *An adaptive homotopy approach for non-selfadjoint eigenvalue problems.* Numerische Mathematik, 119(3):557–583, 2011.

14. V. Mehrmann and A. Międlar, *Adaptive computations of smallest eigenvalues of self-adjoint elliptic partial differential equations.* Numerical Linear Algebra with Applications, 18(3):387–409, 2011.

15. S. Friedland, V. Mehrmann, A. Międlar and M. Nkengla, *Fast low rank approximations of matrices and tensors*, Electronic Journal of Linear Algebra (ELA), **22**, pp. 1031–1048, 2011.

Book Chapters

1. A. Międlar, *A Story on Adaptive Finite Element Computations for Elliptic Eigenvalue Problems.* In Numerical Algebra, Matrix Theory, Differential-Algebraic Equations and Control Theory, Festschrift in Honor of Volker Mehrmann, eds. P. Benner, M. Bollhöfer, D. Kressner, C. Mehl and T. Stykel, pp. 223–255, Springer International Publishing, Switzerland, 2015. (peer-reviewed)

Short Conference Proceedings

1. L. Grubišić, A. Międlar and J. S. Ovall, *Hierarchically enhanced adaptive finite element method for PDE eigenvalue/eigenvector approximations.* Numerical Solution of PDE Eigenvalue Problems, Mathematisches Forschungsinstitut Oberwolfach, Report No. 56/2013, pp. 3262–3265, 2013.

2. V. Mehrmann and A. Międlar, *Error bounds for non-selfadjoint PDE eigenvalue problems.* Proceedings in Applied Mathematics and Mechanics (PAMM), No. 10, pp. 551–552, 2010. (peer-reviewed)

3. V. Mehrmann and A. Międlar, *Adaptive solution of elliptic PDE-eigenvalue problems.* V. Mehrmann and A. Międlar, Proceedings in Applied Mathematics and Mechanics (PAMM), No. 9, pp. 583–584, 2009. (peer-reviewed)

4. A. Międlar and V. Mehrmann, *Adaptive solution of elliptic PDE-eigenvalue problems.* Linear and Nonlinear Eigenproblems for PDEs, Mathematisches Forschungsinstitut Oberwolfach, Report No. 37/2009, pp. 265–266, 2009.

Other Publications

1. M. Bello, J. Biggs, A. Międlar, A. Mócsy, J. Orr, J. P. Ralston and D. Tapia Takaki, *The CERN-IARI Project and New Opportunities for Integrated Arts Research Collaborations at Universities and National Laboratories*. Snowmass 2021 - Letter of Interest https://www.snowmass21.org/.

Theses

1. A. Międlar, *Inexact Adaptive Finite Element Methods for Elliptic PDE Eigenvalue Problems*, PhD Thesis, Technical University Berlin, March 2011, http://opus.kobv.de/tuberlin/volltexte/2011/3059/.

2. A. Międlar, *Numerical Linear Algebra Algorithms for GPS*, Master Thesis, Wrocław University of Technology, Wrocław, July 2007.

Work in Preparation

1. N. Kapur, A. Międlar, A. K. Saibaba and E. de Sturler, *Randomized FEAST Algorithm for Generalized Hermitian Eigenvalue Problems with Probabilistic Error Analysis*.

2. Y. Saad, M. El-Guide and A. Międlar, *A rational approximation method for the nonlinear eigenvalue problem*. Preprint https://arxiv.org/abs/1901.01188.

3. T. Fukaya, A. Międlar and Y. Nakatsukasa, *Moving a specified eigenvalue or eigenvector in generalized and quadratic eigenvalue problems*.

Recent Invited Research Presentations

1. Międlar, A. (2022, July 1). *A Rational Approximation Method for The Nonlinear Eigenvalue Problems*, 30 Years of Acta Numerica, June 26–July 2, 2022, The Mathematical Research and Conference Center (MRCC), Będlewo, Poland. (Invited)

2. Międlar, A. (2022, June 15). *Towards Randomized Eigensolvers for Exascale Computing*, Householder Symposium XXI, June 12–17, 2022, Selva di Fasano, Italy. (Invited Plenary Talk).

3. Międlar, A. (2022, June 11). *Towards Resilient and Robust Asynchronous Linear Systems Solvers for Edge Computing*, "A Journey in Numerical Linear Algebra: A Workshop in Honor of Michele Benzi's 60th Birthday", June 10–11, 2022, Department of Mathematics of the University of Pisa, Pisa, Italy. (Invited Talk).

4. Międlar, A. (2022, May 5). *Challenges for Eigenvalue Computations in Breakthrough Applications*, 47th University of Arkansas Spring Lecture Series *Numerical Linear Algebra: from Scientific Computing to Data Science Applications*, May 4–6, 2022, University of Arkansas, Fayetteville, USA. (Invited Speaker).

5. Międlar, A. (2021, November 11). *Randomized FEAST Algorithm for Generalized Hermitian Eigenvalue Problems with Probabilistic Error Analysis*, Numerical Methods and Scientific Computing (NMSC21) dedicated to Claude Brezinski for his 80th birthday and to Numerical Algorithms for its 30th birthday, November 8–12, 2021, CIRM Luminy, France. (Invited)

6. Międlar, A. (2021, October 28). *Randomized FEAST Algorithm for Generalized Hermitian Eigenvalue Problems with Probabilistic Error Analysis*, Computational Mathematics and Applications Seminar, University of Oxford, UK. (Invited)

7. Międlar, A. (2021, October 20). *Randomized FEAST Algorithm for Generalized Hermitian Eigenvalue Problems with Probabilistic Error Analysis*, Applied Mathematics and Scientific Computing Seminar, Temple University, Philadelphia, US. (Invited)

8. Międlar, A. (2021, September 22). *p-Hierarchical Enrichment of Eigenvalue/Eigenvector Approximations*, XII Forum of Partial Differential Equations, September 19–25, 2021, The Mathematical Research and Conference Center (MRCC) Będlewo & Online Poland. (Keynote Speaker)

9. Międlar, A. (TBD). *TBD*, 30 Years of Acta Numerica, June 14–19, 2021, The Mathematical Research and Conference Center (MRCC), Będlewo, Poland. Postponed to 2022 due to COVID-19. (Invited)

10. Międlar, A. (2021, May 26). *Randomized FEAST Algorithm for Generalized Hermitian Eigenvalue Problems with Probabilistic Error Analysis*, Numerical Analysis in Data Science Transition Virtual Workshop, The Statistical and Applied Mathematical Sciences Institute (SAMSI) Program on Numerical Analysis in Data Science, August 26, 2020 – May 26, 2021. (Invited)

11. Międlar, A. (Canceled due to COVID-19). *TBD*, Workshop on Numerical Linear Algebra, Foundations of Computational Mathematics (FoCM) 2020, June 22–23, 2020, Simon Fraser University, Vancouver BC, Canada. (Invited)

12. Międlar, A. (TBD). *Towards Randomized Eigensolvers for Exascale Computing*, Householder Symposium XXI, June 14–19, 2020, Selva di Fasano, Italy. Postponed to 2022 due to COVID-19. (Invited Plenary Talk)

13. Międlar, A. (Canceled due to COVID-19) *Rational Approximation Methods for Large-Scale Nonlinear Eigenvalue Problems*, Workshop on Theoretical and Numerical Tools for Nanophotonics. February 12–14, 2020, Berlin, Germany. (Invited)

14. Międlar, A. (2019, October 20). *A Rational Approximation Method for Solving Acoustic Nonlinear Eigenvalue Problems*, Minisymposium on *Recent Developments of Adaptive Mesh Methods for Nonlinear Partial Differential Equations and Applications*, 5th Annual Meeting of SIAM Central States Section. October 19–20, 2019, Iowa State University, Ames, Iowa, USA. (Invited)

15. Międlar, A. (2019, October 8). *Randomized Methods and the Future of Numerical Linear Algebra*, ERC Synergy EMC2 Kick-Off Meeting. October 7–8 , 2019, Sorbonne Université, Paris, France. (Invited)

16. Międlar, A. (2019, July 15). *The Nonlinear FEAST Algorithm*, Minisymposium on *Nonlinear and Multiparameter Eigenvalue Problems*, International Congress on Industrial and Applied Mathematics (ICIAM), July 15–19, 2019, Valencia, Spain. (Invited)

17. Międlar, A. (2019, June 13). *A Rational Approximation Method for Large-Scale Nonlinear Eigenvalue Problems*, Workshop on *Mathematical and Numerical Analysis of Electronic Structure Models*, June 10–16, 2019, Suzhou, China. (Invited)

18. Międlar, A. (2019, March 18). *Chasing Eigenvalues in Breakthrough Applications*, Colloquium, Department of Physics and Astronomy, University of Kansas, Lawrence, USA. (Invited)

19. Międlar, A. (2019, February 28). *The Nonlinear FEAST Algorithm*, Minisymposium on *Algorithms and Software for Nonlinear Eigenvalue Problems*, Society for Industrial and Applied Mathematics (SIAM) Conference on Computational Science and Engineering (CSE19), February 25–March 1, 2019, Spokane, WA, USA. (Invited)

20. Międlar, A. (2018, November 6). *The Nonlinear FEAST Algorithm for Large-Scale Nonlinear Eigenvalue Problems*, Applied Numerical Analysis Seminar, Department of Mathematics, Virginia Tech, Blacksburg, VA, USA. (Invited)

21. Międlar, A. (2018, October 29). *The Nonlinear FEAST Algorithm for Large-Scale Nonlinear Eigenvalue Problems*, Numerical Analysis Seminar, Department of Mathematics, Texas A&M University, College Station, TX, USA. (Invited)

22. Międlar, A. (2018, October 20). *From Perron-Frobenius Theorem to Google PageRank Algorithm: The Power of Numerical Linear Algebra*, Midwest Mathematics Inclusion and Diversity Workshop for Undergraduates (MMIDWU 2018), October 20–21, 2018, Iowa State University, Ames, IA. (Invited Featured Speaker and Panelist)

23. Międlar, A. (2018, October 6). *A Posteriori Error Estimates for hp-Adaptive Approximations of Non-Selfadjoint PDE Eigenvalue Problems*, Minisymposium on *Recent Advances in Numerical PDEs*, 4th Annual Meeting of Society for Industrial and Applied Mathematics (SIAM) Central States Section, University of Oklahoma, OK, USA. (Invited)

24. Międlar, A. (2018, July 9). *The Nonlinear FEAST Algorithm*, Minisymposium on *Recent Advances in Eigenvalue Solvers*, Society for Industrial and Applied Mathematics (SIAM) Annual Meeting, Portland, OR, USA. (Invited)

25. Międlar, A. (2018, June 11). *Flexible Krylov-type Methods for Electronic Structure Calculations*, Minisymposium on *PDE Eigenvalue Problems: Computational Modeling and Numerical Analysis*, 6th European Conference on Computational Mechanics (Solids, Structures and Coupled Problems) ECCM 6 and 7th European Conference on Computational Fluid Dynamics (ECCM - ECFD) Glasgow, UK. (Invited)

26. Międlar, A. (2018, May 28). *Reducing FEM Eigenvalue/Eigenvector Computations via p-hierarchical Enrichment*, Workshop on *Adaptive Numerical Methods for Partial Differential Equations with Applications*, Banff International Research Station (BIRS), Banff, Canada. (Invited)

27. Międlar, A. (2017, October 20). *Flexible Eigenvalue Solvers for Electronic Structure Calculations*, Colloquium, Department of Mathematics and Statistics, University of Missouri-Kansas City, MO, USA. (Invited)

28. Międlar, A. (2017, October 1). *Reducing FEM Computations of Eigenvalues via p-Hierarchical Enrichment*, Minisymposium on *Model Reduction and Data Assimilation*, 3rd Annual Meeting of Society for Industrial and Applied Mathematics (SIAM) Central States Section, Fort Collins, CO, USA. (Invited)

29. Międlar, A. (2017, June 22). *Super-Converging Ritz Values via p-Hierarchical Inverse Iteration*, Householder Symposium XX on Numerical Linear Algebra, Blacksburg, VA , USA. (Invited)

30. Międlar, A. (2017, February 28). *Flexible Eigensolvers in Electronic Structure Calculations*, Minisymposium on *Approximation of (Parametrized) Eigenvalue Problems*, Society for Industrial and Applied Mathematics (SIAM) Conference on Computational Science and Engineering (CSE17), Atlanta, USA. (Invited)

31. Międlar, A. (2017, January 5). *Moving Eigenvalues and Eigenvectors by Simple Perturbations*, Simulation for the Environment: Reliable and Efficient Numerical Algorithms Seminar, Institut National de Recherche en Informatique et Automatique (INRIA), Paris, France. (Invited)

32. Międlar, A. (2016, August 30). *Flexible Krylov-type Methods for Electronic Structure Eigenvalue Computations*, Workshop on *Coupled Mathematical Models for Physical and Biological Nanoscale Systems and Their Applications*, Banff International Research Station (BIRS), Banff, Canada. (Invited)

33. Międlar, A. (2016, July 22). *Moving Eigenvalues and Eigenvectors by Simple Perturbations*, Minisymposium on *Structured Perturbation Theory in Linear Algebra*, 7th European Congress of Mathematics (ECM), Berlin, Germany. (Invited)

34. Międlar, A. (2016, July 4–8). *Flexible Krylov Subspace Interior Eigensolvers*, Workshop on *Mathematical and Numerical Analysis of Electronic Structure Models*, Centre Européen de Calcul Atomique et Moléculaire (CECAM), 2016, Roscoff, France. (Invited)

Other Presentations

1. Międlar, A. (2022, April 20–24) (with J. Biggs (NY), D. Tapia Takaki (KU) and J. Orr (Spencer Museum of Art)). Art Exhibition *Collective Entanglements*, https://www.spencerart.ku.edu/iari/inquiries/collective-entanglements#Exhibition, Spencer Museum of Art, The University of Kansas, 2022. (Invited)

2. Międlar, A. (2021, April 7) (with J. Biggs (NY), D. Tapia Takaki (KU), J. Orr (Spencer Museum of Art), C. Hurshman (KU) and O. Johnson (KU)). *Singular Value Decomposition - A research and development perforance by The Arts at CERN - IARI Collaboration* featuring V. Fraley, E. Maneein and the SEVEN)SUNS String Quartet, Cristin Tierney Gallery, Live Stream Performance, 2021. (Invited)

3. Międlar, A. (2020, October 2020) (with J. Biggs (NY), D. Tapia Takaki (KU), J. Orr (Spencer Museum of Art) and C. Hurshman (KU)). *Dear Arts-Integration Community: A Letter of Inquiry from the CERN-IARI Collaboration*, Ground Works - The Alliance for the Arts in Research Universities, Special Session, the 8th a2RU National Conference, October 15–30, 2020. Virtual Conference. (Invited)

4. Międlar, A. (2020, June 12). *Wroclaw to Lawrence – Numerical Analyst on the Road*, Integrated Arts Research Initiative (IARI), Spencer Museum of Art, University of Kansas. (Invited)

5. Międlar, A. (2020, February 29). *Numerical Analysis*, Graduate Visiting Weekend 2020, Department of Mathematics, University of Kansas.

6. Międlar, A. (2019, November 22). *Numerical Analysis*, Jayhawk Mathematics Sneak Peak 2019, Department of Mathematics, University of Kansas.

7. Międlar, A. (2019, April 5). *Developing Your Professional Webpage* (with Paul Cazeaux), Graduate Student Seminar, Department of Mathematics, University of Kansas.

8. Międlar, A. (2019, February 20). *The NLFEAST Algorithm for Large-Scale Nonlinear Eigenvalue Problems*, Computational and Applied Mathematics (CAM) Seminar, Department of Mathematics, University of Kansas.

9. Międlar, A. (2018, March 3). *Numerical Analysis*, Graduate Visiting Weekend 2018, Department of Mathematics, University of Kansas.

10. Międlar, A. (2018, February 14). *FEAST Algorithm and Flexible Krylov-type Eigensolvers*, Computational and Applied Mathematics (CAM) Seminar, Department of Mathematics, University of Kansas.

11. Międlar, A. (2017, September 22). *Why Numerical Linear Algebra?*, Guest Lecturer, EECS 639 Course, Department of Electrical Engineering and Computer Science, University of Kansas. (Invited)

12. Międlar, A. (2017, May 16–19). *Flexible Krylov Subspace Interior Eigensolvers*, Institute for Mathematics and its Applications (IMA) Workshop on *Mathematical Modeling of 2D Materials*, Minneapolis, MN, USA. (Poster presentation).

13. Międlar, A. (2017, February 22). *On Matrix Nearness Problems: Distance to Delocalization*, Computational and Applied Mathematics (CAM) Seminar, Department of Mathematics, University of Kansas.

14. Międlar, A. (2016, September 13). *Applied Mathematics Across Borders*, Association for Women in Mathematics (AWM) KU Student Chapter, Department of Mathematics, University of Kansas.

External Funding

1. Międlar, A. (Principal Investigator). *NSF CAREER: Acceleration Methods, Iterative Solvers and Heterogeneous Architectures: The New Landscape of Large-Scale Scientific Simulations*, Faculty Early Career Development Program (CAREER), National Science Foundation (NSF) Award #2144181, $430,597, September 1, 2022 – August 31, 2027.

2. Międlar, A. (Principal Investigator). *AF: Small: Collaborative Research: Effective Numerical Algorithms and Software for Nonlinear Eigenvalue Problems.* National Science Foundation (NSF) Award #1812927, $140,851, October 1, 2018 – September 30, 2021. Extended to September 30, 2022.

3. Międlar, A. (Principal Investigator). *Analysis of Asynchronous Iterative Solvers.* Lawrence Livermore National Laboratory, $19,006, December 23, 2019 – May 31, 2020.

4. Międlar, A. (Principal Investigator). *Eigenvalue Computations in Modern Applications.* Collaboration Grant for Mathematicians, Simons Foundation, $42,000, September 1, 2017 – August 31, 2019. Initially awarded to 2022, but ended 2019 due to receiving NSF grant.

5. Międlar, A. (Co-Principal Investigator with X. Tu (PI) and E. Van Vleck, W. Huang, and H. Xu (Co-PIs)). *The Midwest Numerical Analysis Day Conference 2017.* National Science Foundation (NSF) Award #1747624, $7,200 requested/received, April 1, 2018 – March 31, 2019. Extended to March 31, 2021.

6. Międlar, A. (co-PI with V. Mehrmann). *Adaptive Finite Element Methods for Nonlinear Parameter Dependent Eigenvalue Problems in Photonic Crystals.* Einstein Center for Mathematics Berlin (EC-Math), June 2014 – May 2017.

7. Międlar, A. (Principal Investigator). *Adaptive methods for nonlinear eigenvalue problems with parameters.* Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) Research Fellowship at the Ecole Polytechnique Fédérale de Lausanne (EPFL), March 2014 – November 2014.

Internal Funding

1. Międlar, A. (Principal Investigator). *Randomized Methods for Eigenvalue Problems.* General Research Fund (GRF), University of Kansas, $6,383.99, July 1, 2019 – June 30, 2022. (Refereed/Competitive)

2. Międlar, A. (Principal Investigator). *On generalizing matrix nearness problems - distance to localization.* New Faculty General Research Fund (NFGRF), University of Kansas, $8,000, April 28, 2017 – April 28, 2019. (Refereed)

Honors and Awards

- Integrated Arts Research Initiative (IARI) Faculty Research Fellow, Spencer Museum of Art, Lawrence, KS, Spring 2021.

- Polish National Agency Academic Exchange Program PROM, May 22–29, 2020. (Postponed due to COVID-19).
- KU Undergraduate Research Award (with Zachary Atkins), Spring 2020.
- KU Undergraduate Research Award (with Aaron Barrett), Spring 2019.
- Graduate Research Consultant Award (with Avary Kolasinski), Spring 2018.
- *National Science Foundation (NSF) Travel Award for the XX Householder Symposium*, $500 received, Virginia Tech, Blacksburg, VA, June 18–23, 2017.
- *Research in Pairs*, Mathematisches Forschungsinstitut Oberwolfach, Germany, January 11–24, 2015.
- *Deutsche Forschungsgemeinschaf (DFG) Research Fellowship*, Postdoctoral Research Fellowship at École Polytechnique Fédérale de Lausanne (EPFL), March – November, 2014.
- *ProFiL-Programm (9. ProFiL-Durchgang)*, "ProFiL. Professionalisierung für Frauen in Forschung und Lehre: Mentoring - Training - Networking", July 2012 – July 2013.
- *Gesellschaft für Angewandte Mathematik und Mechanik (GAMM) Juniors 2011*, GAMM Juniors are young researchers and members of the GAMM who have been nominated by an excellent diploma/master and/or PhD thesis in the fields of Applied Mathematics or Mechanics. November 2011 – September 2014.

Invited Research Stays

- Participant, IPAM Long Program *Tensor Methods and Emerging Applications to the Physical and Data Sciences*, Virtual Program, March 8 – June 11, 2021.
- Invited Researcher, the Statistical and Applied Mathematical Sciences Institute (SAMSI) Program on Numerical Analysis in Data Science, Working Group III: Randomized Algorithms for Matrices and Data, Virtual Program, August 26, 2020 – May 26, 2021.
- Academic Visitor, Prof. Y. Maday (Sorbonne Université) and Prof. E. Cances (INRIA and CERMICS Ecole des Ponts ParisTech), Station Biologique de Roscoff - CNRS - Sorbonne Université, August 24–28, 2020, Roscoff, France. (Canceled due to COVID-19).
- Academic Visitor, Prof. Jungong Xue (Fudan University), Fudan University, June 5–10, 2019, Shanghai, China.
- Academic Visitor, Prof. Y. Maday (Sorbonne Université) and Prof. E. Cances (INRIA and CERMICS Ecole des Ponts ParisTech), Station Biologique de Roscoff - CNRS - Sorbonne Université, July 6–13, 2019, Roscoff, France.
- Academic Visitor, Prof. Y. Saad (Department of Computer Science and Engineering, University of Minnesota), University of Minnesota, June 23–30, 2019, Minneapolis, USA.

- Academic Visitor, IMA, Prof. M. Luskin (Department of Mathematics, University of Minnesota) and Prof. Y. Saad (Department of Computer Science and Engineering, University of Minnesota), January 14–18, 2019, Minneapolis, MN, USA.
- Visiting Professor, Prof. L. Grigori (Institut National de Recherche en Informatique et Automatique (INRIA) Paris) and Prof. E. Cances (Ecole des Ponts ParisTech and INRIA Paris), June 5–July 5, 2018, Paris, France.
- Academic Visitor, Prof. M. Luskin (Department of Mathematics, University of Minnesota), May 20, 2017–July 28, 2017, Minneapolis, MN, USA.
- Academic Visitor, Prof. Y. Maday (Laboratoire Jacques-Louis Lions UMC), Prof. M. Vohralík (INRIA Paris) and Prof. E. Cances (Ecole des Ponts ParisTech and INRIA Paris), January 5–12, 2017, Paris, France.
- Academic Visitor, Prof. D. Kressner (Chair of Numerical Algorithms and High-Performance Computing (ANCHP), SB Mathematics Institute of Computational Science and Engineering (MATHICSE) EPFL), July 27–September 21, 2015, Lausanne, Switzerland.
- Academic Visitor, Prof. M. Luskin (Department of Mathematics, University of Minnesota), March 6–13, 2015, Minneapolis, USA.
- Academic Visitor, Numerical Analysis Group, Department of Mathematics, Royal Institute of Technology in Stockholm (KTH), February 8–14, 2015, Stockholm, Sweden.
- Academic Visitor, Numerical Mathematics, Prof. R. Rannacher, Institute of Applied Mathematics, Ruprecht-Karls-Universität Heidelberg, September 13–25, 2009, Heidelberg, Germany.

SERVICE RECORD

International

- Program Director, SIAM Activity Group on Linear Algebra, January 2022 – present.
- Editor, AIMS Journal Numerical Algebra, Control & Optimization (NACO) 2021 – present.
- Co-Organizer (with Y. Saad, University of Minnesota), Minisymposium on *Theory and Practice of Extrapolation and Acceleration Methods*, SIAM Conference on Applied Linear Algebra 2021, May 17–21, 2021, Virtual Conference.
- Co-Organizer (with A. Fox, Lawrence Livermore National Laboratory), Minisymposium on *Mathematical Challenges for Unreliable Computing Environments*, SIAM Conference on Computational Science and Engineering, 2021, March 1–5, 2021, Virtual Conference.
- Member of Program Committee, Algorithms Track, 49th International Conference on Parallel Processing, August 17–20, 2020, Edmonton, AB, Canada.
- Member of Program Committee, Algorithms Track, 48th International Conference on Parallel Processing, August 5–8, 2019, Kyoto, Japan.

- Local Co-Organizer (with Y. Saad, University of Minnesota, Y. Xi, Emory University and V. Kalantzis, IBM Watson), International Conference on Preconditioning Techniques for Scientific and Industrial Applications (Preconditioning 2019), July 1–4, 2019, Minneapolis, MN, USA.
- Co-Organizer (with R. van Beeuman, Lawrence Berkeley National Laboratory), Minisymposium on *Algorithms and Software for Nonlinear Eigenvalue Problems*, Society for Industrial and Applied Mathematics (SIAM) Conference on Computational Science and Engineering (CSE19), February 25–March 1, 2019, Spokane, WA, USA.
- Co-Organizer (with R. van Beeuman, Lawrence Berkeley National Laboratory), Minisymposium on *Recent Advances in Eigenvalue Solvers*, Society for Industrial and Applied Mathematics (SIAM) Annual Meeting, July 9–13, 2018, Portland, OR, USA.
- Co-Organizer (with Y. Gryazin, Idaho State University and J. E. Roman, Universitat Politecnica de Valencia), Minisymposium on *Advances in Krylov Subspace Methods*, 20th Conference of the International Linear Algebra Society (ILAS 2016), July 11–15, 2016, Katholieke Universiteit Leuven, Leuven, Belgium. Joint DMV-GAMM Annual Meeting 2016, March 7–11, 2016, Technische Universität Braunschweig, Braunschweig, Germany.
- Co-Organizer (with V. Mehrmann, P. Schulze, A. Steinbrecher, B. Unger, Technische Universität Berlin, and A. Gonzalez, Universidad Politécnica de Valencia), Workshop on *Energy Based Modeling, Simulation, and Control of Complex Physical Systems*, April 7–8, 2015, Technische Universität Berlin, Berlin, Germany.
- Co-Organizer (with V. Mehrmann, P. Schulze, A. Steinbrecher, B. Unger, Technische Universität Berlin, and A. Gonzalez, Universidad Politécnica de Valencia), Summer School Applied Mathematics and Mechanics (SAMM) on *Energy Based Modeling, Simulation, and Control of Complex Physical Systems*, April 4–6, 2015, Technische Universität Berlin, Berlin, Germany.
- Co-Organizer (with Y. Nakatsukasa, University of Tokyo), Minisymposium on *Perturbation theory for linear/nonlinear eigenvalue problems in action*, 8th International Congress on Industrial and Applied Mathematics 2015 (ICIAM 2015), August 10–14, 2015, Beijing, China.
- Co-Organizer (with J. Gedicke, Humboldt-Universität zu Berlin), Young Researchers' Minisymposium on *Modern Methods for PDE Eigenvalue Problems*, 17th Conference of the International Linear Algebra Society, August 22–26, 2011, Technische Universität Braunschweig, Braunschweig, Germany.

Reviewer for Professional Journals

Transactions on Mathematical Software, Numerical Algorithms, Mathematics of Computation, Journal Of Computational Physics, BIT Numerical Mathematics, SIAM Journal on Scientific Computing, Applied Mathematics and Computation, Linear Algebra and its Applications, SIAM Journal of Numerical Analysis, Computers & Mathematics with Applications, International Journal of Computer Mathematics, Numerical Methods for Partial Differential Equations, Numerische Mathematik, ESAIM: Mathematical Modelling and Numerical Analysis, Mathematical Methods in the Applied Sciences, Journal of Scientific Computing, Numerical Linear

Algebra with Applications, Electronic Transactions on Numerical Analysis (ETNA), SIAM Publishing, IMA Journal of Numerical Analysis, ACM Transactions on Mathematical Software

Membership in Scientific Organizations

- American Mathematical Society (AMS), January 2022 – present,
- Association for Women in Mathematics (AWM), January 2017 – present,
- Society for Industrial and Applied Mathematics (SIAM) Activity Group on Linear Algebra, October 2014 – present,
- Society for Industrial and Applied Mathematics Activity Group on Computational Science and Engineering (CS&E), October 2014 – present,
- Society for Industrial and Applied Mathematics (SIAM), October 2014 – present,
- International Association of Applied Mathematics and Mechanics (GAMM), November 2011 – present,
- Gesellschaft für Angewandte Mathematik und Mechanik (GAMM) Activity Group Applied and Numerical Linear Algebra, September 2009 – present,
- Deutsche Forschungsgemeinschaft (DFG) Research Center MATHEON, August 2007 – August 2016.