Lin Lin

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Position

Assistant Professor (Tenure track), Department of Mathematics, University of California, Berkeley, 2014–present

Faculty Scientist, Computational Research Division, Lawrence Berkeley National Laboratory, 2014–present

Research Scientist (Career Track), Computational Research Division, Lawrence Berkeley National Laboratory, 2013–2014

Luis W. Alvarez Postdoctoral Fellow, Computational Research Division, Lawrence Berkeley National Laboratory, 2011–2013

Education

Ph. D. Applied Mathematics, Princeton University, USA, 2011

B.S. Mathematics, Peking University, China, 2007

Awards

SIAM CSE Early Career Prize, 2017

NSF CAREER Award, 2017–2022

Alfred P. Sloan fellowship, 2015–2017

Luis W. Alvarez Fellowship, Lawrence Berkeley National Laboratory, 2011–2013

Harold W. Dodds Honorific Fellowship, Princeton University, 2010

Ray Grimm Memorial Prize in Computational Physics, Princeton University, 2010

Research Area

Numerical analysis; Computational quantum chemistry; Computational materials science; Multiscale modeling; Parallel Computing

Publications

1. L. Lin, Randomized estimation of spectral densities of large matrices made accurate, Numer. Math. in press
2. L. Lin and B. Stamm, A posteriori error estimates for discontinuous Galerkin methods using non-polynomial basis functions. Part II: Eigenvalue problems, Math. Model. Numer. Anal. (M2AN) in press
3. L. Lin, Localized spectrum slicing, Math. Comp. in press
4. X. Li, L. Lin, J. Lu, PEXSI-Σ: A Green's function embedding method for Kohn-Sham density functional theory, Ann. Math. Sci. Appl. in press
5. W. Hu, L. Lin, A. Banerjee, E. Vecharynski and C. Yang, Adaptively compressed exchange operator for large scale hybrid density functional calculations with applications to the adsorption of water on silicene, J. Chem. Theory Comput. in press
6. G. Zhang, L. Lin, W. Hu, C. Yang and J.E. Pask, Adaptive local basis set for Kohn-Sham density functional theory in a discontinuous Galerkin framework II: Force, vibration, and molecular dynamics calculations, J. Comput. Phys. 335, 426 2017
7. A. Damle, L. Lin and L. Ying, SCDM-k: Localized orbitals for solids via selected columns of the density matrix, J. Comput. Phys. 334, 1, 2017
8. L. Lin, Z. Xu and L. Ying, Adaptively compressed polarizability operator for accelerating large scale ab initio phonon calculations, Multiscale Model. Simul. 15, 29, 2017
9. A. S. Banerjee, L. Lin, W. Hu, C. Yang, J. E. Pask, Chebyshev polynomial filtered subspace iteration in the Discontinuous Galerkin method for large-scale electronic structure calculations, J. Chem. Phys. 145, 154101, 2016
10. M. Shao, L. Lin, C. Yang, F. Liu, F. Jornada, J. Deslippe and S. G. Louie, Low rank approximation in G0W0 calculations, Sci. China Math., 59 1593, 2016
11. L. Lin and J. Lu, Decay estimates of discretized Green's functions for Schrodinger type operators, Sci. China Math., 59, 1561, 2016
12. L. Lin, Adaptively compressed exchange operator, J. Chem. Theory Comput. 12, 2242, 2016
13. L. Lin, Y. Saad and C. Yang, Approximating spectral densities of large matrices, SIAM Rev. 58, 34, 2016
14. W. Hu, L. Lin, C. Yang, J. Dai and J. Yang, Edge-modified phosphorene nanoflake heterojunctions as highly efficient solar cells, Nano Lett. 16 1675, 2016
15. P. Li, X. Liu, M. Chen, P. Lin, X. Ren, L. Lin, C. Yang and L. He, Large-scale ab initio simulations based on systematically improvable atomic basis, Comput. Mater. Sci. 112, 503 2016
16. M. Jacquelin, L. Lin, N. Wichmann and C. Yang, Enhancing the scalability and load balancing of the parallel selected inversion algorithm via tree-based asynchronous communication, IEEE IPDPS 192, 2016
17. L. Lin and B. Stamm, A posteriori error estimates for discontinuous Galerkin methods using non-polynomial basis functions. Part I: Second order linear PDE, Math. Model. Numer. Anal. (M2AN) 50, 1193, 2016

18. M. Jacquelin, L. Lin and C. Yang, PSelInv – A distributed memory parallel algorithm for selected inversion : the symmetric case, ACM Trans. Math. Software 43, 21, 2016

19. J. Brabec, L. Lin, M. Shao, N. Govind, C. Yang, Y. Saad, E. Ng, Fast algorithms for estimating the absorption spectrum within linear response time-dependent density functional theory, J. Chem. Theory Comput. 11, 5197, 2015

20. M. van Setten, F. Carouso, S. Sharifzadeh, X. Ren, M. Scheffler, F. Liu, J. Lischner, L. Lin, J. Deslippe, S. Louie, C. Yang, F. Weigend, J. Neaton, F. Evers and P. Rinke, GW 100: Benchmarking G0W0 for molecular systems, J. Chem. Theory Comput. 11, 5665, 2015

21. W. Hu, L. Lin and C. Yang, DGDFT: A massively parallel method for large scale density functional theory calculations, J. Chem. Phys. 143, 124110, 2015

22. A. Damle, L. Lin and L. Ying, Compressed representation of Kohn-Sham orbitals via selected columns of the density matrix, J. Chem. Theory Comput. 11, 1463, 2015

23. W. Hu, L. Lin and C. Yang, Edge reconstruction in armchair phosphorene nanoribbons revealed by discontinuous Galerkin density functional theory, Phys. Chem. Chem. Phys. 17, 31397, 2015

24. J. Kaye, L. Lin and C. Yang, A posteriori error estimator for adaptive local basis functions to solve Kohn-Sham density functional theory, Commun. Math. Sci. 13, 1741, 2015

25. F. Liu, L. Lin, J. Lischner, A. F. Kemper, S. Sharifzadeh, F. Jornada, D. Vigil-Fowler, J. Deslippe, C. Yang, J. Neaton and S. G. Louie, Numerical integration for ab initio many-electron self energy calculations within the GW approximation, J. Comput. Phys. 286, 1, 2015

26. A. Damle, L. Lin and L. Ying, Pole expansion for solving a type of parametrized linear systems in electronic structure calculations, SIAM J. Sci. Comput. 36, A2929, 2014

27. W. Hu, L. Lin, C. Yang and J. Yang, Electronic structure of large-scale graphene nanoflakes, J. Chem. Phys. 141, 214704, 2014

28. L. Lin, A. García, G. Huhs and C. Yang, SIESTA-PEXSI: Massively parallel method for efficient and accurate ab initio materials simulation without matrix diagonalization, J. Phys. Condens. Matter, 26, 305503, 2014

29. H. M. Aktulga, L. Lin, C. Haine, E. Ng and C. Yang, Parallel eigenvalue calculation based on multiple shift-invert Lanczos and contour integral based spectral projection method, Parallel Comput. 40, 195, 2014

30. L. Lin, J. Lu and S. Shao, Analysis of the time reversible Born-Oppenheimer molecular dynamics, Entropy 16, 110-137 (Special issue on Molecular Dynamics), 2014

31. L. Lin and C. Yang, Elliptic preconditioner for accelerating the self consistent field iteration in Kohn-Sham density functional theory, SIAM J. Sci. Comput. 35, S277-S298 (Copper Mountain special issue), 2013

32. L. Lin, M. Chen, C. Yang and L. He, Accelerating atomic orbital-based electronic structure calculation via pole expansion and elected inversion, J. Phys. Condens. Matter 25, 295501, 2013

33. L. Lin, S. Shao and W. E, Efficient iterative method for solving the Dirac-Kohn-Sham density functional theory, J. Comput. Phys 245, 205, 2013

34. C. Mendl and L. Lin, Kantorovich dual solution for strictly correlated electrons in atoms and molecules, Phys. Rev. B 87, 125106, 2013

35. L. Lin, L. Ying, Element orbitals for Kohn-Sham density functional theory, Phys. Rev. B 85, 235144, 2012
36. L. Lin, J. Lu, L. Ying and W. E, Optimized local basis function for Kohn-Sham density functional theory, J. Comput. Phys 231, 4515, 2012
37. D. Flammini, A. Pietropaolo, R. Senesi, C. Andreani, F. McBride, A. Hodgson, M. Adams, L. Lin, and R. Car, Spherical momentum distribution of the protons in hexagonal ice from modeling of inelastic neutron scattering data, J. Chem. Phys. 136, 024504, 2012
38. L. Lin, J. Lu, L. Ying and W. E, Adaptive local basis set for Kohn-Sham density functional theory in a discontinuous Galerkin framework I: Total energy calculation, J. Comput. Phys. 231, 2140, 2012
39. L. Lin, J.A. Morrone and R. Car Correlated tunneling in hydrogen bonds, J. Stat. Phys. 145, 365, 2011
40. L. Lin, J.A. Morrone, R. Car and M. Parrinello, Momentum distribution, vibrational dynamics and the potential of the mean force in ice, Phys. Rev. B 83, 220302(R), 2011.
41. L. Lin, C. Yang, J. Lu, L. Ying and W. E, A Fast Parallel algorithm for selected inversion of structured sparse matrices with application to 2D electronic structure calculations, SIAM J. Sci. Comput. 33, 1329, 2011
42. L. Lin, C. Yang, J. Meza, J. Lu, L. Ying and W. E, SelInv – An algorithm for selected inversion of a sparse symmetric matrix, ACM Trans. Math. Software 37, 40, 2011
43. L. Lin, J. Lu and L. Ying, Fast construction of hierarchical matrix representation from matrix-vector multiplication, J. Comput. Physics, 230, 4071, 2011
44. L. Lin, J.A. Morrone, R. Car and M. Parrinello, Displaced path integral formulation for the momentum distribution of quantum particles, Phys. Rev. Lett. 105, 110602, 2010
45. L. Lin, J. Lu, L. Ying and W. E, Pole-based approximation of the Fermi-Dirac function, Chin. Ann. Math. 30B, 729, 2009
46. L. Lin, J. Lu, L. Ying, R. Car and W. E, Fast algorithm for extracting the diagonal of the inverse matrix with application to the electronic structure analysis of metallic systems, Commun. Math. Sci. 7, 755, 2009
47. J.A. Morrone, L. Lin and R. Car, Tunneling and delocalization effects in hydrogen bonded systems: A study in position and momentum space, J. Chem. Phys. 130, 204511, 2009
48. L. Lin, J. Lu, R. Car and W. E, Multipole representation of the Fermi operator with application to the electronic structure analysis of metallic systems, Phys. Rev. B 79, 115133, 2009

Preprints

1. M. Jacquelin, L. Lin and C. Yang, PSelInv âĂŞ A distributed memory parallel algorithm for selected inversion : the non-symmetric case, submitted
2. M. Shao, F. da Jornada, L. Lin, C. Yang, J. Deslippe and S. G. Louie, A structure preserving Lanczos algorithm for computing the optical absorption spectrum, submitted
3. A. Damle, L. Lin and L. Ying, Accelerating selected columns of the density matrix computations via approximate column selection, submitted
4. M. Jacquelin, L. Lin, W. Jia, Y. Zhao and C. Yang, A left-looking selected inversion algorithm and task parallelism on shared memory systems, submitted

Grants

Principle Investigator. NSF CAREER Program, 2017–2022. *Turbo-Charging Hybrid Functional Electronic Structure Calculations via Adaptive Compression Methods*, (80,000 per year)

Co-Investigator. NSF. 2015–2019. *Collaborative Research: SI2-SSI: ELSI-Infrastructure for Scalable Electronic Structure Theory.* Joint project with Volker Blum (Lead PI) and Jianfeng Lu (Total award: $126,004 per year)

Principal Investigator. Laboratory Directed Research and Development Program of Lawrence Berkeley National Laboratory under the U.S. Department of Energy contract number DE-AC02-05CH11231, 2014–2016. *Fast numerical methods for Green's function in mesoscale simulation*. (Total Award: $41,000 per year)

Co-Investigator. SciDAC-3, DOE Advanced Scientific Computing Research & Basic Energy Sciences, 2012–2017. *Discontinuous methods for accurate, massively parallel quantum molecular dynamics: Lithium ion interface dynamics from first principles.* Joint project with John Pask (Lead PI), Erik W. Drager, Vincenzo Lordi, and Chao Yang. (Total Award: $735,000 per year)

Co-Investigator. SciDAC-3, DOE Advanced Scientific Computing Research & Basic Energy Sciences, 2012–2017. *Advanced Modeling of Ions in Solutions, on Surfaces, and in Biological Environments.* Joint project with Roberto Car (Lead PI), Weinan E, Esmond Ng, Michael Klein, Xifan Wu and Chao Yang. (Total Award: $700,000 per year)

Co-Investigator. *CAMERA: Center for Applied Mathematics for Energy Research Applications*. Joint project with James A. Sethian (Lead PI), Jeff Donatelli, Maciej Haranczyk, Alexander Hexemer, Xiaoye S. Li, Stefano Marchesini, Richard L. Martin, Daniela Ushizima and Chao Yang. (Total Award: $1,000,000, 2013–2015).

Principal Investigator. Laboratory Directed Research and Development Program of Lawrence Berkeley National Laboratory under the U.S. Department of Energy contract number DE-AC02-05CH11231, 2011–2013. *Computational algorithms and mathematical software tools for materials science and chemistry.* Joint project with Chao Yang. (Total Award: $142,000 per year)

Oberwolfach travel grant, 2011, 2013 (Total Award: $500 each)

Recent Teaching Activities

Math 54: Linear algebra and its applications, UC Berkeley, Fall 2016

Math 128B: Mathematical tools for the physical sciences, UC Berkeley, Spring 2016

Math 128A: Mathematical tools for the physical sciences, UC Berkeley, Spring 2016

Math 228A: Numerical solutions of differential equations, UC Berkeley, Fall 2015

Math H54: Linear algebra and differential equations, UC Berkeley, Fall 2014

Conference Presentations

Minisymposium on electronic structure theory for excited states, SIAM Conference on Computational Science and Engineering, Atlanta, February, 2017

IPAM: Collective Variables in Quantum Mechanics, Los Angeles, November 2016

Mean-field modeling and multiscale methods for complex physical and biological systems, Santa Barbara, October 2016

EMN Meeting on Computation and Theory, Las Vegas, October 2016

USACM "Recent Advances in Computational Methods for Nanoscale Phenomena", Ann Arbor, August 2016

International Conference on Algorithms and Applications for Excited State Electronic Structure Theories, CSRC, Beijing, August 2016

Mathematical and Numerical Analysis of Electronic Structure Models, Roscoff, July 2016

Workshop on Optimization and Eigenvalue Computation, BICMR, Beijing, June 2016

2nd Computational and Theoretical Chemistry Research PI Meeting, Washington D.C., May 2016

Workshop on Mathematical and Computational Methods in Quantum Chemistry, Yale, May 2016

SIAM Conference on Mathematical Aspects of Materials Science (SIAM MS16), Philadelphia, May 2016

Workshop on Workshop on Computational Quantum Systems, Shanghai, December 2015

Minisymposium on New Numerical Linear Algebra Methods Meet New Challenges of Physics, SIAM Applied Linear Algebra Meeting (SIAM LA15), Atlanta, October, 2015

Upscaling Electronic Structure: Reduced-Scaling and Multi-Scale Methods (invited talk), Psi-k 2015, San Sebastian, September 2015

Minisymposium on Electronic structure theory for large scale systems, 250th ACS National Meeting, Boston, August 2015

Minisymposium on Mathematics and Algorithms in Quantum Chemistry; Computational Methods of PDE-based Eigenvalue Problems and Applications in Nanostructure Simulations, ICIAM 2015, Beijing, August 2015

Workshop on Multiscale Modeling and Analysis in Materials Science, Shanghai, August 2015

Minisymposium on Recent Progress in Multi-scale Modeling at the Intersection of Ab-initio Methods, Mechanics and Mathematics, 13th U.S. National Congress on Computational Mechanics (USNCCM13), July 2015

Minisymposium on Recent developments of mathematical aspects of computational chemistry, 26th Biennial Numerical Analysis Conference, Glasgow, June 2015

Workshop on Dimension Reduction: Mathematical Methods and Applications, Penn State University, March 2015

Workshop on Numerical Methods for Quantum Chemistry, Tromso, 2015

Workshop on Fundamental Aspects of DFT, Oslo, 2015

Workshop on New and Future Directions in Atomistic Simulation and Modeling, Seattle, 2014

Minisymposium on Mathematical Theory and Computational Techniques for Multiscale Materials Modeling, 7th International Conference on Multiscale Materials Modeling, Berkeley, 2014

Workshop on Mathematical and Numerical Analysis of Electronic Structure Models, Berlin, April 2014

Workshop on Mathematical and Numerical Methods for Complex Quantum Systems, Chicago, March 2014

Session on High Performance Computing in Density Functional Theory, APS March Meeting, Portland, March 2014

Minisymposium on Density Functional Theory: Large-scale Algorithms and O(N) Methods, SIAM Conference on Parallel Processing for Scientific Computing (SIAM PP14), Portland, February 2014

Workshop on Numerical Solution of PDE Eigenvalue Problems, Oberwolfach, November 2013

Minisymposium on Electronic structure, and minisymposium on Computational methods for nano scale materials and devices, SIAM Conference on Mathematical Aspects of Materials Science (SIAM MS13), Philadelphia, June 2013

Workshop on quantum systems: a mathematical journey from few to many particles, University of Maryland, College Park, May 2013

Session on Recent developments in density functional theory, APS March Meeting, Baltimore, March 2013

Minisymposium on Recent advances in preconditioning techniques, SIAM Conference on Computational Science and Engineering, Boston, February, 2013

Bay Area Scientific Computing Day, SLAC, December, 2012

2012 Young Researchers Workshop: Kinetic Description of Multiscale Phenomena, University of Wisconsin-Madison, October, 2012

Materials defects: Mathematics, Computation, and Engineering Workshop I: Quantum and Atomistic Modeling of Materials Defects, IPAM, October 2012

Minisymposium on Structured matrices and scientific computing, SIAM Conference on Applied Linear Algebra (SIAM LA12), Valencia, June 2012

Workshop on Mathematical and Numerical Analysis of Electronic Structure Models, Beijing, June 2012

Workshop on Computational Problems in Material Sciences, Beijing, June 2012

Session on Nonlinear solution methods, 12th Copper Mountain Conference on Iterative Methods, Copper, March 2012

Session on Electronic structure: calculations, APS March Meeting, Boston, March 2012

Workshop on Structure & Dynamics of Water & Aqueous Solutions, Seattle, February 2012

Minisymposium on Large-scale parallel first principles calculation for quantum many-particle systems, SIAM Conference on Parallel Processing for Scientific Computing (SIAM PP12), Savannah, February 2012

Workshop on Structure & Dynamics of Water & Aqueous Solutions, Seattle, February 2012

Thematic Minisymposia: Quantum modeling in molecular simulation, International Council for Industrial and Applied Mathematics (ICIAM 2011), Vancouver, July 2011

Workshop on Mathematical Methods in Quantum Chemistry, Oberwolfach, June 2011

Session on Numerical PDE, International Conference on Interdisciplinary Applied Mathematics and Computational Mathematics (ICIACM 2011), Hangzhou, June 2011

Workshop on Electronic Structure Analysis and Computation, Shanghai, June 2011

Session on Condensed phase dynamics and structure, APS March Meeting, Dallas, March 2011

Workshop on Density Functional Theory: Fundamentals and Applications in Condensed Matter Physics, Banff, January 2011

Workshop on Structure & Dynamics of Water & Aqueous Solutions,Princeton, December 2010

Workshop on High Energy Neutrons for Science and Society, Rome, October 2010

Minisymposium on Electronic structure, SIAM Conference on Mathematical Aspects of Materials Science (SIAM MS10), Philadelphia, May 2010

Minisymposium on Large-scale parallel computing for scientific modeling and simulation, SIAM Conference on Parallel Processing for Scientific Computing (SIAM PP10), Seattle, February 2010

Session on Theoretical chemistry, APS March Meeting, Portland, March 2010

Seminar Talks

Applied Mathematics Seminar, Department of Mathematics, UC Berkeley, September, 2016

Center for Computational and Applied Mathematics seminar, Purdue University, December 2015

School of Mathematical Sciences, Peking University, Beijing, July 2015

Algorithms Division, Beijing Computational Science Research Center, Beijing, July 2015

Computer Network Information Center, Chinese Academy of Sciences, Beijing, July 2015

Software Center for High Performance Numerical Simulation, Chinese Academy of Engineering Physics, Beijing, July 2015

PACM Colloquium, Princeton, April, 2015

Math/CS Seminar, Emory University, April, 2015

Condensed matter theory seminar, UC Berkeley, December, 2014

Scientific Computing and Matrix Computations Seminar, UC Berkeley, October, 2014

Colloquium, Applied Physics and Applied Mathematics, Columbia University, March 2014

Colloquium, Department of Computational and Applied Mathematics (CAAM), Rice University, February, 2014

CSCAMM Seminar, University of Maryland at College Park, February, 2014

Colloquium, Department of Mathematics, University of Toronto, February, 2014

Colloquium, Department of Mathematics, University of Southern California, January, 2014

Department of Mathematics, UC Berkeley, January, 2014

Colloquium, Department of Mathematics, UNC Chapel Hill, January, 2014

Department of Mathematics, Stanford University, January, 2014

PDE-Numerical Analysis Seminar, Department of Mathematics, University of Maryland at College Park, December, 2013

Applied Mathematics Seminar, Department of Mathematics, UC Santa Barbara, December, 2013

Department of Mathematics, National University of Singapore, December, 2013

Colloquium, Department of Mathematics, University of Wisconsin at Madison, November, 2013

Computational Math Seminar, University of Colorado at Bolder, November, 2013

Institute of Mathematics Seminar, Peking University, July 2013

Laboratoire Jacques-Louis Lions Seminar, UPMC, June 2013

Applied Mathematics Seminar, UC Irvine, April 2013

Applied Mathematics Seminar, Stanford University, April 2013

Seminar in Quantum Simulations Group, Lawrence Livermore National Laboratory, March 2013

Applied Mathematics and Analysis Seminar, Duke University, February, 2013

Scientific and Statistical Computing Seminar, University of Chicago, January, 2013

NWChem Seminar, Pacific Northwest National Laboratory, October 2012

Computer Science Summer Student Program Talk, Lawrence Berkeley National Laboratory, July 2012

The State Key Laboratory of Scientific and Engineering Computing (LSEC), Chinese Academy of Sciences, July 2012

School of Mathematics and Statistics, Wuhan University, July 2012

Statistical Mechanics Seminar, UC Berkeley, March 2012

Linear Scaling Theory Seminar, Lawrence Livermore National Lab, March, 2012

Scientific Computing and Matrix Computations Seminar, UC Berkeley, March, 2012

Applied Mathematics Seminar, Courant Institute, February, 2012

Computational Statistical Mechanics Seminar, Courant Institute, February, 2012

Applied Mathematics Seminar, UC Berkeley, February, 2012

Numerical Analysis Seminar, University of Texas at Austin, October 2011

Scientific Computing and Matrix Computations Seminar, UC Berkeley, September, 2011

Special PACM Colloquium, Princeton University, March 2011

Special Imaging and Computing Seminar, MIT, January 2011

Special PACM Colloquium, Princeton University, March 2010

Numerical Analysis Seminar, University of Texas at Austin, February 2010

Numerical Analysis Seminar, University of Texas at Austin, May 2009

Services

Referee for

CMAME, CMS, CPC, CPAM, CPL, JAMS, JCP, JCTC, MMS, NM, PRE, PRL, PNAS, SIMA, SIMAX, SINUM, SISC, TOMS, among many others.

Co-organizer (with James Sethian and Jianfeng Lu). MSRI Summer School on "Mathematical Introduction to Electronic Structure Theory", 2016. Previous summer school in Peking University (2012, 2013, 2015)

Conference and seminar organization

Co-organizer (with Eric Cances, Gero Friesecke and Trygve Helgaker): Oberwolfach Workshop on Mathematical methods in quantum chemistry, March 2018

Co-organizer (with Virginie Ehrlacher, Benjamin Stamm, Chao Yang): Minisymposium, SIAM Conference on Computational Science & Engineering (SIAM CSE17), Atlanta, February 2017

Co-organizer (with Wei Cai, Limin Liu, Jianfeng Lu and ChiYung Yam): International Conference on Algorithms and Applications for Excited State Electronic Structure Theories, CSRC, 2016

Co-organizer (with Gero Friesecke and Jianfeng Lu). Minisymposium, SIAM Conference on Mathematical Aspects of Materials Science (SIAM MS16), Philadelphia, May 2016

Co-organizer (with Jianfeng Lu). Minisymposium, The International Congress on Industrial and Applied Mathematics (ICIAM), Beijing, 2015

Co-organizer (with Eric Polizzi and Chao Yang). Minisymposium, SIAM Conference on Computational Science & Engineering (SIAM CSE15), Utah, March 2015

Co-organizer (with Eric Cances, Gero Friesecke and Chao Yang).Minisymposium, SIAM Conference on Mathematical Aspects of Materials Science (SIAM MS13), Philadelphia, June 2013

Co-organizer (with Chao Yang). Minisymposium, SIAM Conference on Parallel Processing for Scientific Computing (SIAM PP12), Savannah, February 2012

Member of *Society for Industrial and Applied Mathematics* (SIAM), *American Mathematical Society* (AMS), *American Physical Society* (APS),