Curriculum Vitae

Guang Lin

1. Contact Information

Full Professor, Department of Mathematics, School of Mechanical Engineering, **Purdue University**
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https://www.webofscience.com/wos/author/record/ABB-2145-2021

2. Education

- Ph.D., 2007, Applied Mathematics, Brown University
- M.S., 2004, Applied Mathematics, Brown University
- M.S., 2000, Mechanics and Engineering Science, Peking University, P.R. China
- B.S., 1997, Mechanics, Zhejiang University, P.R. China

3. Professional Experience

Administrative and Government Appointments

- 01/01/2024-Present, Associate Dean for Research and Innovation, College of Science
- 2023-Present, Joint appointment, Argonne National Laboratory, Lemont, IL.
- 01/2019-, Director of Data Science Consulting Services, Purdue University
- 2023-Present, Entrepreneurial Ambassador, College of Science, Purdue University
- 2021-2022, Chair of Initiative in Data Engineering and Applications, Purdue University
- 2019-2020, Dean's Fellow, College of Science, Purdue University
- 03/2008-08/2014, Senior Staff Scientist, Computational Mathematics Group, Pacific Northwest National Laboratory, Richland, WA

Academic Appointments

- 2024-2025, Chair of the Selection Committee for the 2024 Herbert Newby McCoy Distinguished Research Award, Purdue's Most Prestigious Recognition
- 2022-Present, Associate Editor of the American Society of Mechanical Engineering Journal of Computing and Information Science in Engineering
- Co-organizer of the 75th American Physics Society Annual Meeting of the Division of Fluid Dynamics, November 20-22, 2022, Indianapolis, IN.

- 2019-2020, Core-team member of Data Science Major Curriculum Re-design Committee, Purdue University
- 08/2021-, Full Professor, Department of Mathematics, School of Mechanical Engineering, Purdue University.
- 08/2021-, Professor, Department of Earth, Atmospheric, and Planetary Sciences Courtesy Appointment, Purdue University
- 08/2021-, Professor, Department of Statistics Courtesy Appointment, Purdue University
- 04/2017-08/2021, Associate Professor, Department of Mathematics, School of Mechanical Engineering, Purdue University
- 08/2014-04/2017, Assistant Professor, Department of Mathematics, School of Mechanical Engineering, Purdue University
- 01/2013-8/2014, Adjunct Associate Professor, Department of Mathematics, University of North Carolina, Chapel Hill, NC
- 04/2012-8/2014, Affiliated Faculty, Department of Applied Mathematics, University of Washington, Seattle, WA
- 11/2009-8/2014, Adjunct Associate Professor, Department of Mathematics, University of Notre Dame, Notre Dame, IN
- 03/2008-08/2014, Senior Staff Scientist, Computational Mathematics Group, Pacific Northwest National Laboratory, Richland, WA
- 2007-03/2008 Postal Doctoral Researcher, Computational Mathematics Group, Pacific Northwest National Laboratory, Richland, WA
- **Associate Editor, SIAM Multiscale Modeling and Simulations, 2019-Present.**
- Member of the Editorial Board of the International Congress on Uncertainty Quantification, July 6th-10th, 2020.
- **Guest Editor: Special Issue:** Machine Learning and Statistical Learning with Applications, in Mathematics, 2024
- **Guest Editor: Special Issue:** Artificial Intelligence (AI) in Medical Systems and Healthcare Management, in ES Materials & Manufacturing, 2021.
- **Guest Editor: Special Issue** "AI-Guided Materials Design and Manufacturing Processes" in ES Materials & Manufacturing, 2020.
- **Guest Editor: Special Issue** "Geostatistics and Machine Learning", in Mathematical Geosciences, 2020-2021.
- **Guest Editor: Special Issue** "Shock waves, Discontinuities and Singularities in Natural Phenomena", Mathematical Modeling of Natural Phenomena, 2017.
- Serve on the editorial board of "**Applied Mathematics and Mechanics**", 2025-Present.
- Serve on the editorial board of "ES Materials & Manufacturing", 2020.
- Serve on the editorial board of "***International Journal of Uncertainty Quantification***", 2010- 2015.
- Serve on the editorial board of "***Journal of Stochastics***", 2013- Present.
- Serve on the editorial board of "***Austin Statistics***", 2013- Present.
- Serve on the editorial board of "***Advances in Fluid Mechanics***", 2018-Present.

4. Research Description:

Guang Lin's research interests include diverse topics in computational and data science both on algorithms and applications. His main current thrust is machine learning, data-driven modeling, stochastic simulation (in the context of uncertainty quantification and beyond), and multiscale modeling of interconnected, physical and biological systems (e.g., blood flow).

Guang Lin's research goal is to develop data-driven high-order numerical algorithms to promote innovation with significant potential impact and design highly-scalable numerical solvers on petascale supercomputers to investigate new knowledge discovery in complex interconnected, physical and biological complex systems.

Guang Lin received NSF faculty early career development award in recognition of his work on uncertainty quantification and big data analysis in the smart grid and other complex interconnected systems. Guang Lin has developed advanced optimization algorithms to calibrate complex global and regional climate models. For this work, he received a Ronald L. Brodzinski Award for Early Career Exception Achievement in 2012. Guang Lin also received the 2010 ASCR Leadership Computing Challenge (ALCC) award for his work in analyzing big climate data using extreme-scale supercomputers. Guang Lin has also received the Outstanding Performance Award at Pacific Northwest National Laboratory in 2010, and the Ostrach Fellowship at Brown University in Fall 2005.

5. Honors and Awards

[A1] 2024 Seed for Success Acorn Award, Purdue University
[A2] 2024 Faculty/Staff Recognition Award, Department of Mathematics
[A3] 2022-23 Purdue University College of Science Research Award
[A4] 2021 best paper award in Engineered Science Materials and Manufacturing Journal
[A5] Dean's Fellow, College of Science, Purdue University, 2019.
[A6] Mid-Career Sigma Xi Award, Purdue University Chapter of Sigma Xi, 2019.
[A7] University Faculty Scholar, Purdue University, 2019.
[A8] 2016 National Science Foundation (NSF) Faculty Early Career Development (CAREER) award from NSF Division of Mathematical Science, *2016.*
[A9] 2015 Mathematical Biosciences Institute Early Career Award*, Fall 2015*
[A10] ***2012 Ronald L. Brodzinski Award for Early Career Exception Achievement*** (two awards each year in the whole PNNL with 5000 researchers), April 2012.
[A11] ***2010 Department of Energy Advanced Scientific Computing Research Leadership Computing Challenge (ALCC) award*** with 2010 Allocation Amount: 5,000,000 processor hours at OLCF, ORNL.
[A12] ***Brown University Ostrach Fellowship***, Division of Applied Math, Brown University, Fall 2005.
[A13] ***Outstanding Performance Award***, Pacific Northwest National Laboratory, 2010.

6. Bibliography

Bibliography Summary:

- ***Total 282 Published or Accepted Refereed Publications (4 Book chapters +227 published or Accepted Journal Papers +51 Referred Conference Proceeding papers) + 1 Ph.D. Dissertation, 6 Formal Reports and 38 Submitted Journal Papers.***
- ***Received total 72 Research Projects with $112M Research Grants (personal manages: $20.4M).***
- ***Three invention disclosures, and one startup company.***
- ***Total of 6 keynote/plenary talks and 187 Invited Presentations***
- ***Mentored over 15 Post-Doctoral/Post-Master Scholars***
- ***Mentored and Supervised over 30 Graduate, undergraduate, and High-School Summer Interns*** *(High-School Science Intern Katrina Hui was named a semifinalist in the 2011 Siemens Competition, and a semifinalist in the 2012 Intel Science Talent Search based on the sickle cell anemia research she did with her mentor,* ***G. Lin;*** Also served as the mentor in Wentao Chen's Purdue undergraduate team, awarded the **Prize of Finalist in the MCM math modeling contest** in 2016 and 2018*)*

6.1 Recent and Current Research Grants Received in the Past Ten Years (*Received Total 71 Research Projects with $112M Total Research Grants (personal manages: $20.4M)*

6.1.1 Current Research Grants

[G1] CDS&E: Integrated Molecular Dynamics and Machine Learning Investigation of Gas-Liquid Interface in Transcritical Reacting Flows, NSF, $404,204, Co-PI, 2024-2027.

[G2] Machine learning of the additive manufacturing process for optimized fatigue performance, 09/2024-08/2026, $329,983, MRL Materials Resources LLC, Co-PI, 2024-2027.

[G3] I-empowered heterogeneously nanomanufactured imperceptible human-integrated wearables for personalized digital twins with multimodal fusion (AI-HEPHAESTUS), Purdue IPAI Postdoctoral Research Program, $280,000, Co-PI, 2024-2026.

[G4] Remote monitoring of eating safety and efficiency: an AI integrated validation approach to improve Veterans' wellbeing, Purdue University Health of Forces, $10,000, Co-PI, 2024-2025.

[G5] Accelerating discovery and diagnostics of plasma-wall interactions using machine learning, Department of Energy, $2,469,160, Co-PI, 2023-2026.

[G6] Modeling Mortality in Duchenne Muscular Dystrophy Cardiomyopathy: Identification of Surrogate Outcome Measures for DMD Drug Trials, National Institutes of Health, $3,600,000, Purdue PI, 2023-2028.

[G7] (MOLUcQ) Uncertainty Quantification for Multifidelity Operator Learning, Department of Energy, $2,000,000, Co-PI, 2023-2027.

[G8] Elements: FourPhonon: A Computational Tool for High-Order Phonon Anharmonicity and Thermal Properties, National Science Foundation, $600,000, Co-PI, 2023-2026.

[G9] ASCENT: From sensors to multiscale digital twin to autonomous operation of resilient electric power grids, NSF, $1,000,000, Co-PI, 2023-2026.

[G10] Hierarchical Machine Learning-based Optimal Parameterization Scheme for WECC Composite Load Model under All Disturbances, Brookhaven National Laboratory, $216,537, PI, 2023-2025.

[G11] Trustworthy Heterogeneous Data-Aware Bayesian Federated Learning, Department of Energy, EXPRESS: 2022 Exploratory Research for Extreme Scale Science, $400,000, PI, 2022-2025.

[G12] BRITE PIVOT: Machine Learning Enabled Rapid and Robust 3D Nanomanufacturing, NSF, $419,695, Co-PI, 2022-2025.

[G13] Collaborative Research: Robust Deep Learning in Real Physical Space: Generalization, Credibility, and Scalability, NSF DMS, $1,000,000, PI, 2021-2025.

[G14] Collaborative Research: Inference and Uncertainty Quantification for High Dimensional Systems in Remote Sensing: Methods, Computation, and Applications, NSF CDS&E program, $120,000, Purdue PI, 2021-2025.

6.1.2 Past Research Grants

[G1] Developing AI-assisted In-situ NDT Testing for Air-Void Distribution in Fresh and Hardened Concrete, Indiana Department of Transportation, $278,913, Co-PI, 2021-2023.

[G2] Trustworthy Physics-Informed Deep Learning for Predictive Scientific Computing, Department of Energy, $300,000, PI, 2020-2023

[G3] A Deep learning-based online platform for critical anomaly detection and emergency control to enhance grid reliability and resiliency, $1,200,000, Co-PI, U.S. Department of Energy, Office of Electricity Delivery and Energy Reliability Advanced Grid Modeling Program, Co-PI, 2020-2023.

[G4] Smart Gear Boxes Phase II, Contract from John Deere, $219,846, One of the three PIs, 2021-2023

[G5] Designing for Data-focused Undergraduate Course Innovation: Integrating Data Science into Undergraduate Courses, Purdue University Innovation Hub, $39,644, Co-PI, 04/2022-12/2022

[G6] Development of a graphic user interface of Wave Logix's sensing platform, Wave Logix, $3,000, PI, 2021-2022

[G7] Purdue IMPACT Faculty Development Program, $10,000, PI, 2022

[G8] Career: Uncertainty Quantification and Big Data Analysis in Interconnected Systems: Algorithms, Computations, and Applications, **2016**

National Science Foundation (NSF) Faculty Early Career Development (CAREER) award from NSF Division of Mathematical Science, $400,759.91 (DMS-1555072), PI, 2016-2022

[G9] Revolutionizing the development and manufacturing of next-generation biologics, Big Ideas Challenges 2.0, Purdue University Discovery Park, $300,000, Co-PI, 2019-2022

[G10] Machine Learning Driven Contouring System for High-Frequency Four-Dimensional Cardiac Ultrasound and Photoacoustic Imaging, Trask Innovation Award, $50,000, PI, 2021-2022

[G11] Traffic anomaly detection using diffusion-convolutional neural networks, Subcontract from Argonne National Laboratory, $12,148, PI, 2020-2021

[G12] Smart Gear Boxes Phase I, Contract from John Deere, $108,283, One of the three PIs, 2020-2021

[G13] Development of a COVID-19 Purdue Campus Epidemic Model for Evaluating the Effective Control Measure for Protecting Purdue Campus, Protect Purdue Innovations Faculty Grants competition, $20,000, PI, 2020-2021

[G14] Supplement for CAREER: Investigating Process-Structure-Property Correlations of Nitrides and Oxides for High Temperature Thermoelectric Applications, awarded from NSF Division of Civil, Mechanical and Manufacturing Innovation, $70,000, (CMMI-1560834), Co-PI, 2020-2021

[G15] Fractional PDEs for Conservation Laws and Beyond: Theory, Numerics and Applications，U.S. Army Research Laboratory MURI program, $125,000, Co-PI, 2020-2022

[G16] SNM: Continuous and Scalable 3D Nanoprinting, awarded from NSF Division of Civil, Mechanical and Manufacturing Innovation, $70,000, 05/20/2020-07/31/2021, (CMMI-1634832), Co-PI, 2020

[G17] IMA PI conference grant $5000 for the workshop on "Deep Learning Theory and Applications", Purdue University, Oct. 17-18, Co-PI, 2020

[G18] IMPACT Data Science Education: Preparing Undergraduates to Lead into the Future, Integrative Data Science Education Ecosystem Initiative, Purdue University, $70,146, Co-PI, 2019-2020

[G19] A data science approach to the qualification of additive manufactured material, Institute for Global Security and Defense Innovation, Purdue University, $30,000, Co-PI, 2019-2020

[G20] Integrating Geospatial Information across Disciplines, Integrative Data Science Education Ecosystem Initiative, Purdue University, $80,000, Co-PI, 2019

[G21] IMA PI conference grant $5000 for the workshop on "Approximation Theory and Machine Learning Conference", Purdue University, Sep. 29-30, Co-PI, 2018

[G22] DOE LLNL Subcontract B627599 $19,962, PI, 2018

[G23] Purdue Mathematics Department CCAM grant $6000 for the workshop on "Current Trends and Challenges in Data Science and Uncertainty Quantification", Purdue University, PI, Mar 31, 2018

[G24] Collaborative Research: AMPS: Multi-Fidelity Modeling via Machine Learning for Real-time Prediction of Power System Behavior, awarded from NSF Division of Mathematical Science, 2017-2020, $240,000. (DMS-1736364), PI, 2017-2021.

[G25] Collaborative Research: Design and Analysis of Data-Enabled High-Order Accurate Multiscale Schemes and Parallel Simulation Toolkit for Studying Electromagnetohydrodynamic Flow, awarded from Division of Mathematical Sciences, CDS&E-MSS program, 2018-2019, $150,000 (DMS-1821233), Co-PI, 2018-2022

[G26] Startup Fund from Purdue University, PI, 2014-2020

[G27] 2015 Mathematical Biosciences Institute Early Career Award, PI: Guang Lin, Sep.-Dec., 2015, $17,322

[G28] Subcontract from Department of Energy Pacific Northwest National Laboratory, $170,000, Nov. 2014-Nov. 2017.

[G29] *Scalable Solvers for Uncertainty Quantification of Large-scale Stochastic Partial Differential Systems,* **PNNL Early Career Award, PI: Guang Lin,** 2012-2013, $100,000.00 (Personal manage: $100,000.00).

[G30] *Modeling and Simulation of High Dimensional Stochastic Multiscale PDE Systems at the Exascale*, **PI: Guang Lin**, DOE - Office of Advanced Scientific Computing Research, 10/01/10-09/30/13, $1,483,863.00. (*Six projects were funded from 90 competitive proposals)* (Personal manage: $1,483,863.00).

[G31] *Stochastic nonlinear data-reduction methods with detection & prediction of critical rare events*, **PI: Guang Lin**, DOE - Office of Advanced Scientific Computing Research, 10/01/09-09/30/12, $1,436,000.00. *(10 projects were funded from 86 competitive proposals)* (Personal manages: $1,436,000.00)

[G32] *Uncertainty Quantification Pipeline*, Carbon Sequestration Initiative, Laboratory Directed Research and Development Program, **PI, Guang Lin,** 01/01/11-09/30/13, $650,000.00 (Personal manages: 650,000.00).

[G33] *Scalable Hierarchical Validation & Calibration for Robust Distributed Control of Large-scale Complex Systems under Uncertainty*, Control of Complex Systems Initiative, Laboratory Directed Research and Development Program, **Co-PI, Guang Lin,** 10/01/14-09/30/17, $450,000.00 (Personal manages: 240,000.00).

[G34] *The Multifaceted Mathematics Center for Complex Energy Systems,* PI: Mihai Anitescu, **Stochastic Modeling Task Lead: Guang Lin**, DOE - Office of Advanced Scientific Computing Research, 2012-2017, $15,000,000.00. (Personal manages: $1,000,000.00)

[G35] *Modeling Mesoscale Processes of Scalable Synthesis*, PI: George Karniadakis, **Stochastic Modeling Task 4 Lead: Guang Lin**, DOE - Office of Advanced Scientific Computing Research, 2012-2017, $15,000,000.00 (Personal manages: $1,500,000.00).

[G36] *Climate Science for a Sustainable Energy Future*, PI: David Bader, ORNL, **Atmosphere and Land Uncertainty Quantification Tasks PNNL Lead: Guang Lin**, 06/01/11-09/30/13, $16,000,000.00 (Personal manages: $1,250,000.00).

[G37] *Carbon Capture and Simulation Initiative (CCSI),* **Uncertainty Quantification Task Co-Chair: Guang Lin, DOE** – Fossil Energy, 10/01/10-09/30/13, $14,000,000.00 (Personal manages: $1,230,000.00).

[G38] *Multiscale Methods for Accurate, Efficient, and Scale-Aware Models of the Earth System,* PI: Williams Collins, Berkley National Laboratory, **PNNL Uncertainty Quantification Lead: Guang Lin***,* DOE – Office of Biological and Environmental Research (SciDAC 3 Program), 2012-2017, $20,500,000.00 (Personal manages: $400,000.00).

[G39] *High Order Model, Computation, and Stochastic Hybrid Coupling Continuum-Particle Algorithm with Application to Micro-propulsion,* PI: Zhiliang Xu, University of Notre Dame, **Co-PI: Guang Lin**, National Science Foundation, 2011-2014, $38,738.00 (Personal manages: $38,738.00).

[G40] *Towards understanding interfacial chemistry at reactive solid/liquid interphases,* PI: Maria Sushko, **Co-PI: Guang Lin**, PNNL Laboratory Directed Research and Development Program, 2012-2013, $800,000.00 (Personal manages: $200,000.00).

[G41] *Simulating Interface Growth and Defect Generation in CZT, PI: Chuck Henager,* **Co-PI: Guang Lin***,* 2011-2012, Domestic Nuclear Detection Office, Department of Homeland Security, $149,776.00 (Personal manages: $40,000.00).

[G42] *Multiscale Modeling of Energy Storage Materials, PI: Maria Sushko,* **Co-PI: Guang Lin**, PNNL Laboratory Directed Research and Development Program, 10/01/11-09/30/12, $400,000.00 (Personal manages: $200,000.00).

[G43] *A Multi-Modal Integration Framework for Chemical Imaging,* PI: Kerstin Kleese Van Dam, **Co-PI: Guang Lin**, PNNL Laboratory Directed Research and Development Program, 10/01/10-09/30/12, $1,179,000.00 (Personal manages: $300,000.00).

[G44] *Multi-Resolution Data Model and Directed Data Reduction, Reconstruction and Aggregation,* PI: Kerstin Kleese Van Dam, **Co-PI: Guang Lin**, PNNL Laboratory Directed Research and Development Program, 10/01/10-09/30/12, $975,000.00 (Personal manages: $200,000.00).

[G45] *Modeling of Distributed Energy Resources in the Smart Grid,* PI: Shuai Lu, **Co-PI: Guang Lin**, PNNL Laboratory Directed Research and Development Program, 10/01/10-09/30/12, $750,000.00 (Personal manages: $350,000.00).

[G46] *A Statistical State Prediction Methodology to Improve Reliability and Efficiency of Power System Operation,* PI: Ning Zhou, **Co-PI: Guang Lin**, PNNL Laboratory Directed Research and Development Program, 10/01/10-09/30/12, $1,100,000.00 (Personal manages: $240,000.00).

[G47] *Scalable Sensor Data Management Middleware*, PI: Jian Yin, **Task Lead: Guang Lin**, PNNL Laboratory Directed Research and Development Program, 10/01/10-09/30/12, $1,050,000 (Personal manages: $200,000.00).

[G48] *Real-time Model Validation and Calibration for Large Interconnected Time-variant Systems Using Online Measurement Data,* PI: Shuai Lu, **Co-PI: Guang Lin**, DOE - Office of Advanced Scientific Computing Research, 10/01/09-09/30/12, $1,707,000.00 (Personal manages: $400,000.00).

[G49] *Property Improvement in CZT via Modeling and Processing Innovation,* PI: Charles H Jr Henager, **Co-PI: Guang Lin**, DOE - Office of Nonproliferation Research and Engineering (NA-22), 10/01/09-09/30/12, $2,400,000.00 (Personal manages: $600,000.00).

[G50] *Hybrid Model for Ice Sheet Dynamics,* PI: Alexandre M. Tartakovsky, **Co-PI: Guang Lin**, DOE - Office of Advanced Scientific Computing Research, 10/01/09-09/30/12, $931,000.00 (Personal manages: $200,000.00).

[G51] *Stochastic analysis of advection-diffusion-reaction systems with application to reactive transport in porous media*, PI: Alexandre M. Tartakovsky, **Co-PI: Guang Lin, DOE** - Office of Advanced Scientific Computing Research, 10/01/2009-09/30/2012, 549, 000.00 (Personal manages: $265,000.00).

[G52] *Advanced Scalability for STOMP: Subsurface Simulation and Characterization at Extreme Resolution*, PI: Steve Yabusaki, **Co-PI: Guang Lin**, PNNL Laboratory Directed Research and Development Program, 10/01/08-09/30/11, $750,000.00 (Personal manages: $250,000.00).

[G53] *Multiscale investigations of CO2 behavior in subsurface under extreme conditions*, PI: Alexandre M. Tartakovsky, **Co-PI: Guang Lin**, PNNL Laboratory Directed Research and Development Program, 10/01/08-09/30/11, $1,389,567.00 (Personal manages: $460,000.00).

[G54] *From molecular reactions to catalytic reactors: Multiscale modeling*, PI: Michael Dupuis, **Co-PI: Guang Lin**, PNNL Laboratory Directed Research and Development Program, 04/01/09-03/30/12, $1,200,000.00 (Personal manages: $400,000.00).

[G55] *Analytical approaches for integrated assessments of grid operations & planning,* PI: Ning Zhou, **Key Contributor: Guang Lin**, PNNL Laboratory Directed Research and Development Program, 10/01/09-10/30/10, $200,000.00 (Personal manages: $50,000.00).

[G56] *Materials Discovery Tool for Radiation Detection Materials: From Crystal Structure and Property Data to Processing Predictions*, PI: Charles H Jr Henager, **Key Contributor: Guang Lin**, DOE - Office of Nonproliferation

Research and Engineering (NA-22), 10/01/2006-09/30/2009, $3,192,000.00 (Personal manages: $800,000.00).

[G57] *Stochastic analysis of advection-diffusion-reaction systems with application to reactive transport in porous media*, PI: Alexandre M. Tartakovsky, **Key Contributor: Guang Lin**, DOE - Office of Advanced Scientific Computing Research, 10/01/2006-09/30/2009, $537, 000.00 (Personal manages: $260,000.00).

6.2 Publications (* represents the corresponding author)

24 Representative publications:

1. Jason E. Johnson, Ishat Raihan Jamil, Liang Pan, **Guang Lin**, Xianfan Xu, Bayesian Optimization with Gaussian-Process based Machine Learning for Improvement of Geometric Accuracy in Projection Multi-photon 3D Printing, Light: Science & Applications (Nature, Impact Factor 20.6), 14, 56, 2025. https://doi.org/10.1038/s41377-024-01707-8

2. Zhang, Y., Zhang, S., Wu, H., Wang, J., **Lin, G**.*, Zhang, A.P. Miniature computational spectrometer with a plasmonic nanoparticles-in-cavity microfilter array. Nat Commun 15, 3807 (2024).

   https://www.nature.com/articles/s41467-024-47487-y

3. Ziqi Guo, Zherui Han, Dudong Feng, **Guang Lin***, Xiulin Ruan, Sampling-accelerated prediction of phonon scattering rates for converged thermal conductivity and radiative properties, Npj Computational Materials, 10, 31, 2024. https://doi.org/10.1038/s41524-024-01215-8

4. Ziqi Guo, Roy Chowdhury Prabudhya1, Zherui Han, Yixuan Sun, Dudong Feng, **Guang Lin***, and Xiulin Ruan, Fast and Accurate Machine Learning of Phonon Scattering Rates and Lattice Thermal Conductivity, **Nature npj Computational Material** 9, 95, 2023. https://doi.org/10.1038/s41524-023-01020-9

5. Haoyang Zheng, Jeffrey Petrella, P. Murali Doraiswamy, **Guang Lin***, Wenrui Hao, Data-driven causal model discovery and personalized prediction in Alzheimer's disease, **Nature NPJ Digital Medicine**, 5, 137, 2022. https://www.nature.com/articles/s41746-022-00632-7

6. Yixuan Sun, Surya Mitra Ayalasomayajula, Abhas Deva, **Guang Lin***, R. Edwin Garcia, Artificial Intelligence Inferred Microstructural Properties from Voltage-Capacity Curves, **Scientific Reports**, 12, 13421, 2022. https://doi.org/10.1038/s41598-022-16942-5

7. Ehsan Kharazmi, Min Cai, Xiaoning Zheng, **Guang Lin**, George Karniadakis, Identifiability and predictability of integer- and fractional-order epidemiological models using physics-informed neural networks, **Nature Computational Science**, 1-10, 2021.
https://doi.org/10.1038/s43588-021-00158-0

8. **Guang Lin**, Chau-Hsing Su and George E. Karniadakis, The stochastic piston problem, **Proceedings of the National Academy of Sciences of the United States of America**, 101(45):15840-15845, 2004.
https://doi.org/10.1073/pnas.0405889101

9. **Guang Lin**, Chau-Hsing Su and George E. Karniadakis, Random Roughness Enhances Lift in Supersonic Flow, **Physical Review Letters**, 99:104501, 2007.
https://doi.org/10.1103/PhysRevLett.99.104501

10. Sheng Zhang, **Guang Lin***, Samy Tindel, Two-dimensional signature of images and texture classification, **Proceeding of the Royal Society of London**. Series A, mathematical, physical and engineering sciences, *A*.**478:**20220346, 2022.
https://royalsocietypublishing.org/doi/abs/10.1098/rspa.2022.0346

11. Sheng Zhang, **Guang Lin***, Robust data-driven discovery of governing physical laws with error bars, **Proceedings of the Royal Society of London**. Series A, mathematical, physical and engineering sciences, A 474: 20180305, 2018.
https://doi.org/10.1098/rspa.2018.0305

12. Yifan Du, **Guang Lin***， Turbulence Generation from a stochastic wavelet model, **Proceeding of the Royal Society of London. Series A**, mathematical, physical and engineering sciences, 474(2217):20180093, 2018.
https://doi.org/10.1098/rspa.2018.0093

13. Bledar A. Konomi, Georgios Karagiannis, Kevin Lai, **Guang Lin***, Bayesian treed Calibration: an application to Carbon capture with AX sorbent, **Journal of American Statistical Association**, 112(517): 37-53, 2017.
https://doi.org/10.1080/01621459.2016.1190279

14. F. Liang, Y. Cheng, and **G Lin***, Simulated Stochastic Approximation Annealing for Global Optimization with a Square-Root Cooling Schedule, **Journal of the American Statistical Association**, 109(506): 847-863, 2014.

https://www.tandfonline.com/doi/abs/10.1080/01621459.2013.872993

15. Wei Deng, Xiao Zhang, Faming Liang, **Guang Lin***, An adaptive empirical Bayesian method for sparse deep learning, **2019 Conference on Neural Information Processing Systems (NeurIPS)**, accepted, Dec. 8 – Dec. 14, 2019, Vancouver, Canada. (Tier 1 AI conference)
https://pmc.ncbi.nlm.nih.gov/articles/PMC7687285/

16. Wei Deng, Faming Liang, **Guang Lin***, A contour stochastic gradient Langevin dynamics algorithm for simulations of multi-modal distributions, **2020 Conference on Neural Information Processing Systems (NeurIPS)**, Dec. 5 – Dec. 12, 2020, virtual meeting. (Tier 1 AI conference)
https://pmc.ncbi.nlm.nih.gov/articles/PMC8457681/

17. Wei Deng, Qi Feng, Liaoyao Gao, F. Liang, **G. Lin***, Non-convex learning via replica exchange stochastic gradient MCMC, **2020 International Conference on Machine Learning (ICML)**, accepted, Jul 12 - 18, 2020, Virtual Meeting. (Tier 1 AI conference)
https://proceedings.mlr.press/v119/deng20b.html

18. Wei Deng, Qi Feng, Georgios Karagiannis, **Guang Lin***, Faming Liang, Accelerating Convergence of Replica Exchange Stochastic Gradient MCMC via Variance Reduction, **The Ninth International Conference on Learning Representations (ICLR)**, May 4th-7th, 2021, accepted (virtual meeting). (Tier 1 AI conference)
https://openreview.net/forum?id=iOnhIy-a-0n

19. Wei Deng, Siqi Liang, Botao Hao, **Guang Lin***, Faming Liang, Interacting Contour Stochastic Gradient Langevin Dynamics, **The Tenth International Conference on Learning Representations (ICLR) 2022**, Virtual Meeting. (Tier 1 AI conference), Apr 25th – 29th, accepted.
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20. Wei Deng, Qian Zhang, Qi Feng, Faming Liang, **Guang Lin***, Non-reversible Parallel Tempering for Uncertainty Approximation in Deep Learning, Thirty-seventh AAAI Conference on Artificial Intelligence, accepted, 2023. (Oral accepted talk)
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[C16] Wei Deng, Faming Liang, **Guang Lin***, A contour stochastic gradient Langevin dynamics algorithm for simulations of multi-modal distributions, **2020 Conference on Neural Information Processing Systems (NeurIPS)**, Dec. 5 – Dec. 12, 2020, virtual meeting. (Tier 1 AI conference) https://pmc.ncbi.nlm.nih.gov/articles/PMC8457681/

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[C45] J. Bao, Z. Hou, Y. Fang, H. Ren, **G. Lin**, Uncertainty quantification of geomechanical responses and risk analysis of induced seismicity during geological CO2 sequestration, *12th Annual Conference on Carbon Capture, Utilization and Sequestration*, Pittsburgh, PA, 2013.

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[C50] J. Wang, X. Liu, H. Shen, **G. Lin***, Multi-resolution Climate Ensemble parameter analysis with nested parallel coordinates plots, IEEE VIS Conference, Visual Analytics Science and Technology program (VAST), Oct. 23-28, 2016, Baltimore, MD, USA.

[C51] A. Biswas, **G. Lin**, X. Liu, H. Shen, Visualization of Time-Varying Weather Ensembles Across Multiple Resolutions, IEEE VIS Conference, Scientific Visualization program (SciVis), Oct. 23-28, 2016, Baltimore, MD, USA.

6.2.5 Referred Formal Reports

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[R2] CH Henager, Jr., F Gao, SY Hu, **G Lin**, EJ Bylaska, N Zabaras, "Simulating interface growth and defect generation in CZT-simulation state of the art and known gaps", PNNL-189638, Pacific Northwest National Laboratory, Richland, WA, 2012.

[R3] P. Ramuhalli, **G. Lin**, S.L. Crawford, B. Konomi, B.G. Braatz, J.B. Coble, B. Shumaker, H. Hashemian, Uncertainty Quantification Techniques for Sensor

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6.2.6 Selected 6 Keynote/plenary speeches

[KS1] Plenary talk at SIAM Great Lakes Section Annual Meeting, Hammond, IN, October 12th, 2024.

[KS2] College of Science's Honorary Invited Lecture Talk, Purdue University Fort Wayne Campus, For Wayne, IN, April 25th, 2024.

[KS3] Keynote talk at Young Researcher Workshop on Uncertainty Quantification and Machine Learning, Shanghai Jiaotong University, Shanghai, China, June 5th, 2019.

[KS4] Semi-keynote talk in Computational Science and Engineering in Electrochemical Energy Systems Mini-symposium at Conference on Finite Elements in Fluids, Chicago, IL, March 03/31-04/03, 2019.

[KS5] Keynote Seminar at the Center for Interdisciplinary Scientific Computation, Illinois Institute of Technology, Feb. 1, 2019

[KS6] Keynote talk at the second Microstructure modeling Young Researcher Forum, Southeast University, Nanjing, China, May 12, 2018.

6.2.7 Selected 187 Invited Talks

[IT1] NSF funded IMSI Spring 2025 Long Program | Uncertainty Quantification and AI for Complex Systems, Spring 2025.

[IT2] Invited talk at NSF funded ICERM workshop on Nonlocality: Challenges in Modeling and Simulation, Providence, RI, April 15-19, 2024.

[IT3] Colloquium at Department of Applied and Computational Mathematics and Statistics, University of Notre Dame, Oct. 14, 2024.

[IT4] Colloquium at Department of Mathematics, Florida State University, March 22nd, 2024.

[IT5] Bridge to Research Seminar, Feb. 26th, 2024, West Lafayette, IN.

[IT6] Math, Physics, and Computer Science Club Seminar at West Lafayette Jr./Sr. High School, Jan 31, 2024, West Lafayette, IN.

[IT7] Invited DDPS Webinar at Lawrence Livermore National Lab, Jan 12th, 2024.

[IT8] Invited Poster at DOE ASCR PI Meeting, Jan 8-10, 2024 Albuquerque, NM

[IT9] Invited DataLearning Seminar, Imperial College London, 12/05/2023

[IT10] Invited talk at Anna Maria Workshop XXIII, Anna Maria, FL, Nov. 15, 2023.

[IT11] Invited Webinar, Department of Mathematics, Shanghai University, Nov. 10, 2023.

[IT12] Bridge to Research Seminar, West Lafayette, IN, Oct. 30, 2023.

[IT13] College of Agriculture Data-driven seminar, West Lafayette, IN, Sep., 21, 2023.

[IT14] Invited Seminar at DOE ORNL, Jan 5th, 2023, Oak Ridge, TN, US.

[IT15] Invited Brown Bag Webinar at DOE NREL, Oct. 31st, 2022.

[IT16] Invited Zhejiang University Webinar, Nov. 14th, 2022

[IT17] Invited Colloquium at Department of Mathematics, University of Utah, Salt Lake City, Nov. 3rd, 2022.

[IT18] Statistics New Student Seminar, Oct. 26th, 2022, Purdue University, West Lafayette, IN 47906.

[IT19] Invited Webinar at Department of Mathematics, Chinese University of Hong Kong, Oct. 23rd, 2022.

[IT20] Invited talk at SIAM Conference on Mathematics of Data Science, San Diego, Sep. 27, 2022.

[IT21] Invited talk at 2022 Joint Statistical Meeting, August 9, 2022, Washington, DC, US.

[IT22] Invited talk at SIAM Conference on Uncertainty Quantification, April 24, 2022, Atlanta, Georgia, US.

[IT23] Invited webinar at Tongji University, March 28th, 2022.

[IT24] Invited Colloquium at Department of Mathematics, Auburn University, March 18th, 2022.

[IT25] Invited talk at Naval Air Systems Command Project Kick-off Meeting, March 14th, 2022.

[IT26] Invited Webinar at Shanghai Normal University, Jan, 3rd, 2022.

[IT27] Invited Webinar at Shanghai Finance and Economics University, Dec. 30, 2021

[IT28] Invited talk at Center for Infrastructure Innovation, Purdue University, Dec. 9th, 2021.

[IT29] Invited talk at Department of Applied Mathematics, Illinois Institute of Technology, Oct. 27, 2021.

[IT30] Invited talk at Lunch and Learn Seminar, Pacific Northwest National Laboratory, Oct. 19, 2021.

[IT31] Invited talk at IMPACT Data Science Education workshop, Oct. 21st, 2021, Purdue University.

[IT32] Invited talk at IMA Workshop on the Mathematical Foundation and Applications of Deep Learning, August 13th, 2021

[IT33] Invited talk at Global Science Leadership Seminar, August 30th, 2021.

[IT34] Invited talk on predicting the COVID-19 pandemic with uncertainties using trustworthy data-driven epidemiological models at Society for Mathematical Biology Annual Meeting, June 13-17, 2021, (virtual meeting).

[IT35] Invited talk at Purdue Research Foundation, May 5th, 2021

[IT36] Invited talk at Zhejiang University, May 6th, 2021

[IT37] Invited talk at IMPACT Data Science Education Forum, April 26th, 2021, Purdue University.

[IT38] Invited talk at Numerical Analysis Seminar, University of Iowa, Mar. 23, 2021.

[IT39] Invited talk at Center for Computational and Applied Mathematics Seminar, Purdue University, West Lafayette, IN, Mar. 15, 2021.

[IT40] Invited talk at SIAM Conference on Computational Science and Engineering, Feb. 15, 2021.

[IT41] Invited talk at the Workshop on “workshop on Computation and Applications of PDEs Based on Machine Learning”, Tianyuan Mathematical Center in Northeast China, July 13-15, 2020.

[IT42] Invited seminar at the Center for Computational Mathematics and Applications, Eberly College of Science, Penn State University, July 23rd, 2020.

[IT43] Invited talk at Workshop on "Experimental and Computational Fracture Mechanics: Validating peridynamics and phase-field models", Lousiana State University, Baton Rouge, LA, Feb. 26, 2020.

[IT44] Invited seminar, Big Data in Forest Research, Purdue University, West Lafayette, IN, Feb. 20, 2020.

[IT45] Invited seminar, Computational Interdisciplinary Graduate Program Seminar Series, Purdue University, Feb. 15, 2020.

[IT46] Invited seminar, Birck Nanotechnology Center Faculty Seminar Series, Purdue University, Feb. 13, 2020.

[IT47] Invited seminar, IMPACT Data Science Education working group, Purdue University, Feb. 13, 2020.

[IT48] Invited seminar at Department of Mathematics, North Carolina State University, Feb. 10, 2020.

[IT49] Invited Talk in the Data Security Panel at 2020 Business Technology Summit, Indianapolis, IN, Jan 23, 2020.

[IT50] Invited seminar at IACS, Stonybrook University, Stonybrook, NY, Oct. 31, 2019.

[IT51] Invited seminar at Department of Mathematics, John Hopkins University, Baltimore, MD, Oct. 9, 2019.

[IT52] Invited talk at Workshop on computational methods for simulation science, uncertainty quantification and physics-informed machine learning, MIT, Boston, MA, Sep. 20, 2019.

[IT53] Invited seminar at School of Information Science, Shanghai Technology University, Shanghai, China, June 13, 2019.

[IT54] Invited seminar at Department of Electrical Engineering, Zhejiang University City College, Hangzhou, China, June 12, 2019.

[IT55] Invited seminar at Department of Mathematics, Harbin Institute of Technology, Harbin, China, June 10, 2019.

[IT56] Invited talk at the Sixth International Conference on Interdisciplinary Applied and Computational Mathematics, Zhejiang University, Hangzhou, China, June 8, 2019.

[IT57] Invited seminar at Department of Mathematics, Shanghai Normal University, Shanghai, China, June 7, 2019.

[IT58] Invited seminar at the University of Michigan-Shanghai Jiaotong University Joint Institute, Shanghai Jiaotong University, Shanghai, China, June 5, 2019.

[IT59] Keynote talk at Young Researcher Workshop on Uncertainty Quantification and Machine Learning, Shanghai Jiaotong University, Shanghai, China, June 5, 2019.

[IT60] Invited seminar at Department of Mathematics, Beijing University of Technology, Beijing, China, June 3, 2019.

[IT61] Invited talk at the 11th International Conference on Scientific Computing and Applications, Xiamen, China, May 29, 2019.

[IT62] Invited seminar at Department of Mathematics, Nanjing University of Information Science and Technology, Nanjing, China, May 22, 2019.

[IT63] Invited seminar at Department of Mathematics, Southeast University, Nanjing, China, May 15, 2019.

[IT64] Invited seminar at Department of Applied Mathematics, University of California Santa Cruz, April 29, 2019

[IT65] Kenote talk at Midwest Numerical Analysis Day, Illinois Institute of Technology, April 20, 2019

[IT66] Invited talk at Foundations of Data Science Workshop, Purdue University, West Lafayette, IN, April 13, 2019.

[IT67] Invited seminar at Department of Mathematics, Michigan State University, East Lansing, MI, April 5, 2019.

[IT68] Invited seminar at University of Notre Dame, Notre Dame, IN, April 3, 2019.

[IT69] Keynote talk in Computational Science and Engineering in Electrochemical Energy Systems Mini-symposium at Conference on Finite Elements in Fluids, Chicago, IL, March 03/31-04/03, 2019.

[IT70] Invited seminar at SIAM CSE Conference, Spokane, WA, Feb. 27, 2019.

[IT71] Invited talk at IRG3: MRSEC and IRG Discussion, Purdue University, West Lafayette, IN, Feb 26, 2019.

[IT72] Invited seminar at Bridge to Research Seminar, Purdue University, West Lafayette, IN, Feb. 18, 2019.

[IT73] Invited talk at Geo-Data Science Seminar, Purdue University, West Lafayette, IN, Feb 6, 2019.

[IT74] Semi-Keynote Seminar at the Center for Interdisciplinary Scientific Computation, Illinois Institute of Technology, Feb. 1, 2019

[IT75] Colloquium at Department of Mathematics, Illinois Institute of Technology, Nov. 16, 2018.

[IT76] Invited talk at NSF ATD/AMPS workshop, Washington D.C., Oct. 11-12, 2018.

[IT77] Invited talk at Dep Learning Workshop @ Purdue, Integrative Data Science Initiative, Purdue University, West Lafayette, IN, August 16, 2018.

[IT78] Invited seminar at Institute of Computational Mathematics and Scientific/Engineering Computing, Academy of Mathematics and Systems Sciences, Chinese Academy of Sciences, Beijing, China, June 6, 2018.

[IT79] Invited Seminar at the Harbin Industrial University, Harbin, China, June 8, 2018.

[IT80] Invited seminar in Water Resource National Key Laboratory, at Wuhan University, June 4, 2018.

[IT81] Invited seminar at School of Environmental Resource, Zhejiang University, Hangzhou, China, June 2, 2018.

[IT82] Invited seminar at the Department of Mathematics, Zhejiang University, Hangzhou, China, June 1, 2018.

[IT83] Invited seminar at Department of Mathematics, Shanghai Normal Unversity, Shanghai, China, May 31, 2018.

[IT84] Invited seminar in the Department of Mathematics, Tongji University, Shanghai, China, May 25, 2018.

[IT85] Invited seminar at School of Aerospace and Aeronautics, Zhejiang University, Hangzhou, China, May 22, 2018.

[IT86] Invited seminar at School of Information Science, Shanghai Technology University, Shanghai, China, May 21, 2018.

[IT87] Invited seminar at Department of Mathematics, Nanjing University of Information Science and Technology, Nanjing, China, May 17, 2018.

[IT88] Invited seminar in the Department of Mathematics, Southeast University, Nanjing, China, May 17, 2018.

[IT89] Keynote talk at the second Microstructure modeling Young Researcher Forum, Southeast University, Nanjing, China, May 12, 2018.

[IT90] Invited seminar at Department of Energy Sandia National Laboratories, Alburqueue, NM, May 1, 2018.

[IT91] Invited seminar in the Department of Mathematics, Penn State University, State Collge, PA, April 23, 2018.

[IT92] Invited seminar at Department of Mathematics, Indiana University - Purdue University Indianapolis, August 25, 2017.

[IT93] Invited talk at Midwest Workshop on Mechanics of Materials and Structures, Purdue University, August 11, 2017.

[IT94] Invited talk at International Conference on Uncertainty Quantification in Computational Fluid Dynamics, Shanghai, China, on July 24-27, 2017.

[IT95] Invited talk at Workshop on Mathematical Approaches to Interfacial Dynamics in Complex Fluids, Banff International Research Station, Banff, CA, on June 26-30, 2017.

[IT96] Invited seminar at Division of Applied Mathematics, Brown University, Providence, RI, March 17, 2017.

[IT97] Invited seminar at Math Biology seminar series, Purdue University, West Lafayette, IN, Feb. 23, 2017.

[IT98] Invited seminar at Probability seminar, Purdue University, West Lafayette, IN, Feb. 7, 2017.

[IT99] Invited seminar at Probability seminar, Purdue University, West Lafayette, IN, Jan. 31, 2017.

[IT100] Invited seminar at INFORMS seminar, Department of Industrial Engineering, Purdue University, West Lafayette, IN, Nov. 16, 2016.

[IT101] Invited seminar at Department of Electric Engineering, Southeast University, Nanjing, China, June 28, 2016.

[IT102] Invited seminar at Department of Mathematics, Nanjing Information Engineering University, Nanjing, China, June 27, 2016.

[IT103] Invited seminar at Institute of Information Science, ShanghaiTech University, Shanghai, China, June 25, 2016.

[IT104] Invited seminar at Department of Mathematics, Zhejiang University, Hangzhou, China, June 22, 2016.

[IT105] Invited talk at Workshop on Modeling and Analysis in Molecular Biology and Electrophysiology, Suzhou, China, June 17, 2016.

[IT106] Invited seminar at Naritech Company, Nanjing, China, June 7, 2016.

[IT107] Invited seminar at Department of Mechanical Engineering, Southeast University, Nanjing, China, June 6, 2016.

[IT108] Invited talk at the International Conference on Applied Mathematics 2016 at City University, Hong Kong, May 30-June 2, 2016.

[IT109] Invited seminar at Department of Mathematics, Michigan State University, East Lansing, MI, April 29, 2016.

[IT110] Invited seminar at Spatial Statistics Seminar Series, Purdue University, West Lafayette, IN, April 23, 2016.

[IT111] Invited seminar at Department of Mathematics, Ohio State University, Columbus, OH, Dec. 3, 2015.

[IT112] Invited seminar at Department of Mathematics, Ohio State University, Columbus, OH, Nov. 12, 2015.

[IT113] Invited seminar at Department of Mathematics, Penn State University, State College, PA, Oct. 26, 2015.

[IT114] Invited seminar at Department of Mathematics, Indiana University–Purdue University Indianapolis, Indianapolis, IN, Sep. 18, 2015.

[IT115] Invited seminar at Department of Statistics, University of Minnesota, Minneapolis, MN, Feb. 26., 2015.

[IT116] Invited seminar at Science and Technology for Aquifer Recharge Workshop, Doha, Qatar, Feb. 9, 2015

[IT117] Invited seminar at Department of Mathematics Colloquium, Ohio State University, Columbus, OH, Nov. 18, 2014.

[IT118] Invited seminar at Southeast University, Nanjing, China, Nanjing, China on May 11, 2014.

[IT119] Invited seminar at the Department of Mathematics, Shanghai University, China, Shanghai, China on July 16, 2013.

[IT120] Invited talk at Workshop on Scientific Computing With Applications, Kunming, China on July 20, 2013.

[IT121] Invited seminar at Southeast University, Nanjing, China, Nanjing, China on July 25, 2013.

[IT122] Invited seminar at Department of Mathematics, Colorado State University, Fort Collins, CO on November 21, 2013.

[IT123] Invited talk at IMA Hot Topics Workshop on Uncertainty Quantification in Materials Modeling, Minneapolis, MN on December 16, 2013.

[IT124] Invited talk at the 2012 International Workshop on Recent Advances in Scientific and Engineering Computing, Shanghai, China, 2012.

[IT125] Invited talk at the Second Workshop on Computational Methods for Applied Sciences at Columbia University, New York City, Dec. 2, 2012.

[IT126] Invited talk at the Computational Challenges in Probability Workshop: Uncertainty Quantification, Providence, RI on October 9, 2012.

[IT127] Invited seminar at the ACMS Colloquium at the University of Notre Dame, Notre Dame, IN on October 4, 2012.

[IT128] Invited seminar at Applied and Computational Mathematics and Statistics, Univ. of Notre Dame, Notre Dame, IN on October 4-5, 2012

[IT129] Invited seminar at the Mechanics and Computation Seminar Series at Stanford University, San Francisco, CA on September 27, 2012

[IT130] Invited talk at the DOE Multifaceted Mathematics Center for Complex Energy Systems Kick-off Meeting, ANL, Lemont, IL, September 13, 2012

[IT131] Invited talk at the DOE Collaboratory on Mathematics for Mesoscopic Modeling of Materials Kick-off Meeting, Seattle, September 10, 2012.

[IT132] Invited talk at the 2012 DOE PNNL Computational Sciences and Mathematics All Hands Meeting, Richland, WA, August 16, 2012.

[IT133] Invited talk at the Carbon Sequestration Initiative Annual Review, Richland, WA, August 18, 2012.

[IT134] Invited talk at the DOE ASCR Exascale Research Conference, Portland, OR on April 17, 2012.

[IT135] Invited seminar at Beijing Computational Science Research Center, Beijing, China on May 21, 2012.

[IT136] Invited Seminar at the State Key Laboratory of Scientific and Engineering Computing, Beijing, China on May 21, 2012.

[IT137] Invited seminar at the Second International Conference on Scientific Computing, Nanjing, China on May 24, 2012.

[IT138] Invited seminar at the conference on “Challenges in Geometry, Analysis, and Computation: High-Dimensional Synthesis”, New Haven, CT.

[IT139] Invited talk at the 2012 Joint CMSD/CSMD session on PNNL FCSD Directorate Advisory Committee Meeting in Richland, WA, June 12, 2012.

[IT140] Invited talk at the Joint Session CSMD and CMSD Material Genome, Directorate Advisory Committee Meeting, Richland, WA, June 12, 2012.

[IT141] Invited poster at the FCSD Joint Poster Session, Directorate Advisory Committee Meeting, Richland, WA, June 12, 2012.

[IT142] Invited seminar in the Department of Mathematics at Univ. of South Carolina, Columbia, SC on April 6, 2012.

[IT143] Invited seminar in the Department of Mathematics at Louisiana State University, Baton Rouge, LA, March 13, 2012.

[IT144] Invited seminar at the Undergraduate Mathematical Sciences Seminar at the University of Washington, Feb. 16, 2012, Seattle, WA.

[IT145] Invited talk at the 1st CESM UQ and Analysis Interest Group Meeting, Jan 31, 2012, Boulder, WA.

[IT146] Invited talk at the 1st Sim-SEQ Workshop, San Francisco, CA on December 6, 2011.

[IT147] Invited seminar at the Society of Petroleum Engineering Golden Gate Section Distinguished Lecture, San Francisco, CA on December 8, 2011

[IT148] Invited seminar at the Seminar in Aeronautics & Astronautics Department, University of Washington, Dec. 2, 2011, Seattle, WA.

[IT149] Invited seminar at the Department of Applied Mathematics Colloquium, Penn. State University, Nov. 4, 2011, University Park, PA.

[IT150] Invited seminar at the Department of Applied Mathematics Pizza Seminar, Penn. State University, Nov. 4, 2011, University Park, PA.

[IT151] Invited seminar 1 at the 2011 DOE Applied Math Program PI Meeting, October 17-19, Washington D.C.

[IT152] Invited seminar 2 at the 2011 DOE Applied Math Program PI Meeting, October 17-19, Washington D.C.

[IT153] Invited talk at the 2011 DOE Climate PI Meeting, September 19-22, Washington D.C.

[IT154] Invited talk "Uncertainty Quantification for CCSI", at the 2011 Carbon Capture Simulation Initiative Industry Workshop, September 26-28, 2011, Morgantown, WV.

[IT155] Invited talk "Uncertainty Quantification Methods and Software for Carbon Capture Simulation", at the 2011 Carbon Capture Simulation Initiative Industry Workshop, September 26-28, Morgantown, WV.

[IT156] Invited talk "A Software System for Uncertainty Quantification and its Application to the CCSI MEA Process Model", at the 2011 Carbon Capture Simulation Initiative Industry Workshop, September 26-28, Morgantown, WV.

[IT157] Invited talk "Solid Sorbent Simulation: Early Development and UQ Evaluation Tools", at the 2011 Carbon Capture Simulation Initiative Industry Workshop, September 26-28, Morgantown, WV.

[IT158] Invited seminar at the Department of Mathematics, Colorado State University, July 15, 2011, Fort Collins, Colorado.

[IT159] Invited poster at the Department of Energy SciDAC 2011 PI meeting, July 10-14 2011, Denver, Colorado.

[IT160] Invited talk at the "Uncertainty Quantification in Computational Fluid Dynamics" invited session, 20th AIAA Computational Fluid Dynamics Conference, Honolulu, Hawaii, June 27-30, 2011.

[IT161] Invited talk at the workshop "Uncertainty Quantification in Industrial and Energy Applications: Experiences and Challenges", June 2-4 2011, at the Institute for Mathematics and its Applications (IMA) in Minneapolis, MN.

[IT162] Invited seminar at the Applied and Computational Mathematics Seminar, California Technology Institute, May 9th, 2011, Pasadena, CA.

[IT163] Invited seminar at Applied Mathematics Colloquium, University of Washington, April 21, 2011, Seattle, WA.

[IT164] Invited talk at the IAMCS Workshop in Large-Scale Inverse Problems and Uncertainty Quantification, February 25th, 2011, Texas A&M University, College Station, Texas.

[IT165] Invited seminar at the Petroleum Engineering Department Colloquium, Colorado School of Mines, February 11th, 2011, Golden, Colorado.

[IT166] Invited seminar in the Mathematics Department at University of North Carolina Charlotte, Charlotte, NC on February 7, 2011.

[IT167] Invited seminar at the Division of Applied Mathematics, Brown University, December 17th, 2010, Providence, RI.

[IT168] Invited seminar at the Department of Mathematics Colloquium, Iowa State University, December 7th, 2010, Ames, IA.

[IT169] Invited seminar at the Department of Civil Engineering, University of Southern California, December 1st, 2010, Los Angeles, CA.

[IT170] Invited seminar at the Department of Applied Mathematics, University of Washington, November 22nd, 2010, Seattle, WA.

[IT171] Invited talk at the "Mapping Out Future Directions for Uncertainty Quantification in Scientific Inference" conference, November 5, 2010, Santa Fe, NM.

[IT172] Invited seminar at the Department of Applied Mathematics, SUNY Stony Brook University, September 8th, 2010, Stony Brook, NY.

[IT173] Invited talk at the FY 2011 Nuclear Energy University Programs Workshop, July 27-28, 2010, Rockville, MD.

[IT174] Invited talk at CMSD Division Advisory Committee Meeting, June 15th, 2010, Richland, WA

[IT175] Invited talk at CSM Division Advisory Committee Meeting, June 15th, 2010, Richland, WA

[IT176] Invited seminar at the PNNL Brown Bag Seminar, May 27, 2010, Richland, WA.

[IT177] Invited talk at the 2010 DOE Applied Mathematics Program Meeting, May 4, 2010, Berkeley, CA.

[IT178] Invited seminar at the Aerospace computational design lab, MIT, December 4th, 2009, Boston, MA.

[IT179] Invited talk at Princeton Plasma Physics Laboratory, November 30th, 2009, Princeton, NJ.

[IT180] Invited talk at the Mini-Symposium on Uncertainty Quantification in Simulations of Fluid Flow, Presented at the 62nd Annual Meeting of the APS Division of Fluid Dynamics, November 22nd, 2009, Minneapolis, Minnesota.

[IT181] Invited talk at the Real-time Model Validation and Calibration (RTMV) kick-off meeting, November 11th, 2009, Richland, WA.

[IT182] Invited talk at DOE ASCR Applied Math Program' PNNL visit, September 2nd, 2009, Richland, WA.

[IT183] Invited seminar at the Applied Mathematics Colloquium, in the Department of Applied Mathematics, University of Washington, March 12th, 2009, Seattle, WA.

[IT184] Invited seminar at the PNNL CSM Development Brown Bag, Dec. 18th, 2008, Richland, WA.

[IT185] Invited seminar at the Center for Applied Mathematics Colloquium, University of Notre Dame, November 10th, 2008, Notre Dame, IN.

[IT186] Invited seminar at the 2008 DOE Summer School in Multiscale Mathematics and High-Performance Computing, Washington State University-Tri-Cities, August 5th, Richland, WA.

[IT187] Invited graduate seminar in the Department of Aeronautics & Astronautics, University of Washington, January 18th, 2008, Seattle, WA.

7. Current and Past Students & Postdocs at Purdue University:

Mentored 8 postdocs and 30 students at Purdue University.

Total 7 postdocs and 8 Ph.D. students and 3 undergraduates at Math:
(1 current, 1 past) Postdoc at Math:
Current: Chris Moya, Jiahao Zhang, Izzet Sahin, Shuguang Chen
Past: Yating Wang (Assistant Prof. at University of Hong Kong, Georgios Karagiannis (Associate Prof. at University of Durham), Zecheng Zhang (Postdoc at Carnegie Mellon University)

1 Current Ph.D. students at Math: Sheng Zhang

7 Past Ph.D. students: Wei Deng (Morgan Stanley), Nickolas D Winovich (Postdoc at Sandia National Laboratory), Lusine Kamikyan, Joan Ponce (Postdoc at UCLA, Jointly with Prof. Zhilan Feng), John Patrick Sheeren, Shiqi Zhang, Jiahao Zhang

3 Undergraduate students:
Past: Pengyu Jin (Master student at Columbia Univ.), Lefei Zhang (master student at UCLA), Bo Zhang

Total 1 postdoc, 17 graduate students and 1 undergraduate student at Mechanical Engineering:

1 current Postdoc at ME:
Izzet Sahin (Joint with Prof. Guillermo Paniagua-Perez)

5 Current Ph.D. students: Yixuan Sun, Haoyang Zheng, Amir, Hyeongwoon Lee, Yikai Liu (joint with Prof. Ming Chen), Tianlu Wu ((joint with Prof. Terrence Meyer)
2 Past Ph.D. students: Moonseop Kim (graduated, Samsung), Ziyang Huang (graduated, postdoc at Univ. of Michigan, ME, co-advise with Prof. Arezoo Ardekani)

Total 10 Master students:
2 Current master students:, Zilin Xu (ME), Rohan Moreshwar (ME)

8 Past master students: Bangde Liu (Ph.D. student in University of Texas at Arlington), Bingbin Yang (Software Development Engineer, Amazon), Zeyuan Li (Data Scientist in Machine Learning group at Booking.com), Ningyu Ma (Engineer at Cummins), Jing Gong (Data Scientist at Micron Technology), Dung-yi Chao (IT Supervisor at Nan Ya Plastic Corporation America), Lang Zhao (Data Scientist at Blue Wave AI Labs), Yifan Du (Ph.D. student at John Hopkins University), Pranav A. Jain (Ph.D. student in industrial engineering at NCSU).

One past undergraduate student: Wentao Chen (Ph.D. student at UCSD)

Total 9 Past Statistics Graduate Students:

7 Ph.D. students: Chi-Hua Wang, Wenjie Li, Zhanyu Wang, Yue Xing, Huiming Xie, Jiajun Liang, Qian Zhang
2 Master students: Shuo Yan, Lin Gan
1 Undergraduate student: Sailesh Kandula

8. Past Graduate and High-School Summer Interns and Students Supervised/Co-advised in Past Ten Years

[S1] Purdue undergraduates: Yiyi Chen, Xuan Dan Liu, Ruotong Ji, Zixuan Liu (May-August, 2015)
[S2] Purdue undergraduates: Tian Qiu, Lefei Liu (May-August, 2016)
[S3] Purdue undergraduates: Wentao Chen, Yuting Guo (2015-2016) (awarded the **Prize of Finalist in the MCM math modeling contest** in 2016)
[S4] Visiting student, Zongren Zou from Peking University (July-Sep. 2016)
[S5] Visiting student, Jiangjiang Zhang from Zhejiang University (2015-2016)
[S6] Visiting student, Zhaopeng Hao from Southeast University (2015-2016)
[S7] High-School Science Intern, Katrina Hui from Richland High School, (2011-2012), *who was named a semifinalist in the 2011 Siemens Competition, and a semifinalist in the 2012 Intel Science Talent Search based on the sickle cell anemia research she did with her mentor,* ***G. Lin.***

[S8] Graduate Summer Intern, Huijing Du from University of Notre Dame, (June-August, 2010)
[S9] Graduate Summer Intern, Yichen Chen from Texas A&M University, (June-August, 2011)
[S10] Graduate Summer Intern, Jia Wei from Texas A&M University, (June-August, 2011)
[S11] Graduate Summer Intern, Jin Xu from Cornell University, (June-August, 2011)
[S12] Graduate Summer Intern, Vasileios Fountoulakis from Cornell University, (June-August, 2011)
[S13] Summer Intern, Ruifeng Wang from University of Washington, (June-August, 2011)
[S14] Graduate Summer Intern, Eder Sousa from University of Washington, (April-July, 2011)
[S15] Graduate Summer Intern, Xin Hu from California Institute of Technology, (September-December 2011)
[S16] Graduate Summer Intern, Weixuan Li from University of Southern California, (June-August, 2012)
[S17] Graduate Summer Intern, Simi Wang from University of North Carolina at Chapel Hill, (August 2012)
[S18] Graduate Summer Intern, Bill Shi from University of North Carolina at Chapel Hill, (August 2012)
[S19] Graduate Summer Intern, Gregory Herschlag from University of North Carolina at Chapel Hill, (August 2012)
[S20] Graduate Summer Intern, Hee Sun Lee from Stanford University, (June-August, 2012)
[S21] Long-Term Visiting Student, Ben Yang from Nanjing University, China through PNNL AFS fellowship program, (2010-2012)
[S22] Long-Term Visiting Student, Huiping Yan from Lanzhou University through PNNL AFS fellowship program, (2011-2013)
[S23] Long-Term Visiting Student, Ming Hu from Institute of Atmospheric Physics Chinese Academy of Sciences through PNNL AFS fellowship program, (2011-2013)

9. Past Post-Doctoral/Post-Master Scholars Mentored in Past Ten Years

[PD1] Post-Doctoral Scholar, Yannan Sun, (2010-2012)
[PD2] Post-Doctoral Scholar, Da Meng, (2011-2014)
[PD3] Post-Doctoral Scholar, Bin Zheng, (2012 Jan-2014)
[PD4] Post-Doctoral Scholar, Bledar Konomi, (2011-2014)
[PD5] Post-Doctoral Scholar, Georgios Karagiannis, (2012 March-2016)
[PD6] Post-Doctoral Scholar, Knut Waagan, (2011-2012)
[PD7] Post-Doctoral Scholar, Ido Bright, (2011-2013)
[PD8] Post-Doctoral Scholar, Ryu Seun, (2011-2012)

[PD9] Post-Master Scholar, Zhufeng Fang, (2010-2011)
[PD10] Post-Master Scholar, Huiying Ren, (2012-2013)

10. Selected Academic Activities & Service in Past Eight Years

[AA1] Served as the associate Editor of American Society of Mechanical Engineering Journal of Computing and Information Science in Engineering, 2022.

[AA2] Served as the Co-Organizer of the 75th American Physics Society Annual Meeting of the Division of Fluid Dynamics, November 20-22, 2022, Indianapolis, IN.

[AA3] Served as the minisymposium Co-Chair at SIAM Conference on Uncertainty Quantification, April 12-15, 2022, Atlanta, GA.

[AA4] Served as the Session Co-Chair for DOE Explainable/ Interpretable/ Trustworthy AI of Artificial Intelligence for Earth System Predictability Workshop, Nov. 10th, 2021.

[AA5] **Served as a Guest Editor for Special Issue** "Geostatistics and Machine Learning", in Mathematical Geosciences, 2020-2021

[AA6] Served as the executive committee Chair for the Initiative in Data Engineering and Applications, College of Engineering, Purdue University, 2021-Present.

[AA7] Served as the Chair of Computer Committee for the Department of Mathematics, 2020-Present

[AA8] Served in Applied Mathematics Committee, Department of Mathematics, Purdue University, 2019-Present.

[AA9] Served as Dean's Fellow, College of Science, Purdue University, 2019-2020.

[AA10] Served in the executive committee for the Initiative in Data Engineering and Applications, College of Engineering, Purdue University, 2019- Present.

[AA11] Served as the core-team member in the Center for Intelligent Infrastructure, Purdue University, 2019- Present.

[AA12] Served as the math department representative in the Data Science Major Curriculum Re-design Committee, Purdue University, 2019-Present.

[AA13] Served in the Computer Committee, Department of Mathematics, Purdue University, 2019-Present.

[AA14] Served in the GeoData Science for Professionals (GDSP) MS Program Advisory Committee, 2019-Present.

[AA15] Director of Purdue Data Science Consulting Services, 2019-Present

[AA16] Faculty advisor of Undergraduate Purdue Robomaster Club, Purdue University, 2018-.

[AA17] Chair for Purdue Center for Computational & Applied Mathematics Lunch Seminar Series, 2017-Present

[AA18] Served on the Purdue Astronaut Scholarship Board, 2018-Present

[AA19] Co-chair the conference on “Workshop on Fast Direct Solvers”, Purdue CCAM, 2018.

[AA20] Serve in the “Data Science Cluster Search” Purdue Faculty Search Committee in 2018-2019.

[AA21] Serve in the Department of Mathematics Primary Committee, 2018-Present.

[AA22] Serve in the Department of Mathematics Computer Committee, 2018-Present.

[AA23] Co-organize Annual Meeting of the American Physics Society Division of Fluid Dynamics, Indianapolis, IN, 2022.

[AA24] Organize IMA PI Conference on Approximation Theory and Machine Learning, Purdue University, September 18-20, 2018.

[AA25] Organize the workshop on “Current Trends and Challenges in Data Science and Uncertainty Quantification”, Purdue University, Mar 31, 2018.

[AA26] Serve in the primary committee at the Department of Mathematics, Purdue, 2017-2018.

[AA27] Serve as a mentor for Purdue Network for Computational Nanotechnology Summer Undergraduate Research Fellowship, 2014-Present. Mentored 5 undergraduates: Yiyi Chen, Ruotong Ji, Zixuan Liu, Tian Qiu, Lefei Liu.

[AA28] Co-chair the conference on “Workshop on Fast Direct Solvers”, Purdue CCAM, 2016.

[AA29] Serve in the “Predictive Science Clustering Hiring” Purdue Faculty Search Committee in 2015-2016

[AA30] Serve as a mentor in Wentao Chen’s Purdue undergraduate team, who was awarded the prize of finalist in the MCM math modeling contest in 2016, which is one of 22 finalist teams out of 7421 teams around the world.

[AA31] Serve as a mentor at Purdue Campus for the Society for Collegiate Leadership & Achievement

[AA32] Serve as NSF CISE proposal reviewer, 2016.

[AA33] **Associate Editor: “SIAM MMS”, 2019-.**

[AA34] **Guest Editor:** Special Issue "Mathematical Models and Computational Methods in Biofilm Research (MMCM)", BioMed Research International, 2016.

[AA35] **Journal Editor**: Serve in the editorial board of “***International Journal of Uncertainty Quantification***”, 2010-present.

[AA36] **Journal Editor**: Serve in the editorial board of “***Journal of Stochastics***”, 2013

[AA37] **Journal Editor**: Serve in the editorial board of “***Scientific World Journal***”, 2013

[AA38] **Journal Editor**: Serve in the editorial board of “***Austin Statistics***”, 2013-

[AA39] *Department of Energy Nuclear Energy University Program Proposal Review*, April 2011, Bethesda, MD.

[AA40] *Department of Energy's Early Career Research Program panel review*, January 12, 2010, Bethesda, MD

[AA41] Serving in the Internal Proposals and Whitepapers Review Panel at PNNL, 2007-2014.

[AA42] Minisymposium Chair, "Uncertainty Quantification for Complex System", Minisymposium, *2010 SIAM Annual Meeting*, July 12-16, 2010, Pittsburgh, Pennsylvania.

[AA43] Co-organizer for *"Math for Power Systems" workshop*, August 17th, 2010, Richland, WA.

[AA44] Minisymposium Chair, "Mathematical and Numerical Aspects of Uncertainty Quantification" Minisymposium, *7th International Congress on Industrial and Applied Mathematics (ICIAM) 2011 Meeting*, July 18-22, 2011, Vancouver, British Columbia, Canada.

[AA45] Minisymposium Chair, "Numerical Methods for Complex Flows" Minisymposium, *7th International Congress on Industrial and Applied Mathematics (ICIAM) 2011 Meeting*, July 18-22, 2011, Vancouver, British Columbia, Canada.

[AA46] Invited Session Chair, "Uncertainty Quantification in Computational Fluid Dynamics" invited session, *20th AIAA Computational Fluid Dynamics Conference*, Honolulu, Hawaii, June 27-30, 2011.

[AA47] Minisymposium Chair, "Climate Uncertainty Quantification" Minisymposium, *SIAM Conference on Uncertainty Quantification*, Raleigh, North Caolina, April 2-5, 2012.

[AA48] Reviewer for *Journal of Computational Physics, SIAM Journal on Scientific Computing, ESAIM: Mathematical Modeling and Numerical Analysis, Computer Methods in Applied Mechanics and Engineering, AIAA Journal, Applied Numerical Mathematics, Journal of Journal of Heat Transfer, Journal of Applied Mathematics and Physics, Advances in Water Resources, Society of automotive engineers International, Communications in Computational Physics, Fluid Dynamics Research, International Journal for Uncertainty Quantification*

[AA49] Organizer of the *Frontier in Uncertainty Quantification Seminar Series* at PNNL, 2010-2011 and invited Professor Yannis Kevrekidis (Princeton), Nicholas Zabaras (Cornell), Roger Ghanem (USC), Dion Vlachos (Univ. of Delaware), Randall J. Leveque (Univ. of Washington).

[AA50] Help to establish a *PNNL/University of Washington joint Research Center for Modeling and Data-Intensive Computing*

[AA51] Participate in *PNNL/University of Utah joint Center for Extreme Data Management Analysis and Visualization*

[AA52] Serving as a thesis reader for Ph.D. candidate Qianli Su from University of Washington Electric Engineering Department, June 2010.

[AA53] Building an Uncertainty Quantification Team and Research Center at PNNL, 2007-2014

11. Teaching Record

Dr. Guang Lin has made major contributions to curriculum development in the uncertainty quantification and data sciences with important applications in modeling climate, environmental and biological systems at Purdue University. He has taught a variety of undergraduate, and graduate math courses. At Purdue, he developed two new courses on "Uncertainty Quantification" and "Machine Learning and Uncertainty Quantification for Data Science" in both the Department of Mathematics and School of Mechanical Engineering.

Dr. Lin has participated in a variety of teaching programs at Brown University aimed at improving the quality of undergraduate education. Additionally, he has given many short courses and invited lectures on various research topics at international conferences and department colloquiums, which have helped to improve his teaching skills. He also has extensive experience in mentoring junior researchers and young students. In the past five years, he has mentored 26 summer interns and students, and 10 postdoctoral or post-master scholars.

Over 10 undergraduate students have worked as port of Dr. Lin's research group. He has served as mentor for Purdue Network for Computational Nanotechnology Summer Undergraduate Research Fellowship (SURF) program since 2014. He has mentored 5 undergraduates: Yiyi Chen, Ruotong Ji, Zixuan Liu, Tian Qiu, Lefei Liu through SURF program. In addition, he also served as mentor in Wentao Chen's Purdue undergraduate team, who was awarded the prize of finalist in the MCM math modeling contest in 2016, which is one of 22 finalist teams out of 7421 teams around the world. Besides his teaching responsibilities, Dr. Lin was actively involved at Purdue University in undergraduate advising, serving as a mentor at Purdue Campus for the Society for Collegiate Leadership & Achievement.

List of Courses that Dr. Lin has taught:

ME 308 Introduction to Fluid Mechanics, Fall 2023

MA 303 Differential Equations and Partial Differential Equations for Engineering and the Sciences, Spring 2023

MA 303 Differential Equations and Partial Differential Equations for Engineering and the Sciences (2 Sections), Purdue University, Spring 2022

ME 308 Introduction to Fluid Mechanics, Fall 2021

MA 303 Differential Equations and Partial Differential Equations for Engineering and the Sciences, Purdue University, Fall 2020

Purdue undergraduate vertically integrated project course on “Deep Reinforcement Learning based Optimal Control of Complex Systems”, Spring 2020

Purdue undergraduate vertically integrated project course on “Deep Reinforcement Learning based Optimal Control of Complex Systems”, Fall 2019

Purdue undergraduate vertically integrated project course on “Deep Reinforcement Learning based Optimal Control of Complex Systems”, Spring 2019.

The Vertically Integrated Projects (VIP) Program unites undergraduate education and faculty research in a team-based context. Undergraduate VIP students earn academic credits, while faculty and graduate students benefit from the design/discovery efforts of their teams. VIP extends the academic design experience beyond a single semester, with students participating for up to three years. It provides the time and context to learn and practice professional skills, to make substantial contributions, and experience different roles on large multidisciplinary design/discovery teams. The long-term nature of VIP creates an environment of mentorship, with faculty and graduate students mentoring teams, experienced students mentoring new members, and students moving into leadership roles as others graduate. VIP attracts students from many disciplines and enables the completion of large-scale design/discovery projects, strengthening and expanding faculty research portfolios.

MATH 266 Ordinary Differential Equations (Section 113), Spring 2019.

MA303 Differential Equations and Partial Differential Equations for Engineering and the Sciences, Purdue University, Fall 2018.

ME309 Introduction to Fluid Mechanics, Spring 2018.

MA303 Differential Equations and Partial Differential Equations for Engineering and the Sciences (2 Sections), Purdue University, Fall 2017.

MA265 Linear Algebra, Purdue University, Spring 2017.

MA598-550 Machine Learning and Uncertainty Quantification for Data Science (Created New Course), Purdue University, Fall 2016.

MA265 Linear Algebra, Purdue University, Fall 2016.

ME 597 Uncertainty Quantification (Created New Course), Purdue University, Spring 2016

MA266 Section 052 Ordinary Differential Equations, Purdue University, Spring 2015.

MA266 Section 091 Ordinary Differential Equations, Purdue University, Spring 2015.

Short Courses on Sensitivity Analysis and Uncertainty Quantification, University of Notre Dame, Notre Dame, IN, September 2012

Lectures on Hybrid Particle Simulations At 2008 DOE Summer School in Multiscale Mathematics and High-Performance Computing Washington State Univ., Richland, WA, August 2008

Participated in the teaching certificate program seminar series in the Sheridan Center for Teaching and Learning at Brown University. The Sheridan Center is an organization at Brown University devoted to the improvement of the teaching at the university. The Center recognizes the diversity of learning styles and encourages reflective, independent, life-long learning.

Brown University, Division of Applied Mathematics Providence, RI, USA
Teaching Assistant & Co-Instructor Fall 2004
AM117: Introduction of Numerical Analysis. Professor George Em Karniadakis. Undergraduate and Graduate Course

Brown University, Division of Applied Math. Providence, RI, USA
Teaching Assistant Spring 2004
AM65: Essential Statistics. Professor Donald McClure. Undergraduate Course

Brown University, Division of Applied Mathematics Providence, RI, USA
Computer Teaching Assistant Fall 2004
Computer Assistant for all undergraduate courses opened by Division of Applied Mathematics

Brown University, One-on-One Math Tutor Providence, RI, USA, 2001-2007