Cindy Rubio González

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Research Interest

My research areas of interest are software engineering, programming languages, and high-performance computing, with a focus on program analysis and testing for automated bug finding and program optimization. I am particularly interested in the reliability and performance of systems software and scientific applications, and in the development of large-scale datasets.

Education

2006–2012 **Ph.D. in Computer Science**
University of Wisconsin–Madison.
- Thesis title: "Finding Error-Propagation Bugs in Large Software Systems Using Static Analysis."
- Thesis advisor: Ben Liblit.
- Ph.D. Minor in Piano Performance.

2002–2004 **Master of Science in Computer Science**
University of Wisconsin–Milwaukee.
- Thesis title: "Class Invariant Shape Analysis."
- Thesis advisor: Adam Brooks Webber.

1996–2000 **Bachelor of Science in Computer Systems Engineering**
Saltillo Institute of Technology, Saltillo, Coahuila, Mexico.
- Ranking: 1/300. Summa Cum Laude (Mención Honorífica).

1991–1999 **Bachelor of Music in Piano Performance**
Autonomous University of Coahuila, Saltillo, Coahuila, Mexico.
- Ranking: 1/4 (from an initial class size of 100).
- Normal duration of this program is 8 years. Granted admission at the age of 11.
- Completed middle school, high school and the first 6 semesters of CS while enrolled in this program.

Appointments

7/2020–Present **Associate Professor,** *Department of Computer Science.*
University of California, Davis.

3/2020–6/2022 **Faculty Advisor to the Dean for Diversity and Inclusion,** *College of Engineering.*
University of California, Davis.

11/2014–6/2020 **Assistant Professor,** *Department of Computer Science.*
University of California, Davis.

9/2012–9/2014 **Postdoctoral Researcher,** *Department of Electrical Engineering and Computer Science.*
University of California, Berkeley.
Mentors: Koushik Sen, James Demmel, and Costin Iancu (LBNL).

9/2006–8/2012 **Graduate Research Assistant,** *Department of Computer Sciences.*
University of Wisconsin–Madison.
Advisor: Ben Liblit.

5/2009–8/2009 **Research Intern,** *Software Reliability Research.*
Microsoft Research.
Mentors: Patrice Godefroid and Shuvendu Lahiri.

5/2008–8/2008 **Research Intern,** *Software Reliability Research.*
Microsoft Research.
Mentors: Patrice Godefroid.

Selected Awards and Honors

2024 UC Davis Chancellor's Fellow.
2023 ISC Hans Meuer Award—Best Paper Award.
2021 UC Davis Chancellor's Fellowship for Diversity, Equity and Inclusion.
2020 ISSTA Distinguished Artifact Award.
2020 CRA-WP Anita Borg and Skip Ellis Early Career Awards – Joint Honorable Mention.
2020 Better Scientific Software (BSSw) Fellowship.
2019 Facebook Testing and Verification Research Award.
2019 DOE Early Career Award.
2019 Facebook Probability and Programming Research Award (with Prof. Aditya Thakur).
2018 NSF CAREER Award.
2017 UC Davis Hellman Fellowship.
2014 UC Davis CAMPOS Faculty Scholar.

Publications

Peer-Reviewed Conference and Workshop Papers[1]

[ICS'24] D. Miao, I. Laguna, and **C. Rubio-González**. "Input Range Generation for Compiler-Induced Numerical Inconsistencies". To appear in *Proceedings of the International Conference on Supercomputing* (ICS'24), June 2024, Kyoto, Japan.

[ICSE'24] Y. Wang and **C. Rubio-González**. "Predicting Performance and Accuracy of Mixed-Precision Programs for Precision Tuning". To appear in *Proceedings of the International Conference on Software Engineering* (ICSE'24), April 2024, Lisbon, Portugal.

[PMAM'24] D. Miao, I. Laguna, G. Georgakoudis, K. Parasyris, and **C. Rubio-González**. "MUPPET: Optimizing Performance in OpenMP via Mutation Testing". To appear in *Proceedings of the 15th International Workshop on Programming Models and Applications for Multicores and Manycores* (PMAM'24), co-located with PPoPP'24, March 2024, Edinburgh, United Kingdom.

[ISC'23] D. Miao, I. Laguna, and **C. Rubio-González**. "Expression Isolation of Compiler-Induced Inconsistencies in Heterogeneous Code". In *Proceedings of ISC High Performance* (ISC'23), May 2023, Hamburg, Germany. Acceptance Rate: 21/80 = 26%. *Best Paper Award*.

[ICSE'23-DEMO] H. Zhu, K. Guan, R.M. Furth, and **C. Rubio-González**. "ActionsRemaker: Reproducing GitHub Actions". In *Proceedings of the International Conference on Software Engineering, Demonstration Track* (ICSE'23-DEMO), May 2023, Melbourne, Australia.

[ICSE'23] H. Zhu and **C. Rubio-González**. "On the Reproducibility of Software Defect Datasets". In *Proceedings of the International Conference on Software Engineering* (ICSE'23), May 2023, Melbourne, Australia. Acceptance Rate: 209/796 = 26%.

[CSE'22] W.F. Godoy, R. Arora, K. Beattie, D.E. Bernholdt, S.E. Bratt, D.S. Katz, I. Laguna, A. K. Maji, A. Malviya-Thakur, R.M. Mudafort, N. Sukhija, D.W.I. Rouson, **C. Rubio-González** and K. Vahi. "Giving Research Software Engineers a Larger Stage Through the Better Scientific Software Fellowship". *Computing in Science & Engineering* (CSE'22), September 2022.

[1] Note: underlined authors are my UC Davis students.

[Correctness'22] J. Demmel, J. Dongarra, M. Gates, G. Henry, J. Langou, X. Li, P. Luszczek, W. Pereira, J. Riedy, and **C. Rubio-González**. "Proposed Consistent Exception Handling for the BLAS and LAPACK". In *Proceedings of the International Workshop on Software Correctness for HPC Applications* (CORRECTNESS'22), co-located with SC'22, November 2022, Dallas, TX.

[ASE'21] D.A. Tomassi and **C. Rubio-González**. "On the Real-World Effectiveness of Static Bug Detectors at Finding Null Pointer Exceptions". In *Proceedings of the International Conference on Automated Software Engineering* (ASE'21), November 2021, Melbourne, Australia (Virtual). Acceptance Rate: 82/440 = 18.6%.

[Correctness'21] G. Gopalakrishnan, I. Laguna, A. Li, P. Panchekha, **C. Rubio-González**, and Z. Tatlock. "Guarding Numerics Amidst Rising Heterogeneity". In *Proceedings of the International Workshop on Software Correctness for HPC Applications* (CORRECTNESS'21), November 2021, St. Louis, MO (Virtual).

[ISSTA'21] S. Mukherjee, A. Almanza, and **C. Rubio-González**. "Fixing Dependency Errors for Python Build Reproducibility". In *Proceedings of the International Symposium on Software Testing and Analysis* (ISSTA'21), July 2021, Aarhus, Denmark. Acceptance Rate: 51/233 = 21.9%.

[SC'20] H. Guo, I. Laguna, and **C. Rubio-González**. "pLiner: Isolating Lines of Floating-Point Code for Compiler Induced Variability". *Proceedings of International Conference for High Performance Computing, Networking, Storage and Analysis* (SC'20), November 2020, Atlanta, GA. Acceptance Rate: 96/380 = 25.3%.

[ISSTA'20] J. Vanover, X. Deng, and **C. Rubio-González**. "Discovering Discrepancies in Numerical Libraries". *Proceedings of the International Symposium on Software Testing and Analysis* (ISSTA'20), July 2020, Los Angeles, CA. Acceptance Rate: 43/162 = 26.5%. *Distinguished Artifact Award*.

[ICSE'20] H. Guo and **C. Rubio-González**. "Efficient Generation of Error-Inducing Floating-Point Inputs via Symbolic Execution". *Proceedings of the International Conference on Software Engineering* (ICSE'20), May 2020, Seoul, South Korea. Acceptance Rate: 129/617 = 20.9%.

[PPoPP'20] D. DeFreez, A. Bhowmick, I. Laguna, and **C. Rubio-González**. "Detecting and Reproducing Error-Code Propagation Bugs in MPI Implementations". *Principles and Practice of Parallel Programming* (PPoPP'20), February 2020, San Diego, CA. Acceptance Rate: 28/121 = 23.1%.

[FSE'19] D. DeFreez, H. Baldwin, **C. Rubio-González**, and A. Thakur. "Effective Error-Specification Inference via Domain-Knowledge Expansion". *Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering* (ESEC/FSE'19), August 2019, Tallinn, Estonia. Acceptance Rate: 74/303 = 24%.

[ICSE'19] D.A. Tomassi, N. Dmeiri, Y. Wang, A. Bhowmick, Y. Liu, P. Devanbu, B. Vasilescu, and **C. Rubio-González**. "BugSwarm: Mining and Continuously Growing a Dataset of Reproducible Failures and Fixes". *Proceedings of the International Conference on Software Engineering* (ICSE'19), May 2019, Montreal, Canada. Acceptance Rate: 109/529 = 21%.

[FSE'18] D. DeFreez, A. Thakur, and **C. Rubio-González**. "Path-Based Function Embedding and its Application to Specification Mining". *Joint European Software Engineering Conference and Symposium on the Foundations of Software Engineering* (ESEC/FSE'18), November 2018, Lake Buena Vista, Florida. Acceptance rate: 61/289 = 21%.

[ISSTA'18] H. Guo, and **C. Rubio-González**. "Exploiting Community Detection for Floating-Point Precision Tuning". *International Symposium on Software Analysis and Testing* (ISSTA'18), July 2018, Amsterdam, Netherlands. Acceptance rate: 31/130 = 23%.

[ICSE'18-POSTER] D. DeFreez, A. Thakur, and **C. Rubio-González**. "Poster: Path-Based Function Embeddings". *Proceedings of the International Conference on Software Engineering* (ICSE'18), May 2018, Sweden.

[ASE'17] A. Di Franco, H. Guo, and **C. Rubio-González**. "A Comprehensive Study of Real-World Numerical Bug Characteristics". *Proceedings of the 32nd International Conference on Automated Software Engineering* (ASE'17), October 2017, Urbana-Champaign, IL. Acceptance rate: 65/314 = 21%.

[SWAN'17] P. Devanbu, P. Kudigrama, **C. Rubio-González**, and B. Vasilescu. "Timezone and Time-of-Day Variance in GitHub Teams: An Empirical Method and Study". In *Proceedings of the 3rd International Workshop on Software Analytics* (SWAN'17), September 2017, Paderborn, Germany.

[ISSTA'17-DEMOS] C. Casalnuovo, Y. Suchak, B. Ray, and **C. Rubio-González**. "GitcProc: A Tool for Processing and Classifying GitHub Commits". In *Proceedings of the 26th International Symposium on Software Testing and Analysis* (ISSTA'17), July 2017, Santa Barbara, CA.

[ICSE'16] **C. Rubio-González**, C. Nguyen, B. Mehne, K. Sen, J. Demmel, W. Kahan, C. Iancu, W. Lavrijsen, D. H. Bailey, and D. Hough. "Floating-Point Precision Tuning Using Blame Analysis". In *Proceedings of the 38th International Conference on Software Engineering* (ICSE'16), May 2016, Austin, TX. Acceptance rate: 101/530 = 19%.

[ICSE'15] C. Weiss, **C. Rubio-González**, and B. Liblit. "Database-Backed Program Analysis for Scalable Error Propagation". In *Proceedings of the 37th International Conference on Software Engineering* (ICSE'15), May 2015, Florence, Italy. Acceptance rate: 84/452 = 18.5%.

[PLATEAU'14] J. Galenson, **C. Rubio-González**, S. Chasins, and L. Gong. "Research.js: Evaluating Research Tool Usability on the Web". In *Proceedings of the 5th Workshop on Evaluation and Usability of Programming Languages and Tools* (PLATEAU'14), October 2014, Portand, OR.

[NFM'14] S. Arlt, **C. Rubio-González**, P. Rümmer, M. Schäf, and N. Shankar. "The Gradual Verifier". In *Proceedings of the 6th NASA Formal Methods Symposium* (NFM'14), April 2014, Houston, TX. Acceptance rate: 29/83 = 35%.

[SC'13] **C. Rubio-González**, C. Nguyen, H. D. Nguyen, J. Demmel, W. Kahan, K. Sen, D. H. Bailey, C. Iancu, and D. Hough. "Precimonious: Tuning Assistant for Floating-Point Precision". In *Proceedings of the International Conference for High Performance Computing, Networking, Storage and Analysis* (SC'13), November 2013, Denver, CO. Acceptance rate: 91/457 = 20%.

[SAS'11] P. Godefroid, S.K. Lahiri, and **C. Rubio-González**. "Statically Validating Must Summaries for Incremental Compositional Dynamic Test Generation". In *Proceedings of the 18th International Static Analysis Symposium* (SAS'11), Sep 2011, Venice, Italy. Acceptance rate: 22/67 = 33%.

[ISSTA'11] **C. Rubio-González**, and B. Liblit. "Defective Error/Pointer Interactions in the Linux Kernel". In *Proceedings of the 20th International Symposium on Software Testing and Analysis* (ISSTA'11), July 2011, Toronto, Canada. Acceptance rate: 35/121 = 29%.

[GHC'11] **C. Rubio-González**, and B. Liblit. "Finding Error-Handling Bug in Systems Code Using Static Analysis". In *Proceedings of the 11th Grace Hopper Celebration of Women in Computing* (GHC'11), PhD Forum, November 2011, Portland, OR. Acceptance rate: 10/17 = 59%.

[PASTE'10] **C. Rubio-González**, and B. Liblit. "Expect the Unexpected: Error Code Mismatches Between Documentation and the Real World". In *Proceedings of 9th ACM SIGPLAN/SIGSOFT Workshop on Program Analysis for Software Tools and Engineering*, (PASTE'10), June 2010, Toronto, Canada. Acceptance rate: 12/29 = 41%.

[PLDI'09] **C. Rubio-González**, H.S. Gunawi, B. Liblit, R.H. Arpaci-Dusseau, and A.C. Arpaci-Dusseau. "Error Propagation Analysis for File Systems". In *Proceedings of the 2009 ACM SIGPLAN Conference on Programming Language Design and Implementation* (PLDI'09), June 2009, Dublin, Ireland. Acceptance rate: 41/194 = 21%.

[FAST'08] H.S. Gunawi, **C. Rubio-González**, A.C. Arpaci-Dusseau, R.H. Arpaci-Dusseau, and B. Liblit. "EIO: Error-handling is Occasionally Correct". In *Proceedings of the 6th USENIX Conference on File and Storage Technologies* (FAST'08), February 2008, San Jose, CA. Acceptance rate: 21/94 = 22%.

Theses **C. Rubio-González**. "Finding Error-Propagation Bugs in Large Software Systems Using Static Analysis". Ph.D. thesis, Department of Computer Sciences, University of Wisconsin–Madison, August 2012.

C. Rubio. "Class Invariant Shape Analysis". Master's thesis, Department of Electrical Engineering and Computer Science, University of Wisconsin–Milwaukee, December 2004.

Patent P. Godefroid, S.K. Lahiri, and **C. Rubio-González**. "Incremental Compositional Dynamic Test Generation". United States Patent Number 8,578,344 issued in November 2013.

Software

2024 FPLearner: models for predicting the performance and accuracy of mixed-precision programs.
https://github.com/ucd-plse/FPLearner

2023 Ciel: a tool for isolating compiler-induced numerical inconsistencies in heterogeneous programs.
https://github.com/LLNL/Ciel

2023 ActionsRemaker: a tool for automatically reproducing GitHub Actions builds.
https://github.com/bugswarm/actions-remaker

2021 PyDFix: a tool for fixing dependencies in broken Python builds.
https://github.com/ucd-plse/PyDFix

2020 PLiner: a tool for isolating compiler-induced numerical inconsistencies.
https://github.com/LLNL/pLiner

2020 FPDiff: a differential testing framework for numerical libraries.
https://github.com/ucd-plse/FPDiff

2020 FPGen: a tool for generating floating-point inputs that maximize error.
https://github.com/ucd-plse/FPGen

2020 MpiErrorProp: a tool for finding and reproducing error-propagation bugs in MPI libraries.
https://github.com/ucd-plse/mpi-error-prop

2019 EESI: a tool for inferring error specifications for C programs.
https://github.com/ucd-plse/eesi

2019 BugSwarm: an infrastructure for generating a dataset of real-world reproducible failures and fixes.
https://github.com/BugSwarm/bugswarm

2019 BugSwarm Dataset: a dataset of 3000+ pairs of reproducible failures and fixes from open-source Java and Python projects.
http://www.bugswarm.org/

2018 Func2vec: a tool for finding function synonyms in C programs.
https://github.com/ucd-plse/func2vec-fse2018-artifact

2018 HiFPTuner: a tool for floating-point precision tuning using a hierarchical search.
https://github.com/ucd-plse/HiFPTuner

2017 GitcProc: a tool for processing GitHub commits.
https://github.com/caseycas/gitcproc

2016 BlameAnalysis: a tool for floating-point precision tuning using shadow execution.
https://github.com/corvette-berkeley/shadow-execution

2013 Precimonious: a tool for floating-point precision tuning using delta debugging.
https://github.com/ucd-plse/precimonious

Research Grants

3/2023 **Principal Investigator,** *NSF, $15,000.00 (total award: $49,000.00), Title: "Collaborative Research: DOE/NSF Workshop on Correctness in Scientific Computing", 5/2023–12/2023,* with PIs: Santosh Nagarakatte (Rutgers University) and Stephen Siegel (University of Delaware).

10/2021 **Principal Investigator,** *NSF Principles and Practice of Scalable Systems (PPoSS), $625,000.00 (total award: $5,000,000.00), Title: "PPoSS: Large: ScaleStuds: Foundations for Correctness Checkability and Performance Predictability of Systems at Scale", 10/2021–9/2026,* with PIs: Haryadi Gunawi, Shan Lu and Henry Hoffmann (University of Chicago), Robert Ross and Venkatram Vishwanath (Argonne National Laboratories), Manos Kapritsos (University of Michigan), and Yang Wang (Ohio State University).

10/2021 **Co-Principal Investigator,** *NSF Core, $1,200,000.00, Title: "SHF: Medium: Studying and Exploiting the Bimodality of Software National Science Foundation", 10/2021–9/2024,* with PI: Premkumar Devanbu and co-PIs: Gerardo Con Diaz, Emily Ida Popper Morgan, and Aditya Thakur (UC Davis).

9/2021 **Principal Investigator,** *DoE X-Stack, $389,642.00 (total award: $3,599,642.00), Title: "ComPort: Rigorous Testing Methods to Safeguard Software Porting", 9/2021–8/2024,* with PIs: Ganesh Gopalakrishnan and Pavel Panchekha (University of Utah), Zachary Tatlock (University of Washington), Ignacio Laguna (LLNL), and Ang Li (PNNL).

10/2020 **Principal Investigator,** *NSF CISE Community Research Infrastructure (CCRI), $1,470,431.00, Title: "CCRI: ENS: BugSwarm: Enhancing an Infrastructure and Dataset to Support the Software Engineering Research Community", 10/2020–9/2023,* with co-PI: Premkumar Devanbu (UC Davis).

10/2020 **Co-Principal Investigator,** *NSF Engineering Education and Centers (EEC), $314,699.00, Title: "The PROMISE Engineering Institute", 12/2019–8/2022,* with PI Renetta Tull and co-PI Ricardo Castro (UC Davis).

3/2020 **Principal Investigator,** DOE Better Scientific Software (BSSw) Fellowship, $36,607.00.

10/2019 **Principal Investigator,** Subcontract, Lawrence Livermore National Security, $80,000.00.

10/2019 **Principal Investigator,** Facebook Testing and Verification Research Award, $50,000.00.

9/2019 **Principal Investigator,** *DOE Early Career Award, $806,000.00, Title: "Towards Scalable Precision Tuning of Numerical Software", 9/2019–8/2024.*

5/2019 **Co-Principal Investigator,** *Facebook Probability and Programming Research Award, $50,000.00,* with PI Aditya Thakur (UC Davis).

1/2019 **Principal Investigator,** AWS Cloud Credits for Research, $5,000.00.

7/2018 **Principal Investigator,** *NSF CAREER Award, $552,363.00, Title: "CAREER: Understanding and Combating Numerical Bugs for Reliable and Efficient Software Systems", 7/2018–6/2023.*

6/2017 **Principal Investigator,** UC Davis Hellman Fellowship, $24,000.00.

6/2017 **Principal Investigator,** AWS Cloud Credits for Research, $10,000.00.

5/2017 **Principal Investigator,** Microsoft Azure Research Award, $20,000.00.

9/2016 **Principal Investigator,** *NSF CISE Research Infrastructure (CRI), $1,058,155.00, Title: "CI-New: BugSwarm: A Large-Scale Repository of Replicable Defects, Tests, and Patches to Support the Software Engineering Research Community", 9/2016–8/2020,* with co-PIs Premkumar Devanbu and Bogdan Vasilescu (UC Davis).

3/2015 **Principal Investigator,** *NSF CISE Research Initiation Initiative (CRII), $182,500.00, Title: "CRII: SHF: Automatic Extraction of Error-Handling Specifications in Systems Software", 3/2015–7/2016.*

Invited Presentations, Lectures and Tutorials

12/2023 **BugSwarm: Overview, Lessons Learned and Opportunities,** First International Workshop on Software Defect Datasets (SDD) co-located with ESEC/FSE 2023.

12/2023 **Tutorial: Evaluating Fault Detection, Test Generation and Program Repair Techniques using BugSwarm,** ESEC/FSE 2023.

10/2023 **BugSwarm: an Infrastructure and Dataset for Software Engineering Research,** Amazon Web Services.

Improving Reliability and Performance of Numerical Software.

4/2021 Exascale Computing Project (ECP) Annual Meeting "Collaboration Opportunities with the 2020 BSSw Fellows".

3/2021 SIAM CSE Minisymposium "Better Scientific Software Fellowship".

Automated Testing and Precision Tuning of Numerical Software.

10/2020 Programming Languages Seminar, University of Wisconsin–Madison.

10/2020 Computer Science Seminar, Emory University.

10/2020 Computer Science Graduate Seminar, Texas A&M University.

10/2020 **Testing and Analysis Techniques for Numerical Software,** IFIP WG 2.4 Software Implementation Technology.

10/2020 **Scalable Precision Tuning of Numerical Software,** Best Practices for HPC Software Developers, DOE IDEAS Project.

6/2020 **Mixed Precision Tuning,** GPUs for Science, Lawrence Berkeley National Laboratory (virtual).

5/2020 **Dynamic Analyses for Floating-Point Precision Tuning,** ICERM Workshop on Variable Precision for Mathematical and Scientific Computing, Brown University (virtual).

11/2019 **BugSwarm: An Infrastructure and Dataset for Software Engineering Research,** NJR Workshop co-located with the International Conference on Automated Software Engineering (ASE'19), San Diego, CA.

Tutorial on Floating-Point Analysis Tools.

11/2019 Conf. for High Performance Computing, Networking, Storage, and Analysis (SC'19), Denver, CO.

7/2019 Practice & Experience in Advanced Research Computing (PEARC'19), Chicago, IL.

6/2019 **Func2vec: Path-Based Function Embedding,** Programming Language Mentoring Workshop PLMW@PLDI 2019, Phoenix, AZ.

Path-Based Function Embedding and its Application to Error-Handling Spec Mining.

5/2019 Keynote at the Machine Learning for Software Engineering Workshop (ML4SE), Montreal, Canada.

2/2019 Programming Languages Seminar, Northeastern University, Boston, MA.

7/2018 **BugSwarm: A Large-Scale Database of Real-World Bugs, Fixes and Patches,** IFIP WG 2.4 Software Implementation Technology, Dijon, France.

7/2018 **Exploiting Community Structure for Floating-Point Precision Tuning,** International Symposium on Software Testing and Analysis (ISSTA), Amsterdam, Netherlands.

12/2017 **Dynamic Analyses for Floating-Point Precision Tuning,** Programming Languages and Software Engineering (PLSE) Colloquium, University of Washington.

10/2017 **BugSwarm: A Large-Scale Repository of Reproducible Bugs, Tests, and Patches,** Center for Research in Open Source Software (CROSS) Symposium, University of California, Santa Cruz.

8/2017 **Dynamic Analyses for Floating-Point Precision Tuning,** Dagstuhl Seminar on Analysis and Synthesis of Floating-Point Programs, Germany.

5/2016 **Floating-Point Precision Tuning Using Blame Analysis,** International Conference on Software Engineering (ICSE), Austin, TX.

Dynamic Analyses for Floating-Point Precision Tuning.

5/2016 Ecole Thématique Maths-Info-HPC, St Germain au Mont d'Or, France - 2hr Lecture.

5/2016 Sixth Summer School on Formal Techniques, Atherton, CA - 1hr Lecture.

Scalable Program Analyses to Improve Software Reliability.

6/2015 Information Science & Technology Seminars, Los Alamos National Laboratory, Los Alamos, NM.

4/2015 Salishan Conference for High-Speed Computing, Gleneden, OR.

5/2014 **Precision Tuning of Floating-Point Programs,** Berkeley Programming Systems (Chaperone) Retreat, Santa Cruz, CA.

Improving Software Reliability and Performance Using Program Analysis.

4/2014 University of California, Irvine, Irvine, CA.

3/2014 University of Texas at Dallas, Dallas, TX.

3/2014 University of California, Davis, Davis, CA.

2/2014 The University of New York at Buffalo, Buffalo, NY.

2/2014 College of William and Mary, Williamsburg, VA.

2/2014 SRI International, Menlo Park, CA.

Precimonious: Tuning Assistant for Floating-Point Precision.

1/2014 UC Berkeley ASPIRE Winter Retreat, Tahoe, CA.

12/2013 Bay Area Scientific Computing Day (BASCD'13), LBNL, Berkeley, CA.

11/2013 Conference for High Performance Computing, Storage and Analysis (SC'13), Denver, CO.

11/2013 Massachusetts Institute of Technology, Cambridge, MA.

8/2013 Oracle Corporation, Compiler Technical Talks Series, Santa Clara, CA.

6/2013 Lawrence Berkeley National Laboratory DEGAS Retreat, Santa Cruz, CA.

Finding Error-Handling Bugs in Systems Software Using Static Analysis.

5/2012 University of California, Berkeley, Berkeley, CA.

4/2012 IBM Research, T.J. Watson Research Center, Hawthorne, NY.

4/2012 Oracle Labs, Redwood City, CA.

4/2012 GrammaTech, Ithaca, NY.

4/2012 Fusion-io, Santa Clara, CA.

4/2012 NetApp, Sunnyvale, CA.

4/2012 Virginia Tech, Blacksburg, VA.

3/2012 Microsoft Research, Redmond, WA.

Statically Validating Must Summaries for Incremental Dynamic Test Generation.

9/2011 International Static Analysis Symposium (SAS'11), Venice, Italy.

9/2011 University of Wisconsin–Madison, Programming Languages Seminar, Madison, WI.

Defective Error/Pointer Interactions in the Linux Kernel.

7/2011 International Symposium on Software Testing and Analysis (ISSTA'11), Toronto, Canada.

7/2011 University of Wisconsin–Madison, Programming Languages Seminar, Madison, WI.

Finding Error-Handling Bugs in Systems Code Using Static Analysis.

11/2011 Grace Hopper Celebration of Women in Computing (GHC'11), PhD Forum, Portland, OR.

9/2011 École Polytechnique Fédérale de Lausanne (EPFL), Systems Seminar, Lausanne, Switzerland.

6/2011 Google Inc, Madison, WI.

6/2011 Conference on Programming Languages Design and Implementation (PLDI'11), Student Research Competition, San Jose, CA.

Error Code Mismatches Between Documentation and the Real World.

6/2010 Workshop on Program Analysis for Software Tools and Engineering (PASTE'10), Toronto, Canada.

5/2010 University of Wisconsin–Madison, Programming Languages Seminar, Madison, WI.

Error Propagation Analysis for File Systems.

8/2010 Stanford University, Stanford Software Seminar, Stanford, CA.

8/2010 Mozilla Corporation, Mozilla Research Talks Series, Mountain View, CA.

6/2009 Conference on Programming Languages Design and Implementation (PLDI'09), Dublin, Ireland.

6/2009 Microsoft Research, Redmond, WA.

5/2009 University of Wisconsin–Madison, Programming Languages Seminar, Madison, WI.

8/2009 **Incremental Compositional Dynamic Test Generation,** Microsoft Research, Redmond, WA.

Improving Dynamic Test Generation Using Loop Invariants.

8/2008 Microsoft's Center for Software Excellence, Redmond, WA.

8/2008 Microsoft Research, Redmond, WA.

Full List of Awards and Honors

2023 **Hans Meuer Award**.
Awarded to the Best Research Paper submitted to ISC High Performance 2023.

2022 **UC Davis Faculty & Staff Partnership Award**.
Awarded to the College of Engineering DEI Committee while I served as inaugural faculty co-chair. This award seeks to highlight teams who actively develop and encourage faculty/staff partnerships and who exemplify outstanding achievement and/or service. One winner campus wide.

2021 **UC Davis Chancellor's Fellowship for Diversity, Equity and Inclusion**.
Recognized for exceptional contributions to support, tutor, mentor and advise underrepresented students from underserved communities. One of five awardees campus wide.

2020 **ISSTA Distinguished Artifact Award**.
Received for artifact of paper "Discovering Discrepancies in Numerical Libraries". One of three recipients.

2020 **CRA-WP Anita Borg and Skip Ellis Early Career Awards – Joint Honorable Mention**.
One of five computer scientists (three winners and two honorable mentions) recognized by CRA-WP across the United States and Canada for significant research contributions and for contributions to the profession, especially in the outreach to women and underrepresented demographics.

2020 **Better Scientific Software (BSSw) Fellowship**.
One of three scientists and engineers honored this year. Winners were presented at the Department of Energy (DOE) Exascale Annual Program Meeting in Houston, Texas.

2019 **Facebook Testing and Verification Research Award**.
One of 10 winner proposals selected from over 100 proposals. Our proposal was presented at the Winners' Workshop in London, UK.

2019 **DOE Early Career Award,** *"Towards Scalable Precision Tuning of Numerical Software"*.
One of 73 scientists selected across the nation, and one of four winners from academia selected by the DOE's Office of Advanced Scientific Computing Research (ASCR).

2019 **Facebook Probability and Programming Research Award** *(with Prof. Aditya Thakur)*.
One of 10 winner proposals selected from over 66 proposals. Our proposal was presented at the Winners' Workshop in Seattle, WA.

2018 **NSF CAREER Award,** *"CAREER: Understanding and Combating Numerical Bugs for Reliable and Efficient Software Systems"*.
National Science Foundation's most prestigious awards in support of early-career faculty who have the potential to serve as academic role models in research and education.

2017 **Hellman Fellowship,** *UC Davis*.
The Hellman Fellows Program supports the research of promising assistant professors who show capacity for great distinction in their chosen fields of endeavor. One of fourteen recipients campus wide.

11/2014 **CAMPOS Faculty Scholar,** *UC Davis*.
Scholars are selected for their transformative thinking, interdisciplinary approaches, and leadership potential to impact their STEM discipline in profound and enduring ways. One of six awardees campus wide.

9/2013 **Young Researcher Participant in the 1st Heidelberg Laureate Forum 2013**.
Abel, Fields and Turing Awards Meet the Next Generation, Heidelberg, Germany. One of 200 young mathematicians and computer scientists selected among more than 600 applicants from around the world.

6/2011 **PLDI Student Research Competition,** *Second Place*.
Title: Finding Error-Handling Bugs in Systems Code Using Static Analysis. Graduate Category.

6/2009 **Google Anita Borg Scholarship Finalist**.
One of fifty scholars selected among more than 400 applicants. Attended the 2009 Google Scholars Retreat in Mountain View, CA.

3/2009 **National Youth Award for Outstanding Academic Achievement,** *Nominated*.
Premio Nacional de la Juventud. Nominated by the State of Coahuila to receive this award, presented by the President of Mexico each year.

2008-2009 **AAUW International Doctoral Fellowship**.
Awarded by the American Association of University Women. One of two computer scientist fellows out of 75 fellows (selected among 1050 applicants). One of two Mexican fellows.

12/2007 **State Youth Award for Outstanding Academic Achievement,** *First Place*.
Premio Estatal de la Juventud. The highest academic honor presented each year to a citizen not older than 29. Personally received from the Governor of Coahuila. Selected among 418 nominees from across the state.

11/2007 **Distinguished Alumna Award**.
Awarded by the Ateneo Fuente High School in the celebration of its 140th Anniversary.

2006-2007 and 2003-2004 **SEP Graduate Scholarship**.
Awarded by the Secretariat of Public Education (Mexico). One of eighty scholars (from all fields of study) nationwide. Received twice.

6/2006 **Google Anita Borg Scholarship Finalist**.
One of forty seven finalists selected among 324 applicants from 90 different universities across the country. Attended the 2006 Google Scholars Retreat in Mountain View, CA.

2003-2006 **Chancellor's Graduate Student Award**.
Awarded by the University of Wisconsin–Milwaukee. Received three times.

2002-2007 **CONACYT Graduate Fellowship**.
Awarded by the National Council of Science and Technology (Mexico) to pursue graduate studies abroad. This fellowship is comparable to an NSF Graduate Fellowship.

6/2001 **"Nazario S. Ortiz Garza" Diploma and Medal for Academic Excellence**.
Awarded by the State of Coahuila for Academic Excellence in Computer Engineering. Personally received from the Governor of Coahuila.

2/2001 **Best Graduating Student in Computing Engineering**.
Awarded by the Saltillo Institute of Technology. Highest GPA over the four years of undergraduate studies among those graduating with a Computer Engineering degree.

2/2001 **Best Graduating Student of Class 2000**.
Awarded by the Saltillo Institute of Technology. Highest ranked student among all those graduating from all departments.

1/2001 **Summa Cum Laude (Mención Honorífica)**.
Awarded by the Saltillo Institute of Technology. Only awardee among 300 graduating students.

11/1999 **"Juan Antonio de la Fuente" Diploma and Medal for Academic Excellence**.
Awarded by the Autonomous University of Coahuila. The highest honor presented to students. Personally received from the University President.

6/1999 **"Nazario S. Ortiz Garza" Diploma and Medal for Academic Excellence**.
Awarded by the State of Coahuila for Academic Excellence in Music. Personally received from the Governor of Coahuila.

6/1999 **Best Graduating Student in Music Performance**.
Awarded by the School of Music at the Autonomous University of Coahuila. Highest GPA over the eight years of undergraduate studies.

Teaching Experience

ECS 140A **Programming Languages,** *Undergraduate Course*.
Spring 2023, Spring 2021, Spring 2020, Spring 2019, Spring 2018, Winter 2016.

ECS 260 **Software Engineering,** *Graduate Course*.
Winter 2023, Spring 2021, Spring 2018, Fall 2015, Spring 2015.

ECS 289C **Seminar on Program Analysis,** *Graduate Course*.
Winter 2024, Spring 2020, Spring 2019, Winter 2017, Winter 2015.

Student Advising at UC Davis

Current Ph.D. Students

2023–Present **Goodness Ayinmode**.

2019–Present **Patrick Chapman**.

2023–Present **Haneul Lee**.

2021–Present **Dolores Miao**.

2023–Present **Md Raian Latif Nabil**.

2020–Present **Jackson Vanover**.

2020–Present **Yutong Wang**.

2021–Present **Hao-Nan Zhu**.

Former Students

2015–2020 **Hui Guo, Ph.D**.
- Thesis: "Analysis of Floating-Point Programs for Numerical Reliability and Efficiency."
- Publications: ASE'17, ISSTA'18, ICSE'20, SC'20.
- First Employment: Research Scientist at Facebook.

2015–2019 **Daniel DeFreez, Ph.D.** (co-advised with Aditya Thakur).
- Thesis: "Error-Handling Specification Inference for Software that Uses the Return-Code Idiom."
- Publications: ICSE'18 (poster), FSE'18 SRC, FSE'18, FSE'19, PPoPP'20.
- Honors: First Prize FSE'18 ACM Student Research Competition.
- First Employment: Tenure-Track Assistant Professor at Southern Oregon University.

2018–2021 **David Tomassi, M.S**.
- Publications: ICSE'19, ASE'21.
- Honors: UC Davis College of Engineering Dean's Fellowship.
- First Employment: KryptoWire.

2020–2021 **Suchita Mukherjee, M.S**.
- Thesis: "Fixing Dependency Errors for Python Build Reproducibility."
- Publications: ISSTA'21.
- Honors: UC Davis College of Engineering Masters Thesis Excellence Award.
- First Employment: Zillow.

2020–2020 **Pengcheng Ding, M.S**.
- Project: BugSwarm.
- First Employment: Salesforce.

2019–2020 **Tony Xiao, M.S**.
- Project: BugSwarm.
- First Employment: Palo Alto Networks.

2019–2020 **Jackson Vanover, M.S**.
- Publications: ISSTA'20.
- Honors: ISSTA'20 Distinguished Artifact Award.
- First Employment: Ph.D. student at UC Davis.

2018–2019 **Antara Bhowmick, M.S**.
- Publications: ICSE'19, PPoPP'20.

2017–2019 **Yichen Wang, M.S**.
- Publications: ICSE'19.
- First Employment: Amazon.

2017–2018 **Dana Iltis, M.S** (co-advised with Aditya Thakur).

2016–2017 **Pallavi Kudigrama, M.S**.
- Publications: SWAN'17.
- First Employment: Amazon.

2016–2017 **Ruoan Ji, M.S**.
- First Employment: Skillz Inc.

2015–2016 **Yagnik Suchak, M.S**.
- Publications: ISSTA'17.
- First Employment: Apple.

2015–2016 **Samanwita Pal, M.S**.
- First Employment: Electronic Arts.

2022–2024 **Kevin Wang, B.S**.
- Project: BugSwarm.
- First Employment: Ph.D. student at Cornell University.

2021–2021 **Alex Dunn, B.S**.
- Project: BugSwarm.

2019–2021 **Robert Furth, B.S**.
- Project: BugSwarm.

2020–2021 **Daniel Phan, B.S** (co-advised with Aditya Thakur).
- First Employment: ByteDance.

2020–2020 **Eric Li, B.S**.
- Project: BugSwarm.
- First Employment: M.S. student at Carnegie Mellon University.

2019–2020 **Abigail Almanza, B.S**.
- Publications: ISSTA'21.
- First Employment: M.S. student at UC Davis.

2019–2020 **Xuan Deng, B.S**.
- Publications: ISSTA'20.
- First Employment: M.S. student at Yale University.

2018–2019 **Haaken Baldwin, B.S**.
- Publications: FSE'19.
- Honors: UC Davis Computer Science Citation.
- First Employment: DevOps SE at Wealthfront.

2018–2018 **David Tomassi, B.S**.
- Publications: FSE'18 SRC.
- Honors: First Prize FSE'18 ACM Student Research Competition, UC Davis Computer Science Citation.
- First Employment: Ph.D. student at UC Davis.

2017–2017 **Sahana Mundewadi, B.S**.

2015–2017 **Yichen Wang, B.S**.
- Project: BugSwarm.
- Honors: UC Davis Computer Science Citation.
- First Employment: M.S. student at UC Davis.

2016–2017 **Naji Dmeiri, B.S**.
- Publications: ICSE'19.
- Honors: UC Davis Computer Science Citation, UC Davis Outstanding Senior 2017.
- First Employment: Google.

2016–2016 **Saquiba Tariq, B.S**.
- Project: BugSwarm.
- First Employment: Cisco.

Leadership, Service and Mentoring for Diversity and Inclusion

2021–Present **Mentoring and Diversity Co-Chair,** *SIGPLAN Executive Committee*.
SIGPLAN Liason for the Programming Languages Mentoring Workshop (PLMW) among other activities.

2021–2022 **Diversity, Equity and Inclusion (DEI) Committee Co-Chair,** *UC Davis College of Engineering*.
Organizing and leading the first DEI committee in the College of Engineering composed of faculty and staff.

2020–2023 **PROMISE Engineering Institute (PEI),** *UC Davis*.
Co-PI in the NSF-funded PEI led by UC Davis Vice Chancellor of Diversity, Equity and Inclusion Renetta Tull. The Institute has as goal to encourage and provide mentorship to underrepresented STEM Ph.D. students interested in pursuing academic careers.

2020–2022 **Faculty Director for Diversity and Inclusion,** *UC Davis College of Engineering*.
Part of the College of Engineering Leadership team responsible for identifying opportunities to support diversity and inclusion, directly reporting to the Dean of the College of Engineering.

2018–2021 **Programming Languages Mentoring Workshop (PLMW),** *SIGPLAN Liaison*.
PLMW aims to encourage undergraduates and junior graduates to pursue careers in programming languages research. Overseeing an evaluation of PLMW by CRA-W CERP that will help measure PLMW's impact among students, in particular undergraduate students, women and other underrepresented minorities.

2008–Present **Member of Latinas in Computing**.
A community created by and for the Latinas in computing with a mission of promoting their representation and success in computing related fields.

2018–2020 **AAUW Fellowship and Grants,** *Invited Panelist*.
Participated the last three years in selecting Fellowship recipients.

2015, 2016 **Congressional Hispanic Caucus,** *UC Davis Representative Visitor*.
Represented UC Davis in meetings with members of the Congressional Hispanic Caucus in Washington, D.C. to discuss the importance of diversity in STEM, and promote UC Davis diversity efforts.

2015 **Latin American Women in Technology (LAtINiTY'15),** *PC Member*.
First Latin American Women in Technology conference, held in Chile in November 2015. The event had more than 400 attendees from 14 countries.

1/2013–9/2014 **WICSE AWE Mentor,** *University of California, Berkeley*.
Part of the WICSE AWE Mentoring Program for undergraduate CS female students.

5/2011–8/2012 **WACM President,** *University of Wisconsin–Madison*.
WACM is the University of Wisconsin–Madison's student chapter of ACM-W (ACM's committee on Women in Computing). WACM provides social, educational and outreach for women in the CS Department.

9/2006–5/2011 **WACM Vice President,** *University of Wisconsin–Madison*.
Served as Vice Present of the UW–Madison ACM's committee on Women in Computing.

2/2010–8/2012 **Graduate CS Mentor,** *University of Wisconsin–Madison*.
Part of the WACM Mentoring Program for undergraduate female students.

3/2009–5/2012 **Anita Borg Institute Ambassador,** *USA*.
The ABI Ambassadors is a network of technical women leaders who are passionate about ABI's mission, engaged in ABI's programs, and working to improve technical women's opportunities and impact in their own organizations. Ambassador representing Latinas in Computing.

12/2008–7/2009 **Girl Game Company Virtual Mentor,** *USA*.
The aim of the Girl Game Company is to increase middle school girls' interest, ability and motivation to pursue courses and careers in Computer Science. Mentored two Latinas from California.

Invited Mentoring Talks and Panels

4/2021 Invited Panelist, "Life After Graduate School", ExploreCSR@URI, Explore Computer Science Research, University of Rhode Island.

3/2021 Invited Panelist, "Engineering on Tap: Women Trailblazers of the College of Engineering", UC Davis.

11/2020 Invited Panelist, "Careers in HPC", Students@SC, Supercomputing Conference.

9/2020 Invited Speaker, UC Davis LEADR Summer Bridge – Mini Programming Bootcamp.

6/2019 Invited Speaker, Programming Languages Mentoring Workshop PLMW@PLDI, Phoenix, Arizona.

7/2018 Keynote Speaker, ECOOP and ISSTA Doctoral Symposium, Amsterdam, Netherlands.

Fall 2017 "Conversations with STEM Faculty" (biweekly), UC Davis.

10/2016 Invited Panelist, "Getting to Know Your STEM Network, Navigating the Univerisity". Chicanx and Latinx in STEM, UC Davis.

7/2016 Invited Speaker, UC Davis C-STEM Center Robotics Camp.

6/2016 Invited Panelist, "What I Wish I Knew When I Started Grad School", Programming Languages Mentoring Workshop PLMW@PLDI, Santa Barbara, CA.

3/2015 Keynote Speaker, NWCIT Aspirations in Computing Awards Ceremony, Davis, CA.

2/2015 Keynote Speaker, #FixIT Hackathon, Universidad Autonoma de Mexico (UNAM), Mexico City.

1/2015 Presenter at Woodland High School, Woodland CA.

6/2014 Invited Panelist, 2014 Google Scholar's Retreat Outreach Panel, Google, Mountain View, CA.

9/2010 Panelist and Organizer,"Conference Networking Across Boundaries". Grace Hopper Celebration of Women in Computing (GHC'10), Birds of a Feather, Atlanta, GA.

9/2010 Panelist and Organizer, "Minorities without Borders: Giving Back to Developing Countries". Grace Hopper Celebration of Women in Computing (GHC'10), Birds of a Feather, Atlanta, GA.

9/2009 Panelist and Organizer, "Cross-Cultural Communication Challenges Faced by Women in Computing". Grace Hopper Celebration of Women in Computing (GHC'09), Birds of a Feather, Tucson, AZ.

Professional Activities

Executive Committees

2021–2024 Elected to serve for a second term: Member-at-Large, ACM SIGPLAN Executive Committee.

2018–2021 Member-at-Large, ACM SIGPLAN Executive Committee.

Conference Organization

2017-Present Co-Organizer, International Workshop on Software Correctness for HPC Applications (co-located with Supercomputing. Seven consecutive editions to date).

2024 Co-Organizer, International Workshop on the State Of the Art in Program Analysis, SOAP (co-located with PLDI).

2023 Organizer, First International Workshop on Software Defect Datasets (co-located with ESEC/FSE).

2023 Co-Organizer, DOE/NSF Workshop on Correctness in Scientific Computing (co-located with PLDI).

2023 Co-Chair, ISSTA Doctoral Symposium.

2022 Co-Organizer, Mini Symposium on Testing Numerical Code for Heterogeneity (co-located with SIAM Conference on Parallel Processing for Scientific Computing).

2020 Co-Organizer, ICERM Workshop on Variable Precision in Mathematical and Scientific Computing.

2017 Co-Organizer, Dagstuhl Seminar on Analysis and Synthesis of Floating-Point Programs.

2016 SRC Co-Chair, International Symposium on the Foundations of Software Engineering (FSE'16).

2015 Publication Chair, Conference on Parallel Architectures and Compilation Techniques (PACT'15).

Program Committees

2025 International Conference on Software Engineering (ICSE).

2024 International Conf. for High Performance Computing, Networking, Storage, and Analysis (SC).

2024 Conference on Programming Language Design and Implementation (PLDI).

2024 International Conference on Software Engineering (ICSE).

2023 Conference on Programming Language Design and Implementation (PLDI).

2023 Int. Conf. on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA).

2022 European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE).

2022 International Symposium on Software Testing and Analysis (ISSTA).

2021 International Conference on Software Engineering (ICSE).

2021 Conference on Programming Language Design and Implementation (PLDI).

2020 International Conference on Software Engineering (ICSE).

2019 International Conference on Software Engineering (ICSE).

2019 Conference on Programming Language Design and Implementation (PLDI).

2018 Int. Conf. on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA).

2018 International Symposium on Software Testing and Analysis (ISSTA).

2017 International Conf. for High Performance Computing, Networking, Storage, and Analysis (SC).

2017 International Symposium on Software Testing and Analysis (ISSTA).

2017 International Conference on Compiler Construction (CC).

2016 Conference on Programming Language Design and Implementation (PLDI).

2016 ACM Student Research Competition at PLDI 2016.

2016 International Conf. for High Performance Computing, Networking, Storage, and Analysis (SC).

2016 USENIX Workshop on Hot Topics in Storage and File systems (HotStorage).

External Reviewer/Editor

2021 Guest Editor, IEEE IT Professional Magazine, Special Issue on Software Correctness Technology .
2021 Transactions on Programming Languages and Systems (TOPLAS).
2021 Transactions on Software Engineering and Methodology (TOSEM).
2014, 2012 Conference on Programming Language Design and Implementation (PLDI).
2014 International Conference on Computer Aided Verification (CAV).
2014 International Parallel and Distributed Processing Symposium (IPDPS).
2014 International Symposium on High Performance Computer Architecture (HPCA).
2013, 2011 Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA).
2013 Symposium on Principles and Practice of Parallel Programming (PPoPP).
2009 Working Conference on Mining Software Repositories (MSR).

Grants and Fellowship Committees and Panels

2024 DOE Computational Science Graduate Fellowship (CSGF) Screening Committee, Mathematics/Computer Science Track.
2024 SIGSOFT Awards Committee.
2023 Committee of Visitors (CoV), National Science Foundation (NSF), Computing and Communication Foundations (CCF).
2023, 2021, 2020 Proposal Review Panels, Department of Energy (DOE).
2021 Proposal Review Panel, UC-HBCU Initiative, University of California Office of the President.
2021 Proposal Review Panel, Better Scientific Software (BSSw) Fellowship.
2020, 2018, 2015 Proposal Review Panels, National Science Foundation (NSF).
2020 Reviewer, CRA & CCC Computing Innovation Fellows (CIFellows) Program.
2018–2020 Proposal Review Panels, AAUW International Fellowships.
2015 UC Mexus–Conacyt Review Panel for Engineering and Computer Science.

UC Davis Committees

2019-Present Graduate Advisor, Graduate Group in Computer Science (GGCS).
2023–2024 Math Faculty Recruitment Committee.
2022–2023 CS Faculty Recruitment Committee.
2021–2022 Co-Chair, Diversity, Equity, and Inclusion Committee, College of Engineering.
2020-2022 Faculty Advisor to the Dean for Diversity, Equity and Inclusion, College of Engineering.
2021 UC Davis Representative, Coalition for National Science Funding (CNSF) Advocacy Days, University of California.
2021 Awards Committee Member, Graduate Group in Computer Science (GGCS).
2019, 2018 CS Faculty Representative Committee.
2018, 2017, 2015 CS Graduate Admissions Committee.
2016 CS Faculty Recruitment Committee.

Professional Development

2/2020 DOE Exascale Program Meeting, Houston, TX.
7/2019 Microsoft Research Faculty Summit, Seattle, WA.

3/2016 Leadership Institute Phase 2, UC Davis ADVANCE CAMPOS, Davis, CA.

8/2015 Leadership Institute, UC Davis ADVANCE CAMPOS, Davis, CA.

6/2015 CRA-W Early Career Mentoring Workshop, FCRC'15, Portland, OR.

7/2014 Leadership Skills for Engineering and Science Faculty Workshop, MIT, Cambridge, MA.

11/2013 2^{nd} Rising Stars in EECS Workshop, MIT, Cambridge, MA.

1/2012 2012 Google Graduate Researchers in Academia of Diverse Backgrounds (GRAD) CS Forum, Google Inc., Mountain View, CA.

6/2011 CRA-W Career Mentoring Workshop, FCRC'11, San Jose, CA.

7/2007 Summer School on Language-Based Techniques for Integrating with the External World, July 18-26 2007, University of Oregon, Portland, OR.

Music Activities

9/2006–5/2009 Advanced piano lessons with internationally acclaimed pianist Christopher Taylor, School of Music, University of Wisconsin–Madison.

Participated in more than 100 recitals as soloist as well as piano accompanist. Performed in the Mexican States of Coahuila, Nuevo Leon, Chihuahua, Puebla, and Tlaxcala.