

José A. Morales E.

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Mathematics and
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CV / Résumé

josemoralesescalante.wordpress.com

Work Information

- Aug. 2020 – Present **Assistant Professor**, *The University of Texas at San Antonio - Departments of Mathematics & Physics and Astronomy*, San Antonio, TX, USA.
- Sep. 2018 – Aug. 2020 **Postdoctoral Fellow**, *McMaster University - Department of Mathematics & Statistics*, Hamilton, Ontario, Canada.
Postdoctoral Advisor: Professor Bartosz Protas.
- Oct. 2016 – Aug. 2018 **Postdoctoral Researcher**, *Technische Universität Wien - Institute for Analysis and Scientific Computing*, Vienna, Austria.
Postdoctoral Advisor: Associate Professor Clemens Heitzinger.

Higher Education

- Aug. 2016 **PhD**, *Computational Science, Engineering, and Mathematics (CSEM)*, The University of Texas at Austin, *Austin, TX, USA*.
Institute for Computational Engineering and Sciences (ICES)
- Thesis: Discontinuous Galerkin Methods for Boltzmann-Poisson Models of Electron Transport in Semiconductors.
- Advisor: Professor Irene M. Gamba.
- May 2012 **M.Sc.**, *Computational Science, Engineering, and Mathematics (CSEM)*, ICES, The University of Texas at Austin, *Austin, TX, USA*.
- Aug. 2008 **B. Sc.**, *Physics*, UNAM (Universidad Nacional Autónoma de México), Mexico City, Mexico.
Thesis: *Theory and Experiments on Solitary Water Waves (In Spanish)*.
- Advisors: *Professor P. Panayotaros, Professor M.C. Jorge. (IIMAS-UNAM)*

Research Interests

Current: Discontinuous Galerkin Finite Element Methods, Computational Electronics, Boltzmann Equations, Kinetic Theory, Statistical Mechanics, Quantum Physics, Boltzmann-Poisson Models of Electron Transport in Semiconductors, Plasmas, and Nanotechnology, Numerical Analysis, Scientific Computing, Uncertainty Quantification, Bayesian Estimation, Markov Chain Monte Carlo, Stochastic Galerkin, Inverse Modeling, Optimization, Li-Ion Batteries, Electrochemistry, Diffusion processes, Information Theory. Applied Math & Computational Science and Engineering in general

Publications

- 2020 **Discerning suitable models of phase transformation in porous graphite electrodes; insights from combining inverse modelling with MRI and NMR measurements**, José Morales, William Ko, Jamie Foster, Sergey Krachkovskiy, Gillian Goward, Bartosz Protas, *Electrochimica Acta*, Volume 349, 2020, 136290, pp. 1-20.
- 2019 **Stochastic Galerkin Methods for the Boltzmann-Poisson system**, Jose A. Morales Escalante and Clemens Heitzinger, in preparation, ArXiv preprint, pp. 1-24.
- 2019 **Entropy-stable positivity-preserving DG schemes for Boltzmann-Poisson models of collisional electronic transport along energy bands**, Jose A. Morales Escalante, Irene Gamba, in preparation, ArXiv preprint, pp. 1-28.
- 2019 **Stochastic Collocation in the Boltzmann-Poisson system: rough boundaries and uncertainty in the reflection and initial conditions**, José A. Morales Escalante, Liu Liu, Irene M. Gamba, in preparation.
- 2019 **Determination of Micro- and Nano-Particle Properties by Multi-Frequency Bayesian Methods and Applications to Nanoelectrode Array Sensors**, A. Cossettini, B. Stadlbauer, J. Morales E., L. Taghizadeh, L. Selmi, and C. Heitzinger, 2019 IEEE SENSORS, Montreal, QC, Canada, 2019, pp. 1-4.
- 2018 **Bayesian estimation of physical and geometrical parameters for nanocapacitor array biosensors**, B. Stadlbauer, A. Cossettini, J. Morales E., D. Pasterk, P. Scarbolo, L. Taghizadeh, C. Heitzinger, L. Selmi, *Journal of Computational Physics*, Volume 397, (2019) 108874 , pp. 1-19, ISSN 0021-9991.
- 2018 **Homogenization of Boundary Layers in the Boltzmann - Poisson System**, Clemens Heitzinger, Jose A. Morales Escalante, submitted for publication.
- 2017 **Positivity preserving DG schemes for a Boltzmann - Poisson model of electrons in semiconductors in curvilinear momentum coordinates**, Jose A. Morales Escalante, Irene Gamba, Eirik Endeve, Cory Hauck, ArXiv preprint, pp. 1-18.
- 2017 **Galerkin Methods for Boltzmann-Poisson Transport with reflection conditions on rough boundaries**, Jose Morales Escalante, Irene Gamba, *Journal of Computational Physics* 363C (2018) pp. 302-328.
- 2016 **Discontinuous Galerkin deterministic solvers for a Boltzmann-Poisson model of hot electron transport using an averaged empirical pseudopotential band**, Jose A. Morales Escalante, Irene Gamba, Armando Majorana, Yingda Cheng, Chi-Wang Shu, James Chelikowsky, *Computer Methods in Applied Mechanics and Engineering* , Volume 321, pp. 209-234, 2017.
- 2014 **Boundary conditions effects by Discontinuous Galerkin solvers for Boltzmann-Poisson models of electron transport**, José Morales, Irene Gamba, *Proceedings of 2014 International Workshop on Computational Electronics*, Paris, 2014, pp. 1-4, IEEE, 2014.
- 2012 **A fast approach to Discontinuous Galerkin solvers for Boltzmann-Poisson transport systems for full electronic bands and phonon scattering**, Irene Gamba, Armando Majorana, Jose Morales, Chi-Wang Shu, *Proceedings of 2012 15th International Workshop on Computational Electronics*, Madison WI, 2012, pp. 1-4, IEEE, 2012.

Computing Skills

Scientific Computing, High Performance Computing, FEniCS, Julia C, Fortran, OpenMP, Linux, Mathematica, Matlab, Tecplot.

Honors, Awards, and Fellowships

Graduate

- 2011-12, 2012-13. **NIMS Fellowship**, *CSEM Program Admissions and Fellowships Committee*, ICES, The University of Texas at Austin.
- 2011-12 **David Bruton, Jr. Continuing Fellowship**, *The Graduate School*, U. Texas - Austin.
- Apr 2010 **The Honor Society of Phi Kappa Phi**, *Member Induction*.

Undergraduate

- Nov 2007 **3rd Place, Gallery of Fluids Contest, XIII DFP-SMF Meeting**, (*Division of Fluids and Plasmas, Mexican Society of Physics*), Poster: "Solitary Water Wave Interaction on a Wave Channel", Co-authors: Dr. M.C. Jorge (IIMAS-UNAM), Dr. P. Panayotaros (IIMAS-UNAM), Dr. R. Silva (II-UNAM), Dr. Édgar Mendoza (II-UNAM).
Universidad Veracruzana, Boca del Río, Veracruz, Mexico
- Oct 2004 **3rd Place, 2004 ESFM-IPN Pierre Fermat National Math Contest**, *Category: Applied Math / Teamwork*, Teammate: Eric B. Téllez, Mexico City, Mexico.

Teaching

Assistant Professor

- Fall 2020 **Instructor**, *The University of Texas at San Antonio*, Department of Mathematics.
- MAT 1214 (Section 021): Calculus I (Online-Hybrid Modality)

Postdoc

- Winter 2020 **Instructor**, *McMaster University*, Department of Mathematics & Statistics.
- MATH 1M03 (Section C02): Calculus for Business, Humanities, and the Social Sciences (1st-2nd year Undergraduate course)
- Course Coordinator: Prof. Bartosz Protas
- Fall 2019 **Instructor**, *McMaster University*, Department of Mathematics & Statistics.
- MATH 3F03: Advanced Ordinary Differential Equations (3rd year Math Undergraduate course)
- TA: Elkin Ramirez
- Summer 2018 **Lecturer**, *TU Wien*, Institute for Analysis and Scientific Computing.
- Introduction to Scientific Computing, Lecture and Exercise course
- Co-instructor with Dr. Clemens Heitzinger
- Summer 2018 **Lecturer**, *TU Wien*, Institute for Analysis and Scientific Computing.
- Project Praktikum course: Machine Learning
- Co-instructor with Dr. Clemens Heitzinger
- Winter 2017 **Lecturer**, *TU Wien*, Institute for Analysis and Scientific Computing.
- Seminar course: Scientific Computing (Boltzmann Equation, Uncertainty Quantification, etc.)
- Co-instructor with Dr. Clemens Heitzinger
- Winter 2017 **Lecturer**, *TU Wien*, Institute for Analysis and Scientific Computing.
- Seminar course: Machine Learning
- Co-instructor with Dr. Clemens Heitzinger

Graduate

- Spring 2016 **Teaching Assistant**, *U. Texas - Austin*, Dept. of Mathematics.
- M348: Scientific Computing in Numerical Analysis.
- Instructor: Dr. Irene Gamba
- Spring 2014 **Teaching Assistant**, *U. Texas - Austin*, Dept. of Mathematics.
- M427K: Advanced Calculus for Applications - ODE's, PDE's, Fourier Series & BVP's.
- Instructor: Dr. B. Goddard

- Fall 2013 **Teaching Assistant**, *U. Texas - Austin*, Dept. of Mathematics.
 - M427K: Advanced Calculus for Applications - ODE's, PDE's, Fourier Series & BVP's.
 - Instructor: Dr. B. Goddard
- Spring 2012 **Teaching Assistant**, *U. Texas - Austin*, ICES.
 - CSE393F: Finite Element Methods.
 - Instructor: Dr. Clint Dawson
- Fall 2010 **Teaching Assistant**, *U. Texas - Austin*, Dept. of Mathematics.
 - M408D: Sequences, Series and Multivariable Calculus.
 - Instructor: Dr. Jennifer Mann
- Fall 2009 **Teaching Assistant**, *U. Texas - Austin*, Dept. of Mathematics.
 - M408C: Differential and Integral Calculus.
 - Instructor: Dr. Paul Fili

Undergraduate

- Spring 2009 **Teaching Assistant**, *UNAM School of Sciences*, Dept. of Mathematics.
 - Complex Variable I.
 -Instructor: Dr. María del Carmen Jorge
- Spring 2009 **Teaching Assistant**, *UNAM School of Sciences*, Dept. of Physics.
 - Analytical Mechanics.
 -Instructor: Dr. Fermín Viniegra
- Fall 2008 **Teaching Assistant**, *UNAM School of Sciences*, Dept. of Physics.
 -Introductory Physics Seminar.
 -Instructor: M.Sc. Mirna Villavicencio

Reviewer & Evaluation Activities

Postdoc

- April 10, 2019 **Judge**, *McMaster CSE Student Symposium*, Evaluation of CSE graduate students presentations for the morning Sessions I: Fluid Mechanics & Thermodynamics and II: Optimization & Control, Hamilton Hall HH/109, McMaster University, Hamilton ON, Canada.
- 2019 **Reviewer**, for *International Journal of Computer Mathematics*, IJCM papers.
- Dec'19 - Jan'20 **Evaluation**, *Math PhD Preliminary Exam (Applied Math Option)*, Participation in the departmental Preliminary Examination for graduate students (ODEs section), Department of Mathematics & Statistics, McMaster University, Hamilton ON, Canada.

Conferences & Presentations

Postdoc

- Feb 14, 2020 **Talk**, "*UQ in the Boltzmann-Poisson system for electron transport in semiconductors & Entropy-stable DG schemes for related kinetic theory models*", Math Dept. Seminar, The University of Texas at San Antonio, TX, USA.
- Jan 6, 2020 **Talk**, "*Stochastic Galerkin Methods For The Boltzmann-Poisson System*", AIMS Lab Seminar, McMaster University, Hamilton ON, Canada.
- May 3, 2019 **Talk**, "*Inverse Modeling of Solid-State Diffusion by Multi-objective Optimization*", José Morales, William Ko, Jamie Foster, Sergey Krachkovskiy, Gillian Goward, Bartosz Protas, Southern Ontario Numerical Analysis Day (SONAD) 2019, Ontario Tech University, Oshawa ON, Canada.

- Jan. 11, 2019 **Talk**, “*Positivity preserving DG schemes for a Boltzmann - Poisson model of electrons in semiconductors in curvilinear momentum coordinates*”, José Morales, Colloquium - Postdoc Threads, Dept. of Mathematics & Statistics, McMaster University, Hamilton ON, Canada.
- Nov. 5, 2018 **Talk**, “*Discontinuous Galerkin Methods for Boltzmann-Poisson Models of Electron Transport in Semiconductors*”, José Morales, AIMS Lab Seminar, Dept. of Mathematics & Statistics, McMaster University, Hamilton ON, Canada.
- Apr. 18, 2018 **Talk**, “*Uncertainty quantification for the Boltzmann-Poisson system*”, Jose Morales Escalante, C. Heitzinger, Proc. SIAM Conference on Uncertainty Quantification (SIAM UQ 2018), Garden Grove, CA, USA.
- Sep 21, 2017 **Talk**, “*Boundary Layers in Boltzmann-Poisson: Homogenization, Reflection Boundary Conditions, and Discontinuous Galerkin Schemes*”, Jose Morales Escalante, C. Heitzinger, The University of Texas at Austin, USA, 'Kinetic Equations: Modeling, analysis, and numerics', Conference in honor of Irene Gamba.
- March 7 2017 **Presentation, ICES Seminar**, “*DG Schemes for Collisional Electron Transport with Insulating Conditions on Rough Boundaries*”, Jose Morales Escalante, Irene Gamba, Institute for Computational Engineering and Sciences, The University of Texas at Austin, USA.
- March 2 2017 **Presentation, SIAM CSE17**, “*DG Schemes for Collisional Plasma Models with Insulating Conditions on Rough Boundaries*”, Jose Morales Escalante, Irene Gamba, SIAM Conference on Computational Science and Engineering, Atlanta GA, USA.
- Graduate
- June 16 2016 **Presentation, ECMI 2016**, “*Reflective boundary conditions in Discontinuous Galerkin Methods for Boltzmann - Poisson models of electron transport in semiconductors and zero flux condition for general mixed reflection*”, Jose Morales Escalante, Irene Gamba, European Conference on Mathematics for Industry, Universidad de Santiago de Compostela, Spain.
- March 12 2016 **Presentation, SIAM SEAS 2016**, “*Positivity preserving DG schemes for Boltzmann - Poisson Models of Electron Transport in Semiconductors with General Curvilinear Momentum Coordinates*”, Jose Morales Escalante, Irene Gamba, Cory Hauck, Eirik Endeve, SIAM South East Atlantic Section, University of Georgia at Athens, GA.
- November 12 2015 **Presentation, KI-Net YRW2015**, “*Boundary Conditions Effects for Discontinuous Galerkin Solvers for Boltzmann-Poisson Models of Electron Transport*”, Jose A. Morales Escalante (U. Texas - Austin), Irene Gamba (U. Texas - Austin), Young Researchers Workshop in Kinetic Theory, CSCAMM, University of Maryland - College Park, MD.
- October 20 2015 **Poster, KI-Net ORNL**, “*Reflection Boundary Conditions in DG Methods for Boltzmann - Poisson models of Electronic Transport in Semiconductors*”, Jose A. Morales Escalante (U. Texas - Austin), Irene Gamba (U. Texas - Austin), KI-Net Conference on Scalable Methods for Kinetic Equations, Oak Ridge National Laboratory, TN .
- July 9 2015 **Presentation, CMO-BIRS**, “*Discontinuous Galerkin Methods for Boltzmann-Poisson Models of Electron Transport in Semiconductors*”, Jose A. Morales Escalante (U. Texas - Austin), Irene Gamba (U. Texas - Austin), Workshop on Kinetic and Related Equations, Casa Matematica Oaxaca - Banff International Research Station, Oaxaca, Mexico.

- March 18 2015 **Presentation, SIAM CSE 15**, "*Discontinuous Galerkin Deterministic Solvers of Boltzmann-Poisson Models of Hot Electronic Transport Using Empirical Pseudopotential Methods*", Jose A. Morales Escalante (U. Texas - Austin), Irene Gamba (U. Texas - Austin), SIAM Conference on Computational Science & Engineering, SLC Utah, 2015.
- July 10 2014 **Poster, NSF MPS Visit**, "*Boundary conditions effects by Discontinuous Galerkin solvers for Boltzmann-Poisson models of electron transport*", Jose A. Morales Escalante (U. Texas - Austin), Irene Gamba (U. Texas - Austin), NSF Mathematical and Physical Sciences Director visit to UT - Austin.
- 3-6 June 2014 **Poster, IWCE-16 2014**, "*Boundary conditions effects by Discontinuous Galerkin solvers for Boltzmann-Poisson models of electron transport*", Jose A. Morales Escalante (U. Texas - Austin), Irene Gamba (U. Texas - Austin), International Workshop on Computational Electronics, Paris, France.
- 28 March 2014 **Talk, KI-Net Conference**, "*Discontinuous Galerkin (DG) Methods for Full Band Boltzmann - Poisson (BP) models of Electronic Transport in Semiconductors using Empirical Pseudopotential Methods (EPM)* ", Mathematical and Numerical Methods for Complex Quantum Systems, NSF KI-Network, U. Illinois at Chicago, USA, 28 March 2014.
- 18-22 November 2013 **Poster, IPAM MSEWS4**, "*Deterministic Full Band Boltzmann - Poisson models for Hot Electron Transport by means of Empirical Pseudopotential Methods*", Materials for a Sustainable Energy Future, Workshop IV: Energy Conservation and Waste Heat Recovery. Institute for Pure and Applied Mathematics - UCLA, Los Angeles, USA.
- 14-18 October 2013 **Poster, KI-Net YRW 2013**, "*Deterministic full band Boltzmann-Poisson models for hot electron transport by means of Empirical Pseudopotential Methods*", 2013 Young Researchers Workshop: Kinetic and macroscopic models for complex systems, CSCAMM, U. Maryland, College Park, USA.
- 4-7 June 2013 **Poster, IWCE-16 2013**, "*Deterministic DG Solvers for EPM-Boltzmann-Poisson Transport*", Jose A. Morales Escalante (U. Texas - Austin), Irene Gamba (U. Texas - Austin), Armando Majorana (U. Catania - Italy), Yingda Cheng (Michigan State), Chi-Wang Shu (Brown University), James Chelikowsky (U. Texas - Austin), International Workshop on Computational Electronics, Nara, Japan.
- 13 October 2012 **Talk, KI-Net YRW 2012**, "*A Discontinuous Galerkin Solver for Boltzmann - Poisson Models of Electron Transport in Semiconductors using a Radial Average of a Local EPM Band as a Conduction Band Model* ", J2012 Young Researchers Workshop: Kinetic Description of Multiscale Phenomena, NSF KI-Network, Madison, Wisconsin, USA, 13 October 2012.
- 22 May 2012 **Poster, IWCE-15 2012**, "*A fast Discontinuous Galerkin solver approach for Boltzmann-Poisson transport systems for full electronic bands and phonon scattering*", Irene Gamba (U. Texas - Austin), Armando Majorana (U. Catania - Italy), Jose A. Morales, Chi-Wang Shu (Brown University), International Workshop on Computational Electronics, Madison, Wisconsin, USA.

March 1 2011 **Poster, SIAM CSE11 Meeting**, “*A Discontinuous Galerkin Solver for Full Band Boltzmann-Poisson Models*”, in representation of: Irene Gamba (U. Texas - Austin), Yingda Cheng (U. Texas - Austin), Armando Majorana (U. Catania - Italy) Chi-Wang Shu (Brown University), Society for Industrial and Applied Mathematics, Computational Science and Engineering Meeting, Reno, Nevada, USA. **SIAM U. Texas - Austin Student Chapter Representative at the SIAM-CSE11 Student Chapter Meeting with SIAM leadership**

Undergraduate

- 24 Nov 2008 **Talk, 61st DFD-APS Meeting**, “*Solitary Water Wave Interactions in a Wave Channel*”, Co-Authors: M.C. Jorge (IIMAS-UNAM), P. Panayotaros (IIMAS-UNAM), R. Silva (II-UNAM), Édgar Mendoza (II-UNAM), Division of Fluid Dynamics - American Physical Society Meeting.
Texas A& M, San Antonio, Texas.USA
- 24 Oct 2008 **Talk, XIV DFP-SMF Meeting**, “*Solitary Water Wave Interactions in a Wave Channel*”, Co-Authors: M.C. Jorge (IIMAS-UNAM), P. Panayotaros (IIMAS-UNAM), R. Silva (II-UNAM), Édgar Mendoza (II-UNAM), Division of Fluids and Plasmas, Mexican Society of Physics.
UAZ, Zacatecas, México
- 29 Oct – 1 Nov 2007 **Poster, Gallery of Fluids, XIII DFP-SMF Meeting**, “*Solitary Water Wave Interactions in a Wave Channel*”, Co-Authors: M.C. Jorge (IIMAS-UNAM), P. Panayotaros (IIMAS-UNAM), R. Silva (II-UNAM), Édgar Mendoza (II-UNAM), Division of Fluids and Plasmas, Mexican Society of Physics.
Universidad Veracruzana, Boca del Río, Veracruz, Mexico
- 24 Nov 2004 **Talk, Student Seminar on Discrete Dynamical Systems**, (*organized by Professors Jefferson King and Héctor Méndez*), Talk: “The Shadow of Chaos”, Co-authors: Ernesto Badillo, Juan A. Yoshino.
UNAM School of Sciences. Mexico City, Mexico

Schools, Workshops and Programs

Assistant Professor

- Sep 21 – 25 2020 **IEEE 2020 HPEC**, *High Performance Extreme Computing*, Virtual Conference.
- Sep 17 – 18 2020 **TACC Symposium for Texas Researchers (TACCSTER)**, virtual over Zoom & Slack.

Postdoc

- Jul 28 – Aug 23 2019 **SHARCNET HPC Summer School**, *Courses on Machine Learning, C++, Julia, MPI, Python, CUDA, and use of Compute Canada resources such as Graham*, ON, Canada.
- Jul 28 – Aug 23 2019 **Junior Hausdorff Trimester Program on Kinetic Theory**, Hausdorff Research Institute for Mathematics, Bonn, Germany.
- May 27 – 31 2019 **MacDATA Summer School in Data Science**, MacData Institute, McMaster University, Hamilton ON, Canada.
- July 10 – 14 2017 **Summer School on Bayesian Inference: Probabilistic way of learning from data**, Institute of Scientific Computing, TU Braunschweig, Germany.
- June 20 – 22 2017 **WPI Workshop on Quantum dynamics and uncertainty Quantification**, *Wolfgang Pauli Institute (WPI)*, U. Vienna, Austria.

- May 22 – June 2 2017 **Advanced School & Workshop on Nonlocal Partial Differential Equations and Applications to Geometry, Physics and Probability**, *The Abdus Salam International Centre for Theoretical Physics, ICTP, Trieste, Italy* .
- Apr 24 – 28 2017 **School on Uncertainty Quantification for Hyperbolic Equations and Related Topics**, *GSSI Gran Sasso Science Institute, L'Aquila, Italy*, .
- Feb 27 – Mar 3 2017 **SIAM CSE17 Conference on Computational Science & Engineering**, *Atlanta GA, USA*.
- Graduate
- March 26 – 30 2013 **KI-Net Conference: Mathematical & Numerical Methods for Complex Quantum Systems**, *Dept. of Mathematics, Statistics & Computer Science, U. Illinois at Chicago*.
- November 18 – 22 2013 **Materials for a Sustainable Energy Future, Workshop IV: Energy Conservation and Waste Heat Recovery**, *Institute for Pure and Applied Mathematics - (UCLA), University of California at Los Angeles, CA, USA*.
- October 14 – 18 2013 **KI-Net Young Researchers Workshop: Kinetic and macroscopic models for complex systems**, *Center for Scientific Computation And Mathematical Modeling, University of Maryland, College Park*.
- October 10 – 13 2012 **KI-Net Young Researchers Workshop: Kinetic Description of Multiscale Phenomena**, *University of Wisconsin - Madison Department of Mathematics*.
- June 4 – July 18 2012 **Summer Program on Kinetic and macroscopic models for particle transport in semiconductors: modeling, analytical, and computational research**, *Dipartimento di Matematica e Informatica, Università degli Studi di Catania, Catania, Sicily, Italy*.
- Sept 7 – Dec 9 2011 **ICERM Semester Program on Kinetic Theory and Computation**, *ICERM (Institute for Computational and Experimental Research on Mathematics), Brown University, Providence, RI, USA*.
- 18 – 29 July 2011 **RTG Summer School**, *Analysis, PDEs and Mathematical Physics*, *Department of Mathematics, The University of Texas at Austin, Austin, TX, USA*.
- 9 – 10 Oct 2009 **Joint ICES/CNA-FRG Workshop**, *Analytic and Numerical issues on Quantum, Kinetic, and Statistical Evolution*, *ICES, The University of Texas at Austin, Austin, TX, USA*.

Undergraduate

- 9 – 13 Apr 2007 **7th School on Energy Research**, *CIE-UNAM, Temixco, Morelos, Mexico*.
- 25-29 Jun 2007 **VII School on Materials Science and Engineering**, *IIM-UNAM, Mexico City*.
- 30 Jul – 11 Aug 2007 **XV Summer School on Physics**, *ICF-UNAM, IF-UNAM, Cuernavaca, Morelos and Mexico City, Mexico*.
- 5 – 9 Nov 2007 **IX Autumn School and 3rd Latin-American Meeting on Math Biology**, *UACM, UAEM, UNAM, Cuernavaca, Morelos, Mexico*.

Professional Society Memberships

- 2010 – **Society for Industrial and Applied Mathematics (SIAM)**.
- Jan 2012 **SIAM UT-Austin Student Chapter Officer**.
- Apr 2010 **The Honor Society of Phi Kappa Phi**.
- 2008 – 2009 **American Physical Society (APS)**.

Languages

Spanish **Native Speaker**

English **Fully Proficient**

French **Elementary**

Italian **Beginner**

German **Elementary**

*Full Professional Proficiency after Graduate Studies in USA (2009 - 2016),
TOEFL iBT Score of 110/120 in 2008.*

*French Language Translation & Reading Comprehension Exam
Accreditation, CELE-UNAM*

ÖSD Zertifikat A2 Prüfung mit 76 Punkten "gut bestanden"