Marcial Gonzalez, Ph.D.

School of Mechanical Engineering
Purdue University
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EDUCATION

California Institute of Technology, *Pasadena, California* (2006-2011)
Ph.D. in Aeronautics, Minor in Materials Science
Thesis: Energy and force stepping integrators in Lagrangian mechanics
Advisor: Professor Michael Ortiz
Overall GPA: 4.1

California Institute of Technology, *Pasadena, California* (2005-2006)
M.S. in Aeronautics

Universidad de Buenos Aires, *Buenos Aires, Argentina* (1995-2002)
Mechanical Engineer (a six-year program)
Thesis: Inverse model for estimating the steel-mold heat transfer coefficient in continuous casting installations of steel slabs -- Conducted at Center for Industrial Research (CINI), TenarisSiderca (2000-2002).
Advisor: Professor Eduardo Dvorkin - Co-Advisors: Professor M. Goldschmit and Professor E. Fernandez Berdaguer

PROFESSIONAL EXPERIENCE

Assistant Professor (tenure-track) (2014-present)
School of Mechanical Engineering and Ray W. Herrick Laboratories
Purdue University

Co-Director (2015-present)
Particle, Powder, and Compact Characterization Lab
Purdue University

Research Associate (2011-2013)
Mechanical and Aerospace Engineering
Rutgers University
Supervisor: Professor Alberto Cuitiño

Research Assistant, Computational Solid Mechanics Group (2006-2011)
California Institute of Technology
Advisor: Professor Michael Ortiz

Research Intern, Chemistry, Materials, and Life Sciences Directorate (Summer 2008)
Lawrence Livermore National Laboratory
   Developed a distributed-memory computer framework for mixed continuum-atomistic simulations of crystalline solids.

Research Intern, Computational Chemistry and Materials Science Summer Institute (Summer 2007)
Lawrence Livermore National Laboratory - Mentor: Dr. Jarek Knap
   Developed a distributed-memory computer framework for mixed continuum-atomistic simulations of crystalline solids.

Research Engineer, Computational Mechanics Department (2000-2005)
Center for Industrial Research (CINI), TenarisSiderca, Tenaris Group

Group Leader, Escuela Tecnica Philips Argentina (1994-2000)

Led the development of web-based educational tools and promoted their use among the academic community.

RESEARCH INTERESTS

Predictive, multi-scale modeling and simulation of microstructure evolution in confined granular systems, with an emphasis in manufacturing processes and the relationship between product fabrication and performance. Application areas of interest include:

(i) particulate products and processes (e.g., flow, mixing, segregation, consolidation, and compaction of powders),

(ii) continuous manufacturing (e.g., Quality by Design, model predictive control, and reduced order models), and

(iii) performance of pharmaceutical solid products (e.g., tensile strength, stiffness, swelling and disintegration), biomaterials (e.g., transport and feeding of corn stover) and energetic materials (e.g., deformation and heat generation under quasi-static, near-resonant and impact conditions, and formation and growth of hot spots) materials.

PUBLICATIONS (Total citations: 325 h-index: 11 Source: Google Scholar)

J32. Gonzalez M., "Generalized loading-unloading contact laws for elasto-plastic spheres with bonding strength", *Journal of the Mechanics and Physics of Solids*, **122**, 633-656, 2019.

J31. Bommireddy Y., Agarwal A., Yettella V., Tomar V., and Gonzalez M., "Loading-unloading contact law for micro-crystalline cellulose particles under large deformations", *KONA Powder and Particle Journal*, under review, 2018.

J30. Liu Y., Gonzalez M., and Wassgren C., "Modeling granular material blending in a Tote blender using a finite element method and advection-diffusion equation multi-scale model", *Powder Technology*, under review, 2018.

J29. Moreno M., Ganesh S., Shah Y., Su Q., Gonzalez M., Reklaitis G., and Nagy Z., "Nonlinear Steady-State Data Reconciliation for Continuous Tableting Processes", *Journal of Pharmaceutical Sciences*, under review, 2018.

J28. Su Q., Ganesh S., Moreno M., Bommireddy Y., Gonzalez M., Reklaitis G., and Nagy Z., "A perspective on Quality-by-Control (QbC) in pharmaceutical continuous manufacturing", *Computers and Chemical Engineering*, under review, 2018.

J27. Liu Y., Cameron A.T., Gonzalez M., and Wassgren C., "Modeling granular material blending in a Tote blender using a finite element method and advection-diffusion equation multi-scale model", *Powder Technology*, **340**, 428-439, 2018.

J26. Agarwal A. and Gonzalez M., "Contact radius and curvature corrections to the nonlocal contact formulation accounting for multi-particle interactions in elastic confined granular systems", *International Journal of Engineering Science*, **133**, 26-46, 2018.

J25. Cameron A.T., Liu Y., Gonzalez M., and Wassgren C., "Granular Material Mixing Experiments", *Journal of Purdue Undergraduate Research*, **8**, 2-9, 2018.

J24. Poorsolhjouy P. and Gonzalez M., "Connecting discrete particle mechanics to continuum granular micromechanics: Anisotropic continuum properties under compaction", *Mechanics Research Communications*, **92**, 21-27, 2018.

J23. Gonzalez M., Poorsolhjouy P., Thomas A., Liu J., and Balakrishnan K., "Statistical characterization of microstructure evolution during compaction of granular systems composed of spheres with hardening plastic behavior", *Mechanics Research Communications*, **92**, 131-136, 2018.

J22. Razavi S.M., Gonzalez M., and Cuitiño A.M., "Quantification of lubrication and particle size distribution effects on tensile strength and stiffness of tablets", *Powder Technology*, **336**, 360-374, 2018. (<u>DOI</u>)

J20. Liu Y., Gonzalez M., and Wassgren C., "Modeling granular material blending in a rotating drum using a finite element method and advection-diffusion equation multi-scale model", *AIChE Journal*, 64, 3277-3292, 2018. (DOI)

J21. Yohannes B., Gonzalez M., and Cuitiño A.M., "Discrete numerical simulations of the strength and microstructure evolution during compaction of layered granular solids", *From Microstructure Investigations to Multiscale Modeling: Bridging the Gap*, 123-141, 2017. (DOI)

J19. Yohannes B., Gonzalez M., Abebe A., Sprockel O., Nikfar F., Kiang S., and Cuitiño A.M., "Discrete particle modeling and micromechanical characterization of bilayer tablet compaction", *International Journal of Pharmaceutics*, **529**, 597-607, 2017. (DOI)

J18. Kucuk G., Gonzalez M., and Cuitiño A.M., "Effective thermal expansion property of consolidated granular materials", *Materials*, **10** (11), 1289, 2017. (DOI)

J17. Mares J.O., Woods D.C., Baker C.E., Son S.F., Rhoads J.F., and Gonzalez M., "Localized heating near a rigid spherical inclusion in a viscoelastic binder material under compressional plane wave excitation", *Journal of Applied Mechanics*, **84**(4), 041001, 2017. (DOI)

J16. Sriram A.R., Tolbert D-L., Gonzalez M., Cardella M. and Ramani K., "Augmenting Learning of Mechanics of Materials through Finite Element-based Design Exploration", under review, 2016.

J15. Tripathy R., Bilionis I., and Gonzalez M., "Gaussian processes with built-in dimensionality reduction: Applications to high-dimensional uncertainty propagation", *Journal of Computational Physics*, **321**, 191–223, 2016. (DOI)

J14. Yohannes B., Gonzalez M., Abebe A., Sprockel O., Nikfar F., Kiang S., and Cuitiño A.M., "Evolution of the microstructure during the process of consolidation and bonding in soft granular solids", *International Journal of Pharmaceutics*, **503**, 68–77, 2016. (DOI)

J13. Kucuk G., Gonzalez M., and Cuitiño A.M., "Thermo-mechanical behavior of confined granular systems", *Lecture Notes In Applied And Computational Mechanics: Innovative Numerical Approaches For Multi-Field And Multi-Scale Problems*, **81**, 41–57, 2016. (DOI)

J12. Gonzalez M. and Cuitiño A.M., "Microstructure evolution of compressible granular systems under large deformations", *Journal of the Mechanics and Physics of Solids*, **93**, 44–56, 2016. (DOI)

J11. Kucuk G., Gonzalez M., and Cuitiño A.M., "2D particle mechanics simulations on evolution and interactions of heat chains and force networks under steady state conditions", *Computational Thermal Sciences: An International Journal*, **7**, 515–526, 2015. (DOI)

J10. Yohannes B., Gonzalez M., Abebe A., Sprockel O., Nikfar F., Kiang S., and Cuitiño A.M., "The role of fine particles on compaction and tensile strength of pharmaceutical powders", *Powder Technology*, **274**, 372–378, 2015. (DOI)

J9. Razavi S.M., Gonzalez M., and Cuitiño A.M., "General and mechanistic optimal relationships for tensile strength of doubly convex tablets under diametrical compression", *International Journal of Pharmaceutics*, **484**, 29–37, 2015. (DOI)

J8. Yang J., Gonzalez M., Kim E., Agbasi C., and Sutton M., "Attenuation of solitary waves and localization of breathers in 1D granular crystals visualized via high speed photography", *Experimental Mechanics*, **54**, 1043–1057, 2014. (DOI)

J7. Gonzalez M. and Cuitiño, A.M., "A nonlocal contact formulation for confined granular systems", *Journal of the Mechanics and Physics of Solids*, **60**, 333–350, 2012. (DOI)(Details)

J6. Gonzalez M., Yang J., Daraio C. and Ortiz M., "Mesoscopic approach to granular crystal dynamics", *Physical Review E,* **85**, 016604, 2012. (DOI)(Details)

J5. Gonzalez M., Schmidt B. and Ortiz M., "Force-stepping integrators in Lagrangian mechanics", *Int. J. Numerical Methods in Engng.*, **84**, 1407–1450, 2010. (DOI)(Details)

J4. Gonzalez M., Schmidt B. and Ortiz M., "Energy-stepping integrators in Lagrangian mechanics", *Int. J. Numerical Methods in Engng.*, **82**, 205–241, 2010. (DOI)(Details)

J3. Gonzalez M. and Goldschmit M., "Inverse heat transfer problem based on a radial basis functions geometry representation", *Int. J. Numerical Methods in Engng.*, **65**, 1243-1268, 2006. (DOI) (Details)

J2. Gonzalez M., Goldschmit M., Assanelli A., Fernandez Berdaguer E. and Dvorkin E, "Modeling of the solidification process in a continuous casting installation for steel slabs", *Metallurgical and Materials Transactions*, **34B**, 455-473, 2003. (DOI) (Details)

J1. Toscano R., Gonzalez M. and Dvorkin E., "Validation of a finite element model that simulates the behavior of steel pipes under external pressure", *The Journal of Pipeline Integrity*, **2**, 74-84, 2003. (DOI) (Details)

INVITED LECTURES

L14. Compaction Simulation Forum, <u>Keynote Lecture</u>: "Multi-scale modeling, simulation and characterization of particulate products processing and performance: Driving innovation of pharmaceutical products through mechanistic understanding", New Brunswick, NJ, June 3-5, 2019.

L13. International Workshop on Multiscale Innovative Materials and Structures (MIMS19): "Multi-scale modeling, simulation and characterization of particulate products processing and performance: Driving innovation of pharmaceutical products through mechanistic understanding", University of Salerno, Cetara, Italy, February 28-March 2, 2019.

L12. Compaction Simulation Forum, <u>Keynote Lecture</u>: "Multi-scale modeling and simulation of solids processing: From tableting to dissolution", Cambridge University, UK, September 17-19, 2018.

L11. 2018 Granulation Symposium, <u>Keynote Lecture</u>: "Continuous granulation using a Roller Compactor in an Integrated Tableting Line", Sponsored by ShinEtsu and Alexanderwerk GmbH, Wiesbaden, Germany, June 26-28, 2018.

L10. Numerical and Evolutionary Optimization 2017, <u>Keynote Lecture</u>: "Multi-scale modeling and simulation of microstructure formation and evolution during powder compaction", Tijuana, Mexico, September 27-29, 2017.

L9. University of Notre Dame, Aerospace and Mechanical Engineering, "Multi-scale modeling and simulation of microstructure formation and evolution during powder compaction", January 17, 2017.

L8. University of Copenhagen, Compaction Simulation Forum, <u>Keynote Lecture</u>: "Multi-scale modeling and simulation of powder compaction", Denmark, June 17, 2015.

L7. Tecnológico Nacional de México, Instituto Tecnológico de Tijuana, "Multi-scale modeling and simulation of powder compaction", Mexico, February 4, 2015.

L6. Purdue University, School of Mechanical Engineering, "Multi-scale modeling and simulation of powder compaction", December 4, 2014.

L5. Purdue University, School of Materials Engineering, "Multi-scale modeling and simulation of powder compaction", April 14, 2014.

L4. Compaction Simulation Forum, "Multi-scale modeling and simulation as a cost-effective tool for design and optimization of powder compaction processes", University of Cambridge, Cambridge, UK, June 4-5, 2013.

L3. Purdue University, School of Mechanical Engineering, "Multi-scale modeling and simulation of powder compaction", May 7, 2013.

L2. Arden Conference- Fundamental Mechanical Properties of Pharmaceutical Solids, "Numerical strategies for modeling and simulating powder compaction" with Cuitiño A.M., Rockville, Maryland, March 4-6, 2013.

L1. Institute for Soldier Nanotechnologies (ISN), "Energy and force stepping integrators in Lagrangian mechanics", Massachusetts Institute of Technology, Boston, Massachusetts, August 31, 2010.

PEER-REVIEWED CONFERENCE PUBLICATIONS

C11. Ganesh S., Moreno M.., Liu J., Gonzalez M., Nagy Z.K., and Reklaitis G.V., "Compaction Sensor Network for Continuous Tablet Manufacturing", *Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018,* San Diego, CA, July 2018.

C10. Su Q., Bommireddy B., Gonzalez M., Reklaitis G.V., and Nagy Z.K., "Variation and Risk Analysis in Tablet Press Control for Continuous Manufacturing of Solid Dosage via Direct Compaction", *Proceedings of the 13th International Symposium on Process Systems Engineering – PSE 2018,* San Diego, CA, July 2018.

C9. Mares J.O., Woods D.C., Baker C.E., Son S.F., Rhoads J.F., and Gonzalez M., "Localized Heating due to Stress Concentrations Induced in a Lossy Elastic Medium via the Scattering of Compressional Waves by a Rigid Spherical Inclusion", *ASME's International Mechanical Engineering Congress and Exposition (IMECE),* Phoenix, AZ, November 2016.

C8. Kucuk G., Gonzalez M., and Cuitiño A.M., "Cross-property connection between heat and force networks in thermally-assisted compaction of granular materials", *Proceedings of the 6th International Symposium on Advances in Computational Heat Transfer*, Piscataway, NJ, May 2015.

C7. Gonzalez M., Yang J. and Cuitiño A.M., "Nonintrusive monitoring of solitary wave propagation in granular crystals", *SEM Annual Conference on Experimental and Applied Mechanics*, IL, US, 2013.

C6. Gonzalez M. and Goldschmit M., "Inverse geometry problem of estimating the location of the 1150°C isotherm in a blast furnace hearth", *Mecanica Computacional*, Vol.23 (Eds. G.Buscaglia et al.), Bariloche, Argentina, 2004.

C5. Gonzalez M., Goldschmit M., Musante R., Venica R., Di Gresia G. and Balante W., "Prediction of whale slab conditions using a heat transfer model of the steel slab continuous caster", *Proceedings of the 14th Steelmaking Conference*, San Nicolas, Argentina, 2003.

C4. Gonzalez M., Goldschmit M., Zubimendi J., Gonzalez N., Ametrano R. and Giandomenico F., "Thermal penetration model to estimate blast furnace hearth conditions", *Proceedings of the 4th Ironmaking Conference*, San Nicolas, Argentina, 2003.

C3. Toscano R., Gonzalez M. and Dvorkin E., "Experimental validation of a finite element model that simulates the collapse and postcollapse behavior of steel pipes", *Proceedings of the 2nd MIT Conference on Computational Fluid and Solid Mechanics*, (Ed. K.-J.Bathe), Elsevier, 2003.

C2. Toscano R., Gonzalez M. and Dvorkin E., "Validation of a finite element model that simulates the behavior of steel pipes under external pressure", *3rd Workshop on Subsea Pipelines (COPPE/UFRJ, Heriot-Watt, Petrobras)*, Rio de Janeiro, Brasil, 2002.

C1. Gonzalez M., Goldschmit M., Fernandez Berdaguer E. and Dvorkin E., "Evaluation of the heat transfer coefficients in the mold of a steel slabs continuous casting installation", *Reunión de Trabajo en el Procesamiento de la Información y Control*, Santa Fe, Argentina, 2001.

CONFERENCE ABSTRACTS

A32. Su Q., Ganesh S., Bommireddy B., Gonzalez M., Reklaitis G.V., and Nagy Z.K., "A Quality-by-Control approach in pharmaceutical continuous manufacturing of oral solid dosage via direct compaction", *29th European Symposium on Computer-Aided Process Engineering (ESCAPE-29)*. Eindhoven, The Netherlands, June 16-19, 2019.

A31. Liu Y., Pardikar K., Gonzalez M., <u>Wassgren C.</u>, "Continuum modeling of powder flow, blending, and segregation", *New Frontiers in Multiphase CFD for the 21st Century Energy Mix*. Banff International Research Station – Casa Matemática Oaxaca (BIRS-CMO), Oaxaca, Mexico, 19–25 August, 2018.

A30. <u>Su Q.</u>, Bommireddy B., Gonzalez M., Reklaitis G.V., and Nagy Z.K., "Active Process Control in the Quality-By-Design (QbD) Implementation of Pharmaceutical Continuous Tablet Manufacturing", *2018 American Institute of Chemical Engineers Annual Meeting (18 AIChE)*, Pittsburgh, PA, October, 2018.

A29. <u>Su Q.</u>, Bommireddy B., Gonzalez M., Reklaitis G.V., and Nagy Z.K., "Data Reconciliation in the Quality-By-Design (QbD) Implementation of Pharmaceutical Continuous Tablet Manufacturing", *2018 American Institute of Chemical Engineers Annual Meeting (18 AIChE)* , Pittsburgh, PA, October, 2018.

A28. <u>Liu Y.</u>, Gonzalez M. and Wassgren C., "Modeling Granular Material Segregation Using a Finite Element Method and Advection-Diffusion-Segregation Equation Multi-Scale Model", *2018 American Institute of Chemical Engineers Annual Meeting (18 AIChE)* , Pittsburgh, PA, October, 2018.

A27. Baker C. and <u>Gonzalez M.</u>, "A Particle Mechanics Approach for Particle-Binder Systems", *2018 Engineering Mechanics Institute Conference (EMI 2018),* Boston, MA, May 2018.

A26. Poorsolhjouy P. and <u>Gonzalez M.</u>, "Connecting Macroscopic Behavior of Microscopic Grain Properties", *2018 Engineering Mechanics Institute Conference (EMI 2018),* Boston, MA, May 2018.

A25. <u>Liu Y.</u>, Gonzalez M., and Wassgren C. "Modeling Granular Material Mixing in Tote Blenders Using a Finite Element Method and Advection-Diffusion Equation Multi-Scale Model", *2018 US National Congress on Theoretical and Applied Mechanics,* Chicago, IL, June 2018.

A24. <u>Cideriro P.H.C.</u>, Poorsolhjouy P., and Gonzalez M., "Transport Phenomena in Confined Granular Systems with Applications to Pharmaceutical Solids", *World Congress on Computational Mechanics (WCCM 2018),* New York, NY, July 2018.

A23. <u>Razavi S.</u>, Gonzalez M., and Cuitiño A.M., "Quantification of lubrication and particle size distribution effects on tensile strength and stiffness of tablets", *8th World Congress on Particle Technology (WCPT8),* Orlando, FL, April 2018.

A22. <u>Bommireddy Y</u>. and Gonzalez M., "Multi-Scale Characterization of Powder Compaction Spanning Single Particle, Single Tablet Fabrication, and Industrial Rotary Tablet Press", *8th World Congress on Particle Technology (WCPT8),* Orlando, FL, April 2018.

A21. <u>Liu Y</u>., Gonzalez M., Wassgren C. "Modeling granular material mixing and segregation using a finite element method and advection-diffusion-segregation equation multi-scale model", *8th World Congress on Particle Technology (WCPT8),* Orlando, FL, April 2018.

A20. <u>Wharry J.P.</u>, Faltens T., <u>Ashcroft J.</u>, and Gonzalez M. "Summer Research Experiences in Materials & Computational Nanotechnology for Community College Students", *Materials Research Society Fall Meeting*, Boston, MA, November 2017.

A19. <u>Poorsolhjouy P</u>. and Gonzalez M., "Finding inter-granular stiffness coefficients for granular micromechanics approach using discrete analysis with nonlocal contact", *2017 Engineering Mechanics Institute Conference (EMI 2017),* San Diego, CA, June 2017.

A18. <u>Gonzalez M.</u>, "Multi-scale modeling and simulation of microstructure formation and evolution during powder compaction", *2017 Engineering Mechanics Institute Conference (EMI 2017),* San Diego, CA, June 2017.

A17. <u>Liu Y.</u>, Gonzalez M. and Wassgren C., "Modeling Blending of Granular Materials: a Multi-Scale Model Combining FEM Flow Field Information with Advection-Diffusion Correlations", *2016 American Institute of Chemical Engineers Annual Meeting (16 AIChE),* San Francisco, CA, November, 2016.

A16. Gonzalez M, "Multi-scale modeling and simulation of powder compaction", *12th World Congress on Computational Mechanics,* Seoul, Korea, July, 2016.

A15. Gonzalez M, "Multi-scale modeling and simulation of powder compaction", *U.S. National Congress on Computational Mechanics,* San Diego, CA, July, 2015.

A14. Gonzalez M., Krishnakumar N., and Bilionis I., "Uncertainty quantification in multi-dimensional granular crystals for robust performance", *ASME 2015 Applied Mechanics and Materials Conference*, Seattle, WA, June, 2015.

A13. Bilionis I., Tripathy R., and Gonzalez M., "High-dimensional uncertainty propagation: A Bayesian approach using Gaussian processes with build-in dimensionality reduction", *ASME 2015 Verification and Validation Symposium*, Las Vegas, NV, May, 2015.

A12. Cuitiño A.M., Gonzalez M., and Yohannes B., "Computational strategies for predicting granular matter response under extreme compaction", *1st Pan-American Congress on Computational Mechanics*, Buenos Aires, Argentina, April 27-29, 2015.

A11. Ravazi S., Gonzalez M., Cuitiño A.M., "Optimization of the breaking force and tensile strength relationship of doubly convex tablets under diametrical compression", *SES 51st Annual Technical Meeting*, West Lafayette, IN, October 1-3, 2014.

A10. Shang C. and Gonzalez M., "Microstructure Development of Granular System during Compaction", *The Summer Undergraduate Research Fellowship (SURF) Symposium*, West Lafayette, IN, August 7, 2014.

A9. Yohannes B., Gonzalez M., et al., "The role of particle size distribution on compaction and tensile strength of pharmaceutical powders", *SES 51st Annual Technical Meeting*, West Lafayette, IN, October 1-3, 2014.

A8. Yang J., Gonzalez M., Kim E., Agbasi C., and Sutton M., "Attenuation and localization of solitary waves in granular crystals visualized via high speed photography", *17th U.S. National Congress on Theoretical and Applied Mechanics*, Michigan State University, June 15-20, 2014.

A7. Kucuk G., Gonzalez M. Cuitiño A.M., "Multi-Physics Modeling and Simulations of Thermally- Assisted Compaction of Granular Materials", *11th World Congress on Computational Mechanics*, Barcelona, Spain, July 20-25, 2014.

A6. Razavi S., Gonzalez M. and Cuitiño A.M., "Breaking Force and Tensile Strength Relationship of Doubly convex Tablets Under Diametrical Compression", *ASME IMECE*, Montreal, Canada, 2014.

A5. Gonzalez M. and Cuitiño A.M., "Prediction, design and optimization of microstructure evolution in powder compaction processes", Advanced Manufacturing, *ASME IMECE*, San Diego, CA, 2013.

A4. Kucuk G., Gonzalez M. and Cuitiño A.M., "Coupled thermo-mechanical behavior of granular chains", *ASME IMECE*, San Diego, CA, November 15-21, 2013.

A3. Gonzalez M., Schmidt B. and Ortiz M., "Fully-conserving integration schemes in Lagrangian mechanics", *9th World Congress on Computational Mechanics*, Sydney, Australia, 2010.

A2. Gonzalez M., Schmidt B. and Ortiz M., "Energy-stepping integrators in Lagrangian mechanics", *IV European Conference on Computational Mechanics*, Paris, France, 2010.

A1. Gonzalez M., Vazquez M., Goldschmit M., Zubimendi J. and Brianza J., "Erosion model of Siderar's blast furnace hearth", *Technologists Meeting 2005*, Siderar, San Nicolas, Argentina, 2005.

PARTICIPATION IN WORKSHOPS

W12. Gonzalez M, "Modeling of granular structure evolution in confined powders", *CSOPS IAB Meeting*, University of Maryland, College Park, Maryland, 19-21 November 2013.

W11. Gonzalez M, "Modeling of granular structure evolution in confined powders", *CSOPS IAB Meeting*, Purdue University, West Lafayette, Indiana, 14-16 May 2013.

W10. Gonzalez M, "Consolidation and compaction. Large deformations and confinement", *Molecular and Surface Phenomena*, Rutgers University, Piscataway, New Jersey, 1 March 2013.

W9. Gonzalez M, "Modeling of granular structure evolution in confined powder systems", *CSOPS IAB Meeting*, Rutgers University, Piscataway, New Jersey, 7-9 November 2012.

W8. Gonzalez M, "Modeling of confined granular solids", *CSOPS IAB Meeting*, Purdue University, West Lafayette, Indiana, 21-24 May 2012.

W7. Gonzalez M, "Modeling of confined granular systems", *CSOPS Site Visit*, Rutgers University, New Brunswick, New Jersey, February 2012.

W6. Gonzalez M, "Modeling of confined granular solids", *CSOPS IAB Meeting*, Rutgers University, Piscataway, New Jersey, 2-4 November 2011.

W5. Gonzalez M. and Cuitiño A.M., "A concurrent multi-scale modeling and simulation strategy for confined granular solids", *Linking Scales in Computations: from Microstructure to Macro-scale Properties. IUTAM Symposium*, University of Florida, Florida, 17-19 May 2011.

W4. Gonzalez M. and Cuitiño A.M., "Beyond independent contacts in powder compaction", *Particle Interactions, Packing and Compaction: Towards Developing Understanding of the Influence of Materials on Product Performance*, New Jersey Institute of Technology, Newark, New Jersey, 12 May 2011.

W3. Gonzalez M, "Modeling of confined granular solids", *CSOPS IAB Meeting*, New Jersey Institute of Technology, Newark, New Jersey, 9-11 May 2011.

W2. Gonzalez M., Schmidt B. and Ortiz M., "Energy and force stepping schemes in Lagrangian mechanics", *The Fifth Annual Structured Integrators Workshop*, California Institute of Technology, Pasadena, California, 7-8 May 2009.

W1. Gonzalez M., Schmidt B. and Ortiz M., "Energy-stepping and force-stepping schemes in dynamics", *The Fourth Annual Structured Integrators Workshop*, Stanford University, Palo Alto, California, 24-25 April 2008.

TECHNICAL REPORTS (Confidential)

More than 25 technical reports on predictive numerical modeling of steel manufacturing processes and product performance under extreme service conditions.

PATENTS, INVENTION DISCLOSURES AND PRODUCTS

P8. Hoffman J., et al., 2018, "Powder Compaction", version 5.0. nanoHUB simulation tool. (DOI: 10.4231/D3NP1WM3K) https://nanohub.org/resources/gscompaction

P7. Chen W., Giri A., et al., 2017, "Powder Compaction", version 4.1. nanoHUB simulation tool. (DOI: 10.4231/D3NP1WM3K) https://nanohub.org/resources/gscompaction

P6. Fernandez C., Bommireddy Y., et al., 2016, "Powder Compaction", version 3.0. nanoHUB simulation tool. (DOI: 10.4231/D3C53F28) https://nanohub.org/resources/gscompaction

P5. Lopez J.C., Tripathy R., Billionis I. and Gonzalez M., 2015, "Granular Crystals", nanoHUB simulation tool. (DOI: 10.4231/D33N20F7K) https://nanohub.org/resources/gransurrogate

P4. Fang Y., Baker C., et al., 2015, "Powder Compaction", version 2.0. nanoHUB simulation tool. (DOI: 10.4231/D3C53F28) https://nanohub.org/resources/gscompaction

P3. Shang C. and Gonzalez M., 2014, "Powder Compaction", version 1.0. nanoHUB simulation tool. (DOI: 10.4231/D3C53F28) https://nanohub.org/resources/gscompaction

P2. Gonzalez M, Cuitiño A, Muzzio F. "Multi-fractionable ring-shaped tablet". Accepted as University Invention (RU), 2012.

P1. Gonzalez M, Koynov A, Cuitiño A. "Numerical Modeling Methodology for Predicting Tablet Mechanical Properties". U.S. Provisional Patent Application No. 61/501,987, 2011.

RESEARCH SUPERVISION

Post-Doctoral Research Associate - Mentored
Payam Poorsolhjouy, Ph.D., School of Mechanical Engineering, Purdue University   (F16-F18)
    Currently: Assistant Professor at Graz University of Technology, Austria

Graduate Students - Current
Nathan Gasteyer, School of Mechanical Engineering, Purdue University   (FA18-present)
    M.S. thesis:
Ashwini Khandelwal, School of Mechanical Engineering, Purdue University   (FA17-present)
    ME 597: Modeling and optimization of polyolefin elastomers (POE) handling
Abhishek Paul, School of Mechanical Engineering, Purdue University   (FA17-present)
    ME 597: Granular micromechanics of shells (Fall 2017)
    Ph.D. thesis:
Pedro Cidreiro, School of Mechanical Engineering, Purdue University   (SP17-present)
    Ph.D. thesis:
Shanliangzi Liu, School of Mechanical Engineering, Purdue University   (SP17-present)
    Ph.D. thesis: Scalable manufacturing of liquid-metal for soft electronics
        (co-advised with Prof. Kramer, Yale U.)
Yasasvi Bommireddy, School of Mechanical Engineering, Purdue University   (SP16-present)
    ME 597: Packing of granular systems (Fall 2015)
    Ph.D. thesis:
Caroline Kemme Baker, School of Mechanical Engineering, Purdue University   (FA14-present)
    Ph.D. thesis: Particle mechanics approach to modeling failure and wave propagation in
        confined particulate systems
Ankit Agarwal, School of Mechanical Engineering, Purdue University   (FA14-present)
    Ph.D. thesis: Particle mechanics and continuum approaches to modeling permanent
        deformations in confined particulate systems

Graduate Students - Graduated
Yu Liu, School of Mechanical Engineering, Purdue University   (FA16-FA18)
    Ph.D. thesis: Modeling granular material mixing and segregation using a finite element
        method and advection-diffusion-segregation multi-scale model
        (co-advised with Professor Carl Wassgren)
    Currently: Scientist at Dow Chemical Co. (starting 02/2019)
Vikas Yettella, School of Aeronautics and Astronautics, Purdue University   (SP17-FA17)
    M.S. thesis: Experimental characterization of micro-crystalline cellulose particles with a
        micro-compression tester
        (co-advised with Prof. Vikas Tomar, Purdue University)
Sonia M. Razavi, Mechanical and Aerospace Engineering, Rutgers University   (FA13-FA17)
    Ph.D. thesis: Optimal tensile strength relationships of pharmaceutical tablets with focus on:
        particle size, lubricant sensitivity, and tablet shape
        (co-advised with Professor Alberto Cuitiño, Rutgers U.).
    Currently: Post-doctoral scholar at Rutgers University

Gulsad Kucuk, Mechanical and Aerospace Engineering, Rutgers University (2011-2014)
  Ph.D. thesis: Multi-physics modeling and simulations of thermally-assisted compaction of
   granular materials
  (co-advised with Professor Alberto Cuitiño, Rutgers U.).
  Currently: Senior Scientist at Boehringer Ingelheim Pharmaceuticals, Inc.
Kiran Balakrishnan, MS Student, School of Aeronautics and Astronautics, Purdue University (SP14)
  ME 597 Project: Microstructure evolution during compaction of confined granular systems

Undergraduate Students - Current
Julia Meyer, Mechanical Engineering, Purdue University (SU16-present)
  ME 498(FA16, FA17): Experimental contact mechanics in particulate composite materials
  Bottomley Scholar (SP17)
  ME 498(SP17, FA19): Micro-compression testing of micrometer-size plastic particles.
George Elias, Mechanical Engineering, Purdue University (SP19)
  ME 498: Characterization of flow properties of cohesive powders.
Muhammad Shahin, Mechanical Engineering, Purdue University (SP19)
  ME 498: Mechanical characterization of particle-binder composites under confinement.
Undergraduate Students - Mentored
Melanie Hacopian, Pasadena City College (SU18)
  Computational Nanotechnology Undergraduate Research Experience (NCN-URE).
  Funded by nanoHUB and the SURF Program
  Currently: Undergraduate student at California State University at Long Beach
Isabel Bojanini, Pasadena City College (SU18)
  Computational Nanotechnology Undergraduate Research Experience (NCN-URE).
  Funded by nanoHUB and the SURF Program
  Currently: Undergraduate student at University of California at Berkeley
Vidal Lopez, Pasadena City College (SU18)
  Computational Nanotechnology Undergraduate Research Experience (NCN-URE).
  Funded by nanoHUB and the SURF Program
  Currently: Undergraduate student at California State University at Northridge
Jesse Hoffman, Ivy Tech Community College of Indiana (SU18)
  Computational Nanotechnology Undergraduate Research Experience (NCN-URE).
  Funded by nanoHUB and the SURF Program
  Currently: Undergraduate student at Purdue University
Jeonghee Lee, Mechanical Engineering, Purdue University (SP18)
  ME 497: Pharmaceutical tablet manufacturing.
Joon Yu, Mechanical Engineering, Purdue University (SU17,FA17)
  ME 497: Pharmaceutical tablet manufacturing.
Varun Save, Mechanical Engineering, Purdue University (SP17,FA17)
  ME 497: Pharmaceutical tablet manufacturing.
Danyal Cave, Pasadena City College (SU17)
  Computational Nanotechnology Undergraduate Research Experience (NCN-URE).
  Funded by nanoHUB and the SURF Program
Felix Monge, Pasadena City College (SU17)
  Computational Nanotechnology Undergraduate Research Experience (NCN-URE).
  Funded by nanoHUB and the SURF Program
  Currently: Undergraduate student at University of California at San Diego
Ayush Giri, Mechanical Engineering, Howard University (SU17)
  Summer Undergraduate Research Fellow. Funded by nanoHUB and the SURF Program.
Wentao Chen, Mechanical Engineering, Purdue University (SU17)
  Summer Undergraduate Research Fellow. Funded by nanoHUB and the SURF Program.
Carlos Fernandez Caban, Chemical Engineering, University of Puerto Rico, Mayaguez Campus (SU16)

Summer Undergraduate Research Fellow. Funded by nanoHUB and the SURF Program.
Pathways to the Professorate Fellow. Funded by Diversity Transformation Award.
Currently: Graduate student, Carnegie Mellon University

Alex Thomas, Mechanical Engineering, Purdue University (SP16-SP17)
ME 497: Microstructure evolution during powder compaction.

Andrew Barthel, Computer Science, Purdue University (SP16)
Project: Energetic composite materials under near-resonant excitation.

Yuqi Fang, Chemical Engineering, Purdue University (SU15)
Summer Undergraduate Research Fellow. Funded by nanoHUB and the SURF Program.
Currently: Graduate student, Johns Hopkins University

Juan Camilo Lopez Ramirez, Electronic Engineering, University of Los Andes, Colombia (SU15)
Summer Undergraduate Research Fellow. Funded by nanoHUB and the SURF Program.

Nianshen Zhang, Mechanical Engineering, Purdue University (SU15-FA15)
ME 497 Project (SU15): Numerical contact mechanics of polyhedral particles
Currently: Sakti3

Chen Shang, Material Science and Engineering, Purdue University (SU14-SU16)
Summer Undergraduate Research Fellow. Funded by nanoHUB and the SURF Program.
ME 497 Project: Powder compaction nanoHUB tool for research and teaching purposes
Currently: Graduate student, University of California at Stanta Barbara

Nikilesh Krishnakumar, Mechanical Engineering, BITS Pilani University, Goa Campus, India (SU14-SP15)
S.N. Bose Scholar. Funded by the National Indo-US Technology Forum.
Currently: Graduate student, University of Michigan, Ann Arbor

Jili Liu, Mechanical Engineering, Purdue University (SU14-FA15)
ME 497 Project (SU14): Microstructure evolution during powder compaction
Currently: Apple (MS at University of California at Berkeley)

GRANTS AND CONTRACTS   (Total funding: $ 9.23M   M.G. share: $ 2.15M)

G1. Real-time dynamic measurements and characterization of mesoscale deformation and temperature fields in reacting energetic materials under impact and periodic loading.
Source of support: Air Force Office of Scientific Research - Energy, Power and Propulsion Division (RTE)
Award period: **awarded** 03/2015 - 03/2018
Role: Co-PI; PI Wayne Chen (Purdue University)

G2. Understanding the effect of powder properties and processing conditions on the performance of pharmaceutical tablets manufactured by direct compaction.
Source of support: National Science Foundation
Award period: **awarded** 08/2015 - 08/2018
Role: PI; Collaborative proposal with German Drazer (Rutgers University)

G3. GAANN for Pharmaceutical Engineering.
Source of support: U.S. Department of Education
Award period: **awarded** 2015
Role: Co-PI; PI: Lynne Taylor (Purdue University)

G4. Advance regulatory science to support the implementation of continuous solid dose manufacturing systems, equipped with control systems that are capable of handling raw material variability and assuring product quality in real time.
Source of support: Food and Drug Administration (subcontracted by Rutgers University)
Award period: **awarded** 10/2015 - 09/2016
Role: Co-PI; PI Fernando Muzzio (Rutgers University)

G5. Thermo-mechanical characterization of energetic and mock-energetic composite materials under near-resonant excitation, and development of computational modeling tools for formulation design.

Source of support: Eglin Air Force Base
Award period: **awarded** 10/2015 - 09/2016
Role: Co-PI; PI Jeff Rhoads (Purdue University)

G6. Integrated test system for investigating the dynamic response of energetic and related composite materials under the influence of mechanical and acoustic insults.
Source of support: DURIP ONR
Award period: **awarded** 03/2016
Role: Co-PI; PI Jeff Rhoads (Purdue University)

G7. Real Time Release in Continuous Solid Dose Manufacturing: Systematic Characterization of Material Properties, and Optimal Design of Sensing and Control Methods.
Source of support: Food and Drug Administration (subcontracted by Rutgers University)
Award period: **awarded** 10/2016 - 09/2017 (extended 08/2019)
Role: Co-PI; PI Fernando Muzzio (Rutgers University)

G8. Thermo-mechanical characterization of energetic and mock-energetic composite materials under near-resonant excitation, and development of computational modeling tools for formulation design.
Source of support: Eglin Air Force Base
Award period: **awarded** 10/2016 - 09/2017
Role: Co-PI; PI Jeff Rhoads (Purdue University)

G9. Malvern Mastersizer 3000 laser diffraction particle sizer
Source of support: Provost Major Equipment Program - Purdue University
Award period: **awarded** (2017)
Role: Co-PI; PI Carl Wassgren (Purdue University)

G10. Compression testing of ViscoMAX Memory Foam
Source of support: Bridgestone Americas
Award period: **awarded** (2017)
Role: PI

G11. Analytical modeling of biomass transport and feeding systems
Source of support: Department of Energy (DOE) and U.S. Department of Agriculture (USDA)
Award period: **awarded** (2018 - 2021)
Role: Co-PI; PI Michael Ladisch (Purdue University)

G12. Exploring the thermomechanics of energetic and mock energetic composite materials under quasi-static and near-resonant excitations.
Source of support: Eglin Air Force Base
Award period: **awarded** (2018 - 2023)
Role: Co-PI; PI Jeff Rhoads (Purdue University)

G13. Maximum random closed packing and densest packing attainable under external vibrations
Source of support: Whirlpool Financial Corporation.
Award period: **awarded** (01/2018 - 04/2018)
Role: PI; Co-PI Carl Wassgren (Purdue University)

G14. Natoli NP-400 tablet press, and operating software source code, for continuous manufacturing of pharmaceutical products.
Source of support: Natoli Engineering Company, Inc.
Award period: **in-kind gift** (2017)

G15. The Procter & Gamble Company voluntary support
Source of support: The Procter & Gamble Company
Award period: **gift** (2018)

G16. Industry 4.0 Implementation in continuous pharmaceutical manufacturing
Source of support: Food and Drug Administration (subcontracted by Rutgers University)
Award period: **awarded** (2018 - 2021)
Role: Co-PI; PI Fernando Muzzio (Rutgers University)

G17. Real-time dynamic measurements and characterization of mesoscale deformation and temperature fields in reacting energetic materials under impact and periodic loading.
Source of support: Air Force Office of Scientific Research
Award period: **awarded** (2018 - 2020)
Role: Co-PI; PI Wayne Chen (Purdue University)

HONORS AND AWARDS

Seed for Success Award, Purdue University (*for PIs on grants totaling more than $1 million*) (2018)
Analytical modeling of biomass transport and feeding systems (DOE)

Seed for Success Award, Purdue University (*for PIs on grants totaling more than $1 million*) (2018)
Exploring the thermomechanics of energetic and mock energetic composite materials under quasi-static and near-resonant excitations (AFRL)

Seed for Success Award, Purdue University (*for PIs on grants totaling more than $1 million*) (2016)
Real time Release in continuous solid dose manufacturing: systematic characterization of material properties, and optimal design of sensing and control methods (FDA)

Seed for Success Award, Purdue University (*for PIs on grants totaling more than $1 million*) (2015)
Real-time dynamic measurements and characterization of mesoscale deformation and temperature fields in reacting energetic materials under impact and periodic loading (AFOSR)

USACM Travel Award (2010)
9th World Congress on Computational Mechanics, Sydney, Australia, 2010.

20th Annual Robert J. Melosh Competition (2010)
Finalist for the Best Student Paper in Finite Element Analysis.

Powell Foundation Fellowship (2005-2006)
Division of Engineering and Applied Science, California Institute of Technology

National Presidency Diploma, Argentina. (1992-1995)
Bronze Medal, National Chemistry Olympiad. Finalist, National Mathematical Olympiad.

PROFESSIONAL SOCIETY MEMBERSHIPS

United States Association for Computational Mechanics, USACM. (2015 - present)
American Society of Mechanical Engineers, ASME (2015 - present)
Engineering Mechanics Institute (EMI) of American Society of Civil Engineers, ASCE (2017 - present)
International Society for Porous Media, INTERPORE (2018 - present)
Faculty Committee Member, National Inst. for Pharmaceutical Technology and Education, NIPTE (2015 - present)
Member, Granular Materials Committee, Engineering Mechanics Institute, EMI (2017 - present)

ACADEMIC SERVICE

Global Impact
Purdue-Argentina Agreement for Science and Technological Cooperation (October 2014)
Signed on October 24, 2014 (Press Release).
Pan-American Center for Cybernetic and Computational Engineering (PAC^{3}E) (February 2015)
Letter of Intent for the establishment of the Center
(Organization of American States; Ministry of Science, Technology and Productive Innovation of Argentina; Purdue Global Engineering Program)

Mentor, Pathways to the Professoriate   (2016 - present)
 Diversity Transformation Award, College of Engineering, Purdue

Reviewer

International Journal for Numerical Methods in Engineering   (since November 2010)
International Journal of Plasticity   (since November 2010)
Mechanics Research Communications   (since October 2010)
Computers and Chemical Engineering   (since August 2011)
International Journal of Pharmaceutics   (since August 2012)
Powder Technology (*Certificate of Outstanding Contribution in Reviewing*)   (since December 2013)
Mechanical Engineering Books – John Wiley & Sons   (since August 2014)
Finite Elements in Analysis and Design   (since March 2015)
Journal of Applied Mechanics   (since March 2015)
Nuclear Science and Techniques   (since June 2016)
Control Engineering Practice   (since February 2017)
AIAA Journal   (since April 2017)

US National Science Foundation – Review panelist
 Software Infrastructure for Sustained Innovation (SI2) - 2015
 Mechanics of Materials and Structures (MoMS) - 2014
 Materials Engineering and Processing (MEP) - 2018

Netherlands Organization for Scientific Research – Proposal reviewer   (since 2016)

Society of Hispanic Professional Engineers (SHPE)   (since 2016)
 Engineering Science Symposium – Reviewer

Campus Service

Faculty Mentorship Program (3), School of Mechanical Engineering, Purdue University   (2017 - present)
Purdue University Safe Zone member (trained on 03/27/2016, 12/06/2016)   (2016 - present)
Coordinator, Midwest Mechanics Seminar   (2014 - present)
Coordinator, Solid Mechanics Area Exam   (2014-2016, 2018, 2019)
Member, Mechanical Engineering Curriculum Committee   (2015 - 2017)
Speaker, Global Engineering Professional Seminar (ME290)   (Fall 2015)
Member, Mechanical Engineering Graduate School Admissions Committee   (2015 - present)
Member, M.E. Graduate Fellowships and Diversity Fellowships sub-Committee   (2016 - present)
Member, Faculty Search Committee - Designer Particulate Products (DP2)   (2017 - present)
MS Thesis committee (9/3)

 Graduated (9): Jeong, Chan (CE, FA17); Liu, Yu (ME, FA16); Nitin Shah, Pooja (ME, FA17); Palsdottir, Johanna
  (ME, FA16); Paranjothy, Sai Sudharsanan (ME, FA14); Rajan, Harsh (ME, SP17); Restrepo Perez,
  Vanessa (CE, SP16); Sriram, Anirudh Roshan (ME, FA15); Wang, Yiming (ME, SP15).
 In progress (3): Jeong, Chan Hue (CE); Rohatgi, Nitin (ME); Yogesh, Shashaank (ME).

Ph.D. Thesis committee (8/27)

 Graduated (8): Biswas, Sudipta (AAE, FA17); Kumar, Rohit (ME, FA18); Liu, Jianfeng (ChE, FA17); Moreno
  Ricaño, Mariana (ChE, FA18); Parab, Niranjan (AAE, SP17); Prakash, Chandra (AAE, FA18);
  Swaminathan, Shrikant (ME, SP16); Xie, Yuesong (ME, SP16).
 In progress (27): Ahmadi, Arman (ME); Chen, Chun-Pei (ME); Chen, Yaxiong (ME); Chen, William (ME); Fleck,
  Trevor (ME); Ganesh, Sudarshan (ChE); Ganti, Sai Sanjit (ME); Hosseini, Maryam (CE); Hwang,
  Myungwon (ME); Liao, Huanyu (ME); Liu, Shanliangzi (ME); Morris, Dallin (ME); Pandita, Piyush
  (ME); Pardikar, Kunal (ME); Paulson, Shane (AAE); Pouranian, Mohammadreza (CE); Restrepo Perez,
  Vanessa (CE); Sharma, Nikhil (ME); Tripathy, Rohit (ME); Vaitheeswaran, Pavankumar (ME); Vijay,
  Akhil (ME); Wang, Yiming (ME); Zhang, Yuchen (ME); Foltz, Adam (ME IUPUI); Golub, Michael (ME
  IUPUI); Kane, Stephen (ME IUPUI); Reza, Moheimani (ME IUPUI).

Conference/Forum Organizer

Organizer, first Blending and Segregation Forum (BSF 2019)   (2018 - 2019)
> Hosted at Purdue University, West Lafayette, IN, August 6-7, 2019
> In partnership with Mr. Jean LeFloch, from Triskell and SciFora

Chair, Scientific Committee, Blending and Segregation Forum (BSF 2019)   (2018 – 2019)
> Hosted at Purdue University, West Lafayette, IN, August 6-7, 2019

Member, Scientific Committee, 2019 Engineering Mechanics Institute Conference (EMI 2019)   (2018 - 2019)
> Hosted at California Institute of Technology, Pasadena, CA, June 18-21, 2019

Seminar/Symposium Organizer

Organizer, "Mechanics and Physics of Granular Materials". 2019 Engineering Mechanics Institute Conference (EMI 2019), Pasadena, CA, June 2019.

Co-organizer, "Advanced Materials: Computational Analysis of Properties and Performance". World Congress on Computational Mechanics (WCCM 2018), New York, NY, July 2018.

Co-organizer, "Mechanics and Physics of Granular Materials". 2018 Engineering Mechanics Institute Conference (EMI 2018), Boston, MA, May 2018.

Co-organizer, "Advances in computational methods for heterogeneous materials". World Congress on Computational Mechanics, Korea, July, 2016.

Co-organizer of the Compaction Simulation Forum, and Chair of the Modelling and Simulation session. Copenhagen, Denmark, June 16-17, 2015.

Co-organizer, "Advances in computational methods for heterogeneous materials". U.S. National Congress on Computational Mechanics, 2015

Coordinator, Midwest Mechanics Seminar, Purdue University, (2014 - present).

Co-organizer, "Pharmaceutical solids: synthesis, manufacturing, characterization and modeling". Society of Engineering Science (SES) 51st Annual Technical Meeting, West Lafayette, IN, 2014.

Co-organizer, "The Role of Structure on Emerging Material Properties". International Center for Applied Computational Mechanics, 5th Annual Symposium, New York, 2012.

TEACHING

Purdue University, School of Mechanical Engineering
ME 323 – Mechanics of Materials   (FA14, FA15, SP16, FA16, FA17, FA18, SP19)

Purdue University, School of Mechanical Engineering
ME 323L, ME 323H – Mechanics of Materials Laboratory & Honors components   (SP18, FA18, SP19)

Purdue University, School of Mechanical Engineering
ME 263 – Introduction to Mechanical Engineering Design, Innovation and Entrepreneurship   (Spring 2017)

Purdue University, School of Mechanical Engineering
ME 612 – Continuum Mechanics   (Spring 2014, Spring 2015)

Rutgers University
Honors Engineering Mechanics: Statics   (Spring 2012)

Teaching Assistant, California Institute of Technology
Statics and Dynamics (Prof. Michael Ortiz)   (2006-2007)

Teaching Assistant, Engineering School, Universidad de Buenos Aires
Continuum Mechanics (Prof. Eduardo Dvorkin)   (2003-2005)
Advanced Finite Elements (Prof. Eduardo Dvorkin)   (2003-2005)

High School Teacher (Part-time), Escuela Tecnica Philips Argentina   (1994-1999)
  Designed curriculum, lectures, student guides, and classroom resources for a variety of technical courses.