

ANI P. VELO

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PROFESSIONAL EXPERIENCE

- Sept. 2016-Present **Professor**, Department of Mathematics
- Sept. 2012-2016 **Professor**, Department of Mathematics and Computer Science
- Sept. 2006-2012 **Associate Professor**, Department of Mathematics and Computer Science
- Sept. 2002-2006 **Assistant Professor**, Department of Mathematics and Computer Science
University of San Diego (USD), San Diego, California
- 2002-Present **Research Collaborator**, Army Research Laboratory (ARL)
Aberdeen Proving Ground, Maryland
- Sept. 2000-2002 **Davies Fellow**, The National Research Council, Washington D.C.
Assistant Professor, Mathematical Sciences Department
United States Military Academy (USMA), West Point, New York
Postdoctoral Davies Fellow, ARL, Aberdeen Proving Ground, Maryland
- April 2001-2002 **Research Consultant**, General Technical Services, LLC
Wall Township, New Jersey
- Summer 1997 **Research Assistant**
Eastman Kodak Research Labs, Rochester, New York
- 1994-May 2000 Mathematical Sciences Department, WPI, Worcester, Massachusetts

EDUCATION

- May 2000 **Ph.D. in Mathematics**
Worcester Polytechnic Institute (WPI), Worcester, Massachusetts
Dissertation: *Optimal Design of Gradient Fields with Applications to Electrostatics*
- December 1993 **Graduated with Excellence in Mathematics**
Top of the graduating class – five year advanced mathematics program
University of Tirana, Tirana, Albania
- 1993 **Tempus Project Scholar**
University of Siegen, Siegen, Germany
Diploma Thesis: *Computer Software Tools for the Support of Statistical Evaluation Methods*

RESEARCH AND PUBLICATIONS

Journal Publications

1. Velo, A.P. and Gazonas, G.A., *Applications of z-Transforms to Impact Problems in Elastic Layered Media*, Archive of Applied Mechanics, Volume 89 Number 3, Springer (2019), pg. 581-590
2. Gazonas, G.A., Velo, A.P. and Wildman, R., *Asymptotic impact behavior of Goupillaud-type layered elastic media*, International Journal of Solids and Structures 96 (2016), pg. 38-47
3. Gazonas, G.A., Scheidler, M.J. and Velo, A.P., *Exact analytical solutions for elastodynamic impact*, International Journal of Solids and Structures 75-76, (2015), pg. 172-187
4. Gazonas, G.A. and Velo, A.P., *Analytical solutions for the resonance response of Goupillaud-type elastic media using z-transform methods*, Wave Motion, Volume 49, Issue 1, (2012), pg. 135-151
5. Velo, A.P., Gazonas, G.A., and Ameya T. *, *z-Transform methods for the optimal design of one-dimensional layered elastic media*, SIAM Journal on Applied Mathematics, Vol. 70, No.3, (2009), pg. 762-788
6. Velo, A.P., Gazonas, G.A., Bruder, E. *, and Rodriguez, N. *, *Recursive dispersion relations in one-dimensional periodic elastic media*, SIAM Journal on Applied Mathematics, Vol. 69, No. 3, (2008), pg. 670-689
7. Velo, A.P. and Gazonas, G.A., *Stress wave propagation and optimal design of a two-layered elastic strip subjected to transient loading*, International Journal of Solids and Structures 40, (2003), pg. 6417-6428
Article featured in the book "Civil Engineering Computations Tools and Techniques", Chapter 16: *Analysis and Optimal Design of Multilayer Structure Subjected to Impulse Loading*, by Aref, A.J., Luo, X., and Dargush, G.F., Saxe-Coburg Publications, United Kingdom, (2007)
8. Lipton, R. and Velo, A.P., *Optimal design of gradient fields with applications to electrostatics*, Nonlinear partial differential equations and their applications, College de France Seminar, Volume XIV, Elsevier Science B.V., (2002), pg. 509-532

* Former Student Co-author

Nancy Rodriguez – Faculty member, University of Colorado Boulder, Ph.D. in Applied Mathematics from UCLA (2011), Post-Doctoral Fellowship at Stanford University. The first USD McNair Scholar to receive a Ph.D.

Erwin Bruder – Lt. Colonel, French Army, The Young Leaders 2019 Program selected by the French-American Foundation, Former Cadet of France's elite Saint-Cyr Military Academy

Takanobu Ameya – Japanese Government official in the Nuclear Energy Division (2013), Diplomat with the Japanese Ministry of Foreign Affairs (2007)

Conference Proceedings and Technical Reports

1. Ani P. Velo and George A. Gazonas, *Identifying stress behavioral patterns in impact problems through z-transforms*, paper # 579, ICSV26 Technical Programme and Congress Proceedings, Montreal, Canada, (2019)
2. A. Velo, G. Gazonas, A. Fouhy* and J. Testerman*, *Analytical methods for one-dimensional impact problems involving layered elastic media*, paper #411, ICSV24 Technical Programme and Congress Proceedings, London, United Kingdom, (2017)
3. George A. Gazonas, Mike J. Scheidler, Ani P. Velo, *A new class of exact analytical solutions for elastodynamic impact*, Advances in Numerical Methods for Linear and Non-linear Dynamics III Session, 11th World Congress on Computational Mechanics, Barcelona, Spain, (2014)
4. Gazonas, G.A. and Velo, A.P., *Resonance in m-layered Goupillaud-type Elastic Media*, Extended Abstracts--peer reviewed, Track 1: Phononic Crystals, Phononics 2011, International Conference on Phononic Crystals, Metamaterials, and Optomechanics, Santa Fe, New Mexico, pg.92-93, (2011)
5. Gazonas, G.A. and Velo, A.P., *Resonance phenomena in Goupillaud-type media*, ARL-TR-5384, (2010)
6. Gazonas, G.A. and Velo, A.P., *On the optimal design of multilayered elastic media*, Proceedings of the 6th International Congress on Computational Mechanics, Thessaloniki, Greece, (2008)
7. Velo, A.P. and Gazonas, G.A., *Optimal design patterns in one-dimensional layered elastic media*, U.S. Army Faculty Research and Engineering Program (FREP) Technical Report, Chapel Hill, North Carolina, (2005)
8. Velo, A.P. and Gazonas, G.A., *Dispersion relations in one-dimensional elastic periodic media*, U.S. Army FREP Technical Report, Chapel Hill, North Carolina, (2005)
9. Velo, A.P. and Gazonas, G.A., *Optimal design patterns of Goupillaud type layered media*, Proceedings of the 8th Hellenic Society for Theoretical and Applied Mechanics (HSTAM) International Congress on Mechanics Proceedings, Patras, Greece, (2007)
10. Gazonas, G.A., Velo, A.P., and Weile D.S., *Optimal design of multilayered structures subjected to transient loading*, Proceedings of the 7th HSTAM National Congress on Mechanics, Volume II, Technical University of Crete, (2004)
11. Velo, A.P., Gazonas, G.A., and Scheidler, M.J., *Homogeneous optimal design of a finite elastic strip subjected to transient loading*, 15th ASCE Engineering Mechanics Conference Proceedings, Columbia University, New York, (2002)

* Student Co-author

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12. Lipton, R. and Velo, A.P., *Design of functionally graded composite structures for control of stress*, Materials Research Society Proceedings, Boston, Massachusetts, (2001)
 13. Chang, C., Gade, P., Lindsay, K., Schmidt, J., and Velo, A.P., *Modeling the magnetic properties of magnetorheological fluids*, Industrial Mathematics Modeling Workshop for Graduate Students Proceedings, North Carolina State University, North Carolina, CRSC-TR97-8 (1997)

Directed Student Research

1. *Markov matrix applications in Goupillaud-type layered media*, Dickson, E., *Graduated with outstanding achievement in mathematics USD Class of 2020, Fletcher Jones Summer Scholar*, Summer 2019
2. *Review of crawling of worms model*, independent study project, Pratt, Q., *Triple major in mechanical engineering, physics and mathematics, Fall 2017*
Based on "Crawling of Worms" by Keller and Falkovitz, *Journal of Theoretical Biology*, Volume 104, Issue 3, (1983), pg. 417-442
3. *An application of discrete dynamical systems to stress propagation in layered media*, Fouhy, A. and Testerman, J., senior project, USD, May 2016, 20 pages
4. *Applications of a mathematical model for HIV transmission dynamics of homosexual and bisexual men in San Diego County*, Allman, B. and Riethmiller, D., senior project, USD, May 2015, 24 pages
5. *A mathematical model of serotonin concentration*, Nederend, E., senior project, USD, May 2013 (co-advisor), 22 pages
6. *Laplace transform and stress propagation in one-dimensional layered piezoelectric media*, 2nd Lt. Ephritikhine, I., The Military Academy of Saint-Cyr, France, Dec. 2010, 103 pages
7. *Stress wave propagation in a multilayered strip subjected to a changing loading*, thesis project, 2nd Lt. Gerland, A., The Military Academy of Saint-Cyr, France, Dec. 2009, 93 pages
8. *Bandgap control in one-dimensional periodic elastic layered media*, thesis project, 2nd Lt. Audon, V., The Military Academy of Saint-Cyr, France, Dec. 2007, 80 pages.
The Best Thesis Project 2007-2008, Mechanical Engineering Department, The Military Academy of Saint-Cyr, France
9. *Using Calculus of Variations to derive dispersion relations in one-dimensional periodic layered elastic media*, SURE research project, Yandell, P., USD, Summer 2007
10. *Minimizing temperature gradient of two-dimensional material designs using Calculus of Variations*, senior project, Deckard, C., USD, May 2007, 24 pages
11. *Variational methods to find dispersion relation in periodic layered media*, thesis project, 2nd Lt. Casanova, P., The Military Academy of Saint-Cyr, France, Dec. 2006, 50 pages

12. *Stress wave propagation along finite elastic strips of six-layers*, SURE research project, Yandell, P., USD, Summer 2006
13. *A direct generalization of an existing approach for deriving the dispersion relation in one-dimensional periodic layered elastic media*, senior project, Rodriguez, N., USD, May 2006, 57 pages
14. *An alternative method to derive dispersion relations in elastic periodic layered media*, thesis project, 2nd Lt. Bruder, E., The Military Academy of Saint-Cyr, France, Dec. 2005, 82 pages. *The Best Thesis Project 2005-2006*, Mechanical Engineering Department, The Military Academy of Saint-Cyr, France
15. *The effect of composites on the temperature gradient of two-dimensional material designs*, senior project, Ellefson, A., USD, May 2005, 34 pages
16. *Dispersion relations in one-dimensional elastic periodic media with low number of layered materials and symmetric cell configuration*, senior project, Mahiai, J., USD, May 2005, 24 pages
17. *Optimal band structures of periodic layered media*, thesis project, 2nd Lt. Rispal, C., The Military Academy of Saint-Cyr, France, Dec. 2004
18. *Displacement analysis on a three-layered elastic strip subjected to Heaviside loading*, McNair/SURE research project, Rodriguez, N., USD, Summer 2004
19. *Applications of Laplace transform to wave propagation in layered media*, thesis project, 2nd Lt. Zimmermann, F., The Military Academy of Saint-Cyr, France, May 2004, 50 pages
20. *The z-transform method and its applications to wave propagation in layered media*, senior project, Ameya, T., USD, May 2004, 41 pages
21. *Stress wave propagation through non-Goupillaud type elastic layered media*, senior project, Plakalovic, D., USD, May 2004, 25 pages
22. *Determining the offensive value of a major league baseball player, using linear regression analysis and bootstrap*, senior project, Carney, A., USD, May 2004 (co-advisor), 46 pages
23. *Optimal design of three-layered elastic media of Goupillaud-type*, SURE research project, Davis, T., USD, Summer 2003. *SURE Program Honorable Mention Award*
24. *Stress wave propagation in Goupillaud-type elastic layered media*, thesis project, 2nd Lt. Debaecker, T., The Military Academy of Saint-Cyr, France, May 2003, 37 pages
25. *Mathematics behind composite materials*, thesis project, 2nd Lt. Ottavi, A., The Military Academy of Saint-Cyr, France, May 2002, 37 pages

TEACHING EXPERIENCE

2000-Present	Course Instructor:
2020-2021	Applied Mathematics for Science and Engineering II (Math 311)
Spring-Fall 2021	Business Calculus (Math 294) <i>Initiated and developed the course</i>
2010-2020	Applied Mathematics for Science and Engineering I (Math 310)
2018, 2020	Linear Algebra (Math 320)
2003-2007, 2019	Mathematical Problem Solving Seminar (Math 395) <i>Initiated and developed the course</i>
Spring 2005-2021	Investigations in Modern Mathematics (Math 110/112)
Fall 2003-2019	Calculus I (Math 150), Calculus II (Math 151)
Spring 2017, Fall 2017	Independent Study (Math 499)
2004-2007, 2013-2016	Senior Seminar (Math 495/496) <i>Initiated and developed the course</i>
2003-2008, 2016	Mathematical Modeling (Math 445) <i>Initiated and developed the course</i>
Fall 2002, 2008-2015	Survey of Calculus (Math 130)
Fall 2011	Ordinary Differential Equations (Math 330)
Fall 2005-2007	Logic for Mathematics and Computer Science (Math 160)
Spring 2002	Numerical Methods for Differential Equations (MA 396)
Spring 2001	Single Variable Calculus and Introduction to Differential Equations (MA 103)

GRANTS AND FELLOWSHIPS

Spring 2020	Center for Education Excellence Remote Teaching Fund (Spring 2020), USD
	Sponsored Professional Travels
2019	International Opportunity Travel Grant, International Affairs, USD
2017	The Dean's Office of the College of Arts & Sciences (CAS), USD

	Sponsored Professional Travels
2001-2017	The Siemens Foundation (<i>annually</i>)
2003-2015	The National Academies, Washington D.C. (<i>annually</i>)
2003-2008	The Military Academy of Saint-Cyr, France (<i>annually</i>)
	Putnam Mathematical Competition, Sponsored Event
Fall 2018, 2019	<i>The Fletcher Jones Foundation</i>
Fall 2002-2015	<i>Enhanced Student-Faculty Interaction Initiative Fund Awards, USD</i>
Summer 2013-2014	Principal Investigator. Contract No. W911NF – 11 – D – 0001, \$50,000 <i>U.S. Army Research Office Scientific Services Program</i> Chapel Hill, North Carolina
Summer 2008-2009	Principal Investigator. Contract No. W911NF – 07 – D – 0001, \$50,000 <i>U.S. Army Research Office Scientific Services Program</i> Chapel Hill, North Carolina
2003-2011	Principal Investigator. <i>Cadet Thesis Project Grant, \$75,000</i> The Military Academy of Saint-Cyr, France <i>The first sponsored program at USD funded by an international institution</i> Diploma Thesis in Applied Mathematics and Engineering Thesis Advisor and Thesis Defense Committee Member
Summer 2004-2005	Principal Investigator <i>U.S. Army Faculty Research and Engineering Program (FREP)</i> Chapel Hill, North Carolina
Fall 2010	Faculty Research Grant (FRG), USD
Summer 2003-2007	SURE/McNair Faculty Grant Summer Undergraduate Research Advising, USD
2000-2002	Davies Fellowship, The National Research Council, Washington D.C.
2001-2002	Project New Experience in Teaching (NExT) Fellowship Mathematical Association of America
Summer 2002	Park City Mathematics Institute (PCMI), Utah
1999-2000	Arvid and Marietta Anderson Fellowship, WPI, Worcester, Massachusetts
1993	Tempus Project Study Abroad Scholarship, European Community

HONORS AND AWARDS

June 12, 2020	Featured in Intellectual Brand Albania https://www.facebook.com/ibalbania/videos/280925626612497/
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October 24, 2017	Mortar Board Certificate in Recognition of Outstanding Scholarship, Leadership and Service , USD Mortar Board Alcala Chapter. Nominated by Mortar Board member/student A. Murray
September 1, 2017	Certificate of Recognition in Grateful Appreciation for 15 years of Service , USD
October 2011	Certificate of Recognition for Outstanding Service as a Competition Judge Siemens Foundation, Princeton, New Jersey
May, 2011, 2012	President's Luncheon for Scholar Athletes, USD, guest of M. Bliznyuk
April 2, 2011	The 6th Annual Beta Toast, USD
December 5, 2008	Woman of Impact Certificate of Appreciation Nominated by student C. Llamas, Women's Center, USD
April 22, 2007	The Alpha Chi Omega 2nd Annual Academic Brunch, USD
October 2005	Certificate of Recognition for Outstanding Service as a Competition Judge Siemens Foundation, Princeton, New Jersey
January 2004	USD Presidential Acknowledgement Certificate for Contributions during Firestorm 2003
August 2002	Commander's Award for Public Service U.S. Department of the Army, Washington D.C.
April 2002	Certificate of Appreciation for Outstanding Volunteer Service USMA, West Point, New York

CONFERENCE AND WORKSHOP PRESENTATIONS

- *Markov matrix applications in Goupillaud-type layered media*, co-authored and co-presented with Dickson, E., Department of Mathematics Seminar Series, USD, November 22, 2019
- *Identifying stress behavioral patterns in impact problems through z-transforms*, presenter and leading author, T05 SS01 Wave Propagation in Complex Media, 26th Congress on Sound and Vibration, Montreal, Canada, July 8, 2019
- *Analytical methods for one-dimensional impact problems involving layered elastic media*, presenter and co-author, T05 SS1 Wave Propagation Application in Fluids, Complex Solids and Structures, The 24th International Congress on Sound and Vibration, London, United Kingdom, July 26, 2017
- *Chasing waves in a Goupillaud medium. Impact problems*. Department of Mathematics Seminar Series, USD, April 27, 2017

- *On one-dimensional impact problems involving Goupillaud-type layered elastic media*, Bridging Scales: Homogenization and Related Topics in Solid Mechanics and Crystal Plasticity Symposium, International Symposium on Plasticity, Puerto Vallarta (Mexico), January 2017
- *Asymptotic impact behavior of Goupillaud-type layered elastic media*, European Congress on Computational Methods in Applied Sciences and Engineering (ECCOMAS 2016), Crete, Greece, July 2016, *co-author and presenter Gazonas, G.A.*
- *Analytical results for stress and particle velocity on impact problems in elastic layered media*, SIAM PD15 Conference, CP11, Scottsdale, Arizona, December 10, 2015, *session chair and presenter*
- *Modeling stress wave propagation in one-dimensional Goupillaud-type layered elastic media*, PDEs/Number Theory Session, Second Annual Twin WiMSoCal conference, USD, May 4, 2014
- *A new class of exact analytical solutions for elastodynamic impact*, Advances in Numerical Methods for Linear and Non-linear Dynamics III Session, 11th world congress on computational mechanics, Barcelona, Spain, July 23, 2014, *co-author/presenter Gazonas, G.A.*
- *Impact problems in one-dimensional Goupillaud-type layered elastic media*, ASME 2013 International Mechanical Engineering Congress & Exposition Acoustic and Elastic Wave Propagation II, 2:15pm-2:45pm, San Diego, CA, November 20, 2013
- *A new class of exact analytical solutions for one-dimensional impact problems*, Advances in Numerical Methods for Linear and Non-Linear Dynamics Symposium, the 12th U.S. National Congress on Computational Mechanics (USNCCM12), Raleigh, North Carolina, July 22-25, 2013, *co-author/presenter Gazonas, G.A.*
- *Stress wave propagation in one-dimensional Goupillaud-type layered elastic media with applications to optimization, resonance and impact problems*, 5:15pm-5:45pm, 2013 Joint Mathematics Meetings (JMM) Special Session on Nonlinear Evolution Equations and Integrable Systems, January 9, 2013
- *Analytical and computational study of one-dimensional impact into randomly layered elastic media*, International Workshop on Computational Mechanics of Materials. IWCMM XXII, Baltimore, Maryland, September 26, 2012, *co-author/presenter Gazonas, G.A.*
- *Bandgap formation in Goupillaud-type layered elastic media*, Phonic Crystals and Acoustic Metamaterials Symposium, ASME2012 International Mechanical Engineering Congress, Houston, Texas, November 14, 2012, *co-author/presenter Gazonas, G.A.*
- *On the natural frequencies of a free/free Goupillaud-type elastic strip*, 2011 SIAM Conference on Analysis of Partial Differential Equations, Symposium on Geometric Approaches for Eigenvalue and Stability Problems, San Diego, CA, November 16, 2011

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- *Resonance in m-layered Goupillaud-type Elastic Media*, Phononics 2011, International Conference on Phononic Crystals, Metamaterials, and Optomechanics, Phononic Crystals Session 4, Santa Fe, New Mexico, May 30, 2011, *co-author and presenter Gazonas, G.A.*
 - *z-Transform methods for the optimal design and resonance frequencies of a finite layered elastic strip*, Computational Science Research Center and Aerospace and Mechanics Seminar Series, San Diego State University, San Diego, March 25, 2011
 - ASME 2010 International Congress, Symposium on General Structural Vibration and Acoustics, Session 20-1-3, Vibro-acoustic modeling techniques, Vancouver, Canada, November 15, 2010
 - The 2009 Joint ASCE-ASME-SES Conference on Mechanics and Materials, Session FA14--*Material Response to Shock Loading*, Blacksburg, VA, June 26, 2009, *co-author/presenter Gazonas, G.A.*
 - The 6th International Congress on Computational Mechanics, Thessaloniki, Greece, June 2008, *co-author/presenter Gazonas, G.A.*
 - American Society of Mechanical Engineers (ASME) International Congress and Exposition, Seattle, Washington, November 2007
 - Hellenic Society for Theoretical and Applied Mechanics (HSTAM), 8th International Congress on Mechanics Proceedings, Patras, Greece, July 2007, *co-author/presenter Gazonas, G.A.*
 - The 19th International Symposium on Mathematical Programming (ISMP), Rio de Janeiro, Brazil, August 2006
 - Department of Mathematics and Computer Science Seminar Series, USD, March 2006
 - The Research Laboratory for Numerical Modeling and Simulations Seminar Series, Université de Provence, Aix-Marseille I, France, January 2006
 - Math and Engineering Overnight Program, USD, November 2005
 - The Seventeenth Triennial Conference of the International Federation of Operational Research Societies (IFORS), Session RB-04 Optimization Techniques II, Honolulu, Hawaii, July 2005
 - Mathematics behind Poker, USD Poker Tournament, Mission Crossroads, Sept. 2005
 - Hellenic Society for Theoretical and Applied Mechanics (HSTAM), 7th National Congress on Mechanics, Session B.7 Structural Optimization II, Technical University of Crete, June 2004, *co-author and presenter Gazonas, G.A.*
 - The Third International Conference on Computational Modeling and Simulation of Materials, Thin/Thick Films, Layered Structures and Surface Processing Section, Acireale, Italy, June 2004
 - Resident Faculty Seminar Series, Wisdom for the Real World Residence Life Program, Manchester Village, USD, February 2004

- Science Lecture Series, USD, December 2003
- Faculty and Curriculum Development Programs: Women's Faculty Research Dinner, USD, March 2003
- Institute for Operations Research and Management Sciences (INFORMS) 2002 Meeting, San Jose, California, November 2002, *session chair and presenter*
- Applied Mathematics Seminar Series, U.S. Naval Academy, Annapolis, Maryland, November 2002
- The Tenth Annual ARL and USMA Technical Symposium, ARL, Aberdeen Proving Ground, Maryland, November 2002
- The Fourteenth US National Congress of Theoretical and Applied Mechanics, Virginia Tech, Blacksburg, Virginia, June 2002
- Mechanics of Materials with Microstructure Symposium, The Fifteenth ASCE Engineering Mechanics Conference, Columbia University, New York, June 2002
- Military, Government and Aerospace Simulation Symposium, 2002 Advanced Simulation Technologies Conference, San Diego, California, April 2002
- AMS Special Session on Partial Differential Equations and their Applications, Joint Mathematics Meetings, San Diego, California, January 2002
- Young Mathematician's Network and Project NExT (New Experiences in Teaching) Poster Session, Joint Mathematics Meetings, San Diego, California, January 2002
- Faculty Development Seminar, Department of Mathematical Sciences, USMA, West Point, New York, September 2001
- The Ninth Annual ARL and USMA Technical Symposium, ARL, Aberdeen Proving Ground, Maryland, November 2001
- Composites Engineering Workshop, Department of Civil and Mechanical Engineering, USMA, West Point, New York, August 2001
- Composites Applications, Work Area Review, ARL, Aberdeen Proving Ground, Maryland, November 2000
- The Eighth Annual ARL and USMA Technical Symposium, ARL, Aberdeen Proving Ground, Maryland, November 2000
- International Congress of Theoretical and Applied Mechanics, Chicago, Illinois, Aug 2000
- International Conference on Scientific Computing and Mathematical Modeling, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin, May 2000

- Applied/Computational Mathematics Seminar, Mathematical Sciences Department, WPI, Worcester, Massachusetts, November 1999
- Aero/Thermo Fluid Seminar, Mechanical Engineering Department, WPI, Worcester, Massachusetts, October 1998
- SIAM Northeast Regional Mathematics in Industry Workshop, WPI, Worcester, Massachusetts, May 1998
- Computational Science Laboratory Colloquium, Eastman Kodak Research Labs, Rochester, New York, August 1997
- Industrial Mathematics Modeling Workshop for Graduate Students, Lord Corporation and Center for Research in Scientific Computation, North Carolina State University, Raleigh, North Carolina, August 1996

STUDENT PRESENTATIONS

- Creative Collaborations, USD, 2008, 2013-2016, *student poster presentations*
- Applied Mathematics Capstone Senior Project Presentation Day, *student oral presentations*, USD, May 2004-2007 and 2013-2016
- *Applications and development of a mathematic model for HIV transmission dynamics in San Diego County*, 2015 Annual Biomedical Research Conference for Minority Students (ABRCMS), Washington State Convention Center, Seattle, WA, November 2015, *poster presentation*, Allman, B.
- Society for the Advancement of Chicanos and Native Americans in the Sciences Conference, Texas, October 2004, *poster presentation*, Rodriguez, N.
- Young Mathematicians Conference 2004, The Ohio State University, Columbus, Ohio, August 2004, Rodriguez, N.
- 2004 UCSD Summer Research Conference, Mathematics and Engineering, Price Center, University of California, San Diego, California, August 2004, Rodriguez, N.
- The Fourteenth Annual USD Student Research and Internship Conference, USD, May 2004, *poster presentation*, Davis, T., *Honorable Mention*
- Young Mathematicians Conference 2003, The Ohio State University, Columbus, Ohio, August 2003, Davis, T.

PROFESSIONAL SERVICE

Outside USD

- **Judge**, Interdisciplinary Contest in Modeling (ICM), The Consortium for Mathematics and its Applications (COMAP)
March 2018, 2019 *Evaluated ~12 student projects per year, 20 pages each*
- **Contributor**, International Day of Women and Girls in Science, “Henrietta Leavitt” Foundation, Tirana, Albania
February 5, 2019 Online Article
Mathematics is the language with which God wrote the Universe
<https://fhl.org.al/forum-qe-ka-synim-te-frymezoje-te-nxise-vajzat-te-kontribuojne-ne-shkenca-dhe-inxhinieri-6/>
- **Judge**, Siemens Westinghouse Math, Science and Technology Competition, Princeton, New Jersey
2001-2017 *Reviewed annually 50-70 student research papers*
2008 *Lead Judge for Mathematics*
- **Outreach** to a local K-8 school, The Child’s Primary School (TCPS), 2014-2017
- **Reviewer**, National Research Council, Associateship Awards Program in Engineering, Applied Sciences and Mathematics, Washington D.C.

2003-2015 *Reviewed annually 20-25 research proposals for Postdoctoral and Senior Research Positions*

2007, 2008 *Co-Chair of the Engineering and Mathematics Panel Board*
Research Associateship and Fellowship Programs Advisory Committee
The National Academies
September 2008 Arnold and Mabel Beckman Center, Irvine, California
June 2007 J. Erik Jonsson Center, Woods Hole, Massachusetts
- **Reviewer**, Pearson Education, Calculus and Its Applications, 10e, Bittinger, Ellenbogen, and Surgent (2012), (*My name and affiliation as a reviewer appear on the Preface of the textbook.*)
- **Reviewer**, Army Research Office, Research Triangle Park, North Carolina, 2003-2009
Reviewed research proposals for Postdoctoral and Senior Research Positions
- **Reviewer**, Journal of Integrative Neuroscience, 2007
- **Reviewer**, International Journal of Solids and Structures, Stanford University, Stanford, California, 2004-2005
- **Reviewer**, U.S. Civilian Research and Development Foundation, Cooperative Grants Program, Arlington, Virginia, 2004

- **Judge**, Interdisciplinary Contest in Modeling, USMA, West Point, New York, 2002

USD Service

- Budget Committee, CAS, 2019-2021
- ARRT Committee, CAS, Fall 2016-Spring 2018
- Graduate Studies Committee, CAS, 2009-2015
- Honorary Degrees Committee, 2005-2009
- University Senate, 2005-2007
- Honors Program, 2003-2007
- Information Resources Council, 2006-2007
- Resident Faculty, Wisdom for the Real World Residence Life Program, Manchester Village, 2002-2006
- Faculty Focus Groups Meetings regarding the Design, Space Usage and Academic Vision of the new University Center Expansion, Summer 2005

Department Service

- Chair and Department Representative to the Business Calculus Curriculum Committee, Joint Committee with the School of Business, USD, June 2020 – December 2021
- Chair of the Department Committee for Faculty Promotion to Full Professor, 2020
- Chair of the Department Committee for Faculty Tenure and Promotion, 2019
- Member of the Department Committee for Faculty Tenure and Promotion, 2019
- Mentor of New Faculty, Fall 2018 – 2020
- Contributor to the Mathematics Department Program Review Report, 2018-2019
- Chair of the Tenure Review Committee for the Fletcher Jones Endowed Chair, Spring 2016
- Applied Mathematics Program Coordinator, 2004-2007, 2013-2016
- Chair of the Fletcher Jones Endowed Chair Hiring Committee, Summer 2014 - Spring 2015
- Professional Reference for Students, Faculty and Alumni in Mathematics, Computer Science and Engineering, 2004-Present

- Academic Advisor, 2005-Present
- Department Representative at Student Recruiting Events and Various Campus Events (*Academic Showcase, College Visiting Day, Discover myUSD Overnight, Merit Scholarship Overnight, Multicultural Experience Overnight, Honors Overnight, Student Convocation, Commencement Ceremonies*)
- Math Club Faculty Advisor, 2016-2017
- Webmaster and Seminar Series Coordinator, 2004-2013
- Hiring, Reappointment and Tenure Appointment Committee Member
- Undergraduate Research Conference/Creative Collaborations Board Member, 2014
- SURE Review Committee, Department Representative, Spring 2005, 2011-2013
- Assessment Committee Member, 2009-2011
- Member of the Applied Mathematics Program Task Force, Fall 2007-2013
- Member of the Department Task Force on Appointment Policies and Procedures, 2008
- Department Representative at the SURE Program Meetings, USD, 2003-2008
- Recruiting Committee Member, 2005-2007
- Contributor to the Math and Computer Science Festival for High School Students, 2004
- Contributor to the Department File for the Single Subject Credential Program, 2004
- Faculty Mentor for the Mathematical Contest in Modeling (MCM), COMAP, 2002-2003

Selected Professional Activities Organized

- William Lowell Putnam Mathematical Competition, USD, 2002-2014, 2017, 2019, 2021
- Applied Mathematics Capstone Senior Project Presentation Day, USD, May 2004-2007, 2013-2016
- The symposium "*Music and the Sciences: Synergies among musical arts, math, science, and engineering*", The Annual Meeting of the American Association for the Advancement of Science Pacific Division (AAAS PD), USD, June 14, 2011, (Co-organized with Schubert, T., Mechanical Engineering, USD)
- Department Seminar, Presenter Dr. Rodriguez N., Class of 2006, February 2, 2011

- Tour of a Submarine, Mathematical Modeling Class, San Diego, October 4, 2008
- Euler's 300th Birthday Celebration, Joan B. Kroc Institute for Peace and Justice, USD, April 2007 (co-organizer)
- Faculty Meetings about the Applied Mathematics Program, USD, 2003-2006
- Student-Faculty Trip to Harvey Mudd College, Mathematics Conference on Scientific Computing, November 2005

Selected Professional Development, Year 2021

- MathFest, Virtual Conference, August 2021
 - Application Inspired Linear Algebra: Using Data in the Classroom, Virtual Workshop, August 4, 2021
 - Game Theoretic Modeling for Math Majors, Virtual Workshop, August 5, 2021
- Illustrating Mathematics, IAS/Park City Mathematics Institute, Virtual Conference, July 2021
- Spring 5x5: Teaching Techniques to Keep (or Delete), Virtual Event, USD, April 22, 2021
- Respondus Online Training, February 2021