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Recent Employment History

- Fall 2021 –  **Full Professor.** Department of Mathematics and Statistics, ASU.
- Fall 2015 –Spring 2021  **Associate Professor.** Department of Mathematics and Statistics, ASU.
- Fall 2009 –Spring 2015  **Assistant Professor.** Department of Mathematics and Statistics, ASU.
- Fall 2008 –Spring 2009  **Visiting Assistant Professor.** Department of Mathematics and Statistics, Arkansas State University (ASU)








Education

- December 2003  **The University of Iowa, Iowa City, USA.** Ph.D. in Mathematics.
- February 1991  **Kyung Hee University, Seoul, South Korea.** M.S. in Mathematics.
- February 1989  **Kyung Hee University, Seoul, South Korea.** B.S. in Mathematics.

Teaching Experience

-  Algebra, Precalculus
-  Business Calculus
-  Discrete Structures
-  Calculus I II III with honors
-  Differential Equations with honors
-  Partial Differential Equations
-  Applied Mathematics
-  Numerical Analysis

Area of Research

-  Applied Mathematics
-  Numerical Analysis
-  Partial Differential Equations
-  Dynamic Contact Problems
-  Finite Element Methods
-  Complementarity Problems
-  Differential Variational Inequalities

Research Publications

Refereed Journal papers

22. "A generalized Duffing equation with the Coulomb's friction law and Signorini-type contact conditions" *Nonlinear Anal. Real World Appl.* 74 (2023), Paper No. 103936, 25 pp.
21. "A spring-beam system with Signorini's condition and the normal compliance condition" with Nicholas Tate, *Int. J. Numer. Anal. Model.* 20 (2023), no. 1, 67–91
20. "Nonlinear thermoviscoelastic Timoshenko beams with dynamic frictional contact" *Appl. Anal.* 101 (2022), no. 16, 5615–5642
19. "Dynamic frictional thermoviscoelastic Gao beams", *Z. Angew. Math. Phys.* 72 (2021), no. 6, Paper No. 194, 25 pp.
18. "A rod-beam system with dynamic contact and thermal exchange condition" with Zachary Rail, *Appl. Math. Comput.* 388 (2021), Paper No. 125542, 25 pp.
17. "Damageable elastic buckling bodies with a crack", *Z. Angew. Math. Phys.* 71 (2020), no. 2, Paper No. 66, 27 pp.
16. "Nonlinear Springs with a pair of complementarity conditions" with Jay Mayfield, *NoDEA Nonlinear Differential Equations Appl.*, 25 (2018), paper No.53, 31pp.
15. C^0 interior penalty methods a dynamic nonlinear beam model with Seulip Lee and Eun-Jae Park, *Appl. Math. Comput.*, 339(2018), 685-700
14. "Modeling, analysis and simulations of a dynamic thermoviscoelastic rod-beam system" with Kenneth Kuttler, Meir Shillor, *Differ. Equ. Dyn. Syst.* 25 (2017), 527-552
13. "Dynamic frictionless contact of a nonlinear beam with two stops" with Eun-Jae Park, *Applicable Analysis*, 94 (2015), pp.1355-1379
12. "Mathematical and numerical approaches to a one-dimensional dynamic thermoviscoelastic contact problem" with Natanya Clark, *Nonlinear Analysis: Real World Applications* 22 (2015), pp.437-451
11. "Dynamic impact of a particle" with Jared R. Wolf, *Involve - a journal of mathematics*, 6 (2013), pp.147-167
10. "Dynamic contact of viscoelastic bodies with two obstacles: Mathematical and numerical approaches" with Jon Calhoun, *Electronic Journal of Differential Equations*, 2013 (2013), pp.1-23.
9. "Dynamic contact of two Gao beams" with Kenneth Kuttler and Meir Shillor, *Electronic Journal of Differential Equations*, 2012 (2012), pp.1-42
8. "A viscoelastic Timoshenko beam with Coulomb law of friction", *Applied Mathematics and Computation*, 218 (2012), pp.7078-7099
7. "A viscoelastic Timoshenko Beam with dynamic frictionless impact", with David E. Stewart, *Discrete Contin. Dyn. Syst. Ser. B*, 12 (2009), pp.1-22.
6. "Dynamic frictionless contact in linear viscoelasticity", with David E. Stewart, *IMA Journal of Numerical Analysis*, 29 (2009), pp.43-71
5. "Thick obstacle problems with dynamic adhesive contact", *ESAIM: Mathematical Modelling and Numerical Analysis*, 42 (2008), pp.1021-1045
4. "An Euler-Bernoulli Beam with Dynamic contact: Penalty approximation and existence", with David E. Stewart, *Numerical Functional Analysis and Optimization*, 28 (2007), pp.1003-1026

3. "A vibrating string with dynamic frictionless impact", *Applied Numerical Mathematics*, 57 (2007), pp.861-884
2. "Existence of solution for a class of impact problems without viscosity" with David E. Stewart, *SIAM J. Math. Anal.*, 38 (2006), pp.37-63 (electronic)
1. "An Euler-Bernoulli Beam with Dynamic Contact: Discretization, Convergence, and Numerical Results" with David E. Stewart, *SIAM J. Numer. Anal.*, 43 (2005), pp.1455-1480 (electronic)

Refereed Conference Papers

1. "A simplified model of impact" with David E. Stewart, *Contact Mechanics: Proceedings of the Third Contact Mechanics International Symposium*, Kluwer Acad. Publ, (2002), pp. 309 -316

Book (Solutions manual)

1. "Instructor's Solutions Manual for Elementary Numerical Analysis" by Kendall E. Atkinson and Weimin Han, 3rd edition, joint with Dr. David Chien and Dr. Zongmi Wu, John Wiley and Sons, Inc., (350 pages)