

## CURRICULUM VITAE

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### **Ferhan Merdivenci ATICI**

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### UNIVERSITY EDUCATION

- Ph.D (Mathematics) University of Nebraska at Lincoln, 1995
- M.S (Mathematics) University of Nebraska at Lincoln, 1993
- B.S (Mathematics) Ege University, 1989

### ACADEMIC EXPERIENCE

- Professor, Department of Mathematics and Computer Science, Western Kentucky University, 2011-present.
- Associate Professor, Department of Mathematics, Western Kentucky University, 2005-2011.
- Assistant Professor, Department of Mathematics, Western Kentucky University, 2003-2005.
- Visiting Assistant Professor, Department of Mathematics, Western Kentucky University, 2001-2003.
- Associate Professor, Department of Mathematics, Ege University, 1999-2002.
- Assistant Professor, Department of Mathematics, Ege University, 1996-1999.
- Visiting one year position, Department of Mathematics and Statistics, University of Nebraska at Lincoln, 1995-1996.
- Teaching Assistant, Department of Mathematics and Statistics, University of Nebraska at Lincoln, 1991-1995.
- Teaching Assistant, Department of Mathematics, Ege University 1989-1990.

## CERTIFICATES

- Certificate to teach at High School. (A Certificate was earned after completing 12 months of training at Ege University) 1989.
- Certificate to teach at College Level. (A Certificate was earned after completing 9 months of training at University of Nebraska) 1991.

## DISSERTATION TITLE

Fixed Points Techniques in Cone Theory with Applications to Difference Equations.  
Supervisor: Dr. Allan C. Peterson

## CURRENT FIELDS OF INTEREST

Difference Equations, Differential Equations, Calculus on Time Scales, Dynamic Equations and Their Applications to Economics, Fractional Calculus and Their Applications to Medical Sciences.

## SUPERVISED THESIS

- Master Thesis: “Development of Nabla Fractional Calculus and A New Approach to Data Fitting in Time Dependent Cancer Therapeutic Study”, Nihan Acar, 2012.
- Master Thesis: “Cagan Type Rational Expectation Models on Time Scales with Their Applications to Economics”, Funda Ekiz, 2011.
- Master Thesis: “Development of Fractional Trigonometry and An Application of Fractional Calculus to Pharmacokinetic Model”, Amera Almusharff, 2011.
- Master Thesis: “Deterministic and Stochastic Bellman’s Optimality Principles on Isolated Time Domains and Their Applications in Finance”, Nezihe Turhan, 2011.
- Master Thesis: “Discrete Fractional Calculus and Its Applications to Tumor Growth”, Sevgi Şengül, 2010.
- Master Thesis: “Fractional Calculus: Definitions and Applications”, Joseph Kimeu, 2009.
- Master Thesis: “Calculus of Variations on Time Scales and its Applications to Economics”, Christopher S. McMahan, 2008.
- Master Thesis: “Lebesgue Nabla Measure and Riemann Nabla Integration”, Heather Bjorum, 2005.
- Master Thesis: “Analysis of Economic Models Through Calculus of Variations”, Raman Arora, 2005.
- Master Thesis: “Bounds of eigenvalues which guarantee the existence of positive solutions”, Sibel Delibalci, 1999.
- Ph.D Thesis: “Calculus and Dynamic Equations on Time Scales”, Serap Gulsan Topal, 2001.

## DIRECTED SENIOR PROJECTS

- “The best way to shoot a free throw”, by Blake Martin, WKU, Spring 2010.
- “Fractional q-Fourier Transform: A Fresh Look at a Staple Integral Transform”, by Landon Oakes, WKU, Spring 2010.
- “A Quasilinearization Method and Its Applications in Physics”, by Britney Barrow, WKU, Spring 2009.
- “Math and Dance: Contra and Square Dancing”, by Emily Hartman, WKU, Spring 2008.
- “Government Funded Market Manipulations”, by Nathan Russell, WKU, Spring 2007.
- “Quantum Calculus: A beginning of a closer look at one type of calculus”, April Williams, WKU, Fall 2006.
- “Fractional Calculus”, Nicole Zirkelbach, WKU, Fall 2006.

## AWARDS

- 2011 University Faculty Award, Research/Creativity.
- 2011 Ogden College Faculty Award, Research/Creativity.
- 2006 Recognition of superior achievement in the field of mathematics, Pi Mu Epsilon, Kentucky Beta Chapter.
- 1995 Graduate award winner (Emeritus Faculty Fellowships) Department of Mathematics and Statistics, University of Nebraska at Lincoln.
- 1991-1995 Teaching Assistantship, Department of Mathematics and Statistics, University of Nebraska at Lincoln.
- 1990 Teaching Assistantship, Department of Mathematics, Ege University.
- 1989 Honorary BS degree, First Place in the Science College and in the Mathematics Department, Ege University.

## INTERNAL AND EXTERNAL GRANTS

### External Grants

- “Parameter Estimations of Sigmoidal Models of Cancer”, KSEF-2488-RDE-014, (60,000.00 Dollars )

### Internal Grants

- “ Sigmoidal Models of Tumor Growths: The Gompertz Model”, BISC Graduate Student Research Assistantship, January 2011-May 2011. (2,750.00 Dollars)
- Summer Faculty Scholarship Award, May 2009- Sept. 2009. (6,000.00 Dollars)

### Travel Grants

- AWM-NSF Travel Grant, March 2007. (543 Dollars)
- Ogden College of Science Travel Fund, Jan. 2004. (500 Dollars)

## UNIVERSITY SERVICE

### DEPARTMENTAL COMMITTEES (2010-2011)

- Graduate Studies Committee
- Colloquium/Symposium Committee
- Scholarship/Award Committee
- Tenure/Promotion Committee

### COLLEGE COMMITTEES (2010-2011)

- Ogden Research Scholarship Programs Committee, Chair, March, 2011- present.
- Ogden College Curriculum Committee August 2009 - May 2011.
- BISC Committee for Graduate Assistantship, Nov. 2010 - present.
- Ogden College Faculty Awards Committee, 2010.

### UNIVERSITY COMMITTEES

- University Faculty Awards Committee, April, 2012.
- Graduate Council Representative from Ogden College of Science and Engineering (alternative member) May 2008- May 2009.
- Executive Committee, The Bio-informatics and Information Science Center, May 2006 - present.
- University Senate, May 2004- May 2006.
- The Faculty Welfare and Professional Responsibilities Committee (from the Senate), May 2004- May 2006.

### PROFESSIONAL ACTIVITIES

- Judge in the poster presentation sessions of “The 42nd Annual WKU Student Research Conference,” March, 2012.
- Helper in “Wind Power” class at the event “Girls in Science Day”, April 16, 2011.
- Judge in the paper presentation sessions of “The 41st Annual WKU Student Research Conference,” March, 2011.
- Judge in the paper presentation sessions of “The 40th Annual WKU Student Research Conference,” February 27, 2010.
- Organizer of the session “Time Scales: Theory and Applications,” AMS Sectional Meeting at Miami University-Ohio, March 16-17, 2007.
- Organizer and Coordinator in the “Practical Problem Solving” event for High School students, The Kentucky Science Olympiad State Tournament, April 2006.
- One of the organizer of the special session in AMS sectional meeting which was at WKU on March 18-19, 2005.

- The Kentucky Science Olympiad State Tournament, Organizer of "Data Gathering Event", March 2004.
- Organizer of 24th Annual Mathematics Symposium at WKU, 2004.
- The Kentucky Science Olympiad State Tournament, Organizer of "Data Gathering Event", March 2003.
- 2002 Intel International Science and Engineering Fair, Grand Awards Judge for Mathematics.

#### EDITORIAL BOARD MEMBER

- Reviewer for Mathematical Reviews (Jan 2005 - present)
- Associate Editor of the Journal "The International Journal of Applied Mathematics Statistics" (IJAMAS). (Sept 2006-present)
- Member of the Editorial Board of the Journal: "Abstract and Applied Analysis" (AAA). (Jan 2007-present)
- Member of the Editorial Board of the Journal: International Journal of Mathematics and Computation. (Sept 2009- present)
- Member of the Editorial Board of the Journal: Journal of Black Sea Science and Engineering. (Feb 2011- present)
- Member of the Editorial Board of the Journal: Fractional Differential Calculus. (March 2012- present)

#### CONTRIBUTED TALKS AT CONFERENCES

- International Workshop on Dynamic Systems, Ankara-Turkey, June 26-28th, 2012. (**Invited**)
- 8th Kentucky Innovation and Entrepreneurship 2012 Conference, Louisville-KY, June 1st, 2012. (Poster Presentation)
- AMS Sectional Meeting at University of Nebraska, Lincoln-Nebraska, Oct. 14-16, 2011. (**Invited**)
- Second International Symposium on Computing in Science and Engineering, Kusadasi, Izmir-Turkey, June 1-4, 2011.
- The 6th International Conference: 2010 Dynamical Systems and Applications, Antalya-Turkey, July 10-14, 2010. (**Key Note Speaker**)
- AMS Sectional Meeting at Baylor University, Waco-Texas, Oct. 16-18, 2009. (**Invited**)
- Symposium on Biomathematics and Ecology Research and Education, Izmir - Turkey, June 13-17, 2009.
- 14th International Conference on Difference Equations and Applications, Istanbul-Turkey, July 21-25, 2008. (**Invited**)
- The 27th Southeastern-Atlantic Regional Conference on Differential Equations, Oct 2007, Murray, Kentucky.

- International Conference: 2007-Dynamic Systems and Applications, July 2007, Kusadasi-Izmir, Turkey.
- AMS Sectional Meeting at Miami University-Ohio, March 16-17, 2007. (**Session Organizer and Presenter**)
- 2006 Annual Meeting of KYMAA, March 2006, Centre College, Danville, Kentucky.
- The 25th Southeastern-Atlantic Regional Conference on Differential Equations, Oct 2005, Dayton, Ohio.
- Spring Southeastern Sectional Meeting of AMS at WKU, Bowling Green, KY, March 18-19, 2005. (**Session Organizer**)
- AMS National Meeting, Jan 2005, Atlanta, Georgia. (**Invited**)
- International Conference: 2004-Dynamic Systems and Applications, July 2004, Antalya-Turkey.
- AMS National Meeting, Jan 2004, Phoenix- Arizona. (**Invited**)
- AMS Section Meeting, Bloomington-Indiana, April 2003.
- Workshop on Time Scales, University of Dayton, Dayton-Ohio, September 2002. (**Session Organizer and Presenter**)
- International Conference on Dynamic Systems and Applications, Atlanta-Georgia, May 1999.
- XI. National Mathematics Symposium, Isparta - Turkey, September 1998.
- Fourth International Conference on Difference Equations and Applications, Poznan - Poland, August 1998.
- International Conference Functional Differential-Difference Equations and Applications, Antalya - Turkey, August 1997.
- Rocky Mountain Mathematics Consortium Summer Conference Difference Equations and Their Applications, University of Wyoming, Laramie-Wyoming, July 1997.
- 24. Midwest Differential Equations Conference, University of Nebraska-Lincoln, Nebraska, October 1995.
- 23. Midwest Differential Equations Conference, University of Oklahoma, Oklahoma, October 1994.

## LIST OF PUBLICATIONS

- 1) F. Merdivenci Atici and Thabet Abdeljawad, On the Definitions of Nabla Fractional Operators, *Abstract and Applied Analysis*, in press.
- 2) F. Merdivenci Atici and A. Almushraff, On A Class of Fractional Differential Equations, *Communications in Applied Analysis*, 16(2012), no.3, pp. 423–432.
- 3) F. Merdivenci Atici and P. W. Eloe, Gronwall's Inequality in Discrete Fractional Calculus, *J. Computers and Mathematics with Applications*, doi: 10.1016/j.camwa.2011.11.029 (in press).
- 4) F. Merdivenci Atici and N. Turhan, Sequential Decision Problems on Isolated Time Domains, *J. Mathematical Analysis and Applications*, 388(2012), pp. 753–759.

- 5) F. Merdivenci Atici and P. W. Eloe, Two-Point Boundary Value Problems for Finite Fractional Difference Equations, *J. Difference Equations and Applications*, Vol. 17, 4(2011), pp. 445–456.
- 6) F. Merdivenci Atici, D. C. Biles and A. Lebedinsky, A Utility Maximization Problem on Multiple Time Scales, *International Journal of Dynamical Systems and Differential Equations*, Special issue on Dynamic Equations on Time Scales, Vol. 3, 1-2(2011), pp. 38–47.
- 7) F. Merdivenci Atici and Paul W. Eloe, Linear Systems of Fractional Nabla Difference Equations, *The Rocky Mountain Journal of Mathematics*, Special issue honoring Prof. Lloyd Jackson, Vol. 41, 2(2011), pp. 353–370.
- 8) F. Merdivenci Atici, D. C. Biles, The Stochastic Ito Integral on Time Scales, *PanAmerican Mathematical Journal*, 20(2010), No.4, pp. 45-56.
- 9) F. Merdivenci Atici and Sevgi Şengül, Modeling with Fractional Difference Equations, *Journal of Mathematical Analysis and Applications*, 369(2010), pp. 1–9.
- 10) F. Merdivenci Atici and P. W. Eloe, Discrete Fractional Calculus with the Nabla Operator, *Electronic Journal of Qualitative Theory of Differential Equations*, Spec. Ed I, 2009, No.3, pp.1-12.
- 11) F. Merdivenci Atici and C. S. McMahan, A comparison in the theory of calculus of variations on time scales with an application to the Ramsey model, *Nonlinear Dynamics and Systems Theory*, Vol. 9, 1(2009), pp. 1-10.
- 12) F. Merdivenci Atici and P. W. Eloe, Initial value problems in discrete fractional calculus, *Proceedings of the American Mathematical Society*, Vol. 137, 3(2009), pp 981-989.
- 13) F. Merdivenci Atici and F. Uysal, The production-inventory model of HMMS on time scales, *Applied Mathematics Letters*, Vol. 21, 3(2008), pp 236-243.
- 14) F. Merdivenci Atici and P. W. Eloe, A transform method in discrete fractional calculus, *International Journal of Difference Equations*, Vol. 2, 2((2007), pp 165-176.
- 15) F. Merdivenci Atici and P. W. Eloe, Fractional q-Calculus on a Time Scale, *J. Nonlinear Mathematical Physics*, Vol.14, 3(2007), pp 333-344.
- 16) F. Merdivenci Atici, A. Cabada and J. Ferreiro, First order difference equations with maxima and nonlinear functional boundary value conditions, *J. Difference Equations and Applications*, 12(2006), no. 6, pp 565-576.
- 17) F. Merdivenci Atici, D. C. Biles and A. Lebedinsky, An Application of Time Scales to Economics, *Mathematical and Computer Modelling*, 43(2006), pp 718-726.
- 18) F. Merdivenci Atici and D. C. Biles, First and second order dynamic equations with impulse, *Journal of Advances in Difference Equations*, 2(2005), pp 119-132.

- 19) F. Merdivenci Atici, A. Cabada, C. J. Chyan, B. Kaymakcalan, Nagumo type existence results for second order nonlinear dynamic BVPs, *Nonlinear Analysis*, (2004), Vol.60, no.2, pp 209-220.
- 20) F. Merdivenci Atici and S. Gulsan Topal, The generalized quasilinearization method and three-point boundary value problems on time scales, *Applied Math. Letters*, (2005), Vol. 18/5, pp. 577-585.
- 21) F. Merdivenci Atici and S. Gulsan Topal, Nonlinear three-point boundary value problems on time scales, *Dynamic Systems and Applications*, 13 (2004), pp 327-337.
- 22) F. Merdivenci Atici and D. C. Biles, First order dynamic inclusions on time scales, *J. Mathematical Analysis and Applications*, (2004), Vol. 292/1 pp 222-237.
- 23) F. Merdivenci Atici, E. Akin-Bohner and B. Kaymakcalan, Lower and upper solutions for two point boundary value problems on time scales, *Chapter for a book on time scales edited by M. Bohner and A. C. Peterson Advances in dynamic equations on time scales*, 165-188, Birkhauser Boston, Boston, MA, 2003.
- 24) F. Merdivenci Atici, A. Cabada and V. Otero-Espinar, Multiplicity and nonexistence of positive solutions to a discrete periodic boundary value problem, *J. Difference Equations and Applications*, (2003) Vol. 9, no. 9, pp. 765-775.
- 25) F. Merdivenci Atici and A. Cabada, Existence and uniqueness results for discrete second order periodic boundary value problems, *Computers Math. Applic.*, 45 (2003), pp. 1417-1427.
- 26) F. Merdivenci Atici and E. Akin-Bohner, A quasilinearization approach for two point nonlinear boundary value problems on time scales, *The Rocky Mountain Journal of Mathematics*, 35(2005) Number:1, pp. 19-46.
- 27) F. Merdivenci Atici, A. Cabada and J. B. Ferreira, Existence and comparison results for first order periodic implicit difference equations with maxima, *J. Differ. Equations Appl.*, 8(4), (2002), pp:357-369.
- 28) F. Merdivenci Atici, P. W. Eloe and B. Kaymakcalan, The quasilinearization method for boundary value problems on time scales, *J. Mathematical Analysis and Applications*, 276, 2002, pp:357-372.
- 29) F. Merdivenci Atici and G. Sh. Guseinov, On Green's functions and positive solutions for boundary value problems on time scales, *J. Comput. Appl. Math.*, 141(1-2), (2002), pp: 75-99 .
- 30) F. Merdivenci Atici and G. Sh. Guseinov, Positive solutions for nonlinear differential equations with periodic boundary conditions, In *Conference Proceeding of the Third International Conference On Dynamic Systems and Applications*, Atlanta, 1999. Dynamic Publishers.

- 31)** F. Merdivenci Atici, G. Sh. Guseinov and B. Kaymakcalan, Stability criteria for dynamic equations on time scales with periodic coefficients, In *Conference Proceeding of the Third International Conference On Dynamic Systems and Applications*, Atlanta, 1999. Dynamic Publishers.
- 32)** F. Merdivenci Atici and G. Sh. Guseinov, On the existence of positive solutions for nonlinear differential equations with periodic boundary conditions, *J. Comput. Appl. Math.*, **132** (2001), pp:341-356.
- 33)** F. Merdivenci Atici , G. Sh. Guseinov and B. Kaymakcalan, On Lyapunov inequality in stability theory for Hill's equation on time scales, *J. Inequal. Appl.*, **5** (2000), pp: 603-620.
- 34)** F. Merdivenci Atici, Existence of positive solutions of nonlinear discrete Sturm-Liouville problems, *Math. Comput. Modelling.*, **32** (2000), pp: 599-607.
- 35)** F. Merdivenci Atici and G. Sh. Guseinov, Positive periodic solutions for nonlinear difference equations with periodic coefficients, *J. Math. Anal. Appl.*, **232** (1999), pp: 166-182.
- 36)** F. Merdivenci Atici and G. Sh. Guseinov, Criteria for the stability of second order difference equations with periodic coefficients, *Comm. in Appl. Anal.*, **3** (1999), pp: 166-182.
- 37)** F. Atici and A. C. Peterson, Inequality for a  $2n^{th}$  order difference equation, *PanAmer. Math. J.*, **6** (1996) No: 3, pp: 41-49.
- 38)** F. Atici and A. C. Peterson, Bounds for positive solutions for a focal boundary value problem, *Computers Math. Applic.*, **36** (1998), No: 10-12, pp: 99-107.
- 39)** F. Merdivenci, Positive solutions for focal point problems for  $2n^{th}$  order difference equations, *Panamerican Mathematical Journal*, **5** (1995), Number 2, pp: 71-82.
- 40)** F. Merdivenci, Green's matrices and positive solutions of a discrete boundary value problem, *Panamerican Mathematical Journal*, **5** (1995), Number 1, pp: 25-42.
- 41)** F. Merdivenci, Two positive solutions of a boundary value problem for difference equations, *Journal of Difference Equations and Applications*, **1** (1995), pp: 263-270.