

Vita

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# Chapter 1

## Vita

## 1.1 Education

- 1988: Graduation from Cumhuriyet Lisesi, Ankara, Turkey.
- 1988–1992: Undergraduate study of Mathematics at Hacettepe Üniversitesi, Ankara, Turkey. Graduation with a Bachelor degree in mathematics.
- 1995–2000: Graduate study of Mathematics at University of Nebraska–Lincoln.
- August 16, 1997: Master of Science.
- December 16, 2000: Doctor of Philosophy. Advisor of Ph.D. Thesis: Professor ALLAN PETERSON. Title of Ph.D. Thesis: Boundary value problems, oscillation theory, and the Cauchy functions for dynamic equations on a measure chain.

## 1.2 Awards/Grants/Fellowships

- 1995–2000: Fellowship from the Ministry of Education, Turkey.
- 1999–2000: Award of “The Emeritus Faculty Fellowship”, University of Nebraska–Lincoln.
- 2004-2005: New Faculty Teaching Scholar, University of Missouri-Rolla.
- 2004-2005: Outstanding Teaching Award, University of Missouri-Rolla.
- 2004-2005: College of Arts and Sciences Excellence in Teaching Award, University of Missouri-Rolla.

- June 1, 2005-June 1, 2006: UM Research Board Grant. Applications of Dynamic Equations on Time Scales.
- November 14, 2005: Travel Grant, AWM (Association for Women in Mathematics)-NSF.
- March 14, 2006: AWM-NSF Mentoring Grant.
- March, 2006: Honorary Knight of Saint Patrick's, UMR.
- May 2009: Winner of "We Love Your Class" Award, MST.
- November 4, 2010: Outstanding Teaching Award, MST.
- 2012: Winner of "We Love Your Class" Award, MST.
- 2012: Travel Grant, AWM (Association for Women in Mathematics)-NSF.
- 2014: Missouri S&T Visiting Faculty Grant, MST.
- 2014: Travel Grant, AWM (Association for Women in Mathematics)-NSF.
- 2017: Outstanding Teaching Award 2016-2017, MST.
- 2017: Travel Grant, AWM. 2017.

### 1.3 Appointments

- 1992–1995: Lecturer at Kızılay Dersanesi, Ankara, Turkey.
- 2002-2003: Visiting Assistant Professor at University of Missouri–Rolla.

- 2003–2009: Assistant Professor at Missouri University of Science and Technology (formerly University of Missouri–Rolla).
- 2009–2015: Associate Professor at Missouri University of Science and Technology.
- Since September 1, 2015: Full Professor at Missouri University of Science and Technology.
- October 2010–March 2011: Visiting Professor at University of Ulm, Institute of Mathematical Finance, Germany.
- March 2011–July 2011: Visiting Professor at Middle East Technical University, Ankara, Turkey.

## 1.4 Talks Presented

- April 1998: MAA Nebraska and Southeast South Dakota Section at Hastings College.
- April 1999: MAA Nebraska and Southeast South Dakota Section.
- November 20–21, 1999: Second Annual Regional Workshop in Mathematics and Statistics at University of Nebraska–Lincoln.
- October 20–21, 2000: Midwest Differential Equations Conference, Fargo, ND.
- October 27–28, 2000: Third Annual Regional Workshop in Mathematics and Statistics at University of Nebraska–Lincoln.
- January 6–9, 2002: Joint Mathematics Meetings, San Diego, California.



- March 8–10, 2002: 975th AMS Sectional Meeting, Atlanta, Georgia.
- June 11, 2002: Dynamic Equations Day at METU, Ankara-Turkey.
- July 8–19, 2002: University of Wyoming, Rocky Mountain Mathematics Consortium Summer Conference, Laramie, Wyoming.
- April 4–6, 2003: 985th AMS Sectional Meeting, Bloomington, Indiana.
- July 28–August 1, 2003: 8th International Conference on Difference Equations and Applications, Brno, Czech Republic.
- January 7–10, 2004: Joint Mathematics Meetings, Phoenix, Arizona.
- April 1, 2004: Colloquium Talk, San Diego State University, California.
- April 3–4, 2004: 996th AMS Sectional Meeting, University of Southern California Los Angeles, California.
- June 1, 2004: University of New South Wales, Sydney, Australia. Colloquium Speaker.
- July 5–10, 2004: Dynamic Systems and Applications, Antalya, Turkey.
- January 5–8, 2005: Joint Mathematics Meetings, Atlanta, Georgia.
- June 16-18, 2005: The 1008th AMS Joint Meeting, Mainz, Germany.
- June 27-August 1, 2005: The First International Workshop on Dynamic Equations on Time Scales, Istanbul, Turkey.
- July 25-30, 2005: 10th International Conference on Difference Equations and Applications (ISDE), Munich, Germany.

- October 7, 2005: Designing and Redesigning Academic Experiences to Enhance Student Learning, NFTS. (Panelist)
- October 21-23, 2005: 1011th AMS Sectional Meeting, Lincoln, Nebraska.
- November 9, 2005: Running a Successful Collaborative Learning Center, NFTS.
- November 10, 2005: Discrete Calculus for Math 1, UMR.
- January 12–15, 2006: Joint Mathematics Meetings, San Antonio, TX.
- May 23, 2006: Izmir University of Economics, Turkey. Colloquium Speaker.
- May 27, 2006: Ankara Differential Equations Seminars: Middle East Technical University, Ankara, Turkey. Main Speaker.
- June 15–20, 2006: Marrakesh World Conference on Differential Equations and Applications, Marrakesh, Morocco.
- July 24–28, 2006: 11th International Conference on Difference Equations and Applications, Kyoto, Japan.
- January 5-8, 2007: 1023rd Joint Mathematics Meeting, New Orleans.
- July 23-27, 2007: 12th International Conference on Difference Equations and Applications, Lisbon, Portugal.
- July 28-August 2, 2007: Conference in Honor Allan Peterson, Abbazia di Novacella, Italy. Plenary Speaker.

- October 22, 2007: Discrete Calculus for Math 1, UMR.
- July 21–25, 2008: 14th International Conference on Difference Equations and Applications, Istanbul, Turkey. Main Speaker.
- October 10–11, 2008: 28th Southern-Atlantic Regional Conference on Differential Equations, University of Arkansas at Little Rock, Arkansas.
- June 8-19, 2009: Recent Developments in Dynamic Equations on Time Scales, Rocky Mountain Mathematics Consortium, summer school, Laramie, Wyoming. (Main speaker).
- July 20-24, 2009: Equadiff 12, Brno, Czech Republic.
- October 16–18, 2009. Special Session on “Dynamic Equations on Time Scales”, AMS Meeting 1051. Baylor University, Waco, TX.
- January 13–16, 2010: Joint Mathematics Meetings. San Francisco, CA.
- May 25–28, 2010: The 8th AMS Conference on Dynamical Systems, Differential Equations and Applications, Dresden, Germany.
- June 20–25, 2010: Analysis, Topology and Applications, Vrnjacka Banja, Serbia.
- July 10–14, 2010: The 6th International Conference on Dynamical Systems and Applications. Antalya, Turkey.
- June 29-July 2, 2011: International Conference on Applied Analysis and Algebra, Istanbul, Turkey.
- October 14-16, 2011: Special Session on “Dynamic Equations on Time Scales” at the AMS Meeting #1074, UNL, Lincoln, NE.

- May 17–19, 2012: International Conference on Applied Mathematics and Approximation Theory, TOBB, Ankara, Turkey.
- May 31, 2012: Ankara Math Days, Bilkent University, Ankara, Turkey.
- June 26–28, 2012: The 11th International Workshop on Dynamical Systems and Applications, Cankaya University, Ankara, Turkey.
- November 10–11, 2012: Symposium on Biomathematics and Ecology: Education and Research, St. Louis, MO.
- December 17–21, 2012: The International Conference on the Theory, Methods and Applications of Nonlinear Equations, Texas A-M, Kingsville, TX. (organizer of a special session)
- June 2-5, 2013: International Conference on Applied Analysis and Mathematical Modeling, Yildiz University, Turkey.
- June 13-14, 2013: Ankara Math Days, Cankaya University, Turkey.
- July 3-6, 2013: Anatolian Communications in Nonlinear Analysis, Abant Izzet Baysal University, Turkey. (local organizer)
- October 18-20, 2013: AMS 1094 Sectional Meeting, Washington University. St. Louis, USA. (organizer of a special session)
- October 25-27, 2013: Peterson Conference, University of Nebraska-Lincoln. Lincoln, USA.
- April 11-13, 2014: AMS 1100 Sectional Meeting, Texas Tech University, Lubbock, TX.

- May 27-30, 2014: International Conference on Nonlinear Differential and Difference Equations: Recent Developments and Applications. Antalya, Turkey. (invited speaker)
- June 2, 2014: Akdeniz University. Antalya, Turkey. (colloquium speaker)
- June 23-26, 2014: International Congress in Honour of Profesör Ravi P. Agarwal. Uludag University, Turkey. (local organizer and organizer of a special session)
- October 11–12, 2014: SEARCDE (Southeastern Atlantic Regional Conference on Differential Equations).
- May 27-30, 2015: The Seventh International Conference on Dynamic Systems and Applications. Morehouse College, Atlanta, GA. (special session)
- June 8-12, 2015: International Conference on Applied Analysis and Mathematical Modelling. Yildiz University, Turkey.
- July 20–24, 2015: The 11th International Conference on Fixed Point Theory and its Applications. Galatasaray University, Turkey.
- October 17-18, 2015: 1113th AMS Meeting. University of Memphis, Memphis, TN.
- October 10-11, 2015: The 35th Southeastern Atlantic Regional Conference on Differential Equations, The University of North Carolina Greensboro, Greensboro, NC.
- July 24-29, 2016: ICDEA 2016 Meeting, Osaka, Japan.

- June 5-9, 2017: ICDDEA 2017, Amadora, Portugal.
- July 24-28, 2017: ICDEA 2017, Timisoara, Romania.
- October 6-8, 2017: B.E.E.R (Biomathematics and Ecology Education and Research, 2017, Normal, IL.
- January 10-13, 2018: Joint Mathematics Meetings, San Diego, CA. (special session)
- May 5-7, 2018: 5th Turkish Women in Mathematics Workshops. Dicle University, Diyarbakir, Turkey. (pleanery speaker)
- May 25, 2018: Colloquium Speaker. Cankaya University. Ankara, Turkey.
- July 5-9, 2018: The 12th AIMS Conference on Dynamical Systems, Differential Equations and Applications. Taipei, Taiwan. (special session)
- July 15-19, 2019: International Congress on Industrial and Applied Mathematics, 2019. Valencia, Spain.
- November 19-20, 2020: International Conference on Mathermathical and Related Sciences: Current Trends and Developments. (Keynote Speaker).
- June 9-12, 2020: The 13th CHAOS 2020 International Conference. Florence, Italy. Special Session. (Cancelled due to COVID-19).
- September 1-2, 2021: The Second International Conference on Applied Mathematics in Engineering (ICAME), Balikesir, Turkey. (Special Session).

- November 12-24, 2021: International Symposium on Biomathematics and Ecology Education and Research, e-BEER 2021.
- June 16-18, 2022: International Symposium on Advanced Engineering Technologies, Turkey. (Keynote Speaker).
- August 24-26, 2022: International Conference on Control and Optimization with Industrial Applications, Baku Azerbaijan. (Keynote Speaker).
- October 27-30, 2022: International Conference of Pure and Applied Mathematics and Related Areas, Antalya, Turkey. (Keynote Speaker).
- December 8-9, 2022: International Congress on Engineering and Technology Management, Istanbul Turkey. (Keynote Speaker).
- January 4-7, 2023: Joint Mathematics Meetings, Boston, MA. (Special Session).

## 1.5 Conferences Attended

- July 1997: RMMC Summer Conference at University of Wyoming, Laramie, Wyoming.
- January 2000: Joint Mathematics Meetings, Washington, D.C.
- April 2000: 953rd AMS Meeting at Notre Dame University, Notre Dame, Indiana.
- October 2000: Fargo Preconference Workshop on BVPs and Oscillation Theory for Differential Equations on Measure Chains at North Dakota State University.

- July 30–August 3, 2001: Sixth International Conference on Difference Equations and Applications, Augsburg, Germany.
- October 2001: 970th AMS Meeting at University of Tennessee, Chattanooga.
- September 20–21, 2002: Time Scales Workshop, University of Dayton, Dayton, Ohio.
- October 23-24, 2004: TA Development Using Case Studies: A Workshop for Faculty, 1001th AMS Meeting (2004 Fall Central Sectional Meeting), NWU, Evanston, IL.
- November 19-20, 2004: 24th Annual Western Kentucky University Mathematics Symposium: “Dynamic Equations on Time Scales“, Bowling Green, Kentucky.
- January 24-26, 2005: The Teaching Renewal Conference at UMC.
- March 28-April 1, 2005: The Easter Academy 2005, AbiTUMath Ab-bacy of Novacella, Italy.
- May 16-19, 2005: Building Your Academic Portfolio (NTFS).
- June 9, 2006: Ankara Differential Equations Seminars: Atilim University, Ankara, Turkey.
- November 8, 2007: What Do you Wish You had known About Teaching? By Dr. Margaret Gunderson. A Workshop at UMR.
- April 2-4, 2007: Reaching and Teaching the Digital Native: The Digital Campus Institute@Missouri, Columbia, Missouri.



- July-August 2009: Dr. Agarwal's series of lecturers. Ankara, 2009.
- March 29, 2009: Festcolloquium. In honour of Professor Dr. Donald A. Lutz on the occasion of his 70th birthday.
- June 2-3, 2011: The 6th Ankara Math Days, Hacettepe University, Ankara, Turkey.
- June 12–13, 2014: Ankara Math Days, Atilim University. Ankara, Turkey.
- March 27–28, 2015: Missouri Section of the MAA, Missouri *S&T*.
- April 10-12, 2015: 1st SIAM (Society for Industrial and Applied Mathematics), Missouri *S&T*.
- June 11-12, 2015: Ankara Math Days, Middle Technical University. Turkey.
- August 19, 2017: The Ozark Biomedical Initiative Research Symposium, Missouri *S&T*.
- March 1, 2018: Seminar at Department of Obstetrics and Gynecology of American Hospital, Istanbul - Turkey.
- November 26-27, 2021: Turkish Women Mathematics Association Meeting.
- May 17, 2022: International Day of Women in Mathematics at IHES (Universite Paris-Saclay), France.

## 1.6 Professional Activities

- Organizing AMS Special Session at Joint Mathematics Meeting, Boston, 2023.
- CASB Faculty Leadership Committee, 2022.
- Graduate Policy Committee, 2022.
- Course Coordinator for Math 3304 in Spring 2022.
- Member of Foreign Editorial Advisory Board for Gazi University Journal of Science Part A: Engineering and Innovation.
- Associate Editor for Turkish Journal of Inequalities.
- Associate Editor for Cankaya University Journal Science and Technology.
- Associate Editor for Selcuk Journal of Applied Mathematics.
- Associate Editor for Mathematics Applied in Science and Technology (MAST).
- Associate Editor for International Journal of Applied & Experimental Mathematics
- Associate Editor for International Journal of Applied Mathematical Research, IJAMR.
- Associate Editor for American Journal of Applied Mathematics.
- Organizing Special Session at AIMS, Taipei, Taiwan, 2018.

- Organizing AMS Special Session at Joint Mathematics Meeting, San Diego, 2018.
- Associate Chair 2019-2021.
- Participating “Leadership Development Program”, 2020.
- Committe Member for Third Year Review, 2019.
- Campus *P&T* Review Committee, 2018-2019.
- Promotion NTT Committee Member, 2018-2019.
- CASB *P&T* Committee, 2018-2019.
- Tenure Policy Committee, 2018-2019.
- Search Committee Member, Department of Mathematics - MST, 2016 and 2017.
- Promotion Committee member (NTT-departmentwise and campuswise at MST) and University Of Missouri - Kansas City (TT-Mathematics Department), 2016 and 2017.
- Dean’s Leadership Council, October 12, 2016. Missouri *S&T*.
- Guest Editor for the Special Issue on Qualitative Analysis on Differential, Fractional Differential, and Dynamic Equations and Related Topics in Discrete Dynamics in Nature and Society, 2015.
- Reviewer for numerous journals manuscripts, proposals, thesis, and textbooks.

- Special Session Organizer (The Seventh International Conference on Dynamical Systems and Applications, Morehouse College, Atlanta, GA, 2015).
- External Reviewer for NTT Promotion of Missouri *S&T*, 2015.
- Linkage agreement between Missouri *S&T* and Cankaya University, 2015.
- Organizer of International Conference Anatolian Communications in Nonlinear Analysis (2013) and International Congress in Honour of Professor Ravi Agarwal (2014).
- Course coordinator (Math 1215 and Math 3304).
- Tenure Committee Member. Missouri *S&T*, 2014–2015.
- Organizing special sessions at International Congress in Honour of Professor Ravi Agarwal (2014), AMS # 1094 (2013) and International Conference on The Theory, Methods and Applications of Nonlinear Equations (2012).
- Guest Associate Editor for a special issue of *Advances in Difference Equations* dedicated to Professor Ravi Agarwal.
- Guest Associate Editor for a special issue of *Advances in Dynamical Systems and Applications* dedicated to Professor Allan Peterson's 65th Birthday.
- A member of a Technical Program Committee for the Third International Conference on Modelling, Simulation, and Applied Optimization, 2008.

- A member of the scientific committee for the “First International Workshop on Dynamic Equations on Time Scales”, 2005.
- Reviewer for promotion to the rank of associate professor, 2005.
- Reviewing proposals and awards for the Research Grants Council (RGC) of Hong Kong since 2005, UM Research Board, 2014 and, ”Young Scientist Researcher, TUBITAK”, 2014.
- Advisors of DOL (Delta Omicron) and TSA (Turkish Student Association).
- Organizing a Lecture by Prof. Lawrence from Marshall University for our Math 3304 (Introduction to Differential Equations), 2013.
- August 16, 2011: What I am glad they told me (or wish they had): Getting the most from New Faculty Programs. New Faculty Forum. Missouri S&T.
- January 20, 2010: Tips for Early Career Success in Our Academic World. Missouri S&T New Faculty Forum. Rolla, MO.
- Organizing the Graduate Student Seminar for Mathematics and Statistics at UMR, 2005-2006.
- Graduate Policy Committee member, 2003-2005.
- Departmental Policy Committee member, 2005-2007.
- Facilities Planning Committee member, 2008-2010.
- Advising undergraduate/graduate students since Fall 2004.

- Invited as a panelist “The Expanding Your Horizons in Mathematics and Science Conference”, The Forest Community College, St. Louis, March 13, 2006.
- Participating at hiring committee for a visiting position at Department of Mathematics and Statistics, March 2007.
- March 3, 2005: Interviewing candidates for a tenure-track position in the Chemistry Department at UMR.
- January 19-February 2, 2005: Selection Committee for Math 204 Textbook.

## 1.7 Students and Visiting Professors

- Yalcin, F., Mentoring. UMR, 2003.
- Wright, K., MS Degree (Committee Member), 2010.
- Goggel, M., MS Degree (Committee Member), 2010.
- Schrikant, J., MS Degree in Mathematics and PhD (Committee Member), 2011.
- Matthews, T., PhD (Committee Member), 2011.
- Beckett, J., MS Degree, 2012.
- Heim, J., PhD (Committee Member), 2012.
- Chieochan, R., PhD (Committee Member), 2012.
- Stahlman, E., MS Degree, 2013.

- Yigit, Y., MS Degree, 2014.
- Ozturk, O., PhD, 2016.
- Abobaker, H., PhD (Committee Member), 2016.
- Al-Salih, R., PhD (Committee Member), 2017.
- Griebel, T., PhD (Committee Member), 2017.
- Wardeh, M., PhD (Committee Member), 2018.
- Yeni, G., PhD, 2019.
- Wardeh, M. PhD (Committee Member), 2019.
- Suheyl Kandil, MS Degree, 2021.
- Sun, S., University of Jinan. 2009.
- Dikmen, M., University of Bulent Ecevit. 2013.
- Tiryaki, S., Abant Izzet Baysal. 2014.
- Dosla, Z., Masaryk University. 2018.

## 1.8 Societies

- AMS (American Mathematical Society).
- MAA (Mathematical Association of America).
- ISDE (International Society of Difference Equations).
- AWM (Association for Woman in Mathematics).

- TKMD (Association for Turkish Women in Mathematics).

## 1.9 Collaborators

- Agarwal, Ravi. Florida Institute of Technology, USA.
- Adivar, Murat. Izmir University of Economics, TURKEY.
- Asliyuce, Serkan. Ankara University, TURKEY.
- Akın, Faysal. Dicle University, TURKEY.
- Akgul, Ali, Dicle University, TURKEY.
- Atıcı, Ferhan Merdivenci. University of Western Kentucky, USA.
- Bohner, Martin. Missouri University of Science and Technology, USA.
- Dikmen, Can Murat. Zonguldak University, TURKEY.
- Djebali, Smail. Ecole Normale Supérieure, ALGERIA.
- Dosla, Zuzana. Masaryk University Brno, CZECH REPUBLIC.
- El-Deeb, Ahmet A. Al-Azhar University, Egypt.
- Erbe, Lynn. University of Nebraska-Lincoln, USA.
- Golgeli, Meltem. TOBB University, Turkey.
- Guvenilir, Feza, Ankara University, TURKEY.
- Grace, Said. Cairo University, EGYPT.
- Guzey, Haci. Erzurum Technical University, Erzurum, TURKEY.



- Han, Zhenlai. University of Jinan, CHINA.
- Higgins, Raegan, Texas Tech University, USA.
- Hoffacker, Joan. Clemson University, USA.
- Isik, S. Rana. American Hospital, Istanbul, Turkey.
- Isik, M. Recep. Dicle University, Diyarbakir, Turkey.
- Kaymakcalan, Billur. Georgia Southern University, USA.
- Konur, Dincer. Texas State Univeristy, TX, USA.
- Lawrence, Bonita. Marshall University, USA.
- Matthew, Thomas. GERMANY.
- Moussaoui, Toufik. Ecole Normale Superieure, ALGERIA.
- Ozkan, Ozturk. Missouri S&T, USA.
- Unal, M. Bahcesehir University, TURKEY.
- Pelen, Neslihan Nesliye. On Dokuz Mayis University, TURKEY.
- Perelson, Alan. Los Alamos National Laboratory, USA.
- Peterson, Allan. University of Nebraska-Lincoln, USA.
- Raffoul, Youssef. University of Dayton, USA.
- Rehak, Pavel. Brno University of Technology, CZECH REPUBLIC.
- Saker, Samir. Mansoura University, EGYPT.
- Sun, Shurong. University of Jinan, CHINA.

- Taher, Hassan. Mansoura University, EGYPT.
- Tiryaki, Ismail Ugur. Abant Izzet Baysal University, TURKEY.
- Tisdell, C. The University of New South Wales, AUSTRALIA.
- Vaidya, Naveen. San Diego State University, USA.
- Zhang, Wei Nian. Sichuan University, CHINA.
- Zhao, Ping. University of Jinan, CHINA.
- Yalcin, Fusun. Akdeniz University, TURKEY.
- Yeni, Gulsah. Pennsylvania State University, USA.

# Chapter 2

# Teaching

## 2.1 Teaching Experience

- Fall 2002: Math 22 (Calculus III) and Math 204 (Elementary Differential Equations, two sections)
- Spring 2003: Math 21 (Calculus II) and Math 204 (Elementary Differential Equations, two sections)
- Fall 2003: Math 15 (Calculus II for Engineers) and Math 229 (Differential Equations with Linear Algebra)
- Spring 2004: Math 300 (Special Problems: Introduction to Real Analysis) and Math 15 (Calculus II for Engineers)
- Fall 2004: Math 351 (Introduction to Complex Variables), Math 300 (Special Problems: Introduction to Real Analysis) and Math 15 (Calculus II for Engineers)
- Spring 2005: Math 204 (Elementary Differential Equations) and Math 15 (Calculus II for Engineers)
- Fall 2005: Math 15 (Calculus II for Engineers) and Math 302 (Intermediate Differential Equations)
- Spring 2006: Math 15 (Calculus II for Engineers) and Math 431 (The Theory of Differential Equations)
- Fall 2006: Math 15 (Calculus II for Engineers) and Math 204 (Elementary Differential Equations)
- Spring 2007: Math 15 (Calculus II for Engineers) and Math 315 (Partial Differential Equations)

- Fall 2007: Math 15 (Calculus II for Engineers) and Math 302 (Intermediate Differential Equations)
- Spring 2008: Maternity Leave.
- Fall 2008: Math 15 (Calculus II for Engineers) and Math 302 (Intermediate Differential Equations)
- Spring 2009: Math 15 (Calculus II for Engineers) and Math 400 (Special Problems)
- Fall 2009: Math 15 (Calculus II for Engineers), Math 302 (Intermediate Differential Equations), Math 400 (Special Problems)
- Spring 2010: Math 15 (Calculus II for Engineers), Math 431 (The Theory of Differential Equations)
- Fall 2010: Applied Analysis (Ulm, Germany)
- Spring 2011: Calc I-Calc II for Engineers (METU, Turkey).
- Fall 2011: Math 15 (Calculus II for Engineers).
- Spring 2012: Math 15 (Calculus II for Engineers).
- Fall 2012: Math 15 (Calculus II for Engineers).
- Spring 2013: Math 15 (Calculus II for Engineers).
- Fall 2013: Math 15 (Calculus II for Engineers).
- Spring 2014: Math 204 (Ordinary Differential Equations).
- Fall 2014: Math 3304 (Ordinary Differential Equations).

- Spring 2015: Math 3304 (Ordinary Differential Equations).
- Fall 2015: Math 3304 (Ordinary Differential Equations).
- Spring 2015: Math 3304 (Ordinary Differential Equations), Math 4098 (Great Theorems in Mathematics)
- Fall 2016: Math 3304 (Ordinary Differential Equations), Math 6630 (Theory of Differential Equations)
- Spring 2017: Math 3304 (Ordinary Differential Equations)
- Fall 2017: Math 3304 (Ordinary Differential Equations) and Math 5302 (Intermediate Differential Equations)
- Fall 2018: Math 3304 (Ordinary Differential Equations) and Math 5302 (Intermediate Differential Equations)
- Spring 2019: Math 3304 (Ordinary Differential Equations)
- Fall 2019: Math 1215 (Calculus II for Engineers) and Math 5302 (Intermediate Differential Equations)
- Spring 2020: Math 1215 (Calculus II for Engineers) and Math 6631 (Theory of Differential Equations)
- Fall 2020: Math 1215 (Calculus II for Engineers)
- Fall 2021: Math 3304 (Ordinary Differential Equations), Math 5302 (Intermediate Differential Equations)
- Spring 2022: Math 3304 (Ordinary Differential Equations) (course coordinator)

- Fall 2022: Math 1215 (Calculus II for Engineers) and Math 5302 (Intermediate Differential Equations)

## 2.2 Educational Activities

1. October 12, 1993: The Teaching Certificate from Hacettepe University, Turkey.
2. Participating in the Mathematics Learning Center of collaborative problem-based learning for students in Calculus for Engineers II since Spring 2004.
3. December 10, 2004: Interviewer for Chancellor's Scholars Day.
4. September 30-October 2, 2004: Course Design Retreat, Lake of the Ozarks.
5. October 23-24, 2004: TA Development Using Case Studies: A Workshop for Faculty, 1001th AMS Meeting (2004 Fall Central Section Meeting), NWU, Evanston, IL.
6. Initiator of the Mathematics Learning Center, Fall 2004, in cooperation with Missouri S&T LEAD.
7. January 24-26, 2005: The Teaching Renewal Conference at UMC.
8. March 28-April 1, 2005: Mentoring undergraduate and high school students on my research area during the Easter Academy 2005, Abi-TuMath Abbacy of Novacella, Italy.

9. April 14, 2005: Participating in the visit to UMR of UMSL campus leadership to observe and understand the operation of LEAD learning centers.
10. May 16-19, 2005: Building Your Academic Portfolio (NTFS).
11. Member of the pilot project “Personal Response System” at UMR in Math 15 since Fall 2005.
12. October 7, 2005: Designing and Redesigning Academic Experiences to Enhance Student Learning, NFTS. (Panelist)
13. November 9, 2005: Running a Successful Collaborative Learning Center, NFTS.
14. Web Conference on Personal Response System, UMR, February 2, 2006.
15. August 30, 2006: Invited Speaker at LEAD Luncheon, UMR.
16. December 5, 2006: Hosting UMSL Faculties to introduce LEAD, UMR.
17. April 2-4, 2007: Reaching and Teaching the Digital Native: The Digital Campus Institute @ Missouri, Columbia, Missouri.
18. October 10, 2007: Running a Successful Collaborative Learning Center for Your Course, NFTS Luncheon, UMR.
19. November 8, 2007: What Do You Wish You Had Known About Teaching? by Dr. Margaret Gunderson. A Workshop at UMR.
20. October 10, 2008: Running a Successful Collaborative Learning Center, NFTS.



21. February 13, 2013: Teaching Challenges and Solutions in Large, Introductory Classes, MST.
22. September 17, 2014: Great Expectations: Bridging the Gap Between Instructor and Student Expectations, Missouri *S&T*.
23. 2017: Faculty Interaction Luncheon. Missouri *S&T*.



## Chapter 3

## Publications

### 3.1 Theses

1. E. Akin. *Boundary value problems, oscillation theory, and the Cauchy functions for dynamic equations on a measure chain*. PhD thesis, University of Nebraska–Lincoln, 2000.

### 3.2 Chapters

2. E. Akin and Ozkan Ozturk. On Nonoscillatory Solutions of Two-Dimensional Nonlinear Dynamical Systems (Chapter 1 of *Dynamical Systems- Analytical and Computational Techniques*), 2017.
3. E. Akin–Bohner and M. Bohner. Some Dynamic Equations (Chapter 2 of “*Advances in Dynamic Equations on Time Scales* by M. Bohner and A. Peterson”), Birkhäuser, pages 17–46, Boston, 2003.
4. E. Akin–Bohner, F. Atıcı and B. Kaymakçalan. Upper and lower solutions of dynamic equations (Chapter 6 of “*Advances in Dynamic Equations on Time Scales* by M. Bohner and A. Peterson”), Birkhaeuser, pages 165–186, Boston, 2003.

### 3.3 Publications

5. E. Akin. Boundary value problems for a differential equation on a measure chain. *Panamer. Math. J.*, 10(3):17–30, 2000.
6. E. Akin, L. Erbe, B. Kaymakçalan, and A. Peterson. Oscillation results for a dynamic equation on a time scale. *J. Differ. Equations Appl.*, 7:793–810, 2001.

7. E. Akin. Cauchy functions for dynamic equations on a measure chain. *J. Math. Anal. Appl.*, 267:97–115, 2002.
8. E. Akin, M. Bohner, L. Erbe, and A. Peterson. Existence of bounded solutions for second order dynamic equations. *Journal of Difference Equations and Applications*, 8(4):389–401, 2002.
9. R. P. Agarwal, S. R. Grace, and E. Akin–Bohner. On the oscillation of higher order neutral difference equations of mixed type. *Dynamic Systems and Applications*, 11:459–470, 2002.
10. W. Zhang, R. P. Agarwal, and E. Akin–Bohner. On well-posedness of impulsive problems for nonlinear parabolic equations. *Nonlinear Studies*, 9(2):145–153, 2002.
11. E. Akin–Bohner and J. Hoffacker. Solution properties on discrete time scales. *J. Differ. Equations Appl.*, 9(1):63–75, 2003.
12. E. Akin–Bohner and J. Hoffacker. Oscillation properties of an Emden–Fowler type equation on discrete time scales. *J. Differ. Equations Appl.*, 9(6):603–612, 2003.
13. E. Akin–Bohner and M. Bohner. Miscellaneous dynamic equations. *Methods and Applications of Analysis*, 10(1):11–30, 2003.
14. E. Akin–Bohner and F. Merdivenci Atıcı. A quasilinearization approach for two point nonlinear boundary value problems on time scales. *The Rocky Mountain Journal of Mathematics*, 35(1):19–45, 2005.
15. E. Akin–Bohner, M. Bohner, and F. Akin. Pachpatte inequalities on time scales. *Journal of Inequalities in Pure and Applied Mathematics*, 6(1):1–23, 2005.

16. E. Akin–Bohner. Positive decreasing solutions of quasilinear dynamic equations. *Mathematical and Computer Modelling*, 43(3–4):283–293, 2006.
17. E. Akin–Bohner and Y.N. Raffoul. Boundedness in functional dynamic equations on time scales. *Advances in Difference Equations*, 2006(1–18), 2006.
18. E. Akin–Bohner. Positive increasing solutions of quasilinear dynamic equations. *Math. Inequal. Appl.*, 10(1):99–110, 2007.
19. E. Akin–Bohner, M. Bohner, and S. Saker. Oscillation criteria for a certain class of second order Emden–Fowler dynamic equations. *Electronic Transactions of Numerical Analysis*, 27:1–12, 2007.
20. R. Agarwal, E. Akin–Bohner, and S. Grace. Oscillation criteria for fourth order nonlinear difference equations. *Georgian Mathematical Journal*, 14(2):203–222, 2007.
21. R. Agarwal and E. Akin–Bohner. A generalized upper and lower solution method for singular boundary value problems for the one-dimensional  $p$ -Laplacian on time scales. *Advanced Studies in Contemporary Mathematics*, 15(2), 213–228, 2007.
22. E. Akin–Bohner, Z. Dosla and B. Lawrence. Oscillatory solutions of three dimensional dynamic systems. *Nonlinear Analysis*, 69, 483–494, 2008.
23. E. Akin–Bohner. Regularly and strongly decaying solutions for quasilinear dynamic equations. *Advances in Dynamical Systems and Applications*, 3(1), 15–24, 2008.

24. E. Akin–Bohner, M. Bohner, S. Djbali and T. Moussaoui. On the asymptotic integration of nonlinear dynamic equations. *Advances in Difference Equations*, Volume 2008 Article ID 739602, 17 pages, 2008.
25. E. Akin–Bohner, Z. Dosla. Recessive solutions for half-linear dynamic equations. *African Diaspora Journal of Mathematics*, Volume 8, Number 2, 182–195, 2009.
26. E. Akin–Bohner, Y. Raffoul and C. Tisdell. Exponential Stability in Functional Dynamic Equations on Time Scales. *Communications in Mathematical Analysis*, Volume 9, Number 1, 93–108, 2010.
27. E. Akin–Bohner, S. Sun, Z. Han and P. Zhao. Practical stability in terms of two measures for hybrid systems on time scales. *Bull. Pol. Acad. Sci. Math.*, Volume 58, Number 3, 221–237, 2010.
28. E. Akin–Bohner, and S. Sun. Existence of solutions for second order dynamic inclusions. *International Journal of Dynamical Systems and Differential Equations*, Volume 3, Numbers 1/2, 24–37, 2011.
29. E. Akin–Bohner and M. Unal. Gronwall-like dynamic inequalities on time scales with Applications. *Communications in Mathematical Analysis*, Volume 11, Number 2, 23–35, 2011.
30. M. Adivar and E. Akin–Bohner. Halanay type inequalities on time scales with applications. *Nonlinear Analysis, Theory, Methods and Applications*, Volume 74, 7519–7531, 2011.
31. R. Agarwal, E. Akin–Bohner, and S. Sun. Oscillation Criteria for fourth order nonlinear dynamic equations. *Comm. Appl. Nonlinear Anal.* Volume 18, no.3, 1–16, 2011.

32. E. Akin–Bohner, M. Bohner and T. Matthews. New Ostrowski and Gruss type inequalities on time scales. *Nonlinear Dynamics and Systems Theory*, 12 (2012), no.2, 119-135.
33. E. Akin-Bohner, and S. Sun. Oscillation Criteria for a class of second order strongly superlinear and sublinear dynamic inclusions. *Dyn. Contin. Discrete Impuls. Syst. Ser. A Math. Anal.*, 19, 2012, no.3, 285–294.
34. E. Akin-Bohner, Z. Dosla and B. Lawrence. Almost oscillatory Three Dimensional Dynamic Systems. *Adv. Difference Equ.*, 2012, 2012:46 14pp.
35. E. Akin, M. Dikmen and S. Grace. On the Oscillation of Second Order Nonlinear Neutral Dynamic Equations with Distributed Deviating Arguments on Time Scales. *Dynamic Systems and Applications.*, 23 (2014) 735-748.
36. A. Akgul, and E. Akin. Oscillation Criteria for Three Dimensional Dynamical Systems of First Order Delay Dynamic Equations. *Nonlinear Dynamics and Systems Theory.*, 14(3) 2014, 208-222.
37. E. Akin, R. Agarwal and S. Grace. Oscillatory Theorems for Certain Second Order Damped Dynamic Inclusions with Distributed Deviating Arguments. *Communications in Applied Analysis* 19 (2015), 3-14.
38. E. Akin and T. Hassan. Comparison Criteria for Third Order Functional Dynamic Equations with Mixed Nonlinearities. *Applied Mathematics and Computation*, (2015) pp. 169-185.



39. Elvan Akin, Serkan Asliyuce, Feza Guvenilir, and Billur Kaymakcalan. Discrete Grüss type inequality on fractional calculus. *Journal of Inequalities and Applications*. <http://dx.doi.org/10.1186/s13660-015-0688-2>, 2015.
40. E. Akin and O. Ozturk. Nonoscillation Criteria for Two-Dimensional Time-Scale Systems. *Nonautonomous Dynamical Systems* 3 (2016), 1-13.
41. E. Akin and O. Ozturk. Classification of Nonoscillatory Solutions of Nonlinear Dynamic Equations on Time Scales. *Dynamic Systems and Applications* 25 (2016), no. 1-2, 219-235.
42. E. Akin and Said Grace. Oscillation Criteria for Fourth Order Nonlinear Positive Delay Differential Equations with a Middle Term. *Dynam. Systems Appl.* 25 (2016), No. 3, 431-438.
43. E. Akin, Said Grace and Shurong Sun. Oscillation Criteria for Certain Fourth Order Nonlinear Delay Differential Equations. *Mediterr. J. Math.* 13 (2016), no. 5, 2383-2396.
44. E. Akin and Said Grace. Asymptotic Behavior of Certain Integrodifferential Equations. *Discrete Dyn. Nat. Soc.* 2016, Art. ID 4231050, 6pp.
45. E. Akin and Said Grace. Oscillation Criteria for Fourth Order Nonlinear Positive Delay Differential Equations with a Middle Term. *Dynam. Systems Appl.* 25 (2016), No. 3, 431-438.
46. E. Akin and O. Ozturk. On Nonoscillatory Solutions of Two Dimensional Nonlinear Delay Dynamical Systems. *Opuscula Math.* 36 (2016),

No. 5, 651-669.

47. E. Akin, O. Ozturk and I.U. Tiryaki. On Nonoscillatory Solutions of Emden-Fowler Dynamic Systems on Time Scales. *Filomat* 31 (2017) no. 6, 1529-1541.
48. E. Akin and O. Ozturk . Limiting Behaviors of Nonoscillatory Solutions for Two-Dimensional Nonlinear Time Scale Systems. *Mediterr. J. Math.* 14 (2017) no. 1, Art. 34, 10pp.
49. E. Akin, O. Ozkan, I. U. Tiryaki, and G. Yeni. A Note on Nonoscillatory Solutions for Higher Dimensional Time Scale Systems. Mini Review. *International Journal of Applied and Experimental Mathematics*, 2018: 3:216.
50. E. Akin and O. Ozkan. On Volterra-integro Dynamical Systems on Time Scales. *Communications in Appl. Anal.*, 23, No. 1 (2019), 21-30.
51. E. Akin and G. Yeni. Oscillation Criteria for Four-Dimensional Time-Scale Systems. *Mediterr. J. Math.* (2018) 15:200.
52. E. Akin, H. Guzey, and O. Ozkan. Control of Wheeled Mobile Robots on Time Scales. *Differential Equations and Dynamical Systems*, 2019, 1–10. <https://doi.org/10.1007/s12591=019-00492-w>
53. E. Akin, O. Ozkan, I. U. Tiryaki, and T. Hassan. Nonoscillation Criteria for Three Dimensional Time-Scale Systems. *Turk J Math.*, 2019, 43: 2246–2261.
54. E. Akin, I. U. Tiryaki, N. Pelen, and F. Yalcin. Parameter Identification for Gompertz and Logistic Dynamic Equations. *Plos One*, <https://doi.org/10.1371/journal.pone.0230582>, 2020.

55. E. Akin, G. Yeni, and A. Perelson. Continuous and Discrete Modeling of HIV-1 Decline on Therapy. *Journal of Mathematical Biology*, 2020, 81(1):1-24.
56. E. Akin and G. Yeni. Oscillation and Nonoscillation Criteria for Four Dimensional Advanced and Delay Time-Scale Systems *Rocky Mountain Journal of Mathematics*, 2020, 50(6): 1923-1934.
57. E. Akin and G. Yeni. On Exact Solutions to Epidemic Dynamic Models *Journal of Applied Analysis and Computation*, 2020, 10(6), 2299-2312.
58. E. Akin, A. A. El-Deeb, and B. Kaymakcalan Generalization of Mitrinovic-Pecaric Inequalities on Time Scales. *Rocky Mountain Journal of Mathematics*, 2021, 51(6), 1909–1918.

### 3.4 Refereed Proceedings

59. E. Akin–Bohner and M. Bohner. The exponential function and Laplace transform for alpha derivatives. *Proceedings of the Sixth International Conference on Difference Equations*, 231–237, CRC, Boca Raton, FL, 2004.
60. M. Adivar, E. Akin, and R. Higgins. Oscillatory Behaviour of Solutions of Third Order Delay and Advanced Dynamic Equations. *Journal of Inequalities and Applications*, 2014, 2014:95. doi:10.1186/1029-242X-2014-95.

### 3.5 Submitted Manuscripts

61. E. Akin, N. Vaidya, and G. Yeni. Time Scale Theory on Stability of Explicit and Implicit Discrete Eoidemic Models: Applications to Swine Flu Outbreak. Submitted, 2021.
62. E. Akin and N. N. Pelen. Mathematical Analysis and Numerical Simulation of Pathogenesis of HTLV-1 Infection and ATL Development. Submitted, 2022.

### 3.6 Work in Progress

63. with Zuzana Dosla and Pavel Rehak. Recessive solutions for nonoscillatory halflinear dynamic equations. In preparation.
64. with Neslihan N. Pelen, Naveen Vaidya, and Gulsah Yeni. Exponential Stability of Swine Influenza Models on Discrete Time Scales. In preparation.
65. with and Gulsah Yeni, Dincer Konur, Sacide Rana Isik, Mehmet Recep Isik. Stability Analysis of Discrete and Continuous Tuberculosis Models with Treatment. In preparation.
66. with Meltem Gogeli and Neslihan Nesliye Pelen. Mathematical Modeling of the HPA (hypothalamic-pituitary-adrenal glands) axis. In preparation.
67. with Suheyl Kandil. On the Stability of SIR Epidemic Discrete Models. (MS Thesis.) In preparation.

68. with Fusun Yalcin, Neslihan Pelen, Allan Perelson Dynamics of HIV-1 Infection of CD4+ T cells. In preparation.
69. with Rainer Glaser and Neslihan Nesliye Pelen Systems of Mixtures of Acids. In preparation.