

**DR. ANDREW J. SIEFKER**  
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## EDUCATION

**Arizona State University**, Ph.D. in Mathematics, 1997.

**Georgia Institute of Technology**, Master of Science in Electrical Engineering, 1980.

**Georgia Institute of Technology**, Bachelor of Electrical Engineering, 1979.

## TEACHING EXPERIENCE

**Angelo State University**, Assistant Professor, Fall 2004 to Present

MATH 1302: College Algebra

MATH 1303: Trigonometry

MATH 1311: Business Math I

MATH 1312: Business Math II

MATH 1321: Analytic Geometry

MATH 1325: Business Calculus and Finite Math II

MATH 1332: Introduction Contemporary Mathematics – financial math, probability, etc.

MATH 1360: Precalculus

MATH 1361, 1362, 1561: Precalculus I, Precalculus II, Precalculus

MATH 2331, 2332: Calculus I, Calculus II

MATH 2313, 3333: Calculus I, Calculus III

MATH 2513: Calculus I

MATH 3514: Calculus II

MATH 3301: Linear Algebra

MATH 3307: Probability and Statistics

MATH 3315: Vector Calculus

MATH 3333: Calculus III

MATH 3335: Differential Equations

MATH 4331: Real Analysis

MATH 4361: Complex Analysis

MATH 4381: Seminar

MATH 4391: Independent Research: Problem Solving Seminar 1

MATH 4391: Independent Research: Calculus IV – Vector Calculus

MATH 4391: Introduction to Fourier Analysis

MATH 4391: Introduction to Fourier Analysis II

MATH 4391: Partial Differential Equations and Boundary Value Problems

**Murray State University**, Assistant Professor, Fall 1998 to Spring 2004

MAT 117: Mathematical Concepts – financial math, probability and stats, voting theory, etc.

MAT 140: College Algebra

MAT 145: Trigonometry

MAT 150: College Algebra and Trigonometry

MAT 250: Calculus I

MAT 308: Calculus II

MAT 335: Linear Algebra

MAT 520: Complex Analysis

MAT 525: Advanced Calculus I

MAT 526: Advanced Calculus II

MAT 591: Undergraduate Independent Study in Advanced Linear Algebra.

MAT 591: Undergraduate Independent Study in logic, set theory, and topology.

- MAT 691: Graduate Ind. Study in Harmonic Analysis with applications to hydrology.
- MAT 691: Graduate Ind. Study in Fourier series, Fourier transforms, and numerical analysis.
- MAT 691: Graduate Ind. Study in the History of Mathematics.

**Arizona State University**, Graduate Assistant and Tutor, January 1989 to June 1997

- Complete responsibility for teaching the following courses:
  - MAT 106: Intermediate College Algebra
  - MAT 117: College Algebra
  - MAT 119: Discrete Mathematics - linear programming, prob., permutations, and combinations.
  - MAT 210: Calculus for Business and Social Sciences - differential and integral calculus.
  - MAT 242: Linear Algebra - introductory course.
  - MAT 270: Calculus - differential calculus using the Oregon State Calculus Reform Consortium and traditional methods.
  - MAT 271: Calculus - integral calculus using the Oregon State Calculus Reform Consortium.
  - MAT 274: Differential Equations
- Assistant for the following courses: (grading and office hours)
  - MAT 210: Calculus for Business and Social Sciences
  - MAT 300: Mathematical Structures - set theory, mathematical proof methods, relations, cardinality, permutations, combinations, and algebraic structures.
  - MAT 272: Calculus - vector calculus using the Oregon State Calculus Reform Consortium.
  - MAT 371: Advanced Calculus - junior level course in analysis.
- Tutor in mathematics, physics, engineering core, and electrical engineering in the Engineering Tutoring Center (June 1997 to June 1998).

**Mesa Community College**, January 1989 to December 1989

Taught courses in intermediate algebra and basic A.M. and F.M. communications theory.

## ENGINEERING EXPERIENCE

**McDonnell Douglas Helicopter Systems**, November 1996 to May 1997 (Contractor)

- Researched a monochrome still image compression scheme for use on the Apache Helicopter. The task included investigating statistical, transform, linear predictive, and wavelet methods of image compression.

**DC&S Inc.**, May 1996 to August 1996 (Consultant)

- Developed system software specifications for a unit that reorganizes and prints customer receipts in a user-friendly format.
- Participated in the system software design and documentation.

**AG Inc.**, June 1990 to December 1990 (Intern)

- Developed quality measures for software used in telephone exchange switching computers.

**Motorola Inc.**, Government Electronics Group, July 1980 to October 1988

Communications Division, Scottsdale, Arizona (R&D Electrical Engineer)

- Task leader and designer responsible for the development of a modulo-arithmetic math co-processor. Task leader responsibilities included oversight of all digital design, testing and documentation, and personnel management. Design responsibilities included algorithm

analysis and participation in architectural design, logic design, computer simulation of the design, and testing of the production integrated circuit.

- Task leader responsible for the manufacturing, testing, and documentation of special test equipment used in the evaluation and repair of the space shuttle's encryption devices. Developed and presented a video on troubleshooting using the special test equipment.

Strategic Electronics Division, Chandler, Arizona (R&D Electrical Engineer)

- Designed the data multiplexer and data format for a digital teleconferencing system. Analyzed the effects of the bandwidth compression scheme used in the teleconferencing system on video images.
- Designed control software for a high speed, high density, digital data recorder.
- Developed a system of design reviews and quality measurements used in critiquing digital designs, improving design cycle time, and reducing time spent in troubleshooting.
- Developed testing technique for a high-speed Analog to Digital converter.

## GRANTS

- Angelo State University Research Enhancement Grant (Received 1/06 for \$7,214).
- Kentucky State EPSCOR Research Grant( 5/03 – 6/04 for \$12,500); Co-Principal Investigator with Dr. Robert Martin of the Department of Biology at Murray State University, for the second year of *Mathematical Pattern Analysis of the Enamel-Dentine Junction in Arvicolid Rodent Molars: A New Analytical Method in Evolutionary Biology*.
- Kentucky State EPSCOR Grant (5/02 – 5/03 for \$12,500); Principal Investigator for the first year of *Mathematical Pattern Analysis of the Enamel-Dentine Junction in Arvicolid Rodent Molars: A New Analytical Method in Evolutionary Biology*.
- Kentucky EPSCOR Research Enhancement Grant (5/01 – 5/02 for \$12,000); Principal Investigator for *Representation of Non-Uniformly Spaced, Discrete-Time Signals from Fourier Phase and Magnitude Information*.
- National Science Foundation travel grant: (received 7/00 for \$1000).
- Murray State University Committee on Institutional Studies and Research: (received 2000 for \$200).
- Murray State University Committee on Institutional Studies and Research: (received 1999 for \$200).

## PUBLICATIONS

### Refereed

- Robert A. Martin, Andrew Siefker and Federica Marcolini, *Modeling the Morphology and Evolution of the Linea Sinuosa (Crown-Root Junction) in Arvicolid Rodents; A Test with Pliocene Ogmodontomys from Kansas*; Lethaia, Vol. 42, pp. 155–166, 2009.
- Marcolini F., Martin R.A., Siefker A., Najdeck C., *Morphometric variability in the first lower molars of North American Ogmodontomys (Arvicolidae, Rodentia, Mammalia) determined by Fourier analysis*; Forschungsinstitut Senckenberg, 256: 193-200 (2006).
- R. Martin and A. Siefker, *A New Quantitative Approach Modeling the Linea Sinuosa (Crown-Root Junction) of Arvicolid Rodent Molars*; Paludicola, vol 4, number 3, pg 69 – 73, January 2004.
- A. Siefker, *Characterization of Non-Uniformly Spaced Discrete-Time Signals from Their Fourier Magnitude*; Conference Record of the Thirty-Third Asilomar Conference on Signals, Systems, and Computers, vol. 2 (1999), pg. 1052 - 1055.
- J. Trelewicz and A. Siefker, *Burst Error Compensation for a Two-Dimensional Channel*, Proceedings of the 1999 International Conference on Acoustics, Speech, and Signal Processing, pg. 2579 - 2582.
- J. McDonald and A. Siefker, *Nonnegative Trigonometric Sums*, Journal of Mathematical Analysis and Applications, v. 238, issue 2, Oct. 1999, pg. 580 - 586.
- A. Siefker, J. McDonald, and D. Cochran, *Characterization of Non-Uniformly Spaced Discrete-Time Signals from Their Fourier Phase*; Conference Record, Thirtieth Asilomar Conference on Signals, Systems, and Computers, vol. 2 (1996), pg. 1109 - 1113.

### Other

- Submission; Crux Mathematicorum for problem #4095 (2016)
- Joint author on Pi Mu Epsilon problem #1291 – “also solved” recognition. (2014)
- Participated in the Faculty Problem Solving seminar:
- Joint author on School Science and Mathematics problem #5210 - published. (2012)
- Joint author on Pi Mu Epsilon problem #1266 - submitted. (2012)
- Joint author on School Science and Mathematics problem #5222 - submitted. (2012)
- Joint author on School Science and Mathematics problem #5223 - submitted. (2012)
- Elsie M. Campbell, Dionne T. Bailey, Charles Diminnie, Andrew Siefker, Published solution to problem 5210; School Science and Mathematics, Nov 2012.
- Elsie M. Campbell, Dionne T. Bailey, Charles Diminnie, Andrew Siefker, Pi Mu Epsilon problem #1266 – submitted (2012).
- Elsie M. Campbell, Dionne T. Bailey, Charles Diminnie, Andrew Siefker, School Science and Mathematics problem #5222 - submitted. (2012).
- Elsie M. Campbell, Dionne T. Bailey, Charles Diminnie, Andrew Siefker, School Science and Mathematics problem #5223 - submitted. (2012).
- Elsie M. Campbell, Dionne T. Bailey, Charles Diminnie, Andrew Siefker, Published solution to problem 1237; Pi Mu Epsilon, v. 13 (5), Fall 2011.
- Elsie M. Campbell, Dionne T. Bailey, Charles Diminnie, Andrew Siefker, Published solution to problem 1185; Pi Mu Epsilon, v. 12 (10), Spring 2009.
- Elsie M. Campbell, Dionne T. Bailey, Charles Diminnie, Andrew Siefker, Published solution to problem 4871; School Science and Mathematics, v. 106 (1), January 2006.
- D. Bailey, E. Campbell, C. Diminnie, K. Havlak, A. Siefker, Published solution to problem 4834; School Science and Mathematics, v. 105 (4), April 2005.
- D. Bailey, E. Campbell, C. Diminnie, K. Havlak, A. Siefker, Published solution to problem 4838; School Science and Mathematics, v. 105 (4), April 2005.

## PRESENTATIONS

- Proof Without Words II; Angelo State University Seminar Course; (2011).
- Proof Without Words; Angelo State University Seminar Course; (2011).
- *Reconstruction of Discrete From Time Signals Their Fourier Phase Information*; Texas Section of the Mathematical Association of America; April 9, 2010; Abilene Texas; Faculty Session V-4 — Friday, 3:30–3:45.
- *Bounding the Coefficients of Nonnegative, Nonharmonic Trigonometric Polynomial*; Texas Section of the Mathematical Association of America (2009).
- *Extending the Fejer-Riesz Theorem*; Texas Section of the Mathematical Association of America (2008).
- *Extending the Fejer-Riesz Theorem*; Slow Pitch Seminar (2008).
- *Mathematics in Ancient Architecture*, Pi Mu Epsilon induction ceremony (2005).
- *Extending the Fejer-Riesz Theorem*; Kentucky Chapter of the Mathematical Association of America (2001).
- *When Fourier Phase or Magnitude Characterizes Non-Uniformly Spaced, Discrete-Time Functions*, Joint Meetings of the American Mathematical Society, the Mathematical Association of America, and the Society of Industrial and Applied Mathematicians (2000).
- *The Bounding Of Nonnegative Trigonometric Sums*; The Central Division of American Mathematical Society, special session of Wavelets and Approximation Theory (1999).
- *Characterization of Non -Uniformly Spaced Discrete-Time Signals from Their Fourier Magnitude*; Thirty Third Asilomar Conference on Signals, Systems, and Computers (1999).
- *Burst Error Compensation for a Two-Dimensional Channel*; International Conference on Acoustics, Speech, and Signal Processing (1999).
- *Introduction to Wavelets*; Presented a four-week introductory course on Wavelets at the Murray State University Applied Mathematics Seminar (1999).
- *Mathematics in Ancient Architecture*; joint meeting of the Murray State University Math Club and The Murray State University chapter of the Pi Mu Epsilon Honor Society (1998).
- *Characterization of Non- Uniformly Spaced Discrete-Time Signals from Their Fourier Phase*; Thirtieth Asilomar Conference on Signals, Systems, and Computers (1996).

## OTHER SCHOLARLY ACTIVITIES

- Peer reviewer of an article for Signal Processing, a European journal (1998 – Present).
- Regular book reviewer for the Mathematical Association of America (2004 - Present).
- Judge of student presentations at meetings of the Texas section of the Mathematical Association of America (2008 – 2012).
- Participant at the meetings of the Texas section of the Mathematical Association of America (2008 – 2012).
- Directed a Master thesis entitled *Solution of Elliptic Partial Differential Equations for Regional and Local Groundwater Flow* (2003 - 2004).
- Sponsored undergraduate research (three students) and graduate research (one student) through funded grants (2001 – 2004).
- Consultant for Houghton Mifflin on problems for a chapter in a new book (2002).
- Consultant for Dr. Trelewicz of IBM – reviewed her research paper (2001).
- Selected to participate in the 20<sup>th</sup> Century Harmonic Analysis Conference in Barga, Italy (2000).

## ACADEMIC SERVICE

### UNIVERSITY

- Faculty Senate Parliamentarian (2014 – Present)
- Faculty Senate Bylaws Committee (2014 – Present)
- Civil Engineering faculty search committee Member (2015).
- Faculty Senate President – ex officio (2013 – 2014).
- Faculty Senate ad hoc committee that wrote the senate resolution regarding paired courses.
- Faculty Senate President (2012 – 2013).
- Co-Chairman of the Provost Search Committee (2012 – 2013).
- Faculty Senate Vice-President (2011 – 2012).
- Faculty Senate Executive Committee (2010 – Present).
- Chairman Faculty Senate's Committee on Committees (2010 - 2013).
- Faculty Senate's University Affairs Committee (2010 – 2012).
- SACS subcommittee on Institution-wide Authority (2011 - 2012).
- Faculty Senate ad-hoc committee on teaching evaluations tasked with recommending ways to improve the measure of teaching effectiveness (2012 – 2013).
- Student Handbook/Sanctions Review committee tasked with rewriting the student judicial appeal process and committee structure (2012 – 2013).
- Community Engagement Advisory Committee (2012).
- President's Award for Faculty Excellence Nominee Selection Committee (2010 - Present).
- University Curriculum Committee (2010 - 2013).
- Shared Governance Committee – chaired by Provost (2010 - 2011).
- Chairman of the Residential College Task Force subcommittee on academics (2009).
- University Relations Committee (2009 - 2010).
- Campus Safety and Security Committee. (2008 – 2009).
- Vice-Chairman of the Academic Integrity Committee (2008 – 2010).
- A Speaker for recruitment presentation to seniors from Miles, TX (2007).
- Served on the Research Enhancement Committee (2006 – 2007).
- Member of the Organization of Christian Faculty - Charter Member (2005 – Present).
- Faculty sponsor for the Video Gaming Association (2005 - Present).
- Regularly participated in SOAR and Discover ASU (2005 – Present).
- Judged with local and regional Science Fair (2005 – 2011).
- Assisted with Science Days presentation (2005 – 2010).
- Ad-hoc electrical engineering curriculum committee (2001).
- Participated in Great Beginnings (1999 – 2003).
- Roads Scholar recruitment team member (2000 – 2003).
- Regularly attended Residential College social events (1998 – 2003).
- Participated in the College of Science, Engineering and Technology dinner for undeclared students (2002).
- Tutored mathematics biweekly at Richmond Residential College (2002).
- Tutored mathematics every third week at Murray Christian Fellowship (2002).
- Hosted several social gatherings for mathematics students at my home (1999-2001).
- Talked with undeclared students about majoring in mathematics during orientation (2001).

## COLLEGE

- College Curriculum Committee (2006 - Present).
- College T&P committee (2014 – 2015).
- Tenure and Promotion committee - College of Arts and Sciences (2014)

## DEPARTMENT

- Served on the departmental promotion committee.
- Served on the departmental peer-review committee.
- Wrote recommendation letter for Adrianna Bingham nomination for the Presidential Award and Distinguished Student Awards – she won the distinguished science student award (2014).
- Served on the department's faculty search committee: Read resumes, Participated in phone interviews, helped transport candidates, participated in meetings with candidates (2013 - 2014).
- Developed and maintain 4 excel programs to assist in advising. The programs are degree checklists used to monitor a student's degree progress. The programs identify missing courses and course hours as well as guard against course duplication in fulfilling requirements (2014).
- Maintain departmental website including updating syllabi and links, and updating time sensitive information – e.g. office hours, seminar announcements, club meetings, etc. (2004 – Present).
- Led two efforts to redesign the webpage for the Angelo State University Department of Mathematics.
- Chairman of a departmental Peer Review committee (2005 – 2013).
- Served on department's Executive Committee (2013 – Present)
- Served on various ad-hoc committees; e.g. promotion committees, peer review committees, etc. (2005 - Present).
- Served on various text book selection and syllabi review committees (2005 - Present).
- Mathematics Department's Faculty Senator (2009 – Present).
- Curriculum committee (2001 – 2004).
- Counseled with students regarding career options and preparation.
- Sponsor or Co-sponsor of the math club. • Annually organize and execute a three daylong student trip to the Texas Section of the Mathematical Association of America regional meeting. Activities included recruiting students, obtaining funding, reservations, registration, transportation, and reviewing student presentations (2008 – Present, except 2013).
- Chaired the committee to alter Business Math I and II to correspond to the Texas board common numbering system.
- Graduate committee (1998 – 2001).
- Supervised several students in independent research.
- Given several seminar talks. The purpose is to demonstrate professional presentations to our students.

## COMMUNITY

- Tutored for free former student in college algebra to increase his score on the military jobs exam (2014 - 2015).
- IEEE Collabratec  $\beta$ -tester.
- Lead a weekly Bible study and fellowship for college students (2006 – Present).
- Planner and organizer for annual Exchange Student dinner and College Hills Baptist Church (2013 - Present).
- Host parent for three high school, foreign exchange students (2011 – 2012, 2013 – 2014, and 2015 – Present).
- Hosted weekly student socials at my home (2005 - Present).
- ASU Relations Committee of College Hills Baptist Church (2007 – 2014).
- Judge for regional speech tournament held at Central High School (2012).
- Judge of student presentations at the MAA meetings (2010, 2011).
- Taught extracurricular course on logic (2006 – 2007).
- Assisted with the planning of the Science Fair Competition (2006 - 2007).
- Led a Bible study for ASU students on Wednesday evenings at my home (2005 - 2007).
- Regularly hosted a dinner and game night for faculty and students at my home (2000 – 2004).
- Judge for the Jackson Purchase Swing Speech Tournament (2002).
- Question reader at CSET Science Bowl (2001).
- Member of the American Mathematical Society of America, the Mathematics Association of America, the Institute of Electrical and Electronic Engineers, and Pi Mu Epsilon.
- Participate in the Math Faculty Problem Solving Seminar.
- Regularly Attend Moon Lecture Series.
- Invited participant of the North Atlantic Treaty Organization's Advanced Study Institute on Harmonic Analysis in Italy held July 2 - 15, 2000.
- Co-founder of the Organization of Graduate Students in Mathematics at Arizona State University, and its president from 1994 - 1996. The organization acts as liaison between the mathematics graduate students and the mathematics department as well as the university student government.
- Serve as elder and college student Bible study leader for my church (2012 - Present).
- Play guitar in College Hills Baptist Church's worship team (2006 - Present).
- Non-paid Consultant for Shamrock Financial (local business):
  - a. Assisted with verification of an algorithm for solving a financial equation.
  - b. Assisted with troubleshooting a computer program, similar to C++, to solve the equation.
  - c. Wrote an EXCEL program to solve the equation.
- Contributed several research presentations at the Texas Section of the MAA.



## **Recruitment and Retention**

- Regularly participated in SOAR and Discover ASU (2005 – Present).
- Regularly assist with local and regional Science Fair judging (2005 – Present).
- Gave recruitment presentation to seniors from Miles, TX (2007).
- Participated in Great Beginnings (1999 – 2003).
- Roads Scholar recruitment team member (2000 – 2003).
- Regularly attended Residential College social events (1998 – 2003).
- Participated in the College of Science, Engineering and Technology dinner for undeclared students (2002).
- Tutored mathematics biweekly at Richmond Residential College (2002).
- Tutored mathematics every third week at Murray Christian Fellowship (2002).
- Hosted several social gatherings for mathematics students at my home (1999-2001).
- Talked with undeclared students about majoring in mathematics during orientation (2001).

## **Other**

- Charter Member of the Organization of Christian Faculty (2005 – Present).
- Hosted weekly student socials at my home (2007 - Present).
- ASU Relations Committee of College Hills Baptist Church (2007 – Present).
- Taught extracurricular course on logic (2006 – 2007).
- Assisted with the planning of the Science Fair Competition (Fall 2006 - 2007).
- Judge at numerous local and regional science fairs (2006 - Present).
- Utilized and supported Supplemental Instruction (SI) in pertinent classes. Activities included weekly meetings with SI instructor and monthly meetings with SI coordinator (2007 - 2008).
- Assisted with the Mathematics Department's presentation for Science Days (2006 - Present).
- Attended a Christian Faculty and Staff conference in Abilene, TX (2007).
- Led a Bible study for ASU students on Wednesday evenings at my home (2005 - 2007).
- Regularly hosted a dinner and game night for faculty and students at my home (2000 – 2004).
- Judge for the Jackson Purchase Swing Speech Tournament (2002).
- Question reader at CSET Science Bowl (2001).

## **OTHER PROFESSIONAL ACTIVITIES**

- Member of the American Mathematical Society of America, the Mathematics Association of America, the Institute of Electrical and Electronic Engineers, and Pi Mu Epsilon.
- Participate in the Math Faculty Problem Solving Seminar.
- Regularly Attend Moon Lecture Series.
- Invited participant of the North Atlantic Treaty Organization's Advanced Study Institute on Harmonic Analysis in Italy held July 2 - 15, 2000.
- Co-founder of the Organization of Graduate Students in Mathematics at Arizona State University, and its president from 1994 - 1996. The organization acts as liaison between the mathematics graduate students and the mathematics department as well as the university student government.

## **HONORS AND AWARDS**

- Nominated by the department to receive the President's Award for Excellence in Leadership (semifinalist).
- "Great Teacher" recognition by students in the 2002 publication of the Roundtable published by the Murray State University Center for Teaching, Learning & Technology.
- Profiled for the 2002-03 edition of the Murray State University yearbook, The Shield

## **HOBBIES, TRAVEL, EXTRACURRICULAR ACTIVITIES**

- I have play guitar in the worship band at College Hills Baptist Church since 2006.
- Hobbies include playing basketball playing guitar, and reading.
- Enjoy traveling and have traveled to Canada, Mexico, and Europe as well as in the United States.
- I have served as a deacon, a deacon officer, Sunday school teacher, and finance committee chairman in my local church. I have been an elder at College Hills Baptist Church since the spring of 2011.