Hasan Coskun, Ph.D.

Associate Professor
Department of Mathematics
Texas A&M University-Commerce

Contact Information

2600 S. Neal Street
Commerce, TX 75429, USA
Phone: (903) 886-5951 (office)
E-mail: hasan.coskun@tamuc.edu
Url: http://faculty.tamuc.edu/hcoskun

Education

- PhD in Mathematics, December 2003
  Texas A&M University, College Station TX, USA

- MS in Mathematical Sciences, 1996
  Stevens Institute of Technology, Hoboken NJ, USA

- BS in Mathematics Ed, 1992
  Middle East Technical University, Ankara, Turkey

Academic Experience

- Associate Professor, Texas A&M University-Commerce, Fall 2011-current

- Assistant Professor, Texas A&M University-Commerce, Fall 2004-Fall 2011

- Visiting (Ad-Interim) Assistant Professor, Texas A&M University-Commerce, Fall 2003-Spring 2004

- Teaching Assistant (1998-1999, 2000-2002), NSF VIGRE Research Fellow (Summer 2001, Spring 2002), and Instructor (Summer 2001), Texas A&M University

Research Interests

- Algebraic Combinatorics:
  Multiple (analogues of combinatorial) special numbers; Elliptic and basic hypergeometric series identities associated to root systems; Multiple q-series identities

- Applied Mathematics:
  Speech processing; Mathematical biology; Statistical computing

Selected Journal Publications

Algebraic Combinatorics:

- H. Coskun, *A combinatorial interpretation of multiple hypergeometric summation and transformation identities*, in preparation.

- H. Coskun, *Multiple factorial function, Stirling number and Lah number identities*, Journal of Combinatorics, 9 (2018) 3, 499-533, (arXiv:1212.6573v2).

- H. Coskun, *Combinatorial formulas for Certain Sequences of Multiple Numbers*, Ramanujan Journal, 44 (2017) 2, 453-469, (arXiv:1601.00052), DOI :10.1007/s11139-016-9843-8.

- H. Coskun, *A multilateral Bailey Lemma and multiple Andrews-Gordon Identities*, The Ramanujan Journal, 26 (2011) 2, 229-250, (arXiv:1002.0183v1).

- H. Coskun, *Multiple analogues of binomial coefficients and families of related special numbers*, Discrete Mathematics, 310 (2010) 17, 2280-2298, (arXiv:1001.3466v1).

- H. Coskun, *Multilateral basic hypergeometric summation identities and hyperoctahedral group symmetries*, Advances and Applications in Discrete Mathematics, Volume 5 (2010) 2, 145-157, (arXiv:1002.4468).

- H. Coskun *An Elliptic BC_n Bailey Lemma, Multiple Rogers-Ramanujan Identities and Euler's Pentagonal Number Theorems,* AMS Transactions, 360 (2008), 5397-5433, (arXiv:math/0605653).

- H. Coskun and R. Gustafson, *The well-poised Macdonald functions W_λ and Jackson coefficients ω_λ on BC_n*, Jack, Hall-Littlewood and Macdonald Polynomials, September 2003, ICMS, AMS Contemporary Mathematics, Volume 417 (2006), 127-155, (arXiv:math/0412153).

Mathematical Biology:

- H. Coskun and H. Coskun, *Cell physician: Reading cell motion. A mathematical diagnostic technique through analysis of single cell motion*, Bulletin of Mathematical Biology, Volume 73, Issue 3 (2011), pp. 658. (author's copy).

- G. Angle and H. Coskun, *A complete syllable dictionary for Serinus Canarius*, Ecological Informatics, Elsevier, Volume 20, (2014), pp. 67–75. (author's copy).

Other Publications

- H. Coskun, *MultiNumbers*, a software package written in Mathematica language that generates various sequences of multiple combinatorial numbers for given partition indices, 2010v1, 2013v2, 2014v3, and 2015v4.

- H. Coskun, *Inverse scattering and spectral problems in human speech*, Advanced Research Program Technical Progress Reports (2009, and 2010), and Final Technical Report (2011), Texas Higher Education Coordinating Board, Project Number: 003656-0046-2007, accepted, (abstract).

- H. Coskun, *Calclab I, II, and III Lab Manuals*, a collection of three manuals written in Mathematica language that accompanies Calculus sequence courses, to be published.

- H. Coskun, *Number Theory Lab Manual*, a manual written in Mathematica language that accompanies Number Theory courses, to be published.

- H. Coskun, *Differential Equations Lab Manual*, a manual written in Mathematica language that accompanies Differential Equations courses, to be published.

- H. Coskun, *Fourier Analysis and Wavelets*, Lecture Notes, unpublished, 2009.

- H. Coskun, *Mathematical Statistics*, Lecture Notes, unpublished, 2010.

- H. Coskun, *A BC_n Bailey Lemma and Generalizations of Rogers-Ramanujan Identities*, Ph.D. Thesis, Texas A&M University, College Station, TX, December 2003.

Recent Grant Awards

- *Faculty Development Grant*, Provost's Office, Texas A&M University-Commerce, Fall 2015, $600.

- *Travel grant support*, National Science Foundation (NSF) via Penn State, *Multiple special numbers and combinatorial interpretations*, November 5-7, 2012. $800. Role: Invited Speaker at the Ramanujan 125 Conference at the UF, Gainesville.

- *Inverse scattering and spectral problems in human speech*, (jointly with T. Aktosun), Advanced Research Program (ARP) grant, Texas Higher Education Coordinating Board, 2008-2011, $108,000. Role: Co-PI.

Previous Grant Awards and Applications

- *The World of Sounds*, Future Topics for the NSF Convergence Accelerator pre-proposal, submitted to the National Science Foundation, Spring 2019. Role: PI.

- *Quantitative Analysis of Bird Vocalization for Preventing Certain Large Scale Natural Disasters*, NSF EAGER grant pre-proposal, submitted to the National Science Foundation (NSF), Fall 2017. Role: PI.

- *Multiple combinatorial numbers and associated identities*, submitted to the National Science Foundation (NSF), June 2016-May 2018, $183,634. Role: PI.

- *Multiple analogues of combinatorial special numbers and associated identities*, submitted to Simons Foundation, $35,000, 09/01/16 - 08/31/21. Role: PI

- *Multiple analogues of combinatorial special numbers and associated identities*, submitted to the National Science Foundation (NSF), $177,129, for 06/01/14 – 05/31/16. Role: PI

- *Faculty Development Grant*, Provost's Office, Texas A&M University-Commerce, Fall 2014, $450.

- REU Site: 10×10 Research Experience for Undergraduates and In-Service Math Teachers at Texas A&M University-Commerce, National Science Foundation (NSF), $355,937, 03/01/14 – 02/28/17. Role: Senior Personnel

- *Multiple analogues of combinatorial special numbers and associated identities*, Simons Foundation, $35,000, 09/01/14 - 08/31/19. Role: PI

- *Faculty Development Grant*, Provost's Office, Texas A&M University-Commerce, Fall 2012, $700.

- *The theory of multiple special numbers*, National Science Foundation (NSF), Spring 2012-Spring 2014, $195,258. Role: PI.

- *The theory of multiple numbers*, National Science Foundation (NSF), Fall 2011-Fall 2012, $97,629. Role: PI.

- *Computational Science Ph.D. Program Application*, joint Federal Initiatives 2012 Proposal, Texas A&M University System, $1,750,022. Role: Core faculty member in Mathematics.

- *Speech Processing and Applications*, joint Federal Initiatives 2012 Proposal, Texas A&M University System, Fall 2012-Fall 2013, $357,300. Role: PI.

- *Quantitative diagnostic and prognostic techniques through single cell motility analysis*, joint NSF proposal, submitted for a period of 3 years between 2010-2013, $722,667, Role: Co-PI.

- *Computational thinking-based infrastructure to support collaboration and cooperation among highly security sensitive and vulnerable areas to boost the construction of highly secure cyber environment for electronic commerce*, joint Federal Initiative 2010 Proposal, $2,524,760. Role: Co-PI

- *Cancer cell characterization and classification through single cell motility analysis*, joint NIH proposal, submitted for a period of 5 years between 2010-2015, $3,368,079. Role: PI.

- *Identification of region of interests in high dimensional histological slides*, joint Advanced Research Program 2010 Preproposal, submitted to Texas Higher Education Coordinating Board (THECB), 2010-2011, $97,027. Role: PI.

- *Faculty Development Grant Application*, submitted to the Office of the Dean of College of Arts and Sciences, Fall 2009, $700.

- *Applications of contemporary mathematics to scientific and engineering research*, joint Federal Initiative 2010 Proposal, submitted to the Provost's Office, 2011-2015, $1,862,137, Role: PI.

- *Faculty Development Grant*, awarded by Office of the Dean of College of Arts and Sciences, Spring 2009, $570.

- *Applications of contemporary mathematics to scientific and engineering research*, joint Interdisciplinary Research Incentive Preproposal, Office of the Dean of Graduate Studies and Research, 2009-2010, $30,000. Role: Collaborating PI.

- *Computational mathematics*, Interdisciplinary Research Incentive Proposal for Head Start, Office of the Dean of Graduate Studies and Research, Spring 09, $20,000. Role: PI.

- *Faculty Development Grant*, awarded by Office of the Dean of College of Arts and Sciences, Fall 2008, $650.

- *Statistical analysis of calcium dependent gene expression*, joint Integrated Research Competition Proposal Office of the Dean of Graduate Studies and Research, 2008-2009, $30,000. Role: PI.

- *Wavelet applications in the analysis of human speech*, Faculty Research Enhancement Proposal, 2008-2009, $29,225.60.

- *Continuous Hopfield Neural Networks for Nonlinear Integer Programming Problems*, joint Advanced Research Program preproposal, submitted to Texas Higher Education Coordinating Board, 2008-2009, $108,000. Role: PI.

- *Multiple q-series identities*, submitted to Algebra, Number Theory and Combinatorics (ANTC) Program, Division of Mathematical Sciences (DMS # 0801224), National Science Foundation (NSF), 2008-2011, $219,632. Role: PI.

- *Faculty Research Enhancement Grant*, awarded by the Graduate School, Texas A&M-Commerce, August 2007 through August 2008, $12,674. Role: PI.

- *Faculty mini-grant for Research*, submitted to the Office of Graduate Studies and Research at Texas A&M University-Commerce in Spring 2007. Role: PI.

- *Faculty Special Enhancement Grant*, awarded by the Graduate School, Texas A&M-Commerce, Spring 2007. Role: PI.

- *Dean's Teaching Initiative Grant* to organize a Mini-Course in Biomathematics in Spring 2007, submitted to the Office of the Dean of Arts and Sciences at Texas A&M-Commerce. Role: PI.

- *An NSF ROA grant application for visiting researcher position*, submitted to NSF, 2006-2007. Role: Research Associate.

- *An NSF ROA summer grant application for visiting researcher position*, submitted to NSF, Summer 2006. Role: Research Associate.

- *Summer Undergraduate Research Program*, submitted to the Graduate School, Texas A&M-Commerce, Summer 2006.

- *Faculty Special Enhancement Grant for the Biomathematics Research Group*, submitted to Graduate School, Texas A&M-Commerce, Fall 2006. Role: PI.

- Undergraduate Research Grant awarded by the Office of Graduate Studies and Research at Texas A&M University-Commerce in Summer 2005. The project title: *Comparison of various multivariate interpolation techniques*. Role: PI.

- Faculty Advancement Grants awarded by the Office of the Dean of Arts and Sciences at Texas A&M University-Commerce in Fall 2004, Spring 2005, Fall 2005 and Fall 2006. Role(s): PI.

- *A construction method for 3D representation of objects via spline interpolation*, submitted to L3 ComCept, May 2005. Role: PI.

- *Theory and applications of generalized hypergeometric series*, submitted jointly to Australian Research Council, Fall 2004. Role: Research Associate.

- *Faculty mini-grant for Research* awarded by the Office of Graduate Studies and Research at Texas A&M University-Commerce in Spring 2004, $600. Role: PI.

Editorial Boards

- Journal of Algebra, Number Theory and Applications, 2010-2015

- Advances and Applications in Discrete Mathematics, 2010-2015

- Far East Journal of Mathematical Sciences (FJMS), 2010-2015

- Far East Journal of Applied Mathematics, 2010-2015

- Surveys in Mathematics and Mathematical Sciences, 2010-2015

Scholarships and Awards

- Scholarship Award, Quality Matters Connect: Pathways to Excellence Conference, Texas, Fall 2017.

- Professional Excellence in Technology Recognition Award, Feculty Senate, Texas A&M University-Commerce, nominated in 2013.

- Junior Faculty Research Award, the Office of Graduate Studies and Research, Texas A&M University-Commerce, nominated in 2007.

- NSF VIGRE Fellowships through Mathematics Department at Texas A&M University in Summer 2001 and Spring 2002.

- Graduate education scholarship by Afyon Kocatepe University in Turkey between Spring 94-Fall 99.

- Undergraduate scholarship by Turkish Education Association (TEV) in 1988-1989.

- Ranked in the top 100s among over a million high-school graduates in the nationwide University Entrance Exam (an equivalent of SAT test in the US) in Turkey in the year 1987.

Graduate Theses, Research Papers and Projects

- Graduate committee chair, master's thesis title: "Classification algorithms and feature extraction in certain sound signals", Mathematics, Texas A&M University-Commerce, Summer 2017 (incomplete).

- Graduate committee chair, master's thesis title: "Image filtering algorithms for automatic motion detection", Mathematics, Texas A&M University-Commerce, Summer 2017 (incomplete).

- Graduate committee chair, master's thesis title: "A recurrence formula for multiple qt-Catalan numbers in two dimensional case", Mathematics, Texas A&M University-Commerce, Spring 2015-Spring 2016.

- Graduate committee chair, master's thesis title: "A new combinatorial interpretation of multiple qt-binomial coefficients in two dimensional case", Mathematics, Texas A&M University-Commerce, Spring 2015.

- Graduate committee chair, master's paper title: "Combinatorial interpretations of q-analogues of certain special number sequences", Mathematics, Texas A&M University-Commerce, Spring 2015.

- Graduate committee chair, master's paper title: "A survey on classical combinatorial number sequences", Mathematics, Texas A&M University-Commerce, Fall 2014.

- Graduate committee chair, master's paper title: "A survey on combinatorial special numbers and their generalizations", Mathematics, Texas A&M University-Commerce, Spring 2013.

- Graduate committee member, master's paper title: "Estimating Sample Size and Confidence Intervals", Mathematics, Texas A&M University-Commerce, Spring 2013.

- Graduate committee member, Ph.D. dissertation title: "Structure in Operator Algebras", Mathematics, University of Houston, Spring 2011.

- Graduate committee chair, master's thesis title: "Numerical solutions for forward and inverse problems in a vocal tract model", Mathematics, Texas A&M University-Commerce, Fall 2009-Spring 2011.

- Supervisor, undergraduate research project, project title: "Generalized binomial coefficients and applications", Mathematics, Texas A&M University-Commerce, Fall 2009.

- Graduate committee chair, master's thesis title: "Numerical solutions for the generalized Schrodinger equation", Mathematics, Texas A&M University-Commerce, Spring 2009.

- Supervisor, undergraduate research project, project title: "Mathematica implementation of numerical solution methods for ordinary and partial differential equations", Mathematics, Texas A&M University-Commerce, Spring 2009.

- Graduate committee chair, master's thesis title: "Quantitative analysis of canary (Canarius serinus) vocal repertoire", Mathematics, Texas A&M University Commerce, Spring 2008-Spring 2011.

- Graduate committee chair, master's paper: "A survey of International Mathematics Olimpiad (IMO) problems and their solutions", Mathematics, Texas A&M University Commerce, Fall 2008.

- Graduate committee chair, master's paper: "A quantitative analysis of continuous models in population dynamics", Mathematics, Texas A&M University-Commerce, completed in Spring 2008.

- Graduate committee member, Ph.D. dissertation title: "Negotiating Meaning in Context: How First Year Composition Students Make Sense of Writing Assignments", Literature & Languages Department, Texas A&M University-Commerce, Summer 2007.

- Graduate committee chair, master's thesis title: "Computer-aided proofs of multiple q-series identities", Mathematics, Texas A&M-Commerce, Spring 2007.

- Graduate committee chair, master's paper: "A quantitative analysis of discrete models in population biology", Mathematics, Texas A&M University-Commerce, Fall 2006-Spring 2007.

- Graduate committee member, dissertation title: "The Impact of Science Based Informational Texts and Expository Retellings on the Reading Comprehension Achievement and Motivation of Fourth and Fifth Graders", Education, Texas A&M University-Commerce, Fall 2006.

- Graduate committee member, master's paper: "Bivariate Extreme Value Theory", Mathematics, Texas A&M-Commerce, Spring 2006.

- Graduate committee member, dissertation title: "Investigating the factors that determine the decision made by graduate students in choosing a graduate institution to pursue their studies", Mathematics Education, Texas A&M University-Commerce, Fall 2005-Fall 2006.

- Graduate committee member, master's paper: "A survey of construction methods for magic squares and curious conclusion with elliptic curves", Mathematics, Texas A&M University-Commerce, Summer 2005.

- Supervisor, undergraduate research project, Summer of Math and Science, Summer 2005, Texas A&M University-Commerce. Project title: "A comparison of various multivariate interpolation techniques for computational complexity and precision".

Courses Taught

A list of courses taught at Texas A&M University-Commerce (2003-2018)
Markers: T: traditional lecture style, W: web-based/online, DE: distance education, E:

web enhanced/hybrid. The E, W, or DE courses are delivered via eCollege between (2008-2018) and D2L BrightSpace (after 2018). The mathematics technology component (Mathematica, Matlab, R software, Geometer's Sketchpad GSP, Geogebra, LaTeX, ect.) for each course is also indicated.

- UNDERGRADUATE COURSES: (18 Subjects)
    - Business Math I and II (T, Excel)
    - College Algebra (T & E, TI-83, eCollege)
    - Essentials of Statistics (W, R, D2L)
    - Precalculus (T & E, TI-83, eCollege)
    - Calculus I, II and III (T & E, TI-83, Mathematica, eCollege)
    - Mathematical Technologies (W, Mathematica, MATLAB, Geometer Sketchpad)
    - Introduction to Abstract Algebra (T & E, eCollege)
    - Number Theory (T & E, Mathematica, eCollege)
    - Linear Algebra (T & E, Mathematica, eCollege)
    - Discrete Mathematics (T & E, eCollege)
    - Introduction to Mathematical Statistics (T & E, Mathematica, eCollege)
    - Differential Equations (T & E, Mathematica, eCollege)
    - Interdisciplinary Research Exp: Numerical Analysis (T, Mathematica)
    - Introduction to Analysis (T & E, Mathematica, eCollege)
    - Functions of a Complex Variable (T & E, Mathematica, eCollege)

- GRADUATE COURSES: (31 Subjects)
    - Advanced Calculus I and II (T & E, Mathematica, eCollege)
    - Introduction to Real Analysis I and II (T & E, Mathematica, eCollege)
    - Complex Variables I and II (T & DE, Mathematica, eCollege)
    - Mathematical Statistics I and II (T & E, R, Mathematica, eCollege)
    - Abstract Algebra I and II (T)
    - Methods of Applied Mathematics (T, W & DE, Mathematica, eCollege)
    - Modern Applications of Mathematics (W, Mathematica, eCollege)
    - Fundamental Techniques in Mathematical Economics (T, Mathematica)
    - Differential Equations and Applications (T, Mathematica, eCollege)
    - Theory of Numbers (T & DE, Mathematica, eCollege)
    - Optimization (T, W Mathematica, eCollege)
    - Cryptography (T & DE, Mathematica, eCollege)
    - Foundations of Geometry (T & DE, Geometer's Sketchpad, eCollege)
    - Euclidean/Non-Euclidean Geometry (T & DE, Geogebra, eCollege)
    - Fourier Analysis and Wavelets (T, W & DE, Mathematica, eCollege)
    - Probability and Statistics (T, Mathematica, eCollege)
    - Stat Computing and Design of Exp (T & DE, Mathematica, eCollege)
    - Dynamical Systems (T, W & DE, Mathematica, eCollege)
    - Numerical Solutions to PDEs (T, Mathematica, eCollege)
    - Numerical Analysis (T, Mathematica, MATLAB, eCollege)
    - Math Technologies (T, W & DE, Mathematica, LaTeX, R, Geometer Sketchpad)
    - Multiple Special Numbers (T, Independent Study, Mathematica, LaTeX)
    - Combinatorics (T & W, Mathematica, eCollege)
    - Sound and Text Analysis (T & W, Mathematica, eCollege)

- Thesis (T, Mathematica, MATLAB, LaTeX)
- Research Literature & Techniques (T, Mathematica, MATLAB, LaTeX)

Selected Synergistic Activities

- Judge, Texas A&M University Commerce Annual Research Symposium (2019), Federation of North Texas Area Universities Annual Graduate Research Symposium (2015, 2016, 2017, 2018), and Texas A&M University System Pathways Student Research Symposium (2017).

- Developed and taught 2 new undergraduate course and 11 new graduate courses since Fall 2003. All traditional courses are designed and taught as web enhanced, hybrid courses with an integrated mathematical technology component (see the list above).

- Prepared and graded about 15 graduate comprehensive examinations in about 5 different subjects each year until 2016.

- Developed and taught 9 new online graduate courses since Fall 2012 (see the list above). In addition, efforts are made to make the course material accessible for all students.

- Chaired the graduate committees of 6 graduate research projects in the last 5 years since Fall 2011. Each student typically gave up to five (5) talks and poster presentations about the results of their projects in the department, and at regional mathematical meetings and conferences.

- Faculty Development Leave Committee, committee member, representative of the College of Sciences, Engineering, and Agriculture, Fall 2015-current

- Quality Enhancement Plan (QEP), core committee member, representative of the College of Sciences, Engineering, and Agriculture, Spring 2014-current

- Quality Enhancement Plan (QEP), mentor, Mathematics Department, Spring 2014-Fall 2016.

- Quality Enhancement Plan (QEP) committee member, appointed, Chair of the Global Fellows subcommittee, Texas A&M University-Commerce, May 2012 - December 2013.

- Evaluation Panelist, Department of Defense supported American Society for Engineering Education Scholarship Program, "Science, Mathematics and Research for Transformation" (SMART), 2007-current.

- Reviewer & Referee: Inventiones Mathematicae, Applied Mathematics Letters (Elsevier), International Journal of Number Theory (World Scientific), The Ramanujan Journal (Springer), Central European Journal of Mathematics (Versita & Springer Verlag), Mathematical & Computer Modeling (Elsevier), Symmetry, Integrability and Geometry: Methods and Applications (SIGMA), Axioms Journal, Journal of Mathematical Analysis and Applications, Applicable Analysis and Discrete Mathematics, Prentice Hall Higher Education (Book Review).

- Was featured by the IT & DE department at A&M-Commerce on the October 2010 issue of the Faculty Spotlight for integration of technology in the classroom instruction.

- Was featured by various science media channels including Science Daily for the results of the joint cancer cell research project.

- Scientific Committee Member, International Conference of Mathematical Sciences, Maltepe University, Istanbul, Turkey, 2009.

- European Commission Project Evaluator/Review Expert in Mathematics and Statistics, Sixth Framework Programme FP6, 2006, Seventh Framework Programme FP7, and for Horizon 2020 Programme, since 2006.

- Graduate Council member, elected, Representative of College of Arts and Science, Graduate Faculty, Research and Instruction Subcommittee, Texas A&M University-Commerce, Fall 2005-Fall 2008.

Conferences and Meetings Organized

- Organizer of the third annual special session titled "Multiple combinatorial numbers and associated identities", American Mathematical Society (AMS) Fall Eastern Section Meeting #1115, Rutgers University, New Brunswick, NJ, November 14-15, 2015. (Conference Program).

- Organizer of the second annual special session titled "Multiple combinatorial numbers and associated identities", American Mathematical Society (AMS) Fall Southeastern Section Meeting #1105, University of North Carolina in Greensboro, NC, November 8-9, 2014. (Conference Program).

- Organizer of the first annual special session titled "Multiple analogues of combinatorial special numbers and associated identities", American Mathematical Society (AMS) Fall Eastern Section Meeting #1093, Temple University, Philadelphia, PA, October 12-13, 2013. (Conference Program).

Presentations and Invited Talks

- *MAA 2017 Spring TX Sectional Meeting*, Texas A&M University Commerce, Spring 2017. Title: "Multiple Analogues of the Binomial and Poisson Distributions on the Set of Integer Partitions."

- *STEM Living and Learning Community*, College of Science, Engineering and Agriculture, Texas A&M University-Commerce, Commerce, TX, Spring 2017, 60 minutes presentation. Title: "Why Math Matters."

- *Math Clubs Meeting*, Texas A&M University-Commerce, Commerce, TX, Fall 2016, 60 minutes presentation. Title: "Modern Applications of Mathematics."

- American Mathematical Society (AMS) Fall Eastern Sectional Meeting #1115, Rutgers University, New Brunswick, NJ, November 2015, opening speech, 20 minutes, *Combinatorial formulas for certain sequences of multiple numbers*. (Conference Website).

- *Math Department Colloquium*, Texas A&M University-Commerce, Commerce, TX, October 2015, 60 minutes lecture. Title: "An overview of combinatorial multiple number theory."

- American Mathematical Society (AMS) Fall Southeastern Section Meeting #1105, University of North Carolina in Greensboro, NC, November 8-9, 2014, opening speech, 45 minutes, *A Combinatorial formula for rational Macdonald functions and applications*. (Conference Program).

- Math Department Colloquium, invited speech, 60 minutes, *Applications of Multiple Combinatorial Numbers*, University of North Texas at Dallas, TX, Spring 2014. (Colloquium Website)

- American Mathematical Society (AMS) Fall Eastern Sectional Meeting #1093, Temple University, Philadelphia, PA, October 2013, opening speech, 45 minutes, *Multiple Bracket, Lah Number and Stirling Number Identities*. (Conference Website).

- Millican Colloquium, invited speech, 60 minutes, *Multiple special numbers and applications*, Department of Mathematics, University of North Texas (UNT), Denton, TX, November 2013. (Colloquium Website)

- *Math Department Colloquium, Texas A&M University-Commerce, Commerce, TX, Spring 2013*, 60 minutes lecture. Title: "Love for mathematics."

- *Math Department Colloquium, Texas A&M University-Commerce, Commerce, TX, Fall 2012*, 60 minutes lecture. Title: "Number of ways to cycle on Mars."

- *Ramanujan 125 Conference*, University of Florida, Gainesville, Fall 2012, invited speech, November 5-7, 2012. Title: "Multiple special numbers and combinatorial interpretations."

- *Math Department Colloquium, Texas A&M University-Commerce, Commerce, TX, Spring 2012*, 60 minutes lecture. Title: "Rabbit reproduction in the outer space."

- *Math Department Colloquium, Texas A&M University-Commerce, Commerce, TX, Fall 2011*, 60 minutes lecture. Title: "Modern mathematical technologies for education and research."

- *Digi-Faire Conference, Texas A&M University-Commerce, Commerce, TX, Spring 2011*, invited speech, March 22, 2011. Title: "Mathematical Technologies."

- *q-Series 2011: An International Conference on q-Series, Partitions and Special Functions*, invited speech (canceled), Georgia Southern University, March 14-16, 2011. Title: "Multiple special numbers and applications."

- *Algebra Seminar, Texas A&M University, College Station, TX*, invited speech (canceled), 60 minutes talk, February 2011. Title: "Combinatorial interpretation of multiple special numbers."

- *Math Department Colloquium, Texas A&M University-Commerce, Commerce, TX, Fall 2010*, 60 minutes lecture. Title: "Multiple Stirling numbers of the first and the second kind."

- *AMS 2010 Spring Western Section Meeting #1059 at University of New Mexico, Albuquerque, NM*, invited speech, April 17-18, 2010, 30 minutes talk in the Special Session on Geometric Combinatorics. Title: "Multilateral basic hypergeometric summation identities and hyperoctahedral group symmetries."

- *AMS 2010 Spring Central Section Meeting #1058 at Macalester College, St. Paul, MN*, invited speech, April 10-11, 2010, 30 minutes talk in the Special Session on Partition Theory and the Combinatorics of Symmetric Functions. Title: "Multiple special numbers."

- *Physics & Astronomy Colloquium, Texas A&M University-Commerce, Commerce, TX, Spring 2010*, 60 minutes invited lecture. Title: "Multidimensional discrete probability measures."

- *AMS 2009 Fall Southeastern Meeting #1053 at Florida Atlantic University, Boca Raton, FL*, invited speech, October 30-November 1, 2009, 30 minutes talk in the Special Session on Enumerative Combinatorics. Title: "A multilateral Bailey Lemma and multiple Andrews-Gordon identities."

- *Math Department Colloquium, Texas A&M University-Commerce, Commerce, TX, Fall 2009*, 60 minutes lecture. Title: "Multiple analogues of binomial coefficients and applications."

- *AMS 2009 Fall Central Section Meeting #1051 at Baylor University, Waco, TX*, invited speech, October 16-18, 2009, 30 minutes talk in the Special Session on Contemporary Complex and Special Function Theory. Title: "Elliptic Macdonald functions and Jackson coefficients on BC_n."

- *AMS 2009 Spring Central Sectional Meeting #1047 at University of Illinois at Urbana-Champaign, Urbana, IL*, invited speech, March 27-29, 2009, 30 minutes talk in the Special Session on q-Series and Partitions. Title: "A weak multiple Bailey Lemma and some applications."

- *Math Club Talk, Texas A&M University-Commerce, Commerce, TX, Fall 2008*, 60 minutes lecture. Title: "Speaker Recognition via Vocal Tract Modeling."

- *MAA 2008 Fall MD/DC/VA Sectional Meeting*, Hood College, November 7-8, 30 minutes talk. Title: "A Mathematical Model of Canary (Canarius serinus) Vocal System."

- *AMS 2008 Spring Western Section Meeting #1039 at Claremont McKenna College, Claremont, CA*, May 3-4, 2008, 30 minutes talk in the Special Session on Algebraic Combinatorics. Title: "Multiple Andrews-Gordon Identities."

- *School on Macdonald Polynomials, and Workshop on Combinatorial Hopf Algebras and Macdonald Polynomials*, Theme Semester: Recent Advances in Combinatorics, CRM, University of Montreal, Canada, invited participant, April 30 - May 4, 2007.

- *Math Department Colloquium, Texas A&M University-Commerce, Commerce, TX, Spring 2007*, 60 minutes lecture. The title: "Combinatorial Proofs of Multiple q-series Identities".

- *New College of Florida*, invited speech, 60 minutes seminar talk. Title: "Symmetries of q-series Identities", Spring 2007.

- *AMS 2006 Eastern Sectional Meeting #1021 at University of Connecticut, Storrs, CT*, October 28-29, 2006, 30 minutes talk in the Special Session on Number Theory. Title: "An Elliptic BC_n Bailey Lemma and Euler Pentagonal Number Theorems".

- *Math Department Colloquium, Texas A&M University-Commerce, Commerce, TX, Fall 2006*, 60 minutes seminar lecture. Title: "An Infinite Family of Multiple q-series Identities".

- *NSF/CSEMS Research Program, North Texas CC, Mount Pleasant, TX, May 2006*, invited speaker. Title: "An Alternative Approach to 3D Image Reconstruction via Cubic Splines".

- *Summer 05 Research Seminar, Texas A&M University-Commerce, Commerce, TX*, 30 minutes presentation. Title: "Multivariate Interpolation Techniques and Special Functions".

- *Combinatorial and Additive Number Theory (CANT 2005), CUNY Graduate Center, New York, NY, May 18-21, 2005*, 30 minutes talk. Title: "Hyperoctahydral Symmetries of BC_n Bailey Lemma".

- *AMS Sectional Meeting in Pittsburgh, PA, University of Pittsburgh, November 6-7, 2004*, 30 minutes talk in the Special Session on Multivariable Hypergeometric Functions. Title: "Elliptic BC_n Bailey Lemma and Applications".

- *AMS Sectional Meeting in Evanston, Illinois, Northwestern University, October 15-16, 2004*, 30 minutes talk in the Special Session on Orthogonal Polynomials and Applications. Title: "Multiple q-series Identities".

- *Math Department Colloquium, Texas A&M University-Commerce, Commerce, TX, Fall 2004*, a 60 minutes seminar lecture. The title: "Multiple q-series Identities for Dummies".

- *Workshop on Jack, Hall-Littlewood and Macdonald Polynomials, Sept. 23-26, 2003, International Center for Mathematical Sciences, Edinburgh*, invited participant.

- *Math Department Colloquium, Texas A&M University-Commerce, Commerce, TX, Fall 2003*, two 60 minutes seminar lectures on certain applications of results from dissertation research.

- *Algebra/Combinatorics Seminar, Texas A&M University, College Station, TX, Fall 2002 and Spring 2003*, two 60 minutes talks on recent results of dissertation work.

- *Number Theory and Combinatorics in Physics Conference, March 21-23, 2003, University of Florida, Gainesville*, invited participant.

- *AMS Sectional Meeting in Baton Rouge, Louisiana, March 14-16, 2003*, 30 minutes talk in the Special Session on q-series in Number Theory and Combinatorics. Title: "Certain Applications of BC_n Bailey Lemma".

- *AMS Sectional Meeting in Madison, University of Wisconsin, October 12-13, 2002*, 30 minutes talk in the Special Session on Special Functions and Combinatorics. Title: "BC_n Bailey Lemma and Rogers-Ramanujan Identities".

- *San Diego Joint Meeting, San Diego, CA, Jan 6-Jan 9, 2002*, 10 minutes talk in a General Contributed Paper Session. Title: "Properties of well-poised rational Schur functions W_λ on BC_n".

- *SIAM Conference in Discrete Mathematics, San Diego, CA, August 11-14, 2002*, 15 minutes talk in the Enumeration Session. Title: "A Higher Dimensional Generalization of Bailey Lemma and Rogers-Ramanujan Identities".

- *NATO ASI conference Special Functions 2000: Current Perspectives and Future Directions, Tempe, AZ, May 29-Jun 9, 2000*, 30 minutes talk. Title: "An analogue of Jackson sum for the root system $B_\ell^\vee$".