Dr. Tamás Forgács

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Education

Ph.D. in Mathematics, University of Illinois at Urbana-Champaign, 2007
Master of Science in Mathematics, University of Iowa, 2001
Master of Arts in Economics, Eastern Illinois University, 1998
Bachelor of Arts in Economics, Corvinus University, Budapest, 1996

Employment

Professor of Mathematics - CSU Fresno	*Fall 2018 - present*
Associate Professor of Mathematics - CSU Fresno	*Fall 2013 - present*
Visiting Associate Professor of Mathematics	
University of Hawai'i at Manoa	*Fall 2013-Spring 2014*
Assistant Professor of Mathematics - CSU Fresno	*Fall 2007 - Spring 2013*
Visiting Professor - Brigham Young University	*Summer, 2011*
Instructor - Parkland College	*Fall 1999-Spring 2000*

Publications and works in preparation

19. T. Forgács, K. Tran and H. Kim, The zeros of Sheffer sequecnes, *in preparation.*

18. T. Forgács and K. Tran, Hyperbolic polynomials and linear generating functions, *in preparation.*

17. D. Cardon, T. Forgács, A. Piotrowski, E. Sorensen and J. White, Sector decreasing operators and sequences, *under revision.*

16. T. Forgács, J. Luong and J. Williamson, A note on infinite series with recursively defined terms, *to appear in Amer. Math. Monthly.*

15. L. Buck, K. Emmrich and T. Forgács, Sufficient conditions for a linear operator on $\mathbb{R}[x]$ to be monotone, *to appear in Houston J. of Math.*

14. M. Chasse, T. Forgács and A. Piotrowski, Polynomially interpolated Legendre multiplier sequences, *Comput. Methods Func. Theory*, **18** (2) (2018), pp. 315-333. DOI 10.1007/s40315-017-0221-3

13. T. Forgács, Directions for Mathematics Research Experience for Undergraduates - a review, *Notices of the AMS*, **65** (4) (2018) pp. 432-435.

12. T. Forgács and K. Tran, Zeros of polynomials generated by a rational function with a hyperbolic-type denominator, *Constr. Approx.* **46** (2017), pp. 617-643. DOI 10.1007/s00365-017-9378-2

11. T. Forgács and K. Tran, Polynomials with rational generating functions and real zeros. *J. Math. Anal. Appl.* **443**(2) (2016), pp. 631-651. DOI 10.1016/j.jmaa.2016.05.041

10. G. Csordas, and T. Forgács, Multiplier sequences, classes of generalized Bessel functions and open problems, *J. Math. Anal. Appl.* **433** (2016), pp. 1369-1389. DOI: 10.1016/j.jmaa.2015.08.047

9. T. Forgács and A. Piotrowski, Hermite multiplier sequences and their associated operators, *Constr. Approx.* **42**(3) (2015), pp. 459-479. DOI 10.1007/s00365-015-9277-3

8. T. Forgács, 2015. FURST - A Symbiotic Approach to Research at Primarily Undergraduate Institutions. In: Peterson, M. A., and Rubinstein, Y. A., ed. *Directions for Mathematics Research Experience for Undergraduates.* World Scientific. pp. 17-31.

7. T. Forgács, J. Haley, R. Menke, and C. Simon, The non-existence of cubic Legendre multiplier sequences, *Involve, a Journal of Mathematics,* **7-6** (2014), 773–786. DOI 10.2140/involve.2014.7.773

6. T. Forgács and A. Piotrowski, Multiplier sequences for generalized Laguerre bases, *Rocky Mountain J. of Math.*, **43** (2013) (4), 1141-1159.

5. K. Blakeman, E. Davis, T. Forgács, and K. Urabe, On Legendre Multiplier Sequences, *Missouri J. Math. Sci.*, **24** (2012) (1), 7-23.

4. T. Forgács, J. Tipton, B. Wright, Multiplier Sequences for Simple Sets of Polynomials, *Acta Math. Hungar.*, **137** (2012) (4), 282-295. DOI: 10.1007/s10474-012-0222-7

3. T. Forgács, O. Vega, *Analysis and Algebra*, Cognella Publishing, First edition, 2012. ISBN: 978-1-60927-756-7

2. A. Cseh, and T. Forgács, The effects of Mental Health Parity Legislation on Mental Health Related Hospitalizations, *The Journal of Economics*, **XXXV** (2009), (1), 1-20.

1. T. Forgács, D. Varolin, Sufficient Conditions for Interpolation and Sampling Hypersurfaces in the Bergman Ball, *Int. J. of Math*, **18** (2007), (5), 559-584.

Grants

NSF-SSTEM: : Mentoring Math Scholars for Success ($999,907.00)	2018-22

co-PI: Organize and administer activities supporting talented but economically disadvantaged students.

FURST: Faculty and Undergraduate Research Student Teams ($64,940.00)	2017-18

PI: Organize and administer a multi-institutional grant supporting research at PUIs

PUMP: Preparing Undergraduates through Mentoring to PhDs ($11,000.00)	2016-17

PI: mentor two students in an academic year-long research project.

NSF supplement to SMALL ($10,000.00)	2015

Co-wrote the grant proposal with Steven J. Miller at Williams College to support the national REU outreach effort to underrepresented minority students in STEM

NSF REU Site renewal grant ($219,996.00)	2015-2018

PI: Direct and mentor summer undergraduate research in a 3 year summer research program

FURST - NSF supplement ($39,000.00)	2014

PI: Direct a pilot program for faculty-student research teams.

NSF New REU Site grant ($198,350.00)	2012-2013

PI: Direct and mentor summer undergraduate research in a 2 year summer research program

NSF-CURM mini grant ($19,850.00+$2,900.00 in matching funds)	2010-2011

PI:Direct and advise a 4 member undergraduate research team

Selected Presentations and Conferences

Hausdorff Geometry of Polynomials Conference	*Mittag-Leffler Institute*
Title: Generating relations of hyperbolic polynomials	*Stockholm, Sweden, May, 2018*
Department Seminar	*Eau-Claire, WI, February, 2018*
Title: Zero Locus Preserving Operators	
AMS-MAA Joint Meeting	*San Diego, CA, January 2018*
MAA Panelist on Tips and Tricks to securing funding for undergraduate research	

AMS-MAA Joint Meeting — *San Diego, CA, January 2018*
Title: *"On sector reducing operators"*
Combinatorics and Zeros of analytic functions seminar — *Fresno, CA, April 7, 2017*
Title: *Grace's Apolarity theorem and consequences Part II*
Combinatorics and Zeros of analytic functions seminar — *Fresno, CA, March 17, 2017*
Title: *Grace's Apolarity theorem and consequences*
AMS-MAA Joint Meeting — *Atlanta, GA, January 2017*
Title: *"Towards the classification of Legendre multiplier sequences"*
WM^3 conference — *CSU Northridge, October, 2016*
Invited panelist - Undergraduate research panel
Combinatorics and Zeros of analytic functions seminar — *Fresno, CA, September 2016*
Title: *Submodular functions and independent matchings, I & II*
Department seminar — *Fresno, CA, April 2016*
Title: *"Recent progress in the classification of polynomially interpolated Legendre multiplier sequences"*
Department seminar — *Fresno, CA, November 2015*
Title: *"Undergraduate research - the 5 Ws"*
Opportunities in the mathematical sciences: — *UC Irvine, April 2015*
A workshop for emerging scholars
Invited panelist - Undergraduate research panel
AMS-MAA Joint Meeting — *San Antonio, TX, January 2015*
Title: *"Classical multiplier sequences: a special class, continuous transformations, and connections to special functions"*
AMS-MAA Joint Meeting — *San Antonio, TX, January 2015*
Title: *"Implementing modules - a case study"*
PUMP Summer Program Colloquium — *Cal Poly Pomona, July, 2014*
Title: *"Polynomials, derivatives and location of zeros"*
Workshop on Revitalizing Complex Analysis *Westmont College, Santa Barbara, June, 2014*
Title: *"Complex Analysis and REUs"*
UH Function Theory seminar — *Honolulu, HI, February, 2014*
Title: *"The non-existence of cubic Legendre multiplier sequences, Part I & II"*
AMS-MAA Joint Meeting — *Baltimore, MD, January 2014*
Title: *"Multiplier sequences of the second kind"*
UH Graduate Complex Analysis seminar — *Honolulu, HI, October 2013*
Title: *"Hermite Diagonal operators, Part I, II & III"*
Colloquium - University of Hawai'i — *Honolulu, HI, October, 2013*
Title: *"Parallel approaches in the theory of multiplier sequences"*
Mt. Holyoke: New Directions for REUs — *East Hadley, MA, June, 2013*
Title: *"FURST - a symbiotic approach to research"*
Department of Mathematics Seminar — *Fresno, CA, April 12, 2013*
Title: *"Classification of Laguerre multiplier sequences, Part II"*
Department of Mathematics Seminar — *Fresno, CA, April 5, 2013*
Title: *"Classification of Laguerre multiplier sequences, Part I"*
AMS-MAA Joint Meeting — *San Diego, CA, January 2013*
Title: *"Coefficient Polynomials of Hermite Diagonal Operators"*
TURMS conference — *Chicago, IL , October 27, 2012*
Title: *"Challenges in developing and sustaining an internalized undergraduate research program in mathematics - the Fresno State experience"*
Department of Mathematics Seminar — *Fresno, CA, October 5, 2012*
Title: *"A new characterization of Hermite multiplier sequences, Part II"*
Department of Mathematics Seminar — *Fresno, CA, September 21, 2012*
Title: *"A new characterization of Hermite multiplier sequences, Part I"*
Department of Mathematics Colloquium — *Fresno, CA, September 21, 2012*
Title: *"Linear Operators on $R[x]$"*

AMS-MAA Joint Meeting   *Boston, MA, January 2012*
Title: *"Multiplier sequences for simple sets of polynomials"*
Summer REU talk   *Provo, UT, June 15, 2011*
Title: *"Zeros of polynomials"*
Department of Mathematics Colloquium   *Fresno, CA, February 25, 2011*
Title: *"O zeros where art thou?"*
Department of Mathematics Seminar   *Fresno, CA, February 14, 2011*
Title: *"On Hermite diagonal operators"*
Southern Economic Association 80th Annual Meeting   *Atlanta, GA, November 22, 2010*
Title: *"On the n-person chicken game"*
Department of Mathematics Seminar   *Fresno, CA, April 29, 2010*
Title: *"Rigor in the chicken game - some proofs and ideas"*
AMS-MAA Joint Meeting   *San Francisco, CA, January 13-16, 2010*
Title: *"Addiction and Treatment in a rational framework - can lowering health care costs have adverse effects?"*
Southern Economic Association 79th Annual Meeting *San Antonio, TX., November 21, 2009*
Title: *"Urbanization and the Cultural Costs of International Trade"*
Missouri Valley Economic Association 46th Annual Meeting   *Kansas City, October, 2009*
Title: *"The More the Merrier? The Effects of Mental Health Parity Legislation on the Availability and Quality of Mental Health Treatment: a Game Theoretic Approach"*
Department of Mathematics Seminar   *Fresno, CA, April 2, 2009*
Title: *"An Inclusion Theorem for Multiplier Sequences"*
Regional Conference on Excellence in Teaching and Learning *Fresno, CA, March 13, 2009*
Title: *"Does small group independent problem solving solve any problems? The case of Math 171 Intermediate Mathematical Analysis"*
Southern Economic Association 78th Annual Meeting *Washington D.C., November 21, 2008*
Title: *"A Rational Addiction-Treatment Model with Interacting Stocks"*
Department of Mathematics Seminar   *Fresno, CA, November 13, 2008*
Title: *"Extrema of functionals, the Euler-Lagrange equation and an application to economics"*
Missouri Valley Economic Association 45th Annual Meeting   *St. Louis, October, 2008*
Title: *"Aspects of Modeling Cultural Barriers in International Trade"*
Department of Mathematics Seminar   *Fresno, CA, April 3, 2008*
Title: *"Laguerre multiplier sequences - towards a classification theorem. Part I."*
Missouri Valley Economic Association 44th Annual Meeting   *Kansas City, October, 2007*
Title: *"The effects of parity legislation on mental health care utilization"*
Department of Mathematics Seminar   *Fresno, CA, October 4, 2007*
Titlte: *"A primer on rational addiction"*
Department of Mathematics Seminar   *Fresno, CA, September 27, 2007*
Title: *"Notions of uniform flatness"*

Students

Undergraduate Research
Jack Luong, Josh Williamson   *Independent research supervision, Fall 2017-Spring 2018*

Alexandra Leon and Summer Al-Hamdani   *PUMP, Fall 2016-Spring 2017*

Leah Buck, Kelly Emmrich, Christian Hokaj, and   *Fresno State REU, June-August, 2016*
Kenny Plante

Molly Corcoran   *Independent research supervision, Spring, 2015*

James Haley, Rebecca Menke, Carlee Simon, and   *Fresno State REU, June-August, 2013*
Fernando Quintino

Hagop Karakazian	*Independent research supervision, Spring 2012-Fall 2012*
Kelly Blakeman, Emily Davis and Katherine Urabe	*Brigham Young University REU, June-August, 2011*
Mario Banuelos, Michelle Hoshiko James Tipton, Benjamin Wright	*CURM Undergraduate Research Group supervision, Fall 2010-Spring 2011*
Whitney Walker	*Senior Project supervision, Fall 2009*
Michelle Hoshiko, Luciana Montalvo	*Summer REU, 2009*
Iliana Perez	*Senior Project supervision, Fall 2008*

Graduate Research

Jeffrey C. Park	*Masters Thesis supervision, Spring 2016*
David Heywood	*Masters Thesis supervision, Spring 2015*
Kristi Rieg	*Masters Project supervision, Spring 2011*
Danielle Alberti	*Masters Project supervision, Spring 2010*
Luke Denton	*Masters Project supervision, Spring 2009*

Professional Development

Hausdorff Geometry of Polynomials Conference	*Stockholm, Sweden, May-June 2018*
Question, Persuade, Refer (QPR) training	*Fresno State, May, 2018*
Critical Issues in Mathematics Education 2018: Access to mathematics by opening doors for students currently excluded from mathematics	*MSRI, Berkeley, CA 2018*
Social & behavioral research - basic course completion	*Fresno, CA, November, 2017*
Workshop on Revitalizing Complex Analysis	*Santa Barbara, CA, June, 2014*
Mt. Holyoke conference on REU directions	*East Hadley, MA, June, 2013*
Trends in Undergraduate Research (TURMS) conference	*Chicago, IL, October, 2012*
Mentoring Minority Students in REUs	*PCMI, Park City, UT July, 2012*
Experiencing Mathematics & Statistics Workshop - Teaching with Technology	*Napa, September, 2010*
CURM Faculty workshop on mentoring undergraduate research	*Draper, UT June, 2010*
CSALT - Conference on Active Learning	*March 2, 2010*
CETL - Regional Conference on Excellence in Teaching and Learning	*March 13, 2009*
CETL workshop series (6 workshops)	*Fall 2008-Spring 2009*
Service Learning Mini Grant Workshops	*Fall 2008*

Professional Service

National Science Foundation Panelist	*Washington, D.C., 2018*
Primary/Secondary reviewer for 9 grant proposals	
Reviewer - Notices of the American Mathematical Society	*November, 2017*
Wrote a book review on *Directions for Mathematics Research Experience for Undergraduates*.	
Referee - Involve, a Journal of Mathematics	*March, 2017*
Refereed a journal article.	
Referee - American Mathematical Monthly	*February, 2017*
Refereed a journal article.	
Referee - Computational Methods and Function Theory	*August, 2016*

Refereed a journal article.

Referee - Rose-Hulman Undergraduate Mathematics Journal   *March, 2016*

Refereed a journal article.

AMS-MAA Joint Meetings   *Seattle, WA, January, 2016*

Session organizer - Research Conducted by Undergraduates I-IV

Session organizer - Distribution of zeros of entire functions.

Mathematical Biology Search Committee   *Fall '15-Spring '16*

Search committee member (department level)

AMS Fall Sectional Meeting   *October 24-25, Fullerton, CA*

Session organizer for Research Conducted by Early Career Graduate students.

Referee - Bollettino dell'Unione Matematica Italiana   *October, 2015*

Refereed a journal article.

Referee - PRIMUS   *August, 2015*

Refereed a journal article.

REU leadership administrator   *2012-present*

I maintain and moderate a listserv for all REU PIs in the US

AVP for Enrollment Management Search Committee   *Fresno, CA, Fall 2014-Spring 2015*

Search committee member (university level)

Analysis Search Committee   *Fresno, CA, Fall 2014-Spring 2015*

Search committee member (department level)

AMS-MAA Joint Meetings   *San Antonio, TX, January, 2015*

Session organizer - Research Conducted by Undergraduates I-IV

Session chair - Advances in Analysis

Project NExT   *November, 2014 - present*

Consultant

Referee - Proceedings of the New Directions in REUs conference   *August, 2014*

Refereed a book chapter.

Referee - Computational Methods and Function Theory   *February, 2014*

Refereed a journal article.

AMS-MAA Joint Meetings   *Baltimore, MD, January 2014*

Session Chair (2 different sessions)

Referee - American Mathematical Monthly   *December, 2013*

Refereed a journal article.

National Science Foundation Reviewer   *2013*

Reviewed a proposal submitted to the NSF.

Referee - Constructive Approximation   *March-April, 2013*

Refereed a journal article for CA

National Science Foundation Panelist   *Washington, D.C., 2012*

Primary reviewer for 10 grant proposals

Young Mathematicians Conference   *Colombus, OH, July, 2012*

Abstract reviewer for the conference

Pacific Coast Undergraduate Mathematics Conference   *March 13, 2012*

Student session moderator

AMS-MAA Joint Meetings   *Boston, MA, January 2012*

Student Poster Session Judge

Pacific Coast Undergraduate Mathematics Conference   *March 13, 2011*

Student session moderator

AMS-MAA Joint Meetings   *New Orleans, LA, January 2011*

Student Poster Session Judge

Southern Economic Association Annual meeting   *November 21-23 2010*

Discussant: Christopher Garmon., "Major League Baseball's Rule 4 Draft"

Pacific Coast Undergraduate Mathematics Conference   *March 13, 2010*

Student session moderator

AMS-MAA Joint Meetings   *San Francisco, CA, January 2010*

Student Poster Session Judge
Southern Economic Association Annual meeting *November 21-23 2009*
Discussant: Joshua Dennis Hall., "The Rate of Technological Progress, Effective Human Capital and the Dynamics of Income Inequality: An Empirical Analysis"
Missouri Valley Economic Association 46th annual meeting *October 22-24 2009*
Discussant: Kent Eliasson et al., "All in the Family: Self Selection and Migration by Couples"
Southern Economic Association Annual meeting *November 20-23 2008*
Discussant: Lisa A. Delgado., "Nash and correlated equilibria in the market for skills"
Missouri Valley Economic Association 45th annual meeting *October 23-25 2008*
Discussant: Valerica Vlad, "Terms of Trade and Environment in a North-South Model with Cross-border Pollution"
Missouri Valley Economic Association 44th annual meeting *October 22-24 2007*
Discussant: Wang, X., *"Tax competition and economic integration with investor lock-in"*

Community Service

Youth Soccer League Coach *August 2014 -June, 2015*
Smittcamp Family Honors College application reader *Winter, 2008, 2010*
Wheels of Support Project *Fall 2007 to present*
Founder

Professional Memberships

American Mathematical Society
Mathematical Association of America
Southern Economic Association
Missouri Valley Economic Association

Administration and Leadership

Faculty Workload Taskforce *Spring 2017 to present*
member
Research Subcommittee of the APP *Fall 2016 to present*
Chair
Fresno State Academic Senate *Fall 2014 to 2017*
Department Senator
Department Undergraduate Research Committee *Spring 2012 to 2017*
Chair
CSUF Mathematics Club *Fall 2008 to Spring 2015*
Advisor
Departmental Colloquium Series *Fall 2008 to Spring 2015*
Chair
CSUF Wheels of Support Club *Fall 2008 to 2010*
Advisor

Awards and Honors

Bold Ideas Challenge winner *2018*
The creation of an undergraduate research center on campus was one of the winning ideas this year.
Faculty Professional Development Award *AY 2018-19*
I was awarded $1200.00 to support my participation in the *Hausdorff Geometry of Polynomials* conference at the Mittag-Leffler institute in Stockholm, Sweden, and in the fall sectional meeting of the AMS in San Francisco, CA.
Outstanding publication in the Department of Mathematics *2018*

The department voted for my paper with K. Tran (see 12. on the publication list) to receive this honor.

Faculty Professional Development Award *AY 2017-18*
I was awarded $1200.00 to support my participation at the joint AMS-MAA meetings in San Diego, CA

Outstanding Faculty Research Award *2016-17*
in the College of Science and Mathematics
For research accomplishments, grant activity and the promotion of undergraduate research nation wide.

Faculty Creative Activity Award *Summer 2017*
I was awarded $5,000.00 to support my writing and submitting a research paper for publication

Outstanding publication in the Department of Mathematics *2016*
The department voted for my paper with K. Tran (see 11. on the publication list) to receive this honor.

Faculty Professional Development Award *AY 2016-17*
I was awarded $1200.00 to support my participation at the joint AMS-MAA meetings in Atlanta, GA

Faculty Creative Activity Award *Fall 2016*
I was awarded 3 WTU assigned time to complete and submit a research paper for publication coauthored with visiting professor A. Piotrowski

Faculty Creative Activity Award *Summer 2016*
I was awarded $5,000.00 to support my writing and submitting a research paper for publication

Faculty Creative Activity Award *2015*
I was awarded $5,000.00 to support my writing a grant in collaboration with H. Soto-Johnson at NCU on improving STEM education

Faculty Professional Development Award *AY 2015-16*
I was awarded $1200.00 to support my participation at the joint AMS-MAA meetings in Seattle, WA

Outstanding publication in the Department of Mathematics *2014*
The department voted my paper in *Involve* to receive this honor.

Faculty Professional Development Award *Fall 2014*
I was awarded $1200.00 to support my participation at the joint AMS-MAA meetings in San Antonio, TX

College Scholarly and Creative Activity Award *Fall, 2014*
3 WTU release time awarded for writing scholarly papers during the fall of 2014

College Scholarly and Creative Activity Award *Spring, 2014*
$5,000.00 awarded for the writing of two grants during the summer of 2014

Faculty Performance Award *Fall 2013*
I was awarded $999.00 to support my participation at the joint AMS-MAA meetings in Baltimore, MD

Outstanding publication in the Department of Mathematics *2012*
The department voted my paper in *Acta Math. Hung.* to receive this honor.

Nominee for the Provost's Award for Promising New Faculty *Spring, 2012*
I was nominated for this award by the chair of the department of Mathematics.

Faculty Performance Award *Fall 2011*
I was awarded $999.00 to support my participation at the joint AMS-MAA meetings in Boston, MA

College Scholarly and Creative Activity Award *Fall 2011*
3 WTU's awarded for the Spring of 2012 at California State University, Fresno

Invited Professor *June-August, 2011*
Brigham Young University summer REU

Outstanding publication in the Department of Mathematics *2010*
The department voted my book with O. Vega to receive this honor.

Faculty Performance Award *Fall 2010*
I was awarded $999.00 to support my participation at the 80th annual meeting of the SEA.

Provost Faculty Scholarship Support *Spring 2010*
I was awarded 3 WTUs to support scholarly advancement
Faculty Performance Award *Fall 2009*
I was awarded $999.00 to support my participation at the 46th annual meeting of the MVEA.
Faculty Performance Award *Fall 2008*
I was awarded $900 to support my participation at the 45th annual meeting of the MVEA.
International Faculty Development Award -CSUF *Fall 2007-Summer 2008*
I was awarded $2500 from the Office of International Programs to support my studies of Spanish and writing at the University of Alicante.
Graduate Faculty/Program Enhancement Award *Spring 2008*
I was awarded $3000 to enhance the instructional material and standardize the syllabus for one of our graduate courses at California State University, Fresno
Faculty Performance Award *Fall 2007*
I was awarded $1200 to support my participation at the 44th annual meeting of the MVEA.
College Scholarly and Creative Activity Award *Fall 2007*
3 WTU's awarded for the 2008-2009 academic year at California State University, Fresno
International Activities Award *2007-2008*
I was awarded $440 to support my studies in Alicante, Spain
Global Ambassador Award *Fall 2007*
An award given in recognition of outstanding alumni of Eastern Illinois University