Umut Caglar

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EDUCATION

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• Ph.D. in Mathematics Thesis: Divergence and entropy inequalities for log concave functions Advisers: Elisabeth M. Werner and Stanislaw J. Szarek	2010-2014
• M.S. in Mathematics Thesis: Floating bodies Adviser: Elisabeth M. Werner	2008-2010
Cukurova University, Adana, Turkey	
• B.S. in Mathematics	
 EMPLOYMEN'T Associate Teaching Professor Elorida International University 	2021-Present
Fiorida International Oniversity	
Department of Mathematics and Statistics	
 Department of Mathematics and Statistics Assistant Teaching Professor Florida International University Department of Mathematics and Statistics 	2015-2021

PUBLICATIONS

- U. Caglar and E. M. Werner. "Divergence for s-concave and log-concave functions." Advances in Mathematics 257, pages: 219-247 (2014).
- U. Caglar and E. M. Werner. "Mixed f-divergence and inequalities for log-concave functions."
 Proceedings of the London Mathematical Society 110, pages: 271-290 (2015).
- U. Caglar, M. Fradelizi, O. Guedon, J. Lehec, C. Schütt and E. M. Werner. "Functional version of Lp-affine surface area and entropy inequalities." International Mathematics Research Notices 2016, pages: 1223-1250 (2016).
- U. Caglar and D. Ye. "Affine isoperimetric inequalities in the functional Orlicz- Brunn-Minkowski theory" Advances in Applied Mathematics 81, pages: 78-114 (2016)

- U. Caglar and E. M. Werner. "Stability results for some geometric inequalities and their functional versions" Book Chapter: Convexity and Concentration Vol. 161 of IMA Volumes in Math. and its Applications, pages: 541-564, Springer 2017
- U. Caglar, A. Kolesnikov and E. M. Werner. "Pinsker inequalities and related Monge-Ampere equations for log concave functions." ArXiv: <u>2005.07055</u> Indiana University Mathematics Journal, Vol. 71, No. 6 (2022)
- Darici, Y., Kramer, L., Castillo, A., Benabentos, R., Secules, S., Miksovska, J., Wells, L., Cardella, M., Bhimani, J., & **Caglar, U.** (May 2023). Project VOCES: Establishing student voice to drive STEM education transformation. Presented at the 2023 National Science Foundation Hispanic Serving Institutions PI Meeting, San Antonio, TX.

RESEARCH INTERESTS

Convex geometry, geometric analysis, geometric functional analysis, and information theory

SCHOLARSHIPS & AWARDS

٠	FIU-Gateway Award for Excellence in Teaching (FIU Medal was given)	2023
٠	FIU-Top Scholar Award	2022
٠	FIU- Rewarding Excellence in Teaching Incentives (RETI) Award	2022
٠	FIU-CASE Teaching Award	2021
٠	Nominated for FIU-Top Scholar Award	2021
٠	Nominated for FIU-Faculty Senate Excellence in Teaching Award	2020 & 2021
٠	Nominated for FIU-Gateway Award for Excellence in Teaching	2020 & 2021
٠	FIU-CASE Teaching Award	2019
٠	Graduate student travel award from American Mathematical Society	October 2013
٠	Visiting scholar, Kiel University in Germany	May 2013
٠	Graduate assistantship (tuition, fees, monthly stipend),	2010-2014
	Mathematics Department, Case Western Reserve University	
٠	Graduate scholarship (tuition, fees, monthly stipend)	2008-2014
	by Turkish Government for M.S. and Ph.D. degrees in USA	
٠	Ranked first among the class of 2005 of the Cukurova University	2005
	Department of Mathematics (Graduated Cum Laude)	

GRANTS/SUPPORTS:

• Faculty Fellow at NSF-HSI Institutional Transformation Project Voces (Award Number 2225201). Total award is \$2,999,986.00.

- CURM (The Center for Undergraduate Research in Mathematics), undergraduate research project, 2022 (Denied)
- FIU-CAT (local) grant (~4K), to redesign MAC 2281, 2282, and 2283 Calculus for Engineering in Hybrid and active learning format, Summer 2020
- FIU-STEM (local) grant (~\$10K), to redesign MAC 1147 Pre-Calc and Trig, Summer 2018 &2019
- FIU-HHMI (local) grant(~\$4K), to redesign MAC 1140, Precalculus Algebra, Summer 2017
- Dr. Umut Caglar (Co-PI), Dr. Peter J. Clarke (PI), Dr. Geoff Potvin (Co-PI), Dr. Bridgette Cram (Co-PI), Dr. Mario Eraso (Co-PI), Dr. Debra Davis (Co-PI), Ms. Maria Charters, (Co-PI), Ms. Leanne Wells, (Co-PI), Dr. Jeremiah Hower (Co-PI), and Dr. Anthony McGoron (Co-PI).

Project title: "Student Engagement and Retention in Engineering and Computing Gateway Courses Supported by a Cyberlearning Environment (STEM-CyLE)". **Agency:** IES, U.S. Dept. of Ed. Dates: 09/01/18 – 08/31/21. **Funds requested:** \$1.4M. (Denied)

TEACHING EXPERIENCE

- Pre-Calc Alg and Trig (Hybrid)
- Calculus I
- Stretch Pre-Calc Alg and Trig
- Pre-Calc Alg and Trig (Hybrid)
- Calculus I
- Stretch Pre-Calc Alg and Trig
- Calculus I for Engineering (Hybrid)
- Pre-Calc Alg and Trig (Hybrid)
- Calculus I
- Stretch Pre-Calc Alg and Trig
- Stretch Calculus II
- Pre-Calc Alg and Trig (Hybrid)
- Stretch Pre-Calc Alg and Trig
- Stretch Calculus II
- Pre-Calc Alg and Trig (Hybrid)
- Calculus I for Engineering
- Calculus I (Hybrid)
- Stretch Pre-Calc Alg and Trig
- Pre-Calc Alg and Trig (Hybrid)
- Calculus I for Engineering
- Pre-Calc Alg and Trig (Online)
- Finite Math (Hybrid)
- Trigonometry (Hybrid)

Fall 2023 (at FIU) Fall 2023 (at FIU) Fall D 2023 (at FIU) Spring2023&Summer 2023 (at FIU) Spring 2023 (at FIU) Fall D 2022 (at FIU) Fall 2022 (at FIU) Spring2022&Fall 2022 (at FIU) Spring 2022 & Fall 2022 (at FIU) Fall D 2021 (at FIU) Fall D 2021 (at FIU) Summer 2021 (at FIU) Summer 2021 (at FIU) Summer 2021 (at FIU) Fall 2020 & Spring 2021 (at FIU) Fall 2020 (at FIU) Summer 2020 & Fall 2020 (at FIU) Summer 2020 (at FIU) Spring & Summer 2020 (at FIU) Spring 2020 (at FIU) Fall 2019 & Spring 2020 (at FIU) Fall 2019 (at FIU) Summer & Fall 2019 (at FIU)

• Pre-Calc Alg and Trig	Summer & Fall 2019 (at FIU)
• Trigonometry (Hybrid)	Spring &Summer 2018 (at FIU)
Pre-Calculus	Fall 2017& Spring 2018 (at FIU)
Calculus I	Fall 2017 (at FIU)
• Trigonometry	Fall 2017 (at FIU)
Trigonometry (Hybrid)	Summer 2017 (at FIU)
• Trigonometry	Fall 2016 & Spring 2017 (at FIU)
Pre-Calculus	Fall 2016 & Spring 2017 (at FIU)
Discrete Mathematics	Summer 2016 (at FIU)
• Trigonometry	Fall 2015 & Spring 2016 (at FIU)
Pre-Calculus	Fall 2015 & Spring 2016 (at FIU)
Differential Equations	Summer 2015 (at CWRU)
Calculus III	Fall 2014 & Spring 2015 (at CWRU)
Calculus for non-science majors	Fall 2013 (at CWRU)
Graduate Student Teaching Assistant Tutoring & grading various undergraduate and grad	2008-2013 duate courses

* I was on parental leave in Fall 2018 and Spring 2019

* I was on Professional Development Leave in Fall 2021

COURSE DESIGN:

- Trigonometry (MAC 1114) in Hybrid format -2017
- Pre-calculus Algebra and Trigonometry (MAC 1147) in Online format -2019
- Pre-calculus Algebra and Trigonometry (MAC 1147) in Hybrid format -2019
- Calculus for Engineering Sequence (MAC 2281, 2282, and 2283) in Hybrid format-2020
- Stretch section for Pre-calculus Algebra and Trigonometry (MAC 1147) 2021
- Stretch section for Calculus II (MAC 2312) 2021
- Pre-calculus Algebra and Trigonometry (MAC 1147) with an Open Source Book -2022

SERVICE

- Experience Committee in FIU's 2030 Strategic Work Plan Fall 2023-Spring 2024 This committee was formed by the Provost's Office to develop an agile and innovative strategic plan that will address the needs of our students, faculty, staff, and community.
- Served in the General Education Review Ad hoc Workgroup -Fall 2023 This committee was formed by the Provost Office. We worked on the core curriculum courses and made sure they aligned with the state requirements.
- Serve in Human Resources Committee Since Summer 2023 Read all applications for promotions (we had six faculty members this academic year), meet with committee members to discuss the files, demonstrate the files to the center faculty, and write letters to the center director for each applicant.

- Organizing the Faculty Innovations and Student Success Showcase (FISSS) Fall 2022 and Spring 2023. I worked in the organizing committee to organize a panel about AI, ChatGPT, and their impact on teaching and learning.
- Serve in Faculty Senate Student Success Committee Since Fall 2022 Working with faculty from various disciplines at FIU to find solutions to problems related to education and student success at FIU. Our job is to identify evidence-based strategies (pedagogic and practical) for promoting student learning and academic success and report to the Faculty Senate.
- Serve as a Senator at the Faculty Senate since Fall 2021 My role is to discuss academic matters and general educational policies with the rest of the senate along with initiating, reviewing, evaluating and, recommending policies.
- Serve as a Senator at United Faculty of Florida (UFF-FIU) since Fall 2020 Attend training sessions, discuss local issues and, vote on policy Serve also as Legislative Affairs Chair and UFF- FEA Statewide Delegate since Fall 2022
- Reviewer for the Journals Math Reviews and zbMATH which provide brief synopses, and in some cases evaluations, of many articles in mathematics, statistics, and theoretical computer science.
- Served in Teaching Evaluation Committee Spring 2022 Develop some guidelines for teaching contributions and evaluation
- Serve as CASE Accessibility Faculty Liaison Fall 2021-Spring 2022 Work on accessibility issues identified in high enrollment gateway courses and in other courses enrolling DRC students in the math department, and work with student interns to fix those issues.
- Serve as a Hybrid Faculty Fellow at the Center for the Advancement of Teaching Fall 2021-Spring 2022 Train faculty to design evidence-based hybrid classes
- Coordinator of Pre-Calc Alg and Trig (MAC 1147) Fall 2019 Spting 2021 Organize weekly meetings with faculty, prepare departmental syllabus and common final exam, provide resources to support teaching and learning, use technology in classroom, and also maintain quality and consistency of instruction in multiple-sections.
- Served in Hiring Committee Fall 2020 Spring 2021 Read all applications, meet with committee members and interview candidates
- Served in Differential Assignment Policy Committee Fall 2019 Spring 2020 This committee was established to develop proposed departmental by-laws for discipline-aligned and equity-oriented research, service and teaching assignments for faculty members.

- Coordinator of Trigonometry (MAC 1114) Fall 2016 Summer 2019 Organize weekly meetings with faculty, prepare departmental syllabus and common final exam, provide resources to support teaching and learning, use technology (like Mymathlab and I-clicker) in classroom, and also maintain quality and consistency of instruction in multiple-sections
- Faculty Advisor of Turkish Student Association Spring 2018
- Reviewer for Math Reviews and zbMATH

GRADUATE COMMITTEE MEMBERSHIP

- Willian Neris Ph.D. in Teaching and Learning, FIU 03/2022 Present.
- Shivanni Jagessar Ph.D. in Teaching and Learning, FIU 03/2023 Present.

CONFERENCES

Conference Organization

• <u>Convexity, High-Dimensional Probability and Applications</u> Mathematical Congress of the Americas, University of Miami, Florida, July 2025

Invited/Delivered Talks

Colloc	uium Talk, Florida International University	April 2022
"From	Pinsker Type to Isoperimetric Type Inequalities for Log Conca	ve Functions"
• Gradu "Func	ate Student Seminar, Florida International University tional affine surface area and related isoperimetric inequalities"	November 2020
• Ameri "Isope	can Mathematical Society Meeting, University of Florida rimetric, information theoretic, and Monge Ampere type inequa	November 2019 lities"
• 34th S "Isope	outheastern Analysis Meeting (SEAM), Georgia Tech rimetric and information theoretic inequalities for log concave f	March 2018 unctions"
• Ameri "Mixe	can Mathematical Society Meeting, University of Georgia ed f-divergence and inequalities for log concave functions"	March 2016
• Colloc "Diver	uium Talk, Florida International University gence and Entropy inequalities for log concave functions"	October 2015
• Ameri "Mixe	can Mathematical Society Meeting, San Francisco State Universit d f-divergence and inequalities for log concave functions"	ty October 2014
• Analys "Diver	is Seminars, Kent State University gence and Entropy inequalities for log concave functions"	May 2014
• Ameri "Diver	can Mathematical Society Meeting, Washington University gence for s-concave and log concave functions"	October 2013
• Asymp Euler "Diver	ototic Geometric Analysis II International Mathematical Institute, St. Petersburg, Russia gence for log concave functions"	June 2013

Conferences and Workshops

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٠	Calculus of Variations in Probability and Geometry, at IPAM-UCLA, L	os Angeles, CA
	(Attended in person and served as session chair)	February 2022
٠	Hausdorff Trimester Seminars, "The Interplay between High-Dimensio	nal Geometry
	and Probability" (attended virtually)	
	Hausdorff Research Ins. for Mathematics, Bonn, Germany January	2021 - April 2021
•	School "Randomness online"(attended virtually)	
	Euler Inter. Math. Inst., St. Petersburg, Russia	November 2020
•	Sunshine State Teaching and Learning Conference, Daytona Beach, FL	January 2020
٠	In Mathematics Education Yesterday, Today, Tomorrow, Kangaroo	Mathematics,
	Nesin Math Village, Izmir, Turkey	April 2019
•	Sunshine State Teaching and Learning Conference, St. Petersburg, FL	January 2018
•	Quantum Information Theory at IHP, Paris, France	December 2017
•	Introductory Workshop: phenomena in high dimensions	
	at MSRI, Berkeley, CA	August 2017
•	Redesign: Technology and Innovation in Math & English, Charleston, S	SC March 2017
•	Chairs +1 meeting, TPSE Math, College Park, Maryland	March 2017
•	Teaching in the 21st Century, Sunshine State Teaching and Learning Co.	nference
	St. Petersburg, FL	February 2017
•	Information Theory and Concentration Phenomena, IMA, Minneapolis	, MS April 2015
•	Joint Mathematics Meetings, San Antonio, TX	January 2015
•	Interplay of convex geometry and Banach space theory, Banff, Canada	March 2013
•	Informal analysis seminars, Kent State University	November 2012
•	Invariants in convex geometry and Banach space theory, AIM, Palo Alto	, CA August 2012
•	Workshop on Convexity and Asymptotic Geometric Analysis	April 2012
	at CRM and University of Montreal, Canada	-
•	Informal analysis seminars, Kent State University	March 2012
•	Perspectives in High Dimensions, Case Western Reserve University	August 2010
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Local Conferences and Workshops

Gateway Inquiry Institute Workshop I and II, FIU	December 2023
Gateway Inquiry Institute Workshop I and II, FIU	May 2023
Gateway Inquiry Institute Workshop I and II, FIU	December 2022
Gateway Inquiry Institute Workshop I and II, FIU	May 2022
Teaching with LAs: Designing Group-worthy Activities	May 2021
Gateway Inquiry Institute Workshop, FIU	December 2020
• STRIDE Faculty Recruitment Workshop (STRIDE=Strategies and Tactics for Recruiting to Increase Diver	October 2020 sity and Excellence)
• Series of Workshops by the LA Program for Synchronous and As with LAs	ynchronous Learning April 2020
Bystander Leadership Program Workshop	September 2019
Math Hybrid Initiative Workshop, FIU	Summer 2017

٠	Provost's Hybrid Pilot Program, FIU	Spring 2017
•	International Conference on Geometry, Topology and Applications, FIU	Jan, 2017
•	Gateway Summer Institute Workshop, FIU	May, 2016
•	International Conference PDE, Complex Analysis, and Related Topics, FIU	Jan, 2016
Poste	ers	
•	Poster presentation, Quantum Information Theory, IHP, Paris, France De "Entropy inequalities for log concave functions"	cember 2017
•	Poster presentation, Information Theory and Concentration Phenomena IMA, Minneapolis, MS "Divergence for log concave functions"	April 2015
•	Poster presentation, Informal analysis seminars, Kent State University "Divergence for log concave functions	March 2014

TECHNICAL SKILLS

LATEX, MATLAB, MATHEMATICA, MYMATHLAB, IMATHAS