

EDUARDO DUEÑEZ

Associate Professor of Mathematics at The University of Texas at San Antonio

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eduenuez

EDUCATION

Ph.D. in Mathematics

Princeton University

2001

Thesis advisor: Peter Sarnak.

B.Sc. in Mathematics

University of Guanajuato, Mexico

1996

PROFESSIONAL EMPLOYMENT

Research Consultant

Gibran.ai (AI startup; seed funding from Together Fund)

2025 – 2026

Full-time research consulting, June-December 2025.

Associate Professor

The University of Texas at San Antonio

2011 – Present

Assistant Professor

The University of Texas at San Antonio

2005 – 2011

Presidential Fellow

The University of Texas at San Antonio

2004 – 2005

J. J. Sylvester Assistant Professor

The Johns Hopkins University

2002 – 2004

Research Fellow

American Institute of Mathematics, Palo Alto

2001

RESEARCH INTERESTS

My research revolves around analysis in a broad sense. I have worked on random matrix theory (Dyson's "Threefold Way"; linear group ensembles) and number theory (zeros of L-functions); nowadays, my research is on the foundations of analysis and probability, as well as both theoretical and applied aspects of real-valued computing.

REFEREED PUBLICATIONS

1. E. Dueñez, A. S. Hamakiotes, S. J. Miller. *Sums of Powers by L'Hospital's Rule*. *Fibonacci Quart.* **63**:3 (2025) 603–613.
2. Xavier Caicedo, Eduardo Dueñez, José N. Iovino. *Metastable convergence and logical compactness*. *Beyond First Order Model Theory*, Volume II, CRC Press, Boca Raton, FL (2023) 3–41.

RESEARCH AWARDS & GRANTS



NSF Grant: "Model Theory and Ergodic Theorems" (2015 – 2019)
Co-PI with José N. Iovino.



AMS/Tensor-SUMMA Grant (2007 – 2008)
Supported UTSA's Problem-Solving Seminar.

PREPRINTS & WORK IN PROGRESS

- E. Dueñez, J. Iovino, L. Salvetti Martinez, T. M. Wiederhold, Franklin Tall. *Complexity of deep computations via topology of function spaces* (In preparation.) arXiv:2601.00528.
- Samson Alva, E. Dueñez, J. N. Iovino, C. Walton. *Deep equilibria: Existence and computability* (To appear in *Mathematical Structures in Computer Science*.) arXiv:2409.06064.
- Peter G. Casazza, Eduardo Dueñez, José N. Iovino. *Nondefinability of the spaces of Tsirelson and Schlumprecht* (Accepted.)
- Eduardo Dueñez, José N. Iovino. *Analysis: The Study of Real-Valued and Random-Valued Structures* (Book in preparation.)

PROFESSIONAL/EDITORIAL SERVICE

- Associate Editor, *Mathematics Magazine* (2016 – 2019).
- Co-editor, Problems and Solutions column, *Mathematics Magazine* (2016 – 2019).
- Co-organizer (with J. Iovino), session "Topological Methods in Model Theory", Meeting of the AMS Central Section, University of Texas at San Antonio (2024).
- Member, SACNAS Summer Leadership Institute (2015).
- Reviewer of manuscripts for Princeton University Press, Oxford University Press.
- Referee. *Annals of Pure and Applied Logic*, *Bulletin of the London Mathematical Society*, *Communications*

3. Eduardo Dueñez, José N. Iovino. *Model theory and metric convergence II: Averages of unitary polynomial actions*. *Contemp. Math.* **775** (2021) 85–114.
4. Eduardo Dueñez, José N. Iovino. *Model theory and metric convergence I: Metastability and dominated convergence*. *Beyond First Order Model Theory, Volume I*, CRC Press, Boca Raton, FL (2017) 131–187.
5. E. Dueñez, D. K. Huynh, J. P. Keating, S. J. Miller, N. C. Snaith. *A Random Matrix Model for Elliptic Curve L -functions of Finite Conductor*. *Journal of Physics A: Mathematical and Theoretical* **45:11** (2012) 115207 (32 pp).
6. E. Dueñez, D. K. Huynh, J. P. Keating, S. J. Miller, N. C. Snaith. *The Lowest eigenvalue of Jacobi random matrix ensembles and Painlevé VI*. *Journal of Physics A: Mathematical and Theoretical* **43:40** (2010) 405204 (27 pp).
7. E. Dueñez, D. W. Farmer, S. Froehlich, C. P. Hughes, F. Mezzadri, T. Phan. *Roots of the Derivative of the Riemann Zeta Function and of Characteristic Polynomials*. *Nonlinearity* **23** (2010) 2599–2621.
8. E. Dueñez, S. J. Miller. *The effect of convolving families of L -functions on the underlying group symmetries*. *Proc. London Math. Soc.* **99:3** (2009) 787–820.
9. Stephanie Deacon, Eduardo Dueñez, José N. Iovino. *A public-key threshold cryptosystem based on residue rings*. *J. Discrete Math. Sci. Cryptogr.* **10:4** (2007) 559–571.
10. E. Dueñez, S. J. Miller. *The low lying zeros of a $GL(4)$ and a $GL(6)$ family of L -functions*. *Compos. Math.* **142:6** (2006) 1403–1425.
11. E. Dueñez. *“Harder” ensembles of orthogonal matrices*. *Experiment. Math.* **15:3** (2006) 273–277.
12. E. Dueñez, S. J. Miller, A. Roy, H. Straubing. *Incomplete quadratic exponential sums in several variables*. *J. Number Theory* **116:1** (2006) 168–199.
13. E. Dueñez. *Random matrix ensembles associated to compact symmetric spaces*. *Comm. Math. Phys.* **244:1** (2004) 29–61.

in Mathematical Physics, Experimental Mathematics, Journal of Number Theory, Journal of Physics A, Mathematics Magazine, The Ramanujan Journal, Indian Journal of Mathematics, Random Matrices: Theory and Applications, and others.

- NSF panelist; proposal reviewer for CONACyT (Mexico).
- Judge of student abstracts and posters, SACNAS (2010 – 2018).

PROFESSIONAL MEMBERSHIPS

- American Mathematical Society (AMS)
- Mathematical Association of America (MAA)
- Association for Symbolic Logic (ASL)
- Society for Advancement of Chicanos and Native Americans in Science (SACNAS)