

Contact Information Sabancı University
Faculty of Engineering
& Natural Sciences
Orta Mahalle, Üniversite Cad.
Tuzla/ İstanbul
34956 TURKEY

Phone: (216) 483-9513
E-mail: tbayraktar@sabanciuniv.edu
URL: myweb.sabanciuniv.edu/tbayraktar

Education **2006–2012** Ph.D. Mathematics,
Indiana University, Bloomington, USA
Dissertation Advisor: Eric Bedford

2003–2005 M.Sc Mathematics,
Middle East Technical University (METU), Turkey

1998–2002 B.Sc Mathematics,
Middle East Technical University (METU), Turkey

Research Interests Several Complex Variables, Complex Geometry, Holomorphic Dynamics

Appointments **11.2024–present** Full Professor, Sabancı University
03.2022–present Tosun Terzioğlu Chair of Mathematics, Sabancı University
02.2020–11.2024 Associate Professor, Sabancı University
06.2017–02.2020 Assistant Professor, Sabancı University
08.2016–05.2017 Visiting Assistant Professor, University of Hartford
08.2014–06.2016 Philip T. Church Postdoctoral Fellow, Syracuse University
08.2013–06.2014 Visiting Assistant Professor, Indiana University, Bloomington
07.2012–07.2013 Lecturer, Johns Hopkins University
08.2006–05.2012 Associate Instructor, Indiana University, Bloomington

Publications

1. **T. Bayraktar and D. Coman and G. Marinescu and V.-A. Nguyen**, Zeros of random holomorphic sections of big line bundles with continuous metrics, to appear in AMS Contemporary Mathematics volume in memory of Steve Zelditch, arXiv: 2404.08116.
2. **T. Bayraktar and T. Bloom and N. Levenberg**, Random Polynomials in Several Complex Variables, *Journal d'Analyse Mathématique*, 153(2024), 219-245.
3. **T. Bayraktar and E. Karaca**, An Exponential Rarefaction Result for Sub-Gaussian Real Algebraic Maximal Curves, *Comptes Rendus Mathématique*, 362 (2024), 779-788.
4. **T. Bayraktar and A. U. Ö. Kişisel**, Expected Multivolumes of Random Amoebas, *Journal of Complexity*, 80 (2024) paper no 101802.
5. **T. Bayraktar and Ç. Çelik**, Zero Distribution of Random Bernoulli Polynomial Mappings, *Electronic Journal of Probability* 28 (2023), article no. 128, 1-15.

6. **T. Bayraktar and M. Efe**, On the dynamics of asymptotically minimal polynomials, *Journal of Approximation Theory*, 295 (2023) Paper no 105956, 17pp.
7. **T. Bayraktar and S. Hussung, N. Levenberg and M. Perera**, Pluripotential theory and convex bodies: A Siciak-Zaharjuta Theorem, *Computational Methods and Function Theory*, 20 (2020) no. 3-4, 571-590.
8. **T. Bayraktar**, Mass Equidistribution for Random Polynomials, *Potential Analysis*, 53 (2020), no. 4, 1403-1421.
9. **T. Bayraktar and D. Coman and G. Marinescu**, Universality results for zeros of random holomorphic sections, *Transactions of the American Mathematical Society*, 373 (2020), no. 6, 3765-3791.
10. **T. Bayraktar and T. Bloom, N. Levenberg and C. H. Lu**, Pluripotential theory and convex bodies: Large Deviation Principle, *Arkiv for Matematik*, 57 (2019), no. 2, 247-283.
11. **T. Bayraktar**, On global universality for zeros of random polynomials, *Hacettepe Journal of Mathematics and Statistics*, 48 (2019), no. 2, 384-398.
12. **T. Bayraktar, D. Coman, H. Herrmann and G. Marinescu**, A survey on zeros of random holomorphic sections, *Dolomites Research Notes on Approximation*, 11 (2018), no. 4, Special issue dedicated to Norm Levenberg, 1-19.
13. **T. Bayraktar**, Almost sure invariance principle for non-autonomous holomorphic dynamics in \mathbb{P}^k , *Conformal Geometry and Dynamics*, 22 (2018), 45-61.
14. **T. Bayraktar**, Expected number of real roots for random linear combinations of orthogonal polynomials associated with radial weights, *Potential Analysis*, 48 (2018), no. 4, 459-471.
15. **T. Bayraktar and T. Bloom, and N. Levenberg**, Pluripotential Theory and Convex Bodies, *Sbornik Mathematics*, 209 (2018), no. 3, 67-101.
16. **T. Bayraktar**, Asymptotic normality of linear statistics of zeros of random polynomials, *Proceedings of the American Mathematical Society*, 145 (2017), no. 7, 2917-2929.
17. **T. Bayraktar**, Zero distribution of random sparse polynomials, *Michigan Mathematical Journal*, 66 (2017), no. 2, 389-419.
18. **T. Bayraktar**, Equidistribution of zeros of random holomorphic sections, *Indiana University Mathematics Journal*, 65 (2016), no. 5, 1759-1793.
19. **T. Bayraktar**, Ergodic properties of random holomorphic endomorphisms of \mathbb{P}^k , *International Mathematics Research Notices*, (2015), no. 4, 927-959.
20. **T. Bayraktar and S. Cantat**, Constraints on automorphism groups of higher dimensional manifolds, *Journal of Mathematical Analysis and Applications*, 405 (2013), no. 1, 209-213.
21. **T. Bayraktar**, Equidistribution toward the Green current in big cohomology classes, *International Journal of Mathematics*, 24 (2013), no. 10, 1350080, 25 pp.
22. **T. Bayraktar**, Green currents for meromorphic maps of compact Kähler manifolds, *Journal of Geometric Analysis* 23 (2013), no. 2, 970-998.

Preprints

1. **T. Bayraktar and A. U. Ö. Kişisel**, Expected depth of random real algebraic plane curves, submitted, arXiv: 2110.03198.
2. **T. Bayraktar**, Sampling property of Fekete points for random holomorphic sections, submitted, arXiv:2004.02773.

**Grants
&
Funding**

- TÜBİTAK & German DAAD Bilateral Cooperation Grant, **PI**, (01/01/2022-01/04/2024)
- TÜBİTAK 2219 grant for sabbatical, **PI**, (15/01/2024-01/09/2024)
- TÜBİTAK ARDEB-1001/119F184 Research Grant, **PI**, (15/11/2019-15/11/2022)
- TÜBİTAK ARDEB-3501/118F049 Career Development Grant, **PI**, (15/11/2018-15/11/2021)
- Turkish Academy of Sciences, **PI** (as a part of TUBA-GEBIP Award), 01.2020-01.2023
- The Science Academy, Turkey, **PI** (as a part of BAGEP Award), 05.2019-05.2021
- TÜBİTAK-BİDEB 2232/118C006, **PI**, 01/02/2018-01/02/2020
- TÜBİTAK ARDEB-1001/123F358 , **Researcher**, 10/04/2024-10/08/2026
- TÜBİTAK ARDEB-1001/118F405 , **Researcher**, 15/03/2019-15/03/2022
- TÜBİTAK 2518/119N642 Bilateral Cooperation Grant, **Researcher**, 12/01/2020-12/01/2022
- Sabancı University Internal Academic Activity Fund 06/2018, 02/2019, 06/2020, 06/2022
- Turkish Mathematics Association (TMD-MAD) Mathematical Research & Conference Organization Fund 06/2018, 01/2019, 01/2022

**Awards
&
Honors
&
Fellowships**

- Tosun Terzioğlu Chair of Mathematics, Sabancı University, March 2022
- Mathematics Foundation of Turkey, Prof. Dr. Masatoshi Gündüz İkedâ Research Award, 2019
- Turkish Academy of Sciences, Outstanding Young Scientist Award (TUBA-GEBIP), 2019
- Middle East Technical University Prof. Dr. Mustafa N. Parlâr Foundation, Research Incentive Award, 2019
- The Science Academy Turkey, Young Scientist Award (BAGEP), 2019
- Associate Professorship from YÖK, 9/2018
- TÜBİTAK-BİDEB 2232 Scholarship through project BİDEB-118C006
- American Mathematical Society Simons Travel Grant, 2015-2017
- Philip T. Church Postdoctoral Fellowship, Syracuse University, 2014-2016
- Indiana University College of Art and Science Travel Grant, 2012
- Indiana University Mathematics Department Travel Grant, 2008, 2010
- Indiana University Associate Instructorship 2006-2012
- TÜBİTAK, Graduate Scholarship 2003-2005
- Turkish Education Association, Undergraduate Scholarship, 1999-2000

**Supervising
&
Mentoring**

- Afrim Bojik, MSc, Sabancı University, 2019.
- Çiğdem Çelik, PhD student, Sabancı University, 2023.
- Melike Efe, PhD student, Sabancı University, 2023.
- Afrim Bojik, PhD, Sabancı University, 2024.
- Ozan Günyüz, Postdoctoral Fellow, Sabancı University, 01.2019-01.2021
- Emel Karaca, Postdoctoral Fellow, Sabancı University, 11.2019-11.2021

**Recent Invited
Conference
Talks**

- International Conference on Complex Analysis Dedicated to the memory of A. Gonchar and A. Vitushkin, Steklov Mathematical Institute of the Russian Academy of Sciences, October 2024.
- AMS special session, Panorama of Holomorphic Dynamics at the Sectional Mathematics Meetings in University of Wisconsin-Milwaukee USA, April 2024
- Holomorphic Day, University of Copenhagen, Denmark November 2023
- Geometric and Topological Properties of Random Algebraic Varieties, Cologne Germany, October 2023
- Complex Geometry, Dynamical Systems and Foliation Theory, CIRM Luminy France, October 2022
- Dynamical systems and systems of equations, Centro De Giorgi - Pisa Italy, June 2022
- Conference on Constructive Approximation of Functions, Poland, September 2021
- Taipei Conference on Complex Geometry, Sinica Taiwan, December 2019
- Workshop on Zeros of random polynomials, American Institute of Mathematics, San Jose USA, June 2019
- 31st Turkish National Mathematics Symposium, Erzincan, Plenary Address, Erzincan September 2018
- Random Matrix Theory 2018, Winter School, Nesin Mathematics Village, February 2018
- Computational Methods and Function Theory Conference, Lublin Poland, July 2017
- Midwest Several Complex Variables Conference, University of Toledo USA, May 2016

**Recent Seminar
& Colloquia
Talks**

- Bosphorus University, Colloquium, November 2024
- Florida Atlantic University, Analysis and Applications Seminar, August 2024
- Syracuse University, Colloquium, USA, April 2024
- Notre Dame University, Felix Klein Lecture, March 2024
- METU-Bilkent University, Algebraic Geometry Seminar, March 2024
- IUPUI, Dynamical System Seminar, February 2024
- Indiana University, Analysis Seminar, February 2024
- Syracuse University, Colloquium, USA, October 2021
- Indiana University, Several Complex Variables Seminar, October 2021
- Texas A&M Qatar, Virtual East-West SCV Seminar, March 2021
- Indian Statistical Institute, Colloquium, February 2021

**Recent
Academic
Visits**

- Indiana University (October 2021, January-September 2024)
- Syracuse University (October 2021, April 2024)
- University of Cologne (July 2018, March 2021, April 2022, October 2023)
- CIRM, Luminy France (January 2020, October 2022)
- University of Barcelona (April 2023)
- Université d'Aix-Marseille (March 2018)
- University of Auckland (July 2016)

Professional Memberships

- American Mathematical Society
- Turkish Mathematical Society
- Science Academy, Turkey (BAGEP)
- Turkish Academy of Sciences (GEBIP)

Service

- Director, Istanbul Center for Mathematical Sciences (IMBM), 2022-2024.
- Science Academy Turkey, BAGEP Award Jury Member 2023, 2024.
- Mathematics Foundation Gündüz İkedâ Award Jury Member 2024.
- TÜBİTAK ARDEB 1001 projects MFAG, consultant & panelist 2019-2023.
- TÜBİTAK ARDEB 1002 projects MFAG reviewer 2023.
- Refereed for *Trans. Amer. Math. Soc.*, *J. Differential Geom.*, *J. Geom. Anal.*, *J. Math. Anal. Appl.*, *Indiana Univ. Math. J.*, *J. Inst. Math. Jussieu*, *J. Approx. Theory, Comp. Methods Func. Theory* and *Turkish J. Math.*
- Reviewer for AMS Mathematical Reviews and Zentralblatt Math.
- Transfer Committee, Sabancı University, 2017-2023
- Discipline Committee, Sabancı University, 2017-2023

Conference Organization

- Organizer, Randomness in Complex Analysis and Complex Geometry Workshop, September 2024, Nesin Mathematics Village, Izmir/Turkey.
- Organizer, Randomness in Complex Analysis and Complex Geometry Workshop, June 2022, Nesin Mathematics Village, Izmir/Turkey.
- Organizer, Research Workshop on Random Real Algebraic Geometry, October 2019, METU NCC, Cyprus
- Organizer, Frontiers in Several Complex Variables and Functional Analysis, May 2019, METU, Ankara/Turkey
- Organizer, Random Real Algebraic Geometry Workshop, January 2019, Nesin Mathematics Village, Izmir/Turkey
- Organizer, Randomness in Complex Analysis and Complex Geometry, June 2018, Nesin Mathematics Village, Izmir/Turkey
- Organizer, İstanbul Analysis Seminars since Fall 2017.
- Organizer, AMS special session on Randomness in Complex Geometry, April 2017, Bloomington IN, USA.

Synergic Activities

- Nesin Mathematics Village, Lecturer, 2017-2023
- Math Club Lecturer, Syracuse University, 2014-2015.

**Teaching
Experience**

At Sabancı University

MATH 505 Graduate Complex Analysis
MATH 524 Graduate Probability Theory
MATH 523 Graduate Riemann Surfaces
MATH 501 Graduate Analysis I
MATH 502 Graduate Analysis II
MATH 68003 Special Topics in Several Complex Variables
MATH 301 Introduction to Mathematical Analysis
MATH 305 Complex Calculus
MATH 203 Introduction to Probability
MATH 201 Linear Algebra

At University of Hartford

MAT 344 Advanced Engineering Mathematics, Fall 2016, Spring 2017
MAT 145 Calculus II, Fall 2016
MAT 442 Introduction to Complex Analysis, Spring 2017

At Syracuse University

MAT 485 Differential Equations & Linear Algebra, Spring 2016
MAT 285 Calculus for Life Sciences, Fall 2015
MAT 331 Linear Algebra, Fall 2014
MAT 295 Calculus, Spring 2015

At Indiana University

M119 Brief Survey of Calculus: Fall 2010, Spring 2010, Summer 2012
M118 Finite Mathematics: Summer 2010, Spring 2011, Fall 2013
M211 Calculus I, Fall 2013
M303 Linear Algebra, Spring 2014, Summer 2014

At Johns Hopkins University

110.405 Analysis I, Spring 2013
110.201 Honors Multivariable Calculus, Spring 2013
110.107 Calculus II for Biological and Social Sciences, Fall 2012