Curriculum Vitae
Bülent Tosun

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Education/Employment

2023 –	Elmore Professor, University of Alabama
2022 –	Associate Professor of Mathematics, University of Alabama
2016 – 2021	Assistant Professor of Mathematics, University of Alabama
2013 – 2017	Whyburn Research Instructor in Mathematics, University of Virginia
2012 – 2013	CRM Postdoc, UQAM, Montreal
2009 – 2012	Research/Teaching Assistant Georgia Institute of Technology, Mathematics
2009 – 2012	Ph.D. Georgia Institute of Technology, Mathematics (advisor: John B. Etnyre)
2001	Sc.B Yüzüncü Yil University, Mathematics (rank first in Arts & Sciences)

Appointments / Visiting positions

2023-2024	Member, Institute for Advanced Study, Princeton, USA.
Fall 2019	Visiting Scholar, CRM/CIRGET, Montreal, Canada.
Summer 2014	Visiting Researcher, Max-Planck Institute, Bonn, Germany.
Spring 2010	Member, Mathematical Sciences Research Institute, UC Berkeley, USA.

Scientific/Academic honors, grants

2023 – 2027	Marilyn Williams Elmore and John Durr Elmore Endowed Professorship
2023 – 2024	Simons Fellow in Mathematics
2022 – 2027	National Science Foundation CAREER Grant (DMS-2144363)
2021 – 2024	National Science Foundation Grant (DMS-2105525)
2019 – 2024	Simons Foundation Collaboration Grant (BT–636841)
9/2019	CRM-Simons Scholar-in-Residence in Montreal, Canada.
2018	The 2018 Lewis-Parker Lecture.
2018 – 2019	SEC Faculty Travel Grant
2014 – 2017	AMS-Simons Travel Grant
2009	Turkish Scientific and Technological Research Council (TUBITAK) Scholarship

Research interests

Low dimensional topology, Symplectic and contact geometry, Heegaard-Floer homology. Symplectic and holomorphic convexity.

Publications

Published or to appear or submitted

1. Unknotted curves on Seifert surfaces (with S. Dey, V. King*, C. Shaw* and B. Trace).
   Pacific Journal of Mathematics, to appear, 2024.

   * *Undergraduate students.*

2. Fillable contact structures from positive surgeries (with T. Mark).
   Transactions of American Mathematical Society, to appear, 2024.

3. Homology spheres bounding acyclic manifolds and symplectic fillings (with J. Etnyre).
   Michigan Mathematical Journal. $\mathbf{73}(\mathbf{4})$, $719 - 734$, 2023.

4. On contact type hypersurfaces in 4-space (with T. Mark).
   Inventiones Mathematicae $\mathbf{228}$, 493-534, 2022.

5. Stein Domains in $\mathbb{C}^2$ with prescribed boundary.
   Advances in Geometry $\mathbf{22}(\mathbf{1})$, 9-22, 2022.

6. Mazur-type manifolds with L–space boundary (with J. Conway).
   Math Research Letters, $\mathbf{27}(\mathbf{1})$, 35-42, 2020.

7. Tight small Seifert fibered spaces with $e_0 = -2$.
   Algebraic & Geometric Topology $\mathbf{20}(\mathbf{1})$, 1-27, 2020.

8. Symplectic fillings, contact surgeries and Lagrangian discs (with J. Conway and J. Etnyre).
   International Mathematics Research Notices, $\mathbf{2021}(\mathbf{8})$, 6020-6050, 2021.

9. Obstructing pseudo-convex embeddings and contractible Stein fillings of Brieskorn spheres (with T. Mark).
   Advances in Mathematics $\mathbf{335}$, 878-895, 2018.

10. Naturality of Heegaard Floer invariants under positive rational contact surgery (with T. Mark).
    Journal of Differential Geometry, $\mathbf{110}(\mathbf{2})$, 281-344, 2018.

11. Hyperbolic rational homology spheres not admitting fillable contact structures (with A. Kaloti).
    Math Research Letters $\mathbf{24}(\mathbf{6})$, 1693-1705, 2017.

12. On the Legendrian and transverse classification of cablings.
    Math Research Letters $\mathbf{20}(\mathbf{4})$, 787-803, 2013.

13. Legendrian and transverse cables of positive torus knots (with J. Etnyre and D. LaFountain).
    Geometry & Topology $\mathbf{16}$, 1639-1689, 2012.

In progress

1. Legendrian knots in overtwisted manifolds (with P. Cahn).

2. Tight surgeries on torus knots (with J. Etnyre and H. Min).

3. Contact geometry of Seifert fibered spaces (with J. Etnyre).

4. Symplectic convexity in rational complex surfaces with prescribed boundary (with T. Mark).

5. (Book Project) Low dimensional contact topology (with J. Etnyre).

Lecture series and presentations (91 total)

Lecture series

2024 Mar. PACT Meetings, Bryn Mawr: Fillable surgeries [2 lectures]
2024 Feb. IAS, Princeton: Symplectic convexity in closed symplectic 4-manifolds [2 lectures]
2023 Oct. IAS, Princeton: Symplectic fillability and contact surgery [2 lectures]
2019 Oct. CIRGET, Montreal: Stein domains in $\mathbb{C}^2$ with prescribed boundary and Symplectic Rigidity [3 lectures]
2019 May. Louisiana State University: Stein domains in $\mathbb{C}^2$. [2 lectures]
2016 Oct. University of Alabama: Symplectic and contact geometry in low dimensions [5 lectures]
2012 Aug. Georgia Institute of Technology: Geometry and topology of 3–manifolds, Heegaard-Floer homology and interactions [15 lectures]

Invited conferences

2024 Jan. Seoul, South Korea Intensive Lectures in Low Dimensional Toplogy
2023 Oct. Simons Foundation: MPS Annual Meeting
2022 Apr. ICERM at Brown University: Braids in Low Dimensional Topology
2022 Mar. (VIRTUAL) Banff International Research Station, Canada: Interactions of gauge theory with contact and symplectic topology in dimensions 3 and 4.
2021 Apr. (VIRTUAL) Cincinnati, USA: Legendrian Knots and Surfaces, AMS Meeting.
2020 Jun. Dubrovnik, Croatia: Holomorphic Curves and Low Dimensional Manifolds (Cancelled due to COVID-19).
2020 Jun. Banff International Research Station, Canada: Interactions of gauge theory with contact and symplectic topology in dimensions 3 and 4 (Done virtually due to COVID-19).
2018 Jul. Austin, USA: The Topology and Geometry of Low Dimensional Manifolds: A Celebration of the Mathematics of Bob Gompf.
2018 Jun. Dubrovnik, Croatia: Geometric Structures on 3– and 4– Manifolds.
2018 Feb. Alabama, USA: The Lewis-Parker Lecturer at the 68th Annual Meeting of the AACTM.
2017 Jun. Gökova, Turkey: 24th Gökova Geometry and Topology Conference.
2016 Apr. Arkansas, USA: The 41st Spring Lecture Series at the University of Arkansas.
2016 Mar. Georgia, USA: Low-Dimensional Topology, AMS Meeting, UGA.
2015 Apr. Nevada, USA: Contact Geometry and Low-Dimensional Topology, AMS Meeting, UN.
2014 Mar. Virginia, USA: 48th Spring Topology and Dynamics Conference.
2013 Oct. Pennsylvania, USA: Contact and Symplectic Topology, AMS Meeting, Temple U.
2011 Dec. Georgia, USA: 1st Tech Topology Conference, Georgia Tech.

2011 Oct. North Carolina, USA: Low Dimensional Topology, AMS Meeting, WFU.

2011 Apr. Michigan, USA: 9th Graduate Student Topology and Geometry Conference, MSU.

Invited colloquium talks

2024 Apr. Haverford-Bryn Mawr, Bi-college Math Colloquium

2024 Apr. Rutgers-Newark, Colloquium

2024 Mar. University of Pensilvania, The Math Colloquium

2023 Nov. Columbia University, Undergraduate Colloquium

2023 Mar. University of South Alabama, Colloquium

2018 Jun. MSGSU, Istanbul, General Seminar

2016 Apr. University of Alabama, Colloquium

Invited seminar talks

2024 Apr. Rutgers, Geometry-Topology Seminar

2024 Mar. UMass Amherst, Geometry-Topology Seminar

2024 Feb. Bryn Mawr, PACT Seminar

2024 Feb. Georgia Tech, Geometry-Toplogy Seminar

2023 Dec. Columbia University, Geometry-Topology Seminar

2023 Oct. Princeton University, Topology Seminar

2023 Oct. Joint IAS/Princeton Symplectic Geomerty Seminar

2023 Mar. University of South Alabama, Topology Seminar

2021 Apr. Western Hemisphere Symplectic Seminar.

2021 Apr. Northern California Symplectic Geometry Seminar–Joint seminar of Berkeley-Santa Cruz-Davis-Stanford

2020 Dec. METU Geometry Seminar

2020 Nov. Brandeis University –Brandeis Topology Seminar

2020 Nov. The Renyi Institute, Budapest. Algebraic Geometry and Differential Topology Seminar

2020 Mar. Georgia Joint Topology Seminar – joint seminar of Georgia Tech and UGA

2019 Dec. University of Virginia, Geometry Seminar

2019 Nov. PATCH – Philadelphia Area Topology Seminar – joint seminar of UPenn, Bryn Mawr and Temple

2019 Oct. Dartmouth College, Topology Seminar

2019 Sep. CIRGET/UQAM, Topology Seminar

2019 July. IAS Park City Summer School for Undergraduate Faculty Program (2 talks)

2019 Apr. University of Texas, Austin Topology Seminar

2019 Feb. Duke University, Triangle Topology Seminar

2018 Dec   Middle East Technical University, Topology Seminar

2018 Nov. University of Buffalo, Topology Seminar

2018 May   Georgia Institute of Technology, Geometry-Topology Seminar

2018 Mar. University of Virginia, Geometry Seminar

2018 Mar. Louisiana State University, Topology Seminar

2017 Nov. University of Massachusetts, Amherst, Topology Seminar

2017 Mar. University of California Berkeley, Topology Seminar
2017 Mar. University of California Berkeley, Introductory Topology Seminar
2016 Dec. Middle East Technical University, Topology Seminar
2016 Nov. University of Iowa, Topology Seminar
2016 Nov. University of Buffalo, Topology Seminar
2016 Oct. Georgia Institute of Technology, Geometry-Topology Seminar
2016 Oct. University of Virginia, Geometry Seminar
2016 Apr. University of Alabama, Colloquium
2016 Mar. Michigan State University, Topology Seminar
2016 Feb. University of Virginia, Geometry Seminar
2015 Aug. University of Virginia, Geometry Seminar
2015 Apr. Georgia Institute of Technology, Geometry-Topology Seminar
2015 Feb. University of Virginia, Geometry Seminar
2014 May Max-Planck institute, Geometry-Topology Seminar
2013 Dec. Middle East Technical University, Topology Seminar
2013 Nov. University of Virginia, Geometry Seminar
2013 Oct. Georgia Institute of Technology, Geometry-Topology Seminar
2013 Apr. Université de Montréal, Symplectic Geometry Seminar
2012 Oct. LSU/Iowa/Rice Joint Virtual Topology Seminar (at LSU)
2012 Oct. Louisiana State University, Topology Working Seminar
2012 Oct. CIRGET, Low Dimensional Topology Seminars (4 talks)
2012 Apr. Massachusetts Institute of Technology, Geometry-Topology Seminar
2011 Nov. University of Texas, Austin Topology Seminar
2011 Nov. University of Minnesota, Differential Geometry Seminar
2011 May Middle East Technical University, Topology Seminar
2011 Apr. Duke University, Topology Seminar
2011 Mar. Columbia University, Symplectic and Gauge Theory Seminar
2010 Dec. Middle East Technical University, Topology Seminar
2009 Nov. University of Buffalo, Topology Seminar

Outreach talks

2019 Feb   GREX Research Talk: Low Dimensional Geometric Topology
2018 Feb   GREX Research Talk: Smooth Manifold Topology
2018 Apr. Pi Mu Epsilon talk at UA: Knots and their invariants
2016 Sep. Undergrad Math Club at UA: A glimpse of knot theory in arts, sciences and mathematics

Professional Service

Administrative

2022   Panelist–Simons Foundation Collaboration Grants
2022   Panelist/Reviewer–National Science Foundation

2021   Panelist–Simons Foundation Collaboration Grants

Organizing activities (conferences, meetings)

2023–2024   Co-organizer (with H. Hofer, S. Tanny, L. Polterovich, V. Humilière, E. Shelukhin, O. Cornea, C. Viterbo and S. Tukachinsky): Joint IAS/Montreal/Tel Aviv/Paris virtual Symplectic Geomerty Seminars (aka Symplectic Zoominar).

2023–2024   Organizer: "IAS Informal Symplectic Geometry Seminars"

2024   April   Co-organizer (with Ian Zemke, Fraser Binns, and Anubhav Mukherjee): "Recent Progress in 3-and 4- Manifold Topology" workshop at Princeton University from April 27-29.

2023   June   Organizer: 2023 SEC Geometry-Topology Workshop at the University of Alabama from June 2-4.

2023   April   Co-organizer (with Tom Mark and Laura Starkston): An international workshop on "Symplectic and Holomorphic Convexity" at Banff International Research Station, Banff, Alberta, Canada, from April 9-14, 2023

2022   June-July   Organizer "2022 Topology REU at the University of Alabama"

2022   October   Co-organizer (with Hannah Turner and Jon Simone): A special session on "Interactions between 3-manifolds and 4-manifolds", AMS Fall meeting at University of Tennessee.

2021   November   Co-organizer (with Angela Wu and Sam Lisi): A special session on "Low dimensional symplectic and contact topology, their invariants and interactions", AMS Fall meeting at University of South Alabama.

2019   March   Organizer of a Public Lecture at the University of Alabama– the distinguished speaker was Prof. Karen Parshall–Commonwealth Professor of History and Mathematics at the University of Virginia.

2019   February   Co-organizer of a Public Lecture at the University of Alabama– the distinguished speaker was Prof. Ken Ono–Jefferson Professor of Mathematics at the University of Virginia.

2019   March   Co-organizer (with John Etnyre and Shea Vela-Vick): A special session on "Geometry and Topology of low dimensional manifolds and their invariants", AMS Spring meeting at Auburn University.

2015   March   Co-organizer (with Tom Mark and Cagatay Kutluhan): A special session on "Geometric structures on low dimensional manifolds and their invariants", AMS Spring meeting at Georgetown.

Journals and AMS publications refereed

- Geometry & Topology ● Advances in Mathematics, ● Acta Math Hungarica
- Journal of Differential Geometry ● Geometry & Topology Monographs ● Quantum Topology
- Pacific Journal of Mathematics ● Michigan Mathematical Journal ● Algebraic & Geometric Topology
- Proceedings of the American Math Society ● Topology and Its Applications
- Proceedings of the Gökova Geometry-Topology Conference ● Proceedings of Knots in Poland
- Journal of Knot Theory and Its Ramifications ● Journal of Symplectic Geometry
- New York Journal of Mathematics ● MSP K3-Project. ● IMRN

Teaching awards/recognition

2022	My teaching was highlighted in the book: "Inclusive College Classrooms" by Drs. Cardon and Womack.
2012	Award from the "Thank a Teacher" program at Georgia Institute of Technology, Center for the Enhancement of Teaching and Learning (Math 2403)
2011	Award from the "Thank a Teacher" program at Georgia Institute of Technology, Center for the Enhancement of Teaching and Learning (Math 1712)

Teaching activities

Courses taught at Alabama

2023 Spring Discrete Mathematics (Math 301)
2022 Fall   Introduction to General Topology (Math 465/565)
2022 Spring Applied ODE (Math 238)
2022 Spring Introduction to Algebraic Topology (Math 466/566)
2021 Fall   Discrete Mathematics (Math 301)
2021 Fall   Applied ODE (Math 238)
2021 Spring Discrete Mathematics (Math 301)
2021 Spring Topics in Topology (Math 661)
2020 Fall   Discrete Mathematics (Math 301) (Course Coordinator)
2020 Fall   Introduction to General Topology (Math 465/565)
2020 Summer Discrete Mathematics (Math 301)
2020 Spring Topics in Topology (Math 661)
2020 Spring Discrete Mathematics (Math 301)
2019 Spring Discrete Mathematics (Math 301)
2019 Spring Introduction to Algebraic Topology (Math 466/566)
2018 Fall   Honors Calculus II (Math 146)
2018 Fall   Discrete Mathematics (Math 301)
2018 Spring Discrete Mathematics (Math 301)
2018 Spring Applied ODE (Math 238)
2017 Fall   Applied ODE (Math 238)
2017 Fall   Calculus II (Math 126)
2017 Spring Introduction to Algebraic Topology (Math 466/566)
2017 Spring Calculus I (Math 125)
2016 Fall   Calculus II (Math 126)

Courses taught at Virginia

2016 Spring Calculus on Manifolds (Math 5331)
2016 Spring Linear Algebra (Math 3351)
2016 Fall   Topics in Geometry and Topology (Math 8850)
2015 Spring Calculus on Manifolds (Math 5331)
2015 Fall   Differential Equations (Math 3250)
2013 Fall   Complex Analysis and Its Applications (Math 3340)

Courses taught at McGill

2013 Winter Honors Algebra (Math 326)

Courses taught at Georgia Tech

2012 Spring Differential Equations (Math 2403)
2011 Fall   Survey of Calculus II (Math 1712)

Recitations led at Georgia Tech

2012 Summer Calculus II (Math 1502)
2010 Fall   Calculus III (Math 2401)
2009 Spring Differential Equations (Math 2403)

Seminars organized

2017 Spring Algebra-Topology Seminars (at University of Alabama)
2013 Fall   Low dimensional topology working seminars (at University of Virginia)
2012 Fall   Low dimensional topology working seminars (at CIRGET – Montreal)
2012 Spring Research Horizons Seminar (at Georgia Institute of Technology)
2011 Fall   Research Horizons Seminar (at Georgia Institute of Technology)
2009 Fall   Topology graduate student seminar (at Georgia Institute of Technology)

Mentoring activities

Postdoc mentees

2021–2023   Subhankar Dey. Dr. Dey is now a postdoctoral fellow at Durham University in the UK.

Ph.D. Dissertation Committees

2020–2021   (Co-chair) Michael Vaughan (jointly with Dr. Kyungyong Lee)

2022–2023   (Member) Blake Jackson – University of Alabama

2022–2023   (Member) Brittany Burdette – Joint Applied PhD Program UA/UAB/UAH

2023–   (Member) Thomas Sirna – Joint Applied PhD Program UA/UAB/UAH

2018–2019   (Member) Tim Homan – University of Alabama

2020–2021   (Member) Sandeep Vejandla – Joint Applied PhD Program UA/UAB/UAH

2019–2021   (Member) Evan Lee – University of Alabama

2020–2022   (Member) Anna Keefe – University of Alabama

2023–   (Member) Jihyun Lee – University of Alabama

2021–   (Member) Dong-Son Nguyen – University of Alabama

Accelerated Masters Program Projects

2021-2022   Ricky Johnson

College/University service

2020–2023   Elected member of Faculty Senate (2020–2023)

Departmental service

Departmental committees at Alabama

2022–   Long Range Committee

2018–2020   Faculty Mentor for Putnam Exam

2016–2017   Action Plan Committee

2018–   Colloquium Committee

2017–   Organizer of Algebra-Topology Seminars

2020–   Co-Advisor for Accelerated Masters Program Students

Departmental committees at Virginia

2013–2016   Faculty Mentor for Putnam Exam