
► Eaman Eftekhary

Address: School of Mathematics,
Institute for Research in Fundamental Sciences (IPM)
Niavaran Square, Tehran, Iran
P. O. Box: 19395-5746
Phone: 2310- Ext 2111
Birth Place and Date: Golpayegan, Iran, 23/09/1979
E-mail: eaman.eftekhary@gmail.com
Website: <http://math.ipm.ir/~eftekhary>

Education

PhD in Mathematics, July 2004

Princeton University, Princeton, NJ, USA
Thesis Title: Holomorphic Curves in Geometry and Topology
Supervisors: Zoltan Szabo and Gang Tian

BSc in Mathematics, July 2000

Sharif University of Technology, Tehran, Iran
Thesis Title: Automorphisms of the Klein Curve
Supervisor: Arash Rastegar

High School Diploma, September 1997

Allameh Helli High School, Tehran, Iran
Under National Organization for Development of Exceptional Talents (NODET)

Work History (Scientific)

Faculty Member

- March 2013- Present
- School of Mathematics, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran

Senior Research Fellow (with rank of Associate Professor)

- July 2007- March 2013
- School of Mathematics, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran

Benjamin Peirce Assistant Professor of Mathematics

- August 2004- June 2007
- Mathematics Department, Harvard University, Cambridge, MA, USA

Work History (Administrative)

Secretary of the Science and Technology Headquarter

- ▶ March 2024- present
- ▶ Supreme Council for Cultural Revolution (SCCR), Tehran, Iran

Member, Supreme Council for Cultural Revolution (SCCR)

- ▶ November 2021
- ▶ Supreme Council for Cultural Revolution (SCCR), Tehran, Iran

President, Iran National Science Foundation (INSF)

- ▶ March 2019- April 2022
- ▶ Iran National Science Foundation, Tehran, Iran

Head of School of Mathematics

- ▶ September 2022- Present
- ▶ School of Mathematics, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran

Vice Head of School of Mathematics

- ▶ March 2008- March 2019
- ▶ School of Mathematics, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran

Awards and Honors

Associate Member of Iran Academy of Science

- ▶ Iran Academy of Science, Since 2024

Distinguished Scientist Award

- ▶ Alborz Foundation, Iran, 2019

Abureihan Prize in Basic Sciences

- ▶ Iran Academy of Science (IAS), 2018

One of 50 Distinguished Graduates in 50 Years of Activity

- ▶ Sharif University of Technology, 2016, 50th Anniversary of Sharif University of Technology

Editor of Bulletin of Iran Mathematics Society,

- ▶ Iran Mathematical Society, Since 2016

Sobooti-Khajehpour Prize in Fundamental Sciences

- ▶ Sobooti-Khajehpour Foundation, 2014

Invited Member of Iran Academy of Science

- ▶ Iran Academy of Science, 2014-2024

Innovation and Flourishing Research Grant

- ▶ Iran National Elites Foundation, 2009

Principle Investigator (NSF Grant)

- ▶ National Science Foundation (NSF), USA, 2005-2007

Liftoff Fellowship (declined)

- ▶ Clay Foundation, USA, 2004

Graduate Fellowship

- ▶ Princeton University, 2000

Grand First Prize

- Mathematics Competition for University Students, Kestely, Hungary, 1999
- 2nd Place**
- National Mathematics Competition for University Students, Ahvaz, Iran, 1998
- Undergraduate Support**
- Institute for Research in Fundamental Sciences (IPM), 1997-2000
- Full Mark and Gold Medal**
- International Mathematics Olympiad, Mar del Plata, Argentina, 1997
- Gold Medal**
- National Mathematics Olympiad, Iran 1996
- Gold Medal**
- International Mathematics Olympiad, Mumbai, India, 1996
- Gold Medal**
- National Mathematics Olympiad, Iran 1995
- Gold Medal**
- National Informatics Olympiad, Iran 1995

PhD Students

Graduated

Sridhar Rajagopalan

- Brandeis University, MA, USA, 2007

Akram Alishahi

- (joint supervision with Alireza Bahraini), Sharif University of Technology, Iran, 2014

Narges Bagherifard

- (joint supervision with Hamidreza Fanai), Sharif University of Technology, Iran, 2021

Current Students

Neda Bagherifard

- IPM, Iran

Roohallah Mahkam

- IPM, Iran

Marzieh Souri

- IPM, Iran

Mohammad Ghiasi

- Sharif University of Technology, Iran

Siavash Ossareh

- IPM, Iran

Farzaneh Adibi

- IPM, Iran

Selected Publications

Top Journals of Lists A by INSF:

Finiteness and rigidity of J-holomorphic curves in symplectic 3-folds

- *Adv. Math.*, 289 (2016) pp 1082-1105.

On the kappa ring of $\bar{M}_{g,n}$

- (joint work with Iman Setayesh), *Adv. Math.*, 298 (2016) pp 89-121.

Bordered Floer homology and existence of incompressible tori in homology spheres

- *Composito Math.* 154 (2018), pp 1222-1268.

Top Journals of Lists A by INSF:

Floer homology of certain pseudo-Anosov maps

- *J. Symplectic Geom.* 2 (2004), no. 3.

A refinement of sutured Floer homology

- (joint work with A. S. Alishahi), *J. Symplectic Geom.* 3 (2015) no 3, pp 609-743.

On the structure of the kappa ring

- (joint work with Iman Setayesh), *IMRN*, 11 (2017) pp 3281–3321.

Knot Floer homology and the unknotting number

- (joint with Akram Alishahi) *Geometry & Topology*, 24 (2020) pp 2435-2469.

Tangle Floer homology and the cobordisms between tangles

- (joint with Akram Alishahi) *J. Topology*, 13 (2020) pp 1582-1657

Counting closed geodesics on Riemannian manifolds

- *Calc. Var. Part. Diff. Eq.* 64 (2025) 97

Rational tangle replacements and knot Floer homology

- To appear in *J. Symplectic Geom.*

A Heegaard-Floer TQFT for link cobordisms

- To appear in *Trans. Amer. Math. Societ.*

All Publications

Floer homology of certain pseudo-Anosov maps

- *J. Symplectic Geom.* 2 (2004), no. 3.

Longitude Floer homology for knots and the Whitehead double,

- *Alg. and Geom. Topology* 5 (2005) pp. 1389-1418.

A combinatorial approach to surgery formulas in Heegaard Floer homology

- *Alg. and Geom. Topology* 9 (2009) pp. 2225-2246.

Knots which admit a surgery with simple knot Floer homology groups

- *Alg. and Geom. Topology* 11 (2011) pp. 1243-1256.

A refinement of sutured Floer homology

- (joint work with A. S. Alishahi), *J. Symplectic Geom.* 3 (2015) no 3, pp 609-743.

Floer homology and splicing knot complements

- *Alg. and Geom. Topology*, 15 (2015) pp 3155-3213.

Finiteness and rigidity of J-holomorphic curves in symplectic 3-folds

- *Adv. Math.*, 289 (2016) pp 1082-1105.

On the kappa ring of $\bar{M}_{g,n}$

- (joint work with Iman Setayesh), *Adv. Math.*, 298 (2016) pp 89-121.

On the structure of the kappa ring

- (joint work with Iman Setayesh), *IMRN*, 11 (2017) pp 3281–3321.

Bordered Floer homology and existence of incompressible tori in homology spheres

- *Composito Math.* 154 (2018), pp 1222-1268.

Knot Floer homology and the unknotting number

- (joint with Akram Alishahi) *Geometry & Topology*, 24 (2020) pp 2435-2469.

Tangle Floer homology and the cobordisms between tangles

- (joint with Akram Alishahi) *J. Topology*, 13 (2020) pp 1582-1657

Correction to the article: Floer homology and splicing knot complements

- *Alg. and Geom. Topology*, 20 (2020) pp 3205-3218

On sign assignments in knot Floer homology

- *Michigan Math. J.* 70 (2021) pp 207-212.

Heegaard Floer homology, degree-one maps and splicing knot complements

- (joint with Narges Bagherifard) *Stud. Sci. Math. Hung.* 58 (2021) pp 408-431.

Simple balanced three-manifolds, Heegaard Floer homology and the Andrews-Curtis conjecture

- (joint with Neda Bagherifard) to appear in *Alg. and Geom. Topology*

Counting closed geodesics on Riemannian manifolds

- *Calc. Var. Part. Diff. Eq.* 64 (2025) 97

Rational tangle replacements and knot Floer homology

- To appear in *J. Symplectic Geom.*

A Heegaard-Floer TQFT for link cobordisms

- To appear in *Trans. Amer. Math. Societ.*

In Farsi:

Knot theory from past to present

- *Mathematics and Society*, 9 (1), 107-136

Topology of 3-dimensional manifolds

- *Mathematics and Society*, 9 (3), 1-33

Preprints

Counting periodic orbits of vector fields over smooth closed manifolds

- *submitted preprint, available at arXiv:2012.01808[math.DS]*

Gauge theory and foliations I; germ cords versus quantum cords

- (with M. Ajoodanian) *preprint, available at arXiv:1801.02963.*

Heegaard Floer homology and Morse surgery

- *preprint, available at arXiv:math/0603171.*

Heegaard Floer homologies of the pretzel knots

- *preprint, available at math.GT/0311419.*

Organization of Workshops, Conferences and Events (Since 2015)

Frontiers in Mathematical Sciences III (co-organizer)

- IPM, Tehran, Dec. 30 2014-Jan 2, 2015.

3rd Meeting on Contemporary Mathematics (co-organizer)

- IPM, Tehran, Lectures by Freydoon Shahidi (Perdue University), Jan 4,5, 2015.

4th Meeting on Contemporary Mathematics (co-organizer)

- IPM, Tehran, Lectures by Cedric Villani (U. Lyon & IHP), May 10, 2015.

5th Meeting on Contemporary Mathematics (co-organizer)

- IPM, Tehran, Lectures by Mihalis Dafermos (Princeton University), Dec 27,28, 2015.
- 6th Meeting on Contemporary Mathematics** (co-organizer)
- IPM, Tehran, Lectures by Sophie Morel (Princeton University), Feb 20-22, 2016.
- Frontiers in Mathematical Sciences IV** (co-organizer)
- Sharif University of Technology, Tehran, July 19-21, 2016.
- 7th Meeting on Contemporary Mathematics** (co-organizer)
- IPM, Tehran, Lectures by Gang Tian (Princeton Univ. and Peking Univ.), Aug 10-11, 2016.
- Homological Invariants in Low Dimensional Topology** (co-organizer)
- IPM, Tehran, July 30- August 4, 2016.
- 1st Mathematics Summer School for Undergraduate Students** (co-organizer)
- Zanjan University of Higher Edcations, Zanjan, August 27- September 8, 2016.
- Spring Meeting on Algebraic Geometry** (co-organizer)
- IPM, Tehran, April 8-13, 2017.
- Frontiers in Mathematical Sciences V** (co-organizer)
- IPM, Tehran, July 11-13, 2017.
- 2nd Mathematics Summer School for Undergraduate Students** (co-organizer)
- Zanjan University of Higher Edcations, Zanjan, July 27- August 8, 2017.
- 8th Meeting on Contemporary Mathematics** (co-organizer)
- IPM, Tehran, Lectures by Danny Calegari (University of Chicago), June 19-20, 2018.
- 9th Meeting on Contemporary Mathematics** (co-organizer)
- IPM, Tehran, Lectures by Étienne Ghys (École Normale Supérieure de Lyon), April 25-26, 2018.
- Tehran Topology 2018** (co-organizer)
- IPM, Tehran, June 26-28, 2018.
- Frontiers in Mathematical Sciences VI** (co-organizer)
- Sharif University of Technology, Tehran, July 15-17, 2018.
- 3rd Mathematics Summer School for Undergraduate Students** (co-organizer)
- Zanjan University of Higher Edcations, Zanjan, August 23- September 4, 2018.
- 10th Meeting on Contemporary Mathematics** (co-organizer)
- IPM, Tehran, Lectures by Stevo Todorčević (University of Toronto), April 22-23, 2019.
- 4th Mathematics Summer School for Undergraduate Students** (co-organizer)
- Zanjan University of Higher Edcations, Zanjan, August 16-25, 2019.

- BICMR-IPM Conference on Geometry and Topology** (co-organizer)
- IPM, Tehran, August 18-22, 2024.

- Iranian Mathematics Society Conference on Geometry and Topology** (co-organizer)
- IPM, Tehran, June 22-25, 2025.

- Gokova Geometry and Topology Conference** (scientific committee)
- Gokova Geometry and Topology Institute, Gokova, Turkey, May 18-23, 2026.

- Geometry and Topology in Low Dimensions: Lasting Trends and Emerging Directions** (co-organizer)
- Hungarian Academy of Sciences, Budapest, Hungary, June 22-26, 2026.