

IMRE BARTOS

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POSITIONS HELD

2017– Assistant Professor, University of Florida
2016–2017 Associate Research Scientist, Columbia University
2015 Postdoctoral Research Scientist, Columbia University
2012–2016 Lecturer in Discipline, Columbia University

ACADEMIC QUALIFICATIONS

2012 Ph.D. astrophysics, Columbia University
Dissertation: “Gravitation and Multimessenger Astrophysics” (Advisor: Szabolcs Marka)
2006 M.S. physics, Eotvos University, Hungary

MEMBERSHIPS & ACTIVITIES

Member, LIGO Scientific Collaboration, 2008–
Member, IceCube-Gen2 Collaboration, 2014–
President, New York Hungarian Scientific Society, 2017–, Vice President 2015–2016
Board of Trustees, Hope Funds for Cancer Research, 2016–
Chair, Gravitational-wave and high-energy neutrino (GWHEN) Working Group, LIGO-Virgo 2012–
Member, Hungarian Science Abroad Presidential Committee, 2017–
Science Research Mentor, American Museum of Natural History, 2016–2017
Member of Executive Committee, Frontiers of Science, Columbia University, 2013–2016
Consultant to the Columbia Core Science Committee, 2014–2015

HONORS & AWARDS

2016 Gruber Cosmology Prize (as member of the LIGO Discovery team)
The 2016 Special Breakthrough Prize in Fundamental Physics (as member of the LIGO team)
BSA Distinguished Lecture, Brookhaven National Lab, June 2016
National Science Foundation Highlights, 2014
Columbia Science Fellow, Columbia University, 2012–2016
Columbia Presidential Teaching Award, Finalist, 2012
Rising Stars of Science: The Forbes 30 Under 30 (Forbes Magazine), 2012
Allan M. Sachs Teaching Award, 2011
Grand Challenges Explorations Team, Phase 1 (2008) and Phase 2 (2010), B. & M. Gates Foundation

PROFESSIONAL SERVICE

Referee: Nature, PRL, PRX, PRD, ApJ Lett, ApJ, MNRAS, CQG, GRG, Exp. Astron., JCAP.
Reviewed for: NSF, NASA
Moderator, arXiv Popular Physics, 2014–
Co-Organizer, IceCube collaboration meeting, Columbia–Stony Brook, Apr 2016

Co-Organizer, LSST detection of optical counterparts of gravitational waves, Columbia, May 2017
Organizer, AAS Winter Meeting Special Session, Multimessenger Astrophysics with LIGO, Jan 2018
Session Chair: AAS 228th Meeting, “Relat. Astrophys., Grav. Lenses & Waves, and CMB,” Jun 2016
Session Chair: GR21 Conference, “Gravitational waves: Searches, data analysis...,” Jul 2016

CURRENT AND PAST FUNDING

07/01/17–06/30/20, NSF 1740391 Co-PI, “*RAISE: Deep Gravitational Wave Exploration, Instrumental Insights and Noise Removal Through Machine Learning*”
06/15/14–, NSF 1404462 Co-PI, “*Maximizing the Early-Detection Science of Advanced LIGO*”
01/01/16–12/31/17, Columbia/University of Glasgow Research Exchange Fellowship Award
07/14/16, LSST Grant Award 2016, workshop: “*LSST Detection of Optical Counterparts of GWs*”
07/01/12–06/30/15 Columbia Science Fellowship Research Funding

GRADUATE STUDENTS

Maria Charisi (2012–2017, now at Caltech), Kyung-hwan Lee (2018–), Yang Yang (2018–).

SELECTED RECENT PUBLICATIONS

Out of 49 short-author-list publications, including 2 Nature Communications, 4 Phys. Rev. Lett. (2 Editor’s Suggestion), 2 ApJ Lett., and 1 MNRAS Lett. Over 120 LIGO collaboration papers (lead author of 4).

- “*Infused Ice can Multiply IceCube’s Sensitivity*”
I. Bartos, Z. Marka, S. Marka, **Nature Communications**, 9:1236 (2018)
- “*Gravitational-Wave Localization Alone Probes AGN Origin of Stellar-Mass Black Hole Mergers*”
I. Bartos et al., **Nature Communications** 8, 831 (2017)
- “*Search for High-energy Neutrinos from Binary Neutron Star Merger GW170817 with ...*”
ANTARES, IceCube, Pierre Auger, LIGO and Virgo Collaborations, **Astrophys. J. Lett.** 850:L35 (2017)
- “*Multimessenger Astronomy*”
I. Bartos, M. Kowalski, **ebook**, Physics World Discovery (2017)
- “*Search for High-energy Neutrinos from GW Event GW151226 and Candidate LVT151012...*”
ANTARES, IceCube, LIGO and Virgo Collaborations, **Phys. Rev. D** 96, 022005 (2017)
- “*Multi-Messenger Observations of a Binary Neutron Star Merger*”
LIGO Collaboration et al., **Astrophys. J. Lett.** 848, L12 (2017)
- “*GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral*”
LIGO and Virgo Collaborations, **Phys. Rev. Lett.** 119, 161101 (2017)
- “*High-energy Neutrino follow-up search of Gravitational Wave Event GW150914 with ANTARES ...*”
ANTARES, IceCube, LIGO and Virgo Collaborations, **Phys. Rev. D** 93, 122010 (2016)
- “*Observation of Gravitational Waves from a Binary Black Hole Merger*”
LIGO and Virgo Collaborations, **Phys. Rev. Lett.** 116, 061102 (2016)

PATENTS

1. *Optical Barrier to Pests*
S. Marka, Z. Marka, I. Bartos, US20120032096 A1, 2012.
2. *Systems and methods for fraud prevention, supply chain tracking, secure material tracing and...*
S. Marka, Z. Marka, I. Bartos, US8864038 B2, 2014.
3. *System for Cleansing Organisms from Water*
S. Marka, I. Bartos, Z. Marka, US20140202961 A1, 2014.

RECENT MEDIA

Out of 40+ interviews and writings.

- *A new cosmic messenger*
Feature in PhysicsWorld, Jan 2018
- *Spectacular collision of two neutron stars observed for first time*
Physics World, Oct 2017
- *Colliding Neutron Star Discovery Could Solve This Mystery About Our Expanding Universe*
Gizmodo, Oct 2017
- *Virgo bags its first gravitational waves*
Physics World, Sep 2017
- *A New Gravitational Wave Detector Makes Its First Discovery*
Gizmodo, Sep 2017
- *Gravitational Waves Reveal the Unexpectedly Weird Behavior of Distant Black Holes*
Gizmodo, Aug 2017
- *Infused Antarctic ice could boost neutrino detection*
Physics World, Jul 2017
- *Teen Scientists Do Real Science at American Museum of Natural History*
Black Enterprise, Jul 2017
- *Urban High School Students Present Original Science Research*
Diverse: Issues in Higher Education, Jul 2017
- *Physicists Just Spotted Gravitational Waves Again --- So What's Next?*
Gizmodo, Jul 2017
- *No neutrinos from black hole smash*
Nature Research Highlights, Jul 2016
- *Gravitational waves are teaching scientists the 'native language' of black holes*
Tech Insider, Jun 2016
- *More than 1,000 physicists just proved Albert Einstein wrong again*
Tech Insider, Jun 2016
- *A News Flash From Deep Space*
nycitylens.com, Mar 2016
- *The Future of Gravitational Wave Astronomy*
Scientific American, Feb 2016
- *Gravitational Waves Discovered from Colliding Black Holes*
Scientific American, Feb 2016
- *Einstein's weirdest prediction is true - and will soon radically transform our understanding of the...*
Tech Insider, Feb 2016
- *Einstein's wildest prediction could be confirmed within days*
Tech Insider, Feb 2016

RECENT AND UPCOMING INVITED TALKS

Out of 70+.

- *LIGO-Virgo's Discovery of a Binary Neutron Star Merger from a Multi-messenger Perspective*
Invited Talk, Neutrino 2018, June 2018
- *The Road Ahead for Multi-messenger Astrophysics in light of LIGO's Discoveries*
Keynote Speech, 23rd Symposium of Astroparticle Physics in the Netherlands, March 2018
- *Multimessenger Astrophysics in Light of LIGO's Discoveries*
Invited Colloquium, University of Virginia, March 2018
- *Electromagnetic and Neutrino Prompt Emission From Gravitational Wave Sources*
Panel organizer and convener, PAX meeting, Penn State, February 2018
- *Multimessenger Astronomy in light of LIGO-Virgo Discoveries*
Organizer and convener, Special Session, AAS Winter Meeting, January 2018
- *Multimessenger Observations of Binary Neutron Star Merger GW170817*
Invited Talk, Miami 2017, December 2017
- *Multimessenger Astrophysics in Light of LIGO's Discoveries*
Invited Seminar, Harvard, November 2017
- *Search for common sources of gravitational waves and high-energy neutrinos*
Invited Plenary Talk, MANTS, Marseilles, October 2017
- *Multimessenger Astrophysics with Advanced LIGO*
Invited Colloquium, New York University, April 2017
- *Multimessenger Astrophysics with Gravitational Waves*
Invited talk, Tsinghua University, Beijing, April 2017
- *Multimessenger Astrophysics with Gravitational Waves: The road ahead*
Invited seminar, University of Florida, March 2017
- *How much will sky localization matter for the Einstein Telescope's multimessenger science goals?*
Invited plenary talk, 8th Einstein Symposium, U. Birmingham, March 2017
- *LIGO and multi-messenger Astrophysics: The Road Ahead*
Invited Lecture, Lake Louise Winter Institute, February 2017
- *Multi-messenger Astrophysics: The Road (and Roadblocks) Ahead*
Invited Seminar, Harvard University, February 2017
- *Questions from the Road Ahead for Gravitational wave and Multimessenger Astrophysics*
Invited Talk, AMON Workshop, Penn State, December 2016
- *The Discovery of Gravitational Waves from Colliding Black Holes*
Invited Speech, Chemistry and Physics Teachers Clubs, November 2016
- *The Discovery of Gravitational Waves from Colliding Black Holes*
Invited Seminar, Bronx High School of Science, November 2016
- *LIGO's observation of GWs: Discovery, Near-future Plans and Multimessenger Prospects*
Invited Colloquium, University of Delaware, October 2016
- *The Discovery of Gravitational Waves from Colliding Black Holes*
Science Summer Review Master Class, Columbia, July 2016
- *Observation of Gravitational Waves: Discovery, Near-future Plans and Multimessenger Prospects*
Invited talk, Neutrino2016, London, UK, July 2016
- *LIGO + Neutrinos: First Results and Prospects for Multimessenger Astronomy*
Invited talk, RICAP 2016, Frascati, Italy, June 2016
- *Challenges in Time Domain Astroparticle Physics*
Invited talk, MACROS meeting, Pen State, June 2016
- *The Discovery of Gravitational Waves from Colliding Black Holes*
Distinguished Lecture, Brookhaven National Lab, June 2016

- *We can hear the Universe!*
Invited speech, Chelsea Music Festival (“Gravity 350”), June 2016
- *LIGO and The Discovery of Gravitational Waves from Colliding Black Holes*
Invited Colloquium, Uppsala University, June 2016
- *The First Detection and Prospects for Multimessenger Astronomy*
Invited Oscar Klein Colloquium, Stockholm University, June 2016
- *Big data and gravitational wave data analysis*
Invited panel discussion, Hope Funds Scientific Convening, Apr 2016
- *Astronomy Grew Its Ears*
Invited Master Class for Columbia incoming freshmen, Apr 2016
- *LIGO discovery*
Invited Seminar, CUNY-LaGuardia College, Mar 2016
- *LIGO discovery*
Invited Seminar, Baruch College, Mar 2016
- *LIGO discovery*
Invited Colloquium, Stevens Institute of Technology, Mar 2016
- *LIGO discovery*
Invited Colloquium, Brookhaven National Laboratory, Mar 2016
- *Multimessenger gravitational wave follow-up*
Invited Seminar, LIGO Workshop, Columbia University, Feb 2016
- *Advanced LIGO Detectors and New Results*
Invited Seminar, LIGO Workshop, Columbia University, Feb 2016
- *LIGO discovery*
Invited Colloquium, Vanderbilt University, Feb 2016
- *Multimessenger prospects of LIGO discovery*
Invited Colloquium, Astronomy, Columbia University, Feb 2016
- *LIGO discovery*
Invited Colloquium, Physics, Columbia University, Feb 2016
- *LIGO discovery*
Invited Colloquium, New York University, Feb 2016
- *IceCube: the High-energy Universe and Multimessenger Astrophysics with Neutrinos*
Invited Colloquium, Eotvos University, Jan 2016

RECENT TEACHING

2018 FALL	Modern Astrophysics (undergraduate course)
2018 SPRING	Modern Astrophysics (graduate course)
2017 SPRING	Science Research Mentor, AMNH
2016 FALL	M.A. Science Seminars, Columbia Journalism School Science Research Mentor, AMNH
2016 SPRING	Frontiers of Science (undergraduate course)
2015 FALL	M.A. Science Seminars, Columbia Journalism School
2015 SPRING	Consultant to the Columbia Core Science Committee