

Dated: Jan 2026

Shrihari Gopalakrishna
The Institute of Mathematical Sciences,
C.I.T. Campus,
Taramani, Chennai 600113. India.

Tel.: +91 (44) 22543320
Fax: +91 (44) 22541586
email: shri@imsc.res.in
<http://www.imsc.res.in/~shri/>

Curriculum Vitae

Education

- Ph.D. Physics. University of California, Davis, USA, 2002.
(Theoretical Particle Physics, Advisor: James Wells.)
(Intercampus exchange to University of California, Berkeley, USA, 1998-2002.)
- M.S. Applied Physics. University of California, Davis, USA, 1998.
- M.S. Electrical Engineering, University of Arkansas, Fayetteville, USA, 1996.
(Neural Network Controls, Image/Digital Signal Processing)
- B.E. Electronics & Communication. BMSCE, Bangalore University, India, 1992.

Other Educational Training

- Participant, Theoretical Advanced Study Institute (TASI-2001), “Strings, Branes and Extra dimensions.”, Univ. of Colorado, Boulder (June 2001).
- Participant, Summer School in “CP violation in and beyond the standard model.” Stanford Linear Accelerator Center (July 1999).

Research Interests

- *Phenomenology of physics beyond the standard model (BSM) of particle-physics*: baryogenesis, dark matter candidates and detection, particle-physics cosmology connection; Higgs vacuum stability, electroweak symmetry breaking and BSM extensions (composite Higgs, warped extra dimensions, little-Higgs, supersymmetry); precision, flavor, and high energy (collider) probes of BSM physics, Large Hadron Collider (LHC) and future colliders phenomenology.

Academic Appointments

- *Professor*, Theoretical physics faculty, Institute of Mathematical Sciences (IMSc), India, July 2016 – Present.
- *Reader*, Theoretical physics faculty, Institute of Mathematical Sciences (IMSc), India, July 2011 – June 2016.
- *Assistant Professor*, Homi Bhabha National Institute (HBNI), India, to which IMSc is affiliated, Feb 2010 – Present.
- *Fellow E*, Theoretical physics faculty, Institute of Mathematical Sciences (IMSc), India, Sept 2009 – June 2011.

Academic Fellowships

- Kavli Fellow, National Academy of Sciences (NAS), and, The Kavli Foundation, USA, 2015.

Research Appointments

- Research Associate, Theoretical Particle Physics, University of Melbourne, Australia, May 2010 – Dec 2010.
- Research Associate, High Energy Theory Group, Brookhaven National Laboratory, USA, Oct 2006 – Aug 2009.
- Post-doctoral Associate, Theoretical High Energy Physics, Northwestern University, USA, Sept 2004 – Sept 2006.
- Research Associate, Theoretical High Energy Physics, Michigan State University, USA, Sept 2002 – Aug 2004.
- Participating Guest, Theoretical Physics Group, Lawrence Berkeley Laboratory, USA, July 1999 – 2002.
- Student Employee Graduate Research Fellowship, Lawrence Livermore National Laboratory, Livermore, USA, 1997 – 2002.
- Postgraduate Researcher, Lawrence Livermore National Laboratory, USA, May 1996 – July 1997.
- Graduate Research Assistant, University of Arkansas, USA, Jan 1994 – Apr 1996

Research Visits

- CERN Theory Group, BSM Institute, June - July 2012; May - June 2014.

Students Supervised

- *Ph.D. Thesis Advisor* of:
 - Tuhin Subhra Mukherjee, thesis title: “Effective Models of Beyond the Standard Model Scalars Coupled to Vector-like Fermions and their Phenomenology”; completed Sept. 2017.
 - Soumya Sadhukhan; thesis title: “The Phenomenology of Beyond the Standard Model Scalars due to Extended Symmetries with New Fermions”, completed April 2017.
 - Tanumoy Mandal; thesis title: “Phenomenology and LHC signatures of exotic fermions”; completed Oct 2013.
- *M.Sc. Thesis Advisor* of:
 - Pranav M, Sastra University, “Dark Matter Candidates and Signatures” (tentative title), Jan - May 2026.
 - Rohan Awasthi, IMSc, “Gravity Waves from New Physics” (tentative title), Jan - May 2026.
 - Sourashis Roy, IMSc, “Gravity Waves from New Physics” (tentative title), Jan - May 2026.

- Vivan Bhatt, IIT-Madras, “Baryogenesis from Vector-like Fermions”, Aug 2023 - May 2024.
 - Gunalan M, VIT-Vellore, “A Study of Some Particle Dark Matter Models”, Jan - May 2024.
 - Aparna Ramesh, University of Madras, “Bound on a new Scalar Boson from Charged Pion Decay”, Feb-May 2023.
 - Aswin Kumar, University of Madras, “Bound on the Mass of a New Vector Boson using π^\pm Decay”, Feb-May 2023.
 - Anish Ghoshal (IIT-Madras), “Vector-like Lepton Dark Matter”. May 2015 – May 2016. (Joint advisor with Prof. James Libby of IIT-Madras).
 - Shibasis Roy, “Introduction to Little-Higgs Models”. Jan 2015 – July 2015.
 - Soumya Sadhukhan, “Radion phenomenology”. Jan 2012 – Dec 2012.
 - Tuhin Subhra Mukherjee, “Triviality and Vacuum Stability Bounds in the Higgs Sector”. Jan – June 2011.
 - Oindrila Ghosh, “Computation of Relic Density and Direct Detection of Dark Matter in a Toy Model.” Jan – July 2011.
- Post-M.Sc. project advisor of Vidhiya Saravanan, “Top Forward-Backward Asymmetry at the Tevatron.” Feb – July 2011.
 - On the doctoral and monitoring committees of many IMSc students.

Graduate-level courses taught

- Quantum Mechanics II, Jan - May 2026.
- Quantum Field Theory I, Aug - Dec 2024.
- Particle Physics I, Aug - Dec 2023.
- Quantum Field Theory II, Jan – Apr 2019.
- Particle Physics II (taught with others), 8 lectures on electroweak symmetry breaking, Higgs and dark matter, Mar-Apr 2018.
- Gravitation and Cosmology, Jan – Apr 2017.
- Particle Physics II (taught it with 3 others), Jan – Apr 2015.
- Particle Physics I, Aug – Dec 2014.
- Supersymmetry Phenomenology (5 lectures), March 2014.
- Quantum Field Theory II, Jan – Apr 2013.
- Quantum Field Theory I, Aug – Dec 2011.
- Reading Course in Cosmology, Oindrila Ghosh, Jan - June 2011.

Other Pedagogical Lectures

- Four pedagogical lectures on “Baryogenesis” to Ph.D. students, IMSc, March 2025.

- Discussion session tutor in the Asia-Europe-Pacific Schools of HEP, organized by CERN and held in Thailand, to train graduate students in the latest developments in High-Energy Physics (theory, phenomenology, data analysis, instrumentation), 12-25 June 2024.
- Twelve lectures on the “Standard Model of Particle Physics,” delivered in the SERB Preparatory school on Theoretical High Energy Physics, to graduate students from across India, in Tezpur University, Assam, over Oct 28 - Nov 9, 2019.
- Twelve lectures on “Particle Physics and the standard model.” SERC Preparatory school in THEP, IIT-Gandhinagar, Sep 19 - 30, 2016.
- Five lectures on “Supersymmetry phenomenology.” For graduate students, IMSc, March 2014.
- “Physics beyond the SM.” Three lectures to experimental High Energy Physics graduate students, 9th SERC School on EHEP, IIT-Madras, Dec 2013.
- Tutor for the course on Supersymmetry taught by Prof. Romesh Kaul at the Theoretical SERC main school, IIT-Kanpur, Nov 2013.
- “Introduction to MSSM.” Status of Supersymmetry and Dark Matter (SUSY-DM), CHEP IISc, Bangalore, Oct 2013.
- ”New Physics Expectations at the LHC.” Introductory talk for graduate students, IMSc (Oct 2009); SERC Preparatory School, IIT-Madras (Oct 2009).
- “Physics Beyond the Standard Model at the LHC,” and, “Dark Matter in Particle Physics,” three lectures in Workshop on Recent Trends in Nuclear and Particle Physics, Banaras Hindu University (BHU), Mar 2011.
- “Dark Matter in Particle Physics.” Two lectures in Kodaikanal Winter School, Dec 2009.
- “Dark Matter in Particle Physics.” For summer students, Dearborn Observatory, Northwestern University, July 2006.
- “Tiny Neutrino Masses - a theoretical perspective.” New Perspectives 2005, for graduate students, Fermilab, June 2005.
- “Introduction to the Physics of Extra dimensions.” Three-lecture series presented to the HEP group, Michigan State Univ. (Oct 2002).

Other Professional Activities

- Coordinator (one of two) of standard model and beyond working group, 15th Workshop on High Energy Physics and Phenomenology (WHEPP-XIV), IISER-Bhopal Dec 14-23, 2017.
- Coordinator (one of three) of standard model and beyond working group, XXII DAE-BRNS High Energy Physics Symposium 2016, University of Delhi, New Delhi, India, Dec. 12 - 16, 2016.
- IMSc Committees: Computer Committee, Aug 2010 - Aug 2011; Guest-house Advisory Committee, Aug 2011 - July 2015; HEP-group coordinator, Jan 2015 - Mar 2016; Physics PDF Committee, Aug 2015 - Dec 2017; Annual Report Committee, Aug 2014 - present, Physics Approval Coordinator, Aug 2019 - present.
- Serving on the IMSc physics student-admissions interview panel, 2012 - present.

- Co-organizer of the “Pheno Club”, a discussion forum on recent papers, and pedagogical lectures for students, IMSc, Jan 2011 - June 2015.
- Coordinator (one of three) of standard model and beyond working group at WHEPP-XIII, Puri, India, Dec 2013.
- Coordinator of “Frontiers of High Energy Physics” (FHEP), IMSc Golden Jubilee Symposium, a 4-day event in which 16 internationally renowned speakers reviewed the status of the field to inform the Indian HEP community, including about 50 students and young researchers from across India, IMSc, December 10 - 13, 2012.
- Served on the National Advisory Committee for the National Conference on Particle Physics and Cosmology, University of Burdwan, March 2011.
- Discussion leader in Warped-space Phenomenology sub-group at WHEPP-XI, PRL Ahmedabad, Jan 2010.
- Co-organizer of High Energy Physics Seminar Series at: Michigan State Univ., Fall 2003 and Spring 2004. Brookhaven HET/RIKEN seminar series Oct 2007 - Sep 2008.
- World Year of Physics outreach event to area high school students, co-organized modern physics demonstrations, Northwestern Univ., May 2005.
- Referee for the following journals: Pramana, Physical Review Letters, Physical Review D, Physics Letters B, International Journal of Theoretical Physics, International Journal of Modern Physics A.

Computing Skills

- Proficient in C, C++, Fortran; Familiar with programming in a distributed/parallel computing environment.
- Expertise in Monte-Carlo simulation of new physics processes in Pythia, MadGraph, CalcHEP and CompHEP.
- Proficient in: Symbolic and numerical computation in Mathematica; Algebraic manipulation programs Form and FeynCalc; Loop integral evaluation using LoopTools (in Mathematica); Familiar with analysis package ROOT.
- Implemented numerous graphics (ray tracing) and image processing algorithms.

Research and Development Work

- Familiarity with the resistive plate chamber reconstruction software, and, Monte-Carlo simulation for BaBar, under the guidance of Dr. Doug Wright, Lawrence Livermore Lab (1997-98).
- Developed a real-time visualization software using the CUMULVS package based on the PVM protocol, useful in high performance computing, under the guidance of Dr. Alice Koniges, Lawrence Livermore Lab (1996-97).
- Conceived, designed and built a continually online trained artificial neural network for real-time control using a digital signal processor (TMS320C30), under the guidance of Prof. Juan Balda, M.S. project work, Department of Electrical Engineering, Univ. of Arkansas, Fayetteville (1994-1996).

- Part of a team that designed and built an image processing sub-system using a digital signal processor (ADSP 2100) as part of a real-time feedback control system, Systems Engineer, Microcon Instruments and Systems, Bangalore, India (1993).
- Designed and built an Intel-8085 based data acquisition system and joystick controller, B.E. project work under the guidance of Dr. Seshadri, Aeronautical Development Establishment, Bangalore, India (1991-1992).

Publications

Refereed Publications

1. With Rakesh Tibrewala, “Baryogenesis from a Majorana fermion coupled to quarks”, *Phys.Rev.D* 111 (2025) 7, 075016 [arXiv:2411.13231 [hep-ph]].
2. With Rakesh Tibrewala, “Baryon asymmetry from the decay and scattering of a Majorana fermion pair coupled to quarks”, *Phys.Rev.D* 111 (2025) 3, 3 [arXiv:2311.14636 [hep-ph]].
3. With Rakesh Tibrewala, “Effective theory for baryogenesis with a Majorana fermion pair coupled to quarks”, *Phys.Rev.D* 107 (2023) 11, 115029 [arXiv:e-Print: 2211.12115 [hep-ph]].
4. With Arunprasath Velusamy, “Higgs vacuum stability with vectorlike fermions”, *Phys.Rev. D99* (2019) no.11, 115020, DOI: 10.1103/PhysRevD.99.115020 [arXiv:1812.11303 [hep-ph]].
5. With Tuhin Subhra Mukherjee, “Gauge Singlet Vector-like Fermion Dark Matter, LHC Diphoton Rate and Direct Detection”, *Adv. High Energy Phys.* 2017 (2017) 8689270 [arXiv:1702.04000 [hep-ph]].
6. With Tuhin S. Mukherjee, Soumya Sadhukhan, “Status and Prospects of the Two-Higgs-Doublet SU(6)/Sp(6) little-Higgs Model and the Alignment Limit”, *Phys.Rev. D94* (2016) no.1, 015034 [arXiv:1512.05731 [hep-ph]].
7. With Tuhin S. Mukherjee, Soumya Sadhukhan, “Extra Neutral Scalars with Vector-like Fermions at the LHC”, *Phys.Rev. D93* (2016) 5, 055004, [arXiv:1504.01074 [hep-ph]].
8. With Sebastian Ellis, Rohini Godbole, James D. Wells, “Survey of vector-like fermion extensions of the Standard Model and their phenomenological implications”, *JHEP* 1409 (2014) 130, 2014 [arXiv:1404.4398 [hep-ph]].
9. With Tanumoy Mandal, Subhadip Mitra, Gregory Moreau, “LHC Signatures of Warped-space Vectorlike Quarks”, *JHEP* 1408 (2014) 079, 2013 [arXiv:1306.2656 [hep-ph]].
10. With T. Mandal, S. Mitra, R. Tibrewala, “LHC Signatures of a Vector-like b' ”, *Phys.Rev. D84* (2011) 055001 [arXiv:1107.4306 [hep-ph]].
11. With T. Han, I. Lewis, Z. Si, Y. Zhou, “Chiral Couplings of W' and Top Quark Polarization at the LHC”, *Phys.Rev. D82* (2010) 115020 [arXiv:1008.3508 [hep-ph]].
12. With H. Davoudiasl, E. Ponton, J. Santiago, “Warped 5-Dimensional Models: Phenomenological Status and Experimental Prospects”, *New J.Phys.* 12 (2010) 075011 [arXiv:0908.1968 [hep-ph]].
13. With H. Davoudiasl, A. Soni, “Big Signals of Little Randall-Sundrum Models”, *Phys.Lett. B686* (2010) 239-243 [arXiv:0908.1131 [hep-ph]].
14. With S. Lee and J. Wells, “Dark matter and Higgs boson collider implications of fermions in an abelian-gauged hidden sector”, *Phys. Lett. B680* (2009) 88 - 93 [arXiv:0904.2007 [hep-ph]].
15. With K. Agashe, T. Han, G. Huang and A. Soni, “LHC Signals for Warped Electroweak Charged Gauge Bosons”, *Phys.Rev.D80:075007,2009* [arXiv:0810.1497 [hep-ph]].
16. With S. Jung and J. Wells, “Higgs boson decays to four fermions through an abelian hidden sector.” *Phys.Rev.D78:055002* (2008) [arXiv:0801.3456 [hep-ph]].
17. With K. Agashe, H. Davoudiasl, T. Han, G. Huang, G. Perez, Z. Si, A. Soni, “LHC Signals for Warped Electroweak Neutral Gauge Bosons.” *Phys. Rev. D 76:115015* (2007) [arXiv:0709.0007 [hep-ph]].

18. With Andre de Gouvea and Werner Porod, “Stop Decay into Right-handed Sneutrino LSP at Hadron Colliders.” *JHEP* 0611:050,2006 [hep-ph/0606296].
19. With Andre de Gouvea and Werner Porod, “Right-handed Sneutrinos as Nonthermal Dark Matter.” *JCAP* 05(2006)005. [hep-ph/0602027].
20. With Andre de Gouvea, “Low-Energy Neutrino Majorana Phases and Charged-Lepton Electric Dipole Moments.” *Phys. Rev. D* 72:093008 (2005) [hep-ph/0508148].
21. With C.-P. Yuan, “B-Meson Signature of a Supersymmetric U(2) flavor model.” *Phys. Rev. D* 71:035012 (2005) [hep-ph/0410181].
22. With Roshan Foadi and Carl Schmidt, “Effects of fermion localization in Higgsless theories and electroweak constraints.” *Phys. Lett. B* 606:157-163 (2005) [hep-ph/0409266].
23. With Qing-hong Cao and C.-P. Yuan, “Collider Signature of Bulk Neutrinos in Large Extra Dimensions.” *Phys. Rev. D* 70:075020 (2004) [hep-ph/0405220].
24. With Qinghong Cao and C.-P. Yuan, “Constraints on Large Extra Dimensions with Bulk Neutrinos.” *Phys. Rev. D* 69:115003 (2004) [hep-ph/0312339].
25. With Roshan Foadi and Carl Schmidt, “Higgsless Electroweak Symmetry breaking from Theory Space.” *JHEP* 0403:042 (2004) [hep-ph/0312324].
26. Shrihari Gopalakrishna, “Proton Decay due to bulk SU(5) Gauge Bosons in the Randall-Sundrum scenario.” *Phys. Rev. D* 66:024011 (2002) [hep-ph/0202075].
27. With James Wells, “Superlight gravitinos in electron photon collisions.” *Phys. Lett. B* 518 (2001) 123 [hep-ph/0108006].

Books

- Shrihari Gopalakrishna, ”Supersymmetric and Extradimensional Beyond the Standard Model Theories, Aspects and Probes.” (Ph.D. Thesis) ISBN 978-3-8383-1021-3, Lambert Academic Publishing, 2009.

Conference Proceedings:

1. Higgs Vacuum Stability with Vector-Like Fermions, Conference: FHEP 2019, Springer Proc. Phys. **248**, 165-173 (2020) doi:10.1007/978-981-15-6292-1_20.
2. With Kaustubh Agashe, et al., “Warped Extra Dimensional Benchmarks for Snowmass 2013”, Conference: C13-07-29.2, [arXiv:1309.7847 [hep-ph]], Sep 2013.
3. With T. Mandal, S. Mitra, R. Tibrewala, “Phenomenology of Warped-space Custodian b' .” Working group report: Physics at the Large Hadron Collider, WHEPP-XI, PRL, Ahmedabad. In D.K. Ghosh, et al., *Pramana* 76 (2011) 707-723.
4. With G. Moreau and R. Singh, “Single custodian production in warped extra dimensional models.” In G. Brooijmans et al., “New Physics at the LHC”, Physics at TeV Colliders 2009, Les Houches [arXiv:1005.1229 [hep-ph]].
5. Working group report: Physics at the Large Hadron Collider, WHEPP-XI Proceedings, D.K. Ghosh et al., *Pramana* 76 (2011) 707-723.
6. ”Hidden Sector Dark Matter and LHC Signatures.” SUSY 2009, 5-10 June 2009, Northeastern U., Boston, AIP Conf.Proc. 1200 (2010) 778-781 [arXiv:0909.5579 [hep-ph]].

7. With T. Lari et al., “Collider aspects of flavour physics at high Q.” CERN Workshop “Flavour in the era of the LHC”, Nov 2005 – Mar 2007, Eur.Phys.J. C57 (2008) 183-308, arXiv:0801.1800 [hep-ph].
8. With A. de Gouvea and W. Porod, “ Right-handed sneutrino cosmology and hadron collider signatures”, Proceedings of SUSY 2006, Irvine, California, AIP Conf.Proc. 903 (2007) 221-224.
9. With C.-P. Yuan, “New Physics in the Flavor Sector.”, Proceedings of Deep Inelastic Scattering 2005, Madison, Wisconsin, AIP Conf.Proc. 792 (2005) 655-660.
10. J. Hewett, (ed.) et al., “The Discovery Potential of a Super B Factory.” Proceedings of SLAC Workshop, (2003) [hep-ph/0503261].
11. With C.-P. Yuan, “B Physics Signature of a Supersymmetric U(2) flavor model.” Proceedings of Supersymmetry 2003, Tucson, Arizona [hep-ph/0402096].
12. With Maxim Perelstein, James Wells, “Extra Dimensional vs. Supersymmetric Interpretation of Missing Energy Events at the NLC.” Proceedings of Snowmass 2001 [hep-ph/0110339].
13. T. Abe, *et al.* (American Linear Collider Working Group), “Linear Collider Physics Resource Book for Snowmass 2001.” [hep-ex/0106055-58].
14. With Youngbae Kim, A.E. Koniges, “Remote Visualization over Standard Network Connections.” Proceedings of the Fourth Europ. SGI/Cray MPP Workshop, Garching, Germany, (1998) 252-256.

Talks Presented

- “Baryogenesis from a Majorana Fermion Coupled to Quarks.” Phoenix 2025, IIT-Hyderabad, Jul 2025.
- “Baryogenesis from a Majorana Fermion Coupled to Quarks.” CCAPP-2025 conference, SRM University, Feb 2025.
- “Baryogenesis from a Majorana Fermion Coupled to Quarks.” Online seminar organized by Prof. A.P. Balachandran, Dec 2024.
- “Baryon Asymmetry from a Majorana Fermion Pair Coupled to Quarks.” Phoenix-2023, IIT-Hyderabad, Dec 2023.
- “Searches for BSM.” Workshop on High Energy Physics Phenomenology-2019, IIT Guwahati, Dec 2019.
- “Higgs Vacuum Stability with Vector-like Fermions.” FHEP-2019, University of Hyderabad, October 2019.
- “Higgs Vacuum Stability with Vector-like Fermions.” Anomalies-2019, IIT - Hyderabad, July 2019.
- “Higgs Vacuum Stability with Vector-like Fermions.” IMHEP, IOP Bhubaneswar, Jan 2019.
- “Non-SUSY BSM and Dark Matter.” XXIII DAE-BRNS HEP Symposium, IIT Madras, Dec 2018.
- “Status of Warped/Composite-Higgs models.” IISc Bangalore, May 2018.
- “Top-partners in (non-SUSY) models of electroweak symmetry breaking.” Workshop on Top Quark Physics at Present and Future Colliders, IISER Kolkata, Jan 2018.
- “Current Status of Vector-like Fermions.” Looking for BSM Physics IISc Bangalore, Dec 2016.
- “Current Status of Extra Dimension (inspired) Models.” Workshop on High Energy Physics Phenomenology XIV, IIT-Kanpur, Dec 2015.
- “Dark Matter: Evidence, Theory and Detection Prospects.” Current Issues in Cosmology, Astrophysics and High Energy Physics, Dibrugarh University, Nov 2015.
- “Phenomenology of vector-like fermions and new scalars.” HEP seminar, California Institute of Technology, USA, Aug 2015.
- “Particle Physics at the Energy and Intensity Frontiers.” Sixth Indo-American Frontiers of Science Symposium, Irvine, CA, Aug 2015.
- “Vector-like fermions and its searches at the LHC.” LHC and Dark Matter Workshop, IACS, Feb 2015.
- “Vectorlike extensions of the SM.” BSM Lunch Seminar, CERN, May 2014; Hunting for a Non-standard Higgs Sector, Benasque, Spain, April 2014; XXI DAE-BRNS HEP Symposium, IIT-Guwahati, Dec 2014.
- “Composite Higgs (Warped Extradimensional Analogues & LHC Signatures).” 4th KIAS workshop on Particle Physics and Cosmology, S. Korea, Oct 2014.

- “Phenomenology of Extra Dimensions.” Frontiers in Physics (FIP) Conference, University of Hyderabad, Sept 2013.
- “LHC Signatures of Vectorlike Fermions.” Universita’ di Roma La Sapienza, Rome, July 2013.
- “Vectorlike quarks at the LHC.” Workshop on Higgs and Beyond the Standard Model Physics at the LHC, June 2013, ICTP, Trieste, Italy.
- “Vectorlike fermions at the LHC.” CERN BSM Institute, June 2012; Higgstop 2013, BITS-Pilani Goa Campus, Feb 2013.
- “Hidden Sector Dark Matter.” Dark Matter Workshop, PRL, Ahmedabad, April 2011.
- “Phenomenology of Extra Dimensions at the LHC.” Discussion meeting on Physics at early run of the LHC, IACS, Kolkata March 2011.
- “Flavor violation in Randall-Sundrum models.” Workshop on Synergy between High Energy and High Luminosity Frontiers, SEL 2011, TIFR, Mumbai, Jan 2011.
- “Hidden sector dark matter and its signatures.” Workshop on Dark Matter in the LHC Era: Direct and Indirect Searches, SINP, Kolkata, Jan 2011.
- “Warped-space Phenomenology and LHC Signatures.” Theory Seminar, University of Melbourne, Sept 2010; WHEPP-XI, PRL Ahmedabad, Jan 2010; WHEPP-XII, Mahabaleswar, Jan 2012.
- “New-physics expectations at the LHC.” Theory Colloquium, TIFR Mumbai (Jan 2009); Theory Colloquium, HRI Allahabad (Jan 2009).
- “Hidden sector dark matter and LHC signatures.” HEP Seminar, IMSc Chennai (Dec 2008); HEP Seminar, IISc Bangalore (Jan 2009); HEP Seminar, PRL Ahmedabad (Jan 2009); BSMLHC workshop, IACS Kolkata (Jan 2009), Northeastern University (April 2009, June 2009).
- “Warped-space Electroweak Neutral Gauge Bosons at the LHC.” High Energy Physics seminars presented at: SUNY Buffalo; Cornell University; University of Maryland, College Park; Johns Hopkins University; (Oct 2007); University of Massachusetts, Amherst (Dec 2007); ILC Workshop 2008, UIC (Nov 2008); TIFR Mumbai, Free meson seminar (Jan 2008); HEP Seminar, HRI Allahabad (Jan 2008), LHC2FC workshop, CERN (Feb 2009); EWSB & LHC Workshop, LPhT, Saclay (March 2009).
- “Heavy electroweak resonances at the LHC.” LHC08 workshop, KITP, Santa Barbara (Apr 2008); Pheno 2008, University of Wisconsin, Madison (April 2008); Santa Fe 2008 Summer Workshop (Jul 2008); Fermilab HEP Seminar (Aug 2008);
- “LHC Signatures of Warped Space Models.” New Horizons at Colliders, Brookhaven Forum 2007, May 2007.
- “Warped space gauge bosons at the LHC.” Pheno 2007, University of Wisconsin, Madison, May 2007.
- “Right-handed Sneutrino Cosmology and Collider Signatures.” High Energy Theory/Cosmology seminar, Syracuse University, April 2007.
- Brookhaven High Energy Theory Lunch Seminars: “LHC Signatures of Warped Electroweak Gauge Bosons,” Sept 2007. “Warped Space Electroweak Gauge Bosons,” March 2007.

- “Stop versus Top at the Tevatron and the LHC.” Enrico Fermi Institute, University of Chicago (July 2006).
- “Right-handed Sneutrino Cosmology and Collider Signatures.” LHC Inverse Workshop, Univ. of Michigan Ann Arbor (April 2006); HEP Group CEA, Saclay, France (April 2006); HEP Group, IPPP, Durham, U.K., April (2006); Pheno 2006 Symposium, Univ. of Wisconsin, Madison (May 2006); Supersymmetry 2006, Univ. of California, Irvine (June 2006).
- “Right-handed Sneutrino Dark Matter.” High Energy Physics seminar, Los Alamos National Laboratory (Jan 2006).
- “Effective Supersymmetry and B Decays.” International Linear Collider workshop, Snowmass, Colorado (Aug 2005).
- “Phenomenology of a Triplet Higgs Boson and Lepton Number Violation.” ANL Theory Institute, Argonne National Laboratory (May 2005).
- “Triplet Higgs boson and Majorana neutrinos.” Pheno 2005 Symposium, Univ. of Wisconsin, Madison (May 2005).
- “New Physics in the Flavor Sector.” Deep Inelastic Scattering - 2005, Madison (April 2005).
- “Explaining B-meson data with a supersymmetric U(2) flavor model.” HEP Theory Seminar, Purdue Univ. (Feb 2005); Univ. of Wisconsin, Madison (Feb 2005); Argonne National Laboratory (Jan 2005); Northwestern Univ. (Sept 2004).
- “Constraints and Collider Signatures of Bulk Right-handed Neutrinos.” Meeting of the APS Division of Particles and Fields, Univ. of California, Riverside (Aug 2004); ANL Theory Institute, Argonne National Laboratory (May 2004).
- “Higgsless Electroweak Symmetry Breaking.” Pheno 2004 Symposium, Univ. of Wisconsin, Madison (April 2004).
- “Bulk Neutrinos in Large Extra Dimensions.” HEP/Nuclear Seminar, Wayne State Univ., Detroit (Oct 2003).
- “B-physics Signature of a Supersymmetric U(2) Flavor Model.” SUSY 2003, Univ. of Arizona, Tucson (June 2003); Pheno 2003 Symposium, Univ. of Wisconsin, Madison (May 2003).
- “Proton Decay in a Warped Extra Dimension.” HEP Theory Seminar, Fermilab (May 2003).
- “Supersymmetric contributions in b to s gamma.” HEP Theory Seminar, Argonne National Laboratory (Feb 2003).
- “Proton Decay in Extra dimensions.” High Energy Physics Seminar, Michigan State Univ. (Oct 2002).
- “Collider Signatures of a Superlight Gravitino.” Physics Department Colloquium, Univ. of California Davis (June 2002).
- “Proton Decay due to bulk SU(5) gauge bosons in the Randall Sundrum Scenario.” APS California Section Spring Meeting, Univ. of California Davis, March 2002 (Conference); Indian Institute of Science, Bangalore (Dec 2001).
- “Supersymmetric Orbifold GUTs.” Univ. of California Davis (Aug 2001).
- “Superlight gravitino at e-gamma colliders.” 2nd International Workshop on High Energy Photon Colliders. Fermilab (March 2001).

- “Phenomenology of the Superlight Gravitino.” Univ. of California Davis (Nov 2000).

Outreach Talks:

- “Particle Physics and the Early Universe,” Talk for undergraduate students at Guru Nanak College, Chennai, Dec 2025.
- “Quantum Field Theory for Particle Physics and Cosmology,” Talk for undergraduate students at PES University, Bengaluru, Nov 2025.
- “Dark Matter: Evidence, Theory, Detection,” for students and general public at IMSc Open Day, at IMSc, Aug 2024.
- “Cosmology, Particle Physics, and Dark Matter”, inaugural address given to under-graduate and post-graduate students in “Ripples-2019” event at the Ethiraj College for Women, Aug 2019.
- “Origin of Mass”, IMSc Open Day, Lecture to high-school students, Sep 2018.
- “Theoretical Aspects of Dark Matter and Dark Energy.” Tamilnadu Science and Technology Centre, Chennai, Oct 2015.
- “Standard Model And Beyond”, Symposium on High Energy Physics, 102nd Indian Science Congress, University of Mumbai, 6 Jan 2015.
- ”The Nobel Prize in Physics 2013: to Francois Englert and Peter Higgs”, 150th Science Club Meet, CLRI, March 2014.
- “The Large Hadron Collider.” For undergraduate physics students in the series “Popular Lectures in Physics”, Stella Maris College, March 2010.

Other Talks

- ”Research in High Energy Physics Phenomenology”, for fresh graduate students, IMSc, Feb 2014.
- “New Physics at the LHC.” Institute Seminar Week (ISW), IMSc : ISW-2010, ISW-2011.
- “Neutrino Majorana phases and charged-lepton electric dipole moments.” New Phenomena group discussion, Journal club at the Fermilab Theory group (Sept 2005).
- “Superlight gravitinos in electron photon collisions.” Theoretical Advanced Study Institute, TASI-2001 Student Seminar, Univ. of Colorado, Boulder (June 2001).

Other Conferences and Workshops Attended

- EWSB and Flavour Physics Workshop, IIT-Guwahati, Feb 2014.
- India-UChicago@TIFR Workshop, Aug 2013.
- Les Houches (France) 2009, ”Physics at TeV Colliders.”, New Physics Working Group 17-26 June 2009.
- LHC to Future Colliders Theory Institute Workshop, CERN (March 16-27, 2009).
- Physics of the Large Hadron Collider, Kavli Institute for Theoretical Physics, extended workshop (March 16 - April 19, 2008).

- Chicago-Argonne Workshop on Collider Physics, Argonne National Laboratory (May 2006).
- Conferences/Workshops attended at Fermilab: TeV4LHC (Sept 2004, Oct 2005); Users Meeting (June 2005); TeV Particle Astrophysics Conference (July 2005); Bardeen Symposium (Sept 2005); Monte Carlo tools for Beyond the Standard Model Physics (March 2006); Weekly HEP Theory Seminars;
- Kaon 2005, Northwestern Univ., Evanston (June 2005).
- Top Quark Symposium, Univ. of Michigan, Ann Arbor (April 2005).
- SUGRA 20, Northeastern Univ., Boston (March 2003).
- APS April Meeting, Philadelphia (April 2003).
- Theory Institute 2002, Argonne National Laboratory (Sept 2002).
- Snowmass 2001, “The future of Particle Physics.”, Snowmass, Colorado (June 2001).
- Berkeley 2000 Linear Collider Workshop, Lawrence Berkeley Lab (March 2000).