

Curriculum Vitae

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Education:

- Ph.D. in Experimental Particle Physics, Florida State University (2006)
- M.S. in Physics, Florida State University (2001)
- B.Sc. – M.Sc. in Physics, Jadavpur University, Kolkata, India (1997)

Positions held:

- 2019 – Present: Instructional Assistant Professor, Department of Mathematics, TAMU.
- 2017 – 2019: Senior Lecturer, Department of Mathematics, TAMU.
- 2012 – 2017: Lecturer, Department of Mathematics, TAMU.
- 2009 – 2012: Assistant Research Scientist on the CMS (Compact Muon Solenoid) experiment @ the LHC (Large Hadron Collider) at CERN, Switzerland, Department of Physics and Astronomy, TAMU.
- 2006 – 2009: Research Associate on the CMS experiment @ the LHC, School of Physics and Astronomy, University of Minnesota at Minneapolis.
- 2000 – 2006: Research Assistant at the DØ experiment @ Fermi National Accelerator Laboratory, Chicago, Department of Physics, Florida State University at Tallahassee.
 - Ph. D. thesis: “A precision measurement of the W to μ - ν charge asymmetry at a center of mass energy of 1.96 TeV using the DØ detector”.
- 1999 – 2000: Teaching Assistant, Department of Physics, Florida State University.
- 1998 – 1999: Software developer, Department of Physics, Indian Institute of Technology, New Delhi, India.

Courses Taught at the Department of Mathematics at Texas A&M:

- Math 131 (Math concepts: Calculus), renamed Math 148 (Calculus I for Biological Sciences)
- Math 140 (Mathematics for Business and Social Sciences)
- Math 141 (Business Math I), renamed Math 168 (Finite Mathematics)
- Math 142 (Business Math)
- Math 150 (Functions, Trigonometry and Linear Systems)
- Math 151 (Engineering Mathematics I)
- Math 152 (Engineering Mathematics II)
- Math 167 (Explorations in Mathematics)
- Math 251 (Engineering Mathematics III)

- Math 396 (Communications in Mathematics)
- SCEN 289 (First Year Experience from Hullabaloo U.)

Course enhancements (Department of Mathematics at Texas A&M):

- Online homework coordinator: 2018 – present
 - Online homework platform WebAssign via Cengage
 - Online homework platform Edfinity.
- Course coordinator for Math 152: Fall 2017.
- Course coordinator for Math 131: Spring 2016.
- Week-in-Reviews :
 - Math 131: Spring 2016
 - Math 141: Fall 2013
 - Math 151: Spring 2014, Spring 2018, Fall 2014
 - Math 152: Spring 2015, Fall 2017.
- SI (Supervised Instruction) for Math 151: Fall 2016.
- PLTL (Peer Led Team Learning) coordinator for Math 151/152: Spring 2017.
- PPP (Personalized Pre-Calculus) tutor for Math 140: Summer 2018, Winter 2019.

Service/Committee work:

University level

- 2019 – present: UAAP (Undergraduate Academic Appeals Panel) committee.
- 2015 – 2018: APTF (Academic Professional Track Faculty) committee.

Department level

- 2020 – present: APT Teaching Committee.
- 2019 – 2020: APT Committee.
- 2018: APT promotion guidelines committee.
- 2017: Math 151 syllabus alignment committee.
- 2017: Math 150 textbook committee.
- 2014 – 2015: Women in Math steering committee.

Awards:

- 2001 – 2002: Florida State University, University Fellowship.
- 1999 – 2000: Florida State University, College Teaching Fellowship.
- 1991 – 1992: Ranked first in the state of Bihar, India, in the Indian National Mathematical Olympiad (a national talent search exam in Mathematics).

Grants/Bursaries:

- \$2000 equipment grant from Instructional Technology Services, Texas A&M, 2015.
- \$600 bursary for teaching the SCEN 289 class in Fall 2020.
- \$500 bursary for teaching the SCEN 289 class in Fall 2019.
- \$4300 from the Cares Act – Course Delivery for course enhancement, 2021
- \$1000 for completion of the ACUE NASH (Association of Colleges and University Educators, National Association of System Heads) course, offered via the CTE (Center for Teaching Excellence) at TAMU, 2021 (ongoing, pending)

Outreach:

- Co-organizer for the Mathematics and Statistics Fair, TAMU, 2017 – present.
- Volunteer at the “Julia Robinson room” at the annual Math Fair, TAMU, 2016.
- Volunteer at the Physics and Mathematics booth at the annual “Physics and Engineering Festival” at TAMU, since 2010.
- Freshman year Math outreach video with advice for students, available publicly.
 - <https://www.youtube.com/watch?v=TuT8CuXi9Sc>
- Participated in a STEM PBL (Project Based Learning) workshop for high school teachers in collaboration with the Department of Education at TAMU, July 2014.
- Co-organized the “New Perspectives 2005” conference, an annual graduate student conference in Particle Physics, held at Fermilab, Chicago.
- Visited Capitol Hill in Washington D.C. in 2005 as a member of a team comprising of particle physics graduate students, post-docs and University faculty, to talk to Senators and Congressmen about the benefits of science research to society and the importance of continued government funding for Science and Particle Physics.

Mentoring:

- Presently mentor to three Math APT faculty (2 formal, 1 informal).
 - Mentor to various VAPs during their first semester of teaching.
 - Mentor to graduate teaching assistants every semester.
- Mentored 3 graduate students as a course coordinator in Math 131, 2016.
- Mentored several undergraduate as well as graduate Physics students as a Research Associate and as a Research scientist between 2006 – 2012.
- Advise undergraduate students on summer research opportunities.

Memberships in Societies:

- APS (American Physical Society): Since 2000
- AMS (American Mathematical Society)

Talks:

1. “The Personalized Precalculus Program (PPP): using technology to enhance student success”, Transformational Teaching and Learning Conference, Dean of Faculties, TAMU, May 2019.
2. “Dots on a Grid”, Math Circle talk, Department of Mathematics, TAMU, Spring 2019.
3. “The Intertwining of Mathematics and Physics”, AMUSE talk, Department of Mathematics, TAMU, 2018.
4. “A Particle Physicist’s journey to teaching Math”, Promotion talk, Department of Mathematics, TAMU, 2017.
5. “Hunting for the Higgs Boson at the Large Hadron Collider”, Saturday Morning Physics at TAMU, January 2013.
6. “Supersymmetry Results from CMS”, LHC User’s meeting, Argonne National Laboratory, Illinois, Sept 2011.
7. “Recent results in Jet Physics from CMS”, Phenol11, Wisconsin, Madison, May 2011.
8. “Results of the W and Z Boson Asymmetries at the Tevatron”, Particle Physics seminar, Department of Physics, Rutherford Appleton Laboratory, UK, Oct 2008.
9. “Search for the Standard Model Higgs Boson in the $H \rightarrow ZZ^*$ and $H \rightarrow WW^*$ at the LHC”, 16th International Conference on Supersymmetry and the Unification of Fundamental Interactions, Seoul, South Korea, June 2008.
10. “A precision measurement of the W charge asymmetry using the DØ detector”, High energy Physics seminar, University of Minnesota, Minneapolis, Feb 2006.
11. “Measurement of the W charge asymmetry in the muon channel”, APS April meeting, Tampa, Florida, 2005.

Additional Teaching Conferences/Workshops/Scholarly activities:

- “Teaching in the 21st century classroom building” workshop, TAMU, 2019.
- SEE Math workshop for summer enrichment in Math, TAMU, 2019.
- Reader for AP Calculus, 2017, 2018, Kansas City, Missouri.
- “Mathematics matters in Education” workshop, April 6-8, TAMU, 2018.
- Wakonse South Conference on College Teaching, Canyon of the Eagles, TX, 2017.
- Wakonse South Conference on College Teaching, Marble Falls, TX, 2013.
- Advance Roadmap: Workshop for women in STEM, TAMU, 2012.

Publications:

As a lead author:

- CMS Collaboration, “Search for Physics Beyond the Standard Model in Events with τ Leptons, Jets, and Large Transverse Momentum Imbalance in pp Collisions at $\sqrt{s} = 7$ TeV,” Eur. J. Phys. C 73 (2013) 2493.
- DØ Collaboration, “Measurement of the muon charge asymmetry from W boson decays,” Phys. Rev. D. 77, 011106 (2008).

- CMS Collaboration, “Jet energy calibration and transverse momentum resolution in CMS,” 2011 JINST (Journal of Instrumentation) 6 P11002.
- CMS Collaboration, “Performance of the CMS hadron calorimeter with cosmic ray muons and LHC beam data,” 2010 JINST 5 T03012.

Additional publications:

- Author on 85 publications as a member of the DØ Collaboration (2001 – 2008) and
- Author on 260 publications as a member of the CMS collaboration (2007 – 2013)

Note: Journals include PRL (Physics Review Letters), PLB (Physics Letters B), PRD (Physics Review D), JHEP (Journal of High Energy Physics), JINST (Journal of Instrumentation) and the European Journal of Physics.

Programming:

Knowledge of BASIC, Fortran, C and C++

Some experience with the hardware language VHDL

Languages:

Fluent in English, Hindi and Bengali.

Beginner in German.