Curriculum Vitae: Suchetana Chatterjee

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Address: School of Astrophysics,
Presidency University,
86/1 College Street, Kolkata, W.B, India 700073

Research interests

Anisotropies in the Cosmic Microwave Background, the Sunyaev-Zeldovich Effect, Large Scale Structure, Active Galactic Nuclei and Galaxy Evolution, Cosmological Simulations and Multi-wavelength AGN Surveys.

Education

University of Pittsburgh — Pittsburgh, PA
PhD Thesis: The Sunyaev-Zeldovich Effect as a Probe of Black Hole Feedback August 2003 – August 2009
Advisor: Prof. Arthur Kosowsky

Indian Institute of Technology — Kanpur, UP
M.Sc in Physics — July 2001 – May 2003

Presidency College, CU — Kolkata, W.B
B.Sc in Physics (hons), with Mathematics and Statistics — Aug 1998 – May 2001

Employment

Presidency University — Kolkata, W.B
Assistant Professor — Nov 2013 – present

University of Wyoming — Laramie, Wy
Postdoctoral Fellow — May 2012 – Oct 2013
Mentor: Prof. Adam Myers

Yale University — NewHaven, CT
Postdoctoral Associate — Sept 2009 – April 2012
Mentor: Prof. Daisuke Nagai

Refereed Publications

Students and postdocs of SC are marked in italics

Galaxies, clusters, and intergalactic medium: A vision document for the Indian Astronomical Community
Kale, R., Muzahid, S., Khaire, V., Roy, N., Das, S., Chand, H., **Chatterjee, S.**, Datta, A., Das, Hota, A., Jog, C. J., Kartha, S., Lal, D., Mondal, C., Nath, B., Choudhury, P. P., Paul, S., Sachdeva, S., Sharma, P., and Singh, P., **Journal of Astrophysics and Astronomy**, 46, 2, **2025**, IF: 1.1

Spectral Energy Distribution Modeling of Broad Emission Line Quasars: From X-ray to Radio Wavelengths
A. Chakraborty, *M. Kundu*, **S. Chatterjee**, S. Panda, A. Sar, *S. Jaison*, and R. Chatterjee, **Astronomy & Astrophysics**, 694, A140, **(2025)**, IF: 6.24

Cosmological Simulations of Galaxy Groups and Clusters-III: Constraining Quasar Feedback Models with the Atacama Large Millimeter Array
A. Chakraborty, **S. Chatterjee**, M. Lacy, *S. Roy*, *S. Roy*, and R. Kar Chowdhury, **Astrophysical Journal**, 954, 8, **(2023)**, IF: 5.874

Cosmological Simulations of Galaxy Groups and Clusters-II: Studying Different Modes of Feedback through X-ray Observations
R. Kar Chowdhury, **S. Chatterjee**, *A. Gupta*, C. Sarazin, and J. L. Dai, **Astrophysical Journal**, 940, 47, **(2022)**, IF: 5.874

Radio Dichotomy in Quasars with Hβ FWHM greater than 15,000 km s^{-1}, *A. Chakraborty* , A. Bhattacharjee, M. Brotherton, R. Chatterjee, **S. Chatterjee**, and M. Gilbert, **MNRAS**, 516, 2, **(2022)**, IF:5.287

The Signatures of Self-Interacting Dark Matter and Subhalo Disruption on Cluster Substructure
S. Bhattacharyya , S. Adhikari, A. Banerjee, S. More, A. Kumar, E. Nadler and **S. Chatterjee**, **Astrophysical Journal**, 932, 30, **(2022)**, IF:5.874

Properties of Very Broad Line MgII Radio-loud and Radio-quiet Quasars
A. Chakraborty , A. Bhattacharjee, and **S. Chatterjee**, **Galaxies**, Special Issue, 9(4), 74, **(2021)**, IF:3.17

Simulated X-ray Emission in Galaxy Clusters with Feedback from Active Galactic Nuclei
R. Kar Chowdhury, *S. Roy*, **S. Chatterjee**, N. Khandai, C. Sarazin, and T. DiMatteo, **Astronomische Nachrichten**, 342, 164, **(2021)**, IF: 1.064

Cosmological Simulations of Galaxy Groups and Clusters-I: Global Effect of Feedback from Active Galactic Nuclei
R. Kar Chowdhury, **S. Chatterjee**, *Anto. I. Lonappan*, N. Khandai, and T. DiMatteo, 889, 1, **Astrophysical Journal**, **(2020)**, IF: 5.58

The *Chandra* **Deep Wide-Field Survey: A New** *chandra* **Legacy Survey in the** *bootes* **Field I. X-ray Point Source Catalog, Number Counts and Multi-Wavelength Counterparts**
A. Masini, R. C. Hickox, C. M. Carroll, J. Aird, D. M. Alexander, R. J. Assef, R. Bower, M. Brodwin, M. J. I. Brown, **S. Chatterjee**, Chien-Ting J. Chen, A. Dey, M. A. DiPompeo, K. J. Duncan, P. R. M. Eisenhardt, W. R. Forman, A. H. Gonzalez, A. D. Goulding, K. N. Hainline, B. T. Jannuzi, C. Jones, C. S. Kochanek, R. Kraft, Kyoung-Soo Lee, E. D. Miller, J. Mullaney, A. D. Myers, A. Ptak, A. Stanford, D. Stern, A. Vikhlinin, D. A. Wake, Stephen S. Murray, 251, 1, **Astrophysical Journal supplement series**, **(2020)**, IF: 7.95

X-ray Surface Brightness Profiles of Optically Selected Active Galactic Nuclei: Comparison with X-ray AGNs
S. Mukherjee, *A. Bhattacharjee*, **S. Chatterjee**, J. A. Newman, and R. Yan, 872, 1, **Astrophysical Journal**, **(2019)** IF: 5.58

Direct detection of a quasar wind via the Sunyaev-Zeldovich Effect
M. Lacy, B. Mason, C. Sarazin, **S. Chatterjee**, K. Nyland, A. Kimball, G. Rocha, B. Rowe, J. Surace, 483, 1, **Monthly Notices of the Royal Astronomical Society Letters**, **(2019)** IF: 8.993

Mean Occupation Function of High Redshift Quasars from the Planck Cluster Catalog
P. Chakraborty, **S. Chatterjee**, *A. Dutta*, and A. D. Myers, 130, 988, **Publications of the Astronomical Society of the Pacific**, **(2018)**, IF: 3.47

Halo Occupation Distribution of Obscured Quasars: Revisiting the Unification Model, *K. Mitra*, **S. Chatterjee**, M. DiPompeo, A. D. Myers, and Z. Zheng , 477, 1 **Monthly Notices of the Royal Astronomical Society**, **(2018)**, IF: 5.231

Sunyaev-Zel'dovich Signal from Quasar Hosts: Implications for Detection of Quasar Feedback
D. Dutta Chowdhury and **S. Chatterjee**, 839, 1, **Astrophysical Journal**, **(2017)**, IF: 5.58

X-ray Emissions in Non-AGN Galaxies at z $\simeq 1$
S. Chatterjee, J. A. Newman, T. Jeltema, A. D. Myers, J. Aird, K. Bundy, C. Conselice, M. Cooper, E. Laird, A. Montero-Dorta, K. Nandra, & C. Willmer **Astrophysical Journal**, 806, 136, **(2015)**, IF: 5.58

X-ray Surface Brightness Profiles of Active Galactic Nuclei in the Extended Groth Strip: Implications for AGN Feedback
S. Chatterjee, J. A. Newman, T. Jeltema, A. D. Myers, J. Aird, A. Coil, M. Cooper, A. Finoguneov, E. Laird, A. Montero-Dorta, K. Nandra, C. Willmer, & R. Yan, **Publications of the Astronomical Society of the Pacific**, 127, 716, **(2015)**, IF: 3.47

A Direct Measurement of the Mean Occupation Function of Quasars: Breaking Degeneracy of Halo Occupation Distribution Models
S. Chatterjee, *M. Nguyen*, A. Myers, & Z. Zheng, **Astrophysical Journal**, *779, 147*, **(2013)**, IF: 5.58

The Halo Occupation Distribution of X-ray-bright Active Galactic Nuclei: A Comparison with Luminous Quasars
J. Richardson, **S. Chatterjee**, Z. Zheng, A. Myers, & R. Hickox, **Astrophysical Journal**, *774, 143*, **(2013)**, IF: 5.58

The Halo Occupation Distribution of SDSS Quasars
J. Richardson, Z. Zheng, **S. Chatterjee**, D. Nagai, & Y. Shen, **Astrophysical Journal**, *755, 30*, **(2012)**, IF: 5.58

The Halo Occupation Distribution of Active Galactic Nuclei
S. Chatterjee, C. Degraf, *J. Richardson*, Z. Zheng, D. Nagai, & T. DiMatteo, **Monthly Notices of the Royal Astronomical Society**, *419, 2657* **(2012)**, IF: 5.231

The Halo Occupation Distribution of Black Holes
C. Degraf, M. Oborski, T. DiMatteo, **S. Chatterjee**, D. Nagai, *J. Richardson*, & Z. Zheng, **Monthly Notices of the Royal Astronomical Society**, *416, 1591* **(2011)**, IF: 5.231

Tentative Detection of Quasar Feedback from WMAP and SDSS Cross Correlation
S. Chatterjee, S. Ho, J. A. Newman, & A. Kosowsky, **Astrophysical Journal**, *720, 299* **(2010)**, IF: 5.58

Simulations of the Sunyaev-Zeldovich Effect from Quasars
S. Chatterjee, T. Di Matteo, A. Kosowsky, & I. Pelupessy, **Monthly Notices of the Royal Astronomical Society**, *390, 535* **(2008)**, IF: 5.231

The Sunyaev-Zeldovich Effect from Quasar Feedback
S. Chatterjee & A. Kosowsky, **Astrophysical Journal Letters**, *661, 113* **(2007)** IF: 8.374

Conference Proceedings and Others

"Spectral Energy Distribution Analysis of Broad Emission Line Quasars", **S. Chatterjee**, *A. Chakraborty*, & *M. Kundu*, Astronomical Society of India meeting, P52, **2024**

"Simulated X-ray Emission in Galaxy Clusters with AGN Feedback", *R. Kar Chowdhury*, *S. Roy*, **S. Chatterjee**, N. Khandai, C. Sarazin, T. Di Matteo, American Astronomical Society meeting 236, id. 124.05. **Bulletin of the American Astronomical Society**, Vol. 52, No. 3, **(2020)**

"Cosmological evolution of supermassive black holes", **S. Chatterjee** & *R. Kar Chowdhury*, AIP Conference Proceedings, Volume 2109, Issue 1, id.090004. **(2019)**

"Gender status in the Indian physics profession and the way forward", Resmi Lekshmi, Prajval Shastri, Srubabati Goswami, Pragya Pandey, Vandana Nanal, Preeti Kharb, Urbasi Sinha, Tanusri Saha-Dasgupta, Suratna Das, and **Suchetana Chatterjee**, AIP Conference Proceedings 2109, 050019 **(2019)**

"Direct constraints on a quasar wind from observations of the Sunyaev-Zeldovich Effect", C. Sarazin, M. Lacy, B. Rowe, A. Kimball, G. Rocha, J. Surace, B. S. Mason, K. E. Nyland, & **S. Chatterjee**, **Bulletin of the American Astronomical Society**, 233, 213.06, **(2019)**

"Science with the ngVLA: The Sunyaev-Zeldovich Effect from Quasar and Starburst Winds", M. Lacy, **S. Chatterjee**, *A. Chakraborty*, B. Mason, C. Sarazin, A. Kimball, K. Nyland, G. Rocha, & B. Rowe, **ASP Monograph Series, Vol. 517, Science with a Next-Generation VLA, ed. E. J. Murphy (ASP, San Francisco, CA)**, **(2019)**

"Characterizing the evolution of WISE-selected obscured and unobscured quasars using HOD models", A. Myers, M. DiPompeo, *K. Mitra*, R. Hickox, **S. Chatterjee**, & K. Whalen , **Bulletin of the American Astronomical Society**, 232, 322.01, **(2018)**

"Halo Occupation of Quasars: AGN Unification From a Cosmological Perspective ", *K. Mitra*, **S. Chatterjee**, M. DiPompeo, A. Myers, & Z. Zheng., **Bulletin of the American Physical Society**, S16.00001, **(2018)**

"Measuring AGN & Starburst Wind Properties with ALMA", M. Lacy, **S. Chatterjee**, K. Nyland, K. Amy, B. Mason, & G. Rocha, **Bulletin of the American Astronomical Society**, 231 , 342.27, **(2018)**

'Reverberation Mapping of two Radio-Loud Quasars", A. Bhattacharjee et al. **Bulletin of the American Astronomical Society**, 228, 314.12, **(2016)**

"Breaking Degeneracies between Quasar Halo Occupation Distribution Models: Extending Direct Measurements of the Mean Occupation Distribution to Redshift 0.6", *M. Nguyen*, **S. Chatterjee**, A. Myers, Z. Zheng, E. Rozo, & E. Rykoff, **Bulletin of the American Astronomical Society**, 224 , 221.05, **(2014)**

"Breaking Degeneracies between Quasar Halo Occupation Distribution Models :Extending Direct Measurements to Redshift 0.6", *M. Nguyen*, **S. Chatterjee**, A. Myers, Z. Zheng, E. Rozo, & E. Rykoff, **Bulletin of the American Physical Society**, L1.00058, 35, **(2014)**

"Diffuse X-Ray Emission in Active and Normal Galaxies in the Extended Groth Strip", *A. Bhattacharjee*, **S. Chatterjee**, A. Myers et al., **Bulletin of the American Astronomical Society**, 223, 251.28, **(2014)**

"A Direct Measurement of the Mean Occupation Function of Quasars: Breaking Degeneracy of Halo Occupation Distribution Models ", *M. Nguyen*, **S. Chatterjee**, A. Myers & Z. Zheng, **Bulletin of the American Physical Society**, Annual Meeting of the Four Corners Section of the APS, Volume 58, Number 12, D2, 4, **(2013)**

"The Halo Occupation Distribution of X-ray-bright Active Galactic Nuclei: A Comparison with Luminous Quasars ", **S. Chatterjee**, *J. Richardson*, Z. Zheng, A. Myers, & R. Hickox, **Bulletin of the American Physical Society**, APR.K2, 35, **(2013)**

"A Direct Measurement of the Mean Occupation Function of Quasars: Breaking Degeneracy of Halo Occupation Distribution Models ", *M. Nguyen*, **S. Chatterjee** & A. Myers, **Bulletin of the American Physical Society**, APR.K2, 36, **(2013)**

"A Direct Measurement of the Quasar Mean Occupation Function ", *M. Nguyen*, **S. Chatterjee** & A. Myers, **Bulletin of the American Astronomical Society**, 221, 430.06, **(2013)**

"Reverberation Mapping of Radio-Loud Active Galactic Nuclei ", A. Bhattacharjee, M. Brotherton, M. DiPompeo, J. Runnoe, S. Cales, D. Cook, S. Nissim, S. Staudaher, R. Smullen, G. Long, A. Miller, R. Chatterjee, **S. Chatterjee**, M. Lundquist, S. Eftekerzadeh, & E. Woods, **Bulletin of the American Astronomical Society**, 221, 422.04, **(2013)**

"The Halo Occupation of SDSS Quasars", *J. Richardson*, Z. Zheng, **S. Chatterjee**, D. Nagai, & Y. Shen, **Bulletin of the American Astronomical Society**, 220, 332.04, **(2012)**

"The Halo Occupation Distribution of Active Galactic Nuclei", **S. Chatterjee**, D. Nagai, *J. Richardson*, Z. Zheng, C. Degraf, & T. DiMatteo, **Bulletin of the American Astronomical Society**, 43, 120.05, **(2011)**

"The Halo Occupation Distribution of Black Holes", , C. Degraf, M. Oborski, T. DiMatteo, **S. Chatterjee**, D. Nagai, *J. Richardson*, & Z. Zheng, **Bulletin of the American Astronomical Society**, 43, 229.01, **(2011)**

"The Sunyaev-Zeldovich Effect As a Probe of Black Hole Feedback", **S. Chatterjee**, **Bulletin of the American Astronomical Society**, 41, 328, **(2009)**

"Sunyaev-Zeldovich Effect from Active Galactic Nuclei", **S. Chatterjee** & A. Kosowsky, **Bulletin of the American Astronomical Society**, 38, 1210, **(2007)**

Awards and Fellowships

INSA Women Associate, Indian National Science Academy, **June 2025**

Teacher Training Program Grant, International Astronomical Union, Office of Astronomy for Education **Aug 2023**

POWER Fellowship, Science and Engineering Research Board, **June 2023- May 26**

Dinabandhu Sahu Memorial Award, for contributions to undergraduate physics education, **Indian Association for Physics Teachers**, Sep 2020

Academic Visitor, PAVES, **Stanford University**, Jan 2020

International Travel Scheme, SERB, **DST, Govt. of India** 2017

Kavli Fellow, Kavli Foundation, **IUSSTF, US National Academy of Sciences**, 2015

University Associate, Inter University Center for Astronomy and Astrophysics, 2023-2026, 2020-2023, 2017–2020, 2014–2017

Andrew Mellon Predoctoral Fellowship, University of Pittsburgh, 2008

Zacceus Daniel Fellowship, University of Pittsburgh 2007

Winner of the Thomas Lain Essay Competition, Department of Physics & Astronomy, University of Pittsburgh, 2007

Mary E. Warga Predoctoral Fellowship, University of Pittsburgh, 2003

National Eligibility Test (CSIR Level) qualified, University Grants Commission, **Government of India**, 2003

HRI summer research fellowship, Harish Chandra Research Institute, Allahabad, 2002

Sukhamay Chakraborty Memorial Award, Presidency College, Calcutta, 2000

National Scholarships for secondary (1996) and higher secondary (1998) examinations, Government of India

Project Proposals

The Cosmic Evolution of Supermassive Black Holes: A Multi-Wavelength Approach, PI,
SERB POWER Fellowship, INR 30,00,000 **Jun 2023-May 2026**

Studying the Sunyaev Zeldovich Effect from Quasar Feedback, PI
SERB Core Research Grant, INR 19,46,296 **Jan 2021-March 2024**

Optical Monitoring of variable stars and transients with a 14 inch telescope, Co-I
BRNS, INR 31,17,100 PI: Saumyadip Samui **Apr 2020-March 2023**

The Co-Evolution of Supermassive Black Holes with Dark Matter in the Universe, PI
SERB, Early Career Research, INR 13,76,100 **April 2017 – June 2020**

Investigating the Halo Occupation Distribution Properties of Active Galactic Nuclei, PI

UGC start-up grant, INR 600,000 **April 2015 - March 2019**

Observing Proposals

The Connection between Accretion-Disk and Jet in Broad Emission Line Quasars, Co-I
PI: Avinanda Chakraborty (Presidency University), *Effelsberg* Nov, 21

UVIT Observation of a Sample of Sixteen Quasars, Co-I

PI: Avinanda Chakraborty (Presidency University), *Astrosat* Cycle A11 Observing Proposal

Tempest in a Teacup: AGN Feedback Due to Quasar Winds, Co-I
PI: Craig Sarazin (University of Virginia), *Chandra* Cycle 21 Observing Proposal

Spitzer observations of the field of the hyperluminous quasar HE0515-4414, Co-I
Spitzer Proposal, PI: Mark Lacy (NRAO), Follow Up Gemini Proposal

The Chandra Deep Wide-Field Survey: Completing The New Generation Of Chandra Extragalactic Surveys, Co-I
1025 ks of *Chandra* time awarded. PI: Ryan Hickox (Dartmouth College)

Direct detection of a quasar hyperwind through the Sunyaev-Zeldovich Effect, Co-I
ALMA Proposal, PI: Mark Lacy (NRAO)

Courses Taught

Thermal and Statistical Physics (PU)
ASTP0703: PG Core, Fall 2024

Observational and Theoretical Cosmology (PU)
ASTP0902: PG Core, Fall 2023 2024

Fundamentals of Quantum Physics I and II (PU)
ASTP0702, ASTP0802: PG Core, Fall 2022, 2023, Spring 2023, 2024

Statistical and Computational Techniques (PU)
PHYS03SEC01: UG SEC, Fall 2021
Co-Instructors, A. Rajak

Electricity and Magnetism (PU)
PHYS02C3: UG Core, Spring 2020 2021
Co-Instructors, S. Sounda, K.Datta, A. Barua, R. Chatterjee

Astronomy & Astrophysics Lab (PU)
PHYS05DSE2A: UG elective, Fall 2020, 2021, 2022
Co-Instructors, K. Datta

Mathematical Physics Lab-I (PU)
PHYS01C1: UG Core, Fall 2020
Co-Instructors, R. Chatterjee, R.Koley

Atomic and Sub-Atomic Physics (PU)
PHYS-1001D: PG Elective, Spring 2019, 2020, 2021 2022
Co-Instructors, S. Rajbanshi, B. Chakrabarti

Trends in Modern Physics Research (PU)
PHYS-1001: PG Elective Spring 2018

Experimental & Computational Techniques (PU)
PHYS-1001D: PG Elective, Spring 2018

Classical Electrodynamics (PU)
PHYS-0802: PG Core, Spring 2018
Co-Instructors: M. Acharyya

PG-Lab 1 (PU)
PHYS-0791: PG core, Fall 2017, 2018, 2019
Co-Instructors: D. Datta, S. Kar, N. Raha, A. Sadhukhan, S. Rajbanshi, S. De

PG-Lab 2 (PU)
PHYS-0891: PG Core Spring 2017, 2018
Co-Instructors: R. Chatterjee, S.De

Statistical Mechanics (PU)
PHYS-0704/0801: PG Core, Fall 2016, Spring 2018
Co-Instructors: M. Acharyaa

The Observable Universe (PU)
PHYS-0603A: UG Elective, Spring 2016, 2017
Co-Instructors: R. Chatterjee

Quantum Mechanics 2 and Electromagnetic Theory (PU)
PHYS-0501: UG Core, Fall 2015, 2016, 2017, 2018
Co-Instructors: S. Basak, D. Datta

Quantum Mechanics 1 and Atomic Molecular Physics (PU)
PHYS-0402: UG Core, Fall 2014, Spring 2015, 2016, 2017, 2018
Co-Instructors: S. Basak, P. Majumder, K. Datta

Quantum Reality (PU)
PHYS-0332: UG extra-departmental elective for science majors, Fall 2015
Co-Instructors: S. Basak

Space Time and the Universe (PU)
PHYS-131/GE01B/ASTP0155MDC02: UG interdisciplinary elective, Fall 2015, 2016, 2017, 2018, 2019, 2020, 2021
Co-Instructors: S. Raychaudhury, R. Chatterjee, K. Datta

Waves and Oscillations (PU)
PHYS-0232:UG extra-departmental elective for science majors, Spring 2015
Co-Instructors: K. Datta

Thermal Physics and Entropy (PU)
PHYS-0331:UG extra-departmental elective for science majors, Fall 2014
Co-Instructors: B. Raychaudhuri

Physics of Everyday Life (PU)
PHYS-0331:UG interdisciplinary elective, Spring 2014, 2016
Co-Instructors: S. Raychaudhury, R. Chatterjee

General Relativity and Cosmology (PU)
PHYS-0902/0903: PG Elective, Spring 2014, Fall 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022
Co-Instructors:S. Samui, P. Majumdar, R. Koley

Quantum and Statistical Mechanics (PU)
UG Core, Spring 2014, 2015
Co-Instructors: M. Acharyya

Astrophysics Lab (PU)
PHYS-0991/1091, PG Elective, Spring 2014, 2019, 2020, 2021, 2022, 2023, Fall 2014, 2015, 2016, 2017
Co-Instructors: S. Samui, R. Chatterjee, G. Bhattacharya

Basics of Space Flight (University of Pittsburgh)
Astronomy 0087: Recitation instructor for non-science majors, Summer 2007, Spring 2009

Basic Physics for Science & Engineering 2 (University of Pittsburgh)
PHYS-0175, Recitation instructor for calculus-based introductory physics courseSpring 2005

Basic Physics for Science & Engineering 1 (University of Pittsburgh)
PHYS-0174, Recitation instructor for calculus-based introductory physics course Fall 2004

Stars, Galaxies and Cosmology (University of Pittsburgh)
Astronomy 0089: Recitation instructor for non-science majors, Fall 2003

Curriculum Design

Design of syllabus and curriculum for M.Sc in Astrophysics (PU)

Design of syllabus and structure for M.Sc courses (PU)
Trends in Modern Physics Research, Experimental & Computational Techniques, General Relativity and Cosmology; Cosmology module, Astrophysics Lab

Design of syllabus and structure for B.Sc courses (PU)
Astrophysics-DSE Lab, aspects of UG Quantum and StatMech labs, The Observable Universe, Trends in Modern Physics Research

Design of syllabus and structure for extra-departmental and interdisciplinary courses (PU)
Physics of Everyday Life, Space Time and the Universe, Waves and Oscillations, Quantum Reality

Designed self-contained tutorials for advanced undergraduate quantum mechanics course (University of Pittsburgh)
Advisor: Prof. Chandralekha Singh, Summer 2005

Completed one-credit course on basic physics teaching (University of Pittsburgh)
Teaching of Physics (Physics 2997), Fall 2003

Graduate Students Supervised

Palash Nandi, PhD student, Presidency University, funded through the SERB-POWER grant (Project Associate), April 2025-present

Dweepsa Das, JRF student, Presidency University, funded through the SERB-POWER grant, August 2024-present

Samrat Roy, JRF student, Presidency University, funded through the SERB-CRG grant, Jan 2024-March 2024

Alphesunny Sarkar, *Star Formation in the Universe*, PhD Student, Presidency University, UGC-NET Fellow, Nov 2023-present

Maitreya Kundu, JRF student, Presidency University, funded through the SERB-POWER grant, August 2023-July 2024

Anirban Chowdhary, *Aspects of Quasar Clustering*, PhD Student, Presidency University, UGC-NET Fellow, July 2022-present

Avinanda Chakraborty, Phd student, Presidency University, funded through the SERB-ECR and SERB-CRG grants, July 2019-June 2024, **Postdoc: INAF Florence**

Rudrani Kar Chowdhury, *X-ray Emission in Galaxy Clusters*, PhD student, Presidency University, INSPIRE Fellow, March 2015– Sept 2021, **Postdoc: Hongkong University**

Anto Lonappan, *The Co-Evolution of Supermassive Black Holes with Dark Matter in the Universe*, Project Student, SERB-ECR, July 2017-April 2018, **PhD student: SISSA**

Sareh Eftekharzadeh, *Measuring Halo Occupation Distribution of Redshift 2 Quasars*, PhD Thesis Project, University of Wyoming, Summer 2013

Anirban Bhattacharjee, *Studying AGN Feedback at High Redshift Using X-ray Surface Brightness Profiles*, PhD Thesis Project, University of Wyoming, Spring 2013-present, Currently Assistant Professor: Sul Ross State University

My Nguyen, *Mean Occupation Function of Quasars and Luminous Red Galaxies*, PhD Thesis Project, University of Wyoming, Fall 2012-Fall 2013

Masters Students Supervised

Abir Sadhu, *Understanding Large Scale Structure Formation Through Halo Occupation Distribution of Active Galactic Nuclei*, M.Sc thesis, Presidency University, **2024**

Arnadwip Biswas, *Studying Radio Dichotomy in Quasars*, M.Sc thesis, Presidency University, **2024**

Samrat Roy, *Effect of Massive Stars on their Surrounding*, M.Sc thesis, Presidency University, Principal Advisor: Tapas Baug (SNBNCBS) **2023**

Sandra Jaison, *Spectral Energy Distributions Modeling of Quasars using UltraViolet Imaging Telescope Data* , M.Sc thesis, Presidency University, **2023**

Dweepsa Das, *Understanding Host Dark Matter Halo Mass of Active Galactic Nuclei Using the Conditional Luminosity Function* , M.Sc thesis, Presidency University, **2023**

Subhasis Dutta, *Study of Sunyaev Zeldovich Effect* , M.Sc thesis, Presidency University, **2023**

Samsuzzaman Afroze, *Mass Functions of Supermassive Black Holes*, M.Sc thesis, Presidency University, **2022**, **PhD: TIFR**

Alphesunny Sarkar, *Luminosity Functions of Active Galactic Nuclei*, M.Sc thesis, Presidency University, **PhD: Presidency University 2022**

Riya Mullick, *Clustering of Quasars*, M.Sc thesis, Presidency University, **2021**, **PhD: IIT Kanpur**

Ankit Paul, *X-ray Properties of Clusters*, M.Sc thesis, Presidency University, **Customs Officer**, **2021**

Najmul Sk, *Detecting Feedback from Obscured Quasars*, M.Sc thesis, Presidency University, **2020**

Souradip Bhattacharya, *Subhalo Properties for Self Interacting Dark Matter*, M.Sc thesis, Presidency University, **2020**, Principal Advisor: Susmita Adhikari (Stanford University), **PhD: Ohio State University**

Anirban Chowdhury, *Direct Measurement of Halo Occupation Distribution of Obscured Quasars*, M.Sc thesis, Presidency University, **2020**, **PhD: Presidency University**

Monabi Basu, *Machine Learning Problems in Particle Data Analysis*, M.Sc thesis, Presidency University, **2020**, Principal Advisor: Satyaki Bhattacharya (SINP)

Soumya Roy, *Modeling X-ray Emission from Galaxy Clusters*, M.Sc thesis, Presidency University, **2019**, **PhD: IUCAA**

Anwesh Majumdar, *The Redshift Dependence of the Halo Occupation Distribution of Quasars*, Presidency University, M.Sc thesis, **2019**, **PhD University of Amsterdam**

Abu Sahin, *Jarzynski Equality*, Presidency University, M.Sc thesis, Principal Advisor: Jayanta Kumar Bhattacharjee (IACS), Co-Advisor: Debasish Datta, **2019**, **PhD Position: IACS**

Rajesh Paul , *Pattern Formation*, Presidency University, M.Sc thesis, Principal Advisor: Jayanta Kumar Bhattacharjee (IACS), Co-Advisor: Gour Bhattacharya, **State Bank of India**, **2019**

Tanima Karmakar, *Dark Energy: ΛCDM or something else...?*, Presidency University, M.Sc thesis, Presidency University, **Officer: Bangiya Gramin Vikash Bank**, **2018**

Chayan Chatterjee, *Dark Matter Self Interaction and its Impact on Large Scale Structure*, M.Sc thesis, Presidency University, Co-Advisor: Debasish Majumdar (SINP), **2018**, **PhD Position: University of Western Australia**

Writabrata Mukherjee, *Physics of accretion in alternative theories*, M.Sc thesis, Presidency University, Principal Advisor: Sumanta Chakrabarty (IACS), Co-Advisor: Parthasarathi Majumdar (RKMVU), **2018**

Avinanda Chakrabarty, *Sunyaev Zeldovich Effect from Quasar Feedback using Data from the Very Large Array*, Presidency University, M.Sc thesis, Presidency University, **2017**, **PhD Position: NIT Rourkella, Currently PhD student at Presidency University**

Rana Das, *Power Spectrum of Cold Dark Matter*, M.Sc thesis, Presidency University, **2017**, **Assistant Teacher, St Stephen's School**

Priyanka Chakraborty, *Direct Measurement of the Mean Occupation Function of Quasars from Planck*, M.Sc thesis, Presidency University, **2016**, **PhD Position: University of Kentucky**

Lopamudra Mukherjee, *Connection of Propagating Disturbances with Active Region Solar Jets*, M.Sc thesis, Presidency University, Principal Advisor: Dipankar Banerjee (IIA), **2016**,**PhD Position: IIT Guwahati**

Shilpa Sarkar, *Coronal Seismology*, M.Sc thesis, Presidency University, Principal Advisor: Dipankar Banerjee (IIA), **2015**,**PhD Position: ARIES**

Dhruba Dutta Chowdhury, *The Sunyaev Zeldovich Effect from Quasar Host Dark Matter Halos*, M.Sc thesis, Presidency University, **2015**, **PhD Position: Yale University**

Palash Nandi, *Characterizing Photometric and Spectroscopic Data using a Charge Coupled Device* , Presidency University, M.Sc thesis, **2015**, Co-advisor: Saumyadip Samui, **Assistant Teacher: Usha Martin School, Maldah**

Rudrani Kar Chowdhury, *Deriving X-ray Surface Brightness Profile in Simulated Clusters*, M.Sc thesis, Presidency University, **2014**, **PhD Position: Presidency University**

Sanchita Chanda, *Characterizing Galaxy X-ray Luminosities as a Function of Local Environments*, M.Sc thesis, Presidency University, **2014**, **Assistant Manager at Bangiyo Gramin Bikash Bank**.

Rukaiya Khatoon,*Deriving Luminosity Functions of Active Galactic Nuclei from HOD models*, M.Sc thesis, Presidency University, **2014**, **PhD Position: Joint program IUCAA and Tezpur University**

Anirban Roy, *Modeling Sunyaev Zeldovich Effect in Active Galaxies*, Burdwan University, **2014**, **PhD Position: SISSA, Italy**

UG Students Supervised

Arnatri Samajdar, *Studies of the Matter Power Spectrum* , B.Sc Dissertation, Presidency University, **M.Sc: Presidency University**, **2023**

Mrinmoy Das, *X-ray Emission in Galaxies and Clusters*, B.Sc Dissertation, Presidency University, **M.Sc: Presidency University**, **2023**

Samim Riyaj Sheikh, *Studying X-ray Sources over Cosmic Time*, B.Sc Dissertation, Presidency University, **2022**,**M.Sc: Presidency University**

Indira Dalui, *Studying the Relic Radiation from the Big Bang*, B.Sc Dissertation, Presidency University, **2022**, **M.Sc: Presidency University**

Maitreya Kundu, *Study of the Spectral Energy Distributions of Galaxies with X-CIGALE*, B.Sc Dissertation, Presidency University, **2021 M.Sc: Presidency University**

Samrat Roy, *Studying the Prospect of detecting Sunyaev-Zeldovich signal from active galactic nuclei feedback using ngVLA* , B.Sc Dissertation, Presidency University, **2021 M.Sc: Presidency University**

Anik Parui, *Redshift Evolution of the Quasars HOD*, B.Sc Directed Study, Presidency University, **2020 M.Sc: Presidency University**

Suchandra Ray, *Studying Friedmann Equation*, B.Sc Directed Study, Presidency University, **2020 M.Sc: Presidency University**

Agniva Datta, *Observational Probes of Quasars*, B.Sc Directed Study, Presidency University, **2019 M.Sc: Presidency University**

Saugata Barat, *X-ray Source Population Characterisation In High Redshift Galaxies*, B.Sc Directed Study, Presidency University, **2018 M.Sc: Presidency University**, IPhD offers: IISc and TIFR, IUCAA pre-selected for PhD
PhD Position: University of Amsterdam, 2020

Monabi Basu, *Determination of the Mass and Width of the Z boson using CMS data*, B.Sc Directed Study, Presidency University, Principal Advisor: Satyaki Bhattacharya (SINP), Co-Advisor: Gour Bhattacharya, **M.Sc: Presidency University**, **2018**

Kazi Parvez Islam, *Exploring Quantum Dynamics of Wavepackets Using Ehrenfest's Theorem*, B.Sc Directed Study, Presidency University, Principal Advisor: Jayanta Kumar Bhattacharjee (IACS), Co-Advisor: Gour Bhattacharya, **M.Sc: IIT KGP**, **2018**

Priyankar Mukherjee, *Aspects of Dark Matter Physics*, B.Sc Directed Study, Presidency University, Principal Advisor: Parthasarathi Majumdar (RKMVU), **M.Sc: IIT Indore**, **2018**

Sagnick Mukherjee, *X-ray Surface Brightness Profiles of Optically Selected Active Galactic Nuclei*, JBNSTS Project, Presidency University, **2016-2018**, **M.Sc: Presidency University**
IPhD offers: Indian Institute of Science, IUCAA pre-selected for PhD,
Awarded the S. N. Bose Scholarship from the Indo-US Science and Technology Forum, PhD Position: University of California at Santa Cruz, 2020

Soumya Roy, *Supervised Reading: Quantum Computation*, Presidency University, **M.Sc: Presidency University**, **2017**, IUCAA Pre-Selected for PhD

Alankar Dutta, *X-ray emissions in groups and clusters*, B.Sc thesis Project, Presidency University, **2017**, **IPhD: Indian Institute of Science Bangalore**

Anindya Saha, *Supervised Reading: Quantum Computation*, Presidency University, **2017**

Anirban Bhattacharjee, *Supervised Reading: Quantum Computation*, Presidency University, **2016**, **IPhD: Tata Institute of Fundamental Research**

Dipanjali Haldar, *Supervised Reading: Quantum Computation*, Presidency University, **2016**, **M.Sc: IIT Bhubneswar**

Debopriya Sikdar, *Supervised Reading: Quantum Computation*, Presidency University, **2016**, **M.Sc: Presidency University**

Ipsita Bar, *Supervised Reading: Quantum Computation*, Presidency University, **2016**, **M.Sc: IIT Chennai**

Kaustav Mitra, *Halo Occupation Properties of Obscured Quasars*, B.Sc thesis Project, Presidency University, **2016**, **M.Sc: Presidency University**, IUCAA pres-selected for PhD, **American Physical Society Distinguished Student Award**, Phd Position: Yale University, 2018

Ian Vorbach, *AGN Evolution in Galaxy Clusters*, Senior Thesis, Yale University, Fall **2012**

Jonathan Richardson, *The Halo Occupation Distribution of X-ray AGN*, Fall 2012, **PhD Position: University of Chicago**
Jonathan Richardson, *The Halo Occupation Distribution of SDSS Quasars*, Senior Thesis, Yale University, **Fall 2009 - Summer 2011**.

Pearson Miller, *Visualization of Cosmological Simulations*, Freshman Project, Yale University, **Fall 2010 - Spring 2011**

Adam Solomon, *Detecting the Sunyaev-Zeldovich Effect in the Wilkinson Microwave Anisotropy Probe Data*, Senior Thesis, Yale University, **Fall 2009 - Spring 2010**, **PhD Position: Cambridge University**

Invited and Contributed Presentations

Invited Talk, "Studying Supermassive Black Holes in the Universe: A Multiwavelength Approach", **Seminar in Physics: Focusing Women on Scientific Leadership** , March 26th, **(2025)**

Invited Talk, "From Big Bang to Black Holes: The mysteries of our Universe", **One day Seminar** , Scottish Church College, March 4th, **(2025)**

Invited Talk, "AGN Co-evolution Paradigm through Statistical Modeling Tools", **International Calcutta Triennial Symposium** , Ballygunj Science College, Dec 27th-30th, **(2024)**

Invited Talk (in Bangla), "100 years of Bose Statistics: From Fundamental Particles to Cosmology", **Bangiyo Bigyan Porishod**, Berhampore Krishnath College, Dec 9th, **(2024)**

Invited Talk, "Studying Supermassive Black Holes in the Universe: A Multiwavelength Approach", **IOP Golden Jubilee Young Women Scientists' Meet** , Nov 13th-14th, **(2024)**

Invited Talk, "The Cosmological Evolution of Supermassive Black Holes", **Lowell Center for Space Science and Technology** online colloquium, Nov 7th, **(2024)**

Invited Talk, "The Cosmological Evolution of Supermassive Black Holes", **CU Physics in-house Symposium**, Sept 24th, **(2024)**

Invited Talk, "The Cosmological Evolution of Supermassive Black Holes: A Multiwavelength Approach", **CARINAS Monthly Colloquium**, Sept 23rd, **(2024)**https://youtu.be/Zlh5zxGV0iM?si=ajYSS4Tx153lqBP2

Invited Panelist, "Women in Quantum Science and Technologies ", **SNBNCBS**, July 17th-19th, **(2024)**

Contributed Poster, "Spectral Energy Distribution Analysis of Broad Emission Line Quasars ", **Astronomical Society of India**, IISc, Jan 31st-Feb 4th, **(2024)** https://www.astron-soc.in/asi2024/abstractdetails/ASI2024527

Invited Talk, "Ensuring strict compliance of each provision of Sexual Harassment act for crating a safe working environment", **SNBNCBS**, Dec 8th, **(2023)**

Invited Poster, "Toward Gender Equity in Physics: The Changing Scenario in Indian Academia" **International Conference on Women in Physics**, TIFR, July 11th-15th, **(2023)** https://www.youtube.com/watch?v=faUOoCcS4qI

Invited Lecture, Ramatosh Sarkar Memorial Lecture, **Bangiyo Bigyan Porishod**, Feb 15th, **(2023)** https://youtu.be/2s6iiGz3bOs

Invited Lecture, " Harvard's Computers: the legacy of the stellar women", PAVINARI Lecture Series, **Indian Physics Association**, Jan 10th, **(2023)** https://youtu.be/nNLqqTGWuy4

Invited Lecture, " Temperature Anisotropies in the Cosmic Microwave Background", ISSAA & RCAA 2022, **IUCAA**, June 17th, **(2022)** https://www.youtube.com/watch?v=6mjjUfA5bOQ

Invited Talk, "Diversity and Inclusivity in Physics: The Road Forward", **SNBNCBS**, Dec 9th, **(2021)** https://www.youtube.com/watch?v=Phn27wjONw

Invited Panelist, "Towards Gender Equity : New Directions & Steps", **IPA-APS Webinar**, Nov 11th, **(2021)** https://www.youtube.com/watch?v=PvVotzER1A

Invited Talk, "Feedback from Active Galactic Nuclei: The Cosmological Perspective", **IUCAA Colloquium,** , IUCAA, July 29th, **(2021)**https://tinyurl.com/iucaa-channel

Invited Talk, "Cosmological Evolution of Supermassive Black Holes", **VSM Special Colloquium,** , Raman Research Institute, June 29th, **(2021)** https://www.youtube.com/watch?v=7nAFPKskTH8

Contributed Poster, "Halo Occupation Distribution of Quasars: Evolution with Redshift ", **Astronomical Society of India**, Virtual Meeting, February 18th-23rd, **(2021)**

Invited Talk, "The Co-Evolution of Supermassive Black Hole with Galaxies and Dark Matter in the Universe", **Astronomical Society of India**, IISER Tirupati, February 12th-17th, **(2020)**

Invited Panelist, "Bibha Choudhury and Purnima Sinha: Hidden Figures in a Indian science" **Tata Steel Kolkata Literary Meet**, Jan 22nd - 26th, **(2020)** https://www.youtube.com/watch?v=00Ou1UKBoEU

Invited Talk, "Supermassive Black Holes and their Host Dark Matter Halos", **Saint Xaviers College**, September 27th, **(2019)**

Invited Talk, "Supermassive Black Holes and their Host Dark Matter Halos", **IIT Hyderabad**, September 20th, **(2019)**

Contributed Talk, "Supermassive Black Holes and their Host Dark Matter Halos", **SERB Group Monitoring Project, Jamia Hamdard**, July 5th, **(2019)**

Invited Lectures, "Role of Women in Higher Education: Past, Present and the Future", **Hansraj College, New Delhi, Faculty Induction Program**, July 4th **(2019)**

Invited Talk, "Diversity and Inclusion in Physics: Past Present and Future", **Astronomical Society of India**, Bangalore, February 18th-22nd, **(2019)**

Contributed Poster, "Supermassive Black Holes and their Host Dark Matter Halos", **Astronomical Society of India**, Bangalore, February 18th-22nd, **(2019)**

Contributed Talk, "The Sunyaev-Zeldovich Effect from Quasar Feedback", **Cosmology: The Next Decade, International Center for Theoretical Sciences**, Bangalore, January 22nd-25th, **(2019)**

Invited Talk, "Supermassive Black Holes and their Host Dark Matter Halos", **One day conference on AGN Science, IIA**, October 6th, **(2018)**

Invited Talk, "Diversity and Inclusion in Science: The Road Forward", **Indo-French Women in Science Seminar**, CNRS-Paris, September 24th, **(2018)** https://www.youtube.com/watch?v=aGuwFnamcbI

Invited Talk, "Diversity and Inclusion in Physics: Past Present and Future", **Presidency University** 150th Colloquium, April 18th, **(2018)**

Invited Talk, "Diversity and Inclusion in Physics: Past Present and Future", "**Pressing for Progress: A Discussion Meeting on the Gender Gap in Physics", ICTS**, March 22nd, **(2018)**

Invited Talk, "Supermassive Black Holes and their Host Dark Matter Halos ", **ICTS**, March 22nd, **(2018)**

Invited Talk, "Supermassive Black Holes and their Host Dark Matter Halos ", **Introductory School on Galaxy Formation, NISER**, March 13th-16th, **(2018)**

Invited Poster, "Cosmological Evolution of Supermassive Black Holes", **ICWIP, IUPAP**, University of Birmingham, July 16th-19th, **(2017)**

Invited Talk, "Cosmological Evolution of Supermassive Black Holes", **Introductory Workshop on Astrophysics & Cosmology organized by Department of Physics, Aliah University In collaboration with IRC**, Kolkata, September 27th, **(2016)**

Invited Talk, " Supermassive Black Holes in the Cosmic Web", **TIFR DAA Colloquium**, Mumbai, June 21st, **(2016)**

Contributed Poster, "Feedback from Active Galactic Nuclei: Implications from X-ray Surface Brightness Profiles of Galaxies", **Astronomical Society of India**, Kashmir University, May 10th-13th, **(2016)**

Contributed Talk, " Feedback from Active Galactic Nuclei: Implications from X-ray Surface Brightness Profiles of Galaxies", **5th TCGCA-ER, ISI Kolkata**, March 19th **(2016)**

Contributed Talk, " The Co-Evolution of Supermassive Black Holes with Cosmic Structures in the Universe", **International Conference on Gravity and Cosmology**, IISER Mohali, Dec 14-18 **(2015)**

Invited Talk, " Supermassive Black Holes and their Host Dark Matter Halos", **AAPCOS, Saha Institute of Nuclear Physics**, Oct 12-17 **(2015)**

Invited Poster, " Presidency University Cosmology Research Highlights", **Indo-US Frontiers of Science Conference**, Irvine, California, Aug 10-12 **(2015)**

Invited Talk, " Supermassive Black Holes and their Host Dark Matter Halos ", **University of Wyoming Colloquium**, Laramie, Wyoming, Aug 7th **(2015)**

Contributed Talk, "The Halo Occupation Distribution of Active Galactic Nuclei", **StatCosmo, Indian Statistical Institute**, Kolkata, Feb 10–13, **(2015)**.

Contributed Talk, "A Direct Measurement of the Quasar Mean Occupation Function: Breaking Degeneracies between Halo Occupation Distribution Models", **Cosmology at the Interface, Saha Institute of Nuclear Physics**, Jan 28–30, **(2015)**.

Contributed Talk, "A Direct Measurement of the Quasar Mean Occupation Function: Breaking Degeneracies between Halo Occupation Distribution Models", **Astronomical Society of India**, Indian Institute of Science Education and Research, Mohali, March 20–22, **(2014)**.

Invited Talk, " Cosmological Evolution of Supermassive Black Holes", **Topical Conference on Gravity and Cosmology, Saha Institute of Nuclear Physics**, Dec 13th, **(2013)**

Contributed Poster, "A Direct Measurement of the Mean Occupation Function of Quasars: Breaking Degeneracy of Halo Occupation Distribution Models", **Fifty Years of Quasars, California Institute of Technology**, Sep 9–10, **(2013)**

Contributed Talk, "X-ray Surface Brightness Profiles of Active Galactic Nuclei in the Extended Groth Strip: Implications for AGN Feedback", **AEGIS collaboration meeting, University of Kentucky**, Aug 25, **(2013)**

Contributed Poster, "The Halo Occupation Distribution of X-ray-bright Active Galactic Nuclei: A Comparison with Luminous Quasars ", **Massive Black Holes: Birth, Growth and Impact, KITP, Santa Barbara**, Aug 5–9, **(2013)**

Contributed Talk, " The Halo Occupation Distribution of X-ray-bright Active Galactic Nuclei: A Comparison with Luminous Quasars ", **23rd New England Regional Quasar and AGN Meeting**, MIT Haystack Observatory, May 21, **(2013)**

Invited Talk, "Studying Structure Formation in the Universe: New Frontiers and Future Challenges", **Indian Institute of Technology, Kharagpur**, May 9, **(2013)**

Invited Talk, "Probing Structure Formation in the Universe: New Frontiers and Future Challenges", **Indian Institute of Technology, Guwahati**, June 29, **(2012)**

Invited Talk, "Probing Structure Formation in the Universe: New Frontiers and Future Challenges", **Indian Institute of Technology, Kanpur**, June 25, **(2012)**

Contributed talk, "The Halo Occupation Distribution of SDSS Quasars", **22nd New England Regional Quasar and AGN Meeting**, MIT, May 24, **(2012)**

Contributed Poster, "The Halo Occupation Distribution of Active Galactic Nuclei", **Tristate Astronomy Conference, City University of NewYork**, Oct 28, **(2011)**

Invited Talk, "Cosmological Evolution of Supermassive Black Holes", **Indian Institute of Science**, Bangalore, Aug 03, **(2011)**

Invited Talk, "Cosmological Evolution of Supermassive Black Holes", **Indian Institute of Astrophysics**, Bangalore, Aug 02, **(2011)**

Invited Talk, "Cosmological Evolution of Supermassive Black Holes", **Tata Institute of Fundamental Research**, Mumbai, July 28, **(2011)**.

Invited Talk, "Cosmological Simulations of Structure Formation: New Frontiers and Future Challenges", **Indian Institute of Technology, Mumbai**, July 27, **(2011)**

Invited Talk, "Cosmological Evolution of Supermassive Black Holes", **Inter University Center for Astronomy and Astrophysics**, Pune, July 25, **(2011)**

Invited Talk, "Cosmological Evolution of Supermassive Black Holes", **National Center for Radio Astrophysics**, Pune, July 22, **(2011)**

Invited Talk, " Cosmological Simulations of Structure Formation: New Frontiers and Future Challenges", **Indian Institute of Science Education and Research**, Pune, July 21, **(2011)**

Contributed talk, "The Halo Occupation Distribution of Active Galactic Nuclei", **AEGIS collaboration meeting**, University of Pittsburgh, June 22–24, **(2011)**

Contributed talk, "The Halo Occupation Distribution of Active Galactic Nuclei", **21st New England Regional Quasar and AGN Meeting**, Yale University, May 19, **(2011)**

Invited Talk, "The Sunyaev-Zeldovich Effect As a Probe of Black Hole Feedback", **MIT Kavli Institute for Astrophysics and Space Research**, March 05, **(2009)**

Contributed Poster, **Science 2008**, University of Pittsburgh, Pittsburgh, Oct 2–3, **(2008)**

Invited Talk, "The Sunyaev-Zeldovich Effect as a Probe of Black Hole Feedback", **Raman Research Institute**, Banglore, June 13, **(2008)**

Invited Talk, "The Sunyaev-Zeldovich Effect as a Probe of Black Hole Feedback", **Inter University Centre for Astronomy And Astrophysics**, Pune, June 11, **(2008)**

Contributed Poster "Simulated Sunyaev-Zeldovich Maps From Black Hole Feedback", **21cm Cosmology Conference, Center for Astrophysics, Cambridge**, May 12–15, **(2008)**

Contributed Poster, **Science 2007**, University of Pittsburgh, Pittsburgh, Oct 11–12, **(2007)**

Contributed talk, "Sunyaev-Zeldovich Effect from Quasar Feedback", **Atacama Cosmology Telescope workshop, Princeton University**, August 8–10, **(2007)**

Invited Talk, "Anisotropies in the Cosmic Microwave Background", **Saha Institute of Nuclear Physics**, Calcutta, May 28, **(2007)**

Professional Services

Coordinator, "7th Regional Science and Technology Congress: Engineering Sciences", Presidency University, Jan 17th-18th, (2025)

Convener, “100 years of Bose Statistics Symposium”, Presidency University, Nov 20th, (2024)

Convener, “Prof. Shyamal Sengupta Centenary Celebration”, Presidency University, April 24th, (2024)

Moderator, WGGE-Panel Discussion, “Spousal Hiring Policies in India: Conflict of Interests versus Equal Opportunity Practices”, **Astronomical Society of India**, IISc, Jan 31st-Feb 4th, **(2024)**
https://www.youtube.com/live/bNgKvgwXkI8?si=Zh3D9Ocf6zFQecXK

Convener, Organizing Committee, **First International Astronomical Union-Office of Astronomy for Education Teacher Training Workshop**, Presidency University, Dec 1st-2nd 2023

Invited Participant, **AKR Centenary Symposium**, August 11th and 12th, 2023

Moderator, **ASI-WGGE Mentoring Panel**, March 9th, 2023
https://www.youtube.com/watch?v=04t6AR4DF0Y

External Member, **Research Advisory Committee**, Tanya Tripti, NISER

Member, **Galaxies Clusters and IGM Chapter**, Future of Indian Astronomy, Astronomical Society of India

Member and Country Leader, Local Organizing Committee, **International Conference on Women in Physics**, Host Country: India

Member, **NSSE-2022**, Local Organizing Committee, Science City, **ISRO**, 5th Dec 2022-11th Dec 2022
https://www.youtube.com/watch?v=3mgL7izg-Q
https://www.youtube.com/watch?v=I4XK2QnNtgI

External Member, **Board of Studies, Department of Physics**, July 2022-present, Saint Xaviers College

Member, Scientific Organizing Committee, **IAGRG Annual Meeting, IISER-Kolkata**, 19th-21st Dec 2022

Convener, DAE C V Raman Lecture, **IPA and Presidency University** 8th Feb 2022
https://www.youtube.com/watch?v=G1uBfN2F15Y

Member, NSSS-2022 Outreach Committee, **ISRO** Sep 2021- Feb 2022
https://www.youtube.com/watch?v=81hB7YOIcNw

External Expert, **PhD Selection Panel, IUCAA** Sept 2021, June 2023

Member, **NRF, Division of Physical Sciences**, Astronomy & Astrophysics, Aug 2021

National Member : **International Astronomical Union**, May 2021- present

Member, Scientific Organizing Committee, Discussion Meeting: **Astrophysics of Supermassive Black Holes**, ICTS, Dec 17-19 2019

Member, Scientific Organizing Committee, **Pressing for Progress**, University of Hyderabad, Sept 19-21 2019

Member, Organizing Committee, **Young Physics Colloquium**, Saha Institute of Nuclear Physics Aug 2019

Member, LOC, **Universe after the first 200 million years**, Presidency University, Dec 11th-13th, 2017

Convener, LOC, **Advanced School on Gravitational Waves**, Presidency University, Dec 12th-16th 2016

Member, SOC, **Astronomical Society of India**, Annual Meeting, 2016-2019

Convener, LOC, **2nd Topical Conference on Gravity and Cosmology meeting** Aug 9th 2014

Convener, **125th Birth Anniversary Celebration of Prof. S. N. Bose**
Presidency University, 9th Jan 2019

Convener, **Amal Kumar Raychaudhuri Memorial Lecture**
Presidency University, Apr 8th 2023, Apr 17th 2021, 4th Jan 2019, 7th Jan 2017

Convener, **125th Birth Anniversary Celebration of Prof. M. N. Saha**
Presidency University 27th Nov 2018

Chief Organizer, **Workshop on Digital Learning with Prof. Sanjay Sarma**
MIT Digital Learning Labs, Presidency University, April 19th 2017

Organizer, **Advanced Lectures on Topics on Condensed Matter Physics**, PU, Lecturer: Prof. Krishnendu Sengupta, IACS August 2016

Chief Organizer, **Teaching and Learning Workshop**, Presidency University
Speaker: Dr. Shiladitya Raj Chaudhury, Auburn University, Dec 15th 2015

Chief Organizer, **Physics Weekly Colloquium**, PU, 2015-2019,

Invited Panelist, **Kishore Vyagyanik Protsahan Yojna**, Feb 2019, Jan 2020

External Expert, **CSIR Minor Research Project** Sept 2018

Referee, **United States-India Educational Foundation** 2018

Professional Services

Referee, **Monthly Notices of the Royal Astronomical Society**, **Astrophysical Journal**

Invited Panelist, **Kolkata Literary Meet**, Jan 23rd 2020

Invited Panelist, **Indo-French Women in Science Seminar**, CEFIPRA, Sept 24-25, 2018

Invited Participant, **ICWIP IUPAP**, Birmingham, Jul 16-20 2017

Invited Participant, Seminar on History and Philosophy of Science, **INSA & Jadavpur University**, July 18th 2019

Participant, **Frontiers of Statistical Physics**, Indian Statistical Institute and Presidency University, 26th-28th Feb 2018

Invited Participant, **4th TCGC Meeting**, IISER Kolkata, Sept 19th 2015

Invited Participant, **Trends and Challenges in Astronomy and Astrophysics**, University of Calcutta and IUCAA Resource Center Sept 9th-12th, 2015

Invited Participant, **Kavli Indo-US Frontier of Science Conference**, August 2015

Life Member, **Bangiyo Bigyan Porishad**, 2021-present

Life Member, **Indian Physics Association**, 2017-present

Life Member, **IAGRG**, 2017-present

Life Member, **Astronomical Society of India**, 2014- present

National Astronomy Education Coordinator, Office of Astronomy Education, **International Astronomical Union** June 2020 – August 2022

Guest Faculty, **Indian Institute of Technology Mandi**
Introduction to the Observable Universe, April 22nd-29th, 2019

"The Radio Universe at Low Surface Brightness: Feedback & accretion in the circumgalactic medium", Bjorn Emonts, Mark Lacy, Kristina Nyland, Brian Mason, Matthew Lehnert, Chris Carilli, Craig Sarazin, Zheng Cai, **Suchetana Chatterjee**, Helmut Dannerbauer, John Gallagher, Kevin Harrington, Desika Naryanan, Dominik Riechers, Graca Rocha,
White Paper submitted to the Astro Decadal Survey 2020

Chief Faculty Advisor, **Undergraduate Research Symposium**, Presidency University, 2017, 2018, 2020, 2021

Administrative Services

Member, **Departmental PhD Committee**, School of Astrophysics, Nov 2022-present, Presidency University

Member, **Departmental Examination Committee**, School of Astrophysics, Nov 2022-present, Presidency University

Member, **Working Group For Gender Equity**, Astronomical Society of India, June 2022-present,

Member, **Academic Advisory Committee**, School of Astrophysics, June 2022-present, Presidency University

Member, **Coordination Committee for the School of Astrophysics**, Apr 4th- June 14th 2022, Presidency University

Presiding Officer, **Internal Complaints Committee**, Sept 2021-present, SNBNCBS

Member, **Departmental Examination Committee, Department of Physics**, 2018-June 2022, Presidency University

Member, **Technical Advisory Committee for School of Astrophysics**, 2nd campus of Presidency University, 2018

Member, National Gender Working Group **IPA**, 2017-2020

Convener, **International Programs coordination committee**, Presidency University

Chief Coordinator of the MoU between **Presidency University Department of Physics and UMass Lowell**

Member, **NAAC-Teaching and Learning Committee**, 2016, Presidency University

Member, **Presidency University 3rd campus academic committee**, Presidency University

Member, **Board of Studies, Department of Physics**, 2014- June 2022, Presidency University

Member, **University Student Feedback Committee**, Presidency University

Member, **Bicentenary Committee**, Presidency University

Convener, Local Organizing Committee, **Presidency University Physics Alumni Meet**, December 22nd-23rd, 2014

Joint-coordinator, **GenEd cell**, 2015-2017, Presidency University

Convener, **Outreach Committee, Presidency University Physics Alumni Meet**, December 22nd-23rd, 2014

Convener, **Cultural Committee, Presidency University Physics Alumni Meet**, December 22nd-23rd, 2014

Coordinator, **Physics PhD program**, 2013-2014, Presidency University

Assistant Queue Manager for the **1.3m Small and Moderate Aperture Research Telescope System Observing Queue Team**, 2009-2011

Public Outreach

Panelist, National Space Day, **Doordarshan, Prasar Bharti**, 23rd August, 2024
https://www.youtube.com/watch?v=Xn07tew26U

Invited Speaker, 'Culture of Science and the Scientific Temper', **Discussion Panel in Bangla at the closing program of the Centennial Celebration of Prof. Shyamal Sengupta**, Charuprava Devi Shiksha Sansad, July 19th, 2024
https://www.youtube.com/watch?v=f5kEpLqyHEY&t=31s

Invited Guest, Public Outreach Program in Bangla,
Bigyan.org https://fb.watch/lhBdU5kAqz/

Panelist, Woman in Science, International Women's Day, **Doordarshan, Prasar Bharti**
https://www.youtube.com/live/exsg4rfaIPU?feature=share

Outreach Booth Coordinator from Presidency University, **National Space Science Exhibition**, Chief Organizer of the "Science Outreach in Mother Tongue" program Dec 5th-11th 2022,
https://www.youtube.com/watch?v=3mgL7izg-Q
https://www.youtube.com/watch?v=I4XK2QnNtgI

Public Lecture at **Jamal Nazrul Islam Astronomy Club**, Feb 22nd, 2022, Jashore University of Science and Technology, Bangaldesh,"Cosmic Evolution of Supermassive Blackholes"

Member, NSSS-2022 Outreach Committee, **ISRO** Sep 2021- Feb 2022
https://www.youtube.com/watch?v=81hB7YOIcNw

Public Lecture at **Vigyan Samagam, Thirty Meter Telescope Week**, Nov 30th, 2019, Science City, Kolkata"Adventures with Supermassive Blackholes"

Public Lecture in Bangla, **Gorabazar Ishwar Chandra Institution**, Dec 27th, 2015, "Observation Confronts theory: What is the Universe made up of??"

Public Lecture to B.Tech and M.sc students at **Indian Institute of Technology Mumbai**, July 30, 2011, "Observation Confronts theory: Is all our understanding of theoretical Physics account for only 4% of the Universe??"

Developing Visualizations for the Leitner Family Observatory, Yale University, Fall 2009

Science Volunteer, SciTech festival, **Carnegie Science Center**, Fall 2007

Science Volunteer, **Investing Now**, University of Pittsburgh, Fall 2006

Science Volunteer, **Allegheny Observatory Open House**, Fall 2007, Fall 2005