Neelima Sehgal

Stony Brook University
Physics and Astronomy Department
Stony Brook, NY 11794

tel. (631) 632-8229 fax. (631) 632-8176
http://www.astro.sunysb.edu/nsehgal/Site/Homepage.html
neelima.sehgal@stonybrook.edu

POSITIONS

- **Stony Brook University** - Professor in Physics and Astronomy - *Sept. 2025 - present*
- **Stony Brook University** - Associate Professor in Physics and Astronomy - *Sept. 2018 - Aug. 2025*
- **Stony Brook University** - Assistant Professor in Physics and Astronomy - *Sept. 2012 - Aug. 2018*
- **Princeton University** - NSF Postdoctoral Fellow - *Sept. 2011 - Sept. 2012*
- **Stanford University/SLAC** - KIPAC Postdoctoral Fellow - *Oct. 2008 - Sept. 2011*

EDUCATION

- **Rutgers University**—Department of Physics and Astronomy
  PhD in Astrophysics - May 2008
- **Yale University**—Department of Physics and Mathematics
  B.S. in Physics and Mathematics - May 1999
  Distinction in Physics and Mathematics

CURRENT RESEARCH INTERESTS

- Dark Matter, Early Universe
- Neutrino Physics, Dark Energy
- Inflation, Quantum Gravity

FELLOWSHIPS, HONORS, AND AWARDS

- APS Fellow - Division of Astrophysics (2025)
- Perimeter Institute Visiting Fellowship (2022-present)
- Simons Foundation Visiting Scholar at the Flatiron Institute (2018-2019)
- Stony Brook Discovery Prize Finalist (2017)
- NSF Postdoctoral Fellowship (2011-2012)

- University and Bevier Dissertation Fellowship, Rutgers (2007-2008)
- GAANN fellowship, Rutgers (2003-2004)
- GAANN fellowship, Rutgers (2000-2001)
- Deforest Senior Prize in Mathematics, Yale (1999)

GRANTS

- **Department of Energy, High Energy Physics Theory** – 2024-2028, PI
- **Stony Brook OVPR Seed Grant** – 2024-2025, PI
- **Department of Energy, High Energy Physics Theory** – 2019-2024, PI
- **National Science Foundation, Astronomy & Astrophysics** – 2019-2023, PI
- **Brookhaven National Laboratory LDRD** – 2019-2022, co-PI
- **Stony Brook-Brookhaven Research Initiative Seed Grant** – 2016-2017, PI
- **LSSTC and Simonyi-Gates Enabling Science Grant** – 2016, PI
- **National Science Foundation, Astronomy & Astrophysics** – 2015-2018, PI
- **Stony Brook-Brookhaven Research Initiative Seed Grant** – 2013-2014, PI

PROFESSIONAL ACTIVITY AND SERVICE

- Collaboration Leadership:
  - PI of CMB-HD Collaboration, 2019-present (https://cmb-hd.org)
  - Co-lead of Simons Observatory Lensing Science Working Group, 2016-present
  - Co-lead of ACTPol/AdvACT Lensing Science Working Group, 2014-present
  - Co-Lead of CMB-S4 Membership Working Group, 2017-2018
  - Lead editor of CMB Lensing Chapter of Simons Observatory Forecast Paper,2018
  - Lead editor of CMB Lensing Chapter of CMB-S4 Science Book, 2015-2016
- Workshop Organizer:
  - "New Discoveries in the Era of High-Resolution, Low-noise CMB Experiments", Aspen Center for Physics Summer Program, Sept. 2021
  - "The CMB in HD: the low-noise high-resolution frontier" at the CCA, Dec. 2018
  - "LSST Dark Energy Science Collaboration Meeting" at Stony Book, July 2017
  - "Cross-correlation Spectacular with LSST" at Stony Book/BNL, May 2016
  - "Cosmological Implications of the EBL" at KIPAC/SLAC, Dec. 2009

- Convener:
  - Co-convener of the "Cosmology and Dark Energy" working group for the APS Division of Particles and Fields (DPF) meeting in Boston, Aug. 2019
  - Co-convener of the "Cosmic Physics" working group for the Conference on the Intersections of Particle and Nuclear Physics (CIPANP18) in Palm Springs, CA, May/June 2018
  - Co-convener of the "Cosmology and Astrophysics" working group for the APS Division of Particles and Fields (DPF) meeting at Fermilab, July/Aug 2017
- Lecturer at Summer School:
  - DMSS: A Dark Matter Summer School, University at Albany, SUNY, July 2018
  - Theoretical Advanced Study Institute in Elementary Particle Physics (TASI), "Anticipating the Next Discoveries in Particle Physics", Boulder CO 2016
- Review panel member for the following agencies from 2011 to present:
  - National Science Foundation (NSF)
  - Department of Energy (DOE)
  - National Aeronautics and Space Administration (NASA)
- Referee for the following journals:
  - *Physical Review D, Journal of Cosmology and Astroparticle Physics, Astronomy & Astrophysics, Monthly Notices of the Royal Astronomical Society, The Astrophysical Journal*

FORMER ADVISEES:

- Joshua Ange - currently PhD student at Columbia University
- Ho Nam Nguyen - currently PhD student at University of Berkeley
- William Tyndall - currently PhD student at Yale University
- Dongwon Han - currently Postdoc at Cambridge University
- Mat Madhavacheril - currently Faculty at University of Pennsylvania
- Alex van Engelen - currently Faculty at Arizona State University

UNIVERSITY SERVICE

- Played integral role in creation of new Cosmology Cluster initiative at Stony Brook University resulting in four new Cosmology faculty positions, 2013

TEACHING EXPERIENCE

- AST 101 - Undergraduate Introduction to Astronomy
- AST 347 - Undergraduate Cosmology
- PHY 524 - Graduate Cosmology
- PHY 688 - Graduate Special Topics in Astrophysics: The Dark Universe
- PHY 620 - Modern General Relativity

OTHER EXPERIENCE

- Private Pilot - Single Engine Land (2002-present)

INVITED COLLOQUIA, SEMINARS, AND TALKS

∗ **71 invited talks**

1. New Synergies in Multi-Probe Cosmology, KITP, Santa Barbara, CA, Feb 4th, 2026
2. New York University CCPP Astro Seminar, New York, NY, Oct. 28th, 2025
3. Particle Physics and Cosmology PPC2025, Deadwood, SD, June 25, 2025
4. Perimeter Institute Cosmology Seminar, Canada, Dec. 17, 2024
5. Brookhaven National Laboratory Physics Colloquium, NY, July 30th, 2024
6. Stony Brook University Physics & Astronomy Colloquium, NY, Feb. 27th, 2024
7. Simons Symposium on Illuminating Dark Matter, Germany, June 26th, 2023
8. Simons Center Lighting New Lampposts Workshop, NY, March 13th, 2023
9. University of Texas Austin Theory Group Seminar, Austin, TX, Nov. 29, 2022
10. City College of New York Colloquium, New York, NY, Sept. 28, 2022
11. Cosmological Probes of New Physics Workshop, U. of Maryland, Sept. 16, 2022
12. Waterloo Centre for Astrophysics Astro Seminar, Canada, January 20, 2021
13. University of Albany Physics Colloquium, Albany, NY, March, 6, 2020
14. Cosmological Frontiers in Fundamental Physics, Perimeter Institute, Sept. 19, 2019
15. STRONG-DM 2019, Vienna, Austria, Aug, 19, 2019
16. LSST Dark Matter Workshop, Chicago, IL, Aug. 6, 2019
17. Brookhaven National Laboratory HET Lunch Seminar, Brookhaven, July 19, 2019

18. AAS Special Session on Cosmological Probes of Dark Matter, June 10, 2019
19. NASA Goddard Physics Colloquium, Baltimore, MD, May 21, 2019
20. In Pursuit of New Particles and Paradigms, Aspen, March, 26, 2019
21. Accurate Lensing in the Era of Precision Cosmology, Berkeley, CA, Jan. 14, 2019
22. Novel Instrumentation for Fundamental Physics, Puerto Rico, November 30, 2018
23. Yale University Physics Colloquium, November 26, 2018
24. University of Toronto Physics Colloquium, October 25, 2018
25. New York University CCPP Astro Seminar, September 18, 2018
26. Conference on Shedding Light on the Dark Universe with Extremely Large Telescopes, Trieste, Italy, July 3, 2018
27. CDM18 Workshop, KITP, Santa Barbara, CA, May 25th, 2018
28. CDM18 Conference, KITP, Santa Barbara, CA, May 1st, 2018
29. American Physical Society Mid-Atlantic Section, Newark, NJ, Nov. 4, 2017
30. Kavli CMB Lensing Workshop, Stanford, CA, September 13, 2017
31. Fermilab Colloquium, Batavia IL, November 30, 2016
32. York University Physics & Astronomy Colloquium, Toronto, Canada, Oct. 18, 2016
33. U.S. RMS Futures II, HERA Session, Baltimore, MD, August, 4, 2016
34. U.S. RMS Futures II, CMB Session, Baltimore, MD, August, 3, 2016
35. Light Dark World International Forum 2016, Daejeon, South Korea, July 12, 2016
36. Neutrinos and Light Particles in Cosmology, Berkeley, CA, June 23, 2016
37. University of Michigan Physics Seminar, Ann Arbor, MI, March 28, 2016
38. Canadian Institute of Theoretical Physics Seminar, Canada, Nov. 5, 2015
39. BNL DOE Cosmic Visions Talk, New York, NY, Oct. 17, 2015
40. Gruber Cosmology Conference, Yale University, New Haven, CT, Oct. 2, 2015
41. Brookhaven National Laboratory Physics Seminar, New York, NY, Sept. 17, 2015
42. CCAPP Seminar, Ohio State University, Columbus, OH, October 27, 2014
43. Rutgers University Astronomy Talk, New Brunswick, NJ, October 25, 2014
44. HPS Collaboration Meeting, VA, June 17, 2014
45. Dark Interactions, Brookhaven National Lab, NY, June 12, 2014
46. NY section of the APS meeting, SUNY Oswego, NY, April 25, 2014

47. Simons Center for Geometry and Physics Seminar, Stony Brook, NY, March 25, 2014
48. American Museum of Natural History, New York, NY, January 14, 2014
49. Princeton/IAS Cosmology Lunch, Princeton, NJ, October 21, 2013
50. Tri-State Astronomy Conference, New York, NY, September 27, 2013
51. Simons Center for Geometry and Physics Seminar, Stony Brook, NY, April 16, 2013
52. American Physical Society Invited Session, Denver, CO, April 14, 2013
53. Particle Physics Seminar, Stony Brook University, Stony Brook, NY, Dec. 3, 2012
54. A New Era for SZ Science, Santander, Spain, June 27, 2011
55. Stony Brook University Physics and Astronomy Seminar, NY, May 10, 2011
56. San Francisco State University, Physics & Astronomy Colloquium, April 11, 2011
57. Santa Cruz FLASH Seminar, CA, March 11, 2011
58. Canadian Institute of Theoretical Physics Seminar, Canada, Feb. 3, 2011
59. University of Waterloo Astro Lunch Talk, Canada, Feb. 2, 2011
60. Perimeter Institute Cosmology and Gravitation Seminar, Canada, Feb. 1, 2011
61. Chicago KICP Seminar, Chicago, IL, Jan. 28, 2011
62. Lawrence Livermore National Lab Physics Seminar, CA, Jan. 21, 2011
63. AAS Special Session: Cluster Cosmology with Optical and SZ, Seattle, Jan. 12, 2011
64. Caltech Astronomy Colloquium, Pasadena, CA, Dec. 15, 2010
65. Berkeley Cosmology Seminar, U.C. Berkeley, Berkeley, CA, Nov. 23, 2010
66. Stanford Astrophysics Colloquium, Stanford, Palo Alto, CA, May 20, 2010
67. University of Pennsylvania Cosmology Seminar, Philadelphia, PA, Jan. 16, 2008
68. Berkeley Cosmology Seminar, Berkeley, CA, Dec. 18, 2007
69. University of California at Davis Cosmology Seminar, Davis, CA, Dec. 17, 2007
70. Princeton Wunch Talk, Princeton, NJ, Dec. 5, 2007
71. Harvard Center for Astrophysics HEAD Lunch Talk, Boston, MA, Nov. 10, 2007