Biographical Sketch

(Last updated/compiled on April 22, 2024.)

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1 Academics

1.1 Academic Record

20. Aug 2023 - Present: Professor of Practice at the Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

19. Aug 2018 - Jul 2023: Associate Professor of Practice at the Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

18. Aug 2013 - Jul 2018: Lecturer at the Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

17. Aug 2012 - Jul 2013: Postdoctoral associate at The L. Cademartiri Lab, Materials Science and Engineering Department, Iowa State University, Ames, Iowa, USA. Project advisor: Ludovico Cademartiri.

16. Apr 2012 - Jul 2012: Visiting postdoctoral fellow at Department of Energy Process and Technology, Norwegian University of Science and Technology (NTNU), Trondheim, Norway. Project advisor: Iver Brevik.

15. Feb 2012 - Mar 2012: Visiting postdoctoral fellow at the University of Oklahoma, Norman, Oklahoma, USA. Project advisor: Kimball A. Milton.

14. Jul 2010 - Jan 2012: Postdoctoral associate at Rutgers University, Newark, New Jersey, USA. Project advisor: Martin Schaden.

13. Aug 2008 - Jun 2010: Physics teacher at Saint Edward's School, Vero Beach, Florida, USA.

12. Aug 2001 - Jul 2008: Ph. D. in Physics at University of Oklahoma, Norman, Oklahoma, USA. Dissertation title: Casimir effect: An avatar of the quantum vacuum. Thesis advisor: Kimball A. Milton.

11. Jun 2001 - Jul 2001: Visiting research scholar at Center of Theoretical Studies, Indian Institute of Technology, Kharagpur, India.

10. Jan 2001 - Apr 2001: Visiting research scholar at The Institute of Mathematical Sciences, Chennai, India.

9. Aug 1996 - Aug 2000: Research Scholar at Physical Research Laboratory, Ahmedabad, India.

8. Aug 1994 - Aug 1996: Masters degree (M. Sc.) at Indian Institute of Technology, Kharagpur, India. CGPA : 6.95/10

7. Aug 1991 - Aug 1994: Bachelors degree (B. Sc.) at Banaras Hindu University, Varanasi, India. Percentage marks : 68.3 %

6. Aug 1990: Passed my Secondary School Examination (A. I. S. S. C. E.). Percentage marks : 76.2 %

5. Aug 1988: Passed my High School Examination (A. I. S. S. E.). Percentage marks : 69.8 %

4. Aug 1986 - Aug 1990: Schooling from Class IX to Class XII at Kendriya Vidyalaya, Air Force Station Sulur, Coimbatore, India.

3. Aug 1981 - Aug 1986: Schooling from Class III to Class VIII at Kendriya Vidyalaya, Air Force Station Avadi, Chennai, India.

2. Aug 1978 - Aug 1981: Schooling from Class I to Class III at Kendriya Vidyalaya, Air Force Station Pune, Pune, India.

1. Aug 1976 - Aug 1978: Kindergarten at Air Force Station Pune, Pune, India.

1.2 Awards and Recognitions

12. 2016-2019: I was a co-investigator for a FRINATEK (translated from Norwegian as Independent Projects in Mathematics, Science and Technology) project titled "Casimir effect and van der Waals forces in multilayer systems" that was funded by the Norwegian Research Council for three years (2016-2019). Investigators: Prof. Iver Brevik (Norway), Prof. Clas Persson (Norway), Dr. Mathias Boström (Sweden), Prof. Johan Høye (Norway), Prof. Stefan Buhmann (Germany), Prof. Kimball A. Milton (USA), Prof. Barry W. Ninham (Australia), Dr. Oleksandr I. Malyi (Singapore), Dr. Kristian Berland (Norway), Dr. Prachi Parashar (USA), Dr. K. V. Shajesh (USA), Dr. Drew F. Parsons (Australia), Dr. Eduardo Lima (Brazil).

11. 2015: At the initiative of the students of the Southern Illinois University Carbondale chapter of the Society of Physics Students I was elected member of Sigma Pi Sigma National Physics Honor Society and received into the chapter at Southern Illinois University Carbondale.

10. 2013: My work titled "Casimir interaction energies for magneto-electric δ-function plates," (item [18] in Section 2.1) was highlighted on the cover of IL Nuovo Cimento Vol. 36 C (2013).

9. 2009: Awarded the Neilsen Prize for the best Ph. D. thesis (item [29] in Section 2.1) by Homer L. Dodge Department of Physics and Astronomy, University of Oklahoma.

8. 2009: My Ph. D. thesis (item [29] in Section 2.1) was nominated for the University of Oklahoma Provost's Dissertation Prize for the year 2009. According to unofficial sources I was placed second by the Dissertation award committee.

7. 2008: My article titled "Quantum mechanics using Fradkin's representation" (item [37] in Section 2.1) is listed in "The Net Advance of Physics", which is a collection of review articles and tutorials in an encyclopedic format, supported by The Massachusetts Institute of Technology. My article is listed under the topic "Field Theory" and under the subtitle "Fradkin representation".

6. 2004: My article titled "Eikonal approximation" (item [39] in Section 2.1) is cited by the Wikipedia article on the topic.

5. 2004: My web-page was spotlighted on the main page of the University of Oklahoma's Arts and Science's web-page for one week starting from Dec 9, 2004, by web-mistress Angela P. Startz.

4. 2000: Passed the CSIR-UGC Net examination which is a requirement for "Graduate Research Fellowship" in India.

3. 1994: Gold medalist in the National Graduate Physics Examination (N. G. P. E.) conducted by the Indian Association of Physics Teachers(I. A. P. T.) in the year 1994.

2. 1990: Was selected for studying in U. S. S. R. in the discipline of Physics and Mathematics with full scholarship by "Indo Soviet Medical Education Care and Research Foundation".

1. 1989: A mathematical teaching exhibit describing the "Zeros of a Polynomial" was designed, built and presented in the Jawaharlal Nehru National Science Exhibition at Jaipur Cantt, India.

2 Research

2.1 Publications in Physics

1. E. Harikumar, K. V. Shajesh, Suman Kumar Panja, "How does Casimir energy fall in κ-deformed space-time?," arXiv:2404.10300 [hep-th].

2. N. Warnakulasooriya, D. H. Gallaba, J. J. Marchetta, D. Wetzel, P. Parashar, K. V. Shajesh, "Magneto-static interaction energy between a point magnet and a ring magnet," Physics Open **15**, 100140 (2023), arXiv:2209.06393 [cond-mat.mes-hall].

3. R. Narayanan, P. Parashar, K. V. Shajesh and S. Vijayakumar, "Role of long-range van der Waals interaction in the coefficient of static friction," (2022), arXiv:2209.06123 [cond-mat.mes-hall].

4. I. Cavero-Peláez, P. Parashar and K. V. Shajesh, "Quantum Vacuum Energy of Self-Similar Configurations," Universe **7**, no.5, 128 (2021), arXiv:2105.05507 [hep-th].

5. J. J. Marchetta, P. Parashar and K. V. Shajesh, "Geometrical dependence in Casimir-Polder repulsion," Phys. Rev. A **104**, 032209 (2021), arXiv:2020.11870 [quant-ph].

6. J. J. Marchetta, P. Parashar and K. V. Shajesh, "Geometrical dependence in Casimir-Polder repulsion: Anisotropically polarizable atom and anisotropically polarizable annular dielectric," (2020), arXiv:2020.11871 [quant-ph].

7. P. Thiyam, P. Parashar, K. V. Shajesh, O. I. Malyi, M. Boström, K. A. Milton, I. Brevik, J. Forsman and C. Persson, "Charge carrier and medium alteration of the magnitude and the sign of the Casimir-Lifshitz torque," Phys. Rev. B **100**, 205403 (2019), arXiv:2209.08846 [cond-mat.mes-hall].

8. P. Parashar, K. V. Shajesh, K. A. Milton, D. F. Parsons, I. Brevik and M. Boström, "The role of zero point energy in inducing nucleation of ice in a spherical drop of water," Phys. Rev. Research **1**, 033210 (2019), arXiv:1907.04301 [cond-mat.mes-hall].

9. I. Brevik, P. Parashar and K. V. Shajesh, "Remarks on the Casimir force for magnetodielectric media," Phys. Rev. A **98**, 032509 (2018), arXiv:1808.02205 [physics.class-ph].

10. P. Thiyam, P. Parashar, K. V. Shajesh, O. I. Malyi, M. Boström, K. A. Milton, I. Brevik and C. Persson, "Distance-dependent sign-reversal in the Casimir-Lifshitz torque," Phys. Rev. Lett. **120**, 131601 (2018), arXiv:1801.01183 [cond-mat.mes-hall].

11. K. V. Shajesh, P. Parashar and I. Brevik, "Casimir-Polder energy for axially symmetric systems," Ann. Phys. (N. Y.) **387**, 166 (2017), arXiv:1709.08814 [physics.class-ph].

12. K. V. Shajesh, P. Parashar, I. Cavero-Peláez, J. Kocik and I. Brevik, "Casimir energy of Sierpinski triangles," Phys. Rev. D **96**, 105010 (2017), arXiv:1709.06284 [hep-th].

13. P. Parashar, K. A. Milton, K. V. Shajesh and I. Brevik, "Electromagnetic δ-function sphere," Phys. Rev. D **96**, 085010 (2017), arXiv:1708.01222 [hep-th].

14. M. Boström, O. I. Malyi, P. Parashar, K. V. Shajesh, P. Thiyam, K. A. Milton, C. Persson, D. F. Parsons, I. Brevik, "Lifshitz interaction can promote ice growth at water-silica interfaces," Phys. Rev. B **95**, 155422 (2017), arXiv:1704.01332 [cond-mat].

15. K. V. Shajesh, I. Brevik, I. Cavero-Peláez and P. Parashar, "Casimir energies of self-similar configurations of plates," Phys. Rev. D **94**, 065003 (2016), arXiv:1607.00214 [hep-th].

16. P. Thiyam, P. Parashar, K. V. Shajesh, C. Persson, M. Schaden, I. Brevik, D. F. Parsons, K. A. Milton, O. I. Malyi, M. Boström, "Anisotropic contribution to the van der Waals and the Casimir-Polder energies for CO_2 and CH_4 molecules near surfaces and thin films," Phys. Rev. A **92**, 052704 (2015), arXiv:1506.01673 [cond-mat].

17. K. A. Milton, K. V. Shajesh, S. A. Fulling and P. Parashar, "How does Casimir energy fall? IV. Gravitational interaction of regularized quantum vacuum energy," Phys. Rev. D **89**, 064027 (2014), arXiv:1401.0784 [hep-th].

18. K. A. Milton, P. Parashar, M. Schaden and K. V. Shajesh, "Casimir interaction energies for magnetoelectric δ-function plates," IL Nuovo Cimento **36 C**, 193 (2013), arXiv:1302.0313 [hep-th].

19. K. A. Milton, E. Abalo, P. Parashar and K. V. Shajesh, "Three-body Casimir-Polder interactions," IL Nuovo Cimento **36 C**, 183 (2013), arXiv:1301.2484 [quant-ph].

20. P. Parashar, K. A. Milton, K. V. Shajesh and M. Schaden, "Electromagnetic semitransparent δ-function plate: Casimir interaction energy between parallel infinitesimally thin plates," Phys. Rev. D **86**, 085021 (2012), arXiv:1206.0275 [hep-th].

21. K. V. Shajesh and M. Schaden, "Significance of many-body contributions to Casimir energies," Proceedings of the 10th Quantum Field Theory Under the Influence of External Conditions (QFEXT11); Editors: M. Asorey, M. Bordag, E. Elizalde, Int. J. Mod. Phys. Conf. Ser. **14**, 521 (2012), arXiv:1112.1383 [hep-th].

22. K. V. Shajesh and M. Schaden, "Repulsive long-range forces between anisotropic atoms and dielectrics," Phys. Rev. A **85**, 012523 (2012), arXiv:1112.1348 [physics.atom-ph].

23. K. V. Shajesh and M. Schaden, "Many-body contributions to Green's functions and Casimir energies," Phys. Rev. D **83**, 125032 (2011), arXiv:1103.3048 [hep-th].

24. P. Parashar, K. A. Milton, I. Cavero-Peláez and K. V. Shajesh, "Electromagnetic non-contact gears: Prelude," Quantum field theory under the influence of external conditions (QFEXT09), devoted to the centenary of H. B. G. Casimir (pp 48-54), proceedings of the ninth conference, University of Oklahoma, USA, (2010), arXiv:1001.4105 [cond-mat.other].

25. K. A. Milton, P. Parashar, J. Wagner and K. V. Shajesh, "Exact Casimir energies at nonzero temperature: Validity of proximity force approximation and interaction of semitransparent spheres," Doing physics: A festschrift for Thomas Erber, edited by Porter Johnson, Illinois Institute of Technology Press (2010), arXiv:0909.0977 [hep-th].

26. I. Cavero-Peláez, K. A. Milton, P. Parashar and K. V. Shajesh, "Leading- and next-to-leading-order lateral Casimir force on corrugated surfaces," Int. J. Mod. Phys. A **24**, 1757 (2009) arXiv:0810.1787 [hep-th].

27. I. Cavero-Peláez, K. A. Milton, P. Parashar and K. V. Shajesh, "Lateral Casimir forces on parallel plates and concentric cylinders with corugations," J. Phys. Conf. Ser. **161**, 012008 (2009) arXiv:0810.1786 [hep-th].

28. K. A. Milton, P. Parashar, J. Wagner, K. V. Shajesh, A. Romeo and S. Fulling, "How Does Quantum Vacuum Energy Accelerate?," arXiv:0810.0081 [hep-th].

29. K. V. Shajesh, "Casimir effect: An avatar of the quantum vacuum," Ph. D. Thesis, The University of Oklahoma, 2008, 153 pages. Available under 'Open Access publishing', a service offered by UMI Dissertation Publishing.

30. I. Cavero-Peláez, K. A. Milton, P. Parashar and K. V. Shajesh, "Non-contact gears: II. Casimir torque between concentric corrugated cylinders for the scalar case," Phys. Rev. D **78**, 065019 (2008), arXiv:0805.2777 [hep-th].

31. I. Cavero-Peláez, K. A. Milton, P. Parashar and K. V. Shajesh, "Non-contact gears: I. Next-to-leading order contribution to lateral Casimir force between corrugated parallel plates," Phys. Rev. D **78**, 065018 (2008), arXiv:0805.2776 [hep-th].

32. K. A. Milton, I. Cavero-Peláez, P. Parashar, K. V. Shajesh and J. Wagner, "PT-Symmetric Quantum Electrodynamics–PTQED," arXiv:0712.0045 [hep-th]. Revised version published in Int. J. Theor. Phys. 50, 963 (2011).

33. K. V. Shajesh, K. A. Milton, P. Parashar and J. A. Wagner, "How does Casimir energy fall? III. Inertial forces on vacuum energy," J. Phys. A: Math. Theor. 41, 164058 (2008), arXiv:0711.1206 [hep-th].

34. K. A. Milton, S. A. Fulling, P. Parashar, A. Romeo, K. V. Shajesh and J. A. Wagner, "Gravitational and Inertial Mass of Casimir Energy," J. Phys. A: Math. Theor. 41, 164052 (2008), arXiv:0710.3841 [hep-th].

35. K. A. Milton, P. Parashar, K. V. Shajesh and J. Wagner, "How does Casimir energy fall? II. Gravitational acceleration of quantum vacuum energy," J. Phys. A: Math. Theor. 40, 10935 (2007), arXiv:0705.2611 [hep-th].

36. S. A. Fulling, K. A. Milton, P. Parashar, A. Romeo, K. V. Shajesh and J. Wagner, "How does Casimir energy fall?," Phys. Rev. D **76**, 025004 (2007), arXiv:hep-th/0702091.

37. K. V. Shajesh and K. A. Milton, "Quantum mechanics using Fradkin's representation," arXiv:hep-th/0510103.

38. C. M. Bender, I. Cavero-Peláez, K. A. Milton and K. V. Shajesh, "PT-symmetric quantum electrodynamics," Phys. Lett. B **613**, 97 (2005), arXiv:hep-th/0501180.

39. K. V. Shajesh, "Eikonal approximation," a study report (Mar 2004).

40. N. D. Hari Dass and K. V. Shajesh, "Vacuum polarization induced coupling between Maxwell and Kalb-Ramond fields," Phys. Rev. D **65**, 085010 (2002) arXiv:hep-th/0107006.

41. K. V. Shajesh, "Effective Lagrangian for the pseudoscalars interacting with photons in the presence of a background electromagnetic field," arXiv:hep-th/0008187.

42. D. Basu, S. Bal and K. V. Shajesh, "The Character of the Exceptional Series of Representations of SU(1,1)," J. Math. Phys. **41**, 461 (2000) arXiv:hep-th/9906066.

43. J. A. Grifols, E. Masso, S. Mohanty and K. V. Shajesh, "Pair production of light pseudoscalar particles in strong inhomogeneous fields by the Schwinger mechanism," Phys. Rev. D **60**, 097701 (1999) [Erratum-ibid. D **65**, 099905 (2002)] arXiv:hep-ph/9906255.

44. S. Bal, K. V. Shajesh and D. Basu, "A Unified Treatment of the Characters of SU(2) and SU(1,1)," J. Math. Phys. **38**, 3209 (1997) arXiv:hep-th/9611236.

2.2 Exposure to Developments in Physics

39. 2023, Dec 12 - 14: Hosted John Joseph Marchetta from Baylor University, Waco, Texas, USA, at School of Physics and Applied Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

38. 2021, Jun 14 - Aug 14: Hosted Ram Narayanan from Horace Mann School, Bronx, New York, USA, at John A. Logan College, Carterville, Illinois, USA, with Prof. Prachi Parashar, and unofficially at Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

37. 2019, Jun 29 - Jul 5: Hosted Prof. Inés Cavero-Peláez from the University Center for Defense (CUD), Zaragoza, Spain, at Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

36. 2019, Jun 23 - 29: Hosted Prof. Bing-Sui Lu from the NanYang Technological University (NTU) Singapore, at Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

35. 2019, May 22 - 25: Visited Prof. Kimball A. Milton's research group at the University of Oklahoma, Norman, Oklahoma, USA,

34. 2019, May 28 - Aug 1: Visited Prof. Iver Brevik's research group at Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

33. 2019, Feb 22 - 26: Hosted Prof. Bing-Sui Lu from the NanYang Technological University (NTU) Singapore, at Southern Illinois University–Carbondale, Carbondale, Illinois, USA. Prof. Lu gave a seminar titled 'Casimir/van der Waals interaction between dielectrically anisotropic topological insulator slabs'.

32. 2018, Jun 11 - 16: Attended 'Summer school and workshop on the Casimir effect' at Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

31. 2018, May 17 - Aug 3: Visited Prof. Iver Brevik's research group at Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

30. 2017, Aug 23: Attended 'Post-eclipse mini-symposium on mathematical physics' at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

29. 2017, May 29 - 31: Attended 'Workshop on Casimir/van der Waals theory' at Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

28. 2017, May 16 - Aug 15: Visited Prof. Iver Brevik's research group at Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

27. 2016, Aug 15 - 19: Visited Prof. Clas Persson's research group, and Dr. Mathias Boström, at University of Oslo (UiO), Oslo, Norway.

26. 2016, May 30 - Aug 12: Visited Prof. Iver Brevik's research group at Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

25. 2016, Mar 24: Hosted Prof. Kimball A. Milton from the University of Oklahoma, Norman, Oklahoma, USA, at Southern Illinois University–Carbondale, Carbondale, Illinois, USA. Prof. Milton gave a colloquium titled 'The Casimir Effect: An Accelerating Subject', and a seminar titled 'An Introduction to Schwinger's Quantum Action Principle'.

24. 2015, Apr 11 - 28: Hosted Priyadarshini Thiyam from Royal Institute of Technology (KTH), Stockholm, Sweden, at Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

23. 2014, May 12 - Jun 5: Visited Prof. Iver Brevik's research group at Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

22. 2014, Jan 31: Attended the '18th Annual Science in the South' conference at Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

21. 2012, Jun 27 - 28: Visited Department of Electrical Engineering at the Indian Institute of Technology - Hyderabad, Hyderabad, India.

20. 2011, Sep 18 - 24: Attended the tenth workshop on 'Quantum Field Theory under the Influence of External Conditions' (QFEXT11) at The Centro de Ciencias de Benasque Pedro Pascual, Benasque, Spain.

19. 2011, Sep 14 - Aug 17: Visited Prof. Iver Brevik's research group at Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

18. 2011, Aug 18 - 19: Attended the workshop on 'Theoretical Atomic-Molecular-Optical Physics: Recent Developments and a Vision for the Future' at NSF Headquarters, Arlington, Virginia, USA.

17. 2011, May 18 - 19: Attended the workshop on 'Quantum Vacuum' at University of Oklahoma, Norman, Oklahoma, USA.

16. 2010, Jul 8 - 9: Attended the workshop on 'Quantum Vacuum' at Texas A & M University, Texas, USA.

15. 2010, Apr 9 - 10: Attended Non-Perturbative Quantum Field Theory (NPQFT) 2010 (Milton Fest), a conference celebrating 48 years of Kim Milton's research, at University of Oklahoma, Norman, Oklahoma, USA.

14. 2009, Dec 15 - 20: Attended 'Miami-2009', a topical conference on elementary particles, astrophysics, and cosmology at Lago Mar Resort, Fort Lauderdale, Florida, USA.

13. 2009, Jul 22 - Aug 15: Visited Prof. Kimball Milton's research group at Homer L. Dodge Department of Physics and Astronomy, University of Oklahoma, USA.

12. 2008, Mar 15 - 16: Attended the workshop on 'Quantum Vacuum' at University of Oklahoma, Norman, Oklahoma, USA.

11. 2007, Sep 17 - 21: Attended the eighth workshop on 'quantum field theory under the influence of external conditions' (QFEXT07) at University of Leipzig, Leipzig, Germany.

10. 2007, Aug 6-8: Attended the workshop on 'Quantum Vacuum' at Texas A & M University, Texas, USA.

9. 2006, June 28 - July 1: Attended the workshop on 'Quantum Vacuum' at University of Oklahoma, Norman, Oklahoma, USA.

8. 2006, April 22-25: Attended American Physical Society (APS) April meeting 2006, at Dallas, Texas, USA.

7. 2005, July 18 - 29: Attended Prospects in Theoretical Physics (PiTP-2005), a two-week summer program on "Introduction to Collider Physics" at Institute for Advanced Study, Princeton, New Jersey, USA.

6. 2003, Sep 15 - 19: Attended the sixth workshop on 'quantum field theory under the influence of external conditions' at University of Oklahoma, Norman, Oklahoma, USA.

5. 1999, March: Attended the SERC school on High Energy Physics at Mysore University, Mysore, India.

4. 1998, March: Attended the SERC school on High Energy Physics at Shantiniketan University, Shantiniketan, India.

3. 1997, October: Attended the SERC school on High Energy Physics at Khalsa College, New Delhi, India.

2. 1995, August - 1996, May: Did my M. Sc. project on 'Classification of the unitary irreducible representations of the SU(1,1) group' under the guidance of Prof. Debabrata Basu.

1. 1995 May - June: Did a project on 'Quark confinement – MIT Bag Model' under the guidance of Prof. S. Naik at Mehta Research Institute, Allahabad, India.

2.3 Talks, Lectures, and Presentations

52. 2024, Mar 21: 'Sympathetic oscillations,' two lectures at the Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. Video recording: part 1/2, part 2/2 not recorded.

51. 2023, Oct 18: 'Quantum Vacuum Energy,' Undergraduate seminar for PHYS-100 at School of Physics and Applied Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

50. 2023, Sep 28: 'Negative mass,' Potpourri seminar at School of Mathematical & Statistical Sciences, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. Video recording.

49. 2022, Nov 9: 'Quantum Vacuum Energy,' Undergraduate seminar for PHYS-100 at School of Physics and Applied Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

48. 2022, Oct 6: 'Quantum Vacuum Energy,' Online talk using Zoom, Kerala Theoretical Physics Initiative. Video recording.

47. 2022, Oct 6: 'Schwinger's Unitary Operator Bases,' two lectures at the Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. Video recording: part 1/2, part 2/2.

46. 2022, Feb 17: 'Electric charge in crossed electric and magnetic field,' two lectures at the Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

45. 2021, Nov 3: 'Quantum Vacuum Energy,' Undergraduate seminar for PHYS-100 at Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

44. 2021, Apr 15: 'Direction of friction on wheels,' Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

43. 2020, Nov 11: 'Casimir effect: Quantum correlations and Green's function,' two lectures at the Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

42. 2020, Oct 21: 'Casimir effect,' Undergraduate seminar for PHYS-100 at Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

41. 2020, Sep 10: 'A comment on "Delayed choice and indeterminate past" by Mohammad Sayeh,' Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

40. 2020, Feb 6: 'Rayleigh scattering off Ford circles,' two lectures at the Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

39. 2019, Oct 10: 'How does Zero Point Energy gravitate?,' two lectures at the Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

38. 2019, Oct 9: 'Quantum Vacuum energy,' Undergraduate seminar for PHYS-100 at Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

37. 2019, Mar 28: 'Electromagnetic fields confined on a plane,' two lectures at the Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

36. 2018, Nov 7: 'Quantum Vacuum energy,' Undergraduate seminar for PHYS-100 at Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

35. 2018, Sep 14: 'Casimir energies for fractal configurations,' Department Seminar at Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

34. 2018, Sep 6: 'Towards understanding topological insulators in a classical setting,' three lectures at the Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

33. 2018, Jun 11: 'Casimir energies for fractal configurations,' Summer school and workshop on the Casimir effect, Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

32. 2017, Nov 15: 'Vacuum energy of Sierpinski triangle,' Undergraduate seminar for PHYS-100 at Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

31. 2017, Aug 23: 'Vacuum energy of Sierpinski triangle,' Post-eclipse mini-symposium on mathematical physics, Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

30. 2017, May 30: 'Boundary conditions on a δ-function dielectric plate: Abraham and Minkowski momentum,' Workshop on Casimir/van der Waals theory, Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

29. 2017, Apr 27: 'Divergence theorem across δ-function boundaries,' Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

28. 2016, Nov 11: 'Quantum vacuum energy,' Undergraduate seminar for PHYS-100 at Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

27. 2016, Apr 07: '$1 + 2 + 3 + \ldots = -\frac{1}{12}$: Casimir energy in $(1 + 1)$ dimensions,' Potpourri seminar at Department of Mathematics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

26. 2015, Oct 07: 'Quantum vacuum energy,' Undergraduate seminar for PHYS-100 at Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

25. 2014, Nov 19: 'Quantum vacuum energy,' Undergraduate seminar for PHYS-100 at Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

24. 2014, Jan 31: 'Geodesics of an (idealized) race car,' Presentation at the 18th Annual Science in the South Conference at Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

23. 2013, Oct 23: 'The Casimir effect: A manifestation of quantum vacuum fluctuations,' Undergraduate seminar for PHYS-100 at Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA.

22. 2012, Jun 27: 'Casimir Effect in Nano-Mechanical-Devices,' Presentation at Department of Electrical Engineering, Indian Institute of Technology - Hyderabad, Hyderabad, India.

21. 2012, May 31: 'Optical properties of an infinitesimally thin plate,' Seminar at Department of Physics, Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

20. 2012, Mar 29: 'Repulsive Casimir force: Non-intuitive manifestations of quantum vacuum fluctuations,' Neilsen Prize Colloquium talk at Homer L. Dodge Department of Physics and Astronomy, University of Oklahoma, USA.

19. 2012, Jan 25: 'Repulsive Casimir force: Non-intuitive manifestations of quantum vacuum fluctuations,' Seminar at Department of Physics, Rutgers University–Newark, Newark, New Jersey, USA.

18. 2011, Sep 23: 'Significance of many-body contributions to Casimir energy,' Quantum field theory under the influence of external conditions (QFEXT11), The Centro de Ciencias de Benasque Pedro Pascual, Benasque, Spain.

17. 2011, Sep 15: 'Macroscopic manifestations of the quantum vacuum,' Seminar at Department of Physics, Norwegian University of Science and Technology (NTNU), Trondheim, Norway.

16. 2011, May 18: 'Many-body Casimir energies,' Quantum vacuum meeting, Department of Physics and Astronomy, University of Oklahoma, USA.

15. 2010, Apr 10: 'Casimir energy using Fradkin's representation,' NPQFT 2010 (Milton Fest), University of Oklahoma, Norman, Oklahoma, USA.

14. 2009, Dec 20: 'Electromagnetic non-contact gears: Lateral Casimir force between dielectric slabs,' Miami-2009, Lago Mar Resort, Fort Lauderdale, Florida, USA.

13. 2008, Jul 15: 'Casimir effect: An avatar of the quantum vacuum,' Thesis defense, Department of Physics and Astronomy, University of Oklahoma, USA.

12. 2008, Mar 15: 'Casimir torque between corrugated surfaces: I. Next-to-leading-order contributions,' Quantum vacuum meeting, Department of Physics and Astronomy, University of Oklahoma, USA.

11. 2007, Sep 21: 'How does Casimir energy fall? III. A progress report on an investigation of inertial property of vacuum energy,' Quantum field theory under the influence of external conditions (QFEXT07), University of Leipzig, Leipzig, Germany.

10. 2007, Aug 6: 'How does Casimir energy fall? Renormalization of gravitational and inertial masses,' Quantum vacuum meeting, University of Texas A & M, Texas, USA.

9. 2006, Jun 28: 'Quantum mechanics using Fradkin's representation,' Quantum vacuum meeting, Department of Physics and Astronomy, University of Oklahoma, USA.

8. 2006, May 8: 'Particle Theory with Extra Dimensions,' Department of Physics and Astronomy, University of Oklahoma, USA.

7. 2006, Apr 23: 'Quantum mechanics using Fradkin's representation,' APS April meeting, Dallas, Texas, USA.

6. 2004, Mar 10: 'Eikonal Approximation,' Department of Physics and Astronomy, University of Oklahoma, USA.

5. 2003, Feb 3: 'Breakdown of vacuum into e^+-e^- pairs in the presence of a classical background electromagnetic field,' Department of Physics and Astronomy, University of Oklahoma, USA.

4. 2002, Sep 19: 'Dirac quantization of electric charge,' Department of Physics and Astronomy, University of Oklahoma, USA.

3. 2002, Feb 12: 'An integral transform connecting the Hilbert space of Quantum mechanics ($L^2(R)$ space) and the Bargmann-Segal Hibert space,' Department of Physics and Astronomy, University of Oklahoma, USA.

2. 2001, Jun 26: 'An integral transform connecting the Hilbert space of Quantum mechanics and the Bargmann-Segal Hibert space,' Center for Theoretical Studies, Indian Institute of Technology, Kharagpur, India.

1. 1999 Sep: 'Effective Lagrangian for the pseudoscalars interacting with photons in the presence of a background electromagnetic field,' Physical Research Laboratory, Ahmedabad, India.

2.4 References

2.4.1 Current references

1. Kimball A. Milton, George Lynn Cross Research Professor of Physics, Department of Physics and Astronomy, University of Oklahoma, 440 West Brooks Street, Norman, OK - 73019, USA;
Email: ⟨milton@nhn.ou.edu⟩; Tel.: +1-405-570-4520.

2. Inés Cavero-Peláez, University Center for Defense (CUD), Zaragoza - 50090, Spain;
Email: ⟨cavero@unizar.es⟩; Tel.: +34-976-739854.

3. Iver Brevik, Department of Energy and Process Engineering, Norwegian University of Science and Technology, N-7491 Trondheim, Norway; Email: ⟨iver.h.brevik@ntnu.no⟩; Tel.: +47-7359-3860.

4. J. D. O'Donnell, CATS Academy Boston, Braintree, MA - 02184, USA;
Email: ⟨dodonnell@catsboston.com⟩; Tel.: +1-772-321-2532.

3 Mentoring and Teaching

3.1 Research Mentoring

3.1.1 High School Students

3. *Neil Kaushik*, Pennsylvania, USA. [202109 - Present]

2. *Ram Narayanan*, Horace Mann School, Bronx, New York, USA. [202009 - 202308]

1. *Bradley Midkiff*, St. Edwards School, Vero Beach, Florida, USA. [200909 - 201006]

3.1.2 Undergraduate students

12. *Jasilyn Westerfield*, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [202301 - 202305]
11. *Thayne H. Dean*, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [202211 - 202312]
10. *Christian Rose*, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [201806 - 201808, 202005 - 202205]
9. *Avinash Khatri*, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [201908 - 201912, 202005 - 202007]
8. *John Joseph Marchetta*, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [201309 - 201712, 202005-202007]
7. *Yasufumi Nakano*, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [201911 - 202003]
6. *Molly Stacks*, Undergraduate student at Southern Illinois University–Carbondale. [201708 - 201712]
5. *Daniel McKinney*, Undergraduate student at Southern Illinois University–Carbondale. [201708 - 201712]
4. *Preston Yun*, Undergraduate student at Southern Illinois University–Carbondale. [201411 - 201605]
3. *Suddarsun Shivakumar*, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [201310 - 201507]
2. *Aaron Zolotor*, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [201501 - 201505]
1. *William D. Rekemeyer*, Iowa State University, Ames, Iowa, USA. Mentoring in Cademartiri's laboratory. [201209 - 201306]

3.1.3 Graduate students

10. *Abhiyan Oli*, School of Physics and Applied Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [2023 Summer: Master Thesis Committee]
9. *Afnan Almazmomi*, School of Mathematical and Statistical Sciences, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [2023 Summer: Ph.D. Thesis Committee]
8. *Rana Alkhaldi*, School of Physics and Applied Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [2023 Summer: Ph.D. Thesis Committee]
7. *Venkat Abhignan*, Department of Physics, National Institute of Technology, Tiruchirappali, Tamil Nadu 620015, India. [202202 - 202304]
6. *Md Mostak Ahammed*, School of Mathematical and Statistical Sciences, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [2022 Spring: Dissertation Proposal Committee, 202202 - 202306, 2023 Summer: Ph.D. Thesis Committee]
5. *Moses Gaither-Ganim*, School of Physics and Applied Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [2022 Spring: Master Thesis Committee]
4. *Duston Wetzel*, Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [201806 - 201808, 202108 - 202112, 2021 Spring: Master Thesis Committee]

3. *Masaya Takahashi*, School of Physics and Applied Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [2021 Fall: Ph.D. Thesis Committee]

2. *Daniel Jacob Dilley*, Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [2019 Spring: Ph.D. Thesis Committee]

1. *Yub Raj Sapkota*, Department of Physics, Southern Illinois University–Carbondale, Carbondale, Illinois, USA. [201602 - 201605]

3.2 Teaching Assignments

25. Spring 2024: University Physics (PHYS-205A-001), University Physics (PHYS-205B-001), Problem Solving for PHYS-205A (PHYS-206A), Problem Solving for PHYS-205B (PHYS-206B), and Classical Mechanics (PHYS-510, graduate level), School of Physics and Applied Physics, Southern Illinois University–Carbondale, USA.

24. Fall 2023: University Physics (PHYS-205A-002), University Physics (PHYS-205B-001), Problem Solving for PHYS-205A (PHYS-206A), Problem Solving for PHYS-205B (PHYS-206B), Mathematical Methods (PHYS-500A, graduate level), School of Physics and Applied Physics, Southern Illinois University–Carbondale, USA.

23. Spring 2023: University Physics (PHYS-205A-001), University Physics (PHYS-205B-001), Problem Solving for PHYS-205A (PHYS-206A), Problem Solving for PHYS-205B (PHYS-206B), and Electromagnetic Theory (PHYS-520B, graduate level), School of Physics and Applied Physics, Southern Illinois University–Carbondale, USA.

22. Fall 2022: University Physics (PHYS-205A-002), University Physics (PHYS-205B-001), Problem Solving for PHYS-205A (PHYS-206A), Problem Solving for PHYS-205B (PHYS-206B), Mathematical Methods (PHYS-500A, graduate level), School of Physics and Applied Physics, Southern Illinois University–Carbondale, USA.

21. Spring 2022: College Physics (PHYS-203B-001), University Physics (PHYS-205A-001), Classical Mechanics (PHYS-510, graduate level), and Electromagnetic Theory (PHYS-520B, graduate level), School of Physics and Applied Physics, Southern Illinois University–Carbondale, USA.

20. Fall 2021: College Physics (PHYS-203A-002), University Physics (PHYS-205B-001), Mathematical Methods (PHYS-500A, graduate level), and Special Projects in Quantum Electrodynamics (PHYS-470), Department of Physics, Southern Illinois University–Carbondale, USA.

19. Spring 2021: University Physics (PHYS-205A-001), Electricity and Magnetism-II (PHYS-420, undergraduate level), Classical Mechanics (PHYS-510, graduate level), and Electromagnetic Theory (PHYS-520B, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

18. Fall 2020: College Physics (PHYS-203A), Electricity and Magnetism-I (PHYS-320, undergraduate level), Mathematical Methods (PHYS-500A, graduate level), and Electromagnetic Theory (PHYS-520A, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

17. Spring 2020: Theoretical Methods in Physics (PHYS-301, undergraduate level), Electricity and Magnetism-II (PHYS-420, undergraduate level), Classical Mechanics (PHYS-510, graduate level), and Electromagnetic Theory (PHYS-520B, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

16. Fall 2019: Theoretical Methods in Physics (PHYS-301, undergraduate level), Electricity and Magnetism-I (PHYS-320, undergraduate level), Mathematical Methods (PHYS-500A, graduate level), and Electromagnetic Theory (PHYS-520A, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

15. Spring 2019: Theoretical Methods in Physics (PHYS-301, undergraduate level), Electricity and Magnetism-II (PHYS-420, undergraduate level), Classical Mechanics (PHYS-510, graduate level), and Electromagnetic Theory (PHYS-520B, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

14. Fall 2018: College Physics (PHYS-203A), Electricity and Magnetism-I (PHYS-320, undergraduate level), Mathematical Methods (PHYS-500A, graduate level), and Electromagnetic Theory (PHYS-520A, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

13. Spring 2018: College Physics (PHYS-203A), University Physics (PHYS-205A), Classical Mechanics (PHYS-510, graduate level), and Quantum Mechanics-II (PHYS-530A, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

12. Fall 2017: College Physics (PHYS-203A-002), University Physics (PHYS-205A-001 and PHYS-205A-002), Quantum Mechanics (PHYS-440, undergraduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

11. Spring 2017: College Physics (PHYS-203B-001 and PHYS-203B-002), University Physics (PHYS-205B-002), and Classical Mechanics (PHYS-510, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

10. Fall 2016: College Physics (PHYS-203B-001), University Physics (PHYS-205A-001 and PHYS-205B-001), and Quantum Mechanics-II (PHYS-530B, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

9. Spring 2016: College Physics (PHYS-203A-001), University Physics (PHYS-205B-002), and Quantum Mechanics-II (PHYS-530A, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

8. Fall 2015: College Physics (PHYS-203B-001) and University Physics (PHYS-205A-001 and PHYS-205B-001), Department of Physics, Southern Illinois University–Carbondale, USA.

7. Summer 2015: College Physics (PHYS-203A and PHYS-203B), Department of Physics, Southern Illinois University–Carbondale, USA.

6. Spring 2015: University Physics (PHYS-205B-002), Electricity and Magnetism-II (PHYS-420, undergraduate level), Electromagnetic Theory (PHYS-520B, graduate level), and Quantum Mechanics-II (PHYS-530A, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

5. Fall 2014: University Physics (PHYS-205A-001 and PHYS-205B), Electricity and Magnetism-I (PHYS-320, undergraduate level), and Electromagnetic Theory (PHYS-520A, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

4. Summer 2014: College Physics (PHYS-203A and PHYS-203B), Department of Physics, Southern Illinois University–Carbondale, USA.

3. Spring 2014: Electromagnetic Theory (PHYS-520B, graduate level), Electricity and Magnetism-II (PHYS-420, undergraduate level), and Quantum Mechanics-II (PHYS-530A, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

2. Fall 2013: Electromagnetic Theory (PHYS-520A, graduate level), Electricity and Magnetism-I (PHYS-320, undergraduate level), and Quantum Mechanics-II (PHYS-530B, graduate level), Department of Physics, Southern Illinois University–Carbondale, USA.

1. Aug 2008 - Jun 2010: Taught all the physics courses as the Physics Instructor at Saint Edward's School, Vero Beach, Florida, USA. I taught courses at three different levels: College Preparatory Physics (aimed for students who are not expected to take physics courses after graduating), Honors Physics (aimed for students who intend to major in fields requiring knowledge of physics), and Advanced Placement Physics (aimed for students earning college credit).

3.3 Teaching Assistant Positions

14. Spring 2008: Teaching assistant to Dr. Ronald Kantowski for the course on Physics for Engineers I (PHYS-2514), Department of Physics and Astronomy, University of Oklahoma, USA.

13. Fall 2007: Teaching assistant to Dr. Dick Henry for the course on Musical Acoustics (PHYS-1453), and, part time teaching assistant to Dr. Mike Strauss for the course on Physics for Life Sciences I (PHYS-2414), Department of Physics and Astronomy, University of Oklahoma, USA.

12. Spring 2007: Teaching assistant to Dr. Sheena Murphy for the course on General Physics Laboratory II (PHYS-1321), Department of Physics and Astronomy, University of Oklahoma, USA.

11. Fall 2006: Teaching assistant to Dr. John Moore Furneaux for the course on General Physics Laboratory I (PHYS-1311), Department of Physics and Astronomy, University of Oklahoma, USA.

10. Spring 2006: Teaching assistant to Dr. John Moore Furneaux for the course on Physics for Life Sciences II (PHYS-2424), Department of Physics and Astronomy, University of Oklahoma, USA.

9. Fall 2005: Teaching assistant to Dr. Dick Henry for the course on Musical Acoustics (PHYS-1453), and, part time teaching assistant to Dr. John Moore Furneaux for the course on Physics for Life Sciences II (PHYS-2424), Department of Physics and Astronomy, University of Oklahoma, USA.

8. Spring 2005: Part time department tutor for all the undergraduate courses, and, part time teaching assistant to Dr. Brad Abbott for the course on Physics for Life Sciences I (PHYS-2414), Department of Physics and Astronomy, University of Oklahoma, USA.

7. Fall 2004: Department tutor for all the undergraduate courses, Department of Physics and Astronomy, University of Oklahoma, USA.

6. Spring 2004: Teaching assistant to Dr. Lloyd Bumm for the course on General Physics Laboratory I (PHYS-1311), Department of Physics and Astronomy, University of Oklahoma, USA.

5. Fall 2003: Teaching assistant to Dr. Patrick Skubic for the course on Physics for Engineers I (PHYS-2514), Department of Physics and Astronomy, University of Oklahoma, USA.

4. Spring 2003: Teaching assistant to Dr. Lloyd Bumm and Dr. Bruce Mason for the courses on Physics for Life Sciences I (PHYS-2414) and Physics for Engineers II (PHYS-2524) respectively, Department of Physics and Astronomy, University of Oklahoma, USA.

3. Fall 2002: Department tutor for all the undergraduate courses, Department of Physics and Astronomy, University of Oklahoma, USA.

2. Spring 2002: Grading assistant to Dr. Michael Santos for the course on Solid State Physics (PHYS-4243), Department of Physics and Astronomy, University of Oklahoma, USA.

1. Fall 2001: Grading assistant to Dr. James Shaffer for the course on Physical Mechanics (PHYS-3054), Department of Physics and Astronomy, University of Oklahoma, USA.

3.4 Tutoring

4. 2013: Tutor for Physics at Tutor.com.

3. 2001 - 2006: I enjoyed giving one-on-one private tutoring for courses related to Physics and Mathematics. I have given an average of 50 hours of tutoring per year between 2001 to 2006.

2. Summer 2004: Provided private tutoring on Electrodynamics.

1. Fall 2001: Official tutor for the Cadet Tutoring Program in the ROTC, University of Oklahoma, USA.

4 Community Events

4.1 Education Events

4. 2022 April - Present: Founding member of Sphics Science Center. It is an initiative to promote science to a popular audience. We maintain an Activity Center in Thalassery, India, and an online dicussion forum on the web. We also organize weekly lectures and monthly public astronomy nights. URL: `http://scs.sphics.com`; YouTube Channel: Sphics Science Center.

3. 2020, Jun 11: Invited by Hedrick Ellis, from Endicott College, to a brief ten minute presentation on how to use a stand-alone web camera to capture board work in an online meeting using video conferencing.

2. 2019, Dec 26: Gave a presentation titled 'Sun, Moon, and Earth' on the occasion of 2019 Dec 26 Annular Solar Eclipse viewing event organized by the Moozhikkara Community Library in Thalassery, India, at the hill-top of Moozhikkara Kunnil. The viewing event was attended by more than a hundred people consisting of kids, adults, and elders, in the local community. The organizers distributed eclipse glasses that made the viewing of the eclipse, including the 'ring of fire', possible. Simple projection techniques to view the crescent shadows of the eclipse were introduced. The event was covered in the local TV News on the same day.

1. 2007, Jan 11: Invited by K. Radhakrishnan, head of the 'Satellite Based Remote Education' program, Everonn Systems India Limited, to present a guest lecture on 'Electromagnetism and Gravity'. The lecture was broadcasted live to more than 100 schools from the transmission studio based in the Chennai office of Everonn Systems India Limited.