

Ani Aprahamian

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Education

B.A. Clark University, Worcester, Massachusetts 1980
 Ph.D. Clark University, Worcester, Massachusetts 1986

Positions

2008	Co-Chair of standing NSAC subcommittee on Isotope Production and Applications
2006-2008	Program Director for Nuclear Physics and Nuclear Astrophysics at the National Science Foundation
2003-2005	Physics Department Chair
2001-2006	P.I. and Director of the Nuclear Structure Laboratory
2001-2007	Consultant, LLNL Physics Division, Livermore, California
1999-present	Professor
1994-1999	Associate Professor
1989-1994	Assistant Professor
	Physics Department, University of Notre Dame
1985-1989	Postdoctoral Research Fellow
	Lawrence Livermore National Laboratory, California

Visiting Scientist

2001	Lawrence Livermore National Laboratory, Livermore, CA
1999	GANIL, Caen, France (Nov. – Dec.)
1999	Los Alamos National Laboratory, New Mexico (Jul -Oct)
1999	University of Surrey, Guildford, United Kingdom (Jan-Jun)
1991-Present	Argonne National Laboratory, Argonne, Illinois
1990-2000	Institut Laue-Langevin, Grenoble, France

Honors, Awards, and Professional Society Memberships

National Science Academy of Republic of Armenia Elected Foreign member, 2008

NSF Director's Award for Collaborative Integration, 2008

Provost's Recognition Award ND vs. Pitt Football game on the field (2008)

Presidential Award, University of Notre Dame, 2003

College of Arts & Letters Award of Appreciation, Notre Dame, 2006

Women in Science 1 of 3 panelists at session of **“Most Influential Women in Science and Scientific Publishing”** at the 49th Annual Meeting of the Council of Science Editors, May 21, 2006.

Fellow Elected Fellow of the **AAAS**, 2008

Elected Fellow of the **American Physical Society**, 1999

Reilly Center for Science, Technology and Values, Notre Dame, 2006

The Collegium Common Room (The Liberal Arts and the 21st Century Intellectual Quest), 2007

Member AAAS, ACS, APS, Sigma Xi, New York Academy of Science

Reviewer Phys. Rev. Lett., Phys. Rev. C, Phys. Lett. B, Nucl. Phys. A, European Physics Journal

U.S. Civilian Research & Development Foundation (CRDF)

International Science & Technology Center, 2005-2006 (**ISTC: Non-proliferation through Science Cooperation**)

National Science Foundation

American Institute of Physics

Department of Energy

National Research Council

Editor **Capture Gamma-Ray Spectroscopy and Related Topics**, AIP Conference Proceedings, Vol. 819, 2006.

Mapping the Triangle, AIP Conference Proceedings 638, 2002.

Journal of Research of the National Institute of Standards and Technology, 2000.

External Committees - International

Scientific Advisory Councils

NSF Committee to write policies on International Collaborations for the Mathematical and Physical Sciences Directorate as a representative of Physics Division

OECD	Nuclear Science Representative on OECD global Nuclear Forum (2007)
GSI	JINA representative to the EMMI Helmholtz Alliance to study "Extremes of Density and Temperature: Cosmic Matter in the Universe", Germany (2007-2012)
GANIL	Chair of scientific council, Caen, France (2007-2009)
	ISTC Collaboration with Armenia: 2006-2011 "Radiological Characterization and Database Creation in Support of ANPP Decommissioning Planning"

External Committees – National

National Academies

NRC Committee on **Smaller Facilities**, 2003-2005.

Nuclear Science Advisory Committee

Subcommittee on Isotope Production and Applications, 2008-2010.

DOE/NSF Nuclear Science Advisory Committee (NSAC), 2004-2006.

NSAC Subcommittee on **revisiting priorities of the 2002 LRP for Nuclear Science**, 2005.

American Physical Society

Tom W. Bonner Prize Selection Committee, **Chair**, 2007.

Tom W. Bonner Prize Selection Committee, **Vice Chair**, 2006.

Committee on **International Freedom of Scientists**, 2002-2006.

Search Committee to find a successor for **Editor of Reviews of Modern Physics**, 2005

APS Committee on the Status of Women

American Physical Society's Division of Nuclear Physics

Fellowship Committee, 2008-2010

Executive Committee, 2005-2007

Program Committee, 2002-2004.

WECAN (Women Encouraging Competitive Advancement in Nuclear Science) Steering Committee of the Division of Nuclear Physics, 2003-2005

Facility/Center Executive Committees

JINA (Joint Institute for Nuclear Astrophysics) 2002-2008

ATLAS Users Executive Committee (Argonne National Laboratory), 2004-2006 (served as chair 2005).

National Laser Users Facility Steering Committee, University of Rochester, 2004, 2006.

NSCL Users Executive Committee, 2002-2005.

LANSCE, Nuclear Physics PAC, Los Alamos National Lab, 2002-2005.

HRIBF, Holifield Radioactive Ion Beam Facility Users Group, Oak Ridge National Laboratory, Oak Ridge, TN (served as chair 2002-2003) 2000-2003

GEANIE Detector Council, Los Alamos National Laboratory, 2000-2002.

Advisory Committees for Conferences

International Advisory Committee for "21st European Conference on Few-Body Problems in Physics", to be held Aug. 29-Sept. 3 in Salamanca, Spain, 2010.

International Advisory Committee for 10th Topical Conference on Giant Resonances, "Collective motion in nuclei under extreme conditions" (COMEX 3), East Lansing, MI June 2-5, 2009.

International Advisory Committee for ENAM'08, 5th International Conference on Exotic Nuclei and Atomic Masses, held in Poland in 2008.

International Advisory Committee for Capture Gamma-Ray Spectroscopy 13, in Koeln, Germany, Aug. 25-29, 2008.

International Advisory Committee for the 2007 International Conference on Nuclear Data for Science and Technology, [Nice](#), France, April 22 to April 27, 2007.

International Advisory Committee for the conference on exotic nuclei, Sanibel Island, FL, Nov. 11-17, 2007.

International Advisory Committee for 9th Topical Conference on Giant Resonances, "Collective motion in nuclei under extreme conditions" (COMEX 2), Germany, June 20-23, 2006.

International Advisory Committee for International Conference on Nuclear Data for Science & Technology, Santa Fe, NM, September 2004.

Organizer

International Technical Programme Committee (IPC) of ND-2007 to take place in Nice, France, April 22-27, 2007.

CGS-12, International Conference on Capture γ -ray Spectroscopy & Related Topics, Notre Dame, IN, September 4-9, 2005.

APS Session "Nuclear Structure in Astrophysics," Denver, CO, May 1-4, 2004.

ACS Symposium on "Nucleosynthesis 2000," Washington, DC, August 20-25, 2000.

International Conference on Applications of High-Precision γ -Spectroscopy, Notre Dame, IN, July 1-3, 1998.

Co-organizer "Cosmology: Physics and Philosophical Perspectives," Notre Dame, IN, April 20, 2005.

First JINA Workshop on the r-process, Gull Lake, Michigan, October 5-6, 2002.

Working group on Nuclear Structure in Astrophysics, Division of Nuclear Physics Long Range Plan meeting, Oakland, CA, November 9-12, 2000.

Midwest Workshop on New Frontiers in Nuclear Astrophysics, April 18-20, 2000.

International Workshop on the Interface between Nuclear Structure and Heavy-Ion Reaction Dynamics, Notre Dame, IN, May 24-26, 1990.

International Conference on Nuclei in the Cosmos, Notre Dame, IN, June 24-27, 1996.

University committees

Departmental Committees

1. Chair of Graduate Admissions (95, 96, 97)
2. Instructional laboratories (95, 96, 97, 98, 00, 01, 02)
3. Curriculum Committee (95)
4. Academic Advisor to the Class of 1998 (94-98)
5. Academic Advisor to the Class of 2007 (2004-2007)
6. Recruitment Committee (96, 97, 00, 01, 02, 03, 04)
7. Appointments and Promotions (01, 02, 03, 04, 05)
8. Chair of Graduate Recruitment & Publicity (00, 01, 02, 03, 04)

College of Science Committees

1. Selection of Business Manager for College of Science (2003)
2. Web page Committee (2005)

3. Jordan Hall of Science Furnishings, Fixtures, Equipment (FFE) Comm. For classrooms and common spaces (2005).

University Committees

1. Colloquy 2000 (92-93)
2. Academic Life Committee for the Colloquy 2000 (92-93)
3. Cultural Diversity (93-96)
4. Campus Climate Subcommittee (93-94)
5. Graduate School Liaison for the recruitment of minorities for the Physics graduate program (94-2005)
6. Luce Professorship - Search Committee (94/95)
7. Radiation Control Committee (94-present)
8. Executive Committee of the Distinguished Visiting
9. Provost's Review Panel for Appeals Concerning Sexual Discrimination (94-present)
10. Selection Committee for the appointment of V.P. of Research and Dean of the Graduate School (96)
11. Committee on Women Faculty and Students (96-98)
12. Graduate Council (96-98) (01-03)
13. Academic Affirmative Action Committee (98, 99, 00, 01, 02)
14. Academic and Student Life Advisory Committee (elected 01, 02, 03, 04, 05)
15. Selection Committee of the Graduate School's Outstanding Research Award, 2001
16. Subcommittee on Finance and Fundraising, 2001
17. Advisory Board for the Arts and Letters Science Honors Program, 2002
18. McNair Scholars Advisory Board (2002-2005)
19. Selection Committee for Associate Vice President of Marketing, 2004
20. Provost's Awards Committee (2006)
21. Provost's Awards Committee (2007)

Dissertations

Mathew Quinn, Ph.D. (May 16, 2009)

"Beta-Decay Half-lives of Neutron-Rich Isotopes in the Ge-Br Region"

Boris Skorodumov, Ph.D. (May 20, 2007).

"Resonance Reactions Induced by Light Radioactive Beams"

Plamen Boutachkov, Ph.D. (May 15, 2005)

Co-winner of 2005 Physics Department Dissertation Award

"Toward Understanding of the Nuclear Force via Detailed Spectroscopy of ^{208}Bi and Development of New Techniques for Studies of Neutron Rich Exotic Nuclei: Spectroscopy of ^7He "

Shelly Leshner, Ph.D. (May 2004)

Co-director at University of Kentucky

Rob Catharinus de Haan, Ph.D. (November 16, 2001)

" $K=0^+$ Excitations in Deformed Nuclei"

Susan M. Fischer, Ph.D. (December 1, 1994)

"Spectroscopic Studies of the ^{195}Au Nucleus" Recognized as **most outstanding Ph.D. dissertation** at graduation May, 95.

Xiang Wu, Ph. D. (January 14, 1994)

"Investigations of Multi-phonon Vibrational States in Deformed Nuclei"

Timo Griesel, M.S. (Diplome) (December 1, 2005)

"Isomers in the rp-process: Waiting points ^{68}Se and ^{64}Ge "

Artur Teymurazyan, M.S. (January 4, 2003)

Kelly Vaughan, M. Phys. (May 2003), University of Surrey, United Kingdom

Jose Luis Galache, M. Phys. (May 2002), University of Surrey, United Kingdom

Victoria Barnard, M. Phys. (May 2001), University of Surrey, United Kingdom

Honavalli S. Santosh, M.S. (July 28, 1997)

Anna Susalla, Physics, **Outstanding Research Award** (May 99).

Nathan Cuka, Physics Honors Thesis (May 96)
 “Mass and $B(E2:2^+ \rightarrow 0^+)$ Transition Probability Predictions for the
 A=80 Region of Nuclei with the $N_p N_n$ Scheme”
 Recognized as one of two **most outstanding honors thesis**
 projects at graduation May, 96.

Ana Delia Becerril, UNAM, Mexico City, Mexico (2004).

Postdoctoral Fellows Supervised:

Dr. Timothy Johnson (9/94 – 4/96), presently working in industry
Dr. Joachim Doering (9/96 – 9/98), at GSI
Dr. Stuart Vincent (10/98 – 5/00), UK Naval Academy
Dr. Mark Shawcross (9/00 – 4/02), UK Patent Office

Research and Visiting Faculty Supervised:

Dr. Wanpen Tan (2007-present)
Dr. Henryk Mach (2006-2008)
Dr. Andreas Woehr (10/02 – 10/2006)
Dr. Grisha Rogachev (2/03 – 8/04)
Dr. Nina Demekhina (Armenia)
Dr. Anna Georgieva (Bulgaria)
Prof. Tsanka Venkova (Bulgaria)

Additional Mentoring

CANDAX-McNair Research programs for minorities in Science and
 Engineering (summers of 92 and 93)

92 Alicia Webb
 93 Diedre Pinkney
 95 Antwan Pinckney

Minority students in the colleges of science and engineering

89-93 Kelli Barber (class of 93)
 89-93 Gregory Crowley (class of 93)
 92-94 Sherida DuBoise (class of 94)

Research Experience for High School Teachers

00 Kevin Johnston, Jimtown High School, Indiana
 01 Kevin Johnston, Jimtown High School, Indiana
 02 Kevin Johnston, Jimtown High School, Indiana
 03 Kevin Johnston, Jimtown High School, Indiana

Academic Advisor to Physics Class of 98

Academic Advisor to Physics Class of 2007

Undergraduate Research-Academic Year

92 Robert Winarski
 Jose Maria Castro Ceron

93 Ken O'Hara
 94 Nathan Cuka
 Alejandro Gadala-Maria
 95 Nathan Cuka
 Alejandro Gadala-Maria
 Eric Snyder
 Anna Susalla
 Shelly Leshner
 96 Shelly Leshner
 Anna Susalla
 Arthur Cunningham
 Eva Rzepniewski
 97 Arthur Cunningham
 Anna Susalla
 Shelly Leshner
 98 Anna Susalla
 Shelly Leshner
 99 Anna Susalla
 Shelly Leshner
 00 Mathew Quinn
 01 William Lahnemann
 02 Dominic Antonelli
 Eric Chitambre
 03 Shelece Easterday
 Paul Strycker
 Daniel Wasikowski
 Graham Konecki
 05 Krystie Traudt
 06 Krystie Traudt
 Jonathan Poelhuis
 08 Nancy Paul
 Anamaria Baluyut
 Andrew J. McGauley
 Fred Jung

Summer Research Opportunities for Undergraduates (REU program)

92 Jose Maria Castro Ceron (ND)
 93 Kenneth O'Hara (ND)
 94 Rachel Fricke
 95 Israel Owens
 95 Nathan Cuka (ND)
 96 Laura Glennie
 97 Anna Susalla
 98 Shelly Leshner
 99 Mathew Quinn
 00 Annette Villa
 01 William Horowitz
 02 Paul Strycker
 02 Brian Hirsch
 03 Jaime Wallace

- 04 Lara Street (winner of Goldwater
Scholarship/Rhodes Scholar in 2005)
05 Beverly Lau

Orientation Program for Entering Freshmen (1990-present)

Summer Minority Engineering Program (Prof. McComas, Director)

Introductory Physics lectures for two sessions each summer

- 92 "Don't Worry, Be Happy"
93 "A Career in Physics"
94 "Is Physics for You?"
96 "What's New in Physics?"

Guest Lecturer for Gender in Science Studies

- Oct. 30, 96 "Scientist, warriors, and sexual language"
Feb. 5, 97 "Molding of a scientist"
Oct. 17, 97 Philosophy 232, "Women: Alternative
Philosophical Perspectives"
Oct. 17, 97 Philosophy 354, "Gender and Science: What
Kind of Enterprise is Science?"
Oct. 12, 98 Philosophy 232, "Women in Science"
Oct. 8, 01 Philosophy 232, "A Woman Scientist in
Charge" APS Panel
Oct. 10, 02 "Being a Woman Nuclear Scientist: Option
After a Ph.D." DNP Meeting, East Lansing,
Michigan

Summer Schools in Nuclear Science

Rare Isotope Accelerator Summer School, East Lansing, MI
August 11-15, 2007

American Chemical Society summer school on Nuclear Chemistry

Brookhaven National Laboratories, Upton, New York, Jun. 26, 03

Lecture 1: "Stardust: We are all made of Stardust"

Lecture 2: "Why our sun takes billions of years to burn up instead of minutes"

Public Lecture

"Cosmology: What We Learned in 111 Years," Armenian Church of
the Martyrs Anniversary Banquet, Worcester, Massachusetts (Oct. 5,
2003).

Student Life at Notre Dame

- Nov. 3, 03 "Women professionals: How to Balance
Life, Work, Family," McGlenn Hall, Notre Dame

- Sep. 17, 03 sponsored Participant in the **"Irish Inquisition"** by Notre Dame Student Government
- Dec. 2, 04 Halls **Discernment Dinner** for Walsh and Dillon
- Aug. 05 to May 06 **Residential Scholar to St. Edwards' Hall**
- June 27, 06 "How I became a nuclear physicist," lunch talk to **Sensing our World** program of middleschool children. Sponsored by JINA and the College of Science at the University of Notre Dame.
- July 17, 06 **"Life of a scientist,"** talk, Balfour Scholars Program, University of Notre Dame
- Apr. 4, 2007 **"What does the light from stars tell us?"** Collegium Common Room Lecture
- 2008-2009 Residential Scholar Program
Fellow of Collegium Common Room

"Popular" Press:

1. **Nature Physics:** "Nuclear physics: Long live isomer research," A. Aprahamian and Y. Sun, *Nature Physics* 1, news & views, 81-82 (2005).
2. **Physics Today:** " Beating the odds: How we increased our female component at ND," to be submitted (2005).
3. Physics at University of Notre Dame: History and Introduction (**Physics Department Brochure (2005)**).
4. **Interactions I and II** : Journal of Physics Fall 2004 and Fall 2005.
5. **Nuclear Physics News International:** "Women in Physics," Vol. 13, No. 3 (2003).
6. **Physics World:** "Nuclear Astrophysics: a new era," *Physics World*, 33 (2002).
7. **Nuclear Physics News International:** Portrait of Nuclear Physics at Notre Dame, Vol. 12, No. 4 (2002).

Invited Talks (International and National Conferences, Seminars, Colloquia)

1. "Intruders in the Cd Isotopes and a Simple Explanation," **invited talk**, Workshop on Interacting Boson-Boson and Boson-Fermion Systems, Kellogg Conference Center, Gull Lake, Michigan, May 28-30, 1984.
2. "The Neutron-Rich Cadmium Isotopes," **invited talk**, ACS Symposium on Nuclei Off the Line of Stability, Chicago, Illinois, September 8-13, 1985.
3. "A perfect U(5) nucleus: ^{118}Cd ," **invited talk**, International Conference on Nuclear Structure, Reaction, and Symmetries, Dubrovnik, Yugoslavia, June 5-14, 1986.
4. "Masses along the r-process path," **invited talk**, Symposium on the Origin and Distribution of the Elements, New Orleans, Louisiana, August 31 - September 4, 1987.
5. "Binding Energies and Masses in the IBA," **colloquium**, Nuclear Chemistry Div., Lawrence Livermore National Laboratory, Livermore, CA, November 11, 1987.
6. "Nuclear Properties Far From Stability," **colloquium**, Univ. of Arizona, Tucson, AZ, January 22, 1988.
7. "First Observation of a Vibrational Nucleus," **seminar**, Univ. of Pennsylvania, Philadelphia, PA, February 24, 1988.
8. "Anharmonic Vibrational Motion and ^{118}Cd ," **seminar**, Univ. of Wisconsin, Madison, WI, March 3, 1988.
9. "Predictions of Nuclear Properties Far From Stability," **seminar**, Nuclear Science Division, Lawrence Berkeley Laboratory, Berkeley, CA, March 18, 1988.
10. "Nuclear Masses and Binding Energies Along the r-process Path," **seminar**, Institute of Geoplanetary Physics, Lawrence Livermore Laboratory, Livermore, CA, April 22, 1988.
11. " ^{118}Cd : First Observation of a U(5) Nucleus," **colloquium**, University of Notre Dame, Notre Dame, IN, May 2, 1988.
12. "The Universe, Nuclei and Radiation," **colloquium**, Armenian Scientists and Engineers, Hollywood, CA, July 15, 1988.
13. "Supersymmetry in Nuclei," **seminar**, University of Notre Dame, Notre Dame, IN, December 4, 1989.
14. "A brief introduction to Nuclear Physics," **seminar**, summer school for minority students in science and engineering, University of Notre Dame, Notre Dame, IN, July 13, 1990.

15. "Vibrational Excitation in Defined Nuclei," **invited talk**, XIV Nuclear Physics Symposium, Cuernavaca, Mexico, January 7-10, 1991.
16. "Nuclear lifetimes in the femtoseconds," **seminar**, University of Notre Dame, Notre Dame, IN, February 4, 1991.
17. "Double-Phonon Vibrations in Deformed Nuclei," **invited talk**, ACS Symposium on Recent Advances in Nuclear Structure Research, Atlanta, Georgia, April 15-19, 1991.
18. "Multi-phonon vibrations or nuclear lifetimes in the femtoseconds," **seminar**, Michigan State University Nuclear Structure Cyclotron Laboratory, East Lansing, MI, May 8, 1991.
19. "Vibrations in Deformed Nuclei," **seminar**, Florida State University, Tallahassee, FL, January 17, 1992.
20. "Vibrational States of Deformed Nuclei," **seminar**, University of Pittsburgh, Pittsburgh, PA, January 20, 1992.
21. "Radioactive Ion Beams and Vibrations in Deformed Nuclei," **invited talk**, Symposium on Radioactive Nuclear Beams, San Francisco, California, April 6-10, 1992.
22. "Vibrational Degrees of Freedom in Deformed Nuclei," **invited talk**, Sixth International Conference on Nuclei Far From Stability and the Ninth International Conference on Atomic Masses and Fundamental Constants, Bernkastel-Kues, Germany, July 19-24, 1992.
23. "Nuclear Shapes and Vibrations of Deformed Nuclei," **invited talk**, ACS Symposium on Nuclear Shapes, Washington, DC, August 24-28, 1992.
24. "Gamma Ray Induced Doppler Broadening and Nuclear Lifetimes in the Femtoseconds," **seminar**, Argonne National Laboratory, Argonne, IL, October 12, 1992.
25. "Vibrational Degrees of Freedom in Deformed Nuclei," **invited talk**, XVI Nuclear Physics Symposium, Oaxtepec, Mexico, January 5, 1993.
26. "Vibrational Degrees of Freedom in Nuclei," **colloquium**, University of Pittsburgh, Pittsburgh, PA, March 18, 1993.
27. "Multi-phonon Vibrational Band in Deformed Nuclei," **invited talk**, American Physical Society Invited Talk on Open Questions in Nuclear Structure Physics, Washington, DC, April 15, 1993.
28. "A Possible New Signature for the Characterization of Vibrational Bands," **invited talk**, ACS Symposium on Technical and Scientific Issues of Radioactive Beams, Chicago, Illinois, August 26, 1993.

29. "Identical Dynamic Moments of Inertia as a Possible Signature of Vibrational Bands," **invited talk**, Brighton-Surrey Workshop on Nuclear Structure, Brighton, England, September 15, 1993.
30. "A Possible New Signature for Vibrational Bands of Deformed Nuclei," **seminar**, University of Liverpool, Liverpool, England, Sept. 17, 1993.
31. "Multi-Phonon Quadrupole Vibrational States in Deformed Nuclei," **invited talk**, Plenary Session of the Eighth International Symposium on Capture Gamma-Ray Spectroscopy, Fribourg, Switzerland, September 20-24, 1993.
32. "Multi-phonon Vibrational Excitation in Deformed Nuclei," **seminar**, Niels Bohr Institute, Copenhagen, Denmark, Sept. 28, 1993.
33. "Vibrational Degrees of Freedom in Nuclei," **seminar**, Nuclear Research Center, Studsvik, Sweden, Oct. 5, 1993.
34. "Two-Phonon Vibrational Bands in the Deformed Rare-Earth Region of Nuclei," **seminar**, Theoretical Physics Institute, University of Lund, Lund, Sweden, Oct. 8, 1993.
35. "Vibrational Multi-Phonon Excitations and Identical Bands," **seminar**, Nuclear Physics Institute, University of Köln, Köln, Germany, Oct. 19, 1993.
36. "Vibrational Degrees of Freedom in Deformed Nuclei," **seminar**, Rutgers University Department of Physics and Astronomy, New Jersey, February 21, 1994.
37. "Vibrational Degrees of Freedom in Deformed Nuclei," **seminar**, Clark University Department of Physics and Chemistry, Worcester, MA, April 4, 1994.
38. "Vibrational Degrees of Freedom in Deformed Nuclei," **seminar**, University of Rochester, Rochester, NY, April 29, 1994.
39. "Rotation and Vibrations in Nuclei," **colloquium**, Texas A&M University, College Station, TX, May 3, 1994.
40. "The Role of Gender in the Physical Sciences," **invited talk**, Women's History Month celebrations, University of Notre Dame, February 1995.
41. "Nuclear Dynamics: Rotations and Vibrations," **seminar**, University of Surrey, Guildford, United Kingdom, July 7, 1995.
42. "A woman physicist," visiting lectures to class in Gender Studies (Phil. 354), University of Notre Dame, September 15 and October 4, 1995.
43. "Exotic beams and nuclear structure in the $A=80$ region of nuclei," **invited talk**, at the XIX Symposium on Nuclear Physics, Oaxtepec, Morelos, Mexico, January 3, 1996.

44. "Opening Remarks," International Conference on Nuclei in the Cosmos, Notre Dame, Indiana, June 20-27, 1996.
45. "The A=80 Region of Nuclei and Radioactive Beams," **invited talk**, at the International Workshop on Physics of Unstable Nuclear Beams, São Paulo, Brazil, August 28-31, 1996.
46. "Exotic Beam and Nuclear Structure near the limits," **seminar** at the Erevan Physics Institute, Erevan, Armenia, September 12, 1996.
47. "The A=80 Region of Nuclei and Experiments with Radioactive Ion Beams," **colloquium**, Flerov Laboratory of Nuclear Reactions, Dubna, Russia, September 17, 1996.
48. "Patriarchy, Scientists and Nuclear Warriors," **invited talk**, Women: Alternative Philosophical Perspectives (Phil 232), October 10, 1996.
49. "The Astrophysical rp-process and Nuclear Structure in the A=80 Region of Nuclides," **invited talk**, at the 9th International Conference on Neutron-Capture Studies and Related Topics, Budapest, Hungary, October 10, 1996.
50. "Nucleosynthesis of the Elements and Nuclear Structure," **seminar**, Hope College, Hope, Michigan, November 13, 1996.
51. "Vibrational Excitation in Nuclei: A Status Report," **seminar**, Rutgers University, Piscataway, New Jersey, February 25, 1997.
52. "Nucleosynthesis in Explosive Scenarios via the rp-process," **colloquium**, Rutgers University, Piscataway, New Jersey, February 25, 1997.
53. "Experiments with detectors at the FMA focal plane," **invited talk**, at Workshop II on the Science and Operation of Gammasphere at ATLAS, Argonne National Laboratory, May 10, 1997.
54. "Nucleosynthesis in Explosive Astrophysical Scenarios," **seminar**, Czech Technical University, Prague, Czech Republic, May 15, 1997.
55. "Nuclear Masses in the A=80 Region," **invited talk**, at the International Conference for Nuclear Data in Science and Technology, Trieste, Italy, May 19, 1997.
56. " $K=0^+$ excitations in Nuclei," **invited talk**, at the Workshop on Nuclear Physics with GEANIE at LANSCE, Taos, New Mexico, June 23, 1997.
57. "rp-process nucleosynthesis and RIBs," **invited talk**, at the Workshop on the Science for an Advanced ISOL facility, Columbus, Ohio, July 31, 1997.
58. "Vibrational Dynamics in Nuclei," **seminar**, Ohio University, Athens, Ohio, February 24, 1998.

59. "Collective $K = 0^+$ Vibrational Excitations in Nuclei," **invited talk**, at the Plenary Session of the International Conference on Nuclear Structure at the Extremes on the Occasion of the 40th Anniversary of SU(3) Symmetry in Nuclear Physics in Lewes, United Kingdom, June 17-19, 1998.
60. "Vibrational Excitation in the $A=80$ region of Nuclei," **invited talk**, at the ACS Symposium on Nuclear Structure at Low Excitation Energies on the Occasion of Bill Walter's 60th Birthday, Boston, Massachusetts, August 23-27, 1998.
61. " $K=0^+$ Excitations in Nuclei," **invited talk**, New Physics for the New Millennium Conference, Faure, South Africa, January 22, 1999.
62. "Explosive Nucleosynthesis and Structure of $N=Z$ Nuclei," **seminar**, University of Liverpool, United Kingdom, February 23, 1999.
63. "Multiphonon Vibrational Excitations in Nuclei," **seminar**, University of Manchester, Manchester, United Kingdom, April 21, 1999.
64. "From Exploding Stars to Nuclear Structure," **seminar**, University of Surrey, Guildford, United Kingdom, April 28, 1999.
65. " $N=Z$ Nuclei and Exploding Stars," **seminar**, University of Bordeaux, Bordeaux, France, April 30, 1999.
66. "Status of observed multiphonon vibrational excitation in nuclei," **invited talk**, Int. Workshop on Double Giant Resonances and Multiphonon Vibrations in Nuclei at the European Center for Theoretical Physics, Trento, Italy, May 10-21, 1999.
67. "Explosive Nucleosynthesis and Structure of $N=Z$ Nuclei," **seminar**, Nuclear Physics Institute, Laboratori Nazionale di Legnaro, Legnaro, Italy, May 14, 1999.
68. "From Exploding Stars to the Laboratory: Nuclear Structure at Notre Dame," **invited talk**, Biennial Yale Workshop 1999, New Haven, CT, June 10-12, 1999.
69. "From Explosions to the Laboratory," **seminar**, Los Alamos Neutron Science Center, Los Alamos National Laboratory, NM, August 13, 1999.
70. "Stellar Explosions and the Structure of $N=Z$ Nuclei," **seminar**, Los Alamos Theory Division, Los Alamos National Laboratory, NM, August 19, 1999.
71. " $K=0^+$ Excitations in Deformed Nuclei: Lifetimes with GRID," **invited talk**, 10th International Conference on Capture Gamma-Spectroscopy and Related Topics, Santa Fe, NM, August 30 – September 3, 1999.
72. "Vibrations in Nuclei: $K = 0^+$ bands in Deformed Nuclei," **seminar**, Centre de Spectrométrie Nucléaire et de Spectrométrie de Masse, Orsay, France, November 25, 1999.

73. "From Exploding Stars to the Laboratory: Structure and Lifetimes of N=Z Nuclei," **seminar**, Grand Accélérateur National d'Ions Lourds, Caen, France, December 7, 1999.
74. "Nuclear Dynamics," **colloquium**, Institute for Theoretical Physics, Gent, Belgium, December 16, 1999.
75. "Spectroscopy with Radioactive Ion Beams," **invited talk**, American Chemical Society Symposium on New Nuclear Science with New Techniques in this Millennium, San Francisco, California, March 26-31, 2000.
76. "Exploding Stars and the Structure of N=Z nuclei, **seminar**, University of Kentucky, Lexington, Kentucky, April 13, 2000.
77. "The Nature of K=0+ Excitations in Deformed Nuclei," **invited talk**, 19th International Nuclear Theory Workshop, Rila, Bulgaria, June 12-17, 2000.
78. "From Exploding Stars to the Laboratory...Nucleosynthesis in accreting binary stars," **colloquium**, Johannes Gutenberg University of Mainz, Germany, July 3, 2000.
79. "Lifetimes of the N=Z Waiting Point Nuclei," **invited talk**, International Conference on Nuclear Structure 2000, East Lansing, Michigan, August 15-18, 2000.
80. "Nucleosynthesis in the rp-process: A new Semi-empirical mass model," **invited talk**, 2nd Euroconference on Atomic Physics at Accelerators: Mass Spectrometry, Cargèse, Corsica (France), September 19-23, 2000.
81. "K=0+ Excitations in Deformed Nuclei," **seminar**, Institute of Nuclear Theory, University of Washington, November 2, 2000.
82. "From Exploding Stars to the Laboratory," **colloquium**, Florida State University, Tallahassee, Florida, February 15, 2001.
83. "Nuclear Masses and Nucleosynthesis," **seminar**, Michigan State University, East Lansing, Michigan, February 21, 2001.
84. "Isomeric States in Nuclei and Their Influence on the rp-process," **invited talk**, Workshop on "RISING (Rare Isotope Investigations at GSI) Physics with Stopped Beams," Gottingen, Germany, March 8-9, 2001.
85. "Nuclear Masses," **invited talk**, "Symposium on Rare Isotope Research – Past, Present and Future" at the 221st ACS National Meeting, San Diego, California, April 1-5, 2001.
86. "Nuclear Masses and Abundances of the Elements in the Universe," **invited talk**, APS National Meeting, Washington, DC, April 28-May 1, 2001.

87. "Exploding Stars to the Laboratory," **seminar**, Physics N-Division, Lawrence Livermore National Laboratory, Livermore, California, August 22, 2001.
88. "Nuclear Masses and Nucleosynthesis," **seminar**, National Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, Michigan, February 6, 2002.
89. "What is the nature of $K=0^+$ Bands in deformed nuclei?" **invited talk**, International Conference on Nuclear Structure, Mapping the Triangle, Grand Teton National Park, Wyoming, May 22-25, 2002.
90. "Nuclear Masses in Nucleosynthesis," **invited talk**, Symposium in Honor of Daeg Brenner at the 224th ACS National Meeting in Boston, Massachusetts, August 20, 2002.
91. "Nuclear Structure Effects in Astrophysics," **invited talk**, Eleventh International Symposium on Capture Gamma-Ray and Related Topics, Pruhonice, Czech Republic, September 1-4, 2002.
92. "Nuclear Physics at Notre Dame," **invited talk**, National Academies, National Research Council, Washington, D.C., May 12, 2003.
93. "Stardust: We are all made of stardust," **invited talk**, ACS Summer School in Nuclear Science, Brookhaven National Laboratory, Upton, New York, June 26, 2003.
94. "Why our sun takes billions of years to burn up instead of minutes," **invited talk**, ACS Summer School in Nuclear Science, Brookhaven National Laboratory, Upton, New York, June 26, 2003.
95. "From Ripples to Tidal Waves: Low Lying Vibrational Motion in Nuclei," **invited talk**, International Conference on Collective Motion in Nuclei Under Extreme Conditions (COMEX1), University of Paris, La Sorbonne, Paris, France, July 10-13, 2003.
96. "The Nature of Low-lying $K=0^+$ Bands in Nuclei," **invited talk**, International Conference on Nuclear Structure and Related Topics, NSRT03, Dubna, Russia, September 2-6, 2003.
97. "Nuclear Astrophysics...a new era?" **seminar**, Yerevan State University, Yerevan, Armenia, September 9, 2003.
98. "JINA, Joint Institute for Nuclear Astrophysics," **invited talk**, National Superconducting Cyclotron Laboratory Users Workshop, East Lansing, Michigan, September 28, 2003.
99. "Structure of Heavy Helium Isotopes via the Isobaric Analog States in Lithium," **invited talk**, **G.V. Rogachev**, P. Boutachkov, A. Aprahamian, M. Quinn, J.J. Kolata, B. Skorodumov, A. Woehr, V.Z. Goldberg, G. Chubarian, A. Fomichev,

M.S. Golovkov, Yu. Ts. Oganessian, A. Rodin, R.S. Slepnev, G. Ter-Akopian, R. Wolski, W.H. Trzaska, P.A. DeYoung, G.F. Peaslee, F.D. Becchetti, and Y. Chen, RNB-6, Argonne National Laboratory, Argonne, Illinois, September 22-26, 2003.

100. "Nuclear Astrophysics and the Cosmos," **invited talk**, First ND-ANL Collaboration Workshop, University of Notre Dame, Notre Dame, IN, January 22-23, 2004.
101. "The Origin of the Elements," International Advisory Board of JINA, Notre Dame, IN, April 30, 2004.
102. "Nuclear Physics and the Origin of the Elements," **seminar**, QuarkNet lecture to local high school teachers, QuarkNet Center, South Bend, IN, May 10, 2004.
103. "The Nature of the first excited $K=0^+$ band in Deformed Nuclei," Workshop on New Descriptions of Transitional Nuclei held at the Lawrence Berkeley National Laboratory, Berkeley, CA, October 21-23, 2004.
104. "Low energy 0^+ excitations in ^{158}Gd ," **invited talk**, J.G. Hirsh, G. Popa, C.E. Vargas, S.R. Leshner, A. Aprahamian, XXVIII Symposium on Nuclear Physics, Cocoyoc, Mexico, January 4-7, 2005.
105. "The Nature of $K=0^+$ Bands in Deformed Nuclei: Dynamics from ripples to Tidal Waves," **invited talk**, NUSTAR'05 (An international conference on the interface between Nuclear Structure, Astrophysics and Reactions, held at the University of Surrey, Guildford, United Kingdom, Jan. 5-8, 2005.
106. "Following the Light in the Universe: Nuclear Structure in Nuclear Astrophysics," **seminar**, Indiana University Cyclotron Facility, Bloomington, IN, February 25, 2005.
107. "Cosmology: Ernan McMullin with Physics and Philosophy at Notre Dame," **invited talk**, Cosmology Workshop, Notre Dame, IN, April 20, 2005.
108. "What is the nature of $K=0^+$ bands in deformed nuclei? A challenge to nuclear structure for four decades," **invited talk**, IV Latin American Symposium on Nuclear Physics and Applications, Iguazu, Argentina, October 3-7, 2005.
109. "Following the light in the Universe," **colloquium**, University of North Carolina, Chapel Hill, North Carolina, Nov. 14, 2005.
110. "Users of low-energy nuclear physics facilities on RIA," **talk**, presented to the National Academies RISAC Committee on the Science of RIA, December 16, 2005.
111. "Nuclear Physics: Following the Light in the Universe," **invited talk**, 2006 Joint Annual Conference of National Society of Black and Hispanic Physicists," San Jose, California, February 17, 2006.

112. "JINA at Notre Dame," **invited talk**, 22nd Winter Workshop on Nuclear Dynamics, La Jolla, California, March 11-19, 2006.
113. "Deformed Nuclei and $K=0+$ Excitations," **invited talk**, symposium on Contemporary Frontiers in Nuclear Structure at the 231st ACS meeting, Atlanta, Georgia, March 26-30, 2006.
114. "Nuclear Physics in Action: Following the Light in the Universe," **colloquium**, Western Kentucky University, Bowling Green, Kentucky, April 3, 2006.
115. "How we did it at Notre Dame," **invited talk**, 49th Annual Conference of Science Editors held in Tampa, Florida. 1 of 3 panelists at a session on "Influential Women in Science," May 21, 2006.
116. "The science of JINA," **invited talk**, to high school teachers participating in the JINA sponsored PIXE-PAN program held at the University of Notre Dame Institute for Structure and Nuclear Astrophysics, June 15, 2006.
117. "News & Views from the Users of ATLAS," **invited talk**, A. Aprahamian, ATLAS Science & Technology Review, Argonne National Laboratory, June 20-21, 2006.
118. "Light and Dark Matter," **seminar**, University of Richmond, February 14, 2007.
119. "Introduction to Nuclear Astrophysics I, II, III," **invited talks**, RIA Summer School, Michigan State University, East Lansing, Michigan, August 11-15, 2007.
120. "Nuclear Structure Aspects in Nuclear Astrophysics," **seminar**, Physics Department, University of Maryland, College Park, Maryland, October 17, 2007.
121. "Nuclear masses and what they imply for neutron-rich nuclei," **invited talk**, 4th International Conference on Fission and Properties of Neutron-rich Nuclei, Sanibel Island, Florida, November 16, 2007.
122. "Physics of the Universe: From Dark Energy to the Origin of Life", talk to Presidential awardees for High School Teachers from all 50 states, NSF, Arlington, VA, April 29, 2008.
123. "Origin of the heavy elements," colloquium, Physics Department, Ohio University, Athens, OH, May 9, 2008.
124. "The life of a physicist", talk to New Buffalo, MI Area High School students and teachers, Notre Dame, IN, August 11, 2008.
125. "Expanding Universe, Shrinking Budgets", **colloquium**, Physics Department, Michigan State University, East Lansing, Sept. 18, 2008.

126. "Rotations and Vibrations", **invited talk**, symposium in honor of Joe Hamilton's 50 years of Teaching and Research, Vanderbilt University, Oct 2-3, 2008.
127. "Nuclear Structure Aspects in Nuclear Astrophysics: The Origin of the Heavy Elements", **invited talk**, International Workshop on High Density Nuclear Physics & QCD, Yerevan, Armenia, October 6-10, 2008.
128. "Expanding Universe with Shrinking Budgets: What does that mean to planning your research?", **colloquium**, Physics Department, University of Notre Dame, Notre Dame, IN , December 3, 2008.
129. "Nuclear Physics at the Frontiers of Knowledge", **seminar**, Physics Department, Yale University, New Haven, Ct., February 23, 2009.

Reviewed Publications in Journals

1. "Q Values for Neutron-Rich Rubidium and Lanthanum Isotopes," D.S. Brenner, M.D. Martel, A. Aprahamian, R.E. Chrien, R.L. Gill, H.I. Liou, M. Shmid, M.L. Stelts, A. Wolf, F.K. Wohn, D.M. Rehfield, H. Dejbakhsh, and C. Chung, Phys. Rev. **C26**, 2166 (1982).
2. "Role of Finite Boson Number in the Interacting Boson Approximation Description of γ -g Transitions in Deformed Nuclei," R.F. Casten, D.D. Warner, and A. Aprahamian, Phys. Rev. **C28**, 894 (1983).
3. "Decay of ^{142}Ba to Levels of Odd-Odd ^{142}La ," C. Chung, W.B. Walters, D.S. Brenner, A. Aprahamian, A. Wolf, R.L. Gill, M. Shmid, R.E. Chrien, Z. Berant, and L.-J. Yuan, Phys. Rev. **C28**, 2099 (1983).
4. "Parabolic Energy Dependence of Odd-Odd Multiplets in N=83 Nuclides," W.B. Walters, C. Chung, D.S. Brenner, A. Aprahamian, R.L. Gill, R.E. Chrien, M. Shmid, A. Wolf, L.-J. Yuan, Phys. Lett. **125B**, 351 (1983).
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6. "Empirically Determined Limits on Absolute Boson Numbers for Well Deformed Nuclei," R.F. Casten and A. Aprahamian, Phys. Rev. **C29**, 1919 (1984).
7. "Axial Asymmetry and the Determination of Effective Gamma Values in the Interacting Boson Approximation," R.F. Casten, A. Aprahamian, and D.D. Warner, Phys. Rev. **C29** (Rapid Comm.), 356 (1984).
8. "Observation of 0^+ States in ^{118}Cd and the Systematics of Intruder States," A. Aprahamian, D.S. Brenner, R.F. Casten, R.L. Gill, A. Piotrowski, and K. Heyde, Phys. Lett. **140B**, 22 (1984).
9. "Study of the Three β -decaying Isomers of ^{130}In ," B. Fogelberg, A. Aprahamian, R.L. Gill, H. Mach, and D. Rehfield, Phys. Rev. **C31**, 1026 (1985).

10. "The g-Factor of 4^+_{11} States in the N=82 Isotones ^{136}Xe and ^{138}Ba ," Z. Berant, A. Wolf, J.C. Hill, F.K. Wohn, R.L. Gill, H. Mach, M. Rafailovich, H. Kruse, B.H. Wildenthal, G. Peaslee, A. Aprahamian, J. Golden, and C. Chung, Phys. Rev. **C31**, 570 (1985).
11. "g-Factor of the 6^+_{11} State in ^{132}Te ," B. Fogelberg, C. Stone, R.L. Gill, H. Mach, D.D. Warner, A. Aprahamian, and D. Rehfield, Nucl. Phys. **A451**, 104 (1986).
12. "First Observation of a Near Harmonic Vibrational Nucleus," A. Aprahamian, D.S. Brenner, R.F. Casten, R.L. Gill, and A. Piotrowski, Phys. Rev. Lett. **61**, 535 (1987).
13. "Levels of the Four Lowest Two-Particle Configurations in ^{210}Po Studied by In-Beam gamma-Ray and Conversion-Electron Spectroscopy with the $^{209}\text{Bi}(\text{t}, 2\text{n})$ Reaction," L.G. Mann, K.H. Maier, A. Aprahamian, J.A. Becker, D.J. Decman, E.A. Henry, R.A. Meyer, N. Roy, W. Stoeffl, and G. Struble, Phys. Rev. **C38**, 74 (1988).
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15. "Nuclear Structure of ^{200}Pt from In-Beam Conversion Electron and α -ray Spectroscopy," S.W. Yates, E.M. Baum, E.A. Henry, L.G. Mann, N. Roy, A. Aprahamian, R.A. Meyer, R. Estep, Phys. Rev. **C37**, 1889 (1988).
16. "Electromagnetic Decay of 10^+ States and Yrast Isomers in ^{208}Pb ," N. Roy, K.H. Maier, A. Aprahamian, J.A. Becker, D.J. Decman, E.A. Henry, L.G. Mann, R.A. Meyer, W. Stoeffl, and G.L. Struble, Phys. Lett. **B221**, 6 (1989).
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23. "Spectroscopy of $^{96,97,98}\text{Ru}$," W. Reviol, U. Garg, I. Ahmad, A. Aprahamian, M.P. Carpenter, B.F. David, R.V.F. Janssens, T.L. Khoo, T. Lauritsen, Y. Liang, S. Naguleswaran, J.C. Walpe, D. Ye, *Nucl. Phys.* **A557**, 391C (1993).
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25. "Identical Bands and Multi-phonon Vibrations," X. Wu, A. Aprahamian, J. Castro-Ceron, and C. Baktash, *Phys. Lett.* **B316**, 235 (1993).
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31. "Study of excited states in ^{208}Pb by particle-gamma coincidences with the $^{207}\text{Pb}(d,p)^{208}\text{Pb}$ and $^{209}\text{Bi}(t,\alpha)^{208}\text{Pb}$ reactions," M. Schramm, K.H. Maier, M. Rejmund, L.D. Wood, N. Roy, A. Kuhner, A. Aprahamian, J. Becker, M. Brinkman, D.J. Decman, E.A. Henry, R. Hoff, D. Manatt, L.G. Mann, R.A. Meyer, W. Stoeffl, G.L. Struble, and T.-F. Wang, *Phys. Rev.* **C56**, 1320-1337 (1997).
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