Ani Aprahamian

Frank M. Freimann Professor of Physics

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Education

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

Experience (recent)

2019	Member of Scientific Council of GANIL (France)
2019	Member of Science Advisory Board for GSI-FAIR (Germany)
2018-present	Director of A. Alikhanyan National Science Laboratory of Armenia
2018-present	Chair of FRIB Science Advisory Committee
2018	**Discovery Science Technical Review Committee** of the National Ignition Facility at LLNL, Livermore, CA.
2018	Secretary of IUPAP Commission-12 (Nuclear Physics)
2017, 2018	Physical and Life Sciences External Review, LLNL NSF panel, NNSA centers of excellence panel
2016-2018	**Vice-Chair of National Academies Committee on the "Science of the EIC"**
2016	Chair of External Review of Physics Department, IU Bloomington
2016	External Review of Physics Department, Texas A&M University
2015-present	U.S. Liaison for the International Union of Pure and Applied Physics (IUPAP) Commission on Nuclear Science (C-12)
2015-present	Member of IUPAP Working Group-10 on Astro-Particle Physics (APpic)
2014	Chair of American Institute of Physics, "Physics Today" Advisory Board
2014	Chair of the APS Division of Nuclear Physics
2014	Member of Nuclear Science Advisory Committee
2010	**Vice-Chair of National Academies Decadal Survey of Nuclear Physics (NP2010)**
2010-present	Member of Board of Directors for South Dakota Science and Technology Authority (Sanford Underground Laboratory)
2008-2010	Co-Chair of NSAC subcommittee on **Isotope Production and Applications**
2006-2010	Chair of Scientific Council of GANIL (Caen, France)
2006-2008	Program Director for **Nuclear Physics** and **Particle & Nuclear Astrophysics** at the National Science Foundation
2003-2006	Chair of Physics Department, University of Notre Dame
2001-2006	Director of Nuclear Science Laboratory, University of Notre Dame

Honors, Awards, and Professional Memberships

Mace Bearer for the College of Science, 2017-2018.

Elected Member of the Institute of Physics, 2018

Elected as secretary general of the International Union of Pure & Applied Physics Commission on Nuclear Physics: C-12, October, 2017.

Recognized by the American Physical Society as an "Outstanding Referee", January 2016

Election to the International Union of Pure & Applied Physics Commission on Nuclear Physics: C-12, January 2015 –present

Elected to the IUPAP International committee on AstroParticle Physics, ApPIC, WG- 10, 2016

Appointed by Associate Laboratory Director for Nuclear & Particle Physics to Search committee for permanent Director of the BNL Isotope Program, 2014

Appointed to Institute of Physics panel to evaluate health of physics research in the UK, 2011-2012

Appointed Science Advisory Board to Alikhanyan National Laboratory by prime minister of Armenia, 2011

Elected as advisor to the Mexican Physical Society, 2011

Appointed to the Board of Directors of South Dakota Science and Technology Authority for Sanford Laboratory, 2010-2021

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

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

Presidential Award, University of Notre Dame, 2003

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, 2008, 2009, 2010
Member	AAAS, ACS, APS, Sigma Xi, New York Academy of Science, Mexican Physical Society

Academy Member	Science Academy of Republic of Armenia, Foreign Member
Reviewer	Phys. Rev. Lett., Phys. Rev. C, Phys. Lett. B, Nucl. Phys. A, European Physics Journal, Physica Scripta, Nature Physics, NIM
	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
	Institute of Physics (United Kingdom)
	Fondazione Cassa di Risparmio di Padova e Rovigo (Italy)
	National Research Councils (US and Canada)
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 Committees

GANIL	**Scientific Council, 2019-2022**
GSI-FAIR	**Expert Committee Experiments 2019-2022**
JINA-CEE	**International Advisory Committee, 2015-2020**
	MA-1 Coordinator, 2015-2018
CAARI	**Conference on Applications of Accelerators in Research & Industry, 2016**
IUPAP	**US representative to C-12 (Nuclear Physics) and member of WG-10 (Astroparticle Physics)**
JINA	**International Advisory Committee, 2012-2015**
NNSA	**Center of Excellence for Stockpile Stewardship, 2015-2018**
TUNL	**Science Advisory Committee to TUNL, 2014, 2016**
IOP	**Review of Physics in the United Kingdom, 2011-2012**
ANL	**Science Advisory Board for Alikhanian National Laboratory (ANL), Republic of Armenia, 2011**
FRIB	**Facility for Rare Isotope Beams- Science Advisory Committee (2009-present)**
	Chair of FRIB Science Advisory Committee (2018-present)

InComEx **International committee of experts to evaluate science in Armenia (2009)**

FUSTIPEN **Board member, France-US collaboration on Theory,** 2009-present

NSF Committee to write policies on International Collaborations for the Mathematical and Physical Sciences Directorate as a representative of Physics Division (2008)

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), 2013- present

GANIL **Chair** of scientific council, Caen, France (2007-2011)

ISTC Collaboration with Armenia: 2006-2011

"Radiological Characterization and Database Creation in Support of ANPP Decommissioning Planning"

External Committees – National

National Academies

Co-Chair, NRC committee on the Science of the EIC, 2017-2018

Vice-Chair, NRC committee for decadal survey of **Nuclear Physics 2010, (2010-2012)**

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

FRIB **Science Advisory Committee, 2014- present**

Chair of FRIB SAC, 2018

NIF **LLNL Discovery Science Technical Review Committee, 2018**

Nuclear Science Advisory Committee

Member of Long Range Plan Writing Group, 2015

Ex-officio member of NSAC as the chair of the Division of Nuclear Physics (APS-DNP), 2014-2015

Co-chair, NSAC Subcommittee on Isotope Production and Applications, 2008-2010

DOE/NSF **N**uclear **S**cience **A**dvisory **C**ommittee (NSAC), 2004-2006

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

American Institute of Physics

American Physical Society

Chair of the DNP Fellowship Committee, 2016

Appointed to Physics Policy Committee of the APS January 1, 2013-December 31, 2015

"Physics Today" Advisory Committee 2011-2012, 2012-2015

"Physics Today" Advisory Committee Chair, 2015

Hans Bethe Prize Committee Chair, 2014

Committee on Informing the Public, 2010-2012

Forum on International Physics: Nomination Committee, 2010

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

SDSTA **South Dakota Science and Technology Authority, 2009-present**

RTUVT **Radiological Technologies University-VT Advisory Board , 2016-present**

American Physical Society's Division of Nuclear Physics

Chair of DNP Fellowship Selection Committee, 2016

Chair of DNP, 2014

DNP Chair line duties, 2012-2016

Chair of Mentoring Award Committee, 2010, 2011, 2014

Chair of Dissertation Selection Committee, 2014

Member of Dissertation Selection Committee, 2015

Program Committee Chair, 2012, 2013

Elected as VICE-Chair, APS Division of Nuclear Physics, 2012

Hans-Bethe Award Selection Committee (2012, 2013, 2014)

Program Committee (2012-2013)

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

RIBSS Advisory Committee, Center for RadioActive Ion Beam Studies for Stewardship Science, NNSA center of excellence, 2015-present (Chair in 2016, 2017)

TUNL (Triangle Universities Nuclear Laboratory) Science Advisory Committee, 2011, 2013, 2014

FUSTIPEN board member (France-US Theory Collaboration), 2010 - present

Facility for Rare Isotope Beams, Science Advisory Committee, 2009-2012, 2013-2016

FRIB Users Executive Committee, 2009-2012

NSCL Program Advisory Committee, 2009-2015

JINA (Joint Institute for Nuclear Astrophysics), Executive Committee, 2002-present

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)

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

Advisory Committees for Conferences in the past 10 years

International Advisory Committee to International Nuclear Physics Conference, Glasgow, Scotland, July 29-August 2, 2019.

International Advisory Committee to the conference on "Correlations in Partonic & Hadronic Interactions 2018", Yerevan, Armenia, Sept. 24-28 ,2018.

International Advisory Committee for Advances in Radioactive Isotope Science, Keystone, CO, May28-June2, 2017

International Advisory Committee for **Capture γ-ray Spectroscopy**, Shanghai, China, September 18-22, 2017.

International Advisory Committee for the p-process workshop, Notre Dame, IN, June 29-July 1, 2017

International Advisory Committee for NIC XIV to take place in NIigata, Japan, June 19-24, 2016.

International Advisory Committee for Latin American Symposium on Nuclear Physics and Applications, Medellin, Columbia, November 30-December 4, 2015.

International Science Organizing Committee for 21st International Conference on Few Body Problems in Physics, Chicago, IL, May 18-22, 2015.

International Advisory Committee for CGS-15 "Capture Gamma-Rays and Related Topics", Dresden, Germany, August 25-29, 2014.

International Advisory Committee for "Nuclear Structure 2014" at Triumf, Vancouver, Canada, July 20-25, 2014.

International Advisory Committee for ARIS_2014, Advances in Radio-isotope Science, June 1-6, 2014, ITO International research center, University of Tokyo, Tokyo, Japan.

International Advisory Committee for "Nuclear Data for Science and Technology", NY, NY, March 4-8, 2013.

International Advisory Committee for "Beauty in Physics: Theory and Experiment" held in Cocoyoc, Mexico in Honor of the 70th Birthday of Franco Iachello, May 14-18, 2012.

International Advisory Committee for "Horizons of Innovative Theories, Experiments, and Supercomputing in Nuclear Physics" New Orleans, LA, June 2012.

International Advisory Committee for "14th International Symposium on Capture Gamma Ray Spectroscopy and Related Topics" held at the University of Guelph, Guelph, Ontario, Canada, August 28-September 2, 2011.

International Advisory Committee for "p-process workshop" held in Istanbul, Turkey, May 25-27, 2011.

International Advisory Committee for "Rutherford Centennial Conference on Nuclear Physics" held August 8-12, 2011 at the University of Manchester, Manchester UK.

International Advisory Committee for "21st European Conference on Few-Body Problems in Physics", held August 29-September 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, August 25-29, 2008.

International Advisory Committee for the 2007 International Conference on Nuclear Data for Science and Technology, Nice, France, April 22-27, 2007.

International Advisory Committee for the conference on exotic nuclei, Sanibel Island, FL, November 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

Correlations in Partonic and Hadronic Interactions, September 24-28, Yerevan, Armenia, 2018.

Low Energy Nuclear Science & Applications using Cyclotrons in Armenia, Yerevan, Armenia, September 28, 2018.

Physics Outreach Event in honor of 75th Anniversary of the Founding of Yerevan Physics Institute, September 29, 2018. (Teams from the UK, Germany, USA)

Nuclear Astrophysics sessions, Gordon Research Conferences, Nuclear Chemistry, New London, NH, June 18-23, 2017**.**

CAARI 2016 organizer, (Conference on application of Accelerators in Research & Industry", Forth Worth, TX, Oct. 30 - Nov. 4, 2016

"Low metallicity nucleosynthesis and neutron capture processes", JINA-CEE Virtual Mini-Workshop, December 11, 2014

"Nuclear Science and Society", ND London, October 27-29, 2014

"Climate Change and the Common Good: Security, Sustainability, Policy" University of Notre Dame, Notre Dame, IN, April 8-10, 2013

"Beauty of Physics Theory and Experiment" Hacienda Cocoyoc, Morelos, Mexico, May 14-18, 2012

"Nuclear Structure 2012", Argonne National Laboratory, August 13-17, 2012

"Waltzing to the Nuclear Limits" A symposium in honor of Lee Riedinger, Hilton Head Island, SC, February 25-27, 2011

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

CGS-12, International Conference on Capture □-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 Gamma-Spectroscopy"**, Notre Dame, IN, July 1-3, 1998

"**Cosmology: Physics and Philosophical Perspectives,"** Notre Dame, IN, April 20, 2005

First JINA Workshop on the r-process, Gull Lake, MI, 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, Apr. 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 (Department, College, University)

Departmental Committees

Chair of Undergraduate Research Committee (2017-2018)
Advisor to the Physics Majors class of 2020
Physics Department Committee on Honors Dissertation (2015, 2016, 2017)
Physics Department Undergraduate Research Committee (2011-2017)
Committee on Appointments and Promotions, 2013-2016
Education and Outreach 2011-2014
Awards, 2011-2012
Outreach, 2011-2016
Medical Physics Advisory Committee (2010)
Awards Committee (2010-2011)
Outreach Committee (2010-2011)
Publication Committee (2010-2011)
Graduate Recruitment Committee (2010-2011)
Awards Committee (2010-2011)
Long Range Strategic Planning Committee (2009-2010)
Outreach Committee (2009-2010)
Academic Advisor to the Class of 2007 (2004-2007)
Committee on Appointments and Promotions (01, 02, 03, 04, 05)
Chair of Graduate Recruitment & Publicity (00, 01, 02, 03, 04)
Member of Recruitment Committee (96, 97, 00, 01, 02, 03, 04)
Instructional laboratories (95, 96, 97, 98, 00, 01, 02)
Chair of Graduate Admissions (95, 96, 97)
Curriculum Committee (95)
Academic Advisor to the Class of 1998 (94-98)

College of Science Committees

Endowed Chair Professor Evaluation Committee (2016, 2017)
Web page Committee (2005)
Jordan Hall of Science **F**urnishings, **F**ixtures, **E**quipment (FFE)
Comm. for classrooms and common spaces (2005)
Selection of Business Manager for College of Science (2003)

University Committees

International Programs Reviewer (2018)
Provost's Advisory Committee (2016-2019)
Provost's SPF and Research Faculty Promotion (2017)
College of Science Dean Search Committee (2014-2015)

University Committee on Internationalization (2012-2015)
VPR Evaluation Committee (2011-2012)
Provost's Committee on "Latin America" (2010-2011)
Provost's Committee on launching "Institute for Global Development" (2010-2011)
Limited Submissions Committee for the Office of Research (2011-2012)
Standing Committee of the Graduate School on NSF (2009-2010)
Graduate Council at University of Notre Dame (2009-2010, 96-98, 01-03)
Provost's Awards Committee (2007, 2006)
Selection Committee for Associate Vice President of Marketing, 2004
McNair Scholars Advisory Board (2002-2005)
Advisory Board for the Arts and Letters Science Honors Program, 2002
Subcommittee on Finance and Fundraising, 2001
Selection Committee of the Graduate School's Outstanding Research Award, 2001
Academic and Student Life Advisory Committee (elected 01, 02, 03, 04, 05)
Academic Affirmative Action Committee (98, 99, 00, 01, 02)
Committee on Women Faculty and Students (96-98)
Selection Committee for the appointment of V.P. of Research and Dean of the Graduate School (96)
Provost's Review Panel for Appeals Concerning Sexual Discrimination (94-96)
Executive Committee of the Distinguished Visiting Faculty
Radiation Control Committee (94-2001)
Luce Professorship - Search Committee (94/95)
Graduate School Liaison for the recruitment of minorities for the Physics graduate program (94-05)
Campus Climate Subcommittee (93-94)
Cultural Diversity (93-96)
Academic Life Committee for the Colloquy 2000 (92-93)
Colloquy 2000 (92-93)

Cross-College/Department/Interdisciplinary Interactions

College of Engineering Energy Center collaboration
Board of RTUVT Medical Physics Program (2014-present)
Isotopes project with SPECTRON (2008-2012)
Center for Social Concerns – Urban Plunge
-- Alternative Energy group
Research in the feasibility of Hydrogen Fuel Cells in the Michiana Area
Zhelun Li (David), Mendoza College of Business (Accounting)
James Brown, Mendoza College of Business (Marketing)
Co-Organizer of "Climate Change and the Common Good: Security, Sustainability, and Policy"
April 8-10, 2013, Notre Dame

Significant Initiatives as Physics Department Chair

1. Tripled the number of Physics majors (from an avg. of 11 to 32)
2. Increased the number of graduate students by 25%
3. Launched PR magazine to publicize faculty/research of Physics Department at Notre Dame (**Interactions**)
4. Open Doors of the Physics Department (events every month to publicize physics on and off-campus in the Michiana Area)
5. Garnered funds to renovate the physics building
6. Garnered funds to build common meeting areas in the department to enhance collaboration/communication

Dissertations

Ph.D.

Clark Casarella, Ph.D. (March, 2017) May 2017 Graduation
"Lifetime Measurements and the Feasibility of Vibrational Phonon Configurations in Deformed Rare Earth Nuclei"

Mallory Smith, Ph.D. (July, 2016) May 2017 Graduation
"Chasing Triaxiality: Probing Nuclear Structure near A=110"

Armen Gyurjinyan, Ph. D. (June, 2016)
Nuclear Science Laboratory at Notre Dame Jointly with Alikhayan National Science Laboratory
"Studying atomic nuclei based on symmetry and cluster models"

Anthony Battaglia, Ph.D. **(May 2015)**
"Conversion coefficient measurements of ^{176}Lu using iceball"

Brian Bucher, Ph.D. **(May 2014)**
"On the production of the light heavy elements"

Sergio Almaraz-Calderon, Ph.D. (Sept. 2011: Graduated **May 2012)**
"Study of Resonance Reactions in light nuclei for nuclear astrophysics"

Mathew Quinn, Ph.D. (**May 2010**)
"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 **Outstanding Dissertation Award** entitled "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 ^{7}He"

Shelly Lesher, 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 1995.

Xiang Wu, Ph. D. (**January 14, 1994**)
"Investigations of Multi-phonon Vibrational States in Deformed Nuclei"

M.S.

Nancy Paul, M.S. (December 2014)
"Trapping Radionuclides for the r-process"

Adam Cummins, M.S. (ESTEEM, 2010)
"A new medical diagnostic tool"

Samuel Brett, M.S., University of Surrey, UK (2010)
"Sensitivity Studies of nuclear masses for the r-process"

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

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

B.S.

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

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

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

Nancy Paul, **Physics Honors Thesis** (May 2012)

Michael Robbe, Physics Honors Thesis (May 2014)

"Theoretical Assessment of the Viability of Implementing Cyclotrons in Large-Scale Production of ^{99m}Tc".

Patrick Fasano, Physics Honors Thesis (May 2016)

"Nuclear Lifetime Measurements with the Notre Dame Plunger and Low Cost Electronics"

Current Graduate Students

Stefania Dede

Bryce Frentz

Kevin Lee

Ashabari Majumdar

Kevin Siegl

Sabrina Strauss

Current Undergraduate Students

Leah Clark

Christina Dulal

Diego Garcia

Martin Meier

William S. Porter

Anne Stratman (Luce Scholar)

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

Dr. Andreas Woehr (6/03-8/06), University of Saarlandes Hosp., Head of Radiation Safety (Germany)

Dr. Scott Marley (9/2012-8/2015)

Dr. Matthew Mumpower (9/2012 -8/2015)

Research and Visiting Faculty Supervised

Dr. Henryk Mach (2012)

Dr. Rebecca Surman (2011, 2012)

Dr. Shelly Lesher (2010, 2011)

Dr. Wanpeng 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 92-93)

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

Undergraduate Research-Academic Year

92 Robert Winarski
Jose Maria Castro Ceron
93 Ken O'Hara
94 Nathan Cuka
Alejandro Gadala-Maria
95 Nathan Cuka
Alejando Gadala-Maria
Eric Snyder
Anna Susalla
Shelly Lesher
96 Shelly Lesher
Anna Susalla
Arthur Cunningham
Eva Rzepniewski
97 Arthur Cunningham
Anna Susalla
Shelly Lesher
98 Anna Susalla
Shelly Lesher
99 Anna Susalla
Shelly Lesher
00 Mathew Quinn
01 William Lahnemann
02 Dominic Antonelli
Eric Chitambre
03 Shelece Easterday
Paul Strycker
Daniel Wasikowski
Graham Konecki
Krystie Traudt
05 Krystie Traudt
Jonathan Poelhuis

08 Nancy Paul
Anamaria Baluyut
Andrew J. McGauley
Fred Jung

09 Nancy Paul
Fred Jung

10 Kailin Lou
Fred Jung
Nancy Paul
Nicholas Anderson
Holden Lombard

11 Nancy Paul
Fred Jung
Holden Lombard
Julie Cass
Giusseppe Passucci
Kailin Lou
Sean Pennino

12 Julie Cass
Mike Harrison
Sean Howard
Holden Lombard
Giusseppe Passucci
Nancy Paul
Michael Robbe
Daniel Winnike

13 Holden Lombard
Patrick Fasano
Michael Robbe
Zhelun Li
Kaykay Nyong Essien (Hesburgh Yusko Scholar)
Trenton Kuta
Tim khouw

14 Patrick Fasano
Michael Robbe
Trenton Kuta
Timothy Khouw
Kevin Lee
Trevor Sprouse

15 Andre Bermudez Perez – ND Electrical Engineering
Patrick Fasano – ND Physics
Benjamin Guerin – ND Physics
Timothy Khouw – ND Physics
Trenton Kuta – ND Physics
Kevin Lee – ND Physics
Ethan Sauer – ND Physics
Trevor Sprouse – ND Physics

16 Anne Stratman – ND Physics
Patrick Fasano – ND Physics
Benjamin Guerin – ND Physics
Trenton Kuta – ND Physics & Electrical Engineering
Kevin Lee – ND Physics
Sam Porter – ND Physics

Mark Radell – ND Physics
Ethan Sauer – ND Physics

17 Anne Stratman –ND Physics
William S. Porter – ND Physics
Mark Radell – ND Physics
Ethan Sauer – Research Assistant
Kevin Lee- Research Assistant

18 Anne Stratman –ND Physics
William S. Porter – ND Physics
Christina Dulal – ND Physics
Diego Garcia – ND Physics

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 Lesher
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

09 Raul Chavarria – FIU
Nancy Paul – ND
Fred Jung – ND

10 Nick Anderson – ND
Fred Jung – ND
Nancy Paul – ND
Patrick Copp – U Wisc. LaCrosse
Xao Lor – U Wisc. LaCrosse

11 Andrew Arend – U Wisc. LaCrosse
Nancy Paul – ND

12 Michael Robbe – ND
Daniel Winnike – ND

13 Bryce Frentz – Concordia College
Zachary Tully – U Wisc. LaCrosse

14 Patrick Fasano – ND
Timothy Khouw – ND
Trevor Sprouse – ND
Kevin Lee – ND
Luis Abrego - UNAM
Andre Bermudez Perez – ND Elect. Engineering
Trenton Kuta – ND Elect. Engineering
Marcus Lowe – U Wisc LaCrosse

15 Patrick Fasano (Hichwa summer fellowship)

Benjamin Guerin (private funds: Aprahamian)
Trenton Kuta (private funds: Aprahamian)
Kevin Lee (COS)
Ethan Sauer (COS)
Trevor Sprouse (COS)

16 Carter Hughes (U of Wisconsin- LaCrosse)
William Samuel Porter (ND- Physics)
Mark Raddell (ND-Physics)

17 Anne Stratman (ND- Physics)
William S. Porter (ND-Physics)
Mark Raddell (ND – Physics)

18 Anne Stratman (ND-Physics)
William S. Porter (ND-Physics)
Diego Garcia (ND-Physics)
Christina DuLal (ND-Physics)
Leah Clark (REU: U of Wisconsin-LaCrosse)
Martin Meijer (REU: U of Wisconsin-LaCrosse)

19 Jack Enright (Ireland)
Zariff Rahman (U of Wisconsin LaCrosse)
Lexanne (Lexie) Weghorn (U of Wisconsin LaCrosse)
Jacob Galden (ND- Chemical Engineering)
Martin Meier (U of Wisconsin LaCrosse)

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

October 30, 96	"Scientist, warriors, and sexual language"
February 5, 97	"Molding of a scientist"
October 17, 97	Philosophy 232, "Women: Alternative Philosophical Perspectives"
October 17, 97	Philosophy 354, "Gender and Science: What Kind of Enterprise Is Science?"
October 12, 98	Philosophy 232, "Women in Science"
October 8, 01	Philosophy 232, "A Woman Scientist in Charge" APS Panel

Other lectures or panels

April 27, 2018	Women in Science Panel hosted by Development and College of Science
March 20, 2018	ND ENERGY panel for Graduate Students, Notre Dame, IN
Feb. 2, 2010	"Culture and Diversity in the Classroom", Kaneb Center Workshop for International TAs
Aug. 18, 2010	"International Perspective on being a TA", Kaneb Center Orientation for International Students
Oct. 10, 2002	"Being a Woman Nuclear Scientist: Option after a Ph.D." DNP Meeting, East Lansing, MI

Summer Schools in Nuclear Science

Pan-American Advanced Studies Institute on Rare Isotopes, Joao Pessoa, Brazil, August 1-13, 2010

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

American Chemical Society summer school on Nuclear Chemistry
Brookhaven National Laboratories, Upton, NY, June 26, 2003

Lecture 1: "Stardust: We are all made of Stardust"
Lecture 2: "Why our sun takes billions of years to burn up instead of minutes"

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

Student Life at Notre Dame

November 3, 2003	"Women professionals: How to Balance Life, Work, Family," McGlinn Hall
September 17, 2003	Participant in the "Irish Inquisition" sponsored by ND Student Government

December 2, 2004	Discernment Dinner for Walsh and Dillon Halls
August 2005-May 2006	Residential Scholar to St. Edwards' Hall
June 27, 2006	"How I became a nuclear physicist," lunch talk to Sensing Our World program of middle school children. Sponsored by JINA and the College of Science at the University of Notre Dame.
July 17, 2006	"Life of a scientist," talk, Balfour Scholars Program, University of Notre Dame
April 4, 2007	"What does the light from stars tell us?" Collegium Common Room Lecture
2008 - 2010	Residential Scholar Program, Fellow of Collegium Common Room
September 16, 2009	"Research: Who pays for it, How?" ND Physics Junior Seminar
February 7, 2011	"How to choose a career", discernment dinner (Fisher-Pangborn)
April 19, 2011	"Science Play" open questions in Nuclear Science and Society, Prof. Phillips class
September 26, 2012	"The Future of Energy and Energy Technologies" Center for Social Concerns Energy Policy group
September 29, 2012	"Scientific Leadership" Jordan Hall of Science – Leadership Class by Dean Crawford
October 3, 2012	"What is nuclear physics all about" Junior Physics Majors
January 27, 2013	Urban Plunge Discussion –Center for Social Concerns
Feb. 20, 2013	"How to talk to different communities" Career Development seminar for graduate students, ND
July 27, 2013	"Journey across continents and disciplines: The Origin of the Heavy Elements", pre-college Leadership Seminar, ND.
November 7, 2013	"At the heart of Matter", Nuclear Physics decadal study and where the Nuclear Science Laboratory at Notre Dame fits in.
March 28, 2014	Discernment evening with Freshman at home.
April 10, 2014	Scientia conversations, Nuclear Science and Society.

Outreach and Education (High School)

2010 In order to encourage students to enter college into STEM disciplines, I have taken the initiative to adopt a local high school starting at 9th grade level with annual meetings.

Washington High School in South Bend, IN

2011 Washington High School Astronomy Students at ND, January 27

2011 **Washington High School, Expand Your Horizons at Notre Dame, Career Day for Girls, April 30**

2013 **Science Alive networking with educators/exhibitors, February 1**

Siemens Science Competition invited lecture, November

2014 **Davis-Bahcall Scholars Lecture on Underground Science, Lead, SD, June 20**

Physics of Atomic Nuclei Lectures, June 25

"Popular" Press

1. **Livestream: JINA-CEE LIGO VIRGO talks and Panelist Discussion:** Dec. 1, https://www.youtube.com/watch?v=CxxmaLx-4e0, December 1, 2017.

2. "Nuclear Scientist and World Citizen?" Chapter in an on-line book entitled "Blazing the Trail: Essays by leading women in Science" on the lives and experiences of Women in Physics in the USA, Aprahamian chapter "**Physicist as a Cosmopolitan Citizen**", 2013.

3. **Forum on International Physics, March 2011 Newsletter**: Physics in the Republic of Armenia", A. Aprahamian.

4. **Physics and Society: "Isotopes for the Nation's Future"**, D. Geesaman and A. Aprahamian, April 2010. (Vol. 39, No. 2)

5. **Nature Physics:** "Nuclear physics: Long live isomer research," A. Aprahamian and Y. Sun, Nature Physics 1, news & views, 81-82 (2005).

6. **Physics Today:** "Beating the odds: How we increased our female component at ND," to be submitted (2005).

7. Physics at University of Notre Dame: History and Introduction **(Physics Department Brochure (2005)**.

8. **Interactions I and II:** Journal of Physics Fall 2004 and Fall 2005.

9. **Nuclear Physics News International:** "Women in Physics," Vol. 13, No. 3 (2003).

10. **Physics World:** "Nuclear Astrophysics: a new era," Physics World, 33 (2002).

11. **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, MI, May 28-30, 1984.

2. "The Neutron-Rich Cadmium Isotopes," **invited talk**, ACS Symposium on Nuclei Off the Line of Stability, Chicago, IL, 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, LA, 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, GA, 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, CA, 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, IL, 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, September 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, September 28, 1993.

33. "Vibrational Degrees of Freedom in Nuclei," **seminar**, Nuclear Research Center, Studsvik, Sweden, October 5, 1993.

34. "Two-Phonon Vibrational Bands in the Deformed Rare-Earth Region of Nuclei," **seminar**, Theoretical Physics Institute, University of Lund, Lund, Sweden, October 8, 1993.

35. "Vibrational Multi-Phonon Excitations and Identical Bands," **seminar**, Nuclear Physics Institute, University of Köln, Köln, Germany, October 19, 1993.

36. "Vibrational Degrees of Freedom in Deformed Nuclei," **seminar**, Rutgers University Department of Physics and Astronomy, NJ, 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, IN, 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, MI, November 13, 1996.

51. "Vibrational Excitation in Nuclei: A Status Report," **seminar**, Rutgers University, Piscataway, NJ, February 25, 1997.

52. "Nucleosynthesis in Explosive Scenarios via the rp-process," **colloquium**, Rutgers University, Piscataway, NJ, 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, NM, June 23, 1997.

57. "rp-process nucleosynthesis and RIBs," **invited talk**, at the Workshop on the Science for an Advanced ISOL facility, Columbus, OH, July 31, 1997.

58. "Vibrational Dynamics in Nuclei," **seminar**, Ohio University, Athens, OH, 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, MA, 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**, 10^{th} 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, CA, March 26-31, 2000.

76. "Exploding Stars and the Structure of N=Z nuclei, **seminar**, University of Kentucky, Lexington, KY, April 13, 2000.

77. "The Nature of $K=0^+$ Excitations in Deformed Nuclei," **invited talk**, 19^{th} 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, MI, 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, FL, February 15, 2001.

83. "Nuclear Masses and Nucleosynthesis," **seminar**, Michigan State University, East Lansing, MI, 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, CA, 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, CA, August 22, 2001.

88. "Nuclear Masses and Nucleosynthesis," **seminar**, National Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, MI, 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, WY, 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, MA, 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, DC, May 12, 2003.

93. "Stardust: We are all made of stardust," **invited talk**, ACS Summer School in Nuclear Science, Brookhaven National Laboratory, Upton, NY, 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, NY, 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, MI, 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, IL, 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. Lesher, 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, January 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, NC, November 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, CA, February 17, 2006.

112. "JINA at Notre Dame," **invited talk**, 22nd Winter Workshop on Nuclear Dynamics, La Jolla, CA, 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, GA, March 26-30, 2006.

114. "Nuclear Physics in Action: Following the Light in the Universe," **colloquium**, Western Kentucky University, Bowling Green, KY, April 3, 2006.

115. "How we did it at Notre Dame," **invited talk**, 49th Annual Conference of Science Editors held in Tampa, FL. 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, MI, August 11-15, 2007.

120. "Nuclear Structure Aspects in Nuclear Astrophysics," **seminar**, Physics Department, University of Maryland, College Park, MD, 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, FL, November 16, 2007.

122. "Physics of the Universe: From Dark Energy to the Origin of Life", **special 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, September 18, 2008.

126. "Rotations and Vibrations", **invited talk**, symposium in honor of Joe Hamilton's 50 years of Teaching and Research, Vanderbilt University, October 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.

130. "In a Universe not so far away…", **colloquium**, Catholic University of America, Washington, DC, March 31, 2010.

131. "The Origin of the Heavy Elements", **colloquium**, Rutgers University, Piscataway, NJ, April 28, 2010.

132. "Isotopes for the Nation's Future", **seminar**, Rutgers University, Piscataway NJ, April 28, 2010.

133. "The origin of the heavy elements: What does Nuclear Physics have to do with it?", **invited speaker**, Pan American Advanced Student Institute on Rare Isotopes, Joao Pessoa, Brazil, August 9, 2010.

134. "Isotopes: What is the fuss all about?", **seminar**, University of Notre Dame Nuclear Science Laboratory, August 30, 2010.

135. "The Most Compelling Research Isotopes", **invited talk**, Workshop on Harvesting Isotopes at FRIB, Santa Fe, NM, September 29-October 1, 2010.

136. "Isotope Production Policies", **invited talk**, Radiological Technologies University VT, South Bend, IN, November 17, 2010.

137. "r-process nucleosynthesis and nuclear masses**", invited talk**, XXIV Symposium on Nuclear Physics, Cocoyoc, Morelos, Mexico, January 5, 2011.

138. "Sensitivity of the r-process", **invited talk**, r-process workshop, Russbach, Austria, March 12-19, 2011.

139. "Women of Nuclear Chemistry and Exotic Beams" **invited talk**, Francis P. Garvin-John M. Olin Symposium in Honor of Sherry Yennello, March 28, 2011.

140. "The Elements Beyond Iron and what Nuclear Physics has to say", **colloquium,** Worcester State College, Worcester, MA, April 4, 2011.

141. "The frontiers and applications of Nuclear Science, what it could mean for Armenia", **invited talk,** National Science Academy of Republic of Armenia, April 15, 2011.

142. "Setting Priorities and Articulating Grand Scientific Challenges in Nuclear Science", **invited talk**, NIF workshop, Washington, DC, May 11, 2011.

143. "Evolution of nuclear structure and its impact on masses for the p-process", **invited talk**, Istanbul, Turkey P-process workshop, May 25, 2011.

144. "Nuclear Physics at the Frontiers", **invited talk**, 45th Anniversary of Brazilian Physical Society, Foz de Iguazu, Brazil, June 8, 2011.

145. "NP2010: Decadal Review of Nuclear Physics for the National Science Academies", Super-User meeting, August 18, 2011, NSCL, East Lansing, MI.

146. "r-process Mass Sensitivities", **invited talk**, CGS-14, Guelph, Ontario Canada, August 29, 2011.

147. "Sensitivity of the r-process to masses", seminar, Physics Division, Argonne National Laboratory, Argonne, IL, November 7, 2011.

148. "Mass sensitivities of the r-process", seminar, Physics Department, University of Surrey, Guildford, UK, January 12, 2012.

149. "Sensitivities of the r-process to nuclear structure", **invited talk**, IOP Nuclear Physics Conference, University of Brighton, Brighton, UK, April 2-4, 2012.

150. "Nuclear Structure and the r-process: Experiment and Theory", **invited talk**, **Beauty in Physics: Theory and Experiment**, Conference in honor of Franco Iachello on the occasion of his 70th Birthday, Cocoyoc, Mexico, May 14-18. 2012.

151. "Origins of the Heavy Elements", **invited talk**, CEU, Division of Nuclear Physics Meeting, Newport Beach, CA, October 29, 2012.

152. "Extreme Matter and the Origin of the Heavy Elements", **invited talk,** EMMI Physics Days, GSI Frankfurt, Germany, November 14, 2012.

153. "The heaviest elements in the universe…where did they come from?" **colloquium**, Illinois State University, Noble, IL, February 5, 2013.

154. "Nuclear Structure and Mass Sensitivities for the r-process", **invited talk**, Nuclear Data 2013, NY, NY, March 7, 2013.

155. "Origin(s) of the Heavy Elements", **colloquium**, Thomas Jefferson National Laboratory, Newport News, VA, March 13, 2013.

156. "Where are the heavy elements made in the Universe?", **seminar**, Department of Physics, University of Wisconsin, LaCrosse, WI, April 3, 2013.

157. "r-process mass sensitivities and the F-spin toy mass model in nucleosynthesis" **invited talk**, Heraeus-Seminar on 'Nuclear Masses and Nucleosynthesis' at the Physikzentrum Bad Honnef/Germany, April 23-26, 2013.

158. "Journey across continents and disciplines: the origin of the heavy elements", **invited talk,** Notre Dame Leadership Seminar, 101 Jordan Hall of Science, July 27, 2013.

159. "The heavy elements in the Cosmos", **colloquium,** Manchester College, Manchester, IN, November 4, 2013.

160. "Our Story: Past, Present, Future and where does Nuclear Physics at Notre Dame step in?", **keynote** speaker, Siemens Math, Science, & Technology Competition (Final round of regional competitions), Jordan Hall of Science, Notre Dame, IN, November 9, 2013.

161. "Sensitivities of the r-process: nuclear masses, beta decay rates, and neutron capture rates", invited talk, XXXVIIth symposium on Nuclear Physics, Cocoyoc, Mexico, January 6-9, 2014.

162. "Isotopes for health, wealth, and stealth", **seminar**, RTUVT, South Bend, IN, March 21, 2014.

163. "Nuclear Science and Society", Scientia conversations, Jordan Hall of Science, April 10, 2014.

164. "Sensitivity studies for the main r-process: nuclear masses, beta decay rates, neutron capture rates in three astrophysical scenarios", **invited talk**, Workshop in Nuclear Astrophysics, Institute of Advanced Studies, University of Sao Paolo, Sao Paolo, Brazil, April 14-16, 2014.

165. "Nuclei, the r-process, and Constraints", **invited talk**, Nuclear Symmetries and Stewardship Science, Lawrence Berkeley National Laboratory, Berkeley, CA, May 1-2, 2014.

166. "Pros/Cons of Underground science in the USA at SURF and in Italy at Gran Sasso", **invited talk**, Davis-Bahcall scholars, Lead, South Dakota, June 20, 2014.

167. "Following the light in the Universe", **invited talk**, Physics of Atomic Nuclei lecture, Jordan Hall, Notre Dame, June 25, 2014.

168. "Setting Constraints on the r-process?", **invited talk,** A. Aprahamian, International NUBA conference on Nuclear Physics and Nuclear Astrophysics, Antalya, Turkey, September 15-21, 2014.

169. "The Frontiers of Nuclear Physics in the 21st Century" **invited talk**, A. Aprahamian, Workshop on Thunderstorms and Elementary Particle Acceleration (TEPA-2014), Byuragan, Armenia, September 22-26, 2014.

170. "Interfaces of Nuclear Astrophysics with Fundamental Symmetries", **invited talk**, Fundamental Symmetries Town meeting, Chicago, IL, September 23, 2014.

171. "Nuclear Science, Exploring the heart of matter, serving society, and educating the next generation of innovators", **keynote speaker** at SigmaPiSigma event, Central Michigan University, April 9, 2015.

172. "Where is the site of the r-process", **invited talk**, Nucleus-Nucleus 2015, University of Catania, Catania, Italy, June 21-26, 2015.

173. "Can we use nuclear structure to constrain the sites of the r-process?", **invited talk**, Reflections on the Atomic Nucleus, University of Liverpool, Liverpool, UK, July 28-30, 2015.

175. "Stellar explosive Nucleosynthesis: interesting measurements that could be done at SPES", **invited talk**, SPES Nuclear Astrophysics Workshop, Reggia di Caserta, Caserta, Italy, November 13, 2015.

176. "FRIB: The Facility for Rare Isotope Beams and the R-process", **invited talk**, SPES Nuclear Astrophysics Workshop, Reggia di Caserta, Caserta, Italy, November 14, 2015.

178. "Nuclear Science: Exploring the heart of matter, serving society, educating the next generation of innovators", **invited talk**, Honolulu, Hawaii, ACS meeting of U.S. and Japan, Pacifichem, December 15-20, 2015

179. " Individual nuclear properties and their impact on r-process nucleosynthesis", invited talk, Workshop on Nuclear Astrophysics, Russbach, Austria (March 6-12, 2016)

180. "The origin(s) of the heavy elements in the universe and what Nuclear Physics has to say about it", **colloquium**, Old Dominion University, Norfolk, VA, March 29, 2016.

181. "Connecting FRIB to the Cosmos: Measurements of Nuclear Input Parameters for the r-process", **invited talk**, r-process workshop duration May 30-June 17, East Lansing, MI. I attended June 1-7, 2016.

182. "Neutrons and the Origin of the Heavy Elements", **invited talk**, "Program for the Neutron Nuclear Data Directions Into the Next Half Century", August 5, 2016, Santa Fe, New Mexico.

182. "The Nature of 0^+ states in Deformed Nuclei", **invited talk**, International Nuclear Physics Conference 2016, September 11-16, 2016, Adelaide, Australia.

183. " Vibrations or Coexisting Shapes? 0+ states in Deformed Nuclei", **invited talk,** Heavy Ion Accelerator Symposium 2016, Sept. 18-20, 2016, Australian National University, Canberra, Australia.

184. "Nuclei in the Cosmos: Experiments on Earth", **colloquium**, Sept. 30, 2016, University of Wisconsin, Madison, WI.

185. "The life and death of stars: Nuclei in the Cosmos", **invited plenary talk**, International Conference on Fission and Properties of Neutron Rich Nuclei, Nov. 6-12, 2016, Sanibel, Florida.

186. "Nuclei as messengers of the Cosmos" **colloquium**, Nov. 28, 2016, North Carolina State University, Raleigh, NC.

187. "The evolution of Stars and the Synthesis of the Heavy Elements**", colloquium**, University of Jyvaskyla, Finland, January 13, 2017.

188. " Nuclear Physics in the Cosmos: Experiments on Earth", **Arbeitstreffen Kernphysik**, Schleching, Germany, March 9, 2017.

189. " Nature of 0+ states in Deformed Nuclei", **invited talk**, International Conference on Advances in Radioactive Isotope Science (ARIS), Keystone, Colorado, May 30, 2017.

190. " Stellar Helium Burning", **invited talk** in place of Michael Wiescher, Gordon Conference on Nuclear Chemistry, Colby-Sawyer College, New London, NH, June 21, 2017.

191. "Low Lying Oscillations of Deformed Nuclei", **invited talk**, International Conference on Capture Gamma Ray Spectroscopy and Related Topics, Shanghai, China, Sept. 18-22, 2017.

192. "Nature of 0+ Excitations in Nuclei", **invited talk**, International Workshop on "Shapes and Dynamics of Atomic Nuclei: Contemporary Aspects, Sofia, Bulgaria, Oct 5-7 2017.

193. " Fundamental Oscillations of Deformed Nuclei", **invited plenary talk**, LASNPA-WONP-NURT, 2017, Meeting of South American Physical Society, Havana, Cuba, Oct. 20-28, 2017.

194. " Nuclei in the Cosmos: Gravitational waves and their implications to Nuclear Physics", **invited talk**, Pan Armenian Scientific Forum, Yerevan, Armenia, Nov. 6-8, 2017.

195. "Nuclear Physics and the r-process", **invited talk**, **Symposium on 50 years of Beam-Exploring the Nuclear Frontier**, College Station, TX, Nov. 15-17, 2017.

196. "livestream JINA-CEE, LIGO, VIRGO Discussion on-line" , Dec. 1, 2017
https://www.youtube.com/watch?v=CxxmaLx-4e0

197. "Is the nucleus a normal quantum mechanical system?" **colloquium**, Physics Department, University of Guelph, Guelph, Canada, January 30, 2018.

198. "The r-process, gravitational waves, and nuclear physics" **colloquium**, Joint Institute of Nuclear Reactions, Dubna (Moscow Region), Russia, Feb. 9, 2018.

199. "Gravitational waves: What is the implication to Nuclear Physics and the University of Notre Dame Nuclear Science Laboratory", **Colloquium and Undergraduate Research Symposium**, James Madison University, Harrisonburg, VA, March 23, 2018.

200. "Origin of the Heavy Elements: Are gravitational waves from neutron star mergers the answer?", **Hagopian family endowed colloquium**, Florida State University, Tallahassee, FL, April 20, 2018.

201. "Sensitivities and Measurements", JINA-CEE International Advisory Committee presentation, Michigan State University, East Lansing, MI, May 8, 2028.

202. "The Heavy Elements: Were they all made in neutron star mergers?" **colloquium**, Duke University, Durham, NC, May 16, 2018.

203. " The Science Assessment for an Electron Ion Collider", invited talk, JLAB Users Meeting, JLAB, Newport News, VA, June 18, 2018.

204. " Crucial experiments for a better understanding of the r-process", **invited talk**, ARIEL days, TRIUMF, Vancouver, Canada, July 18, 2018.

205. " The National Ignition Facility and the Origin of the Heavy Elements", **invited talk**, LLNL workshop on Nuclear Processes in Dense Plasmas, Livermore, CA, July 30, 2018.

206. "The role of nuclear physics experiments in the Era of Neutron Star Merger observations", invited talk, Workshop on r-process in the Era of Merger observations, 5th joint meeting of the Divisions of Nuclear Physics of the American Physical Society and the Japanese Physical Society, Hawaii, October 23, 2018.

207. " The Electron Ion Collider: NRC consensus report on the science of the EIC", invited talk, DNP business meeting, October 27, 2018.

208. " Science, Technology, and Education in Armenia", invited talk, sponsored by MIT Armenian Society, National Association for Armenian Studies and Research, and Calouste Gulbenkian Foundation Series on Contemporary Armenian Issues, MIT, Boston, MA, Nov 6, 2018.

209. "Colliding Neutron Stars: The Origin of Gold?", joint Physics and Nuclear Engineering **colloquium,** MIT, Boston, MA, Nov. 7, 2018.

210. "Nuclear Physics and Colliding Neutron Stars: The origin of gold in the universe?", EMMI Science Day Featured GSI **Colloquium**, Darmstadt, Germany, Nov 20, 2018.

211. "Nuclear Energy: Role of Nuclear Physics Experiments", Notre Dame Energy Center Luncheon, Notre Dame, IN, Nov. 29, 2018.

212. "What is the Role of Nuclear Physics Experiments?", Invited talk, 16th annual Russbach School on Nuclear Astrophysics, Russbach, Austria, March 15, 2019

214. "Nuclear Physics Experiments and the Neutron Star Merger", invited talk, workshop on r-process sources in the universe, Arizona State University, Tempe, Arizona, March 31, 2019.

215. Appearance as sole guest on TV show dedicated to special personalities in Armenia, Half Past Midnight, May 10, 2019.

216. "Alikhanyan Back to the Roots: Neural Networks and Machine Learning", invited talk, workshop on "A Life Scientific: Science, Teaching, Management" in honor of 70th birthday of Prof. Ashot Chilingaryan, Nor Amberd, Armenia, May 17-18, 2019.

217. "Superheavies and the r-process", invited talk, International Symposium on the Present and Future of the Periodic Table of Elements, Dubna Joint Institute of Nuclear Research, Russia, May 31, 2019.

218. "High Precision Mass Measurements and the Neutron Star Merger", invited seminar, University of Vienna, Austria, June 6, 2019.

219. Keynote speaker at graduate commencement of American University of Armenia, Yerevan, Armenia, June 8, 2019.

220. "The Evolution of Stars, Science and Nuclear Medicine", invited plenary talk, International Conference on Nuclear and Radiation Physics of Materials, Yerevan, Armenia, June 17, 2019.

221. "Armenia Stepping into the Future: The Cyclone-18 and more", invited Seminar, Physics Department, Yerevan State University, Yerevan, Armenia, June 20, 2019.

222. "The origin of gold in the universe and the neutron star merger", invited talk, International School on Optics and Photonics, Russian-Armenian University, Yerevan, Armenia, July 1-7, 2019.

223. "Explosive Scenarios in Astrophysics: Observations, Models, and Nuclear Physics", invited plenary talk at the International Nuclear Physics Conference, Glasgow, Scotland, July 29-August 2, 2019.

224. "ARUNA: Nuclear Physics at University Laboratories, new developments and future perspectives", Invited talk, Low Energy Community Meeting, Duke University, Durham, NC, August 8-9, 2019.

Reviewed Publications in Journals

1. "Q Values for Neutron-Ricch 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 □-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).

5. "Identification and Decay of ^{124}Ag," J.C. Hill, F.K. Wohn, Z. Berant, R.L. Gill, R.E. Chrien, C. Chung, and A. Aprahamian, Phys. Rev. **C29**, 1078 (1984).

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 □-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^+_1 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^+_1, 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}Bi (t, 2n) 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).

14. "0^- □ 0^+ Beta Decays of ^{96}Y and the Collectivity of the 0^+_2 State in the Doubly Closed Subshell Nucleus, ^{96}Zr," H. Mach, G. Molnar, S.W. Yates, R.L. Gill, A. Aprahamian, and R.A. Meyer, Phys. Rev. **C37**, 254 (1988).

15. "Nuclear Structure of ^{200}Pt from In-Beam Conversion Electron and □-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. Stoefl, and G.L. Struble, Phys. Lett. **B221**, 6 (1989).

17. "Picosecond Lifetime Measurements in ^{116,118,120}Cd and the Structure of Normal and Intruder States," H. Mach, M. Moszynski, R.F. Casten, R.L. Gill, D.S. Brenner, J.A. Winger, W. Krips, C. Wesselborg, M. Büscher, F.K. Wohn, A. Aprahamian, D. Alburger, A. Gelberg, and A. Piotrowski, Phys. Rev. Lett. **63**, 143 (1989).

18. "Decay of the $21/2^-$ Isomer in ^{211}Bi and structure of the $\nu g^2_{9/2}\pi h_{9/2}$ Levels," K.H. Maier, A. Aprahamian, J.A. Becker, D.J. Decman, E.A. Henry, R.G. Lanier, L.G. Mann, R.A. Meyer, N. Roy, W. Stoeffl, and G. Struble, Z. Phys. **A332**, 263 (1989).

19. "Evidence for the existence of two-phonon collective excitations in deformed nuclei," H.G. Börner, J. Jolie, S.J. Robinson, B. Krusche, R. Piepenbring, R.F. Casten, A. Aprahamian and J.P. Draayer, Phys. Rev. Lett. **66**, 691 (1991).

20. "E1 transition in ^{168}Er," A. Aprahamian, Phys. Rev. **C64**, 2093 (1992).

21. "The enigma of ^{114}Cd. A classical case of ambiguities in quantum mechanical state mixing," R.F. Casten, J. Jolie, H.G. Börner, D.S. Brenner, N.V. Zamfir, W.-T. Chou, and A. Aprahamian, Phys. Lett. **B297**, 19 (1992).

22. "Vibrations in Deformed Nuclei," A. Aprahamian, X. Wu, S.M. Fischer, W. Reviol, and J.X. Saladin, Inst. Phys. Conf. Ser. **No. 132**:Section 5, 585 (1993).

23. "Spectroscopy of ^{96,97,98}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).

24. "Vibrational Degrees of Freedom in Deformed Nuclei," A. Aprahamian, X. Wu, S.M. Fischer, W. Reviol, and J.X. Saladin, Revista Mexicana Fisica **39**, Suplemento 2, 1 (1993).

25. "Identical Bands and Multi-phonon Vibrations," X. Wu, A. Aprahamian, J. Castro-Ceron, and C. Baktash, Phys. Lett. **B316**, 235 (1993).

26. "Multiphonon Vibrational States in Deformed Nuclei," X. Wu, A. Aprahamian, S.M. Fischer, W. Reviol. G. Liu, and J.X. Saladin, Phys. Rev. **C49**, 1837 (1994).

27. "The STAR Experiment at the Relativistic Heavy Ion Collider," J.W. Harris et al., the STAR Collaboration, A. Aprahamian, N.N. Biswas and U. Garg, Nucl. Phys. **A566**, 277c (1994).

28. "Exotic Beams and Nuclear Structure in the A=80 Region of Nuclei," A. Aprahamian, A. Gadala-Maria, N. Cuka, Revista Mexicana **42**, 1 (1996).

29. "New High Spin States and Band Termination in ^{83}Y and ^{84}Zr," T.D. Johnson, A. Aprahamian, C.J. Lister, D.J. Blumenthal, B. Crowell, P. Chowdury, P. Fallon, A.O. Machiavelli, Phys. Rev. **C55**, 1108 (1997).

30. "High-Spin States in ^{76}Br," D.F. Winchell, L. Wehner, J.X. Saladin, M.S. Kaplan, E. Landulfo, and A. Aprahamian, Phys. Rev. **C55**, 111-119 (1997).

31. "Study of excited states in ^{208}Pb by particle-gamma coincidences with the ^{207}Pb(*d,p*)^{208}Pb and ^{209}Bi(*t,alpha*)^{208}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).

32. "The endpoint of the rp-process," H. Schatz, A. Aprahamian, J. Görres, M. Wiescher, F.K. Thielemann, T. Rauscher, J.F. Rembges, K.L. Kratz, B. Pfeiffer, P. Möller, H. Herndl, B.A. Brown, H. Rebel, Nucl. Phys. **A621**, 417c (1997).

33. "The Astrophysical rp-process and Nuclear Structure in the A=80 Region of Nuclides," **A. Aprahamian**, Proceedings of the 9th International Conference on Capture Gamma-Ray Spectroscopy and Related Topics, Springer, p. 535 (1997).

34. "Delayed $g^2_{9/2}$ alignment in the N=Z nucleus ^{72}Kr," G. De Angelis, C. Fahlander, A. Gadea, W. Gelletly, A. Aprahamian, D. Bazzacco, F. Becher, P.G. Bizzeti, A. Bizzeti-Sona, F. Brandolini, D. de Acu$\tilde{n}$a, M. De Poli, J. Eberth, D. Foltescu, S. Lenzi, S. Lunardi, T. Martinez, D.R. Napoli, P. Pavan, C.M. Petrache, C. Rossi Alvarez, D. Rudolph, B. Rubio, W. Satula, S. Skoda, P. Spolaore, G. Thomas, C. Ur, and R. Wyss, Phys. Lett. **B415**, 217 (1997).

35. "Band crossing phenomena in N = Z nuclei - A probe to T = 0 pairing correlations?", de Angelis G, Fahlander C, Gadea A, Farnea E, Gelletly W, Aprahamian A, Bazzacco D, Becker F, Bizzeti PG, Bizzeti-Sona A, Brandolini F, De Acuna D, De Poli M, Eberth J, Foltescu D, Lenzi SM, Lunardi S, Martinez T, Napoli DR, Pavan P, Petrache CM, Alvarez CR, Rudolph D, Rubio B, Skoda S, Spolaore P, Thomas G, Ur C, Weiszflog M, Wyss R, ACTA PHYSICA HUNGARICA NEW SERIES-HEAVY ION PHYSICS **6 ,** 269-273, (1997).

36. "New isomer in ^{80}Y," J. Döring, H. Schatz, A. Aprahamian, R.C. deHaan, J. Görres, M. Wiescher, W.B. Walters, J. Rikovska, L.T. Brown, C.N. Davids, C.J. Lister, D. Seweryniak, and B. Foy, Phys. Rev. **C57**, 1159 (1998).

37. "Reaction Parameters for rp-Process Calculations above Z = 32," H. Schatz, A. Aprahamian, J. Görres, M. Wiescher, F.-K. Thielemann, T. Rauscher, J.F. Rembges, B. Pfeiffer, P. Möller, K.-L. Kratz, H. Herndl, B.A. Brown, and H. Rebel, Physics Reports **294**, 167 (1998).

38. "T=0 pairing correlations and band crossing phenomena in N=Z nuclei," G. De Angelis, C. Fahlander, A. Gadea, W. Gelletly, A. Aprahamian, D. Bazzacco, F. Becher, P.G. Bizzeti, A. Bizzeti-Sona, F. Brandolini, D. de Acua, M. De Poli, J. Eberth, D. Foltescu, S. Lenzi, S. Lunardi, T. Martinez, D.R. Napoli, P. Pavan, C.M. Petrache, C. Rossi Alvarez, D. Rudolph, B. Rubio, W. Satula, S. Skoda, P. Spolaore, G. Thomas, C. Ur, and R. Wyss, Nucl. Phys. **A630**, 426-433c (1998).

39. "Lifetimes of states in the opposite-parity bands of ^{153}Eu: Recoil-distance measurements following Coulomb excitation," J.F. Smith, M.W. Simon, R.W. Ibbotson, P.A. Butler, A. Aprahamian, A.M. Bruce, D. Cline, M. Devlin, G.D. Jones, P.M. Jones, and C.Y. Wu, Phys. Rev. **C58**, 3171-3180 (1998).

40. "Recent Developments on the Star Detector System at RHIC," H. Wieman et al., the STAR Collaboration, A. Aprahamian, N.N. Biswas, and U. Garg, Nucl. Phys. **A638**, 559c-563c (1998).

41. "Radioactive decay of ^{80}Y and low-lying states in ^{80}Sr," J. Döring, A. Aprahamian, R.C. deHaan, J. Görres, H. Schatz, M. Wiescher, W.B. Walters, L.T. Brown, C.N. Davids, C.J. Lister, and D. Seweryniak, Phys. Rev. **C59**, 59-70 (1999).

42. "Collective Kπ=0$^+$ Vibrational Excitations in Nuclei," A. Aprahamian, R.C. deHaan, S.R. Lesher, J. Döring, A.M. Bruce, H.G. Börner, M. Jentschel, C. Doll, H. Lehmann, Journal of Physics G: Nucl. Part. Phys. **25**, 685-689 (1999).

43. "Low-Spin States from Decay Studies in the Mass 80 Region," J. Döring, A. Aprahamian, and M. Wiescher, J. Res. Nat. Inst. Stand. Tech. **105**, 43-52 (2000).

44. "Lifetime Measurements in ^{178}Hf," R.C. deHaan, A. Aprahamian, H.G. Börner, C. Doll, M. Jentschel, A.M. Bruce, and S.R. Lesher, J. Res. Nat. Inst. Stand. Tech. **105**, 125-133 (2000).

45. "Half-life Measurement for the rp-process Waiting Point Nuclide ^{80}Zr," J.J. Ressler, A. Piechaczek, W.B. Walters, A. Aprahamian, M. Wiescher, J.C. Batchelder, C.R. Bingham, D.S. Brenner, T.N. Ginter, C.J. Gross, R. Grzywacz, D. Kulp, B. MacDonald, W. Reviol, J. Rikovska, K. Rykaczewski, J.A. Winter, and E.F. Zganjar, Phys. Rev. Lett. **84**, 2104-2107 (2000).

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