

CURRICULUM VITAE

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EDUCATION: Ph. D. Nuclear Physics, 1988, University of Pennsylvania
Thesis: "Spin alignment and resonance behavior in the
 $^{24}\text{Mg} + ^{24}\text{Mg}$ System"
BA. , Physics 1983 University of Pennsylvania

RESEARCH INTERESTS:

Nuclear structure studies with exotic-beam nucleon transfer reactions, clustering phenomena in light nuclei, investigation of astrophysical nucleosynthesis through the interactions of exotic nuclear species, development of advanced instrumentation for nuclear physics, Relativistic heavy-ion interactions, heavy-ion reaction mechanisms.

ACADEMIC AND PROFESSIONAL EMPLOYMENT RECORD:

2014-Present, Professor, University of Connecticut
2020, Visiting Faculty, NSCL/FRIB, Michigan State University
2012, Visiting Faculty, KU Leuven, Belgium
2005-2014, Professor, Western Michigan University
2002-2005, Associate Professor, Western Michigan University
1997-2002, Physicist/Senior Physicist, Argonne National Laboratory
1992-1997, Assistant Physicist, Argonne National Laboratory
1991-1992, Enrico Fermi Fellow, Argonne National Laboratory
1989-1991, Postdoctoral Associate, Argonne National Laboratory
1988-1989, Postdoctoral Associate, University of Pennsylvania

AWARDS and HONORS:

William B. Stevens Award, May 1983, University of Pennsylvania
Phi Beta Kappa, May 1983, University of Pennsylvania
Dean's Scholar, April 1988, University of Pennsylvania
Enrico Fermi Fellowship, September 1991, Argonne National Laboratory
Argonne Performance Award, March 1999, Argonne National Laboratory
Physical Review Outstanding Referee, February 2015

Fellow, American Physical Society, September 2016

PROFESSIONAL MEMBERSHIPS:

American Physical Society, (Division of Nuclear Physics, New England
Section)
Sigma Xi

PROFESSIONAL ACTIVITIES AND SERVICES:

Divisional Associate Editor, Physical Review Letters (2020-Present)
Associate Editor, Frontiers in Physics (2023-Present)
New England Section of the American Physical Society (Vice Chair 2016, Chair 2017,
Past Chair 2018)
Co-convener on Nuclear Structure and Reactions, Long-range Plan meeting 2014
Facility for Rare Isotope Beams User Group, Executive Committee Member (2010-2014)
Co-Convener, Mini-Symposium on Experimental Advances in Transfer Reactions
APS DNP 2011
International Advisory Committee, Workshop on Direct Reactions with
Exotic Beams 2016 (DREB 2016)
International Advisory Committee, Nuclear Structure 2010
International Advisory Committee, Third International Conference on
the Frontiers in Nuclear Structure and Astrophysics (FINUSTAR3) 2010
Michigan State University National Superconducting Cyclotron
Facility Program Advisory Committee Member (2010-2015)
Vice Chair, Research Policies Council, Western Michigan University (2009-2011)
Secretary, Board Member and Western Michigan University Representative,
Central States Universities Inc., 2006-2010
Colloquium Chair, Western Michigan University Physics Department
2003-2006
ATLAS User Executive Committee
2002-2006, 2013-2016 (Chair, 2002-2005, 2013-2015)
Argonne National Laboratory ATLAS Program Advisory Committee,
2000-2005, 2013-2015
International Advisory Committee, International conference
on Nuclei at the Limits (Limits '04) 2004
Chair, Argonne National Laboratory Physics Division Electrical
Safety Committee 2000-2002
Argonne National Laboratory Physics Division Ad Hoc Committee
on Computing, 2000-2002
Michigan State University National Superconducting Cyclotron
Facility Users Executive Committee, 1999-2002

Argonne National Laboratory Physics Division Colloquium
Program Committee, 1998
Co-Spokesperson, Atlas Positron EXperiment (APEX) Collaboration,
1996-1999

Referee for the Journals *Physical Review Letters*, *Physical Review C*,
Physics Letters B, *Nuclear Physics*, *Canadian Journal of Physics*,
European Physical Journal A, *International Journal of Modern Physics*
Iranian Journal of Science and Technology

Grant Reviewer for:

The U. S. Department of Energy Nuclear Physics Program
The U. S. Department of Energy SBIR/STTR Program
The U. S. Department of Energy Stewardship Academic Alliances Program
The U. S. National Science Foundation
The U. K. Engineering and Physical Sciences Research Council
The U. K. Science and Technology Facilities Council
The National Engineering and Research Council of Canada
The U. K. Sciences and Technical Facilities Council
The South African National Research Foundation
The French Agence Nationale de la Recherche
Fonds Wetenschappelijk Onderzoek, Research Foundation Flanders, Belgium

TEACHING EXPERIENCE:

Courses taught at Western Michigan University:
Physics 1130, General Physics (Non-calculus based introductory course)
Physics 3090, Introductory Modern Physics (Introduction to relativity
and quantum mechanics for physics majors and engineers)
Physics 3420, Electronics (Combined lecture and laboratory course on
circuits and electronics for physics majors)
Physics 5640, Nuclear and Particle Physics (Introductory survey
course for advanced undergraduates, or graduate students)

Courses taught at the University of Connecticut:
Physics 1250, Problems in Mechanics and Electromagnetism
Physics 2300, Development of Quantum Physics (Introduction to relativity
and quantum mechanics for physics majors and engineers)
Physics 2501W, Experiments in Electricity, Magnetism and Mechanics
(Physics laboratory and scientific writing course for undergraduates).

LIST OF PUBLICATIONS:(* Significant contributions)

1. **Dominance of $l=10$ in $^{12}\text{C}(^{12}\text{C}, \alpha)^{20}\text{Ne}$ (g.s.)at $E_{\text{c.m.}} = 13\text{-}15 \text{ MeV}$** K. S. Dhuga, H. T. Fortune, M. Carchidi, G. P. Gilfoyle, R. Gilman, J. W. Sweet and A. Wuosmaa, Physical Review C **29**, 1566 (1984).
2. **Resonances in $^{12}\text{C}(^{18}\text{O}, \alpha)^{26}\text{Mg}$** J. W. Sweet, H. T. Fortune, R. W. Zurmühle, L. C. Bland, M. Carchidi, K. S. Dhuga, G. P. Gilfoyle, R. Gilman, G. S. Stephans, A. Wuosmaa, Physical Review C **30**, 556 (1984).
3. **Resonances in $^{13}\text{C}(^{13}\text{C}, \alpha)^{22}\text{Ne}$** G. P. Gilfoyle, L. C. Bland, R. Gilman, M. Carchidi, K. S. Dhuga, J. W. Sweet, A. H. Wuosmaa, G. S. F. Stephans, R. W. Zurmühle, H. T. Fortune, Physical Review C **32**, 861 (1985).
4. **Energy Dependence of Elastic and Inelastic Scattering of $^{32}\text{S} + ^{32}\text{S}$** P. H. Kutt, S. F. Pate, A. H. Wuosmaa, R. W. Zurmühle, O. Hansen, R. R. Betts, S. Saini, Physics Letters B **155**, 27 (1985).
5. ***Compound versus Direct Processes in the $^{12}\text{C}(^{14}\text{N}, \text{d})^{24}\text{Mg}$ reaction** A. H. Wuosmaa, S. Saini, P. H. Kutt, S. F. Pate, R. W. Zurmühle, Physics Letters B **172**, 297 (1986).
6. ***Single and Correlated Spin Alignments for Resonances in $^{24}\text{Mg} + ^{24}\text{Mg}$ Inelastic Scattering** A. H. Wuosmaa, R. W. Zurmühle, P. H. Kutt, S. F. Pate, S. Saini, M. L. Halbert, D. C. Hensley, Physical Review Letters **58**, 1312 (1987).
7. ***Resonance Behavior in the $^{24}\text{Mg} + ^{28}\text{Si}$ System** A. H. Wuosmaa, S. Saini, P. H. Kutt, S. F. Pate, R. W. Zurmühle, R. R. Betts, Physical Review C **36**, 1011 (1987).
8. ***Properties of Intermediate Width Structure in $^{12}\text{C}(^{12}\text{C}, ^{12}\text{C})^{12}\text{C}(0_2^+)$** S. F. Pate, R. W. Zurmühle, P. H. Kutt, A. H. Wuosmaa, Physical Review C **37**, 1953 (1988).
9. ***Reply to Comment on Properties of Intermediate Width Structure in $^{12}\text{C}(^{12}\text{C}, ^{12}\text{C})^{12}\text{C}(0_2^+)$** S. F. Pate, R. W. Zurmühle, P. H. Kutt, A. H. Wuosmaa, Physical Review C **39**, 2084 (1989).
10. ***Reaction Mechanisms in $^{24}\text{Mg} + ^{28}\text{Si} \rightarrow \alpha + ^{24}\text{Mg} + ^{24}\text{Mg}$ and $\alpha + ^{28}\text{Si} + ^{20}\text{Ne}$** A. H. Wuosmaa, S. F. Pate, R. W. Zurmühle, Physical Review C **40**, 173 (1989).

11. **Properties of the Giant Dipole Resonance Built on the Isobaric Analogue State** S. Mordechai, N. Auerbach, S. Greene, C. L. Morris, J. M. O'Donnell, H. T. Fortune, G. Liu, M. Burlein, A. H. Wuosmaa, S. H. Yoo, C. F. Moore, Physical Review C **40**, 850 (1989).
12. **Observation of the Double Isovector Giant Dipole Resonance From Pion Double Charge Exchange** S. Mordechai, H. T. Fortune, J. M. O'Donnell, G. Liu, M. Burlein, A. H. Wuosmaa, S. Greene, C. L. Morris, N. Auerbach, S. H. Yoo, C. F. Moore, Physical Review C **41**, 202 (1990).
13. ***Spins and Spin Alignments in $^{16}\text{O} + ^{16}\text{O}$ Inelastic Scattering** S. F. Pate, R. W. Zurmühle, A. H. Wuosmaa, P. H. Kutt, M. L. Halbert, D. C. Hensley, S. Saini, Physical Review C **41**, R1344 (1990).
14. ***Spin Alignment and Resonance Behavior in the $^{24}\text{Mg} + ^{24}\text{Mg}$ System** A. H. Wuosmaa, R. W. Zurmühle, P. H. Kutt, S. F. Pate, S. Saini, M. L. Halbert, D. C. Hensley, Physical Review C **41**, 2666 (1990).
15. ***Nuclear Spectroscopy with PIN Diode Detectors at Room Temperature I.** Ahmad, R. R. Betts, T. Happ, D. J. Henderson, F. L. H. Wolfs, A. H. Wuosmaa, Nuclear Instruments and Methods A **299**, 201 (1990).
16. ***Systematics of Neutron Transfer at Large Distances** A. H. Wuosmaa, K. E. Rehm, B. G. Glagola, Th. Happ, W. Kutschera, F. L. H. Wolfs, *Nuclear Structure and Heavy-Ion Reactions*, ed R. R. Betts and J. J. Kolata, (Institute of Physics, Bristol 1991) pp. 95-104.
17. ***Neutron Transfer at Large Distances in $^{36}\text{S} + ^{92}\text{Mo}$** A. H. Wuosmaa, K. E. Rehm, B. G. Glagola, Th. Happ, W. Kutschera, F. L. H. Wolfs, Physics Letters B **255**, 316 (1991).
18. ***Gamma-ray Multiplicity Distributions in $^{16}\text{O} + ^{152}\text{Sm}$ Fusion Near and Below the Coulomb Barrier** A. H. Wuosmaa, R. R. Betts, B. B. Back, M. P. Carpenter, H. Esbensen, P. B. Fernandez, B. G. Glagola, Th. Happ, R. V. F. Janssens, T. L. Khoo, E. F. Moore, F. Scarlassara, Ph. Benet, Physics Letters B **263**, 23 (1991).
19. **Nuclear Charge Separation of Low-Energy Medium-Mass Ions With a Gas-Filled Magnetic Spectrometer** F. Scarlassara, B. G. Glagola, W. Kutschera, K. E. Rehm, and A. H. Wuosmaa, Nuclear Instruments and Methods A **309**, 485 (1991).
20. ***Evidence for Alpha-Particle Chain Configurations in ^{24}Mg** A. H. Wuosmaa, R. R. Betts, B. B. Back, M. Freer, B. G. Glagola, Th. Happ, D. J. Henderson, P. Wilt,

and I. G. Bearden. Physical Review Letters **68**, 1295 (1992), A. H. Wuosmaa, R. R. Betts, B. B. Back, M. Freer, B. G. Glagola, Th. Happ, D. J. Henderson, P. Wilt, and I. G. Bearden, Nuclear Physics A **553**, 563c (1993).

21. **Spin Assignments of Angular Momentum Mismatched Resonances in $^{16}\text{O} + ^{16}\text{O}$** S. P. Barrow, R. W. Zurmühle, A. H. Wuosmaa, and S. F. Pate, Physical Review C **46**, 1934 (1992).

22. **Quasielastic Scattering of ^{11}Li and ^{11}C from ^{12}C at 60 MeV/Nucleon** J. J. Kolata, M. Zahar, R. Smith, K. Lamkin, M. Belbot, R. Tighe, B. M. Sherrill, N. A. Orr, J. S. Winfield, J. A. Winger, S. J. Yennello, G. R. Satchler, and A. H. Wuosmaa, Physical Review Letters **69**, 2631 (1992).

23. ***A Fast Low-Noise Silicon Detector for Electron Spectroscopy up to 1 MeV** Lars Evensen, Anders Hanneborg, Thomas Happ, Alan H. Wuosmaa, and R. Russell Betts, Nuclear Instruments and Methods in Physical Research A **326**, 136 (1993).

24. ***Neutron Transfer Reactions at Large Distances** K. E. Rehm, B. G. Glagola, W. Kutschera, F. L. H. Wolfs, and A. H. Wuosmaa, Physical Review C **47**, 2731 (1993).

25. **Sub-Barrier Fusion Cross Sections in $^{58,64}\text{Ni} + ^{92,100}\text{Mo}$ Studied with the Gas-Filled Magnet Technique** K. E. Rehm, H. Esbensen, J. Gehring, B. Glagola, D. Henderson, W. Kutschera, M. Paul, F. Soramel, and A. H. Wuosmaa, Physics Letters B **317**, 31 (1993).

26. **Momentum Distributions for $^{12,14}\text{Be}$ Fragmentation** M. Zahar, M. Belbot, J. J. Kolata, K. Lamkin, R. Thompson, N. A. Orr, J. H. Kelley, R. A. Kryger, D. J. Morrissey, B. M. Sherril, J. A. Winger, J. S. Winfield, and A. H. Wuosmaa, Physical Review C **48**, R1492 (1993).

27. **Selective Populations of states in Fission fragments from the $^{32}\text{S} + ^{24}\text{Mg}$ Reaction** S. J. Sanders, A. Hasan, F. W. Prosser, B. B. Back, R. R. Betts, M. P. Carpenter, D. J. Henderson, R. V. F. Janssens, T. L. Khoo, E. F. Moore, P. R. Wilt, F. L. <http://www.orau.org/ria/> H. Wolfs, A. H. Wuosmaa, K. B. Beard, Ph. Benet, Physical Review C **49**, 1016 (1994).

28. **Heavy-Ion Resonance and Statistical Fission Competition in the $^{24}\text{Mg} + ^{24}\text{Mg}$ System at $E_{c.m.}=44.4$ MeV** A. T. Hasan, S. J. Sanders, K. A. Farrar, F. W. Prosser, B. B. Back, R. R. Betts, M. Freer, D. J. Henderson, R. V. F. Janssens, A. H. Wuosmaa, A. Szanto do Toledo, Physical Review C **49**, 1031 (1994).

29. ***Instrumentation of Double Sided Silicon Strip Detectors for Multi-Particle Detection** A. H. Wuosmaa, P. Wilt, B. B. Back, R. R. Betts, M. Freer, B. G. Glagola, Th. Happ, D. J. Henderson, I. G. Bearden, R. W. Zurmühle, D. P. Balamuth, S. Barrow, D. Benton, Q. Li, Z. Liu, and Y. Miao, Nuclear Instruments and Methods in Physics Research A **345**, 482 (1994).
30. **Quasielastic Scattering of $^{12,14}\text{Be}$ on ^{12}C** M. Zahar, M. Belbot, J. J. Kolata, K. Lamkin, R. Thompson, J. H. Kelley, R. A. Kryger, D. J. Morrissey, N. A. Orr, B. M. Sherril, J. S. Winfield, J. A. Winger, and A. H. Wuosmaa, Physical Review C **49**, 1540 (1994).
31. **Observation of the one- to six-neutron transfer reactions at sub-barrier energies** C. L. Jiang, K. E. Rehm, J. Gehring, B. Glagola, W. Kutschera, M. Rhein, A. H. Wuosmaa, Physics Letters B **377**, 59 (1994).
32. ***Angular distribution measurements for $^{12}\text{C}(\text{ $^{12}\text{C}, }^{12}\text{C}[0_2^+])$, ^{12}C inelastic scattering$** A. H. Wuosmaa, M. Freer, B. B. Back, J. C. Gehring, B. G. Glagola, Th. Happ, D. J. Henderson, P. R. Wilt, I. G. Bearden, Physical Review C **50**, 2909 (1994).
33. ***Many-particle decays of α chain structures in ^{24}Mg** A. H. Wuosmaa, Zeitschrift für Physik A **349**, 249-253 (1994).
34. ***The ATLAS Positron EXperiment - APEX** I. Ahmad, S. M. Austin, B. B. Back, D. Bazin, R. R. Betts, F. P. Calaprice, K. C. Chan, A. A. Chishti, R. W. Dunford, J. D. Fox, S. J. Freedman, M. Freer, S. B. Gazes, J. S. Greenberg, A. L. Hallin, Th. Happ, N. I. Kaloskamis, E. Kashy, W. Kutschera, J. Last, C. J. Lister, M. Liu, M. R. Maier, D. J. Mercer, D. Mikolas, P. A. A. Perera, M. D. Rhein, D. E. Roa, J. P. Schiffer, T. Trainor, P. Wilt, J. S. Winfield, M. Wolanski, F. L. H. Wolfs, A. H. Wuosmaa, A. R. Young, G. Xu, and J. E. Yurkon, *Proceedings of the 10th Winter Workshop on Nuclear Dynamics* (Snowbird, 1994), ed. by J. Harris, A. Mignerey, and W. Bauer (World Scientific, Singapore, 1994), p. 47.
35. ***Electronics for the Si Detectors in APEX**, P. R. Wilt, R. R. Betts, M. Freer, Th. Happ, M. R. Maier, P. A. A. Perera, M. D. Rhein, M. Robertson, D. Sowinski, F. L. H. Wolfs, and A. H. Wuosmaa, *Proceedings of the Fourth Annual Electronics for Future Colliders Conference* (Chestnut Ridge, 1994).
36. ***Recent Results from APEX** I. Ahmad, S. M. Austin, B. B. Back, D. Bazin, R. R. Betts, F. P. Calaprice, K. C. Chan, A. A. Chishti, R. W. Dunford, J. D. Fox, S. J. Freedman, M. Freer, S. B. Gazes, J. S. Greenberg, A. L. Hallin, Th. Happ, N. I. Kaloskamis, E. Kashy, W. Kutschera, J. Last, C. J. Lister, M. Liu, M. R. Maier, D. J. Mercer, D. Mikolas, P. A. A. Perera, M. D. Rhein, D. E. Roa, J. P. Schiffer, T. Trainor, P. Wilt, J. S. Winfield, M. Wolanski, F. L. H. Wolfs, A. H. Wuosmaa, A. R. Young, G. Xu, and J. E. Yurkon, *Proceedings of the 10th Winter Workshop on Nuclear Dynamics* (Snowbird, 1994), ed. by J. Harris, A. Mignerey, and W. Bauer (World Scientific, Singapore, 1994), p. 47.

Wilt, J. S. Winfield, M. Wolanski, F. L. H. Wolfs, A. H. Wuosmaa, A. R. Young, G. Xu, and J. E. Yurkon, *Proceedings of the Conference on Physics from Large γ -ray Detector Arrays Conference*, Berkeley, August 1994, p. 125.

37. Observation of the one- to six-neutron transfer reactions at sub-barrier energies K. E. Rehm, C. L. Jiang, J. Gehring, B. Glagola, W. Kutschera, M. Rhein, A. H. Wuosmaa, Nuclear Physics A **583**, 421 (1995).

38. *Positron Production in Heavy Ion Collisions: Current Status of the Problem - II I. Ahmad, S. M. Austin, B. B. Back, D. Bazin, R. R. Betts, F. P. Calaprice, K. C. Chan, A. A. Chishti, R. W. Dunford, J. D. Fox, S. J. Freedman, M. Freer, S. B. Gazes, J. S. Greenberg, A. L. Hallin, Th. Happ, N. I. Kaloskamis, E. Kashy, W. Kutschera, J. Last, C. J. Lister, M. Liu, M. R. Maier, D. J. Mercer, D. Mikolas, P. A. A. Perera, M. D. Rhein, D. E. Roa, J. P. Schiffer, T. Trainor, P. Wilt, J. S. Winfield, M. Wolanski, F. L. H. Wolfs, A. H. Wuosmaa, A. R. Young, G. Xu, and J. E. Yurkon, *Proceedings of the Nucleus-Nucleus Collisions Conference*, Taormina (Italy), June 1994, Nuclear Physics A **583**, 247c (1995).

39. *Recent Advances in the Study of Nuclear Clusters A. H. Wuosmaa, R. R. Betts, M. Freer and B. R. Fulton, Annual Reviews of Nuclear and Particle Science **45**, 89-131 (1995).

40. Excitation Functions of the $^{20}\text{Ne} + ^{20}\text{Ne}$ System S. P. Barrow, R. W. Zurmühle, J. T. Mugatroyd, N. G. Wimer, Y. Miao, K. R. Pohl, A. H. Wuosmaa, R. R. Betts, M. Freer, and B. G. Glagola, Physical Review C **51**, 1961 (1995).

41. Relationship Between the Deformed Harmonic Oscillator and Clustering in Light Nuclei M. Freer, R. R. Betts, and A. H. Wuosmaa, Nuclear Physics A **587**, 36 (1995).

42. *Search for Narrow Sum-Energy Lines in Electron-Positron Pair Emission from Heavy-Ion Collisions Near the Coulomb Barrier I. Ahmad, S. M. Austin, B. B. Back, D. Bazin, R. R. Betts, F. P. Calaprice, K. C. Chan, A. A. Chishti, R. W. Dunford, J. D. Fox, S. J. Freedman, M. Freer, S. B. Gazes, A. L. Hallin, Th. Happ, N. I. Kaloskamis, E. Kashy, W. Kutschera, J. Last, C. J. Lister, M. Liu, M. R. Maier, D. J. Mercer, D. Mikolas, P. A. A. Perera, M. D. Rhein, D. E. Roa, J. P. Schiffer, T. Trainor, P. Wilt, J. S. Winfield, M. Wolanski, F. L. H. Wolfs, A. H. Wuosmaa, A. R. Young, G. Xu, and J. E. Yurkon, Physical Review Letters **75**, 2658 (1995).

43. *A Solenoidal Spectrometer for Positron-Electron Pairs Produced in Heavy-Ion Collisions I. Ahmad, Sam. M. Austin, B. B. Back, D. Bazin, R. R. Betts, F. P. Calaprice, K. C. Chan, A. A. Chishti, R. W. Dunford, J. D. Fox, S. J. Freedman, M.

Freer, S. B. Gazes, A. L. Hallin, Th. Happ, N. I. Kaloskamis, E. Kashy, W. Kutschera, J. Last, C. J. Lister, M. Liu, M. R. Maier, D. J. Mercer, D. Mikolas, P. A. A. Perera, M. D. Rhein, D. E. Roa, J. P. Schiffer, T. Trainor, P. Wilt, J. S. Winfield, M. Wolanski, F. L. H. Wolfs, A. H. Wuosmaa, A. R. Young, G. Xu, and J. E. Yurkon, Nuclear Instruments and Methods in Physics Research A **370**, 539 (1996).

44. **α -decay properties of ^{181}Pb** K. S. Toth, J. C. Batchelder, C. R. Bingham, L. F. Conticchio, W. B. Walters, C. N. Davids, D. J. Henderson, R. Herman, H. Penttilä, J. D. Richards, A. H. Wuosmaa, and B. E. Zimmerman, Physical Review C **53**, 2513 (1996).

45. ***Reply to “Comment on the APEX $e^+ - e^-$ experiment”** I. Ahmad, S. M. Austin, B. B. Back, D. Bazin, R. R. Betts, F. P. Calaprice, K. C. Chan, A. A. Chishti, R. W. Dunford, J. D. Fox, S. J. Freedman, M. Freer, S. B. Gazes, A. L. Hallin, Th. Happ, N. I. Kaloskamis, E. Kashy, W. Kutschera, J. Last, C. J. Lister, M. Liu, M. R. Maier, D. J. Mercer, D. Mikolas, P. A. A. Perera, M. D. Rhein, D. E. Roa, J. P. Schiffer, T. Trainor, P. Wilt, J. S. Winfield, M. Wolanski, F. L. H. Wolfs, A. H. Wuosmaa, A. R. Young, G. Xu, and J. E. Yurkon, Physical Review Letters **77**, 2839 (1996).

46. **Fission decay of ^{48}Cr at $E_{CN}^* \approx 60$ MeV** K. A. Farrar, S. J. Sanders, A. K. Dummer, A. T. Hasan, F. W. Prosser, B. B. Back, I. G. Bearden, R. R. Betts, M. P. Carpenter, B. Crowell, M. Freer, D. J. Henderson, R. V. F. Janssens, T. L. Khoo, T. Lauritsen, Y. Liang, D. Nisius, A. H. Wuosmaa, C. Beck, R. M. Freeman, Sl. Cavallaro, A. Szanto de Toledo, Physical Review C **54**, 1249 (1996).

47. **Quasielastic scattering of ^9Li on ^{12}C** M. Zahar, M. Belbot, J. J. Kolata, K. Lamkin, D. J. Morrissey, B. M. Sherril, M. Lewitowicz, A. H. Wuosmaa, J. S. Al-Khalili, J. A. Tostevin, and I. J. Thompson, Physical Review C **54**, 1262 (1996).

48. **Transport efficiency of the Argonne Fragment Mass Analyzer** B. B. Back, D. J. Blumenthal, C. N. Davids, D. J. Henderson, R. H. Hermann, C. L. Jiang, H. T. Penttilä, and A. H. Wuosmaa, Nuclear Instruments and Methods in Physics Research A **379**, 206 (1996).

49. ***Resonance spin assignments in $^{12}\text{C} + ^{12}\text{C}(3^-)$ inelastic scattering from angular correlation methods** A. H. Wuosmaa, B. B. Back, R. R. Betts, M. Freer, B. G. Glagola, D. J. Henderson, D. J. Hofman, and V. Nanal, Physical Review C **54**, 2463 (1996).

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207. White paper on nuclear astrophysics and low-energy nuclear physics, Part 2: Low-energy nuclear physics Joe Carlson , Michael P. Carpenter, Richard Casten, Charlotte Elster, Paul Fallon, Alexandra Gade, Carl Gross, Gaute Hagen, Anna C. Hayes, Douglas W. Higinbotham, Calvin R. Howell, Charles J. Horowitz, Kate L. Jones , Filip G. Kondev, Suzanne Lapi, Augusto Macchiavelli, Elizabeth A. McCutchen, Joe Natowitz, Witold Nazarewicz, Thomas Papenbrock, Sanjay Reddy, Mark A. Riley, Martin J. Savage, Guy Savard, Bradley M. Sherrill, Lee G. Sobotka, Mark A. Stoyer, M. Betty Tsang, Kai Vetter, Ingo Wiedenhoever, Alan H. Wuosmaa, Sherry Yennello, Prog. in Part. and Nucl. Phys. **94**, 68 (2017).

208. *Ground-state properties of ^5H from the $^6\text{He}(d, ^3\text{He})^5\text{H}$ reaction A. H. Wuosmaa, S. Bedoor, K. W. Brown, W. W. Buhro, Z. Chajecki, R. J. Charity, W. G. Lynch, J. Manfredi, S. T. Marley, D. G. McNeel, A. S. Newton, D. V. Shetty, R. H. Showalter, L. G. Sobotka, M. B. Tsang, J. R. Winkelbauer, and R. B. Wiringa, Phys. Rev. C **95** 014310 (2017).

209. Proton-decaying states in light nuclei and the first observation of ^{17}Na K. W. Brown, R. J. Charity, J. M. Elson, W. Reviol, L. G. Sobotka, W. W. Buhro, Z. Chajecki, W. G. Lynch, J. Manfredi, R. Shane, R. H. Showalter, M. B. Tsang, D. Weisshaar, J. R. Winkelbauer, S. Bedoor, A. H. Wuosmaa, Phys. Rev. C **95**, 044326 (2017).

210. * α decay of the $T=1, 2^+$ state in ^{10}B and isospin symmetry breaking in the $A = 10$ triplet, S.A.Kuvin, A.H.Wuosmaa, C.J.Lister, M.L.Avila, C.R.Hoffman, B.P.Kay, D.G.McNeel, C.Morse, E.A.McCutchan, D.Santiago-Gonzalez, J.R.Winkelbauer, Phys. Rev. C **96**, 041301 (2017)

211. *Non-dependence of nuclear decay rates of ^{123}I and ^{99m}Tc on Earth-Sun distance J. A. Borrello, A. Wuosmaa, M. Watts, Appl. Radiat. Isot. **132** 189 (2018).

212. Spin alignment following inelastic scattering of ^{17}Ne , lifetime of ^{16}F , and its constraint on the continuum coupling strength, R.J.Charity, K.W.Brown, J.Okolowicz, M.Ploszajczak, J.M.Elson, W.Reviol, L.G.Sobotka, W.W.Buhro, Z.Chajecki,

W.G.Lynch, J.Manfredi, R.Shane, R.H.Showalter, M.B.Tsang, D.Weisshaar, J.R.Winkelbauer, S.Bedoor, A.H.Wuosmaa, Phys. Rev. C **97**, 054318 (2018).

213. **Particle decays of levels in $^{11,12}\text{N}$ and ^{12}O investigated with the invariant-mass method** T.B.Webb, R.J.Charity, J.M.Elson, D.E.M.Hoff, C.D.Pruitt, L.G.Sobotka, K.W.Brown, J.Barney, G.Cerizza, J.Estee, G.Jhang, W.G.Lynch, J.Manfredi, P.Morfouace, C.Santamaria, S.Sweany, M.B.Tsang, T.Tsang, S.M.Wang, Y.Zhang, K.Zhu, S.A.Kuvin, D.McNeil, J.Smith, A.H.Wuosmaa, Z.Chajecki, Phys. Rev. C **100**, 024306 (2019).

214. **First Observation of Unbound ^{11}O , the Mirror of the Halo Nucleus ^{11}Li** T. B. Webb, S. M. Wang, K. W. Brown, R. J. Charity, J. M. Elson, J. Barney, G. Cerizza, Z. Chajecki, J. Estee, D. E. M. Hoff, S. A. Kuvin, W. G. Lynch, J. Manfredi, D. McNeil, P. Morfouace, W. Nazarewicz, C. D. Pruitt, C. Santamaria, J. Smith, L. G. Sobotka, S. Sweany, C. Y. Tsang, M. B. Tsang, A. H. Wuosmaa, Y. Zhang, K. Zhu, Phys. Rev. Lett. **122**, 122501 (2019).

215. **Invariant-mass spectroscopy of ^{18}Ne ^{16}O , and ^{10}C excited states formed in neutron-transfer reactions** R.J.Charity, K.W.Brown, J.Elson, W.Reviol, L.G.Sobotka, W.W.Buhro, Z.Chajecki, W.G.Lynch, J.Manfredi, R.Shane, R.H.Showalter, M.B.Tsang, D.Weisshaar, J.Winkelbauer, S.Bedoor, D.G.McNeil, A.H.Wuosmaa, Phys. Rev. C **99**, 044304 (2019).

216. **Single photon simultaneous K-shell ionization/excitation in C_6H_6 : experiment and theory** S Carniato , P Selles , A Ferte , N Berrah, A H Wuosmaa, M Nakano, , Y Hikosaka , K Ito, M Zitnik , K Bucar , K Soejima, K Jankala , D Cubaynes, J-M Bizau, L Andric, M A Khalal1 , J Palaudoux , P Lablanquie and F Penent, J. Phys. B **53**, 244010 (2020).

217. **Invariant Mass of ^{11}O** , T. Webb *et al.*, Phys. Rev. C. **101**, 044317 (2020).

218. **Search for the $1/2^+$ intruder state in ^{35}P** , M. Salathe *et al.*, Phys. Rev. C **102**, 064317 (2020).

219. ***Configuration mixing in ^{28}Mg and the $^{26}\text{Mg}(\text{t},\text{p})^{28}\text{Mg}$ reaction** D. G. McNeil, A. H. Wuosmaa, S. A. Kuvin, and J. Smith, *et al.*, Phys. Rev. C. **103**, 064320 (2021).

220. **Using spin alignment of inelastically excited nuclei in fast beams to assign spins: The spectroscopy of ^{13}O as a test case** R. J. Charity *et al.*, Phys. Rev. C **104**, 024325 (2021).

221. **Observation of the exotic isotope ^{13}F located four neutrons beyond the proton drip line.** R.J.Charity, T.B.Webb, J.M.Elson, D.E.M.Hoff, C.D.Pruitt, L.G.Sobotka, K.W.Brown, G.Cerizza, J.Estee, W.G.Lynch, J.Manfredi, P.Morfouace, C.Santamaria, S.Sweany, C.Y.Tsang, M.B.Tsang, Y.Zhang, K.Zhu, S. A. Kuvin, D. McNeel, J. Smith, A. H. Wuosmaa, Z. Chajecki, Phys. Rev. Lett. **126**, 132501 (2021).
222. **Beam Particle Identification and Tagging of Incompletely Stripped Heavy Beams with HEIST,** A. K. Anthony *et al.*, Rev. Sci. Instrum. **93** 013306 (2022).
223. **Probing the quadrupole transition strength of ^{15}C via deuteron inelastic scattering** J.Chen, B.P.Kay, T.L.Tang, I.A.Tolstukhin, C.R.Hoffman, H.Li, P.Yin, X.Zhao, P.Marais, J.P.Vary, G.Li, J.L.Lou, M.L.Avila, Y.Ayyad, S.Bennett, D.Bazin, J.A.Clark, S.J.Freeman, H.Jayatissa, C.Muller-Gatermann, A.Munoz-Ramos, D.Santiago-Gonzalez, D.K.Sharp, A.H.Wuosmaa, C.X.Yuan, Phys. Rev. C **106**, 064312 (2022).
224. ***Shell-model calculations for two-neutron transfer near the $N = 20$ island of inversion,** A.H.Wuosmaa, J.K.Stecenko, Eur. Phys. J. A **59**, 202 (2023).
225. **Strong Evidence for ^9N and the Limits of Existence of Atomic Nuclei** R.J.Charity, J.Wylie, S.M.Wang, T.B.Webb, K.W.Brown, G.Cerizza, Z.Chajecki, J.M.Elson, J.Estee, D.E.M.Hoff, S.A.Kuvin, W.G.Lynch, J.Manfredi, N.Michel, D.G.McNeel, P.Morfouace, W.Nazarewicz, C.D.Pruitt, C.Santamaria, S.Sweany, J.Smith, L.G.Sobotka, M.B.Tsang, A.H.Wuosmaa, Phys. Rev. Lett. **131**, 172501 (2023).
226. **Evolution of the nuclear spin-orbit splitting explored via the $^{32}\text{Si}(\text{d},\text{p})^{33}\text{Si}$ reaction using SOLARIS,** J. Chen. B.P. Kay, C.R. Hoffman, T.L. Tang, I.A. Tolstukhin, D. Bazin, R.S. Lubna, Y. Ayyad, S. Beceiro-Novo, B.J. Coombes, S.J. Freeman, L.P. Gaffney, R. Garg, H. Jayatissa, A.N. Kuchera, P. MacGregor, A.J. Mitchell, W. Mittig, B. Monteagudo, A. Munoz-Ramos, C. Muller-Gatermann, F. Recchia, N. Rijal, C. Santamaria, M.Z. Serikow, D.K. Sharp, J. Smith, J.K. Stecenko, G.L. Wilson, A.H. Wuosmaa, C.X. Yuan, J.C. Zamora, Y.N. Zhang, Phys. Lett. B **853**, 138678 (2024).

GRANTS AND PROPOSALS:

Study of Exotic Nuclei with Few-nucleon transfer reactions A. H. Wuosmaa, Proposal for 3-year support, \$562,000, Awarded August 2024, U. S. Department of Energy Office of Nuclear Physics.

Study of Exotic Nuclei with Few-nucleon transfer reactions A. H. Wuosmaa, Proposal for 3-year support, \$680,000, Awarded August, 2021, U. S. Department of Energy Office of Nuclear Physics.

Study of Exotic Nuclei with Few-nucleon transfer reactions A. H. Wuosmaa, Proposal for 3-year support, \$618,000, Awarded August, 2018, U. S. Department of Energy Office of Nuclear Physics.

Study of Exotic Nuclei with Few-nucleon transfer reactions A. H. Wuosmaa, Proposal for 3-year support, \$596,690, Awarded August, 2015, U. S. Department of Energy Office of Nuclear Physics.

Study of Exotic Nuclei with Few-nucleon transfer reactions A. H. Wuosmaa, Proposal for 3-year support, \$551,000, Awarded May 15, 2010, U. S. Department of Energy Office of Nuclear Physics.

Study of Exotic Light Nuclei with Few-nucleon transfer reactions A. H. Wuosmaa, Proposal for 3-year support, \$440,000, Awarded May 15, 2007, U. S. Department of Energy Office of Nuclear Physics.

Study of Exotic Light Nuclei with Few-nucleon transfer reactions A. H. Wuosmaa, Proposal for 3-year support, \$249,000, awarded June 15 2004 from the U. S. Department of Energy Office of Nuclear Physics.

Study of Nuclear Reactions of Astrophysical Interest, A. H. Wuosmaa, W. M. U. Faculty Research and Creative Activities Support Fund (FRACASF) proposal, Awarded \$9,856.

Proposal to Upgrade the WMU Tandem Accelerator: J. A. Tanis, E. Y. Kamber, A. H. Wuosmaa, National Science Foundation Major Research Instrumentation program. Awarded \$115,000 Aug. 2003.

Research in Heavy-Ion Physics, Argonne National Laboratory: May-July 2003 and May 2004, awarded \$26,813 and \$8,415.

Proposal for a Solenoidal Spectrometer to Study Reactions with Short-Lived

Beams, A. H. Wuosmaa, B. B. Back, C. J. Lister, K. E. Rehm, J. P. Schiffer and S. J. Freeman, Proposal submitted to the U. S. Department of Energy, Office of Nuclear Physics, requested \$1,421,313. Submitted October 1, 2004.

INVITED PRESENTATIONS AT MEETINGS:

1. **Systematics of Neutron Transfer at Large Distances** Workshop on Nuclear Structure and Heavy-Ion Reaction Dynamics, University of Notre Dame, May 1990.
2. **Detection of ^{12}C Fragments in Their First Excited 0^+ States – Nuclear Structure in ^{24}Mg ?** International Conference on Clustering in Nuclear and Atomic Systems, Turku Finland, June 1991.
3. **Evidence for Alpha-Particle Chain Configurations in ^{24}Mg** International Nuclear Physics Conference, Wiesbaden, Germany August 1992.
4. **The Argonne Silicon Strip Detector Array** Workshop on Large Gamma-Ray Detector Arrays, Chalk River Laboratories, Canada, May 1992.
5. **Search for Exotic Cluster States in ^{24}Mg** American Physical Society Meeting Santa Fe New Mexico, October 1992.
6. **Many-Particle decays of alpha chain configurations in ^{24}Mg** Second International Conference on Clustering in Atomic and Nuclear Systems. Santorini Greece, July 1993.
7. **Exotic alpha-cluster structures in light nuclei** Symposium on Nuclear Physics , American Chemical Society Meeting Washington DC, August 1994.
8. **Experimental Searches for Exotic Alpha Cluster Configurations.** Clusters in Nuclear Structure and Dynamics Strasbourg France. September 6-9 1994.
9. **Positron Production in Heavy-Ion Collisions: Current Status of the Problem.** Thirteenth International Conference on the Application of Accelerators in Research and Industry. Denton, TX. November 7-10 1994.
10. **The Positron Problem From the APEX Perspective** 1995 Nuclear Chemistry Gordon Research Conference New London NH, June 18-23, 1995.
11. **Analysis of Complex Reaction Using Silicon Strip Detectors** TASCC Workshop on Nuclear Structure and Reactions Chalk River Laboratories, Chalk River Ontario, Canada June 26-28, 1995.
12. **Recent Results on Electron-Positron Production in Heavy Ion Collisions** Fall Meeting of the Division of Nuclear Physics of the American Physical Society, Bloom-

ington, IN, October 25-28, 1995.

13. **Multi-alpha Decays of Cluster States.** Joint US-Japan Symposium on Clustering in Nuclear and Mesoscopic Systems - Honolulu, HA. December 14-16, 1995.
14. **Studies of Many-particle Final States Using Silicon Strip Detectors** Fourteenth International Conference on the Application of Accelerators in Research and Industry, Denton, TX, 6-9 November 1996.
15. **Spin Assignments for quasimolecular resonances from Angular Correlation Techniques** International Workshop on New Ideas on Clustering in Nuclear and Atomic Physics. Rauischholzhausen Germany, 9-13 June 1997.
16. **The PHOBOS experiment at RHIC - Physics and Capabilities** Workshop on Particle Distributions in Heavy Ion Collisions U. of Illinois at Chicago, 2-6 June, 1998.
17. **First results from the PHOBOS experiment** Fourteenth International Conference on the Application of Accelerators in Research and Industry, Denton, TX, 1-4 November 2000.
18. **$dN_{ch}/d\eta$ from the PHOBOS experiment** Fifteenth International Conference on Ultra-relativistic Heavy Ion collisions (Quark Matter 2001), Stony Brook NY, 15-20 January, 2001.
19. **Clustering in Light Nuclei Studied with multi Particle- γ -ray Correlations** W. E.- Heraeus Seminar, Symposium on Nuclear Clusters, Marburg, Germany, 5-9 August 2002.
20. **Summary presentation: Experimental Facilities for the Rare Isotope Accelerator** Rare Isotope Accelerator Facility Workshop, Michigan State University, March 2004.
21. **Experience with inverse (d,p) reactions at ANL with unstable beams** Workshop on transfer reactions in Inverse Kinematics, Argonne National Laboratory, June 2004.
22. **A Solenoid to study reactions in inverse kinematics - Technical Considerations** Workshop on transfer reactions in Inverse Kinematics, Argonne National Laboratory, June 2004.

23. **A Solenoidal Transport Device for Reactions in Inverse Kinematics** American Physical Society, Division of Nuclear Physics Meeting, Chicago IL, October 2004.
24. **Studies of exotic light nuclei with nucleon transfer reactions** XXIX Symposium on Nuclear Physics, Hacienda Cocoyoc, Mexico. January 2006.
25. **Nucleon transfer reactions with light exotic nuclei** American Physical Society Meeting, Dallas TX, April 2006.
26. **Single-particle states in radioactive nuclei: Opportunities with re-accelerated radioactive beams** Workshop on Opportunities for Reaccelerated Radioactive Beams, Michigan State University National Superconducting Cyclotron Laboratory, May 2006.
27. **Nuclear Clusters in Astrophysics** American Physical Society, Division of Nuclear Physics Meeting, Nashville TN, October 2006.
28. **APEX - A search for things that weren't**, Nuclear Physics Symposium, University of Illinois at Chicago, May 2007.
29. **Transfer reactions with exotic nuclei at ATLAS**, Gordon Research Conference, Colby Sawyer College NH, June 2007.
30. **Invited lectures on Nuclear Reactions** The 6th Summer School on Nuclear Physics with Exotic Beams, National Superconducting Cyclotron Laboratory, Michigan State University, E. Lansing MI, August 2007
- .
31. **Properties of ^7He from single nucleon transfer reactions**, American Chemical Society National Meeting, Boston MA, August 2007.
32. **The Structure of ^7He** , Conference on the Frontiers of Nuclear Structure and Astrophysics 2, Crete, Greece, September 2007.
33. **Transfer reactions with exotic beams at ATLAS** HALO-08 Workshop, TRIUMF, Vancouver CA, March 2008.
34. **Nucleon transfer reactions with exotic light nuclei** American Chemical Society National Meeting, New Orleans LA, April 2008.
35. **Nucleon Transfer reactions with exotic light beams at ATLAS** Nuclear Structure 2008, Michigan State University, E. Lansing MI, June 2008.

36. **New Results from the HELIOS Spectrometer**, Gordon Research Conference, Colby Sawyer College, New London NH, June 2009.
37. **Commissioning experiments for the HELIOS Spectrometer** The 8th International Conference on Radioactive Nuclear Beams (RNB8), Grand Rapids MI, May 2009.
38. **How exotic is ^{16}C ? Study of the $^{15}\text{C}(d,p)^{16}\text{C}$ reaction with HELIOS** Nuclear Structure 2010, University of California at Berkeley, Berkeley CA, August 2010.
39. **Transfer reactions at ATLAS before and with HELIOS** ATLAS 25th Anniversary Symposium, Argonne National Laboratory, October 2010.
40. **Transfer reactions with HELIOS** April 2011 Meeting of the American Physical Society, Anaheim CA, April 2011.
41. **Transfer reactions with exotic nuclei - opportunities and questions near N=8** Workshop on recent developments in transfer and knockout reactions, European Center for Nuclear Theory (ECT*), Trento, Italy, May 2011.
42. **Transfer reactions in inverse kinematics with HELIOS** The 2011 Congress of the Canadian Association of Physics, St. John's, Newfoundland, Canada, June 2011.
43. **Nucleon-transfer reactions with light exotic nuclei** The 7th ANL/INT/JINA/MSU Annual FRIB workshop, Institute for Nuclear Theory, Seattle WA, August 2011.
44. **Results from HELIOS** 2011 Joint ATLAS-HRIBF-NSCL-FRIB User Workshop, East Lansing, MI, August 2011.
45. **Studies of neutron-rich exotic nuclei with the (d,p) reaction using HELIOS** 14th International Symposium on Capture Gamma-ray Spectroscopy and Related Topics, Guelph, Canada, August 2011.
46. **Recent experimental results from HELIOS.**, Plenary talk at the 11th International Conference on Nucleus-Nucleus Collisions (NN2012), San Antonio, TX, May 2012.
47. **Studying the properties of neutron-rich light nuclei** Workshop on Simulating the Supernova Neutrinosphere in Heavy-Ion Collisions, European Center for Theoretical Studies in Nuclear Physics and Related Areas (ECT*), Trento, Italy, April 2014.
48. **Physics possibilities with HELIOS and AIRIS beams**, ATLAS User Meeting, Argonne National Laboratory, May 2014.

49. **Structure of light neutron-rich nuclei studied with transfer reactions**, Zakopane Conference on Nuclear Physics, Zakopane, Poland, Sept. 2014.
50. **Solenoid Spectrometers for Reaccelerated-Beam Facilities** 2014 Joint meeting of the American Physics Society/Division of Nuclear Physics and the Japan Physical Society, Waikoloa HA, Oct. 2014.
51. **Transfer Reactions - Opportunities and Challenges for the Modern Era** Active Targets and TPC for Nuclear Physics Experiments Workshop, Michigan State University, May 2015.
52. **Shell Evolution and Direct-Transfer Reactions - Opportunities with Reaccelerated Beams and ReA** ReA3 Upgrade Workshop, Michigan State University, August 2015.
53. **Lecture series on nuclear reactions** A. H. Wuosmaa, Exotic Beam Summer School, MSU/NSCL, July 2016.
54. **Transfer reactions with exotic beams: Opportunities and Challenges**. A. H. Wuosmaa, Invited Plenary Talk, Symposium on Nuclear Physics at the 2016 Meeting "Encontro de Física 2016," Sociedade Brasileira de Física, September 2016, Natal Brazil.
55. **Ground State of ${}^5\text{H}$ from ${}^6\text{He}(d, {}^3\text{He})$ ${}^5\text{H}$** A. H. Wuosmaa, Invited talk, Workshop on Unbound Nuclei and Continuum States, Trento Italy, October 2016.
56. **HELIOS at ATLAS** A. H. Wuosmaa, Invited talk Workshop on Solenoidal Spectrometers for FRIB, Argonne National Laboratory March 2017.
57. **Ground state of the 'nucleus' ${}^5\text{H}$ from the ${}^6\text{He}(d, {}^3\text{He})$ ${}^5\text{H}$ reaction** A. H. Wuosmaa, Invited talk, Gordon Research Conference, New London New Hampshire, June 2017.
58. **Exotic nuclei studied via the $(d, {}^3\text{He})$ reaction with 'fast' and 'not-so-fast' beams.** A. H. Wuosmaa, Invited Talk, 2017 American Physical Society Division of Nuclear Physics Meeting, Pittsburgh PA, October 2017.
59. **Lecture Series on Direct Reactions**, A. H. Wuosmaa, The 2016 Summer School on Exotic Beams (EBSS 2016).

60.Experimental Tests of Ab Initio Calculations of Nuclear Structure. A. H. Wuosmaa, Presentation for the Conference on the Intersections of Particle and Nuclear Physics, Palm Springs, CA, May 2018.

61. Lecture series on nuclear structure with exotic beams CNS Summer School, Tokyo, Japan, August 2019.

SEMINARS AND COLLOQUIA:

1. **Spin alignment and resonance behavior in $^{24}\text{Mg} + ^{24}\text{Mg}$ inelastic scattering**
Seminar, University of Pennsylvania Physics Department, April, 1988.
2. **Spin alignment and resonance behavior in $^{24}\text{Mg} + ^{24}\text{Mg}$ inelastic scattering**
Seminar, Indiana University Cyclotron Facility, November 1988.
3. **Spin alignment and resonance behavior in $^{24}\text{Mg} + ^{24}\text{Mg}$ inelastic scattering**
Seminar, National Superconducting Cyclotron Laboratory, Michigan State University, February 1989.
4. **Spin alignment and resonance behavior in $^{24}\text{Mg} + ^{24}\text{Mg}$ inelastic scattering**
Seminar, Physics Division, Argonne National Laboratory, March 1989.
5. **Studies of many-particle final states with silicon strip detectors** Heavy-ion discussion Group, Physics Division, Argonne National Laboratory November, 1990.
6. **Exotic α -particle clustering phenomena in ^{24}Mg** , Physics Department seminar, State University of New York at Stony Brook, February 1991.
7. **Evidence for α -particle chain configurations in ^{24}Mg** Seminar, Physics Division Argonne National Laboratory, March, 1991.
8. **Evidence for α -particle chain configurations in ^{24}Mg** Seminar, University of Washington Physics Department, February 1992.
9. **Evidence for α -particle Chain configurations in ^{24}Mg** Physics Department Seminar, University of Pennsylvania, March 1992.
10. **Evidence for α -particle Chain configurations in ^{24}Mg** Seminar, Physics Department, University of Notre Dame, March 1992.
11. **Evidence for α -particle Chain configurations** Department Colloquium, Princeton University Department of Physics, April 1992.
12. **Cluster studies in light nuclei** Colloquium, Department of Physics and Astronomy, University of Rochester, January 1993.

13. **Research with the APEX positron spectrometer**, Undergraduate Student Seminar, Physics Division, Argonne National Laboratory, July 1993.
14. **Clustering phenomena in light nuclei** Colloquium, Physics Department, University of Kansas, December 1993.
15. **Clusters in Light Nuclei** Sigma Xi Lecture, Argonne National Laboratory, February 1994.
16. **Positron Detection and Spectroscopy with APEX**, Undergraduate Student Seminar, Physics Division, Argonne National Laboratory, July 1994.
17. **Studying Many-Body Final States in Heavy-Ion scattering: a New Look at an Old Problem.** Seminar, Triangle Universities National Laboratory, January 1996.
18. **Positron Production in Heavy Ion collisions - Current Status of the Problem.** Department Colloquium, New Mexico State University, February 1996.
19. **Positron Production in Heavy Ion collisions - Current Status of the Problem.** Argonne National Laboratory High Energy Physics Division seminar February 1996.
20. **Recent Results in the Study of Nuclear Clusters.** ANL Physics Division Colloquium, February 1996.
21. **Teaching an Old Dog New Tricks - New Experiments at APEX** Physics Division Seminar ANL, October 1996.
22. **Positron Peaks from Heavy-Ion Collisions: New Physics or Something else?** Physics Department Colloquium, Florida State University January 1997.
23. **Angular Correlation Measurements in Heavy Ion Inelastic Scattering.** ANL Physics Division Heavy-Ion discussion group, June, 1997.
24. **The β^+ decay of ^{54}Mn and Cosmic Ray Chronometry** Seminar, Enrico Fermi Institute, University of Chicago, November 1997.
25. **The β^+ decay of ^{54}Mn and Cosmic Ray Chronometry** ANL Physics Division seminar, December 1997.

26. **(Astro)physics with the APEX spectrometer** Student Seminar, ANL Physics Division, July 1998.
27. **The PHOBOS Multiplicity Array** Heavy-ion discussion group, Argonne National Laboratory Physics Division, December 1998.
28. **Particle angular correlation measurements in light-heavy-ion inelastic scattering.** Seminar, Lawrence Berkeley National Laboratory Nuclear Science Division, June 1999.
29. **Spin Alignment and Resonance behavior in $^{12}\text{C}+^{12}\text{C}(3^-)$ inelastic scattering** Seminar, Argonne National Laboratory Physics Division, October 1999.
30. **The PHOBOS experiment at RHIC - the early universe on a tabletop** Colloquium, New Mexico State University Physics Department Colloquium, February 2000.
31. **This just in - very recent results from RHIC** Colloquium, Argonne National Laboratory Physics Division Colloquium, September 2000.
32. **The Phobos Experiment at RHIC - the Early Universe on a Table Top** Colloquium, Western Michigan University Physics Department, April 2001.
33. **The Phobos Experiment at RHIC - the Early Universe on a Table Top** Colloquium, North Carolina State University Physics Department, April 2001.
34. **Studies of Ultra-relativistic Au+Au collisions with the PHOBOS detector at RHIC** Seminar, KVI Gronigen, the Netherlands, March 2002.
35. **Systematics of $^{12}\text{C}+^{12}\text{C}$ inelastic scattering from angular correlation measurements** Seminar, Physics Division Argonne National Laboratory, Jan. 2003.
36. **Systematics of $^{12}\text{C}+^{12}\text{C}$ inelastic scattering from angular correlation measurements** Seminar, Michigan State University National Superconducting Cyclotron Laboratory, Jan. 2003.
37. **A solenoidal transport device for reactions in inverse kinematics** Seminar, Michigan State University National Superconducting Cyclotron Laboratory, Jan. 2004.
38. **The (d,p) reaction in light nuclei: past, present and future?** Seminar, University of Notre Dame Physics Department, March 2005.

39. **The (d,p) reaction in light nuclei: past, present and future?** Seminar, Argonne National Laboratory Physics Division, March 2005.
40. **Opportunities for nucleon transfer reactions with exotic beams: Classical nuclear physics in a new era** Seminar, Physics Division, Los Alamos National Laboratory, July, 2005.
41. **Nucleon transfer reactions with exotic beams: Classical nuclear physics in a new era** Seminar, Nuclear Science Division, Lawrence Berkeley National Laboratory, February, 2007.
42. **HELIOS at ATLAS: A new tool for inverse-kinematic reactions** Seminar, Chemistry and Physics Departments, Washington University at St. Louis, March 2008.
43. **Insights into the structure of ^7He** , Heavy-Ion Discussion Group, Physics Division Argonne National Laboratory, March 2008.
44. **Transfer reactions with exotic beams** Department Colloquium, Western Michigan University Department of Physics, January 2009.
45. **HELIOS at ATLAS: A novel new spectrometer for inverse-kinematic reactions** Seminar, Physics Division, Los Alamos National Laboratory, May 2009.
46. **HELIOS at ATLAS: A novel new spectrometer for inverse-kinematic reactions** Seminar, National Superconducting Cyclotron Laboratory, Michigan State University, E. Lansing MI, January 2010.
47. **New results from HELIOS** Physics Department Seminar, University of Notre Dame, April 2010.
48. **How exotic is ^{16}C ? Study of the $^{15}\text{C}(\text{d},\text{p})^{16}\text{C}$ reaction.** Seminar, Physics Division, Argonne National Laboratory, November 2010.
49. **Lecture Series on "Probing Exotic Nuclear Structure with Transfer Reactions,** Institut fur Kern und Stralphysik, KU Leuven, Leuven Belgium, April 2012.
50. **Everything old is new again: Classical nuclear physics in a new era** Particle and Nuclear Physics Seminar, Department of Physics, University of Connecticut, August 2013.

51. **Transfer reactions with exotic beams: challenges and opportunities** Physics Department Seminar, Rutgers University, April 2015.
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