Education

1993-1999 – **Ph.D**., **MS**, Experimental Nuclear Physics, University of Washington
1988-1992 – **BS** Physics, University of Virginia
1986-1988 – College du Leman International School, Geneva, Switzerland

Professional

2006-Present–**Argonne National Laboratory, Accelerator Physics, Physics Division**
Title: Accelerator Physicist, ANL Superconducting RF Group Leader

2001-2006 –**Argonne National Laboratory, Accelerator Physics, Physics Division**
Title: Assistant Physicist, Accelerator Physicist
Supervisor: Dr. Kenneth W. Shepard

Primary Responsibility: Research and development in the area of superconducting radio frequency (SRF) cavities and related subsystems:

- Technical leader on cavity surface preparation and testing at Argonne; fabrication and testing of five production-style superconducting cavities required for the next generation of rare isotope beams facility.
- Project manager for a new $2M joint Superconducting Cavity Surface Processing Facility (SCSPF) at Argonne built in collaboration with Fermilab.
- Principal investigator for SRF activities at ANL for the International Linear Collider (ILC) effort; to include the establishment at ANL of a new electropolishing capability for ILC cavities.

1999-2001–**Argonne National Laboratory, Accelerator Physics, Physics Division**
Title: Postdoctoral appointee, Accelerator Physics
Supervisor: Dr. Kenneth W. Shepard

- Performed beam tests on and helped demonstrate proof-of-principle for a new very low frequency (12 MHz) cw radio frequency quadrupole for the proposed Rare Isotope Accelerator (RIA) project.
- Developed and adapted the first clean processing techniques for low-velocity superconducting cavities such as those used in ATLAS and for the next generation rare isotope beams facility.

1993-1999 **– University of Washington, Nuclear Physics Laboratory, Gamma-ray/charged-particle spectroscopy,**
Title: Research Associate
Supervisor: Professor Kurt A. Snover

1989-1992 **– University of Virginia Physics Department/Los Alamos National Laboratory Gamma-ray/charged particle spectroscopy,**
Title: Research Assistant
Supervisor: Professor Klaus O.H. Ziock

Publications, International Conferences and Workshops

(the first name for each work indicates the primary or presenting author)

Refereed Publications

1. J.P. Seitz, B.B. Back, M.P. Carpenter, I. Diószegi, K. Eisenman, P. Heckman, D.J. Hofman, **M.P. Kelly**, T.L. Khoo, S. Mitsuoka, V. Nanal, T. Pennington, R.H. Siemssen, M. Thoennessen and R.L. Varner, "Observation of the hot GDR in neutron-deficient thorium evaporation residues", Nucl. Phys. A750, 245-255 (2005).
2. J. Seitz, T. Baumann, K. Eisenman, P. Heckman, M. Thoennesen, R.L. Varner, D.J. Hofman, V. Nanal, I. Dioszegi, B.B. Back, M.P. Carpenter, **M.P.Kelly**, T.L. Khoo, T. Pennington, R.H. Siemssen, 2002 Fall Meeting of the Division of Nuclear Physics of the American Physical Society, East Lansing, MI, October 9-12,2002, Bull. Am. Phys. Soc. **47**, 83 (2002).
3. **M.P. Kelly**, K.A. Snover, J.P.S. van Schagen, M. Kicinska-Habior, Z. Trznadel, "The GDR in highly excited nuclei: does the width saturate?", Phys. Rev. Lett. **82**, 3404 (1999).
4. J.P.S. van Schagen, K.A. Snover, D.W. Storm, **M.P. Kelly**, J.F. Amsbaugh, J.H. Gundlach, D.C. Wright, "The ^{4}He(α,γ)^{8}Be radiative capture reaction: A precision measurement of CVC/SCC in the mass-8 isomultiplet" American Physical Society Centennial Meeting, Atlanta, Georgia, March 20-26, (1999).
5. J.P. Lestone, A.A. Sonzogni, **M.P. Kelly**, R. Vandenbosch, D.J. Hinde, M. Dasgupta, J.R. Leigh, D.G. Marinaro, J.O. Newton, N. Majumdar, P. Bhattacharya, D.C. Biswas, R.K. Choudhury, D.M. Nadkarni, A. Saxena, Comment on "Anomalous peaklike structure in the fission fragment anisotropies at sub-barrier energies in ^{11}B, ^{12}C, ^{16}O, ^{19}F+^{232}Th reactions", Phys. Rev. Lett. **81**, 4776 (1998).
6. A.A. Sonzogni, J.D. Bierman, **M.P. Kelly**, J.P. Lestone, J.F. Liang, R. Vandenbosch, "Transfer and surface vibration coupling in the fusion of ^{40}Ca+^{46,48,50}Ti at near-barrier energies", Phys. Rev.C **57**, 722 (1998).
7. J.P. Lestone, A.A. Sonzogni, **M.P. Kelly**, R. Vandenbosch, "Influence of the ground state spin of target nuclei on the anomalous behavior of fission fragment anisotropies", Phys. Rev. C **56**, R2907 (1997).
8. **M.P. Kelly**, J.F. Liang, A.A. Sonzogni, K.A. Snover, J.P.S. van Schagen, J.P. Lestone, "Preequilibrium particle emission and the giant-dipole resonance in Sn nuclei", Phys. Rev. C **56**, 3201 (1997).
9. J.F. Liang, J.D. Bierman, **M.P. Kelly**, A.A. Sonzogni, R. Vandenbosch, "Dissipative effects in the formation of the ^{156}Er compound nucleus", Phys. Rev. C **56**, 908 (1997).
10. J.F. Liang, J.D. Bierman, **M.P. Kelly**, A.A. Sonzogni, R. Vandenbosch, J.P.S. van Schagen, "Entrance channel dependent light charged particle emission from the ^{156}Er compound nucleus", Phys. Rev. Lett **78**, 3074 (1997).
11. J.P. Lestone, A.A. Sonzogni, **M.P. Kelly**, D. Prindle, "Near- and sub-barrier ^{12}C+^{232}Th Fission fragment anisotropies", Phys. Rev. C **55**, R16 (1997).
12. M. Kicinska-Habior, Z. Trznadel, K.A. Snover, A. Maj, **M.P. Kelly**, "New results in high-energy g-ray studies from heavy-ion reactions at around 10 MeV/u", Acta Phys. Pol. B **28**, 189 (1997).
13. J.D. Bierman, P. Chan, J.F. Liang, **M.P. Kelly**, A.A. Sonzogni, R. Vandenbosch, "Fusion barrier distributions for heavy ion systems involving prolate and oblate target nuclei", Phys. Rev. C **54**, 3068 (1996).
14. J.D. Bierman, P. Chan, J.F. Liang, **M.P. Kelly**, A.A. Sonzogni, R. Vandenbosch, "Experimental fusion barrier distributions reflecting Projectile octupole state coupling to prolate and oblate target nuclei", Phys. Rev. Lett. **76**, 1587 (1996).
15. M. Kicinska-Habior, K.A. Snover, A. Maj, Z. Drebi, D. Ye, **M. Kelly**, "Ultradipole radiation from low-energy heavy-ion collisions", Acta. Phys. Pol. B **26**, 439 (1995).

Conference and Workshop Proceedings

16. T. Tajima, C. Boffo, **M.P. Kelly**, "Design of a New Electropolishing System in the U.S. for SRF Cavities", Proceeding of the 10th European Particle Accelerator Conference, Edinburgh, UK, June 26-30, Submitted (2006)
17. **M.P. Kelly**, "SC Spoke Cavities" High Intensity High Brightness Hadron Beams (HB2006), Tsukuba, Japan, May 29-June 2, Submitted, (2006).
18. **M.P. Kelly**, M. Kedzie, K.W. Shepard, "A Joint ANL/FNAL Cavity Surface Processing Facility", Proceedings of the 12th International Workshop on RF Superconductivity, Ithaca, NY, July 10-15, Submitted (2005).
19. **M.P. Kelly**, M. Kedzie, K.W. Shepard, "Structures for RIA and FNAL Proton Driver", Proceedings of the 12th International Workshop on RF Superconductivity, Ithaca, NY, July 10-15, Submitted, (2005).
20. Z. Conway, K.W. Shepard, **M.P. Kelly,** J. Fuerst, M. Kedzie, "Electromagnetic and Mechanical Mode Interactions of Spoke-Loaded Cavities", Proceedings of the 12th International Workshop on RF Superconductivity, Ithaca, NY, July 10-15, Submitted, (2005).
21. K.W. Shepard, **M.P. Kelly**, J. Fuerst, M. Kedzie, Z. Conway, "Development of Spoke Cavities for RIA", Proceedings of the 12th International Workshop on RF Superconductivity, Ithaca, NY, July 10-15, Submitted, (2005).
22. J. Rathke, M. Cole, E. Peterson, T. Schultheiss, K.W. Shepard, J. Fuerst, M. Kedzie, **M.P. Kelly,** "Prototyping Activities at AES for ANL-RIA and ATLAS Cavities", Proceedings of the 12th International Workshop on RF Superconductivity, Ithaca, NY, July 10-15, Submitted, (2005).
23. K. W. Shepard, Z. Conway, J. Fuerst, M. Kedzie, **M.P. Kelly,** "Prototype Superconducting Triple-Spoke Cavity for Beta = 0.63", Proc. of the 2005 Part. Accel. Conf., Knoxville, TN, May 16-20, p.4339, (2005).
24. K. W. Shepard, Z. Conway, J. Fuerst, M. Kedzie, **M.P. Kelly,** "Superconducting Triple-Spoke Cavity for Beta =0.5 Ions", Proc. of the 2005 Part. Accel. Conf., Knoxville, TN, May 16-20, p.4344, (2005).
25. **M.P.Kelly,** K.W. Shepard, J.D. Fuerst, M. Kedzie, "Cold Tests of a Superconducting Co-axial Halfwave Cavity for RIA", Proceedings of LINAC 2004, Lubeck, Germany, August 16-20, p. 608, (2004).
26. **M.P.Kelly,** K.W. Shepard, J.D. Fuerst, M. Kedzie, "Superconducting β=0.15 Quarter-wave Cavity for RIA", Proceedings of LINAC 2004, Lubeck, Germany, August 16-20, p. 605, (2004).
27. **M.P. Kelly**, K.W. Shepard, J.D. Fuerst, M. Kedzie, Cold Tests of the RIA Two-Cell Spoke Cavity, Proc. of the 11th Workshop on RF Superconductivity, Travemunde, Germany, September 8-12, (2003).
28. **M.P. Kelly**, K.W. Shepard, J.D. Fuerst, M. Kedzie, Microphonics Measurements in RIA Cavities, Proc. of the 11th Workshop on RF Superconductivity, Travemunde, Germany, September 8-12, (2003).
29. J.D. Fuerst**,** K.W. Shepard, **M.P. Kelly**, M. Kedzie, Drift-tube Cavity Cryomodule Design for RIA, Proc. of the 11th Workshop on RF Superconductivity, Travemunde, Germany, September 8-12, (2003).
30. **M.P. Kelly,** K.W. Shepard, J.D. Fuerst, and M. Kedzie, Cavity Development for RIA, The Rare Isotope Accelerator (RIA) Research & Development Workshop, Bethesda, MD, August 26-28, (2003).
31. K.W. Shepard, **M.P. Kelly**, J.D. Fuerst, M. Kedzie, Superconducting 345 MHz Two-Spoke Cavity for RIA, Proc. of the 2003 Part. Accel. Conf., Portland OR, May 12-16, p. 1294, (2003).
32. K.W. Shepard, **M.P. Kelly**, J.D. Fuerst, M. Kedzie, Superconducting Intermediate-Velocity Cavity Development for RIA, Proc. of the 2003 Part. Accel. Conf., Portland OR, May 12-16, p. 1297, (2003).

33. **M.P. Kelly**, K.W. Shepard, J.D. Fuerst, M. Kedzie, Microphonics Measurements in SRF Cavities for RIA, Proc. of the 2003 Part. Accel. Conf., Portland OR, May 12-16, p. 1291, (2003).
34. K.W. Shepard, **M.P. Kelly**, J.D. Fuerst, "Superconducting Drift-tube Cavity Development for the RIA Driver", in Proc. of the 2002 Linac Conf., Gyeongju, Korea, August 19-23, p. 476, (2002).
35. P.N. Ostroumov, **M.P. Kelly**, A.A. Kolomeits, J.A. Nolen, M. Portillo, K.W. Shepard, "A Post Accelerator for the U.S. Rare Isotope Facility", in 14th International Conference on Electromagnetic Isotope Separators and Techniques Related to Their Applications, Victoria, B.C., Canada, May 6-10, (2002).
36. **M.P. Kelly**, "Superconducting RF Activities at Argonne National Laboratory", 10th Workshop on RF Superconductivity, Tsukuba, Japan, Sept. 6-11, p. 1, (2001).
37. **M.P. Kelly**, K.W. Shepard, M. Kedzie, "High-pressure Rinse and Chemical Polish of a Spoke Cavity", 10th Workshop on RF Superconductivity, Tsukuba, Japan, Sept. 6-11, p. 517, (2001).
38. **M.P. Kelly**, K.W. Shepard, M. Kedzie, G.P. Zinkann, "Cold Tests of a Spoke Cavity Prototype for RIA", in Proc. of the 2001 PAC, Chicago, IL, June 18-22, p. 1047, (2001).
39. **M.P. Kelly**, P.N. Ostroumov, K.W. Shepard, B.E. Clifft, M. Kedzie, "Singly-Charged Heavy-ion Beam Studies on A 12 MHZ RFQ", in Proc. of the 2001 PAC, Chicago, IL, June 18-22, p. 506, (2001).
40. K.W. Shepard, M. Kedzie, **M.P. Kelly**, "Superconducting Intermediate-Velocity Drift-Tube Cavities for the RIA Driver Linac, in Proc. of the 2001 PAC, Chicago, IL, June 18-22, p. 1053, (2001).
41. K.W. Shepard, J.R. Delayen, C.M. Lyneis, J. Nolen, P. Ostroumov, J.W. Staples, J. Brawley, C. Hovater, M. Kedzie, **M.P. Kelly**, J. Mammosser, C. Piller, M. Portillo, "SC Driver Linac for a Rare Isotope Facility", 9th Workshop on RF Superconductivity, Santa Fe, NM, Nov. 1-5, 1999, LA-13782-C, pp. 345-351, (2000).