

## **DIANE MELANIE MARKOFF**

[dmarkoff@nccu.edu](mailto:dmarkoff@nccu.edu), (919) 530-6452

North Carolina Central University, Department of Mathematics and Physics, Durham, NC 27707

### **Education and Training**

- 1997 University of Washington, Seattle, WA  
**PhD in Experimental Nuclear Physics**
- 1986 University of California, Berkeley, CA  
**MS in Nuclear Engineering**
- 1983 University of California, Berkeley, CA  
**BS in Engineering Physics, BA in Applied Mathematics**

### **Research and Professional Experience**

- 2008-Present **Associate Professor**  
North Carolina Central University, Department of Physics
- 2004-2008 **Assistant Professor**  
North Carolina Central University, Department of Physics
- 2004-2006 **Adjunct Assistant Professor**  
North Carolina State University, Department of Physics
- 2001-2004 **Research Assistant Professor**  
North Carolina State University, Department of Physics  
Triangle Universities Nuclear Laboratory
- 1998-2001 **Post-Doctoral Research Associate**  
North Carolina State University, Department of Physics  
Triangle Universities Nuclear Laboratory

### **Publications and Invited Talks (7 relevant publications)**

25 peer reviewed publications in last ten years; 6 invited talks in last ten years

#### **Experimental Low-Energy Nuclear Physics – neutron and gamma-ray beam experiments**

J.M. Mueller, M.W. Ahmed, B.J. Davis, H.J. Karwowski, **D.M. Markoff**, L.S. Myers, M.C. Spraker, S. Stave, J.R. Tompkins, H.R. Weller and W.R. Zimmerman, *Polarization asymmetries in the  ${}^9\text{Be}(g,n)$  reaction*, Phys. Rev. C **92**, 034604 (2015).

Couture, A.H., T.B. Clegg, S. Tajima, C.R. Howell, B. Fallin, J.H. Esterline, A.S. Crowell, B.J. Crowe, **D.M. Markoff**, L.C. Cumberbatch, R.S. Pedroni, and H. Witała, *Cross-section measurements of  ${}^2\text{H}(n,np)n$  in symmetric star configurations*, Phys. Rev. C **85**, 054004 (2012).

Mueller, J.M., M.W. Ahmed, B. Davis, J.M. Hall, S.S. Henshaw, M.S. Johnson, H.J. Karwowski, **D. Markoff**, L.S. Myers, B.A. Perdue, S. Stave, J.R. Tompkins, M.J. Tuffley, H. Weller, *Measurement of prompt neutron polarization asymmetries in photofission of  ${}^{235,238}\text{U}$ ,  ${}^{239}\text{Pu}$ ,  ${}^{232}\text{Th}$* , Phys. Rev. C **85**, 014605 (2012).

Snow, W.M., C.D. Bass, T.D. Bass, B.E. Crawford, K. Gan, B.R. Heckel, D.Luo, **D.M. Markoff**, A.M. Micherdzinska, H.P. Mumm, J.S. Nico, A.K. Opper, M. Sarsour, E.I. Sharapov, H.E. Swanson, S.B. Wallbridge, and V. Zhumabekova, *Upper bound on parity-violating neutron spin rotation in  $^4\text{He}$* , Phys. Rev. **C83**, 022501(R) (2011).

Micherdzinska, A.M., C.D. Bass, T.D. Bass, K. Gan, D. Luo, **D.M. Markoff**, H.P. Mumm, J.S. Nico, A.K. Opper, E.I. Sharapov, *et al.*, *Polarized neutron beam properties for measuring parity-violating spin rotation in liquid  $^4\text{He}$* . Nucl. Instrum. Meth. **A631**, 80-89 (2011).

### **Neutrino Physics: (2 most important KamLAND publications)**

A. Gando, Y. Gando, T. Hachiya, A. Hayashi, S. Hayashida, H. Ikeda, K. Inoue, K. Ishidoro, Y. Karino, M. Koga, S. Matsuda, T. Mitsui, K. Nakamura, S. Obara, T. Oura, H. Ozaki, I. Shimizu, Y. Shirahata, J. Shirai, A. Suzuki, T. Takai, K. Tamae, Y. Teraoka, K. Ueashima, H. Watanabe, A. Kozlov, Y. Takemoto, S. Yoshida, K. Fushimi, T.I. Banks, B.E. Berger, B.K. Fujikawa, T. O'Donnell, L.A. Winslow, Y. Efremenko, H.J. Karwowski, **D.M. Markoff**, W. Tornow, J.A. Detwiler, S. Enomoto, M.P. Decowski. (KamLAND-Zen Collaboration) *Search for Majorana Neutrinos near the Inverted Mass Hierarchy Region with KamLAND-Zen*, Phys. Rev. Lett. **117** 082503 (2016).

A. Gando, Y. Gando, H. Hanakago, H. Ikeda, K. Inoue, K. Ishidoshiro, H. Ishikawa, M. Koga, R. Matsuda, S. Matsuda, T. Mitsui, D. Motoki, K. Nakamura, A. Obata, A. Oki, Y. Oki, M. Otani, I. Shimizu, J. Shirai, A. Suzuki, Y. Takemoto, K. Tamae, K. Ueshima, H. Watanabe, B.D. Xu, S. Yamada, Y. Yamauchi, H. Yoshida, A. Kozlov, S. Yoshida, A. Piepke, T.I. Banks, B.K. Fujikawa, K. Han, T. O'Donnell, L.A. Winslow, D. Dwyer, C. Mauger, R.D. McKeown, C. Zhang, B.E. Berger, J.G. Learned, S. Matsuno, M. Sakai, Y. Efremenko, H.J. Karwowski, **D.M. Markoff**, W. Tornow, J.A. Detwiler, S. Enomoto, and M.P. Decowski (The KamLAND Collaboration), *Reactor on-off antineutrino measurement with KamLAND*, Phys. Rev. **D 88**, 033001 (2013).

### **Synergistic Activities**

- Organizing Committee **APS Local Link** for Triangle Area
- Organizing Committee for Southeast Conference for Undergraduate Women in Physics (**CUWiP**) Durham 2010, Raleigh 2011, Durham 2015.
- Co-organized North Carolina Regional High-school Science Bowl (2012 – 2016).
- Chair, Student Affairs Committee for NCCU College of Science and Technology and the Annual CST Research Symposium (2009 – 2012); served on organizing committee for the first campus-wide University Research Symposium (2013) with undergraduate research.
- Membership: American Physical Society (**APS**), Division of Nuclear Physics (**DNP**), American Association of Physics Teachers (**AAPT**)

### **Identification of potential conflicts of interest**

Eric Adelberger and Blayne Heckel (Advisors, U of Washington), Chris Gould, and David Haase (Post-doc mentors, NCSU), **Advisees**: Brandon Davis (MSU), Kossi Agbeve (NCCU), Shawn Muslim (UNC-G) **Collaborators**: C. R. Howell (Duke), W. Tornow (Duke), H. Karwowski (UNC-CH), T. Clegg (UNC-CH), G. Feldman (GWU), K. Scholberg (Duke), P. Barbeau (Duke), Y. Efremenko (UT Knoxville), J. Maricic (UH), J. Learned (UH), B. Vogelaar (VT), J. Blackmon (LSU), W.M. Snow (IU), L. Winslow (MIT), J. Detwiler **Collaborations**: KamLAND, KamLAND-Zen, COHERENT, NuLat, Neutron Spin Rotation