

## **James Gerity**

Department of Physics & Astronomy  
Texas A&M University  
College Station, TX 77843

### **EDUCATION**

**University of Maryland, Baltimore County (UMBC), Baltimore, MD**

B.S. Physics, May 2011

B.S. Mathematics, May 2011

**Texas A&M University**

Ph.D. Physics, In progress

### **PUBLICATIONS**

- J. Gerity, P. M. McIntyre, "A cooling storage ring for an electron-ion collider," in COOL 2015, Newport News, VA, 2015.
- P. M. McIntyre et al., "Fixed-energy cooling and stacking for an electron ion collider," in IPAC 2015, Richmond, VA, 2015.
- S. Assadi et al., "Magnet design and synchrotron damping considerations for a 100 TeV hadron collider," in IPAC 2015, Richmond, VA, 2015.
- S. Assadi et al., "Higgs factory and 100 TeV hadron collider: Opportunity for a new world laboratory within a decade," arXiv preprint arXiv:1402.5973, 2014.
- A. Sattarov et al., "Neutronics of accelerator-driven subcritical fission for burning transuranics in used nuclear fuel," AIP Conference Proceedings, vol. 1525, no. 1, pp. 245-250, 2013.
- E. Sooby et al., "Molten salt considerations for accelerator-driven subcritical fission to close the nuclear fuel cycle," AIP Conference Proceedings, vol. 1525, no. 1, pp. 230-235, 2013.
- P. McIntyre et al., "Accelerator-driven subcritical fission in molten salt core: Closing the nuclear fuel cycle for green nuclear energy," AIP Conference Proceedings, vol. 1525, no. 1, pp. 636-642, 2013.

### **RESEARCH INTERESTS**

- Electron cooling dynamics and cooler design in regimes of strong magnetization and/or neutralization
- Use of genetic algorithms for multi-objective optimization problems in magnet design
- Design of 16+ T dipole magnets for FCC and other high-field applications
- Design of 2-5 T dipole magnets for moderate-field hadron collider applications
- Coupled simulation of heat flow and neutronics for accelerator-driven fission stability analysis

### **SKILLS**

- Finite element simulation with multiple codes: COMSOL Multiphysics, FEniCS
- Programming in C++ (ROOT), Python (numpy, matplotlib), Javascript (d3.js, jQuery, three.js), R
- CAD Layout using Autodesk Inventor