



THE UNIVERSITY
of NORTH CAROLINA
at CHAPEL HILL



UNC/TUNL Plans

Reyco Henning
U. Of North Carolina at Chapel Hill
And
Triangle Universities Nuclear Laboratory

Interests

- Primary: Neutrino physics and potential resolution of “anomalous” results.
- Secondary: New Detector Technology Development
- Personal: 3-5 year experiment, not long-term R&D.

Current Activities

- Interest from of Subset of Experimental Nuclear and Particle Astrophysics (ENPA) group at UNC:
 - Henning, Wilkerson (DOE ONP grant PI)
 - 3 post-docs, 8 grad students, technical staff, undergraduates.
 - Main effort: Majorana Experiment (Wilkerson CPM)
 - Also: KATRIN, Mini-CLEAN, HALO, neutron scattering, low-background assay.

Resources

- TUNL:
 - Consortium of NCSU, UNC and Duke.
 - High-Intensity Gamma Source and FEL, Tandem, LE Accelerators
 - Mechanical and Vacuum Engineers (5) and technical (9) staff.
 - Letter of support for SBL effort from TUNL Director (C. Howell)
- UNC:
 - Several Cleanrooms
 - Machine shop and Instrument Makers
 - DAQ Software developer and expert
 - Low-background assay (KURF)

UNC/TUNL Plans

- Initiated Collaboration with NIST (Mumm) and UW (Heeger) groups in Fall 2012.
 - Prototype segmented liquid scintillator detector
 - Submitted NSF proposal in November 2012 with UW, NIST:
 - UNC/TUNL roles:
 - Monte Carlo Simulation and Data Analysis
 - Active veto
 - Mechanical Design of Shield.
 - DAQ