

## RECOMMENDATIONS

The AARM collaboration has continued to grow and needs better tools to keep in touch. We therefore recommend expanding the wiki into an Integration Website which provides easy access to both AARM-funded projects (e.g. the Community Assay Database), as well as research portals to low background-related research. It is worth mentioning that AARM workshop attendance has always included international representatives. The website can easily be broadened to include all experiments worldwide. There was also enthusiastic support for continuing the workshops in roughly the same format: twice a year with a mixture of focused topics, talks on new results, and breakout sessions for working groups. Talks from the March 2014 meeting can be found at <https://zzz.physics.umn.edu/lowrad/meeting7/detailagenda>

We recognize that budget pressures will make it hard for funding agencies and review panels to find significant monies for additional screening infrastructure (e.g. partially-funded technicians or additional assay capability), even if it results in savings overall due to efficiencies and better access to screening. The resulting cost reduction would become obvious if every experiment entered into an agreement to quantify screening needs and reduce their proposals by a commensurate amount. However, this can only happen if all experiments have confidence that others will buy into the concept. While we have made large strides toward this goal, we believe that the website itself can facilitate the next step. We plan to provide an exhaustive list of all assay user facilities, including sensitivities, modalities, amount of time dedicated to outside users, and contact information. Matching users to the appropriate assay facility and technique will provide experience and cooperation between sites and allow them to pinpoint needs. The resulting community can more easily find common ground.

## WORKING GROUPS

A broad range of tasks related to assay, simulation, and low background techniques were prioritized and those that were most important were assigned working groups. These working groups are responsible for determining the most efficient way to advance their subject. Task 1 includes priority items with minimal budgetary needs, which we believe should necessarily be included in the next proposal. While minimal, resources will have to be requested for a contracted professional web-designer and content providers. Task 2-5 require further resources and the working group should evaluate whether their task should be part of a new umbrella AARM proposal or a separate proposal with ties to AARM.

N.B. The names beside each task are based on interests expressed during the meeting and are neither exhaustive nor fixed. Identifying additional should be the initial job of each working group.

## **Task 1: AARM Website Development and Umbrella Proposal**

All working groups should also compile a of links/publications appropriate to their work for posting on the website.

### **A. Overall design, siting, and content management**

*Prisca Cushman, Jodi, PNNL (Jeter Hall, John Orrell)*

*Angie Reisetter (Newsletter)*

Cloudant. Website design? Hosting

### **B. Assay Database**

*James Loach, Jodi Cooley, Ian Lawson*

*Contact screening heads at each facility, but not time yet for database*

*SNOLAB right away (input data, beta testing)*

*NIM paper in time for proposal*

### **C. Screening Facilities scheduling and sensitivities, consortium building**

*DongMing Mei, Prisca Cushman, PNNL, Ian Lawson, Mani Tripathi*

*Contact screening heads for consortium building.*

### **D. GEANT/FLUKA/MCNP code tools, code benchmarking and updates**

*Anthony Villano, Dennis Wright, Toni Empl, Angie Reisetter*

*Part of geant/fluka in depth paper. Create website for the geant results (Toni already has one). Going forward, try to make a stand-alone paper on processes and models.*

*But not unless they find out about the processes*

*Benchmarking website for Geant. Contact Dennis*

### **E. Nuclear Databases, alpha-n, database and references**

*Alan Robinson, Silvia Scorza, Chao Zhang*

*Make data available. Decide the format*

*DongMing talk to Chao – new cross sections.*

### **F. Cleaning and Handling Protocols. Standardize Assay Preparation**

*Jodi Cooley, Richard Schnee, Jeter Hall, Ray Bunker*

*Eric Hoppe is a resource.*

### **G. Cosmogenic activation, underground storage, transport shielding, spectral info**

*Eric Hoppe, DongMing Mei*

### **H. Research Portals and Interdisciplinary Studies**

*Ask previous DUSEL collaborators in those fields*

*Put in proposal*

**Task 2.** Experiments in Benchmarking Underground Showers

*Ray Bunker, Thomas Langford, Marco Selvi, Prisca Cushman, Anthony Villano, Chao Zhang*

*Simulation study for Soudan, can this be used to introduce new detector functionality*

*Plan for the next detector or FAN underground –part of the feasibility study (one year?) under AARM proposal.*

*Angle for use of Soudan (use it to show what you can do at Soudan), but keep open collaboration with LVD. Complementarity*

**Task 3.** Facility for studying nuclear response (energy scale) across technologies  
neutron beam vs DT n-generator, Xe, Ar, Ge, Si, etc

*DongMing Mei, Matthew Szydagis, Anthony Villano*

*DongMing: Gather ideas and communicate with broader community. Anthony: Small specific study – Ge detector to Notre Dame and do an experiment.*

**Task 4.** Update radiogenic code beyond SOURCES, provide new tools, link to Geant

*Alan Robinson, Silvia Scorza, Chao Zhang, Dennis Wright, Jodi Cooley*

*Chao is ready to write the code. This should be part of the umbrella proposal, but it is not the website “content”.*

**Task 5.** Improvements and measurements in radon plateout and diffusion

*Jodi Cooley, Richard Schnee, Jeter Hall, Ray Bunker*

*Under umbrella proposal. XIA, Alpha counters, do studies*

*For now write up the plan for the proposal.*