**IceCube Institutional Memorandum Of Understanding (MOU)**

**Scope of Work**

**Marquette University**

**Karen Andeen**

**Ph.D Scientists** (Faculty Scientist/Post Doc Grads): **2** (1 1 0)

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Labor Cat.** | **Names** | **WBS Level 3** | **Tasks** | **WBS 2.1** | **WBS 2.2** | **WBS 2.3** | **WBS 2.4** | **WBS 2.5** | **WBS 2.6** | **Grand Total** |
| Program Coordination | Detector Maintenance & Operations | Computing & Data Management | Data Processing & Simulation | Software | Calibration |
| KE | Andeen, Karen | Administration | Program administration | 0.2 |  |  |  |  |  | 0.2 |
|  | Surface Detectors | Surface detector R&D |  | 0.05 |  |  |  |  | 0.05 |
|  | **Andeen, Karen Total** | |  | **0.2** | **0.05** |  |  |  |  | **0.25** |
| PO | PLUM, MATTHIAS | Surface Detectors | Surface detector R&D |  | 0.5 |  |  |  |  | 0.5 |
|  | **PLUM, MATTHIAS Total** | |  |  | **0.5** |  |  |  |  | **0.5** |
| **Marquette University Total** | | |  | **0.2** | **0.55** |  |  |  |  | **0.75** |

**Faculty:**

Karen Andeen – Administration of program at newer IceCube institution, CR composition data analysis, R&D for CR surface (scintillator) detector.

**Scientists and Post Docs:**

Matthias Plum – R&D for CR surface detector (Geant4 detector simulation and prototype testing), set up and maintain local cluster to contribute to CR simulations and for general IceCube use, Cosmic ray composition analysis.

**Grad Students:** No graduate students at Marquette. (Currently have 5 undergrads in the lab.)

**Marquette Computing Resources**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **2016** | | **2017** | |
|  | **CPU Cores** | **GPU Cards** | **CPU Cores** | **GPU Cards** |
| **IceCube** | 96 | 16 | 96 | 16 |
| **PINGU** |  |  |  |  |
| **Gen2** |  |  |  |  |