**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** | **Grand Total** |
| Program Management | Detector Maintenance & Operations | Computing & Data Management | Triggering & Filtering | Data Quality, Reconstruction & Simulation Tools |
| KE | Andeen, Karen  | Administration | Starting a new program at a new IceCube institution | 0.20 |   |   |   |   | 0.20 |
|  | Surface Detector Systems | Lab renovation and acquisition for future surface detector R&D |  |  0.05 |   |   |   | 0.05 |
|  | Computing Resources | Building cluster for future simulation production  |  |   | 0.05  |   |   | 0.05 |
|  |  | Reconstruction and Analysis Tools | 3-year Cosmic Ray Composition Analysis |  |  |  |  | 0.10 | 0.10 |
|   | **Andeen, Karen Total** |  | **0.20** | **0.05** | **0.05** |  | **0.10** | **0.40** |
| PO | THARP, TIMOTHY | Surface Detector Systems | Lab renovation and acquisition for future surface detector R&D |   | 0.25 |   |   |   | 0.25 |
|   |   | Computing Resources | Building cluster for future simulation production  |   |   |  0.25 |   |  | 0.25 |
|  |  | Administration | Starting a new program at a new IceCube institution | 0.10 |  |  |  |  | 0.10 |
|   | **THARP, Timothy Total** |  | **0.10** | **0.25** | **0.25** |  |  | **0.60** |
| **Marquette University Total** |  | **0.30** | **0.30** | **0.30** |  | **0.10** | **1.00** |

**Faculty:**

Karen Andeen – Starting new program at new IceCube institution, CR data analysis, Building cluster to contribute to CR simulations, Lab renovation and acquisition for future CR surface detector R&D.

**Scientists and Post Docs:**

Timothy Tharp – Asssisting with work to start new program at new IceCube institution, Lab renovation and acquisition for future CR surface detector R&D, Building cluster to contribute to CR simulations.

**Grad Students:** No graduate students at Marquette