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

**Scope of Work**

**Drexel University**

**Naoko Kurahashi Neilson**

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

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 | Naoko Kurahashi Neilson | 2.2.3 Online Filter (Pnf) | Point Source WG Lead |  | 0.25  |   |  |   |  | 0.25 |
|  | 2.1.1 Administration | ICB member | 0.05 |  |   |   |   |  | 0.05 |
|  | 2.2.3 Online Filter (Pnf)  | Splitting – Q/P frame and coincidence  |  | 0.05  |   |  |  |  | 0.05 |
|  | 2.5.3 Reconstruction | Optimization of veto techniques for PS |  |  |  |  | 0.10 |  | 0.10 |
|   | **Naoko Kurahashi Neilson Total** |  | **0.05** | **0.30** |  |  | **0.10** |  | **0.45** |
| PO | Mike Richman | 2.5.1 Core Software  | Software strike team |  |  |  |  | 0.30 |  | 0.30 |
|  | 2.5.4 Science Support Tools | HistLite, pyBDT, and other software tools |  |  |  |  | 0.30 |  | 0.30 |
|  | **Mike Richman Total** |  |  |  |  |  | **0.60** |  | **0.60** |
| GR | Elizabeth Wills | 2.2.4 Monitoring | Detector monitoring shifts |  | 0.03 |  |  |  |  | 0.03 |
|  |  | 2.2.3 Online Filter (Pnf)  | High statistic atmospheric neutrino sample |  | 0.20 |  |  |  |  | 0.20 |
|  | Relethford, Ben | 2.2.3 Online Filter (Pnf) | Astrophysical diffuse component in the Point Source data |  | 0.20 |  |  |  |  | 0.20 |
|  | **Drexel GR total** |  |  | **0.43** |  |  |  |  | **0.43** |
| **Drexel University Total** |  |  |  **0.05**  | **0.73** |  |  | **0.70** |  | **1.48** |

**Faculty:**

Naoko Kurahashi Neilson

M&O

* Working group co-leader for Point Source analysis channel
* Development/maintenance of event splitting modules, particularly for the muon channel but for all events
* Development of improved veto techniques optimized for point sources

 Analysis

* Point source analysis focused on the southern sky, particularly using contained cascades and starting tracks

Post Docs

 Mike Richman

 M&O

* Member of IceCube software strike team – core individuals responsible for maintenance of IceCube software systems under direction of IceCube Software Coordinator.
* Development and maintenance of HistLite and pyBDT, two analysis software used collaboration wide

Analysis

* Cascade point source analysis

Graduate Students

 Elizabeth Wills

 M&O

* Development of a high statistics atmospheric neutrino data set to be used for anisotropy and seasonal variation studies

Analysis

* Cosmic ray anisotropy search in atmospheric neutrinos

Ben Relethford

 M&O

* service work in the Point Source working group by fitting for an astrophysical diffuse component in the Point Source data