**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