

**IceCube M&O MoU SOW Summary v23.1 2018.0321**  
**Authors Contribution**

v 23.1, March 21, 2018		Authors Head Count			IceCube Authors: M&O Responsibilities (FTE)						Total	
Institution	Institutional Lead	Ph.D. Authors	Faculty	Scientists / Post Docs	Ph.D. Students	WBS 2.1 Program Management	WBS 2.2 Detector Operations & Maintenance	WBS 2.3 Computing & Data Management	WBS 2.4 Data Processing & Simulation	WBS 2.5 Software	WBS 2.6 Calibration	
University of Alabama*	Dawn Williams	3	(2	1	1)	0.35	0.20	0.05		0.40	0.65	1.65
University of Alaska	Katherine Rawlins	1	(1	0	0)		0.25			0.20		0.45
Clark Atlanta	George Japaridze	1	(1	0	0)		0.02					0.02
Drexel University	Naoko Kurahashi Neilson	2	(1	1	2)	0.05	0.50			0.55		1.10
Georgia Tech	Ignacio Taboada	1	(1	0	2)		0.25					0.25
LBNL*	Spencer Klein	5	(3	2	2)	0.13	0.24	1.08		0.15		1.60
Marquette University	Karen Andeen	2	(1	1	0)	0.20	0.55					0.75
Massachusetts Institute of Technology	Janet Conrad	2	(1	1	4)	0.55			0.50	0.95	0.15	2.15
Michigan State University*	Tyce DeYoung	2	(2	0	2)	0.20	0.03			0.05	0.25	0.53
Ohio State University	James Beatty	2	(1	1	0)	0.05	0.05		0.05			0.15
Pennsylvania State University*	Doug Cowen	5	(1	4	3)	0.50	1.37	0.10		0.30		2.27
South Dakota School of Mines & Technology*	Xinhua Bai	1	(1	0	1)	0.10	0.02		0.15	1.23		1.50
Southern University	Ali Fazely	3	(2	1	0)		0.02	0.30		0.60		0.92
Stony Brook University	Joanna Kirylyuk	1	(1	0	2)	0.10	0.35		0.30	0.05		0.80
University of California, Berkeley	Buford Price	1	(1	0	0)	0.10						0.10
University of California, Irvine	Steve Barwick	1	(1	0	1)		0.02					0.02
University of Delaware*	Tom Gaisser	6	(4	2	2)	0.35	1.45			0.55		2.35
University of Kansas	Dave Besson	1	(1	0	0)		0.02					0.02
University of Maryland*	Greg Sullivan	5	(3	2	3)	1.40	1.34	0.50	0.10	1.00		4.34
University of Rochester	Segev BenZvi	1	(1	0	1)	0.15	0.35			0.30		0.80
University of Texas at Arlington	Benjamin Jones	1	(1	0	1)	0.05				0.25	0.70	1.00
University of Wisconsin, River Falls*	Jim Madsen	3	(3	0	0)	0.60				0.10	0.20	0.90
University of Wisconsin, Madison	Albrecht Karle	18	(6	12	14)	2.23	3.10	0.10	1.60	1.10	3.20	11.33
Yale University	Reina Maruyama	1	(1	0	0)		0.05			0.05		0.10
<b>U.S. Institutions Subtotal</b>		<b>69</b>	<b>(41</b>	<b>28</b>	<b>41)</b>	<b>7.11</b>	<b>10.17</b>	<b>2.13</b>	<b>2.70</b>	<b>7.83</b>	<b>5.15</b>	<b>35.09</b>
DESY-Zeuthen	Marek Kowalski	11	(6	5	10)	0.95	1.27	1.20		0.50	0.30	4.22
RWTH Aachen	Christopher Wiebusch	2	(1	1	9)	0.35	0.42	0.20	0.45	0.95	0.90	3.27
Universität Dortmund	Wolfgang Rhode	2	(1	1	6)		0.83		0.30	1.00		2.13
Universität Mainz	Lutz Köpke	3	(2	1	5)	0.25	1.60			0.45		2.30
University of Münster	Alexander Kappes	2	(1	1	1)	0.40						0.40
Universität Wuppertal	Klaus Helbing	2	(1	1	5)		0.93			0.40	0.20	1.53
Humboldt Universität Berlin	Marek Kowalski	1	(1	0	1)						0.20	0.20
Universität Bochum	Julia Tjus	1	(1	0	2)		0.18			0.10		0.28
Technische Universität München	Elisa Resconi	1	(1	0	4)		0.05		0.50	0.50		1.05
Université Libre de Bruxelles	J. A. Aguilar Sanchez	2	(1	1	2)	0.50	0.57			0.50		1.57
University of Gent	Dirk Ryckbosch	2	(1	1	4)	0.05	0.03		0.55	0.05		0.68
Vrije Universiteit Brussel	Catherine de Clercq	3	(2	1	1)	0.40	0.72			0.25		1.37
Stockholm University	Klas Hultqvist	4	(3	1	2)	0.30	0.81			0.20		1.31
Uppsala University	Olga Botner	3	(3	0	2)	0.40	0.48			0.25		1.13
University of Alberta	Darren Grant	6	(3	3	4)	0.70	0.60	0.45	1.40	0.45	0.45	4.05
University of Oxford	Subir Sarkar	1	(1	0	0)	0.20						0.20
University of Canterbury	Jenni Adams	2	(1	1	2)	0.05	0.20	0.05		0.05	0.10	0.45
University of Adelaide	Gary Hill	2	(1	1	1)					1.90		1.90
Chiba University	Shigeru Yoshida	7	(3	4	0)	0.10	0.20	0.80	0.05	0.70	0.40	2.25
Université de Genève	Teresa Montaruli	2	(1	1	2)	0.30	0.10		0.10	1.40		1.90
Universität Erlangen-Nürnberg	Gisela Anton	3	(2	1	2)	0.20				0.85		1.05
Niels Bohr Institute	Jason Koskinen	4	(2	2	2)	0.25	0.13		0.35	0.25	0.35	1.33
Sungkyunkwan University	Carsten Rott	2	(1	1	5)	0.30	0.80				0.55	1.65
SNOLAB / Queen's University	Ken Clark	1	(1	0	0)					0.10		0.10
<b>Non-U.S. Institutions Subtotal</b>		<b>69</b>	<b>(41</b>	<b>28</b>	<b>72)</b>	<b>5.70</b>	<b>9.92</b>	<b>2.70</b>	<b>3.70</b>	<b>10.85</b>	<b>3.45</b>	<b>36.32</b>
<b>Total U.S. &amp; Non-U.S.</b>		<b>138</b>	<b>(82</b>	<b>56</b>	<b>113)</b>	<b>12.81</b>	<b>20.08</b>	<b>4.83</b>	<b>6.40</b>	<b>18.68</b>	<b>8.60</b>	<b>71.40</b>

Changes since last official version are colored red

\* IceCube M&O Subarwee Institutions