

**IceCube M&O MoU SOW Summary v25.1 2018.1218**  
**Authors Contribution**

v 25.1 January 2, 2019		Authors Head Count				IceCube Authors: M&O Responsibilities (FTE)						
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	Total
University of Alabama*	Dawn Williams	3	(2	1	3)	0.45	0.20	0.05		0.60	0.55	1.85
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	3)	0.05	0.50					0.55
LBLN*	Spencer Klein	4	(2	2	1)	0.13	0.24	1.08				1.45
Marquette University	Karen Andeen	2	(1	1	0)	0.20	0.55					0.75
Massachusetts Institute of Technology	Janet Conrad	2	(1	1	3)	0.40			0.00	0.85	0.15	1.40
Mercer University	Frank McNally	1	(1	0	0)							0.00
Michigan State University*	Tyce DeYoung	2	(2	0	3)	0.30	0.03			0.40	0.25	0.98
Ohio State University	James Beatty	2	(1	1	0)				0.05	0.25		0.30
Pennsylvania State University*	Doug Cowen	5	(1	4	3)	0.50	1.14			0.53		2.17
South Dakota School of Mines & Technology*	Xinhua Bai	1	(1	0	1)	0.18	0.02		0.15	1.45		1.80
Southern University	Ali Fazely	3	(2	1	0)		0.02	0.30		0.60		0.92
Stony Brook University	Joanna Kiryluk	1	(1	0	2)	0.15	0.10		0.20			0.45
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 California, Los Angeles	Nathan Whitehorn	1	(1	0	0)	0.15				0.10		0.25
University of Delaware*	Tom Gaisser	9	(6	3	2)	0.35	1.40	0.20	0.50	0.30		2.75
University of Kansas	Dave Besson	1	(1	0	0)		0.02					0.02
University of Maryland*	Greg Sullivan	6	(3	3	1)	1.15	1.31	0.50	0.50	0.30	0.00	3.76
University of Rochester	Segev BenZvi	1	(1	0	1)	0.15	0.50			0.15		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	16	(5	11	16)	2.23	3.65	0.00	2.30	1.30	2.85	12.33
Yale University	Reina Maruyama	1	(1	0	0)		0.05			0.05		0.10
<b>U.S. Institutions Subtotal</b>		<b>72</b>	<b>(43</b>	<b>29</b>	<b>43)</b>	<b>7.19</b>	<b>10.51</b>	<b>2.13</b>	<b>3.70</b>	<b>7.98</b>	<b>4.70</b>	<b>36.21</b>
DESY-Zeuthen	Marek Kowalski	10	(5	5	10)	1.55	0.82	1.10		0.70	0.30	4.47
RWTH Aachen	Christopher Wiebusch	2	(1	1	11)	0.45	0.52	0.20	0.50	0.95	1.20	3.82
Universität Dortmund	Wolfgang Rhode	2	(1	1	5)		0.73		0.30	1.00		2.03
Universität Mainz	Lutz Köpke	3	(2	1	6)	0.25	1.45			0.45		2.15
University of Münster	Alexander Kappes	2	(1	1	2)	0.30					0.20	0.50
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)	0.10	0.18			0.10		0.38
Technische Universität München	Elisa Resconi	3	(1	2	7)		0.05		0.50	0.50		1.05
Université Libre de Bruxelles	J. A. Aguilar Sanchez	4	(3	1	4)	0.40	0.77			0.25		1.42
University of Gent	Dirk Ryckbosch	2	(1	1	5)	0.05	0.03		0.55	0.05		0.68
Vrije Universiteit Brussel	Catherine de Clercq	3	(3	0	3)	0.50	0.06			0.35		0.91
Stockholm University	Klas Hultqvist	4	(3	1	2)	0.30	0.56			0.20		1.06
Uppsala University	Olga Botner	3	(3	0	2)	0.40	0.41			0.25		1.06
University of Alberta	Darren Grant	5	(4	1	5)	0.70	0.60	0.45	1.15	0.65	0.45	4.00
University of Oxford	Subir Sarkar	1	(1	0	0)	0.20						0.20
University of Canterbury	Jenni Adams	2	(1	1	2)	0.20	0.15			0.15	0.15	0.65
University of Adelaide	Gary Hill	1	(1	0	1)					0.90		0.90
Chiba University	Shigeru Yoshida	5	(3	2	0)	0.10	0.20	0.80	0.00	0.70	0.25	2.05
Université de Genève	Teresa Montaruli	2	(1	1	2)	0.35	0.10			2.30		2.75
Universität Erlangen-Nürnberg	Gisela Anton	3	(2	1	2)	0.20				0.60		0.80
Niels Bohr Institute	Jason Koskinen	5	(2	3	1)	0.15	0.30		0.10	0.25	0.40	1.20
Sungkyunkwan University	Carsten Rott	2	(1	1	4)	0.30	0.80				0.75	1.85
Queen's University	Ken Clark	1	(1	0	0)					0.10		0.10
<b>Non-U.S. Institutions Subtotal</b>		<b>69</b>	<b>(44</b>	<b>25</b>	<b>82)</b>	<b>6.50</b>	<b>8.66</b>	<b>2.55</b>	<b>3.10</b>	<b>10.85</b>	<b>4.10</b>	<b>35.76</b>
<b>Total U.S. &amp; Non-U.S.</b>		<b>141</b>	<b>(87</b>	<b>54</b>	<b>125)</b>	<b>13.69</b>	<b>19.17</b>	<b>4.68</b>	<b>6.80</b>	<b>18.83</b>	<b>8.80</b>	<b>71.97</b>

Changes since last official version are colored red

\* IceCube M&O Subwardec Institutions