

**IceCube M&O MoU SOW Summary v28.0 2020.06**  
**Authors Contribution**

v 28.0 June 2020		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	2	(2	0	3)	0.35	0.25	0.00	0.05	0.10	0.30	1.05
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	1	(1	0	4)	0.25	0.35			0.20		0.80
Georgia Tech	Ignacio Taboada	1	(1	0	3)	0.10	0.45			0.10		0.65
Harvard University	Carlos A. Argüelles	1	(1	0	1)	0.25				0.30		0.55
LBNL*	Spencer Klein	3	(1	2	1)	0.10	0.24	1.08		0.10		1.52
Loyola University Chicago	Rasha Abbasi	1	(1	0	0)							0.00
Marquette University	Karen Andeen	2	(1	1	0)	0.20	0.55					0.75
Massachusetts Institute of Technology	Janet Conrad	2	(1	1	3)	0.10	0.00	0.20	0.10	0.60	0.00	1.00
Mercer University	Frank McNally	1	(1	0	0)	0.15				0.10		0.25
Michigan State University*	Tyce DeYoung	10	(6	4	8)	1.02	0.53	0.40	0.20	1.25	0.20	3.60
Ohio State University	James Beatty	2	(1	1	0)				0.05	0.25		0.30
Pennsylvania State University*	Doug Cowen	6	(2	4	3)	0.70	0.62		0.05	0.45		1.82
South Dakota School of Mines & Technology*	Xinhua Bai	1	(1	0	1)	0.45	0.07		0.00	1.48		2.00
Southern University	Ali Fazely	2	(1	1	0)		0.02	0.30		0.60		0.92
Stony Brook University	Joanna Kiryluk	1	(1	0	1)	0.15	0.10		0.10	0.10		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	0	(0	0	0)							0.00
University of Delaware*	David Seckel	8	(5	3	5)	0.45	1.45		0.80	0.40	0.05	3.15
University of Kansas	Dave Besson	1	(1	0	2)						0.60	0.60
University of Maryland*	Greg Sullivan	6	(3	3	3)	1.15	1.26	0.35	0.15	0.45	0.00	3.36
University of Rochester	Segev BenZvi	1	(1	0	2)	0.25	0.40			0.10		0.75
University of Texas at Arlington	Benjamin Jones	1	(1	0	2)	0.05				0.65	1.10	1.80
University of Wisconsin, River Falls*	Jim Madsen	2	(2	0	0)	0.00				0.10	0.20	0.30
University of Wisconsin, Madison	Albrecht Karle	15	(5	10	13)	2.23	2.56	0.00	1.60	0.65	2.15	9.19
Yale University	Reina Maruyama	1	(1	0	0)		0.05			0.05		0.10
<b>U.S. Institutions Subtotal</b>		<b>75</b>	<b>(45</b>	<b>30</b>	<b>56)</b>	<b>8.05</b>	<b>9.18</b>	<b>2.33</b>	<b>3.10</b>	<b>8.23</b>	<b>4.60</b>	<b>35.49</b>
DESY-Zeuthen	Marek Kowalski	9	(6	3	10)	0.95	0.82	1.35	0.00	0.20	0.00	3.32
Karlsruhe Institute of Technology	Andreas Haungs	6	(2	4	3)	0.20	1.50	0.15	0.35	0.35		2.05
RWTH Aachen	Christopher Wiebusch	1	(1	0	7)	0.40	0.42	0.05	0.55	0.45	0.60	2.47
Universität Dortmund	Wolfgang Rhode	2	(1	1	6)		0.53		0.50	0.80		1.83
Universität Mainz	Lutz Köpke	2	(1	1	5)	0.25	1.45			0.40		2.10
University of Münster	Alexander Kappes	2	(1	1	3)	0.50				0.50		1.00
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	0)	0.10	0.00			0.10		0.20
Technische Universität München	Elisa Resconi	4	(1	3	8)		0.05		1.00	1.10	0.20	2.35
Universite Libre de Bruxelles	J. A. Aguilar Sanchez	5	(3	2	2)	1.30	0.62		0.25			2.17
University of Gent	Dirk Ryckbosch	2	(1	1	4)	0.05	0.03		0.55	0.05		0.68
Vrije Universiteit Brussel	Nick van Eijndhoven	2	(2	0	3)	0.85	0.06		0.10	0.35		1.36
Stockholm University	Klas Hultqvist	2	(2	0	2)	0.40	0.11			0.40	0.20	1.11
Uppsala University	Olga Botner	5	(4	1	2)	0.40	0.61				0.15	1.16
University of Alberta	Juan Pablo Yáñez	3	(2	1	1)		0.60	0.40	0.30	0.30	0.60	2.20
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	8	(3	5	0)	0.10	0.20	0.80	0.00	0.70	0.10	1.90
Université de Genève	Teresa Montaruli	1	(1	0	2)	0.35	0.10			1.10		1.55
Universität Erlangen-Nürnberg	Gisela Anton	3	(2	1	3)	0.20				0.55	0.05	0.80
Niels Bohr Institute	Jason Koskinen	4	(2	2	2)	0.25	0.55		0.85			1.65
Sungkyunkwan University	Carsten Rott	2	(1	1	2)	0.15	0.63				0.20	0.98
Queen's University	Ken Clark	1	(1	0	0)					0.10		0.10
<b>Non-U.S. Institutions Subtotal</b>		<b>72</b>	<b>(43</b>	<b>29</b>	<b>74)</b>	<b>6.85</b>	<b>9.36</b>	<b>2.60</b>	<b>4.10</b>	<b>8.90</b>	<b>2.65</b>	<b>34.46</b>
<b>Total U.S. &amp; Non-U.S.</b>		<b>147</b>	<b>(88</b>	<b>59</b>	<b>130)</b>	<b>14.90</b>	<b>18.54</b>	<b>4.93</b>	<b>7.20</b>	<b>17.13</b>	<b>7.25</b>	<b>69.95</b>

Changes since last official version are colored red

\* IceCube M&O Subawardee Institutions