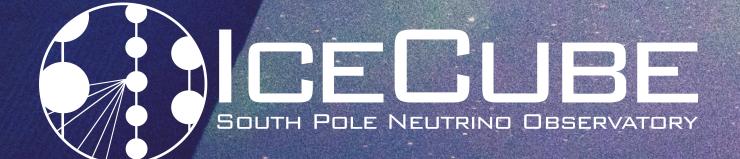
Collaboration Report



Darren Grant IceCube Spokesperson Michigan State University

IceCube Management and Operations NSF Site Visit March 16, 2020





IceCube Collaboration - Chiba 2019







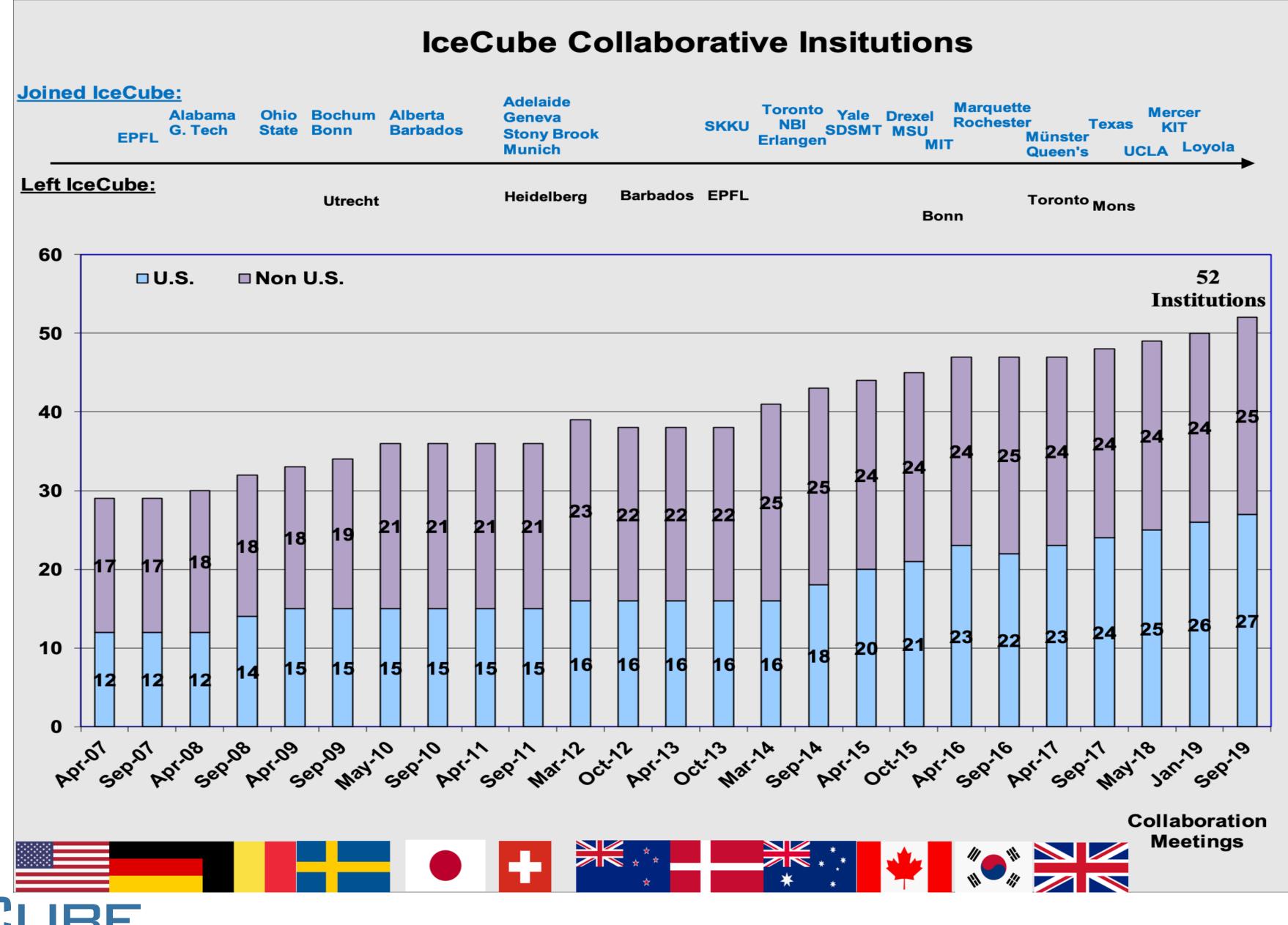
IceCube by the numbers*

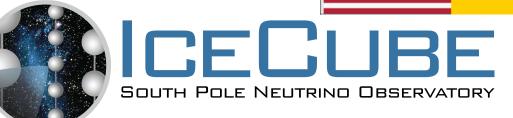


*many thanks Catherine!

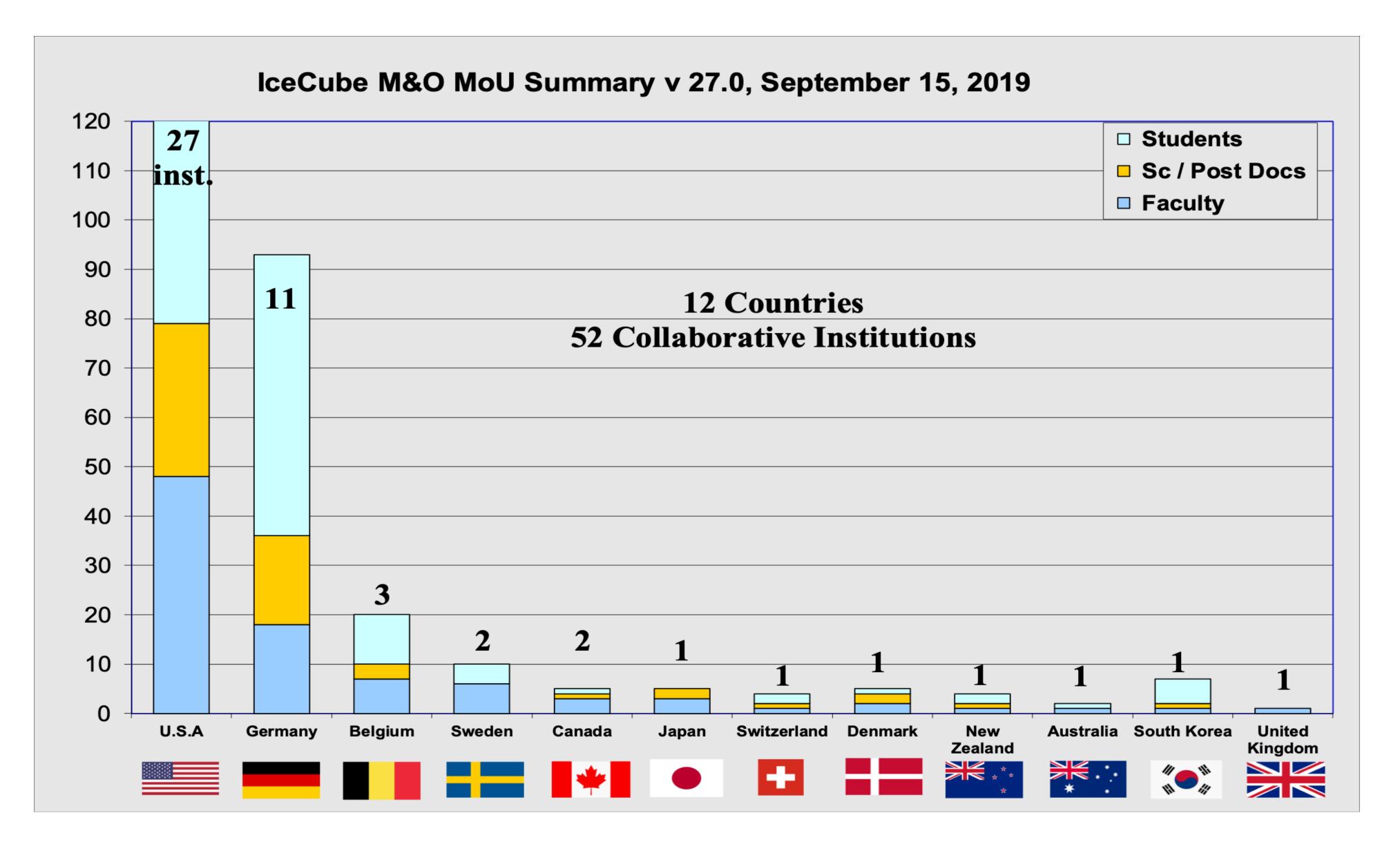






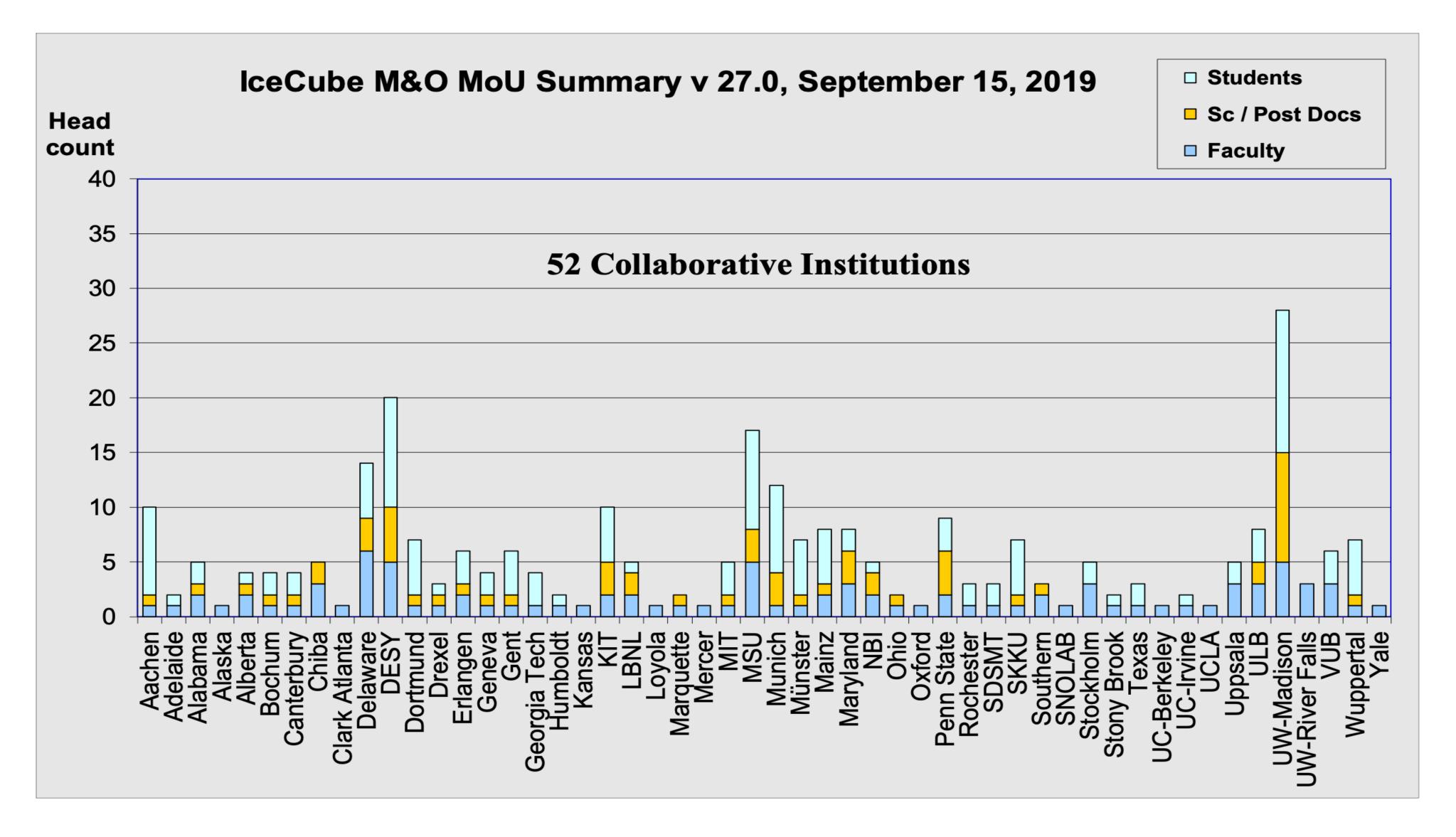
















Changes since last year

- US Institutions
 - Faculty +6
 - Scientists/Post Docs +3
 - Students increased +7
- Non-US Institutions
 - Faculty -1
 - Scientists/Post Docs +3
 - Students increased +1





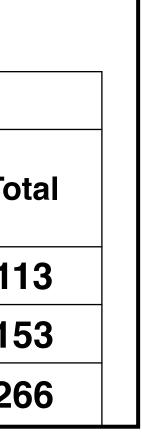


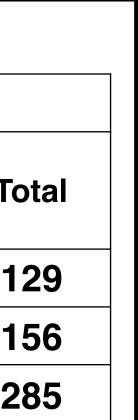
-	l	

v25.0, September 2018	Head Count					
	Ph.D. Authors	Faculty	Scientists /Post Docs	Students	То	
6. Institutions Subtotal	70	42	28	43	1	
n-U.S. Institutions Subtotal	71	45	26	82	1	
al U.S. & Non-U.S.	141	87	54	125	2	

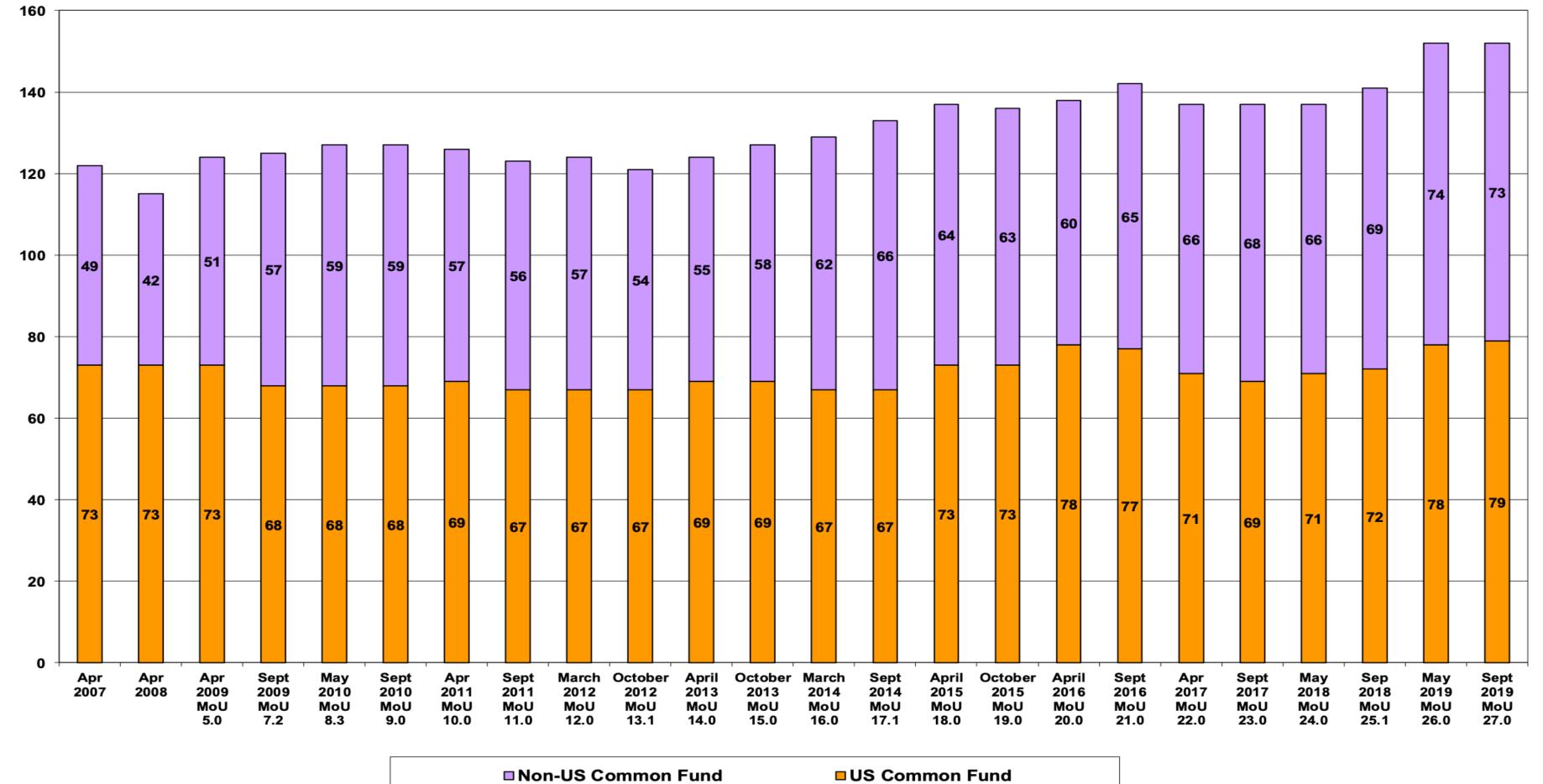
V27.0, September 2019	Head Count				
	Ph.D. Authors	Faculty	Scientists /Post Docs	Students	Тс
S. Institutions Subtotal	79	48	31	50	1
on-U.S. Institutions Subtotal	73	44	29	83	1
tal U.S. & Non-U.S.	152	92	60	133	2







Ph.D. Authors Head Count

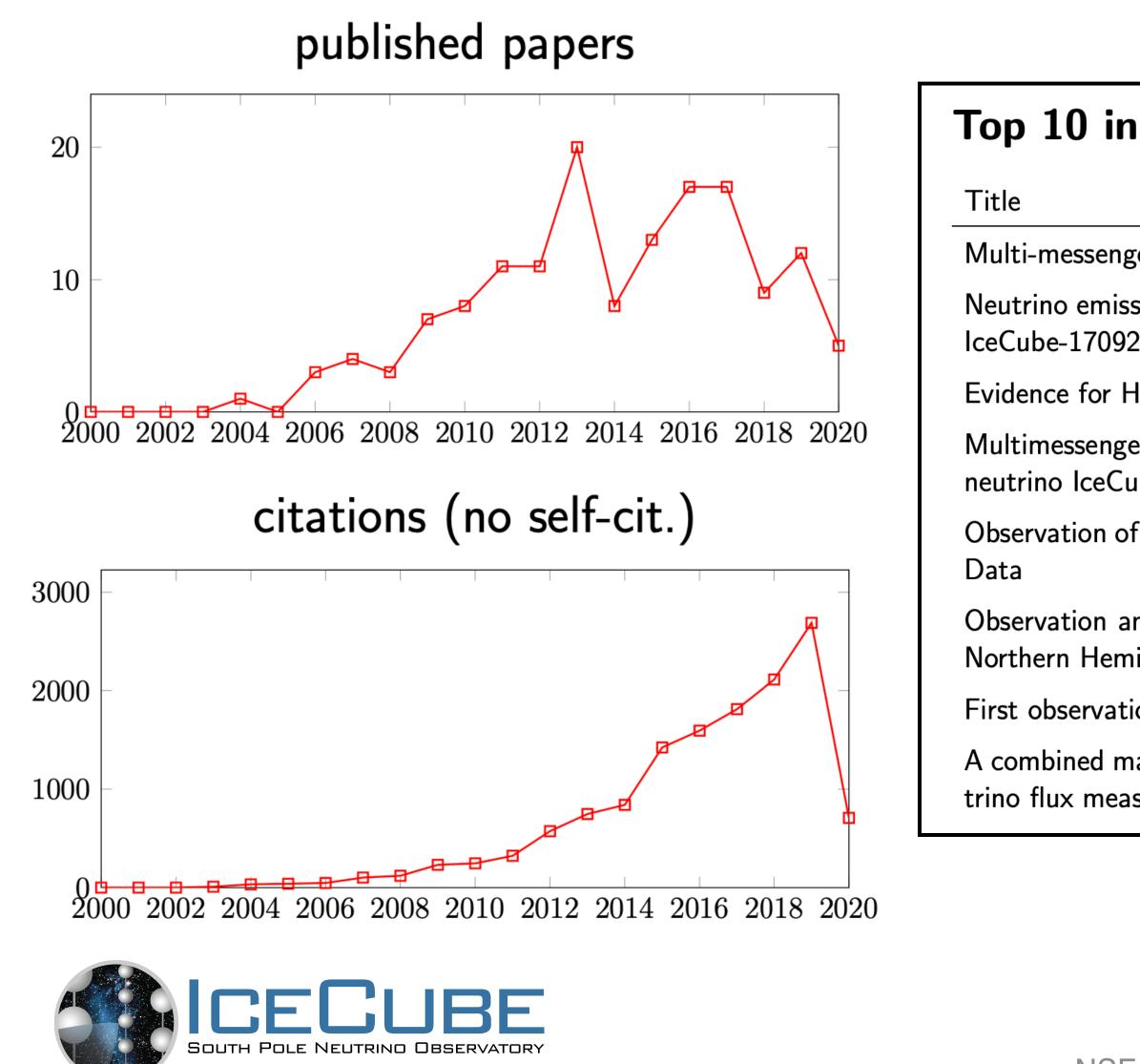


Non-US Common Fund





Publication Statistics

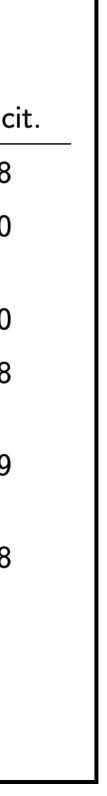




Top 10 in none self-citations in 2019/2020:

	Journal	# ci
ger Observations of a Binary Neutron Star Merger	Astrophys.J. (2017)	758
ssion from the direction of the blazar TXS 0506+056 prior to the 022A alert	Science (2018)	190
High-Energy Extraterrestrial Neutrinos at the IceCube Detector	Science (2013)	180
ger observations of a flaring blazar coincident with high-energy Jube-170922A	Science (2018)	158
of High-Energy Astrophysical Neutrinos in Three Years of IceCube	Phys.Rev.Lett. (2014)	139
and Characterization of a Cosmic Muon Neutrino Flux from the nisphere using six years of IceCube data	Astrophys.J. (2016)	118
tion of PeV-energy neutrinos with IceCube	Phys.Rev.Lett. (2013)	82
naximum-likelihood analysis of the high-energy astrophysical neu- asured with IceCube	Astrophys.J. (2015)	80





Collaboration organization

University of Wisconsin – Madison

R. Blank, Chancellor

Wisconsin IceCube

Center (WIPAC)

K. Hanson, Director

Particle Astrophysics

J. Madsen, Executive Director

M. O'Keefe, Communications

K. Chorlton, HR, Bsnss & Admin

D. Comerford, Busnss IT Support

S. Ackerman, Vice Chancellor for Research and Graduate Education (VCRGE)

National Science Foundation

IceCube Neutrino Observatory

- F. Halzen, Principal Investigator K. Hanson, Director of Operations
- A. Karle, Associate Director for Science
- & Instrumentation J. Madsen, Associate Director for
 - Education & Outreach

Maintenance & Operations

Detector M&O – Run Coordination, DAQ, Supernova DAQ, IceTop Operations,

IceCube Live,

J. Kelley, UW Manager M. Kauer (UW) D. Glowacki (UW) S. BenZvi (Rochester) Processing & Filtering, E. Blaufuss (Maryland) S. Tilav (Delaware)

M. Frère (UW)

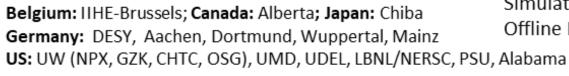
Calibration – S. Blot (DESY) / A. Hallgren (Uppsala)

Data Processing & Simulation Serv – J.C. Diaz-Velez (UW) Offline Data Production, R. Snihur (UW) Simulation Production, K. Meagher (UW)

Program Coordination – C. Vakhnina (UW)

Collaboration Simulation Production Centers:

Software – A. Olivas (Maryland) IceTray Framework/Development, D. LaDieu (Maryland) A. Olivas (Maryland) Simulation Software, T. Yuan (UW) Offline Processing Software,









and Finance Group Science Advisory Committee B. Barish, Caltech, Chair Software & Computing Advisory Panel M. Delfino, PIC, Chair

International Oversight

Education & Outreach Advisory Panel

Foreign Funding Agencies

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Spokesperson & Executive Committee Chair, D. Grant (MSU) Publication Com. Chair, S. BenZvi (Rochester) Speakers Com. Chair, J. Kiryluk (SUNY) Future Gen2 Coordinators, A. Karle (UW) & M. Kowalski (DESY)

South Pole Logistics, R&D Support – J. Haugen (UW)

Quality & Safety – M. Zernick (UW)

Computing & Data Management - B. Riedel, **UW Manager** Data Storage Systems & Cybersecurity, S. Barnet (UW) South Pole System & Test System, R. Auer (UW) Data Transfer and Archive P. Meade (UW) J. Bellinger (UW) Data Management, Distributed Computing, V. Brik (UW) A. Sheperd (UW) Data Processing, Networking and Facilities, S. Barnet (UW) Production Software, D. Schultz (UW) K. Leffhalm (DESY) Data Archive at DESY, S. Klein (LBNL) Data Archive at LBNL,

Coordination Committee Chair, P. Desiati (UW)

Resource Coordination, C. Vakhnina (UW)

TFT Coordination, N. Kurahashi Neilson (Drexel) & R. Moore (Alberta) **Real-Time Oversight** Committee E. Blaufuss (Maryland)

Technical & Science Working Groups

Analysis Coordinator – Anna Franckowiak (DESY)

Analysis Working Groups:

Diffuse Neutrino Sources Beyond Standard Model Cosmic Rays Oscillation Supernova

echnical Working Groups: Real time Calibration Systematics & Reconstrctn Systematics Coordinator

March 10, 2020

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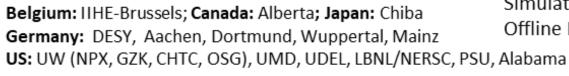
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March 10, 2020



Board Activities

On average approximately 30 items are discussed in depth (and often voted* on) each year:

- Institutional and associate memberships
- Policy development and updates
- Memoranda of understanding (MOUs) with other projects
- Amendments to the collaboration governance

*Voting on items takes place confidentially via GoogleForms





- Collaboration membership:
 - Institutional membership may be considered for any group via application to the board (received by the spokesperson)
 - Associate membership (typically for a dedicated analysis or hardware topic) occurs via application sponsored by an IceCube member institution.
 - Typically for new institutions in a country with existing members guidance is sought on impact to on-going funding and activities
 - For new countries (eg. China in 2018), broader guidance is solicited from lead project agencies
- 5 applications
 - 3 full member (KIT, Loyola passed; Columbia pending)
 - 2 associate member (King's College London passed; Earth tomography consortium pending)





Policy development and updates:

- Approved legacy authorship policy
- Incorporation of radio activities formally within IceCube(-Gen2)





MOUs with partner projects:

- Streamline MOU agreements process with standardized template
- Agreements generally 3 year and are renewable
- Used extensively both for the TXS analyses/publications and the recent M77 results
- 5 new and updated MOUs in the past year.
- New MOUs underway with established radio projects for Gen2 developments





Governance amendments:

 Amendment for approval of member senior scientists at post-IceCube-construction institutes





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Future Collaboration Meetings

- May 9 16, 2020 Brussels Belgium
- September 19 25, 2020 Madison WI, USA
 - 10 year celebration of IceCube detector completion September 21
- March 2021 Aachen Germany



JSA or



