

IceCube Winter Overs: A Year at the South Pole

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(2020 IceCube Winterover)

June 3rd 2025 @ IceCube Summer School



WISCONSIN
UNIVERSITY OF WISCONSIN-MADISON

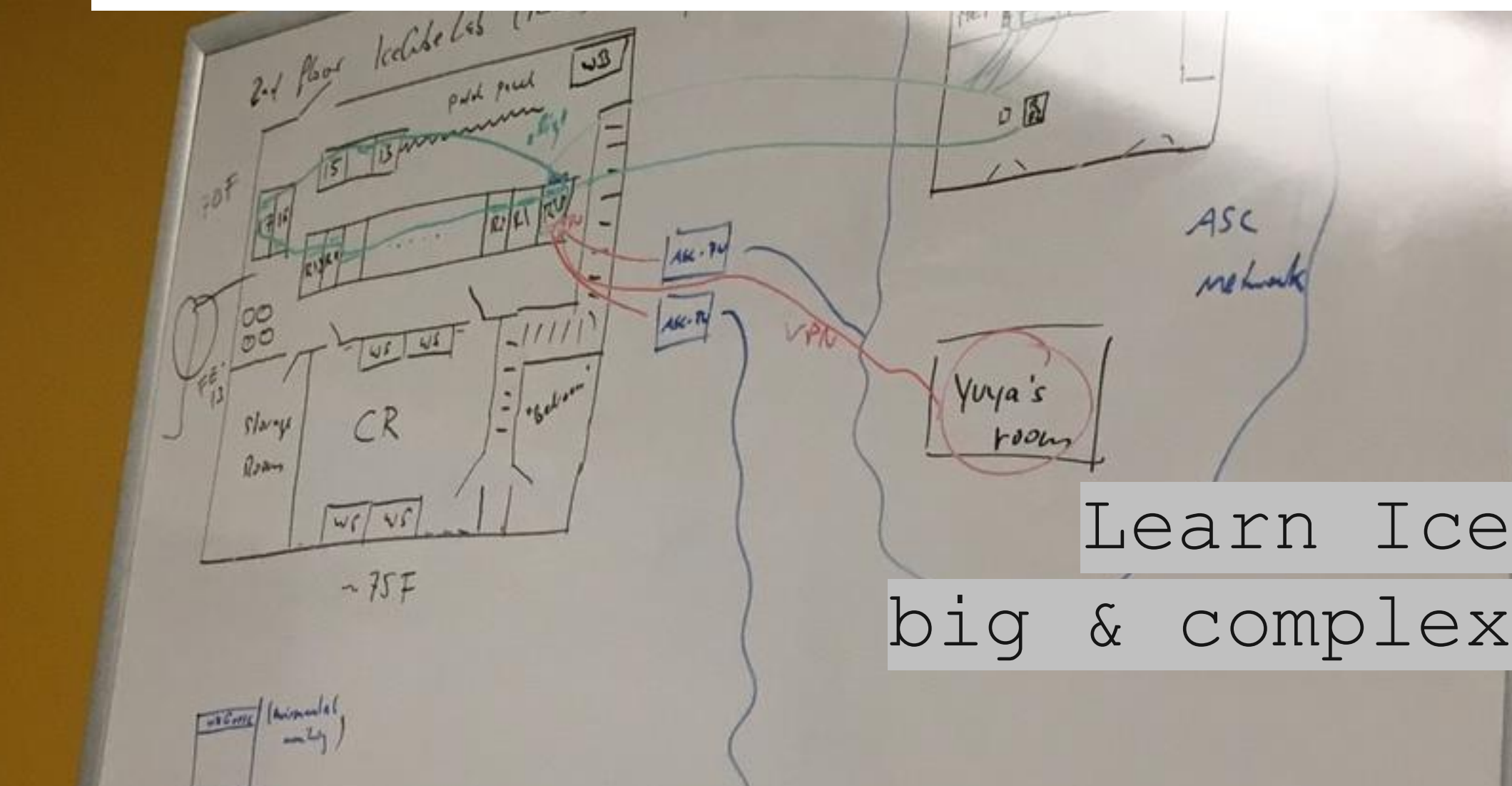
IceCube Winterovers?

- IceCube has been taking data 365/24/7 thanks to the continuous efforts by the DAQ group in the north hemisphere
- Not everything cannot be done remotely, someone has to be there to keep it running!
- Every year, IceCube hires, trains, and sends two “winterovers” to the South Pole

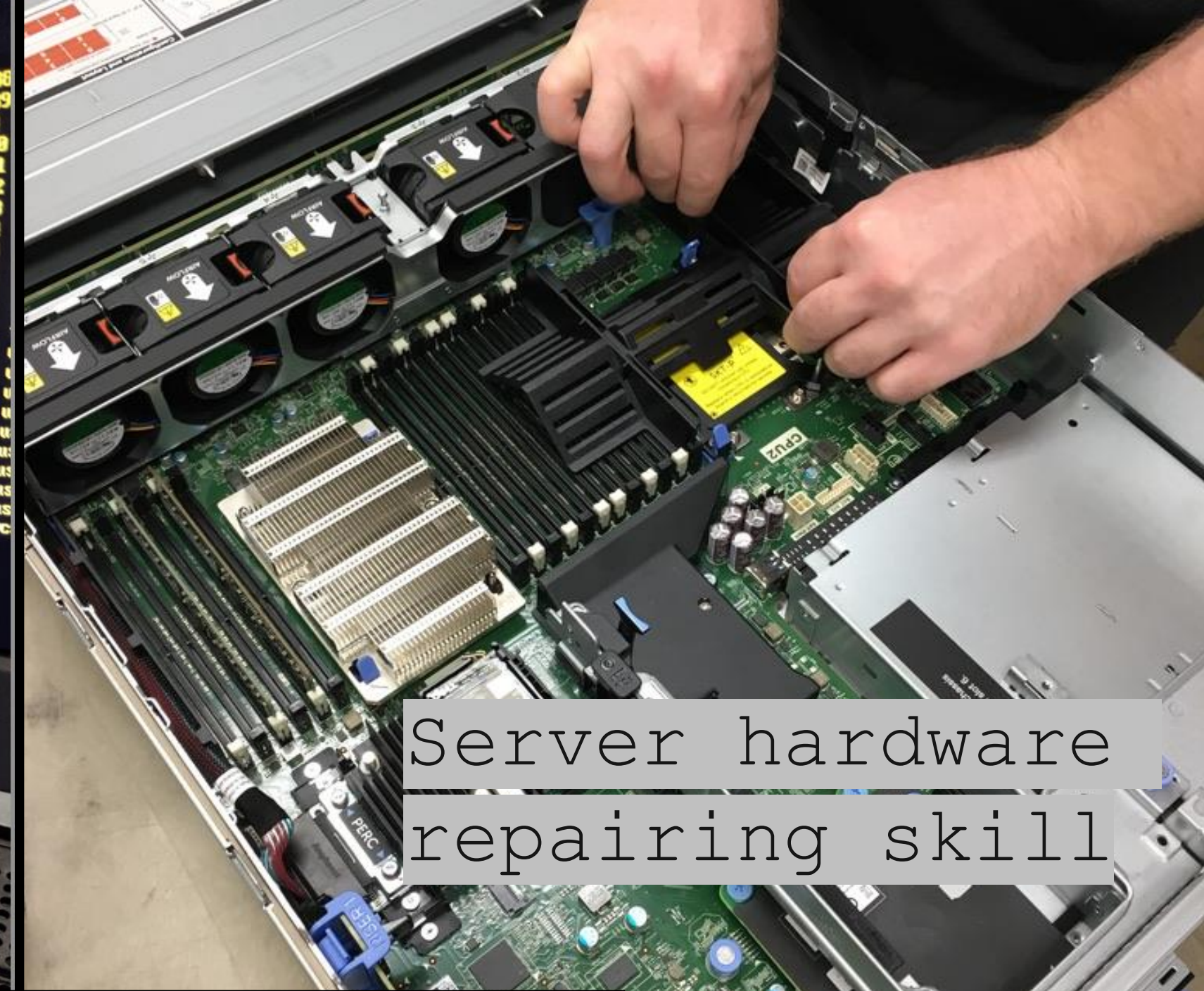
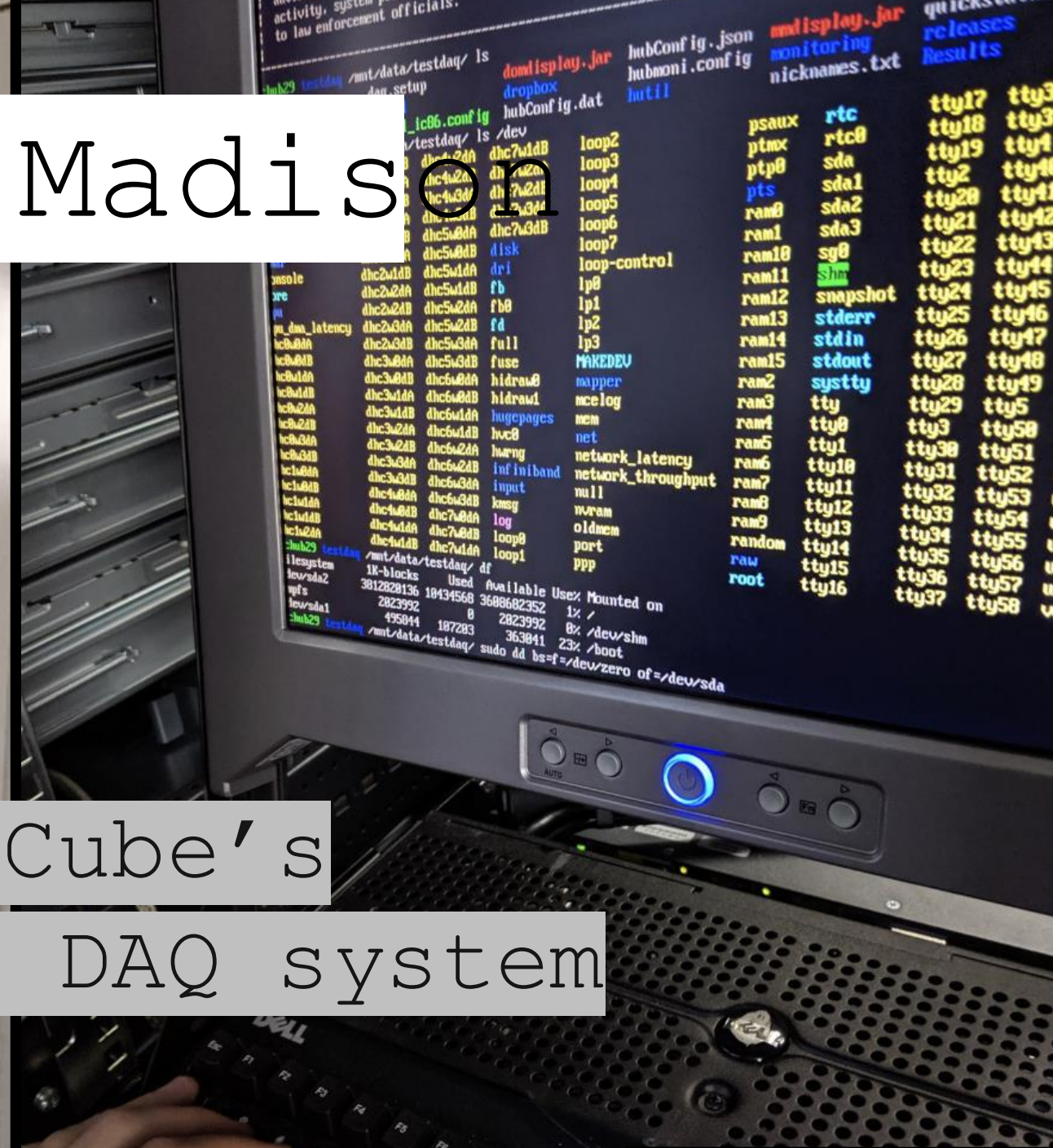


- WOs stay at the Pole as the on-site detector operators for an entire year
- Coordinating normal physics data taking & special calibration runs
- Handle/Fix all software & hardware issues with help of the DAQ group in north when a satellite connection is available, otherwise on their own!

Winterover Training in Madis



Learn IceCube's
big & complex DAQ system



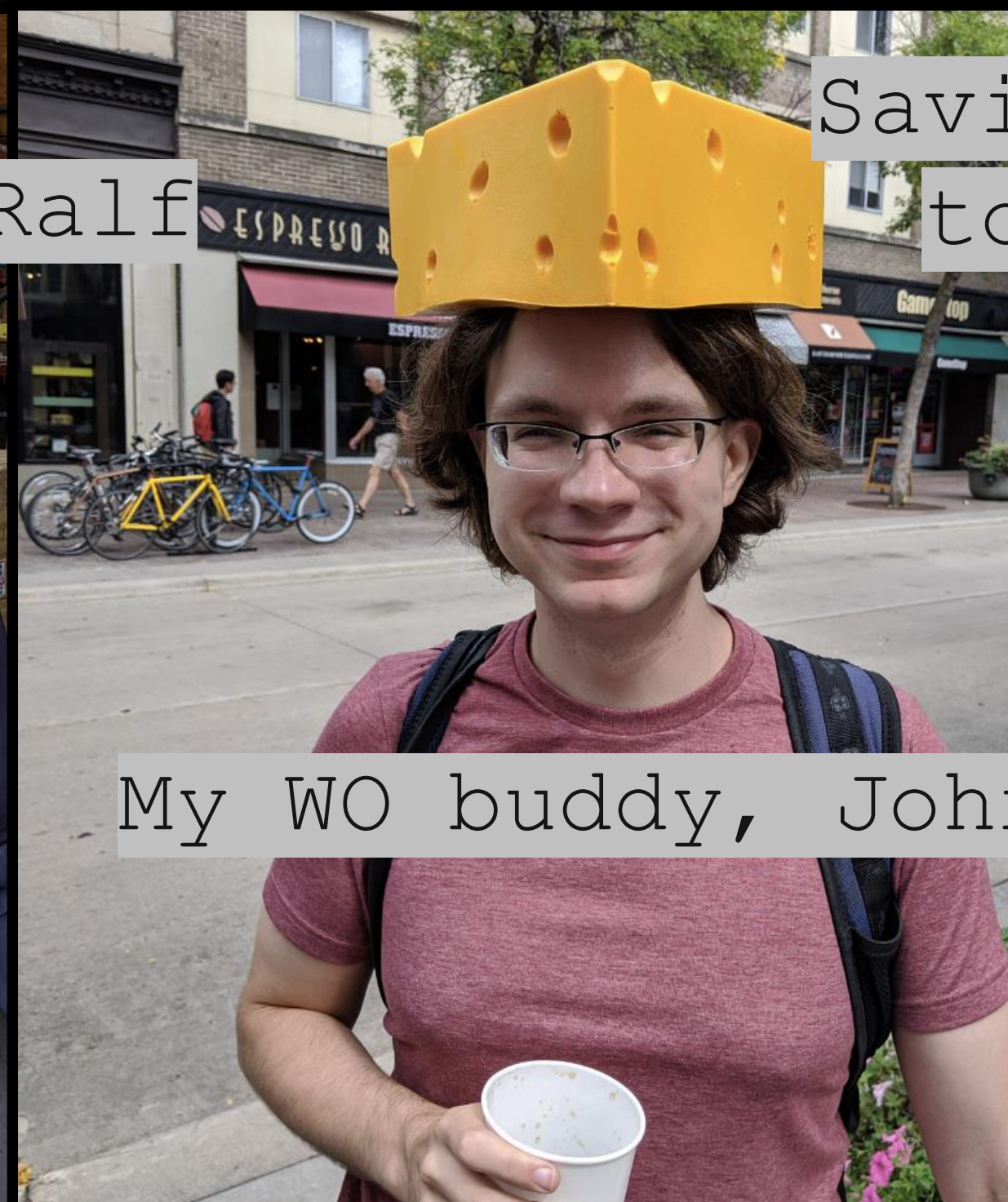
Server hardware
repairing skill



Advanced
understanding of
DOM



WO's boss, Ralf



My WO buddy, John

Saving some energy
to prepare for
Antarctica



Winterover Training in Denver



*No photoshop

All south pole winterovers join
either Medical or Fire emergency
response teams



Going to the Pole



Christchurch, NZ – Gateway to
Antarctica



Going to the Pole



Antarctica!

McMurdo Station

Scott Station

Phoenix Airfield

Runway on the ice shelf!

rst steps on the continent



Murdo Station – Largest Station in Antarctica



McMurdo Station — Wildlife

Penguins are real



Going to the Pole



"Basler"

Going to the Pole

Flying above the endless ice desert!
(South Pole locates in the middle of the world's largest ice sheet)



South Pole!



SPT

BICEP

ICL

Skiway

Ceremonial South Pole

Amundsen-Scott
South Pole Station

Geographic
South Pole

90-degree South

2 am

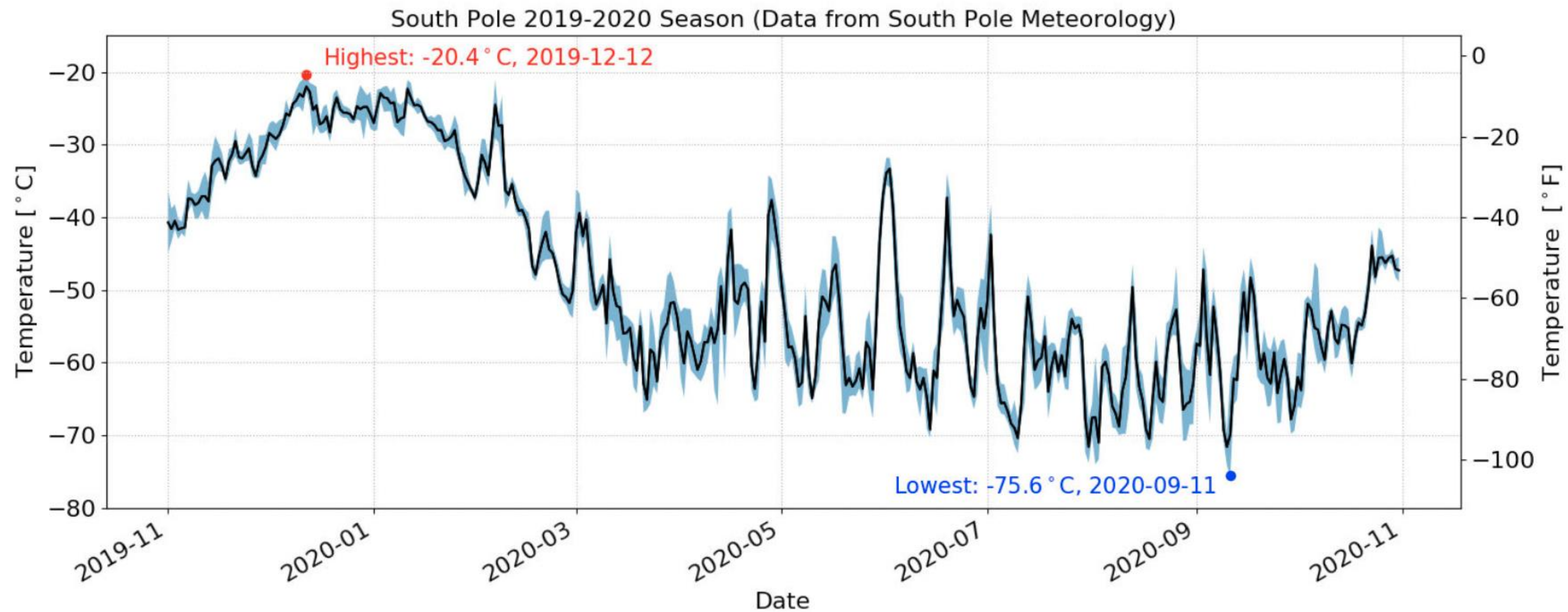
12 am

10 pm

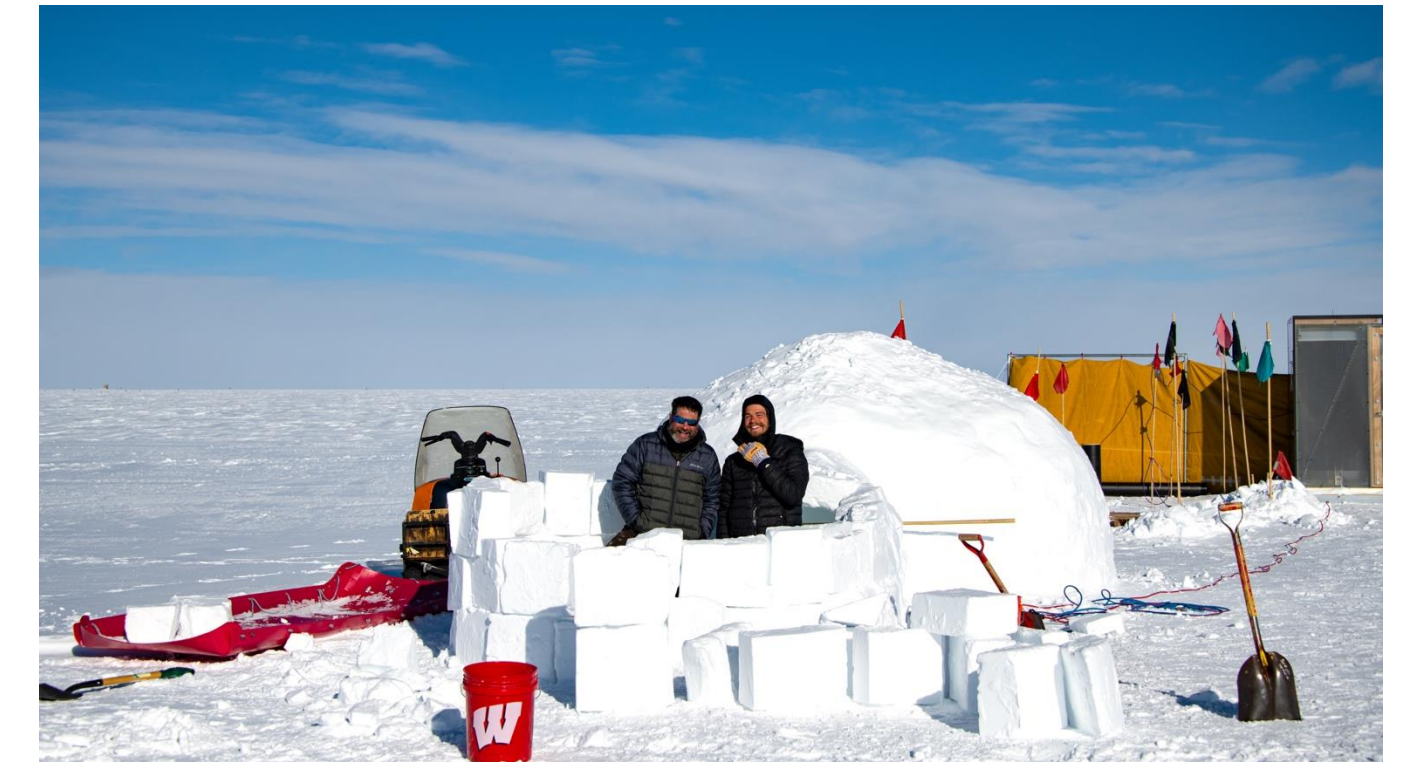
Only one sunset/sunrise every year



South Pole Weather



“Warmest” day, -20.4C



Coldest day, -75.6C

It's always very cold



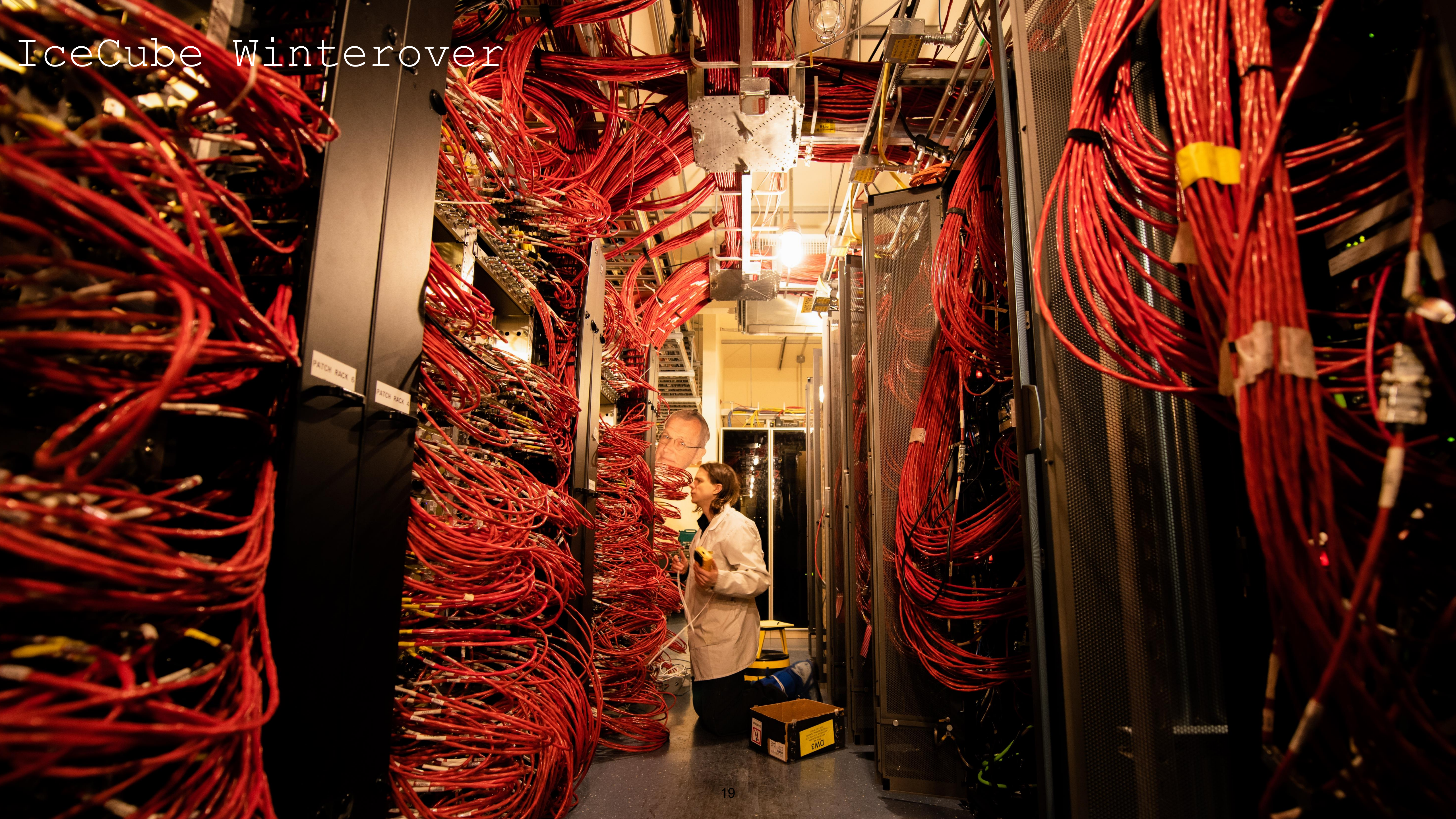
IceCube Winterover

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IceCube Winterover

Fun times





tion closing after the last plane



outh Pole Station Winterovers

2019/20 season: 42 WOs (10 working for science projects)

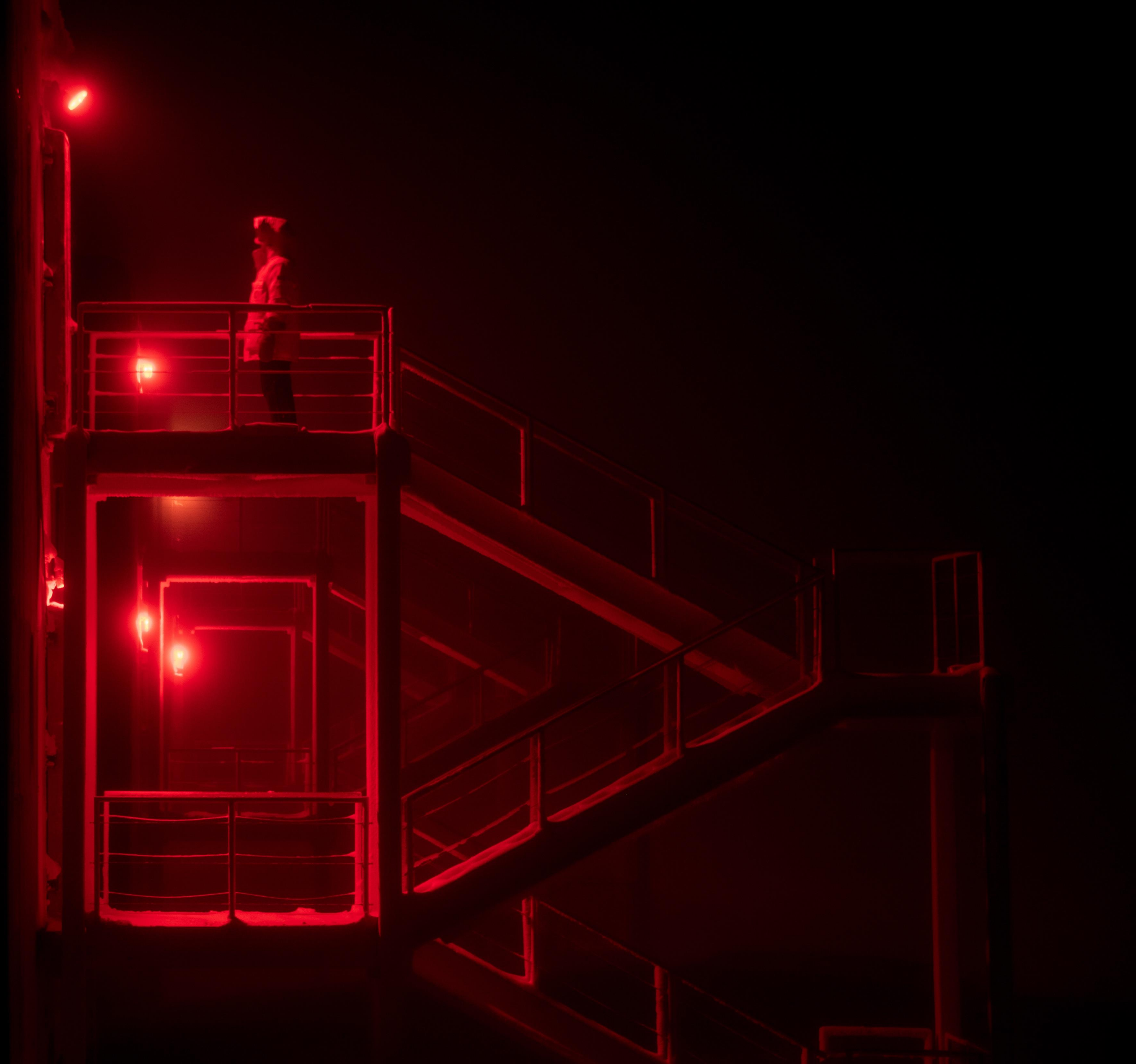


unset - See you in 6 months...



Winter begins

Always dark,
physically isolated
from the rest of world
for more than half a
year...



South Pole Tour



<https://www.youtube.com/watch?v=n9UJOflxNwU&t=12s>

ies that only winterovers can see



ies that only winterovers can see



ies that only winterovers can see



Working outside in winter



Moon light and Aurora





Sunrise



Sunrise

Station Opening



Taking over to next IC
winterovers



Everything Was Great, But...

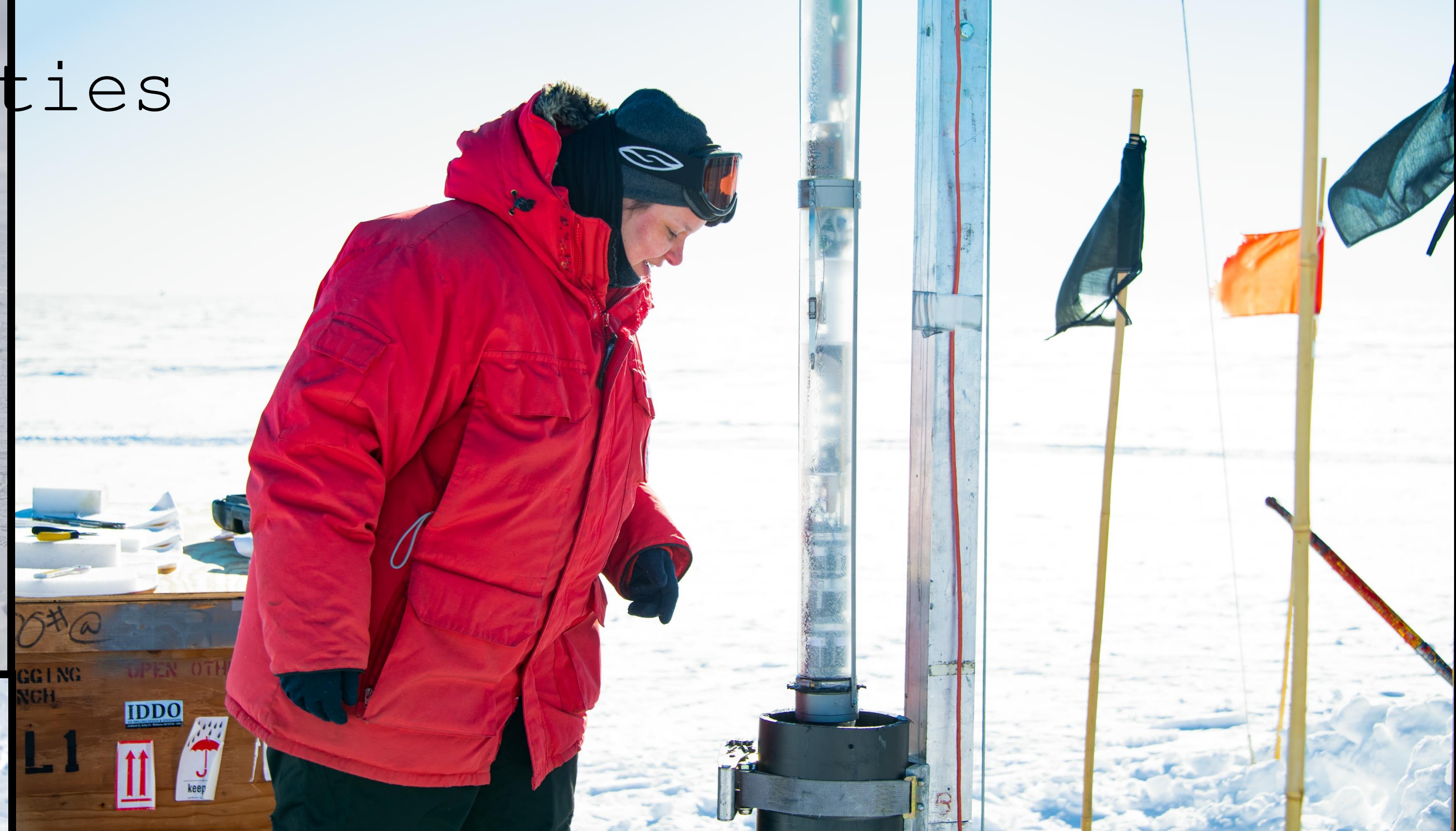


The only thing I hated at the pole...

- Everyday, every moment is a goose bump experience
- The coolest job
- IceCube data from the South Pole thanks to continuous efforts by the DAQ group and WOs



ummer (IceCube) Activities



ummer (IceCube) Activities



Summer (IceCube) Activities

