

Communicating DUNE Science to the Public

Andy Chappell on behalf of the
DUNE Collaboration

ICHEP

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Outreach audiences

- Publicly funded experiments must communicate their science to the public
- Outreach can
 - Build appreciation among the public
 - Consolidate support from policy makers
 - Inspire young people to pursue STEM

Technology

Training

Economy

Collaboration

Education

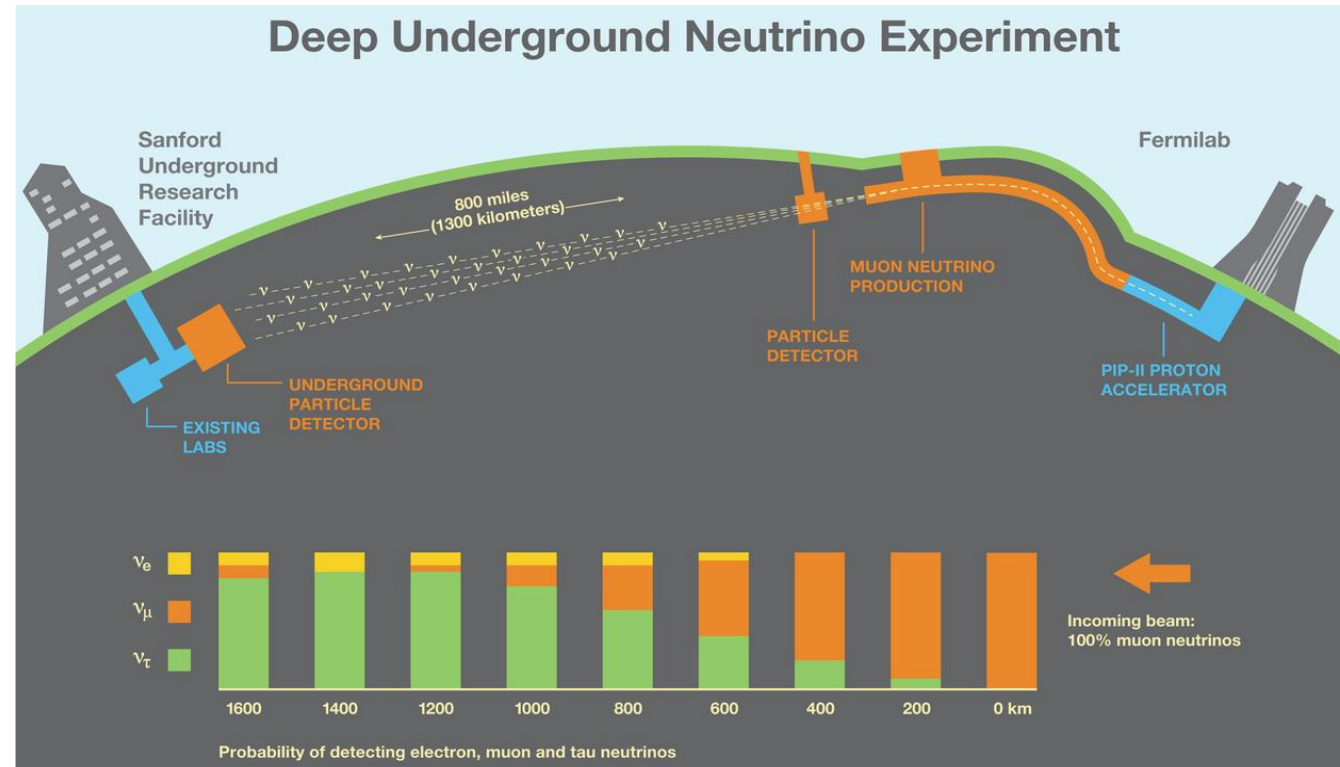


Teachers

General Public

Students

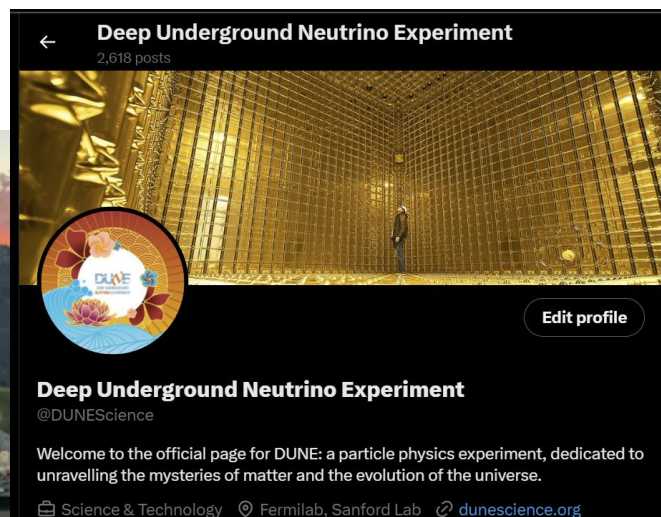
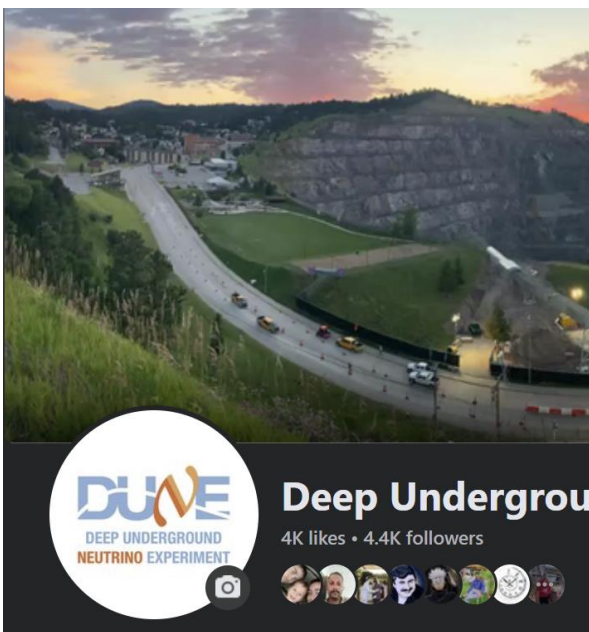
Policy makers



[DUNE overview talk](#)

Outreach channels

- Social Media represents the main outreach channel for DUNE
- Facebook, Instagram and X (Twitter) are our primary communication channels



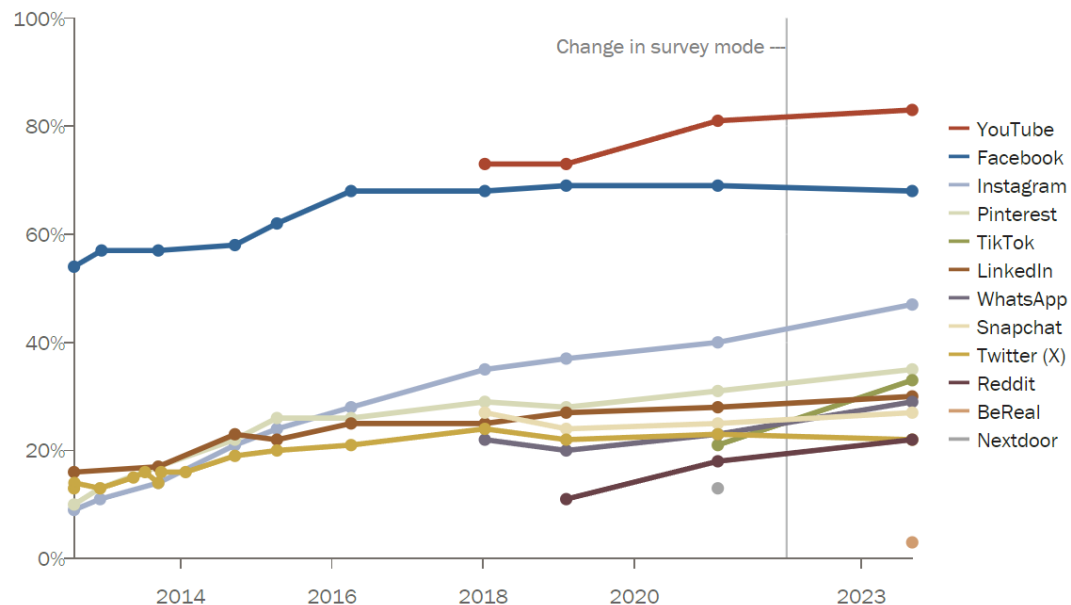
Deep Underground Neutrino Experiment

4K likes • 4.4K followers



Which social media platforms are most popular

% of U.S. adults who say they ever use ...



Note: The vertical line indicates a change in mode. Polls from 2012-2021 were conducted via phone. In 2023, the poll was conducted via web and mail. For more details on this shift, please [read our Q&A](#). Refer to the topline for more information on how question wording varied over the years. Pre-2018 data is not available for YouTube, Snapchat or WhatsApp; pre-2019 data is not available for Reddit; pre-2021 data is not available for TikTok; pre-2023 data is not available for BeReal. Respondents who did not give an answer are not shown. Source: Surveys of U.S. adults conducted 2012-2023.

PEW RESEARCH CENTER

dunescience

Edit Profile

View archive

Ad tools



256 posts

2,268 followers

42 following

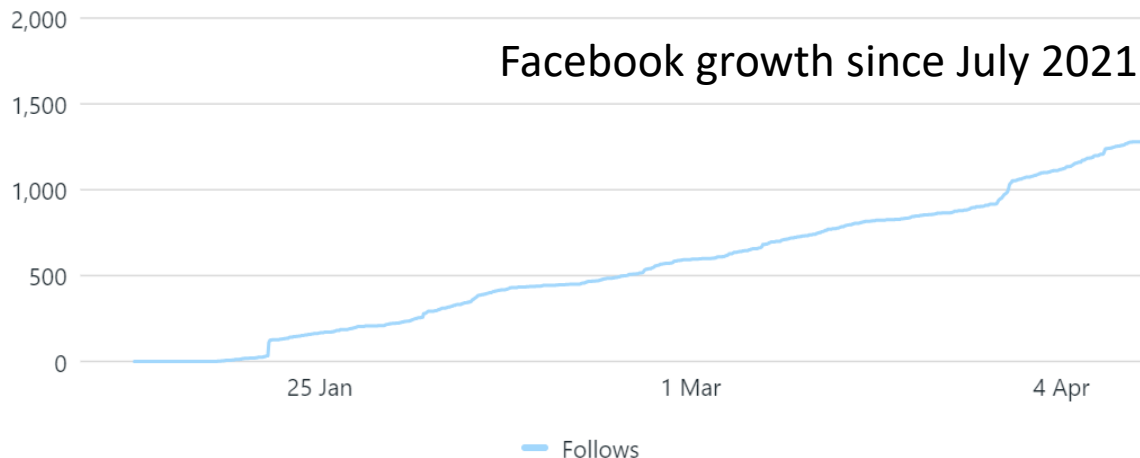
Deep Underground Neutrino Experiment

Welcome to the official page for DUNE: a particle physics experiment, dedicated to unravelling the mysteries of matter... more

dunescience.org

Measuring our reach

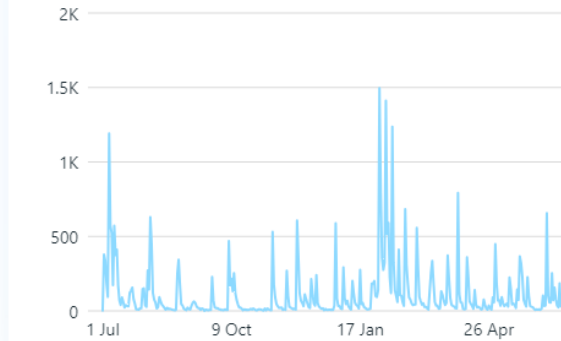
- Standard metrics for measuring success
 - Followers
 - 2,000-6,000 per channel
 - 13-18% growth this year
 - Views
 - Click-throughs to external articles



Reach

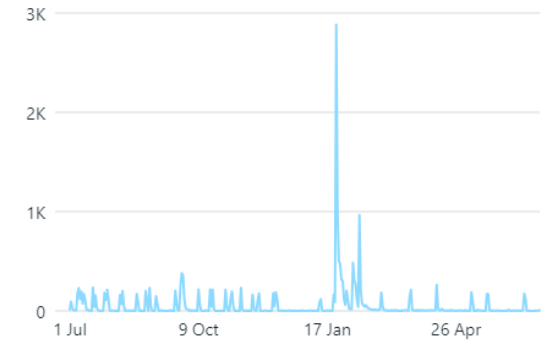
Facebook reach ⓘ

11.8K ↑ 8.8%



Instagram reach ⓘ

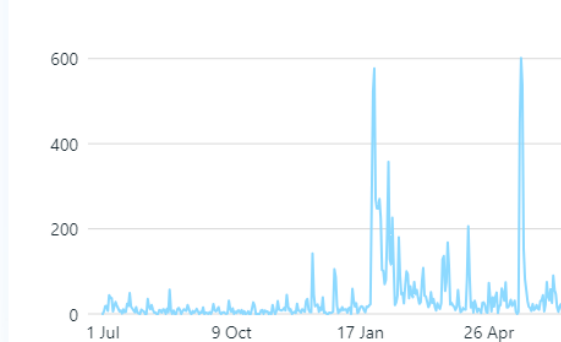
7.1K ↑ 94.8%



Visits

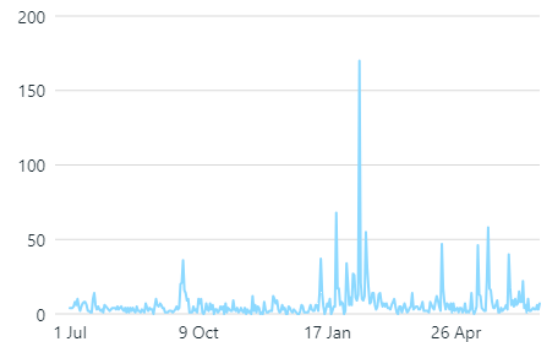
Facebook visits ⓘ

13.3K ↑ 170.6%



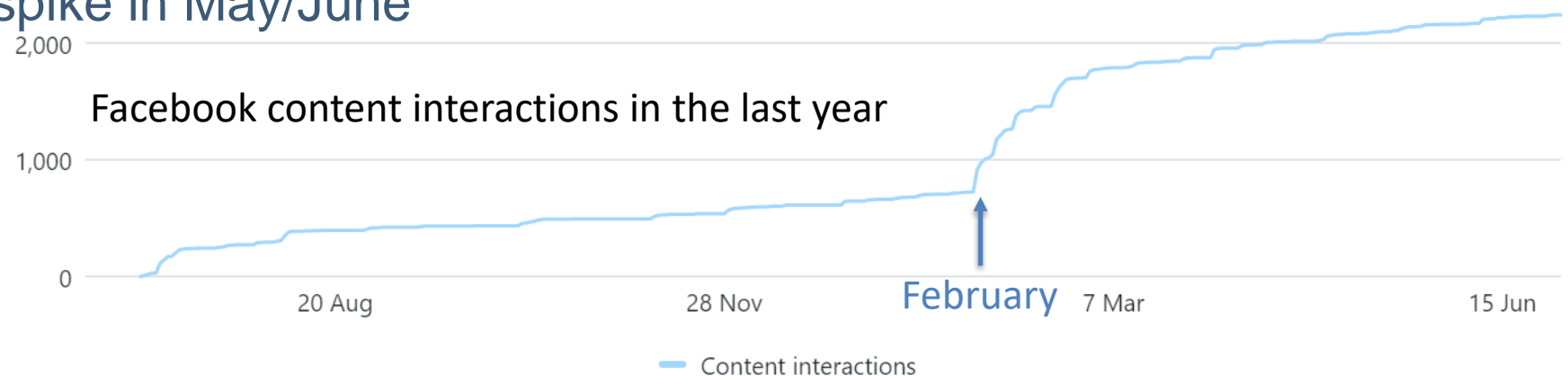
Instagram profile visits ⓘ

2.4K ↑ 32.4%



Engagement in the last year

- Content interactions mostly steady throughout the year
- Click-throughs, in general, are low
 - Need your message to be contained within your post
- Spike in interactions on a few days in February
 - Almost half of our (Facebook) interactions in this period
 - Similar, though not identical pattern on our other platforms
- Instagram follows spike in May/June
- What happened?



High impact images

- People love cool pictures of major civil engineering projects...



Credit: Matthew Kapust (SURF)



Credit: Adam Gomez (SURF)

High impact images

- People love cool pictures of major civil engineering projects...

From Instagram: *"For a sec I thought this was gonna be a trailer for a new alien movie or something"*



Credit: Adam Gomez (SURF)



Credit: Matthew Kapust (SURF)

Engaging technology



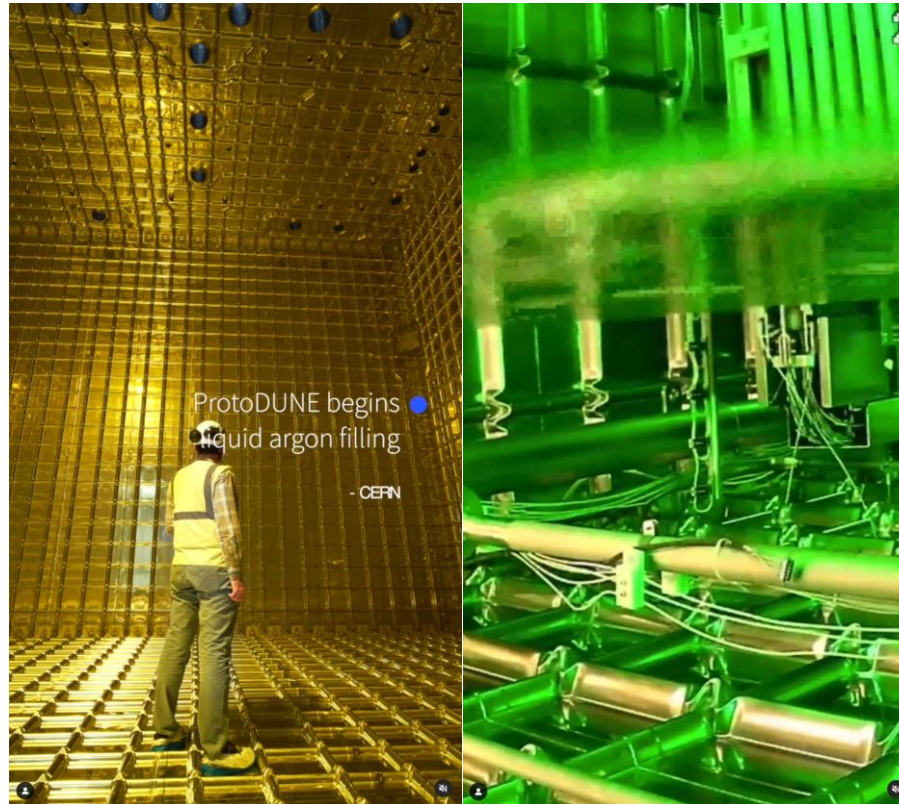
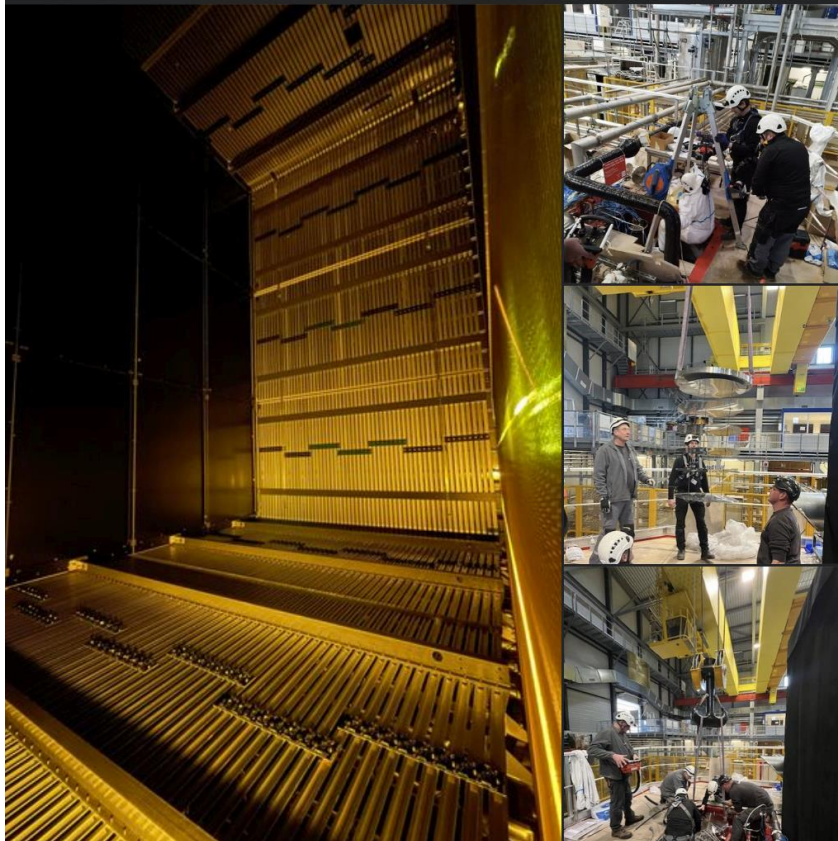
Deep Underground Neutrino Experiment

Published by Andy Chappell

6 February

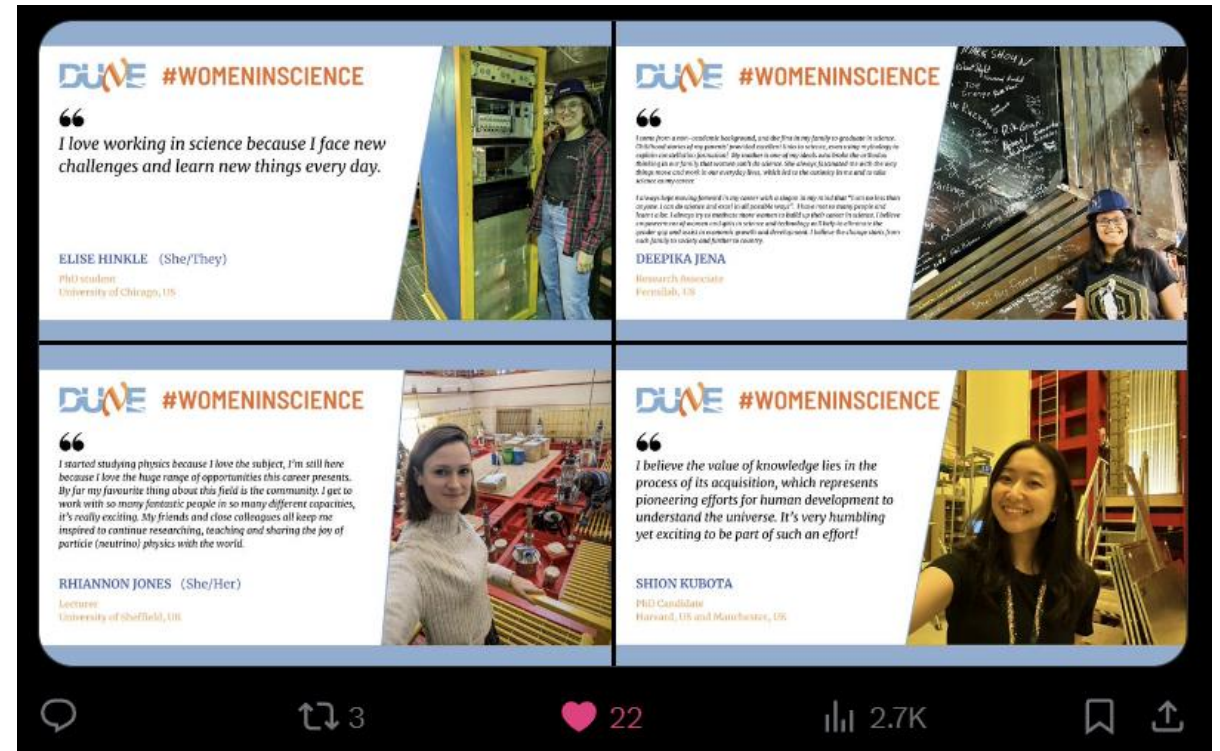
In preparation for filling the protoDUNE HD detector with liquid argon, final checks and cleaning of the detector have been carried out, before using the hoist to extract the last member of our team from the detector. The seal to close the access hole to protoDUNE HD has now been lowered into place and secured, and the next stage will be to purge the detector with gaseous argon ahead of the upcoming liquid argon fill! Credit: CERN

- ... And they also like to see the detector technology
- The time-lapse video of ProtoDUNE's liquid argon filling was by far our most successful post



EDI and platforms

- Fermilab's media team design new DUNE logos as part of campaigns (e.g. Black History Month)
 - This often yields an increase in visits
- DUNE ran a campaign highlighting women within our collaboration for International Day of Women and Girls in Science
 - Excellent engagement on Facebook and X (Twitter)
 - Very little engagement on Instagram



Audience interaction

- Ahead of DUNE's May Collaboration Meeting we asked our followers to post their questions about our experiment
- DUNE/Fermilab then posted a series of short-format videos on Instagram answering these questions
- This worked well, among our best performing posts on Instagram



Practical challenges and (some) solutions

- Even without the occasional “high-impact” post, it’s clear that regular posting helps engagement, but...
- Person-power
 - Generating content (especially video) can require a lot of person-hours
 - If you don’t have funded time, it limits capacity to generate and post content regularly
 - Within DUNE we’re volunteers
 - Collaborate with Fermilab, SURF and CERN
- Approvals processes
 - Scientific content needs collaboration approval
 - Can we streamline this process?

Conclusions

- Take every opportunity to post photos and short-format videos of excavation, construction and detector technologies
 - We have fantastic material, professional or skilled amateur photographers can really emphasize this
- EDI-based campaigns can get high engagement
 - But, platform and media format may matter here
 - Static content worked on Facebook and Twitter
 - May get more success with video on Instagram
- Interaction with your subscribers/followers is an effective means to boost engagement
- DUNE will look to increase short-format video content and run more interactive Q&A campaigns