

IDP Education and Outreach Update

**How can IDP's EPO program help you
broaden the impact of your research?**

Louise T. Huffman

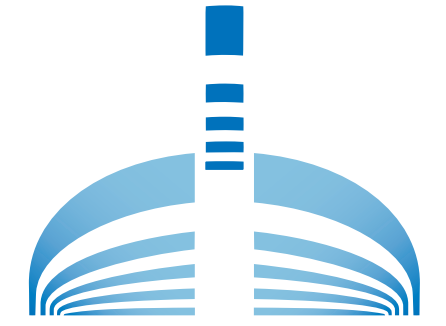
Director of Education and Public Outreach, IDP

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Bill Grosser

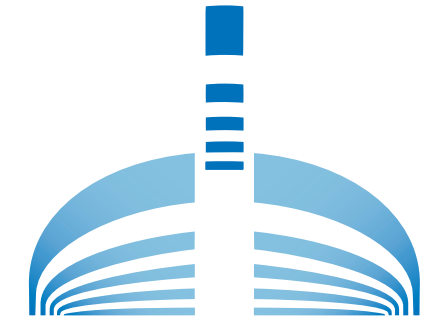
Curriculum Design

william.f.grosser@dartmouth.edu



IDP-EO Program

- **Quick overview of EO Program**
- **Focus on Virtual Field Labs**
- **How to engage**



IDP-EO: Deliverables

All in collaboration with scientists

1. Professional Development for Educators



AGU-GIFT Workshop



2. Development of Resources Based on Research Results



Science Museum-Chico

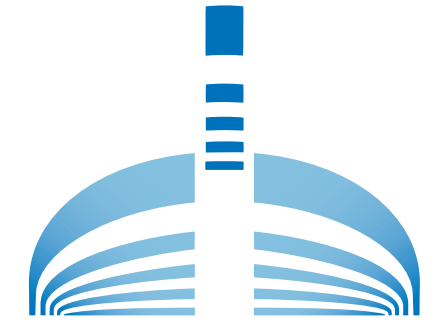


Montshire Museum, VT

3. Public Outreach



School of Ice



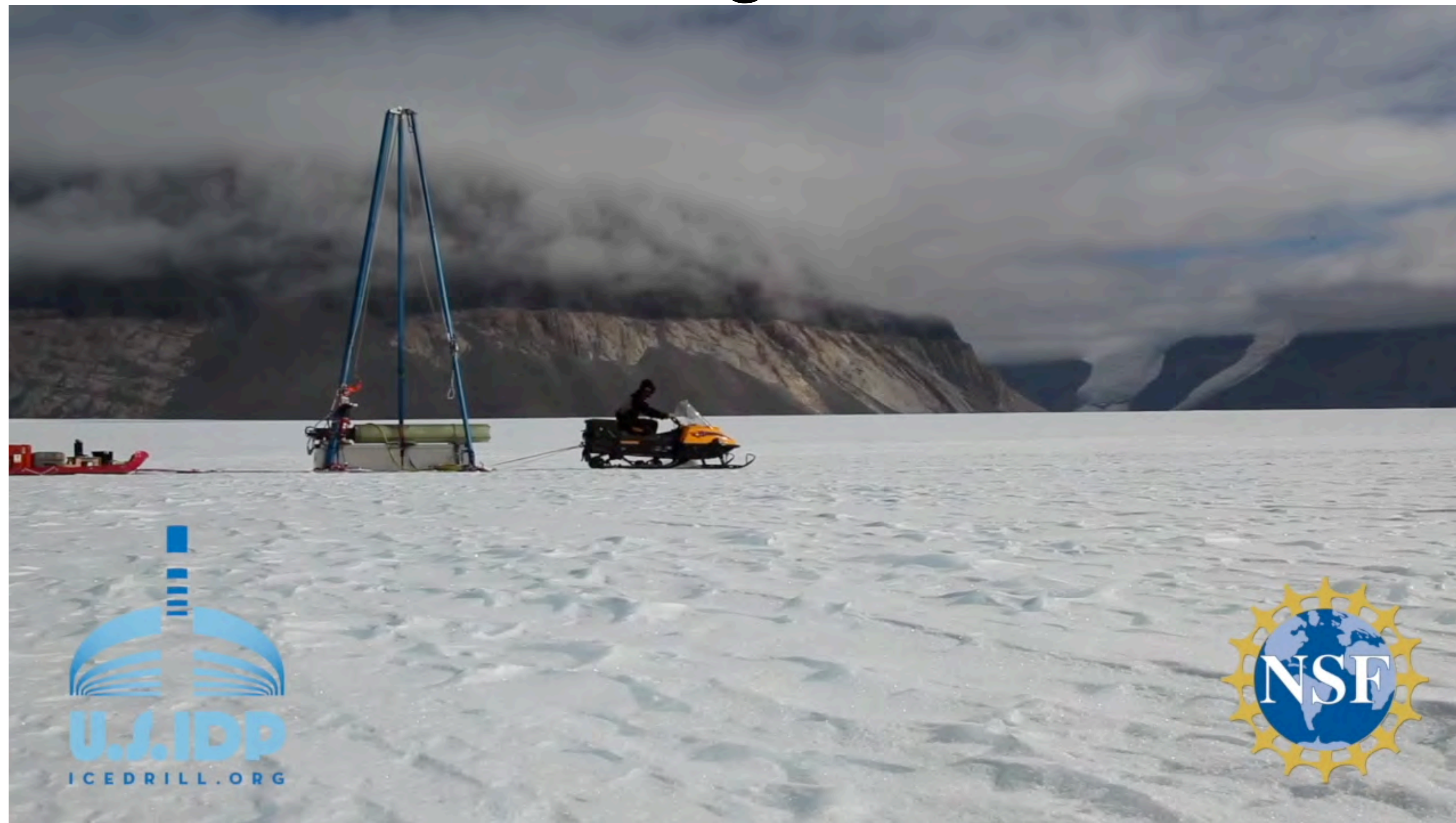
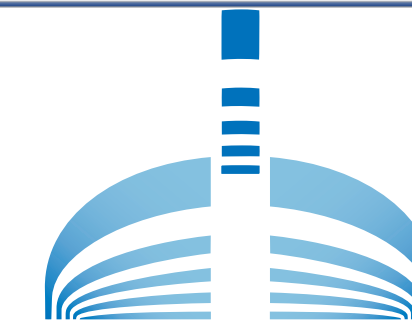
Virtual Field Labs (VFLs)

- 1) Virtual Field Labs are facilitated investigations that engage students in generating, analyzing, and interpreting data with U.S. Ice Drilling climate scientists.
- 2) Each VFL has 3 episodes



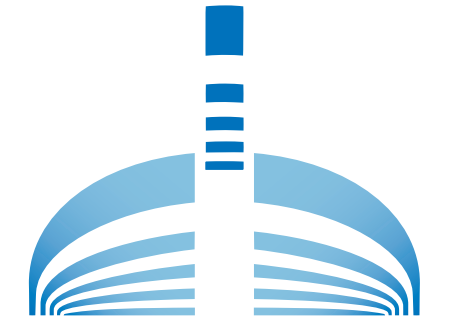


Episode #1: Introducing the scientist





Episode #2: Develop Background Knowledge... Investigate, calculate, graph, analyze



• How much has the amount of snowfall changed since we started burning fossil fuels?

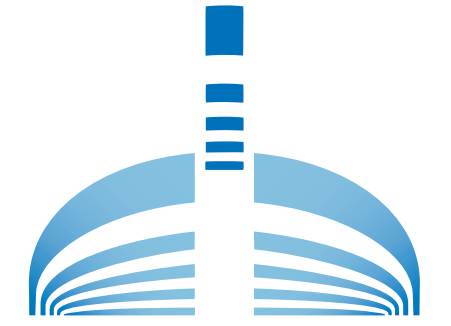
• Prediction: I predict that coring into the glaciers on Mount Hunter will show that since we started burning fossil fuels the amount of snowfall has....
Because...



Snowfall in the Arctic



Episode #2: Develop Background Knowledge...Investigate, calculate, graph, analyze

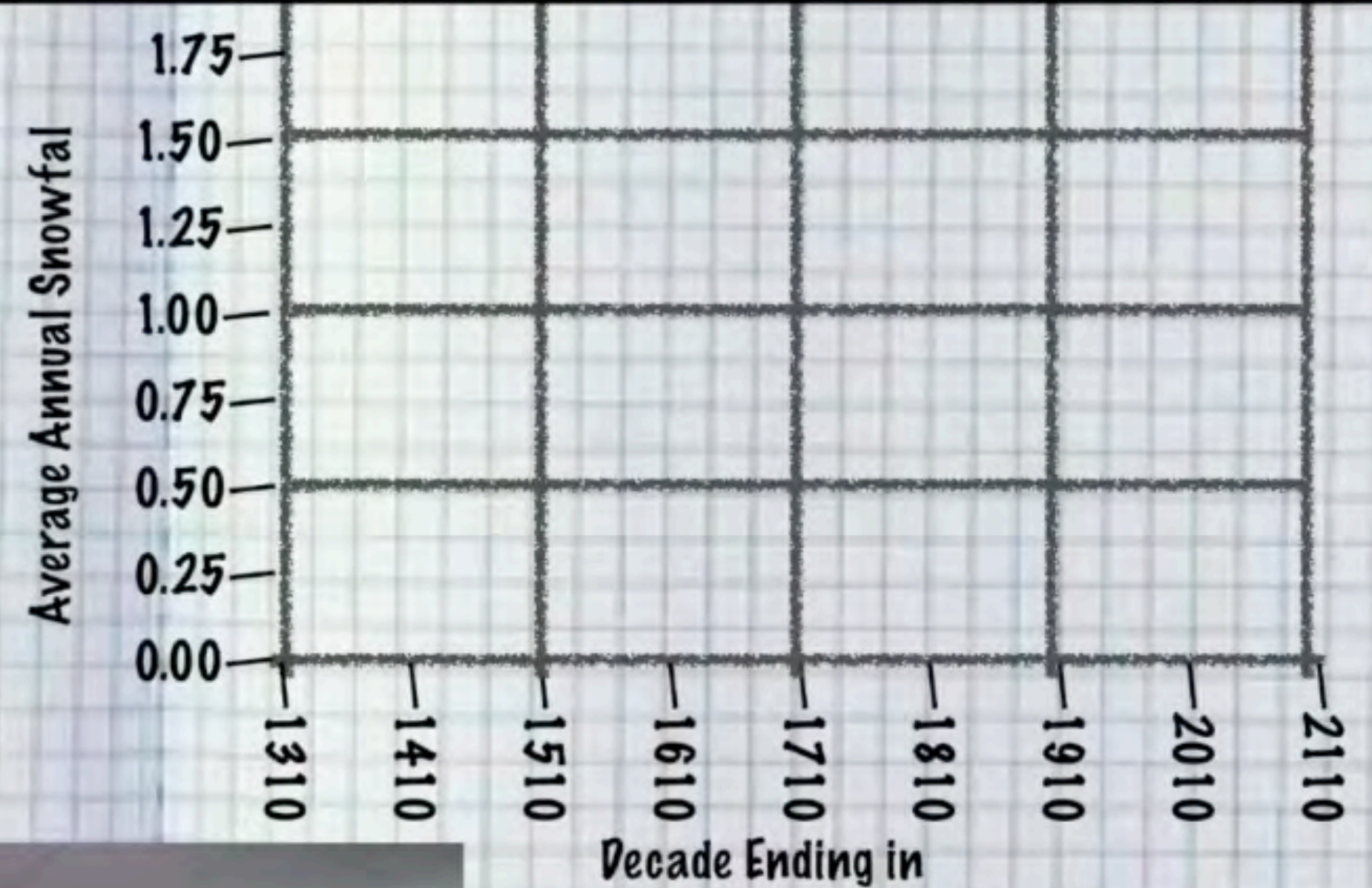


Snowfall in the Arctic

• How much has the amount of snowfall changed since we started burning fossil fuels?

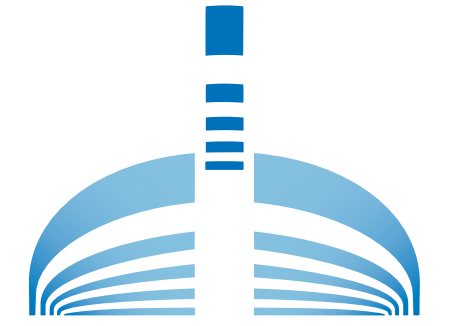
Snowfall during the first ten years of each century.

End Year	Average Annual Snowfall (Meters of Water)
2010	1.58
1910	0.756
1810	0.789
1710	0.619
1610	0.440
1510	0.457
1410	0.426
1310	0.323





Episode #3: Develop Background Knowledge...Investigate, calculate, graph, analyze



•How much has the amount of snowmelt changed since we started burning fossil fuels?

•Prediction: I predict that coring into the glaciers on Mount Hunter will show that since we started burning fossil fuels the amount of snowmelt has....
I think this because...

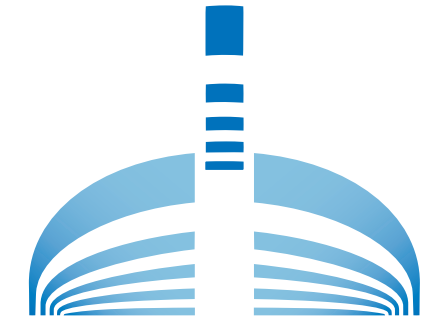
Snowmelt during each generation (25 years) starting with 1776-1800.

Generation End Year	Number of Visible Snowmelt Events
1800	
1825	
1850	
1875	
1900	
1925	
1950	
1975	
2000	
2025	





Episode #3: Develop Background Knowledge...Investigate, calculate, graph, analyze



• How much has the amount of snowmelt changed since we started burning fossil fuels?

• Prediction: I predict that coring into the glaciers on Mount Hunter will show that since we started burning fossil fuels the amount of snowmelt has.... I think this because...

Snowmelt during each generation (25 years) starting with 1776-1800.

Generation End Year	Number of Visible Snowmelt Events
1800	3
1825	0
1850	2
1875	0
1900	2
1925	5
1950	11
1975	28
2000	
2025	



Mount Hunter Melt Event Analysis
Generation Analysis: 2000 (1976-2000)

Dom Winski Alaska Data

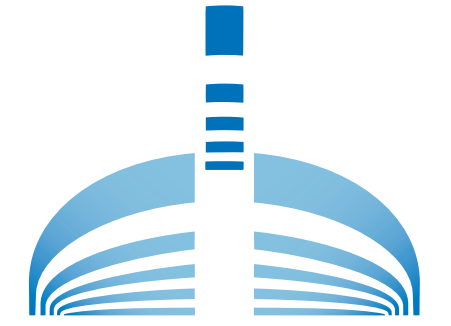
	A	B	C
Y	Top Depth in Ice Core (m)	Calendar Year	Adjusted Melt Layer Thickness (m)
3	4.78	2012	0.00017
4	4.97	2012	0.00006
5	5.25	2012	0.00035
6	5.28	2012	0.00025
7	5.33	2012	0.00046
8	5.34	2012	0.00179
9	5.42	2012	0.00024
10	5.43	2012	0.00017
11	5.54	2012	0.00404
12	5.64	2012	0.00085
13	9.12	2011	0.00013
14	9.15	2011	0.00018
15	9.16	2011	0.00007
16	11.35	2011	0.00052
17	11.41	2011	0.00011
18	11.43	2011	0.00005
19	11.52	2011	0.00016
20	11.79	2011	0.00056
21	12.1	2011	0.00064



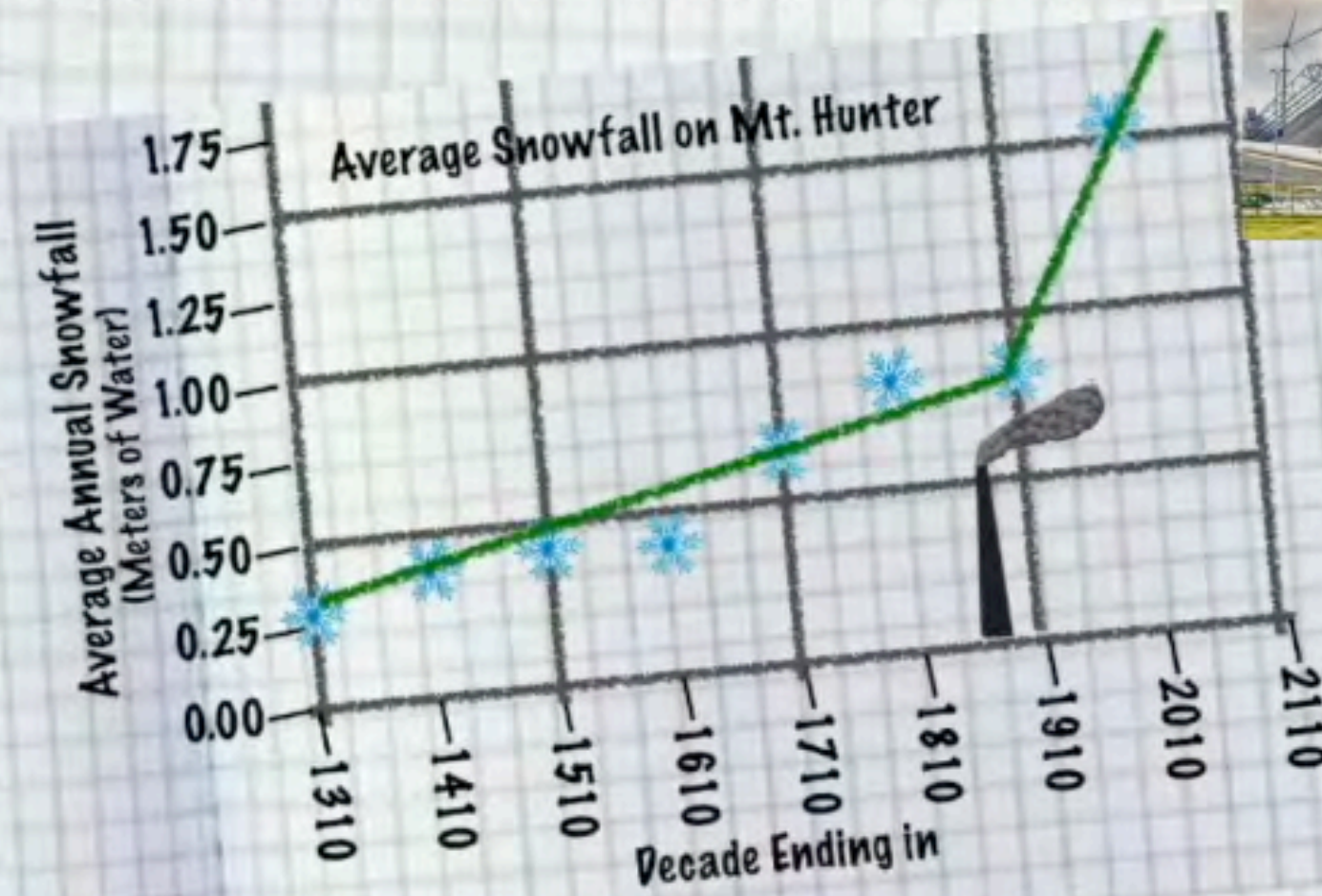
Measuring snow melt events in the Arctic



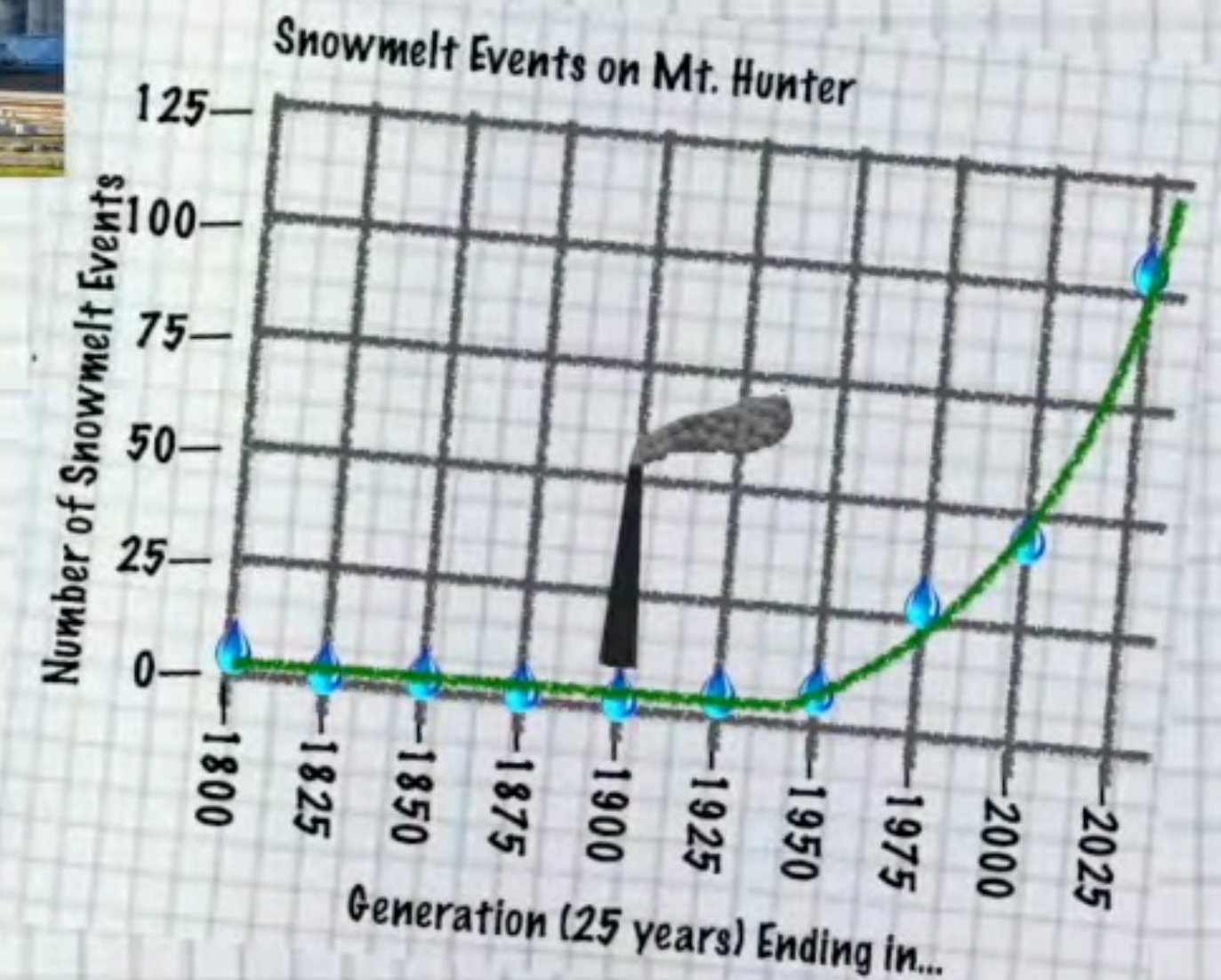
Episode #3: Develop Background Knowledge...Investigate, calculate, graph, analyze



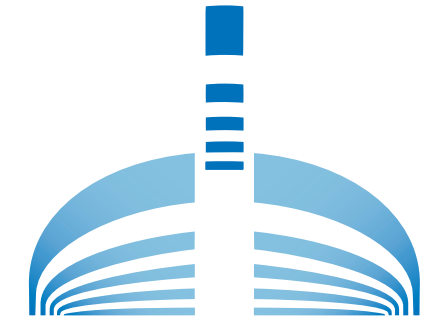
• How much has the amount of snowfall changed since we started burning fossil fuels?



• How much has the amount of snowmelt changed since we started burning fossil fuels?

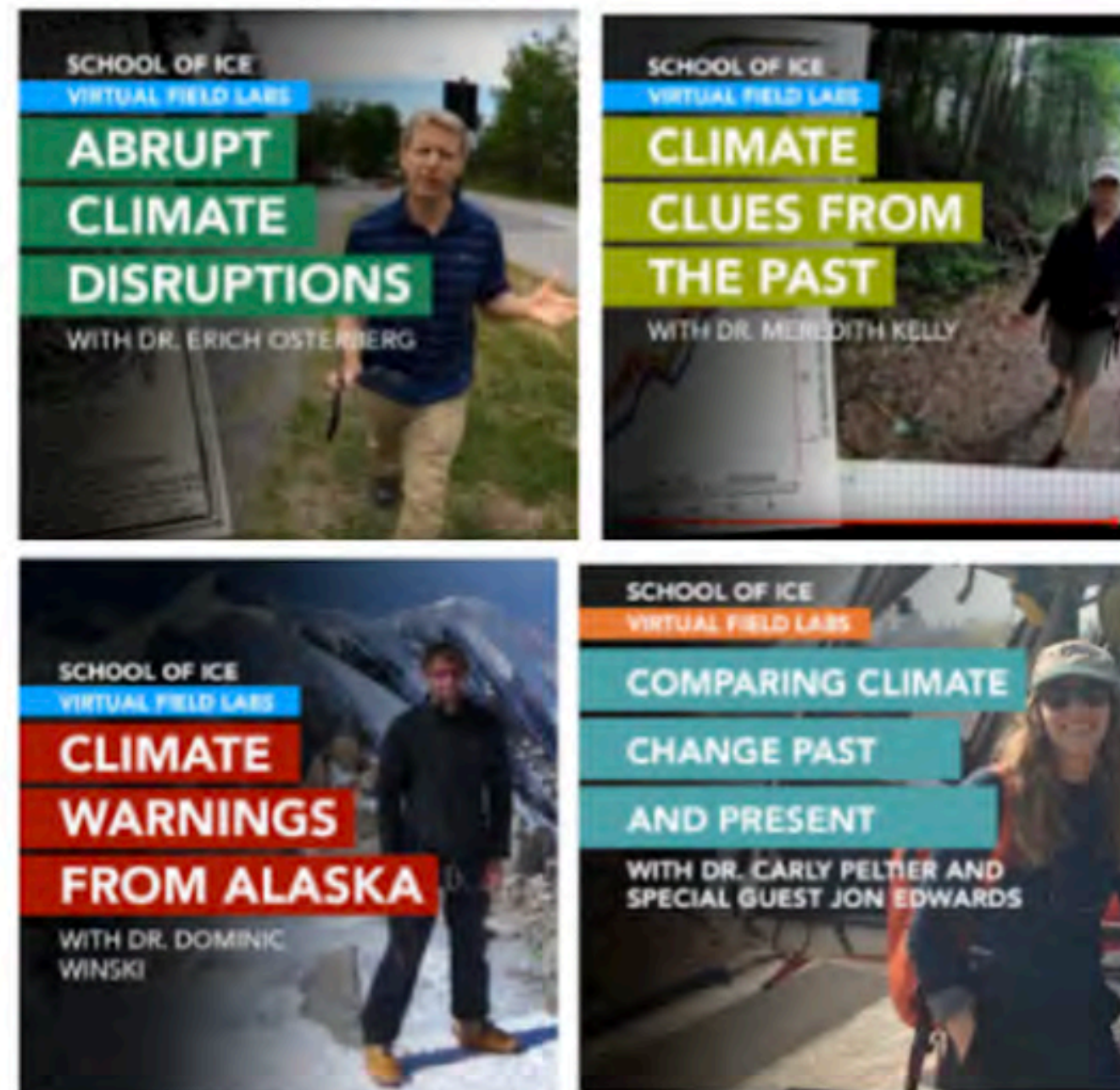


Snowmelt events-
global climate



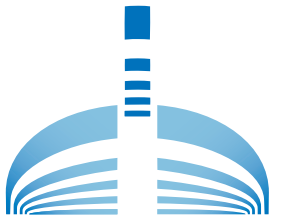
Virtual Field Labs (VFLs)

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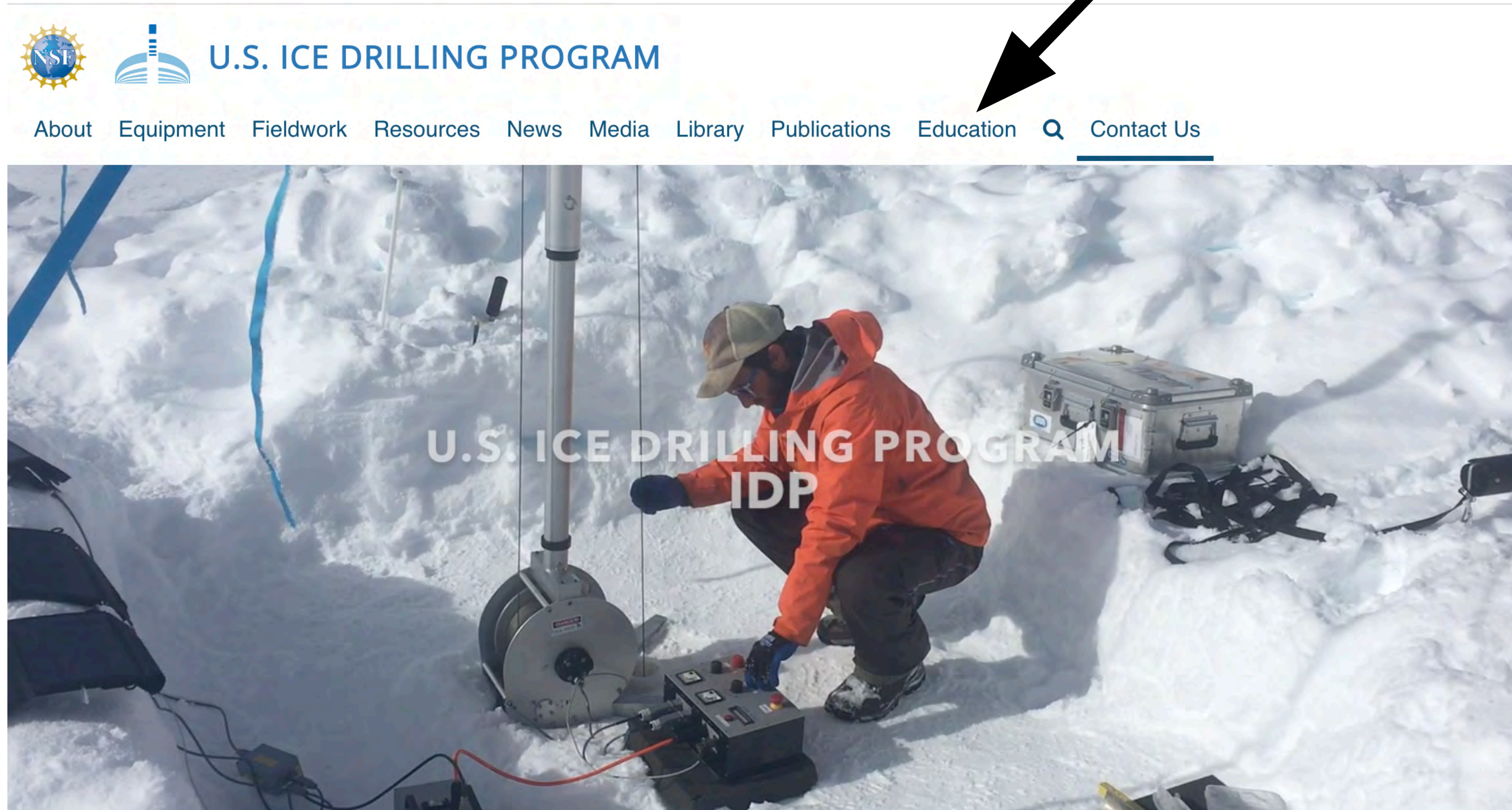


- Comparing Climate Change Past and Present-Dr. Carly Peltier and Jon Edwards
- Climate Warnings from Alaska-Dr. Dom Winski
- Climate Clues from the Past-Dr. Meredith Kelly
- Abrupt Climate Disruptions-Dr. Erich Osterberg

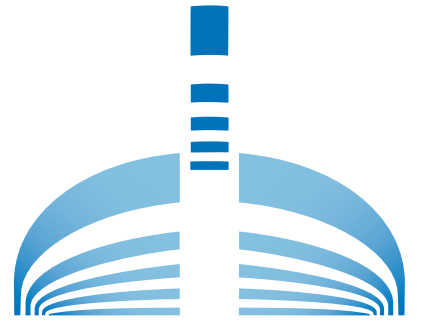
- Fall 2023: Sea Level Rise and Vital Signs from Thwaites-Drs Richard and Karen Alley
- Fall 2023: Do Burping Cows Really Matter? The Role of Methane in our Changing Climate—Ben Riddell-Young
- Fall 2024: Looking for Hope in an Ocean of Climate Change—Becky Alexander
- 2025?: Submarine groundwater discharge TBD—ASGARD (PI Doran)
- 2025?: Albedo TBD-Alden Adolph



How can the IDP EPO help you meet your broader impacts?



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Thank you!