



CU Boulder Wind Team
2023-2024

Connections Creation Final Report

April 18th, 2024

Student Lead:

Elyse DeBarros

Liam West – *CC Lead & Turbine Engineer*

Aria Mundy – *Financial Manager*

Dane Robinson – *Electromechanical Engineer*

Daniel Sherry – *Environmental Engineer*

Donggyu Jang – *Turbine and Wind Farm Engineer*

Jacqueline Hall – *Environmental Engineer*

Julia Gentile – *Project Development Lead*

Kaity Plutt – *Wind Turbine Lead*

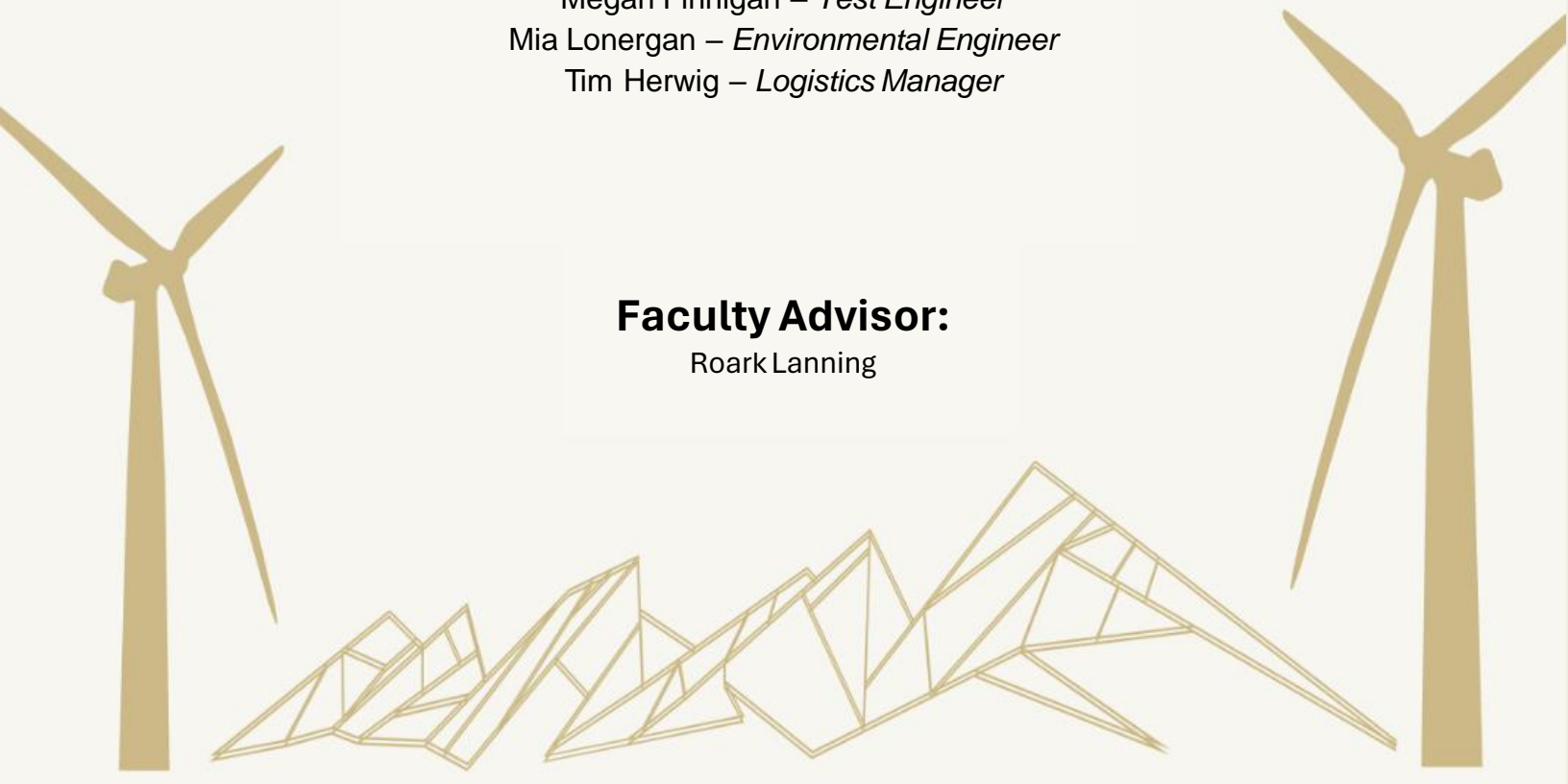
Megan Finnigan – *Test Engineer*

Mia Lonergan – *Environmental Engineer*

Tim Herwig – *Logistics Manager*

Faculty Advisor:

Roark Lanning



High-level Outreach Goals

- 1) Promote an improved understanding and awareness of wind energy within our local communities
- 2) Educate and engage younger kids with hands-on activities that make wind energy concepts approachable and fun
- 3) Inspire and recruit new students within our university to participate in the CWC and explore careers in renewable energy
- 4) Broaden the range of diversity within our renewable energy community by specifically targeting minority and underrepresented demographics
- 5) Foster and create professional connections throughout the industry to help students successfully transition into their future careers

Recruitment Strategy Outcomes

While the mechanical engineering capstone structure of our team prevents us from directly recruiting new members throughout the year, we have still focused on attracting and engaging with future team members through our Wind Energy Club. We also have worked on fostering relationships with other departments within CU to help pave the way for more interdisciplinary team members in the years to come. Lastly, we were recently featured in an article in the *CU Engineering* news publication, which showcased our team's progression to Phase 3 and served to further spread awareness throughout the engineering student community of future opportunities to participate in the Collegiate Wind Competition.

Team Demographics

CU Wind Team Members		
	# of members	% of team
Major		
Mechanical Engineering	11	68.7%
Environmental Engineering	4	25.0%
Electrical Engineering	1	6.3%
Year in School		
Graduating Senior	16	100%

	CU Boulder Undergrad <i>30,671 total</i>		CU Wind Team Members <i>16 total</i>	
	# of students	% of students	# of members	% of team
Gender				
Female	14,118	46%	7	44%
Male	16,546	54%	9	56%
Race/Ethnicity				
Asian	1,897	6.2%	1	6.25%
Native/Pacific Islander	28	0.1%	0	0%
Black/African American	535	1.7%	0	0%
Hispanic/Latino	3,992	13.0%	1	6.25%
American Indian/Alaska Native	48	0.2%	0	0%
White/Unknown	21,184	69.1%	13	81.25%
Other	2,987	9.7%	1	6.25%

CU Wind Club Events

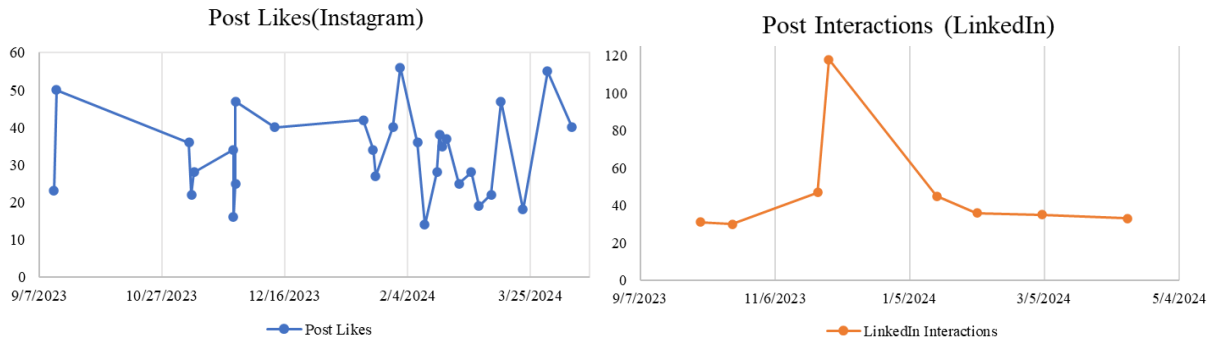
Event Date	Type	Details	~Attendance
September 7 th , 2023	Club Fair	Fall Engineering Immersion	150
October 4 th , 2023	Club Meeting	Intro Meeting	18
November 1 st , 2023	Club Meeting	Wind Trivia Competition	20
December 6 th , 2023	Club Meeting	KidWind Turbine Competition	33
January 25 th , 2024	Club Fair	Spring Engineering Immersion	150
February 7 th , 2024	Club Meeting	Windepardy (Wind Jeopardy)	35
March 13 th , 2024	Club Meeting	KidWind Turbine Competition II	23
April 10 th , 2024	Club Meeting	Kite Day	20

Reflection

The Wind Energy Club has given us the opportunity to reach students of all ages and areas of study through monthly newsletters and meetings. Newsletters contain updates on the progress our competition team has made, along with news and job opportunities in the wind industry. Our newsletter has almost doubled its subscribers in the past year, with a current total of 136 subscribers. Our meetings consisted of fun, wind-related activities, such as KidWind competitions, wind jeopardy, and kite building and flying. In alignment with Outreach Goal #3, we found that many Wind Club members are excited to apply for next year's competition team.

Social Media Strategy Outcomes

	Instagram: Team	Instagram: Club	LinkedIn
Total # of Posts	28	3	7
Initial Followers	189	61	36
Final Followers	340	95	91
Initial Av. Likes	20	16	33
Final Av. Likes	33	16	50
Initial Av. Interactions	120	33	31
Final Av. Interactions	201	41	47



**Initial data points taken on 9/1/23 and final data points taken on 4/18/23*

Reflection

Our team has continued to make great progress in growing our social media presence to help achieve Outreach Goals #1, 3, & 5. Using Instagram and LinkedIn as our primary platforms we have been able to spread general awareness of wind energy, provide regular updates on our progress in the competition, and engage with other relevant organizations. We made meaningful connections with the CU Energy Club,

the KidWind organization, and with multiple school and community news outlets. Additionally, our presence on LinkedIn is how we met the participants in two of our industry interviews, Ken Elser and the DNV team.

Activity #1: Student and Local Community Engagement

Event Date	Event Group	Details	~Attendance
Jan 17 th , 2024	CU Freshman Engineering	KidWind Competition	60
Feb 15 th , 2024	Business and Engineering Women in Technology	Finance & Turbine Competition	50
Feb 24 th , 2024	K-5 Superior STEM-a-Thon	KidWind Competition	80
Mar 11 th , 2024	Ellis Elementary School	KidWind Competition	15
April 2 nd , 2024	Centaurus High School	KidWind Competition	180
April 4 th , 2024	CU Venture Club	Presentation	16
April 9 th , 2024	CU Engineering Excellence	Symposium/presentation	200
April 24 th , 2024	Mission Zero	Exposition/presentation	500 anticipated
April 26 th , 2024	CU Engineering Capstone	Exposition/presentation	2,000 anticipated

Reflection

Our events for this activity effectively aligned with Outreach Goals #1-4. We specifically tailored the event with BEWiT to demonstrate the inextricable overlap between engineering design and financial analysis. For our KidWind events we chose diverse and underprivileged schools where we might have the most positive impact (e.g. Ellis Elementary has 77% minority and 74% economically disadvantaged enrollment). At each of these events we got to engage with kids of all ages and show them the fundamentals of the engineering design processes through strategic iteration and testing. Finally, our series of expo events at the end of the year are an opportunity for us to connect with a huge number of younger engineering students and inspire future CWC participation through showcasing our team's Turbine Design and Project Development progress.

Activity #2: Communications Materials

	December	January	February	March	April	Totals
Episode 1	26	4	7	6	9	52
Episode 2	37	8	8	5	8	66
Episode 3	0	0	35	15	10	60
Episode 4	0	0	0	0	49	49
Episode 5	0	0	0	0	29	29
Total Listens	63	12	50	26	105	256
Total Impressions	2487	1801	5333	3807	3400	14341

**Podcast statistics updated on April 18*

Reflection

We started Season 2 of The Get Blown Away Podcast with the aim to address some of the potential public misconceptions surrounding wind energy through engaging discussions between the hosts, targeting Outreach Goal #1. We also brought in several studio guests in the form of energy policymakers and engineers to provide a more professional take on the issues at hand, aligning with Outreach Goal #5. The podcast audience has shown slow but steady growth over the past 5 months and has been a fun medium through which to educate ourselves and others on many of the complex issues facing the wind energy industry. Our 6th and final episode of the season has been recorded, featuring the Director of the Colorado Energy office Will Toor, and will be released within the next week.

Activity #3: Understanding the Wind Energy Industry

Sector	Company	Connection	Contact	Open to continue?
Chelsea Cedarquist: Project Engineer				
Site Construction	Mortenson	Professional: via team member internship		No
Chris Hansen: State Senator				
Energy Policy	Colorado State Senate	Professional: via team member internship		No
Austin Spafford: Systems Engineer				
Turbine Engineering	Siemens Gamesa	Professional: via team member internship		No
Colin McNichols: Engineering Manager				
On-site Tech Support	Onyx Insight	Professional: via team director		Yes
Jake Frye: Technical Director of Offshore Wind				
Technical Due-Diligence	DNV Offshore Wind	Professional: via LinkedIn		No
Katie Lara: Offshore Wind Engineer				
Technical Due-Diligence	DNV Offshore Wind	Professional: via LinkedIn		No
Javier Molinero: Floating Wind Development Lead				
Technical Due-Diligence	DNV Offshore Wind	Professional: via LinkedIn		No
Noe Rouxel: Senior Project Manager and Consultant				
Technical Due-Diligence	DNV Offshore Wind	Professional: via LinkedIn		No
Chris Ward: Head of Offshore Wind				
Technical Due-Diligence	DNV Offshore Wind	Professional: via LinkedIn		No
Heather Weitzner: Technical Development Business Manager				
Technical Due-Diligence	DNV Offshore Wind	Professional: via LinkedIn		No
Ken Elser: Director of Technology and Technical Services				
Financing	Wells Fargo	Professional: via LinkedIn		No
Will Toor:				
Energy Policy	Colorado Energy Office	Professional: networked		No

Reflection

This activity mostly focused on Outreach Goal #5, and we learned about the wide range of roles in which one can participate in the advancement of wind energy. At least two team members were present at each interview and each lasted 1-1.5 hours. Each interview touched on professional development as well, and we gained insight on how careers can grow and evolve in the wind industry. Our favorite interview was with the DNV offshore team, which was conducted with all DNV individuals at the same time, allowing multiple people to pull from their various backgrounds to provide well-rounded answers. The content gathered from these interviews helps both us and our fellow students to better understand the breadth of career options available within the wind energy industry.

Appendix of Images



Image 1. *CU Wind Club in-house turbine contest in full swing.*



Image 2. *CU Wind Club members adjusting the pitch angle of their winning blades.*

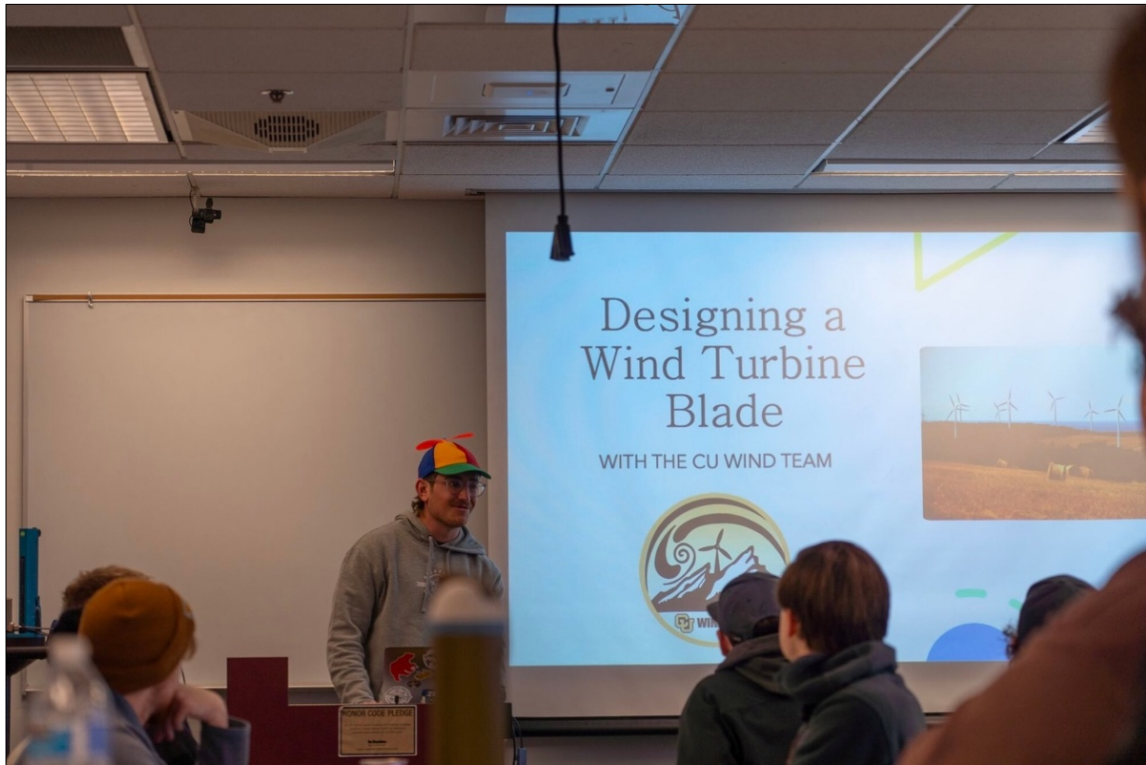


Image 3. *Presenting to CU freshman engineers on the CWC and basic turbine design.*



Image 4. *CU freshman engineers putting their ideas to the test.*



Image 5. Instagram post promoting the podcast interview with Colorado State Senator Chris Hansen.



Image 6. Instagram post celebrating the delivery of custom hybrid ceramic bearings from our sponsor, CeramicSpeed, for use in our turbine.



Image 7. *CU Wind club poster promoting the spring semester turbine competition, featuring an additional financial analysis component.*

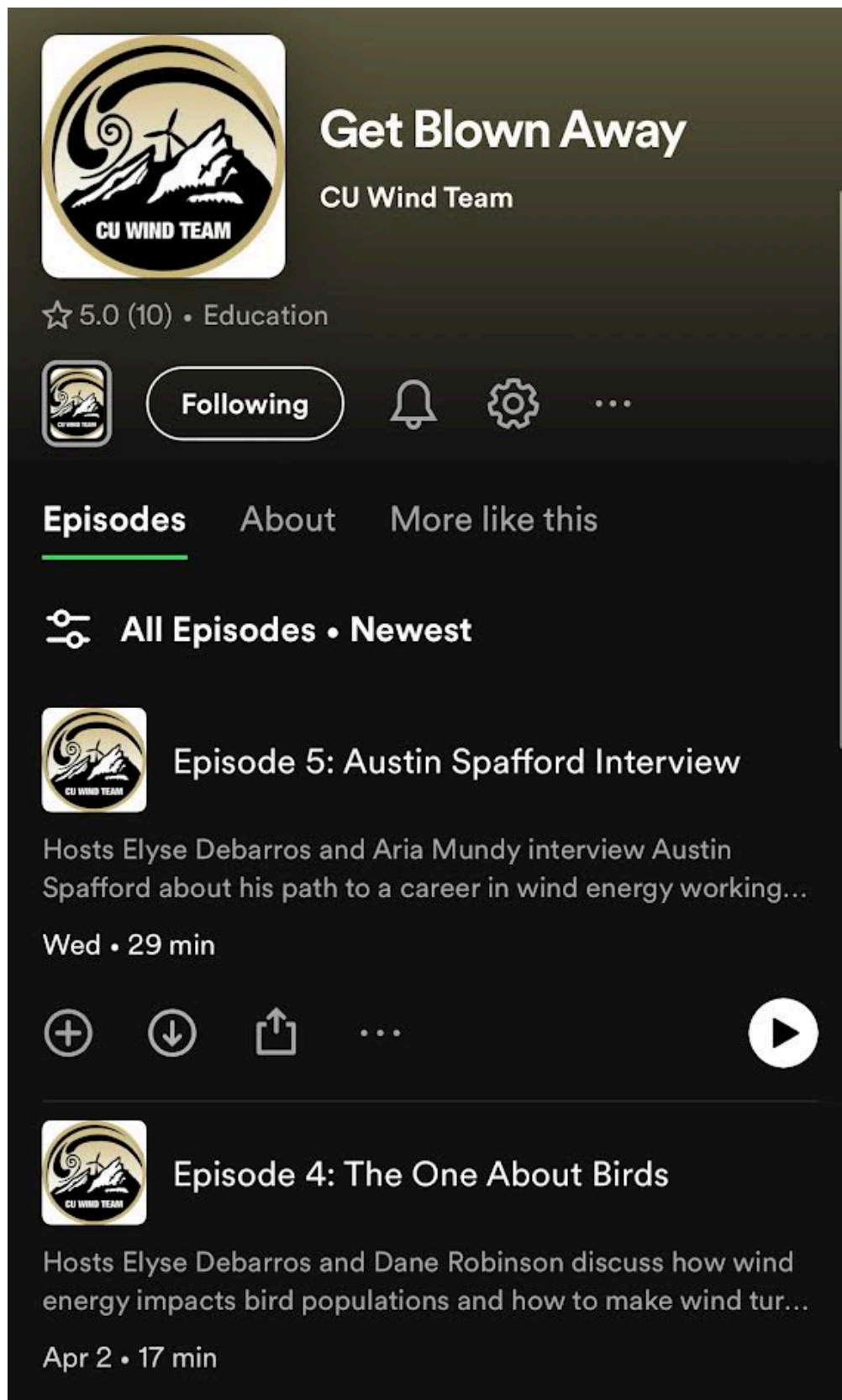


Image 8. Screenshot of the Spotify interface for our educational podcast, *Get Blown Away*.



Image 9. One of our #WindNewsMondays Instagram posts, where we highlighted interesting current wind related news from around the world.

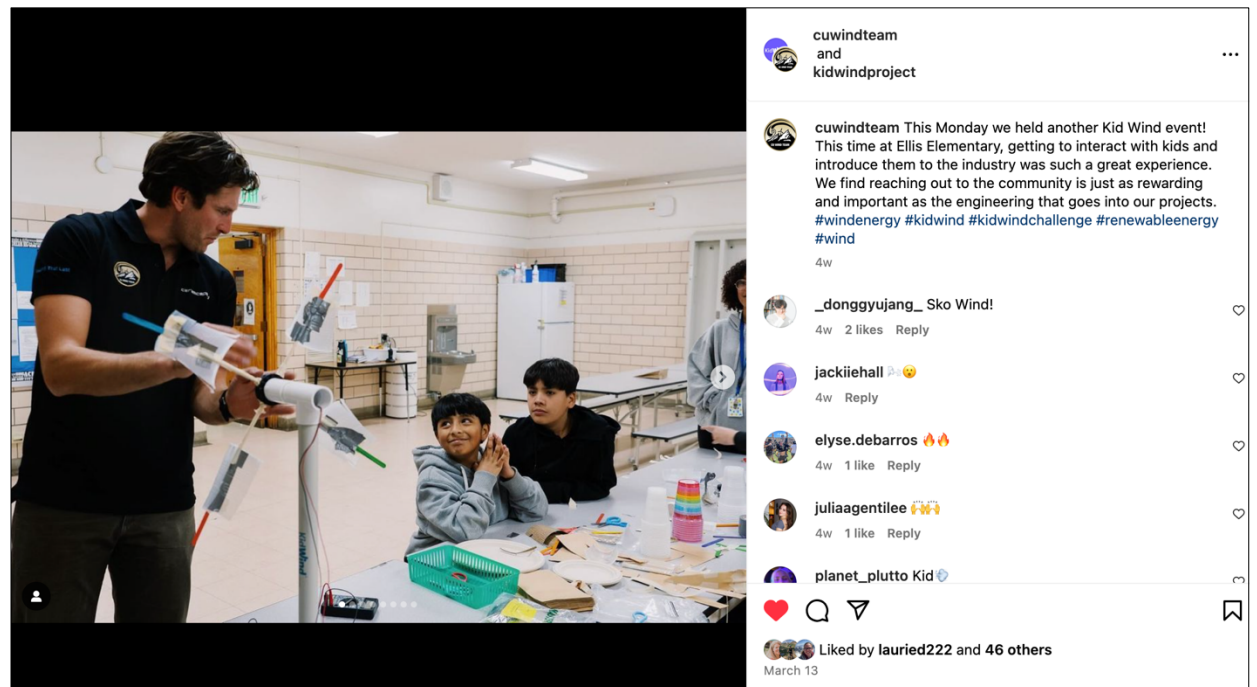


Image 10. Instagram post following our day hosting a KidWind event with Ellis Elementary School.



Image 11. *Hosting a KidWind event with the freshman engineering students at Centaurus High School.*

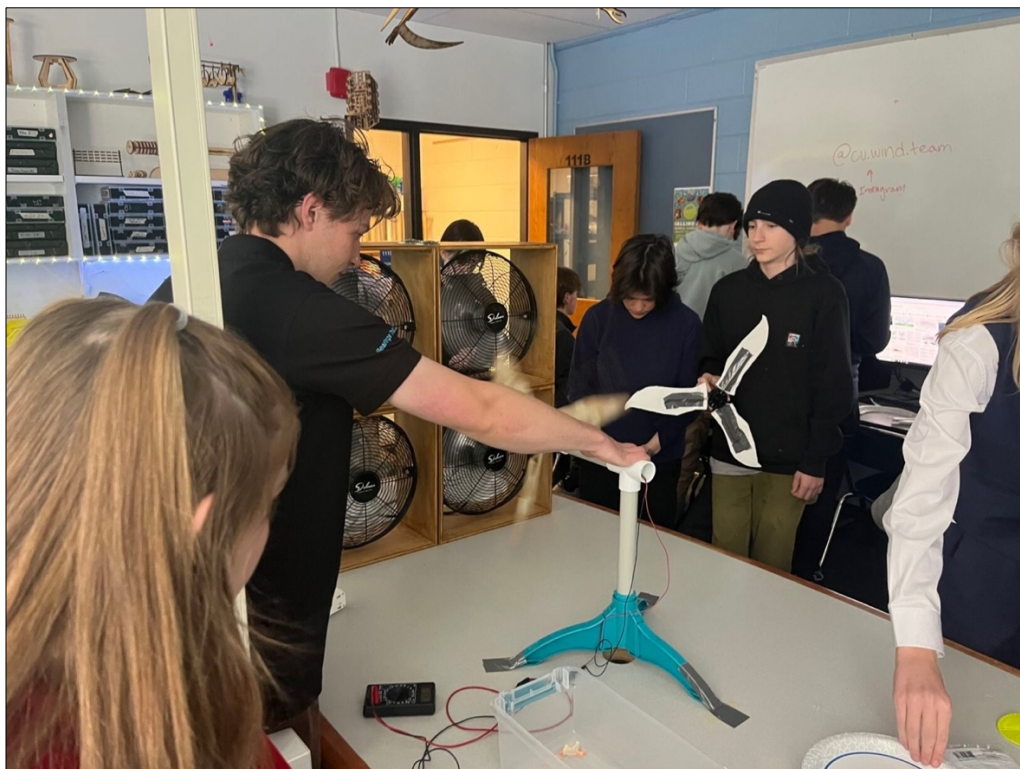


Image 12. *Our newly designed and constructed 2x2 fan array in use at Centaurus High School.*



Image 13. *Ellis elementary student testing to determine if bigger is indeed better.*

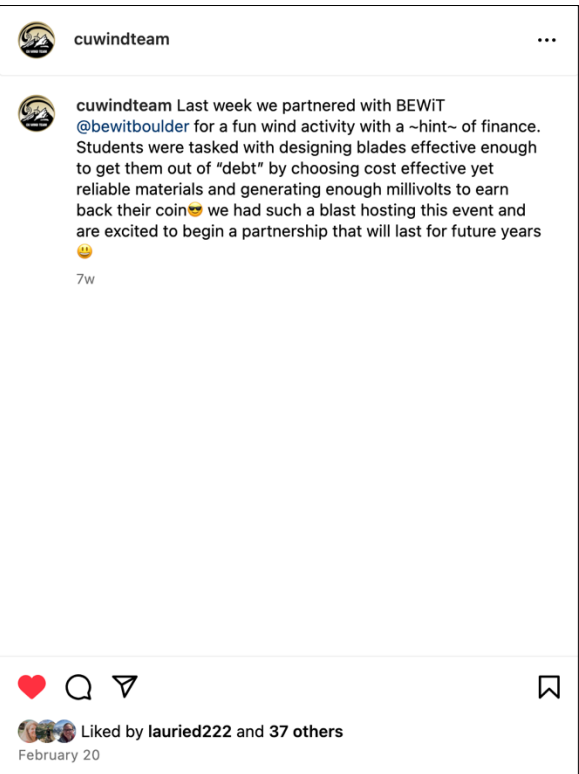


Image 14. *Engineering design mixed with financial analysis at our February event with the Business and Engineering Women in Technology (BEWiT) at CU.*



CU Boulder Student Wind Energy Team

91 followers

1mo •

Our team was selected to receive the RWE Grant for Collegiate Wind Competition! We have been working hard to plan our journey to the competition. Thank you **RWE** for helping us reach our goals! [#skowind](#)



Daniel Sherry and 32 others

1 comment • 3 reposts



Like



Comment



Repost

Organic impressions: 1,514 Impressions

Preview results

Image 15. *LinkedIn post featuring our successful application for the RWE Grant.*

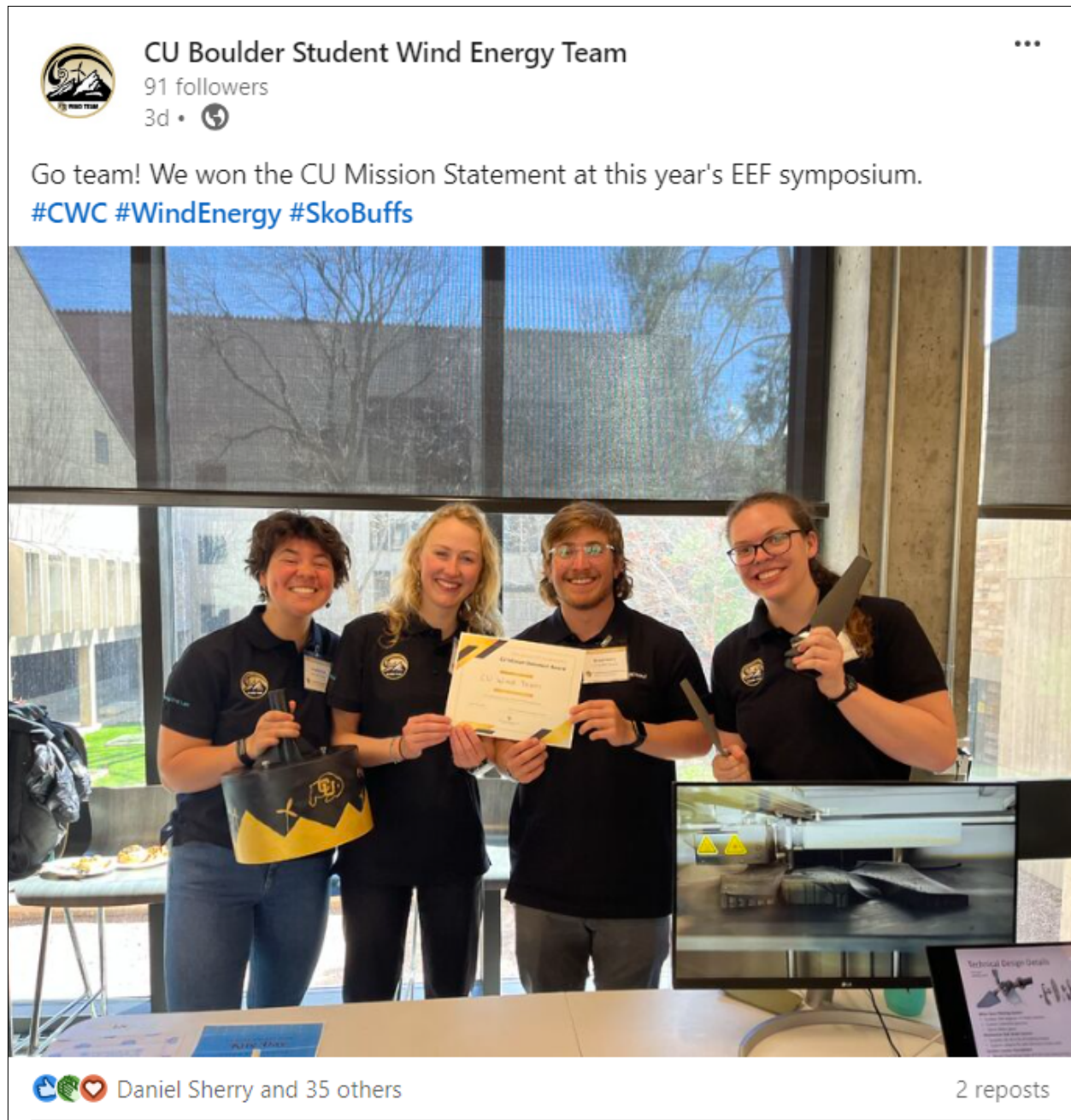


Image 16. *LinkedIn post celebrating our team's winning of the CU Mission Statement Award at the Engineering Excellence Fund Symposium earlier this month.*



Image 17. *The final meeting of the CU Wind Club for the year; club members flying kites to harness the power of the wind in a more lighthearted fashion.*

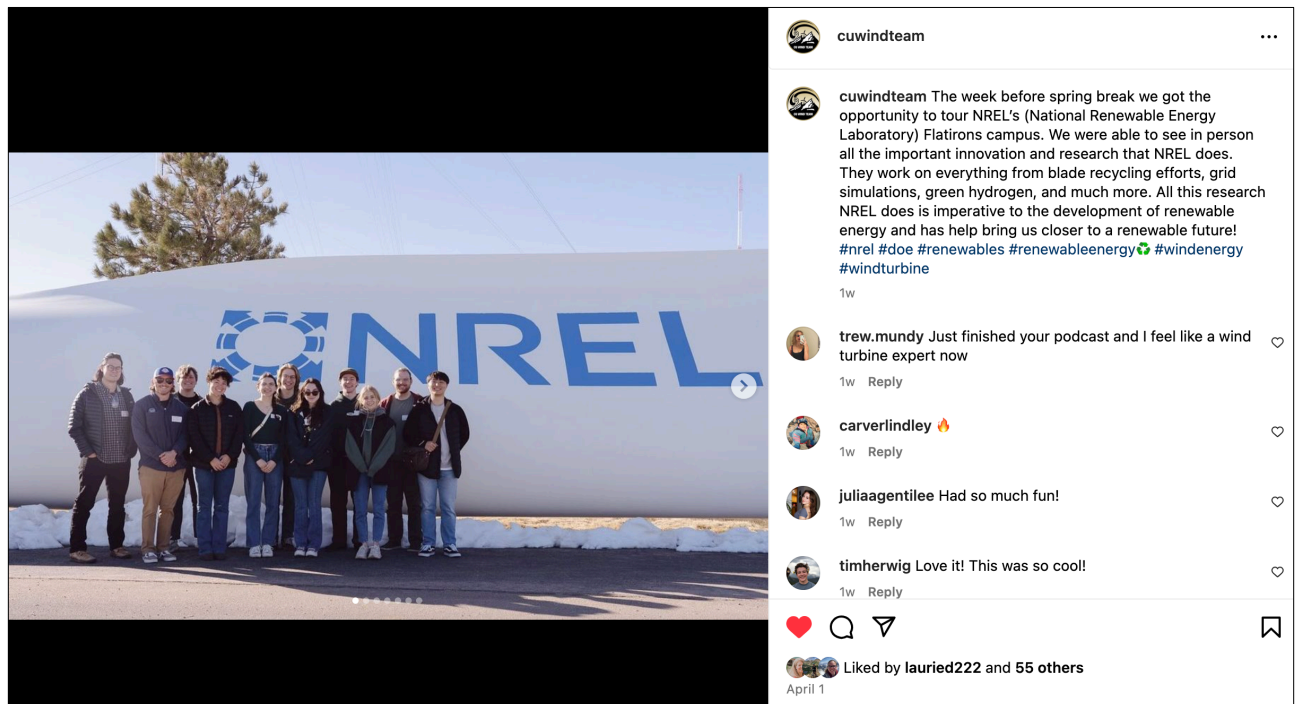




Image 19. *Tabling at the Fall Semester Engineering Immersion Fair for the CU Wind Club.*



Image 20. *A fun-filled team bonding night of board games and make-your-own-pizza.*