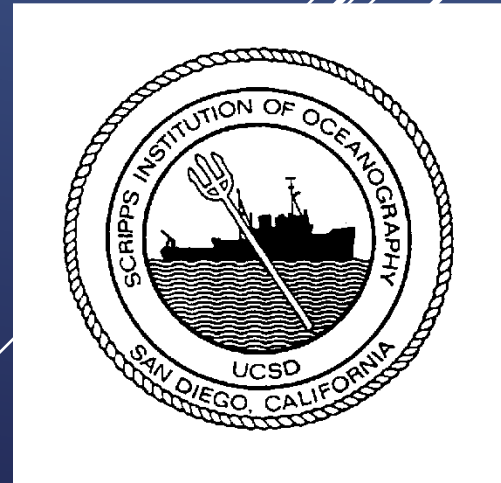


RVOC 2026

NSF WEST COAST WINCH POOL
OPERATED BY
SCRIPPS INSTITUTION OF
OCEANOGRAPHY



OUR MISSION

- To provide an inventory of oceanographic winches (etc.) for shared use.
 - To keep our inventory in good repair and in compliance with applicable standards (CFR, RVSS).
 - To modify our inventory to better serve our community.
 - To provide technical support: cable/wire rope spooling, training, maintenance, repairs, engineering, fabrication, advice...
- 

HOW THE WINCH POOL WORKS

- **Funded by NSF**
- **Customers (science parties, vessel operators, ...) communicate their needs to us.**
- **We match their needs to available machinery and personnel.**
- **We work with customers to send machinery and personnel to and from the vessel and to schedule work.**
- **Those conducting NSF-funded research generally incur no costs to use our machinery and personnel.**
- **Others *generally* pay a “day rate” and the cost of freight.**

UTILITY LINE SPOOLERS



TSE SD-70 Utility Line Spooler

Provides up to 7,500 lbs pull.

Holds 2,800 m of 1" line.

MOORING WINCHES



Hawboldt SPRE-3464 Mooring Winch

Provides up to 10,000 lbs pull.

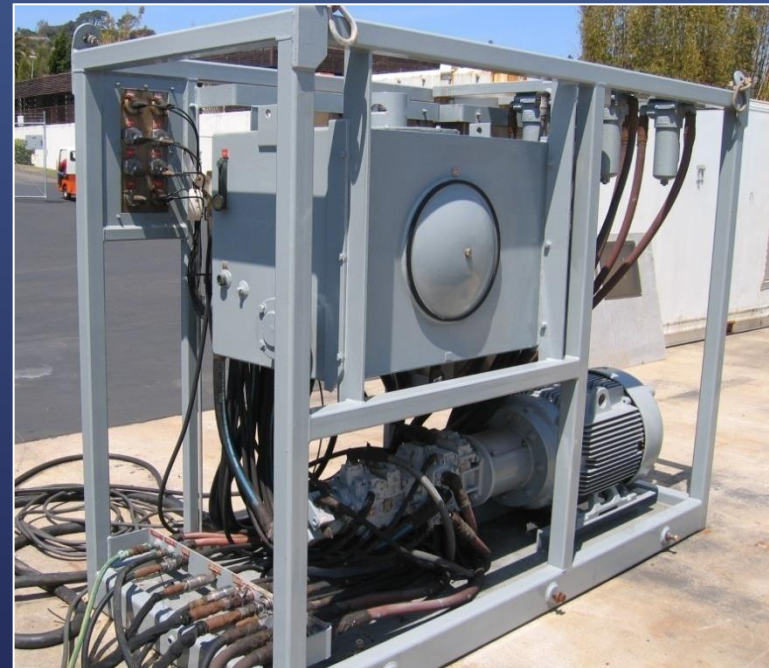
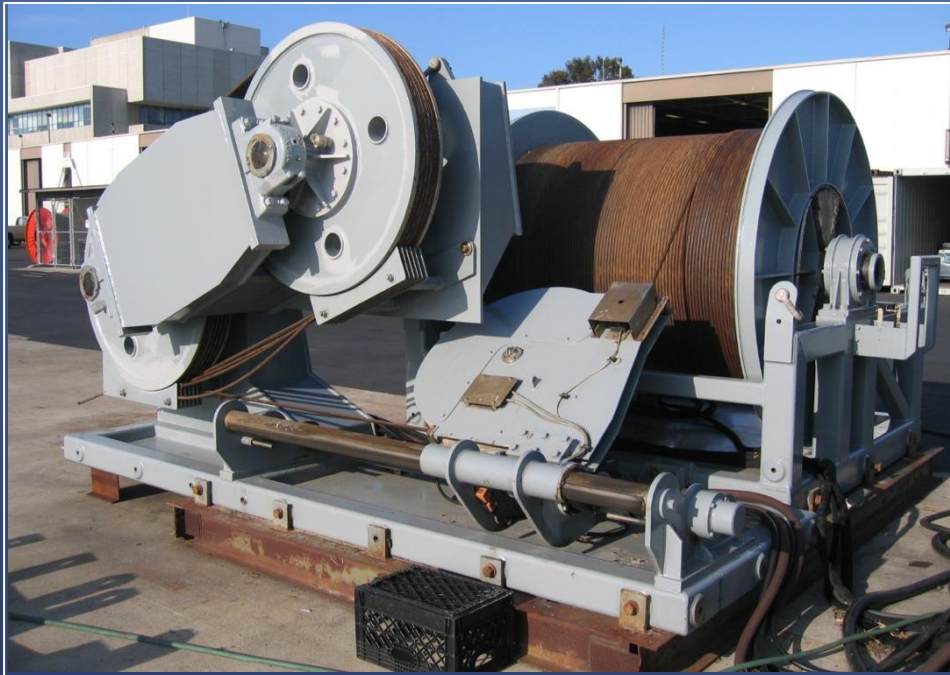
Withstands up to 20,000 lbs pull.

Tension and Scope Display

Holds 2,800 m of 1" line.

Same footprint as TSE Spooler.

TRACTION WINCH



Dynacon Traction Winch

Up to 25,000 lbs pull.

Holds 10,000 m of .681 cable.

(Remote operating station not shown.)

ENGINEERING PROJECTS 2023-2024

- ▶ **Made OHS operator's manuals for *Atlantic Explorer*.**
- ▶ **50% done with OHS operator's manuals for *Thomas G. Thompson*.**
- ▶ **Worked with Markey Machinery Co., Allied Systems Co., and Systems Interface to develop and implement improvements to the CAST-6 handling system.**
- ▶ **Implementing NS Enterprise for all management tasks.**
- ▶ **Developed winch troubleshooting & repair course.**
- ▶ **Worked with USCG to identify all federal regulations pertaining to cranes on inspected & uninspected research vessels.**

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<https://scripps.ucsd.edu/ships/west-coast-winch-pool>





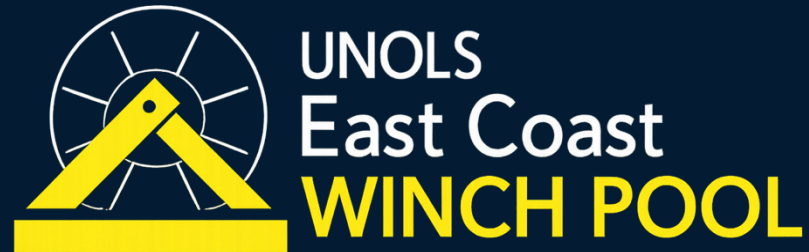
East Coast Winch Pool Team

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Jamie Haley
System Mechanic

Josh Eaton
Engineering

Sean Whelan
Oversight & Coordination



East Coast Winch Pool Mission

3

The East Coast Winch Pool (ECWP) provides overboard handling systems, wire spooling, wire lubrication assistance, consulting, and engineering solutions as part of the NSF UNOLS Equipment Pool Program.

By pooling large value assets with subject matter experts, efficiencies are achieved to provide safe and reliable equipment to the whole UNOLS Academic Research Fleet.

Equipment Requests

4

The past year ECWP has met the needs of over (33) expeditions on (12) different vessels for (497) Sea days of oceanographic science. Including:

Mooring work

Hydrography

Trace metal sampling

Towed body

Towed nets

Benthic survey

Wire walker

Sediment trap

Wire flyer

ECWP Website Upgrade

5

Many changes are under the hood- removing bugs and enhancing security, but there are significant enhancements to help tracking and NSF reporting, while easing the process for prospective users to view documentation and request equipment.

- Rajesh Mishra – Director of IS, Science and Engineering Information Services | WHOI
- Mike Chagnon President & CTO | Kaimika Technology LLC

ECWP Equipment

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winchpool.who.edu



Winch Pool Inventory

Name	Category	Manufacturer	Model	
1m Metering Block	Blocks	WHO/OSU		View
AGO Metering Block	Blocks	AGO Environmental	SR22 18.125"	View
Base Plate Large	Base Plate	WHOI	Medium Duty	View
Base Plate Small	Base Plate	WHOI	Light Duty	View
Base Plate Turn Table	Base Plate	WHOI	Light Duty	View
Block #20	Blocks	Harken Block	CTD	View
Block #21	Blocks	Harken Block	CTD	View
Block 1/2"	Blocks	Harken		View
Block- WHOI 0.681	Blocks	WHOI	WHOI	View
Dynamometer 25K	Dynamometer			View
Dynamometer 50K	Dynamometer	Dillon EDExtreme		View
HD-2	Heavy Duty	Rapp Hydema	JASON LARS	View
LD-1	Light Duty	Dynacon	10030	View
LD-2	Light Duty	Dynacon	10030	View
LD-3	Light Duty	Hawboldt	SPRE-2530S	View
LD-5	Light Duty	InterOcean	76708	View
MASH2K-1	Light Duty	MacArtney	MASH2000	View
MASH2K-2	Light Duty	MacArtney	MASH2000	View
MASH4K-1	Medium Duty	MacArtney	MASH4000	View
MASH4K-2	Medium Duty	MacArtney	MASH4000	View
MD-1	Medium Duty	Hawboldt	SPR-1640/S	View
MD-2	Medium Duty	Hawboldt	SPR-2648	View
MD-3	Medium Duty	Dynacon	P19	View
MD-4	Medium Duty	Hawboldt	SPRE-3464	View
MRU 1 (Motion Reference Unit)	MRU	Kongsberg	MRU-H	View
MRU 2 (Motion Reference Unit)	MRU	Kongsberg	MRU-H	View
MS-1	Mooring Spooler	TSE International	SD-70	View
MS-2	Mooring Spooler	TSE	SD-70	View
Spooler Liethiser	Wire Spooler			View
Spooler Pine Hill	Wire Spooler	Pine Hill		View
Spooler TSE	Wire Spooler	TSE	T 50/42 BWRC	View
ULD-1	Ultra-light Duty	SeaMac	207	View

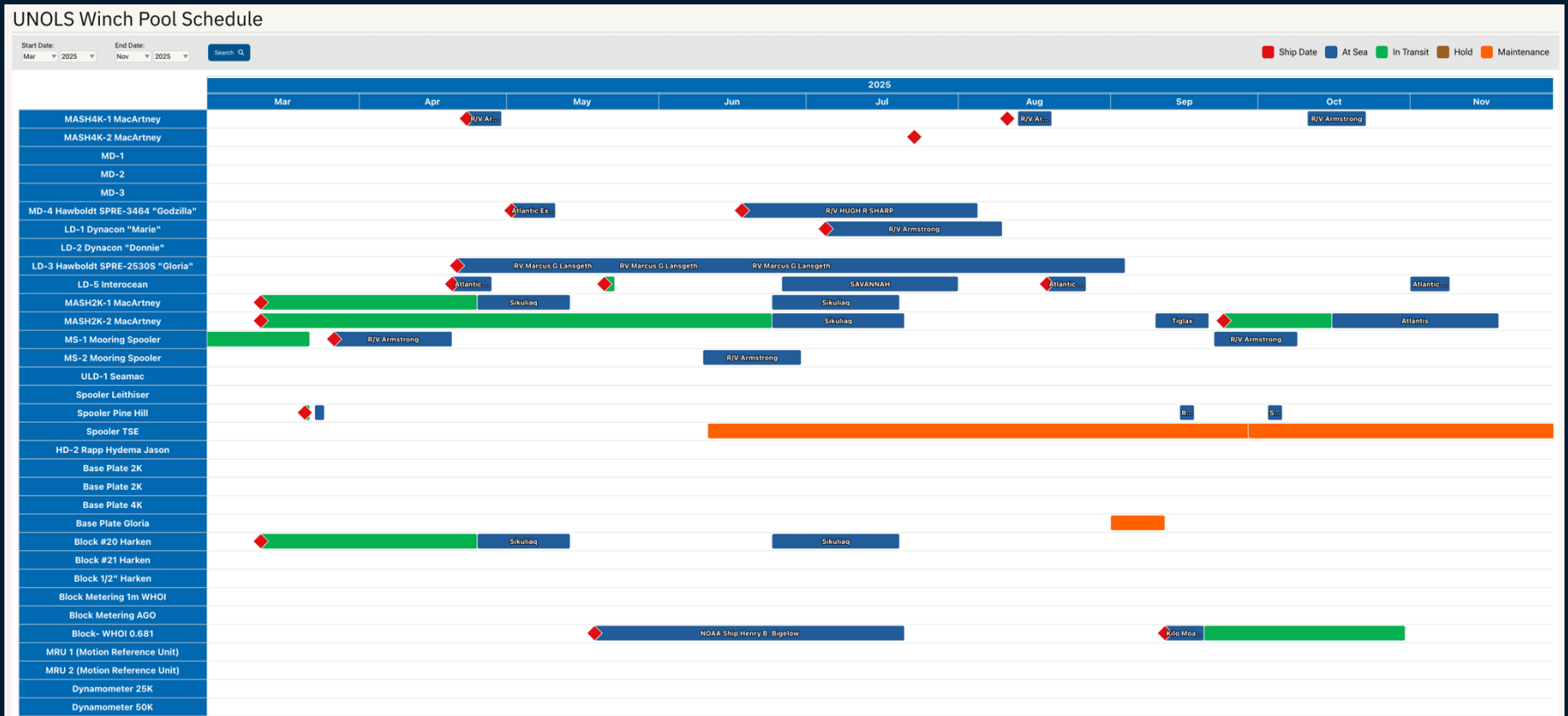
MASH2K-2

Category	Model	Tension Monitoring
Light Duty	MASH2000	Yes
Manufacturer	WHOI Property Tag	Safe Working Load (lbs)
MacArtney	114784	3360
Manufacturer Serial	Length (in)	Flange Diameter (in)
H11152 V35479-2	53.2000	27.5000
Empty Weight (lbs)	Height (in)	Payout Monitoring
3750	67.0000	Yes
Width (in)	Roller Diameter (in)	Remote Control
76.8000	5.9000	Yes
Drum Diameter (in)	Drum Width (in)	
17.9900	28.7400	
Comments		
None		
Documents		Images
Maximum Capability Document MASH 2000 - Rev. B1.PDF		MASH2K1.jpg

ECWP Schedule

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winchpool.who.edu



ECWP Request Form

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Request Form

Requestor First Name*	Requestor Last Name*	Mobilization Date	Mobilization Port
Tom	Crean	08/08/1914	Plymouth, England
Email Address*		Demobilization Date	Demobilization Port
Tom@endurance.edu		05/21/1916	South Georgia Island
Telephone Number(s)		Weight of Gear (lbs)	
n/a		500	
PI First Name	PI Last Name	Expected Tension (lbs)	
Ernest	Shackleton	1400	
Institution Name		Wire Used	
Imperial Trans-Antarctic Expedition		Hemp	
Agency	Other Agency	Wire Length (m)	
Other	Antarctic Exploration	1000	
Grant Number		Submitter Comments	
OCE-2024123		Hazardous journey. Small wages, bitter cold, long months of complete darkness, constant danger, safe return doubtful. Honour and recognition in case of success.	
Ship			
Endurance			
Cruise			
Imperial Trans-Antarctic Expedition			
WHOI Project Number			
N/A			

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Submit

ECWP- Tension & Spooling

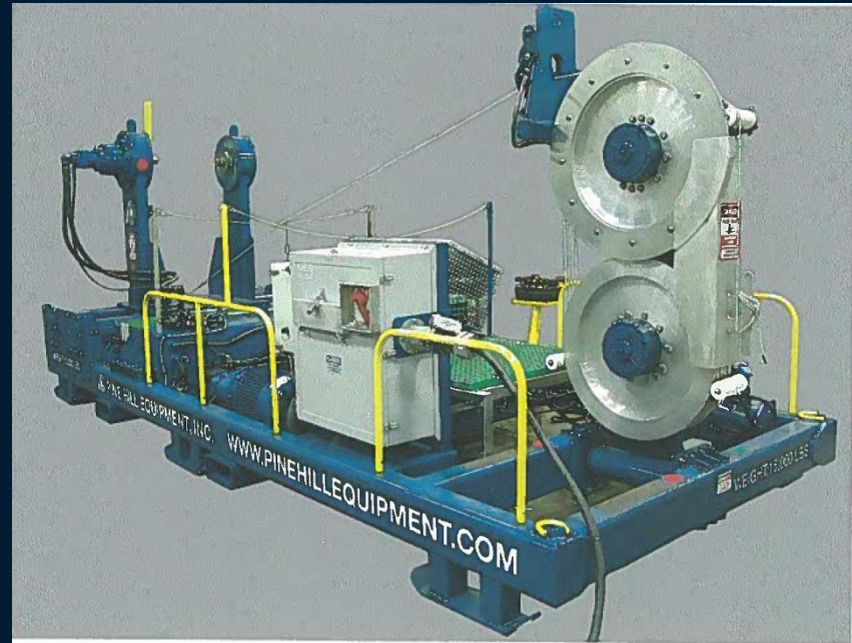
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TSE



Leitheiser

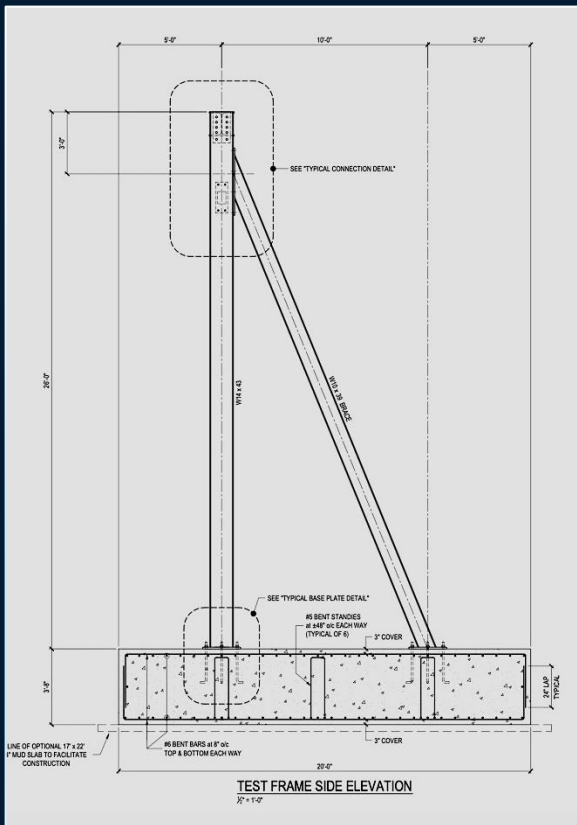


Pine Hill

ECWP Test Frame

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- On site dynamic testing for generating Maximum Capability Documents



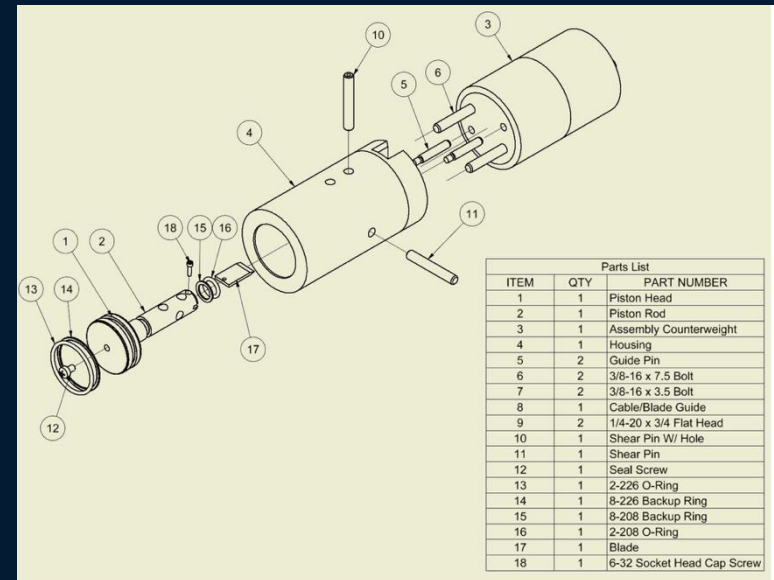
ECWP Hydrostatic Cutter

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The Hydrostatic Cutter is a device developed to cut a tension member at depth.

When a tension member becomes fouled or anchored at the bottom, instead of cutting it at the surface, the device is deployed to cut and release it near bottom.

A significant portion of the expensive tension member can be saved reducing economic loss.



(26) wire cutters (12) weak links fabricated and delivered to Academic Research Fleet

Commercialization - WHOI Winch

12



WHOI Winch Unique Attributes:

- Motor and gearbox inside the drum
- Open-end drum with module components
- Light level wind
- Can use both electric and hydraulic power
- Pull to weight ratio: 2:1 (Incumbent Winch ratio: 1:1 - 1:2)
- Production ease- tab and slot design

WHOI Winch Patent: US 10,889,475 B2



Commercial Opportunities Analyzed:

- Mine Scraper Winch
- Wind Turbine Winch
- Utility and Telecom Line Winch

Look ahead

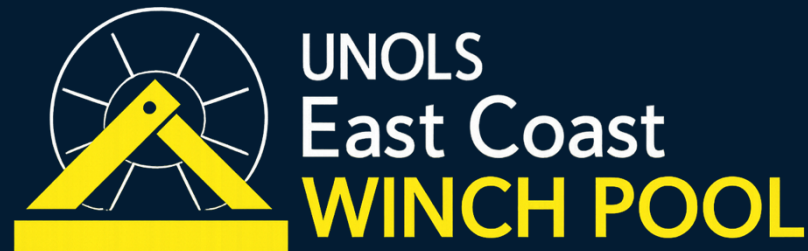
13

- Priority- expand preventative maintenance and repair efficiencies and workflow.
- Continue refurbishment of Pine Hill wire spooler.
- Strengthen East and West Coast Winch Pool communication.
- Continue to seek efficiencies in cost sharing of shipping equipment.
- Evaluate recapitalization opportunities with NSF Oceanographic Facilities and Equipment Support (NSF 23-525).
- Investigate commercialization aspects of the WHOI designed and patented compact winch design under NSF Translation to Practice (NSF 25-540)
- Develop a course of action to implement Winch Capacity Estimator and Estimated Max Tension Estimator applications to be accessible through our ECWP website.
- Investigate with Raj Mishra (WHOI) the development of an Artificial Intelligence application and how it might help match users with equipment.

East Coast Winch Pool

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The ECWP subject matter experts provide the NSF Academic Research Fleet with overboard handling systems, wire winding, engineering support, training, and the logistics for the delivery of safe and reliable equipment worldwide.



<https://winchpool.whoi.edu>

ECWP thanks the following for their support and contributions:

Sarah Fuller, David Fisichella, & Rob Munier- Shipboard Scientific Services & Marine Operations

Isaura Weddige Welch & Isabella Costa Marcondes- WHOI Finance/Administrative Services

John Brinckerhoff & Derek Spencer- International & Domestic Shippers

Eric Trotto, Barbara Callahan, & Andrea Harvey- NSF Wire Pool

Brian Guest- WHOI Oceanographer Emeritus

Tim McGovern- NSF Program Director