WORKING TOGETHER FOR A
SAFE AND HEALTHY U

LABORATORY SAFETY AWARDS & INNOVATIONS EVENT

December 9, 2025

ENVIRONMENTAL HEALTH & SAFETY
UNIVERSITY of WASHINGTON

SCHOOL OF PHARMACY
UNIVERSITY of WASHINGTON

Improving Lab Safety in the School of Pharmacy

Tasha K. Ritchie, PhD
Lab Safety Coordinator
School of Pharmacy

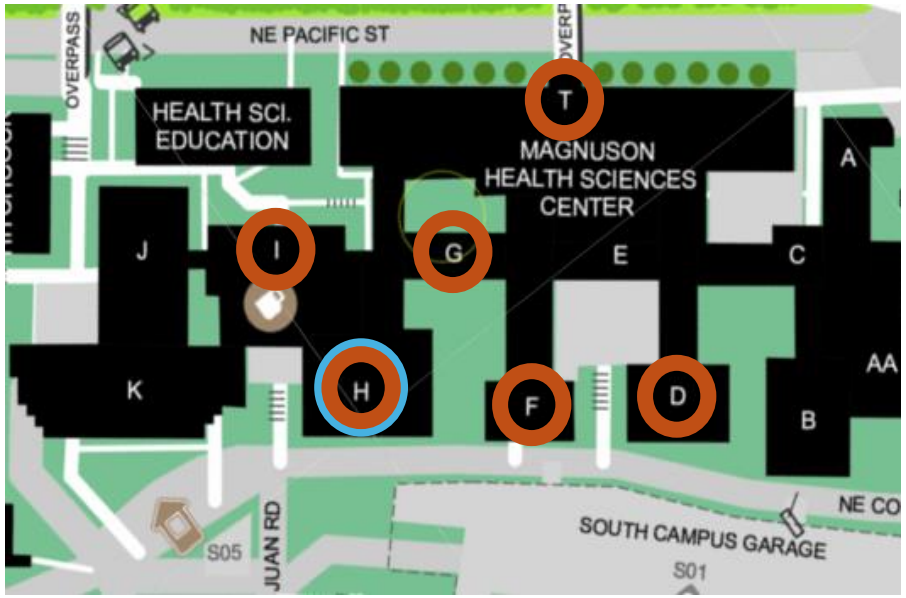
The School of Pharmacy

- Top ranked pharmacist training program (PharmD)
- Highly respected research training programs
  - PhD (Pharmaceutics, Medicinal Chemistry) and Masters (Pharmaceutics)
  - PhD and Masters in Health Economics & Outcomes
  - Coming soon! Minor in Pharmaceutical Sciences
- Research Centers
  - CEDD
  - CHOICE
  - Plein Center for Aging
  - WE-REACH
- Services provided by the SOP
  - Mass Spectrometry Center
  - PK and Modeling Lab
  - Performance-based Risk Sharing Database
  - Rubenstein Pharmacy

The School of Pharmacy: Active Research Laboratories

- Central research themes: drug discovery, development, disposition, and delivery
- Varied techniques: chemical synthesis, nanoparticles, mass spectrometry, peptide synthesis, microscopy, animal models, and clinical trials

- Department of Pharmacy
  - 6 research labs
  - Bracken Pharmacy Learning Lab
- Department of Pharmaceutics
  - 11 research labs
  - TLC-ART program
  - PK Lab
- Department of Medicinal Chemistry
  - 8 research labs
  - Mass Spectrometry Center



Differences in policies between, as well as within, departments

Laboratory Safety Coordinator Position

- Departmental chairs recognized a need for the position
- New position created ~1.5 years ago
- Centralize lab safety policies
  - Inspection preparation
    - RUA/BUA
    - Lab safety
  - SOPs
  - Training Records
- School-wide point of contact for
  - Facilities
  - EH&S
  - Chem waste/MyChem
- Lab closures and new lab set ups

Laboratory Safety Coordinator Position

- Main tasks
  - Operational Management
  - Monitor Safety Training Records
  - Documentation (chemical and procedural SOPs, labRATs, school-wide policies, etc.)
  - Chemical Waste Management
  - SOP liaison to EH&S, facilities, UW-wide committees
- Meet with department chairs and faculty
  - Departmental issues
    - Legacy chemicals
    - Shared equipment management
    - Asset management
  - Discuss lab-specific issues
    - BUA/RUA renewals and new applications
    - Laboratory remodels
    - Freezer defrosting/back ups
    - PPE and other supplies

Progress

- Disposed of hundreds (thousands?) of old, orphaned, and/or unknown chemicals
- Improved lab safety compliance
  - Inspection ratings
    - Increased overall average score
    - Increased number of passing scores
- Increased reporting for lab-related incidents (OARS)
- Developing school-wide rubric for tracking training
- Working with the Green Labs initiative for reusable plastics and decreasing freezer energy usage

Contact information

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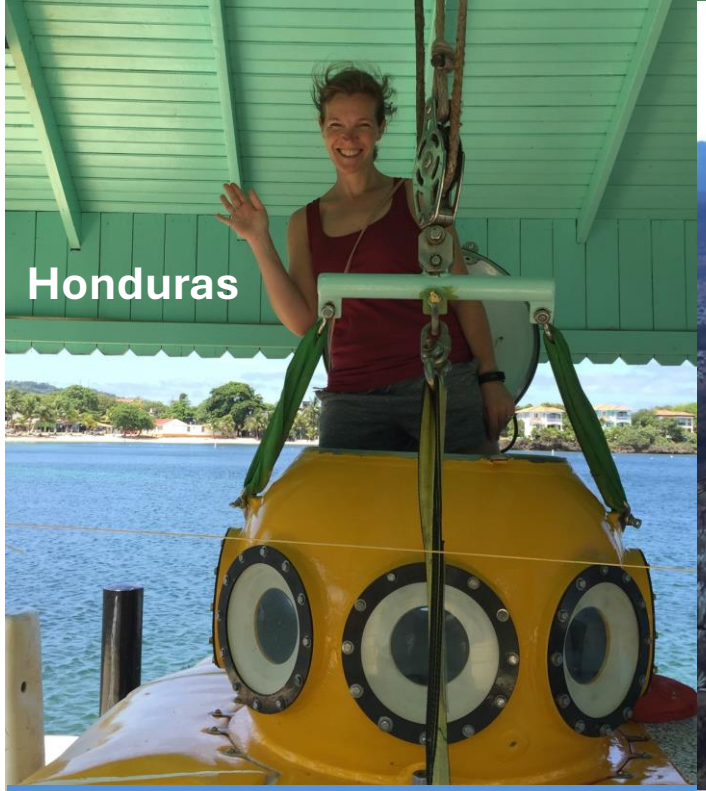
Creating a Framework and Culture for Field Safety Planning at the Burke Museum

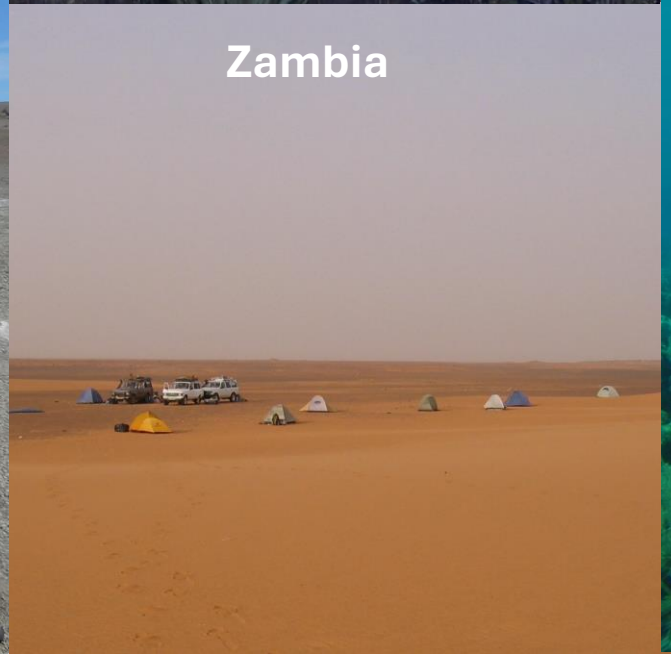
David E. Giblin, Ph.D.
Collections Manager and Research Botanist
Burke Museum Herbarium


Honduras


Colombia


Peru


Argentina


Zambia


Honduras

Historic Deficiencies in Burke Museum Safety Planning

- No central knowledge of who/when/where of field work
- No standard protocol for field safety planning (e.g., who is informed, who is involved, what safety resources are available)
- No mechanism for coordinating sharing safety planning across Museum

Steps to Remedy Deficiencies

- Guidance from EH&S (Alex Hagen)
  - Safety Planning Manual

BURKE MUSEUM FIELD OPERATIONS

SAFETY PLANNING MANUAL

VERSION 1.0

SPRING 2025

Table of Contents

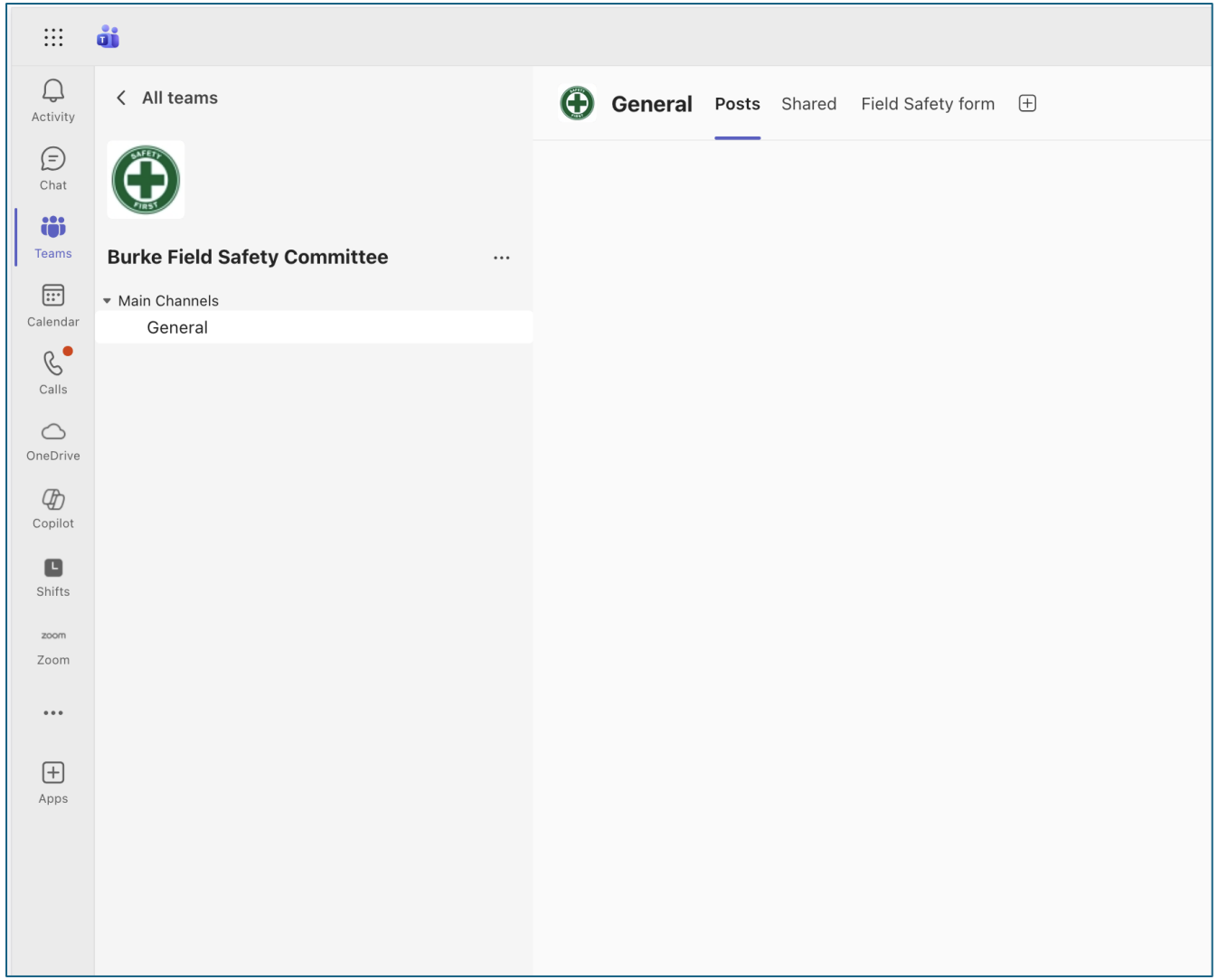
Steps to Remedy Deficiencies

- Guidance from EH&S (Alex Hagen)
  – Safety Planning Manual

- Guidance from College of Arts and Sciences (Megan Arrivey Hall, Peter Denis)
  - Field Safety Planning Committee

Burke Field Safety Committee

(led by Burke's Kelli Kirk and Andrew Flannery)



Field Safety Committee form

1. Name *

Enter your answer

2. Email address *

Please enter an email

3. Phone number *

Enter your answer

4. Date of departure *

Please input date (M/d/yyyy)

5. Date of return *

Please input date (M/d/yyyy)

6. Destination country *

Enter your answer

7. Destination state/province (where applicable)

Enter your answer

8. County/District (where applicable)

Enter your answer

9. Name of destination *

Enter your answer

10. Local transportation *

Enter your answer

11. Number of faculty (include yourself) *

Please enter a whole number

12. Number of staff (include yourself) *

Please enter a whole number

13. Number of students *

Enter your answer

14. Number of volunteers *

Enter your answer

15. Funding source *

Enter your answer

16. First Aid Training *

Enter your answer

17. First Aid Certification Expiration Date (enter as mm/dd/yyyy - field allows for multiple dates to be entered if needed) *

Enter your answer

18. Field Safety Plan *

Upload file

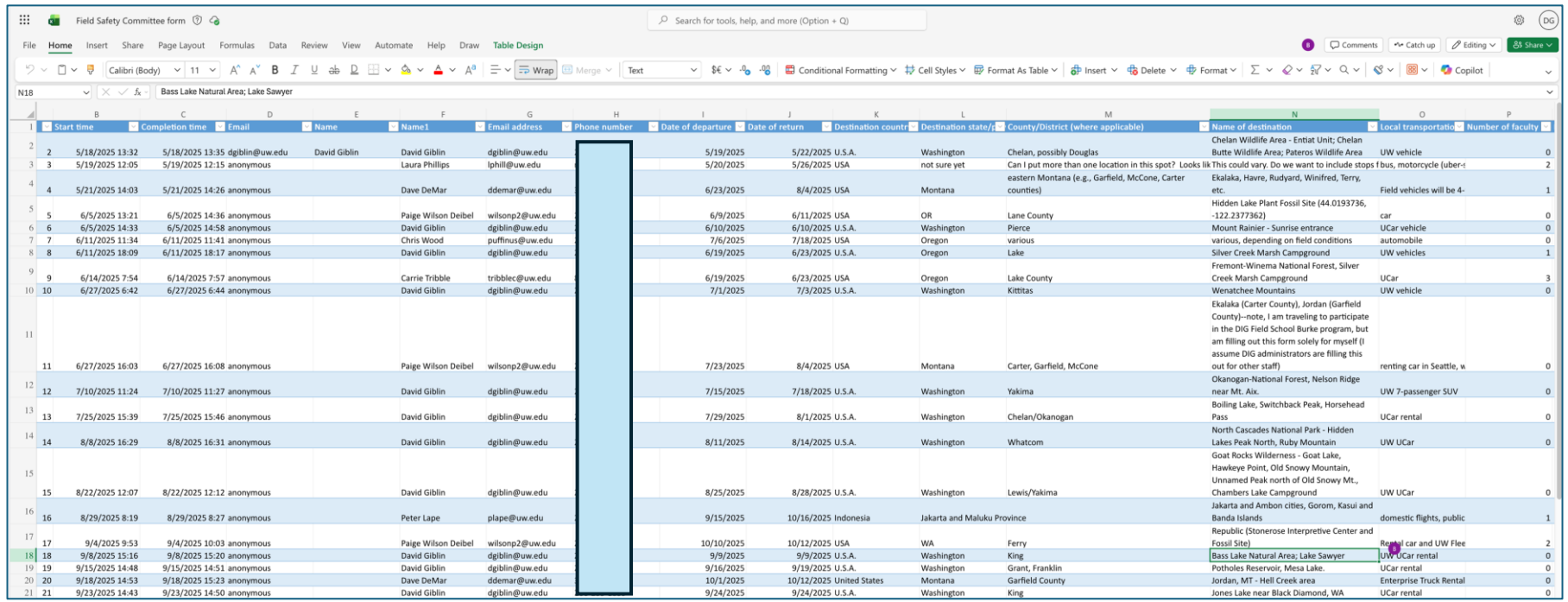
File number limit: 1 Single file size limit: 10MB Allowed file types: Word, Excel, PDF

19. Please upload RAT form *

Upload file

File number limit: 1 Single file size limit: 10MB Allowed file types: Word, Excel, PPT, PDF, Image, Video, Audio

Add new question



	Start time	Completion time	Email	Name	Name1	Email address	Phone number	Date of departure	Date of return	Destination countr	Destination state/p	County/District (where applicable)	Name of destination	Local transportatio	Number of faculty
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3	5/19/2025 12:05	5/19/2025 12:15	anonymous		Laura Phillips	lphill@uw.edu		5/20/2025	5/26/2025	USA	not sure yet	Can I put more than one location in this spot? Looks lik	This could vary. Do we want to include stops f	bus, motorcycle (uber-s	2
4	5/21/2025 14:03	5/21/2025 14:26	anonymous		Dave DeMar	ddemar@uw.edu		6/23/2025	8/4/2025	USA	Montana	eastern Montana (e.g., Garfield, McCone, Carter counties)	Ekalaka, Havre, Rudyard, Winifred, Terry, etc.	Field vehicles will be 4-	1
5	6/5/2025 13:21	6/5/2025 14:36	anonymous		Paige Wilson Deibel	wilsonp2@uw.edu		6/9/2025	6/11/2025	USA	OR	Lane County	Hidden Lake Plant Fossil Site (44.0193736, -122.2377362)	car	0
6	6/5/2025 14:33	6/5/2025 14:58	anonymous		David Giblin	dgiblin@uw.edu		6/10/2025	6/10/2025	U.S.A.	Washington	Pierce	Mount Rainier - Sunrise entrance	UCar vehicle	0
7	6/11/2025 11:34	6/11/2025 11:41	anonymous		Chris Wood	puffinus@uw.edu		7/6/2025	7/18/2025	USA	Oregon	various	various, depending on field conditions	automobile	0
8	6/11/2025 18:09	6/11/2025 18:17	anonymous		David Giblin	dgiblin@uw.edu		6/19/2025	6/23/2025	U.S.A.	Oregon	Lake	Silver Creek Marsh Campground	UW vehicles	1
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11	6/27/2025 16:03	6/27/2025 16:08	anonymous		Paige Wilson Deibel	wilsonp2@uw.edu		7/23/2025	8/4/2025	USA	Montana	Carter, Garfield, McCone	Ekalaka (Carter County), Jordan (Garfield County)--note, I am traveling to participate in the DIG Field School Burke program, but am filling out this form solely for myself (I assume DIG administrators are filling this out for other staff)	renting car in Seattle, w	0
12	7/10/2025 11:24	7/10/2025 11:27	anonymous		David Giblin	dgiblin@uw.edu		7/15/2025	7/18/2025	U.S.A.	Washington	Yakima	Okanogan-National Forest, Nelson Ridge near Mt. Aix.	UW 7-passenger SUV	0
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17	9/4/2025 9:53	9/4/2025 10:03	anonymous		Paige Wilson Deibel	wilsonp2@uw.edu		10/10/2025	10/12/2025	USA	WA	Ferry	Republic (Stonerose Interpretive Center and Fossil Site)	Rental car and UW Flee	2
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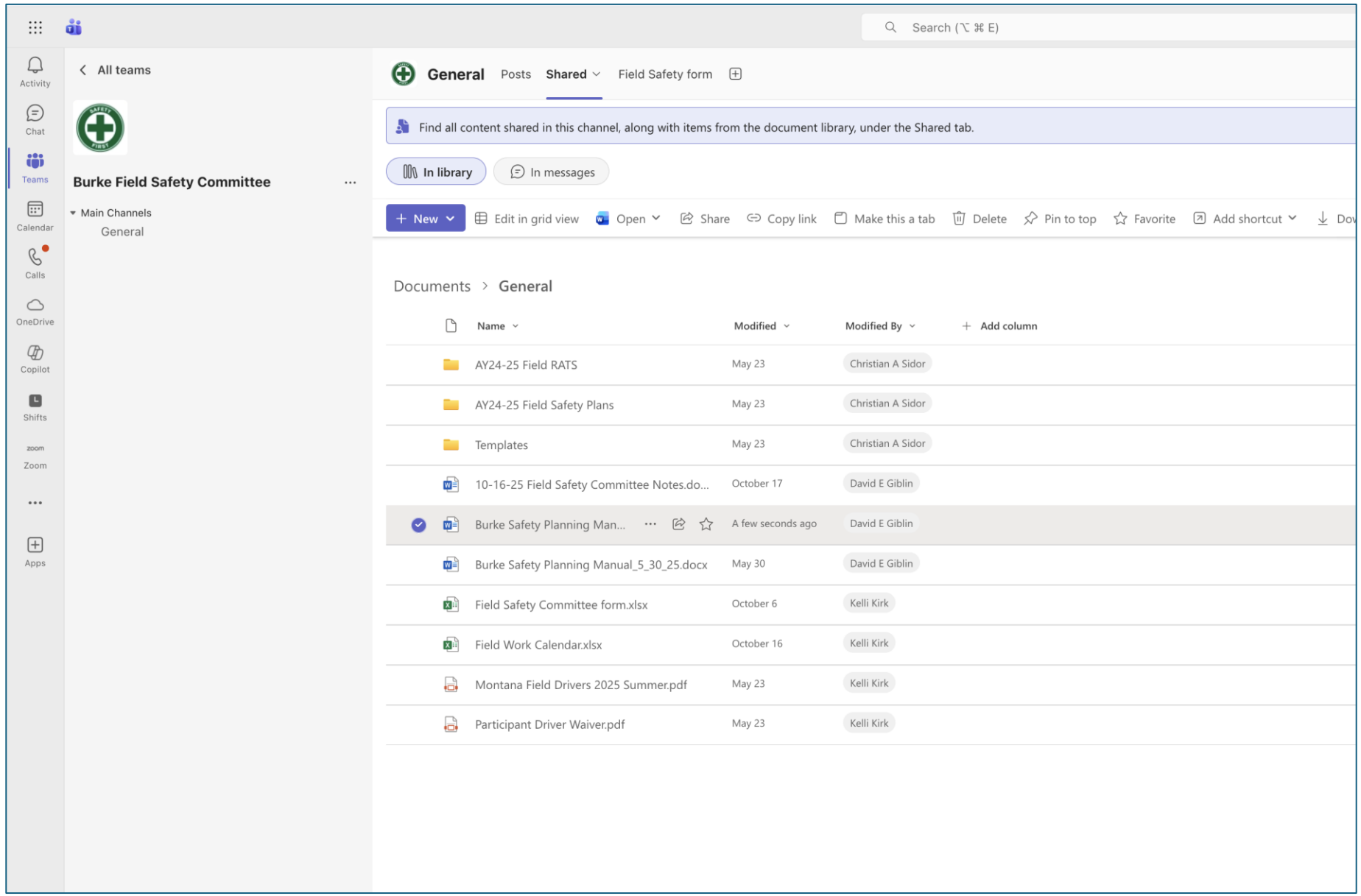
Search (⌥ ⌘ E)
Activity
Chat
Teams
Calendar
Calls
OneDrive
Copilot
Shifts
Zoom
Apps
All teams
Burke Field Safety Committee
Main Channels
General
General
Posts
Shared
Field Safety form
Find all content shared in this channel, along with items from the document library, under the Shared tab.
In library
In messages
New
Edit in grid view
Open
Share
Copy link
Make this a tab
Delete
Pin to top
Favorite
Add shortcut
Documents
General
Name
Modified
Modified By
Add column
AY24-25 Field RATS
May 23
Christian A Sidor
AY24-25 Field Safety Plans
May 23
Christian A Sidor
Templates
May 23
Christian A Sidor
10-16-25 Field Safety Committee Notes.do...
October 17
David E Giblin
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May 30
David E Giblin
Field Safety Committee form.xlsx
October 6
Kelli Kirk
Field Work Calendar.xlsx
October 16
Kelli Kirk
Montana Field Drivers 2025 Summer.pdf
May 23
Kelli Kirk
Participant Driver Waiver.pdf
May 23
Kelli Kirk

Outcomes from First Year

- Ability to visualize who is where, when, and with whom
- Greater awareness among field participants about safety protocols (closest hospital; emergency number)
- More thorough safety planning due to standardization of process (e.g., Field RAT)
- Ability to share information across research disciplines at the Burke (and beyond)

Acknowledgements

- Alex Hagen
- Peter Denis
- Megan Arrivey Hall
- Kelli Kirk
- Andrew Flannery
- Burke Museum Staff

WASHINGTON
Clean Energy Testbeds
University of Washington Clean Energy Institute

Safe Chemical Intake at a Multi-User Research Facility

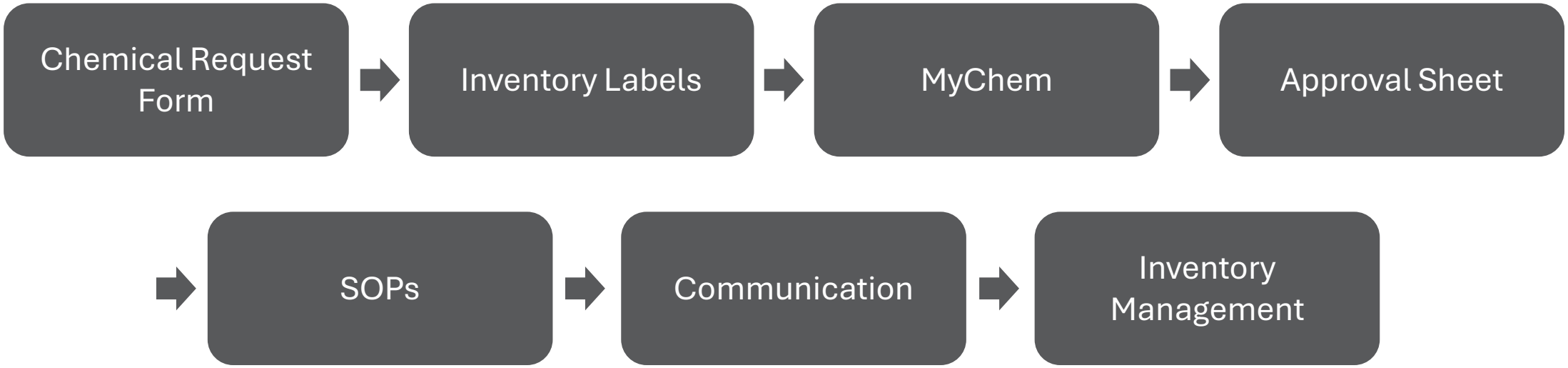
December 9, 2025

Phil A. Cox, Ph.D.
Program Manager, Senior Scientist
Washington Clean Energy Testbeds

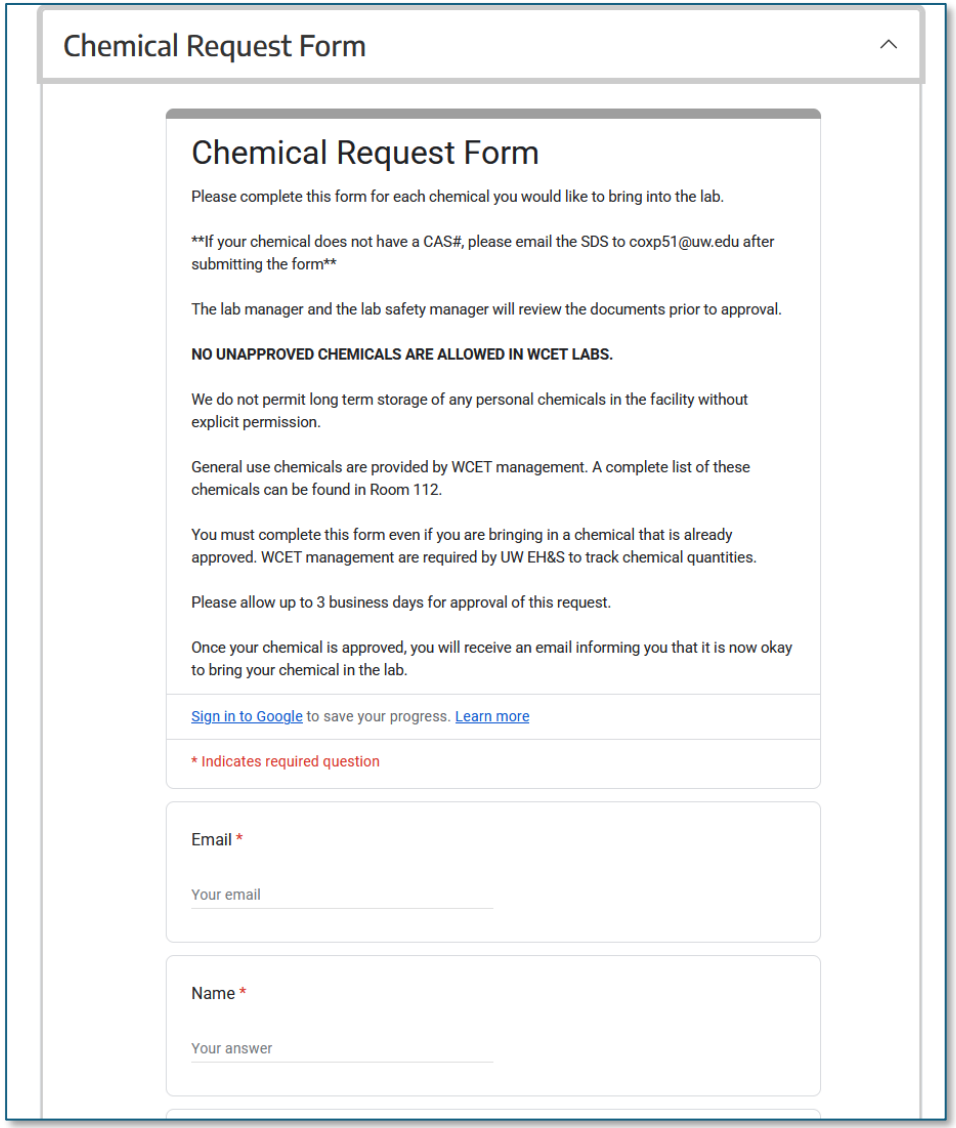
Facility

- Washington Clean Energy Testbeds
- Multi-user R&D facility located off campus
- Fully-equipped wet chemistry lab focused on additive manufacturing – battery, solar, fuel cell, more
- Serve both UW researchers and non-affiliated organizations and companies from all over the world
- Hundreds of chemical containers enter and leave the facility each year, used by a wide variety of people with different backgrounds and experience levels

Process


Chemical Request Form
Inventory Labels
MyChem
Approval Sheet
SOPs
Communication
Inventory Management

Chemical Request Form



- Users fill out the form for each chemical they are requesting
- Form asks for all pertinent information ranging from inventory considerations to application specifics to expected hazards and SDS information
- Responses are collected in a Google Sheet and staff are automatically notified of new entries via email
- Responses are reviewed by staff and assessed based on existing SOPs, lab capabilities, PPE requirements, etc.
- Users are also automatically directed to a Google Form version of the LabRAT if applicable

Inventory Labels

- Sticky label generated for each chemical container
- Contains the information:
  - Chemical name in full
  - Amount
  - PI or Company Name
  - Proper Storage Location
- QR code is used for inventory management (more on that later)
- Label is for primary containers only
- GHS symbols, peroxide former labels, etc. would all be separate, if applicable

MyChem

- MyChem as main inventory system and for compliance with EH&S
- Storage location denotes where in the lab chemical is stored using a code and matches the sticky label
    - E.g. AC = Acid Cabinet, FC = Flammables Cabinet
- Comment field used to denote which research group the container belongs to
- Expiration dates used for chemicals such as peroxide formers to automatically flag for disposal

Approval Sheet

	A	B	C	D	E	F	G	H	I	J	K
1	Chemical Name	01/08/2025 02:43PM	User Name	Amount	Stor. Location	# Containers	SOP Selection 1	SOP Selection 2	SOP Selection 3	SOP Selection 4	Notes
776	SILGEL 612 A	10/13/2025 16:46:07	[redacted]	500 ML	NH	1	None				
777	SILGEL 612 B	10/13/2025 16:46:11		500 ML	NH	1	None				
778	2-BUTANOL	10/13/2025 16:56:59		1 L	FC	1	Flammable Liquid				
779	ASC 40000 PART A	10/22/2025 10:23:10		946 ML	FC	1	Flammable Liquid				
780	ASC 4159 PART A	10/22/2025 10:23:47		946 ML	FC	1	Flammable Liquid				
781	CHLOROPLATINIC ACID HEXAHYDRATE	10/28/2025 7:20:31		1 G	AC	1	Part. Haz. Skin Sensitizer	Cat. 1 Respiratory Hazard	Corrosive		
782	POLY(DIMETHYLSILOXANE)	10/28/2025 7:21:01		100 G	CB	1	None				
783	BUFFER SOLUTION PH 4.00	10/28/2025 7:21:27		4 L	CB	1	None				
784	BUFFER SOLUTION PH 7.00	10/28/2025 7:21:45		4 L	CB	1	None				
785	BUFFER SOLUTION PH 1.00	10/28/2025 7:21:57		500 ML	AC	1	Non-Specific Hazardous				
786	AGAR	10/28/2025 7:27:22		50 G	CB	1	Non-Specific Hazardous				
787	SILVER POWDER	10/31/2025 7:36:50		5 G	CB	1	None				
788	AMMONIUM PERSULFATE	10/31/2025 14:30:19		1 KG	OC	1	Part. Haz. Skin Sensitizer	Cat. 1 Respiratory Hazard	Oxidizer		
789	SODIUM PERSULFATE	10/31/2025 14:30:22		500 G	OC	1	Part. Haz. Skin Sensitizer	Cat. 1 Respiratory Hazard	Oxidizer		
790	POTASSIUM HEXACYANO FERRATE(II) TRIHYDR	11/12/2025 13:28:59		5 G	CB	1	None				
791	ETHYLENE GLYCOL DIETHYL ETHER	11/17/2025 8:01:52		25 ML	ARGB	1	Part. Haz. Reproductive T...	Peroxide Former	Flammable Liq...		
792	ASC 40000 PART A	11/21/2025 12:44:56		946 ML	FC	1	Flammable Liquid				

- Tracks all chemical containers that have been approved
- Appropriate SOPs are assigned to each chemical via dropdown menus
- Used as main reference for assigning the proper SOPs to users for review and training
- If a new SOP is needed, that would be done at this point before moving forward

SOPs

- We maintain any SOP that has been deemed necessary as a result of the chemicals that users have requested over the years
- Split into the major categories shown to the right
- Chemicals with multiple major hazards are listed on all relevant SOPs and cross-referenced
- In some cases, SOPs are made for a specific chemical or process due to its hazards or the intended application
- Online CORAL system:
  - Centralized location accessible from anywhere
  - Most up-to-date SOPs
  - Assign SOPs to users for review and acknowledgement
    - Automated training record-keeping

Chemical Class SOPs

Inorganic Acids SOP v1.0	✓ *You have acknowledged this item.*
Inorganic Bases SOP v1.0	✓ *You have acknowledged this item.*
Lead and Lead-Containing Chemicals SOP v4.0	✓ *You have acknowledged this item.*
Organic Acids SOP v1.0	✓ *You have acknowledged this item.*
Peroxide-Formers SOP v1.0	✓ *You have acknowledged this item.*

Hazard Class SOPs

Category 1 Respiratory Sensitizers SOP v1.0	✓ *You have acknowledged this item.*
Corrosive Chemicals SOP v1.0	✓ *You have acknowledged this item.*
Flammable Compressed Gases v1.0	✓ *You have acknowledged this item.*
Flammable Liquids SOP v1.0	✓ *You have acknowledged this item.*
Flammable Solids SOP v1.0	✓ *You have acknowledged this item.*
Inert Compressed Gases SOP v1.0	✓ *You have acknowledged this item.*
Non-Specific Hazardous Chemicals SOP v1.0	✓ *You have acknowledged this item.*
Oxidizers SOP v1.0	✓ *You have acknowledged this item.*
Pyrophoric Chemicals SOP v1.0	✓ *You have acknowledged this item.*
Water-Reactive Chemicals SOP v1.0	✓ *You have acknowledged this item.*

Particularly Hazardous Chemical SOPs

Methanol SOP v1.0	✓ *You have acknowledged this item.*
Particularly Hazardous Acute Toxicity SOP v1.0	✓ *You have acknowledged this item.*
Particularly Hazardous Carcinogens SOP v1.0	✓ *You have acknowledged this item.*
Particularly Hazardous Reproductive Toxins SOP v1.0	✓ *You have acknowledged this item.*
Particularly Hazardous Skin Sensitizers SOP v1.0	✓ *You have acknowledged this item.*

Specific Chemical SOPs

2M Perchloric Acid SOP v1.0	✓ *You have acknowledged this item.*
Compressed Oxygen Gas SOP v1.0	✓ *You have acknowledged this item.*
Hydranal Coulomat A SOP v1.0	✓ *You have acknowledged this item.*
Hydrochloric Acid SOP v1.0	✓ *You have acknowledged this item.*
Hydrogen Peroxide SOP v1.0	✓ *You have acknowledged this item.*
LiFP6 Battery Electrolyte SOP ver1.0	✓ *You have acknowledged this item.*
Liquid Nitrogen SOP v1.0	✓ *You have acknowledged this item.*
Nitric Acid SOP v1.0	✓ *You have acknowledged this item.*
Platinum on Carbon Catalyst SOP v1.0	✓ *You have acknowledged this item.*

Hazardous Waste SOPs

Lithium Coin Cell Waste SOP v1.0	✓ *You have acknowledged this item.*

Communication

- Approvals, corrections, and any other specific details are handled via email
  - Don’t assume the information in the user-submitted forms is correct
- Users are automatically notified via email of any SOPs assigned to them
- Good way to remind users of certain best practices or especially important safety considerations
- Only when all SOPs, training, PPE acquisition, etc. have been completed are the inventory sticky labels handed over to the user and they are approved to start work
- Keeps a record of communication to the user – if they don’t have an email saying the chemical has been approved, then it hasn’t been!

Inventory Management

- After approval, labels are put in a bin in lab for pickup
- Labels are attached to chemical container and scanned in
- If empty or being relocated, labels are marked for deletion and scanned out
- Once a month, staff update MyChem based on the scanner entries
- Inventory accuracy went up dramatically after implementing a QR/barcode-based label system
- Wishlist: automation with MyChem!

Thank you!

Phil Cox
coxp51@uw.edu

WASHINGTON
Clean Energy Testbeds
University of Washington Clean Energy Institute

2025 LAB SAFETY AWARDS

ENVIRONMENTAL HEALTH & SAFETY

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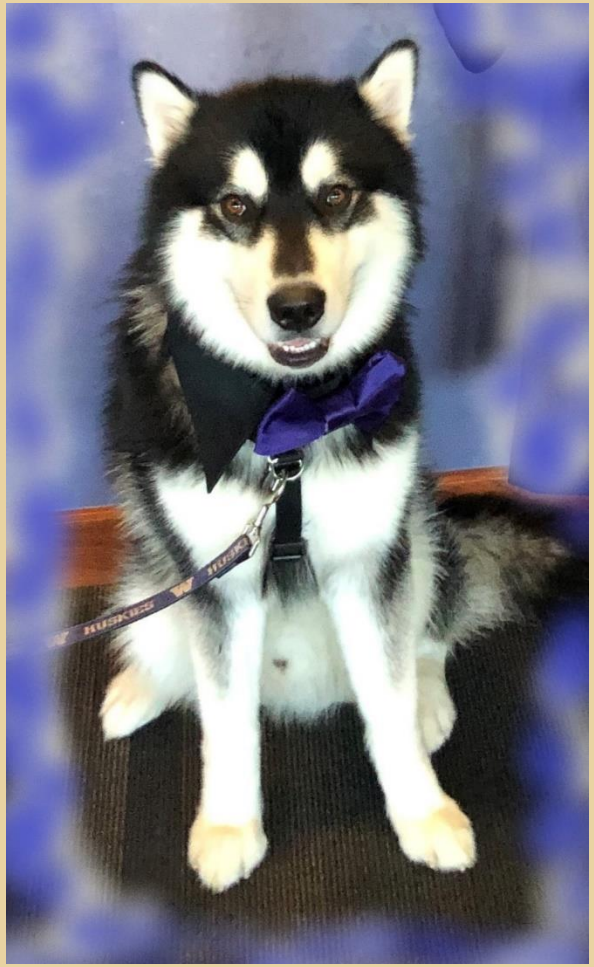
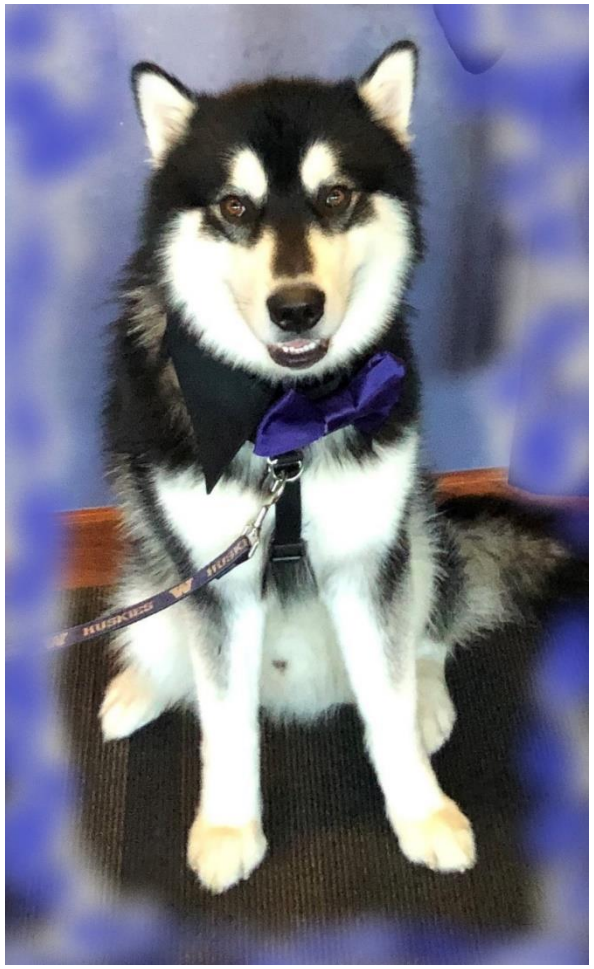


2025
TOP DAWGS IN SAFETY

- Burke Museum, *College of Arts & Sciences*
- Friday Harbor Laboratories, *College of the Environment*
- Paul G. Allen School of Computer Science & Engineering, *College of Engineering*
- Department of Global Health, *School of Public Health*
- Electronic & Photonic Systems, *Applied Physics Laboratory*
- Department of Medicine, *School of Medicine*
- Department of Radiation Oncology, *School of Medicine*

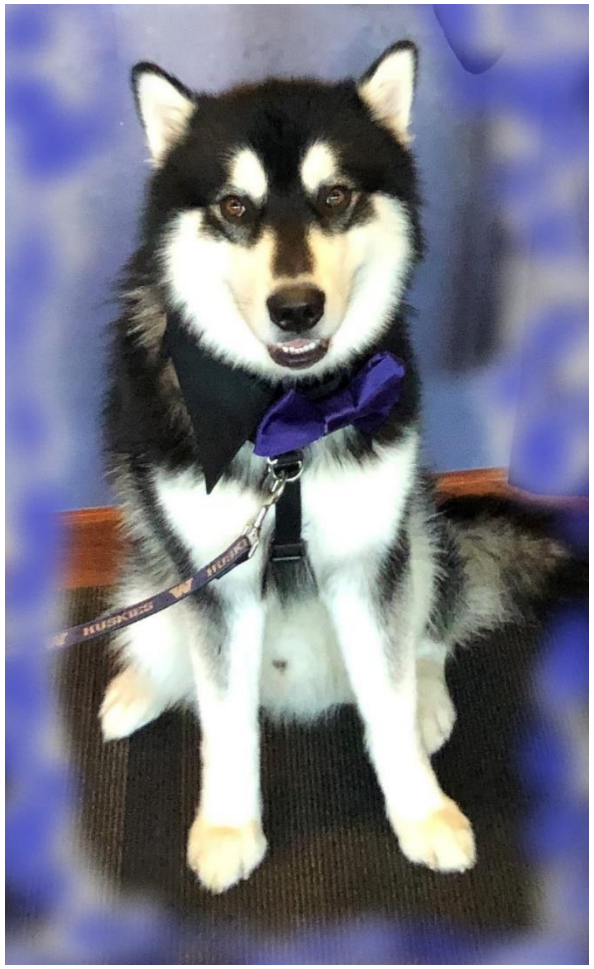
ENVIRONMENTAL HEALTH & SAFETY
UNIVERSITY *of* WASHINGTON



2025
PACK LEADERS IN SAFETY

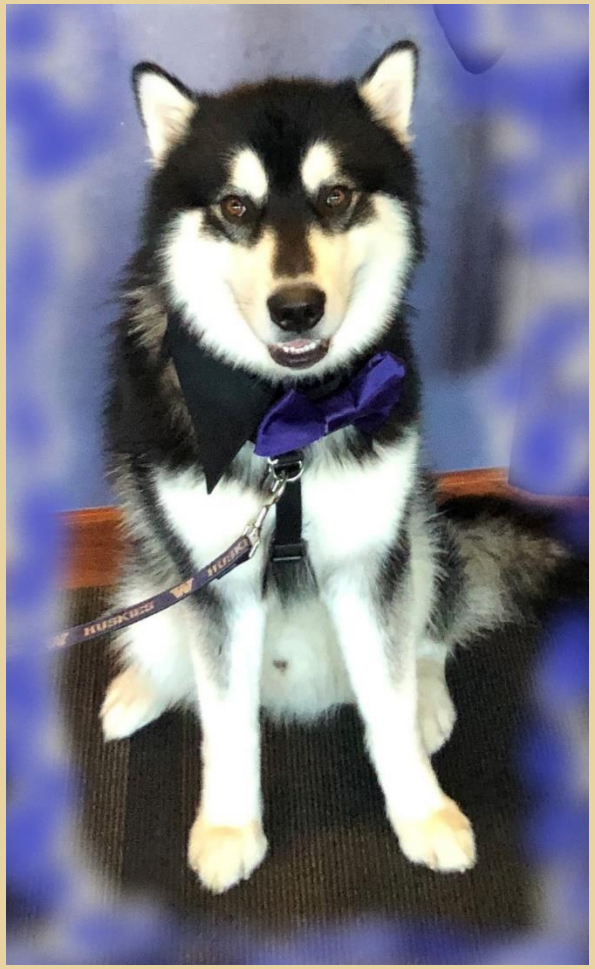
- Jonathan An, *Assistant Professor, Department of Oral Health Sciences*
- Michael Dodd, *Professor, Civil & Environmental Engineering*
- Sharon Doty, *Professor, School of Environmental & Forest Sciences*
- Allison Gardell, *Assistant Professor, Sciences and Mathematics Division of School of Interdisciplinary Arts and Sciences*

ENVIRONMENTAL HEALTH & SAFETY
UNIVERSITY of WASHINGTON



2025
PACK LEADERS IN SAFETY cont.

- Dan Jaffe, *Professor, Physical Sciences Division of Science, Technology, Engineering & Mathematics*
- Francis Kim, *Professor, Division of Cardiology*
- Julie Mathieu, *Associate Professor, Department of Comparative Medicine*
- Anuscheh Nawaz, *Principal Research Scientist and Engineer, Ocean Engineering*
- Sarah Tuttle, *Associate Professor, Department of Astronomy*



2025 PARTNERS IN SAFETY

- David Giblin, *Burke Museum Herbarium Collections Manager, Burke Museum, College of Arts and Sciences*
- Matt Gray, *Facilities Coordinator, School of Environmental and Forest Sciences, College of the Environment*
- Jennifer McKee-Johnson, *Lab Manager*, and the Sciences and Mathematics (SAM) Laboratory Team, *UW Tacoma*
- Daniel Ratner, *Associate Dean, Academic Affairs, College of Engineering*
- Cheryl Greengrove, *Associate Vice Chancellor for Research*, and the UW Tacoma Power Outage Response Team, *UW Tacoma*

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