



## **Off Road Driving**

**Panel discussion on lessons learned & precautions**

**UC Fieldwork Toolkit  
Leadership Training Series**

May 24, 2023

University of California

[Field Research Safety](#)



This meeting is being recorded.

View recording and materials at:  
[training.ucr.edu/fieldworkleadership2023](https://training.ucr.edu/fieldworkleadership2023)

- **90-min** panel discussion
- Please **mute** until Q&A at the end
- Ask questions or post comments by using the “**chat**”
- Please complete an **evaluation** after the webinar
- Thank you!



# Invited Speakers



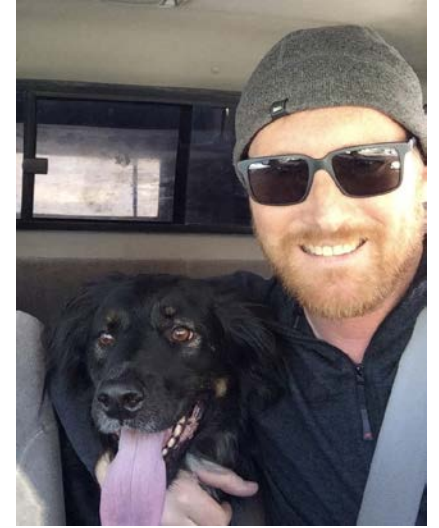
**Breezy Jackson,**  
Director of  
UC Merced's  
Yosemite &  
Sequoia Field  
Stations



**Steven Devanzo,**  
Operations  
Manager for  
UCLA's White  
Mountain  
Research  
Center



**Brett Pickering,**  
Boating Safety  
Officer at  
UCSD's  
Scripps  
Institute of  
Oceanography



**Geoff Davis,**  
Network &  
Systems  
Engineer,  
Geophysics &  
Planetary  
Physics at  
UCSD

# Challenging Roads & Field Sites with Difficult Access



Photos: Shared by Breezy Jackson and Brett Pickering

# Challenging Roads & Field Sites with Difficult Access



Summit Hut constructed in 1955 on White Mountain Peak is 8 km north of Barcroft Station

**Geolocation:** (37°38'03"N / 118°15'20"W)

**Elevation:** 4342 m (14,242')

Photos: UCLA's White Mountain Research Center, [wmrc.edu](http://wmrc.edu)



# Challenging Roads & Field Sites with Difficult Access



Photos: Toro Peak field site in Riverside County; overlooks the Anza Borrego Desert State Park and the Salton Sea to the south, Palm Springs to the east, and has line of sight all the way to La Jolla (courtesy of Geoff Davis, UCSD)

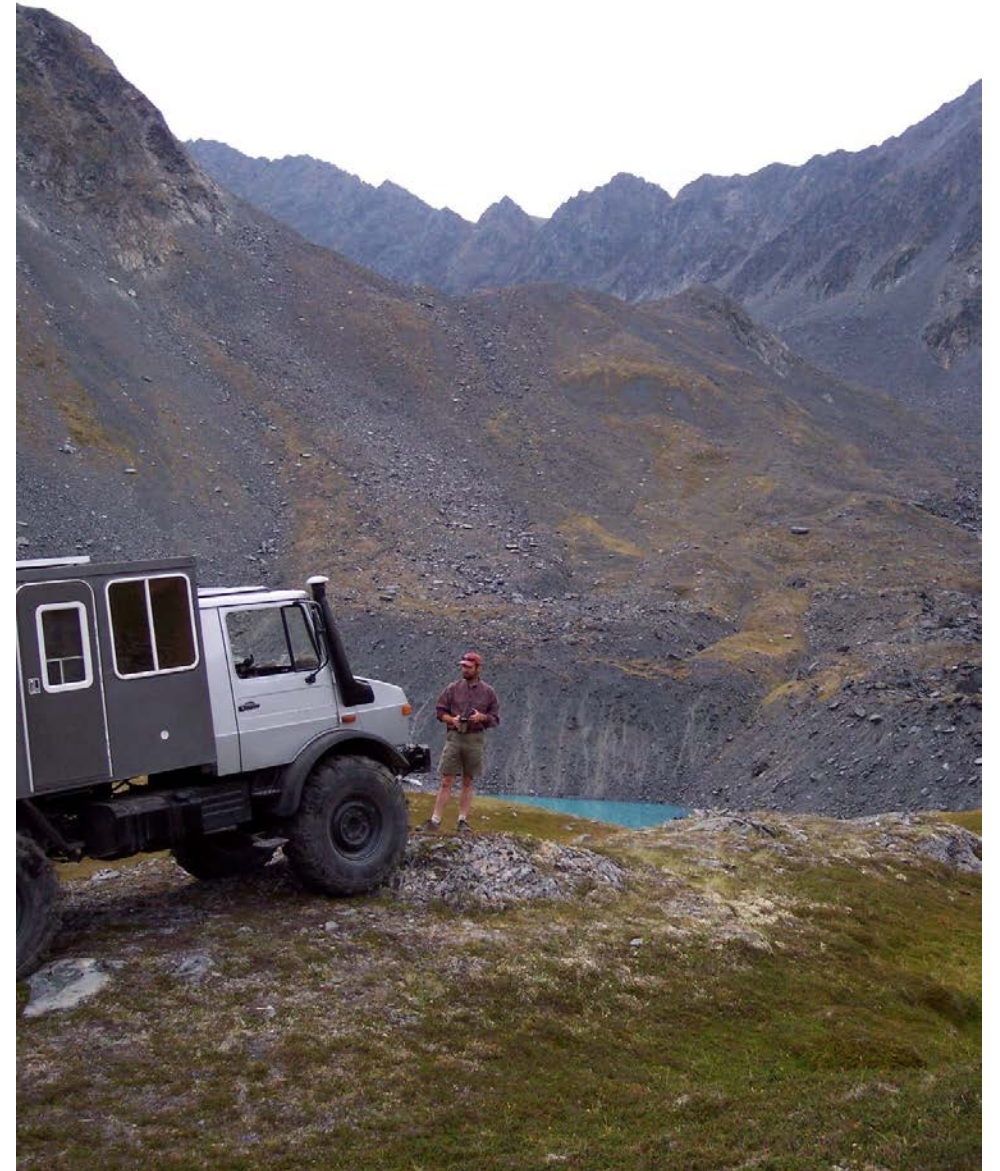
# Early Planning

What are we doing?

Where are we going?

Who is going?

How are we getting home?



# Vehicle Maintenance

Routine Maintenance

Pre-trip Checklists

Daily Checklists



# Pre-Trip Inspections

## Weekly Vehicle Checklist

### Check and Add as Needed

- Oil
- Coolant
- Tire Pressure
- Washer Fluid
- Wiper Blades

### Confirm Presence and Condition

- Fire Ext./Shovel/Chains/Emergency Water
- Spare Tire/Jack/Lugwrench
- Emergency Kit

Rig \_\_\_\_\_ Date \_\_\_\_\_ Name \_\_\_\_\_



Photo: Breezy Jackson, Yosemite, winter Mono wind event

# Secure your load, pre-run your route

2wd Rental truck with 6 and 8 foot antennas.

Rough road to summit of Santiago Peak in Orange County. License plate rattled off, but the antennas made it without a hitch.

Tight corners, loose terrain, fire damage required pre-running the route in a smaller vehicle.

Photo courtesy of Geoff Davis, UCSD.



# Training and/or Vehicle Orientations

Know your vehicle's capabilities and limitations.

Photo: 4WD training at Hollister Hills SVRA with the Driving Company, UC Berkeley/Blue Oak Ranch Reserve truck and staff



# Vehicle Safety Kits

- 1 blue duffel bag containing all of the kit items
- 1 set jumper cables
- 1 rope
- 6-8 hand warmers
- 4-6 body warmers
- 1 multi-wick candle
- 1 flashlight (hand crank option for power)
- 2 small plastic garbage bags
- 1 larger plastic garbage bag
- 1 Blizzard Bucket® containing:
  - 2 snack bars (allergy sensitive)
- Matches
- Jump Start Instructions, Winter Survival Guide
- Metal mug
- Police sign
- 1 space blanket



Photo: Shared by Christin Fine

**Vehicle survival kit inventory – winter example provided by Christin Fine,  
Energy & Environmental Research Center, University of North Dakota**



# WMRC Emergency Kit Example

Photos: Steven Devanzo, UCLA

## VEHICLE CHECKLIST

2023	GMC Sierra	Triton 250	Old Toy	Turbo 150	New Toy	F-15 Old 150	Flatbed	GMC 4500	4runner
First Aid									
Fix a Flat									
Chains									
SPARE									
Patch Kit									
Pump									
Jack									
Wood base									
Jumpers									
Lug Wrench									
Tire seal									

# Weather Forecasting & Assessing Road Conditions



Photos: Steven Devanzo

Photos: Inyo County Sheriff's Office; elderly man trapped in California snow for a week before being rescued (2023); had taken a wrong turn off Hwy 168

# Decision-making in the field: When to turn back?



Photos: Geoff Davis, Cuyamaca Peak in San Diego County; Breezy Jackson, Yosemite, winter; Steven Davanzo, White Mountain Road, early summer

# Accidents: Baja Mexico

- Enroute to remote dive site
- Two injured with lacerations & head trauma
- No cell service
- A local person driving by summoned EMS
- Injured were evacuated by plane before dark from nearby airstrip



Photo: Shared by Eric Hessell, UCSB

# Accidents: Baja Mexico

- Ensure effective communication options established throughout the field expedition (Sat phone, InReach, etc).
- Have a plan for potential language barriers during an emergency.
- Plan on remote air strips having restrictions, etc.
- Have insurance cards readily available for the entire team and critical UC numbers.
- Have outlet converters for the region you are in so you can charge your cell phone from the hospital, etc.
- Ensure equipment in the vehicle is secure.
- Auto insurance in Mexico for UC vehicles has restrictions. Only people signed up on the added Mexico policy can drive the vehicles.
- **Drive conservatively and ensure drivers don't become too tired or drive for too long.**

# Accidents: Greyhound Incident



Photo: Shared by Brett Pickering, UCSD

# Accidents: Lost Brakes



Photos: Shared by Steven Devanzo

# Other Lessons Learned



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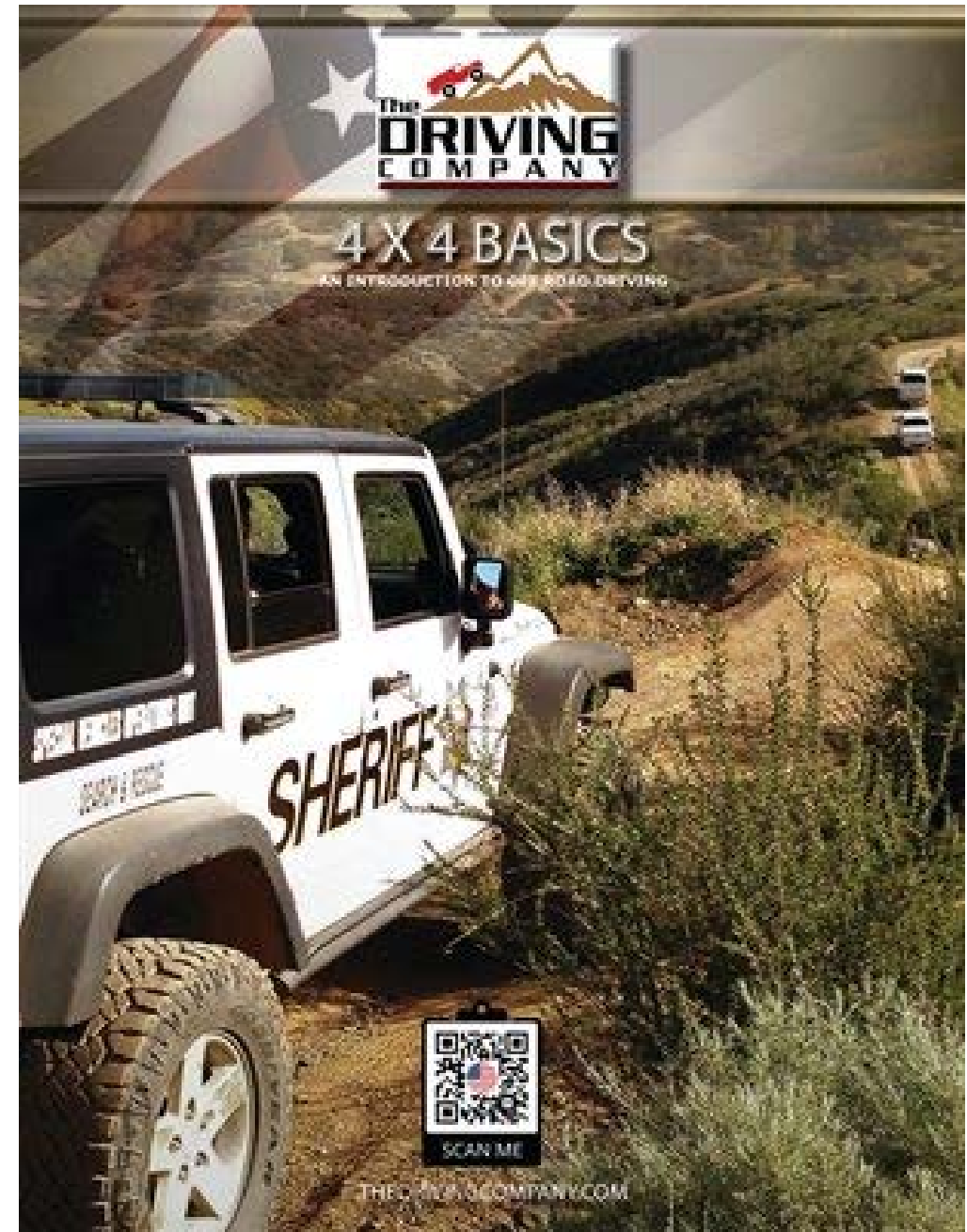


Photo: Steven Devanzo

# Resources

## 4 x 4 Basics Workbook

Publisher: The Driving Company. Includes practical content intended for public agencies, responders & others that need to drive off road for work.



# Specialized Training

- ATVs
- Tractors
- Towing/Trailers
- Snowmobiles



Photo: Shared by Breezy Jackson

# International Considerations

- Insurance
- Local laws & norms
- Vehicles: stick shift, right-side steering wheel
- Reliable local drivers for hire?

[UC Travel Risk Management & Insurance](#)

Contacts: [Campus Risk Managers](#)



Photo: Shared by Meagan Fitzpatrick, Princeton

# Locked gates

Check with land managers in advance.

Carry codes/keys.

Bring a grinder and spare locks in case you get locked in.

Photo: One of many locked gates at Santa Margarita Ecological Reserve - Geoff Davis (UCSD)



# Share the Road

Open range, expect cattle.

Respect speed limits. Don't take shortcuts.

Follow Leave No Trace principles.



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