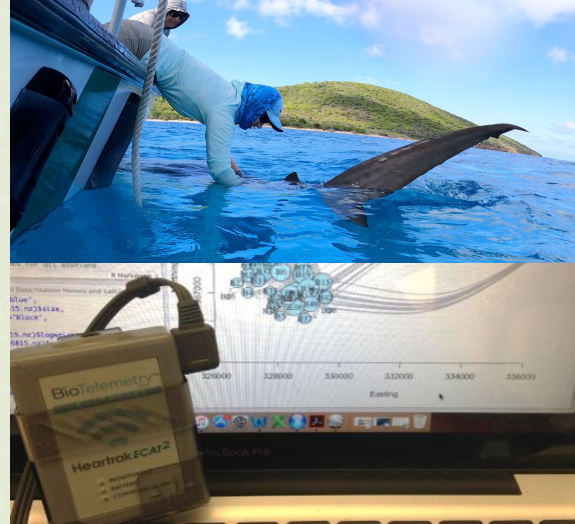


The background features several decorative botanical illustrations. In the top-left corner, there are blue line-art leaves and a cluster of dark green dots. In the top-right corner, there is a light green silhouette of a person's head in profile, with blue line-art leaves extending from it. In the bottom-right corner, there are concentric blue circles resembling a fingerprint, a cluster of white dots, and a blue line-art leaf. In the bottom-left corner, there are blue line-art leaves. The overall color palette consists of various shades of green and blue on a light green background.

# **Building Accessibility into Fieldwork**

#FieldInclusiveWeek, Jan 17th 2024  
Aly Putnam & Grace Casselberry

# About Us



- Marine ecologists
- University of Massachusetts, Amherst
- Disabled Scientists: invisible chronic illness/disability that affects how we do our fieldwork

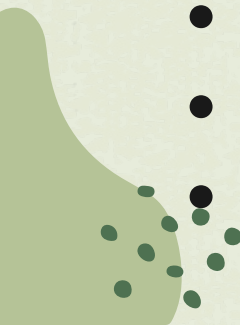

## Disclaimer:

- There are many different kinds of disability
- Disabilities are dynamic and intersectional
- Our discussion is based on our personal experiences, self education, and learning from others
- This discussion is a starting point and there is still much to learn, even as disabled scientists ourselves



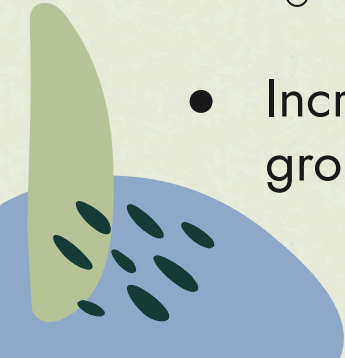

# Outline of Presentation



- What is field based research?
  - Why accessible field research matters
  - What is disability?
  - Challenges faced by those with disabilities
  - Making accommodations
  - Tangible example of creating accessible fieldwork
  - Communication, collaboration, training and education
  - Q&A
- 
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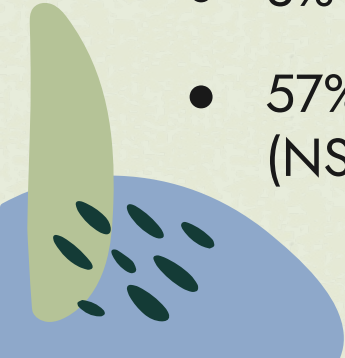

# Field Based Research



- A foundational pillar of most natural sciences research
  - Highly variable but most involves
    - Outdoors, away from the lab
    - Travel to get there
    - Dealing with uncertainty
  - Increasing emphasis on challenges for historically excluded groups
- 
- 

# Why accessible fieldwork matters



- Entry point for most natural science fields
  - Can be further emphasized in graduate programs
  - Outside the sphere of more traditional accommodations
  - Disability can occur at any time in life
  - 3% of STEM workers, 13% of the population
  - 57% of STEM workers with a disability are early to mid career (NSF 23-315)
- 
- 

# What is disability?

The Rise Journey



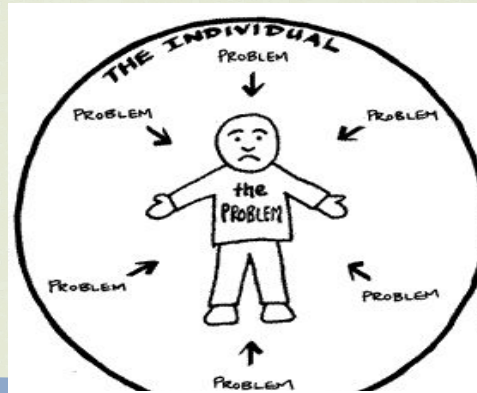
**Not all disabilities are visible, but all are valid.**

Learn how to increase accessibility and inclusion in your workplace by visiting  
[www.therisejourney.com/services/deiba-diversity-equity-inclusion](http://www.therisejourney.com/services/deiba-diversity-equity-inclusion)

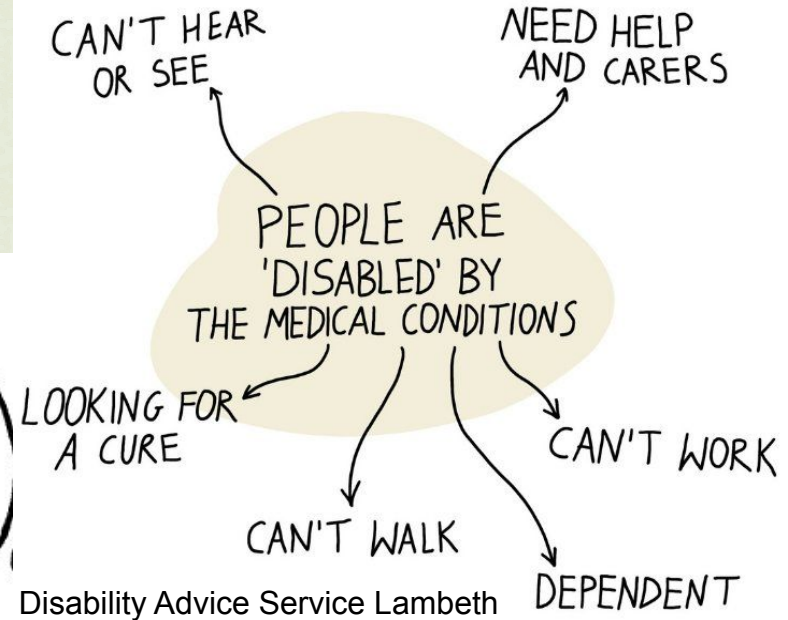
- Many types:
  - Physical
  - Cognitive
  - Visual
  - Auditory
  - Invisible
  - Learning
- Intersecting disabilities
- Disability intersecting with identities
- Disability is dynamic

# Models of Disability

- Medical - views disability as a medical condition or impairment needing to be "fixed"
- Moral - disability is seen as judgement or punishment, that the individual did something wrong to deserve



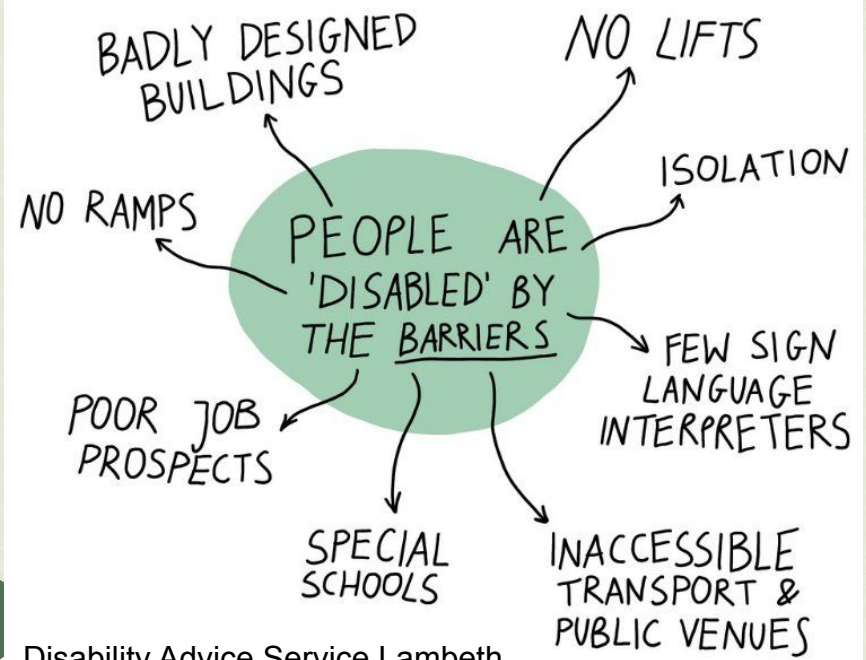
## The Medical Model



# Models of Disability



## The Social Model



- Social/Cultural - shifts the focus from the individual to society and its structures and considers disability as an aspect of identity and culture



[Democracy Disability and Society Group](#)




# The Social Model: Fieldwork






# Challenges

- Physical barriers
    - location of fieldwork
    - weather conditions
    - transportation
  - Housing accommodations - space for all
  - Physical accessibility - access for all
- 



# Challenges

- Communication - deafness and auditory processing
  - Sensory overstimulation
  - Low-vision
  - Fatigue and energy expenditure
  - Health and safety concerns - immunocompromised
- 

# Challenges

- Dynamics: changes in disability over time
- Disclosure dilemmas
- Limited awareness and training among team members about disability
- Stigma and bias - assumptions about competence and ability

# Making Accommodations

- Determine the needs of your field team and those with disability (know that some may not disclose)
- Have a plan (that includes accessibility needs)
- Make the plan available to help individuals prepare and alleviate anxiety
- Be flexible and build flexibility into work where you can
- Modify based on identified needs

# Tangible Examples

- Bluetooth enabled walkies that connect to hearing aids or headphones
- Noise canceling earbuds
- Slates/tablets
- Talking tools:
  - Tape measurer
  - Color identifier
  - Reading pen
- Braille notetakers



# Tangible Examples

- Toilet accessibility
  - Sani can style porta potty
  - Stadium guy/gal, Wag bags
  - Tampons/pads/sanitary napkins
  - Antibacterial wipes and sanitizer
  - Privacy screen



(A)



(B)



(C)



# Tangible Examples

- Mobility vehicles and devices
- Portable seating
- Portable table
- Dollys, lifting tools
- Carts





# Tangible Examples

- Shade tents
- Access to cold water/ice for heat intolerance
- Snacks/bars/food/drink items to assist those with blood glucose issues
- Well stocked first aid kit, with:
  - Over the counter medications
  - Diagnostic and other equipment: pulse oximeter, blood glucose, AED, blood pressure monitor, joint braces



### 3 Different Glucagon Rescue Options

Glucagon Emergency Kit | Powder + diluent



Glucagon Emergency Kit by Lilly



Glucagon Hypo Kit by NovoNordisk

Baqsimi – Nasal Glucagon



Keep tube sealed until ready to use.

3 Different Glucagon Rescue Options

2025

Glucagon Emergency Kit | Powder + diluent

Glucagon Hypo Kit by NovoNordisk

Baqsimi – Nasal Glucagon

Keep tube sealed until ready to use.

2025

#### 2025

Gvoke™ Pre-Filled Syringe  
(glucagon injection)



Gvoke HypoPen™  
(glucagon injection)



# Tangible Examples: Equipment Repositories for Accessibility (ERA)

- Devitz 2023 -
  - Collection of accessibility tools and gear
  - improve accessibility through no cost (to the user) accessibility/adaptive equipment
- Similar to the **Field Gear Closet** that **Field Inclusive Inc.** maintains to provide items such as hiking boots or binoculars
- **Eases the financial burden** of purchasing for the individual



## *Integrative and Comparative Biology*

*Integrative and Comparative Biology*, volume 63, number 1, pp. 98–107  
<https://doi.org/10.1093/icb/icad024>

Society for Integrative and Comparative Biology

Equipment Repositories for Accessibility: A Model for Improving  
Access in Field Science

Amy-Charlotte Devitz 

# Tangible Examples: Equipment Repositories for Accessibility (ERA)

- Work with disabled students and scientists to develop a list of their needs for their success in fieldwork
- Focus on needs rather than diagnoses when selecting equipment to purchase
- Acquire funding and purchase equipment
- Long term management:
  - Protocol for checking in and out, upkeep/damage management
  - Continued search for funding

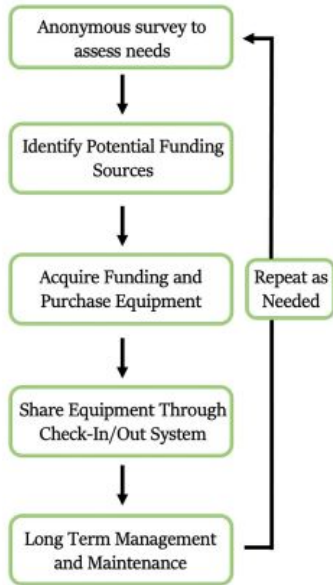



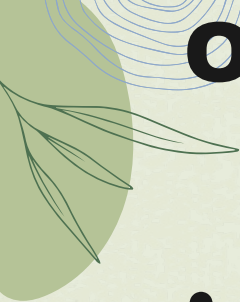
Fig. 2 A flowchart documenting the general process for establishing and maintaining an ERA at a university, beginning with the identification of needs and funding sources, acquiring equipment, overseeing its use and maintenance, and purchasing new equipment as needed.


# Other Considerations for Building Accessibility

- Disrupt the hustle culture of field work
- Policies of not attending when sick (to protect immunocompromised individuals)
- Accommodations that can provide adequate sleep
- Policies that promotes self care for all members of the team (don't skip lunch, water breaks, etc.)

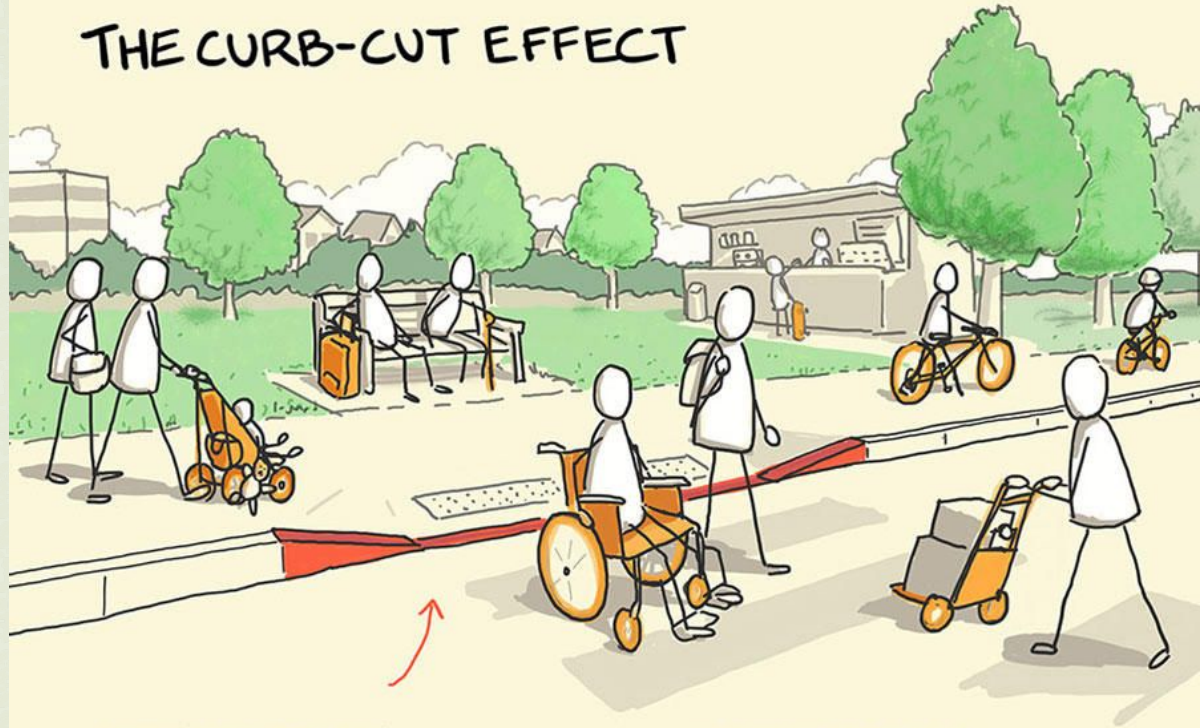


# Other Considerations for Building Accessibility



- Consider your research locations - can you do the research somewhere more accessible?
  - Virtual field research is real and valid - consider using it
  - Harness new technologies
    - Spectrogram app
    - Aerial or underwater drones
    - Acoustic release monitoring equipment
  - Always be reassessing your protocol and plans for fieldwork
- 

# THE CURB-CUT EFFECT



WHEN WE DESIGN  
FOR DISABILITIES

... WE MAKE THINGS  
BETTER FOR EVERYONE

sketchplanations

# Communication between Leadership and Those with Disabilities

- Have a plan - be prepared
- Do not wait until the need arises
- Issues of disclosure
- Clear communication from leaders about logistics for the research so one can be fully prepared
- Check in, actively listen, be flexible when given information

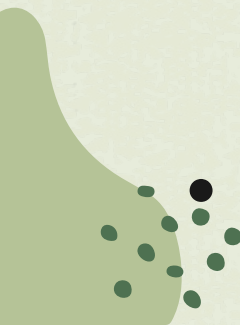



Credit: Aya Lawrence





# Communication with Others




- Communication and training on disability awareness for fieldwork teams
  - Communication/open dialogue between those with disability and field teammates
    - Balance of what to share for sake of safety while working
  - Including accessibility and health in field safety plans
    - Code of conduct
    - Resources in local field site areas
- 
- 





# Why building accessibility into protocol early on is important

- Setting up protocol to be accessible and include disability accommodations:
    - Supports those with disability
    - If someone on team were to develop a disability, the plan is already in place
    - Pre-planned allows for those with disability to not disclose unless they want to or are ready to
- 

# Advice for Allies

- Normalize disability in fieldwork - all bodies should be able to participate in fieldwork: highlight the work disabled fieldworkers do as standard practice
- Fund disability inclusive fieldwork
- Don't make assumptions about what a disabled person can/cannot do

**A** **Acknowledge** and respect individual experiences and abilities.

**L** **Learn** about different disability types.

**L** **Leverage** your influence to promote accessibility and inclusion.

**Y** **Yield** the floor to people with disabilities to help identify and eliminate barriers.

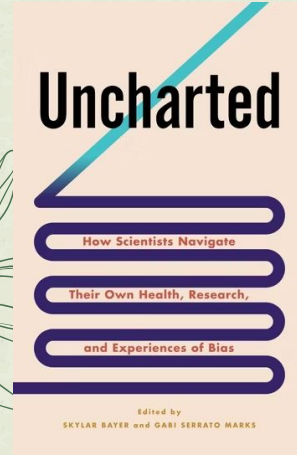
# Advice for Allies

- Be empowering and enabling - be creative and responsive when issues come up
- Respect invisible disability
- Include disability in all JEDIA work in your work or academic institution
- Don't make decisions that involve disabled people without their voices being part of the decision making - **nothing about us without us**



# Resources

- Uncharted: How Scientists Navigate Their Own Health, Research, and Experiences of Bias. Edited by Skylar Bayer and Gabi Serrato Marks.
- Cultivate Project: <https://www.cultivate-project.com/>
- Devitz 2023: Equipment Repositories for Accessibility: A Model for Improving Access in Field Science
- VR: More Inclusive Fieldwork
- See our provided resource list for even more!!!




## Integrative and Comparative Biology

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Society for Integrative and Comparative Biology

### Equipment Repositories for Accessibility: A Model for Improving Access in Field Science

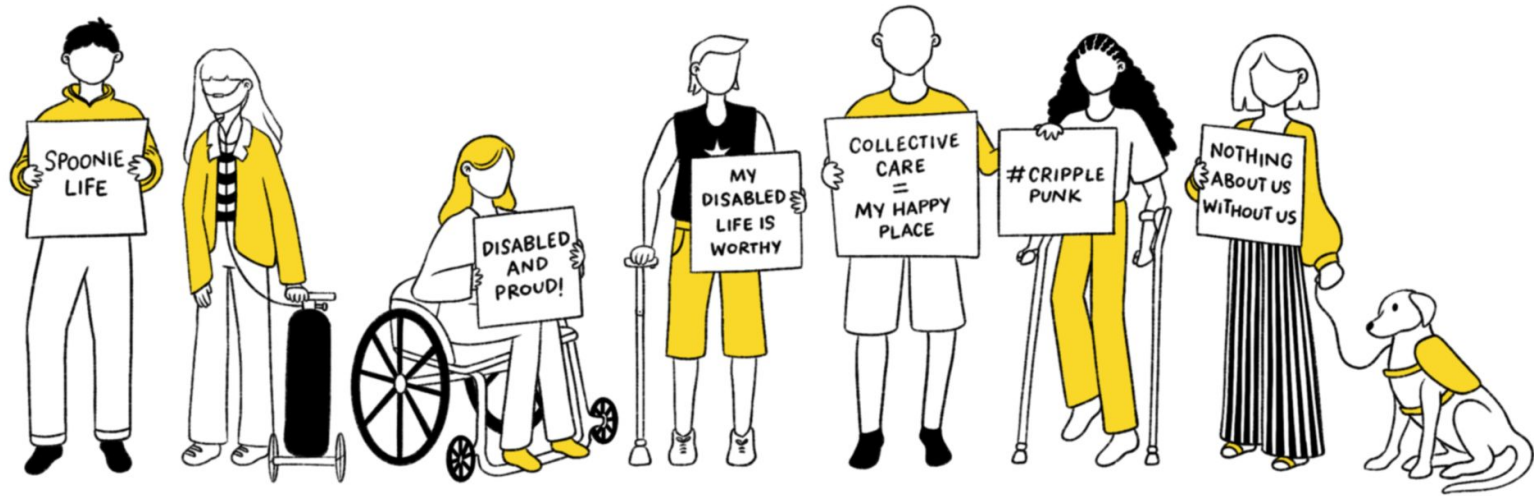
Amy-Charlotte Devitz 

Department of Ecology, Evolution and Behavior, University of Minnesota, Saint Paul MN 55108, USA

10 ways to make fieldwork more inclusive and accessible: a guide for educators.



Prepared by Dr Lynda Yorke, Dr Simon M. Hutchinson, and Dr Liz Hurrell, with input from the academic community.



# Thanks!

Do you have any questions?

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