

# **Developing and Teaching a Biosafety Class**

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# Biosafety Class at Colorado State University

- A 2 credit 540 level class
- Taught in a 2 hour block
- 1. Three page plus references term paper due at 5<sup>th</sup> week class (80 points)
- 2. Midterm (100 pts)
  - Essay, Open book, 2 weeks to complete
  - Applied questions from actual situations
    - Anthrax, salmonellosis, HPAI, Brucellosis, TB

# Biosafety Class at Colorado State University

- A 2 credit 540 level class
- Taught in a 2 hour block
- 3. Lab design project (“final exam”)
  - Groups of 4-6 students
  - Present their design during last 2 classes
  - Must include BSL-2 and BSL-3 containment (choose the agents involved)
  - Emphasis on HVAC, air flow cascade, PPE, equipment, PPE, SOPs

# Understand the basics of BIOSAFETY and overall safety

- “Do not memorize guidelines, regulations.....etc (ever!!!)
- Know how to access the references
- Know how to apply the reference material
- Consult experts/colleagues
- Understand RG does not equal BSL
- Examples of different containment levels for same agent

# References

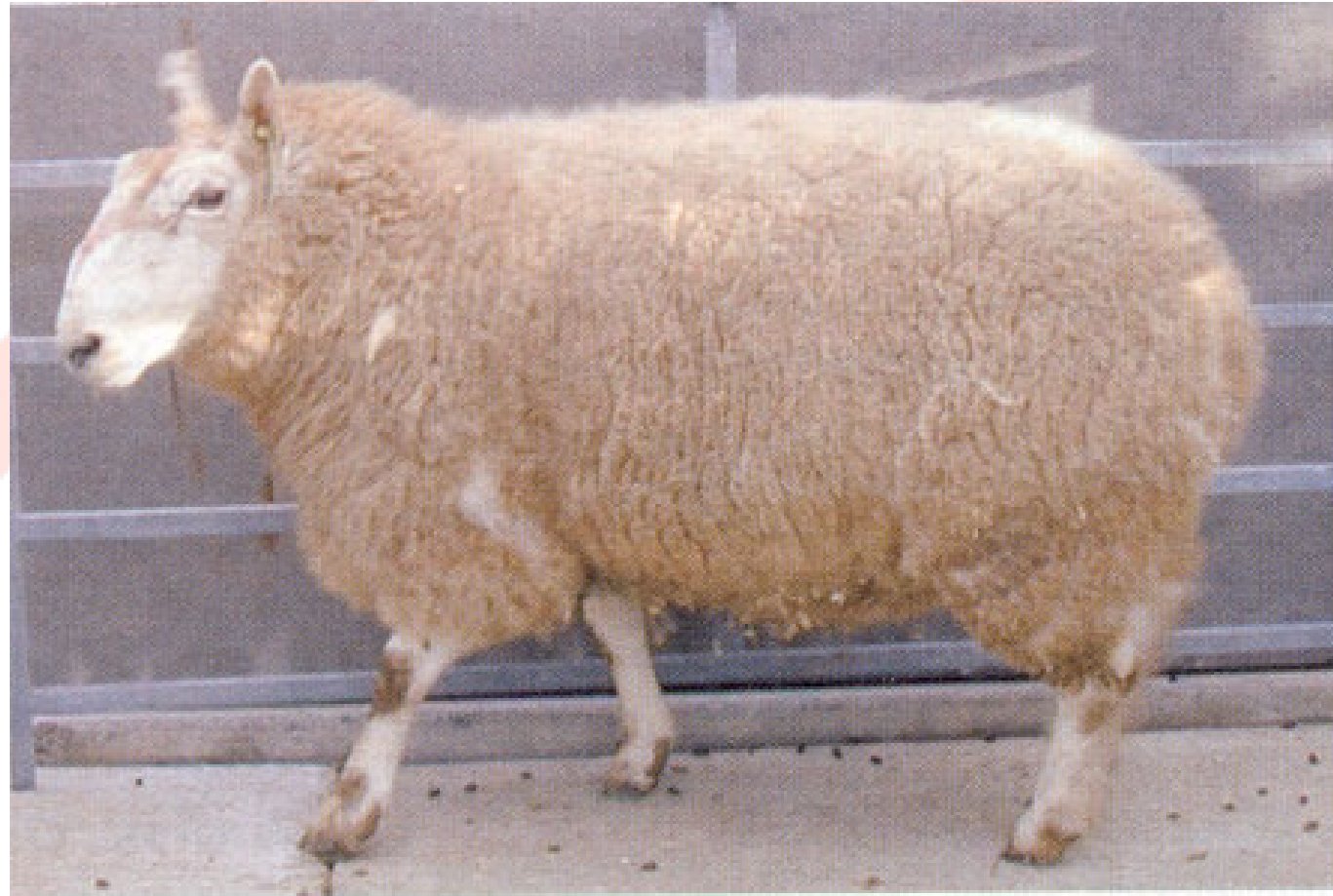


- ABSA
- ProMED
- BMBL
- Biological Safety: Principles and Practices
- WHO
- CDC, USDA, NIH
- Public Health Agency Canada

# Risks from microorganisms

- Examples of disease outbreaks and/or laboratory exposures over the past 20 years
  - Human
  - Animal
  - Plant
- Mouth pipetting!
- BSC is not magical!

# *E coli* K12



# Shigatoxigenic *E. coli*

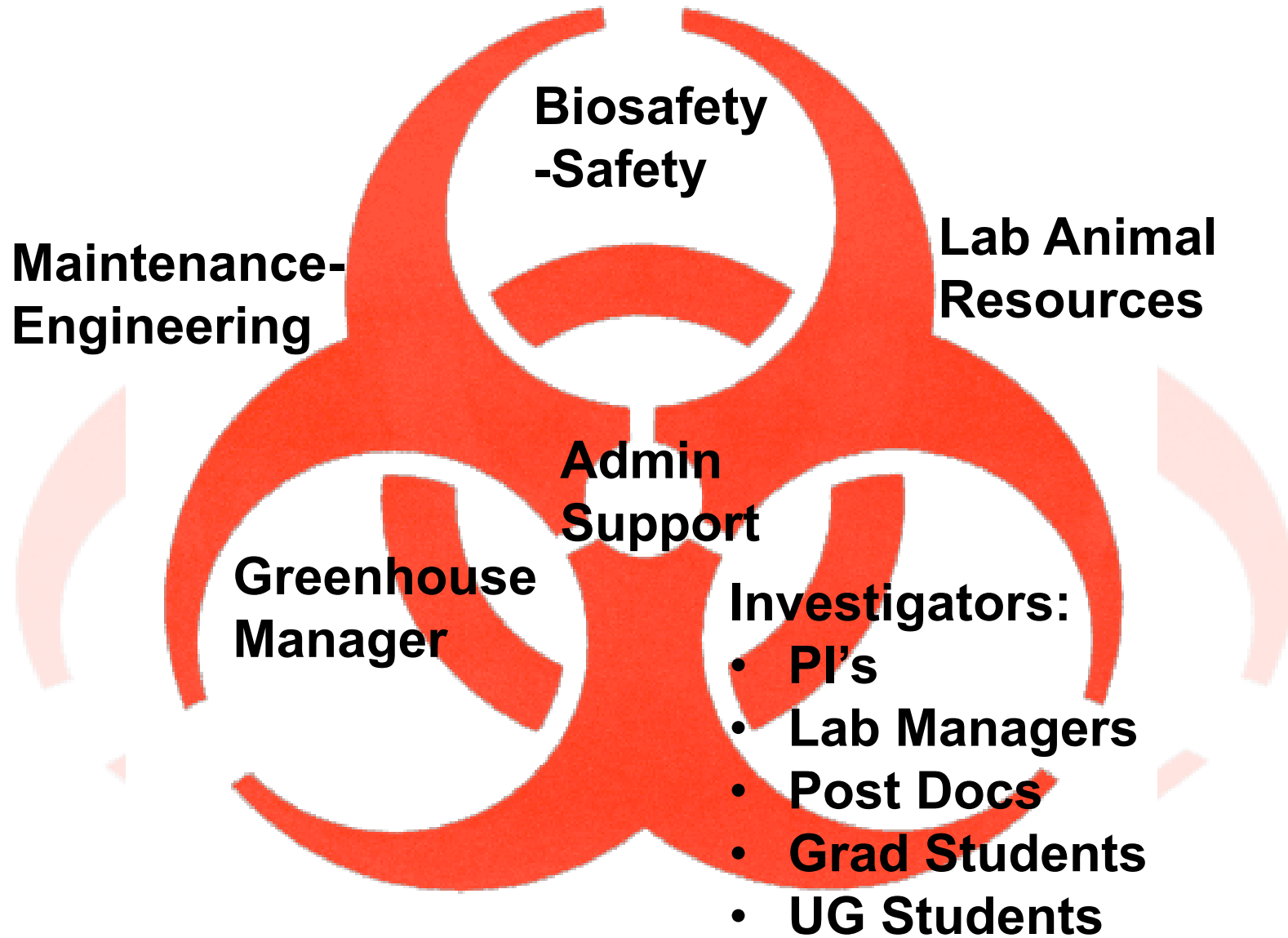




# *E coli* O157:H7



Suzy Squires



# Guest Lecturers

- **Vector-borne diseases**
- **Bats, their agents and BSL-4**
- **Field research**
- **One facility:**
  - multi agents, multi animal species
- **Training Lab, BSC function**
- **Prion diseases**
- **Laboratory Animal Resources**

# COWBOY ETHICS

What Wall Street Can Learn from the Code of the West

**James P. Owen**



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# The Code of the West

7. Ride for the brand
8. Talk less and say more
9. Remember, some things aren't for sale
10. Know where to draw the line



# 7. Ride for the brand

- The brand is a symbol of ownership, identity, and pride 
- Cowboys who “ride for the brand” take pride in making the ranch they ride for continuously better
- Collectively we can improve the “Safety Culture” in our profession



# The Code of the West

9. Remember, some things  
aren't for sale

What could be  
"for Sale"  
in Biosafety?

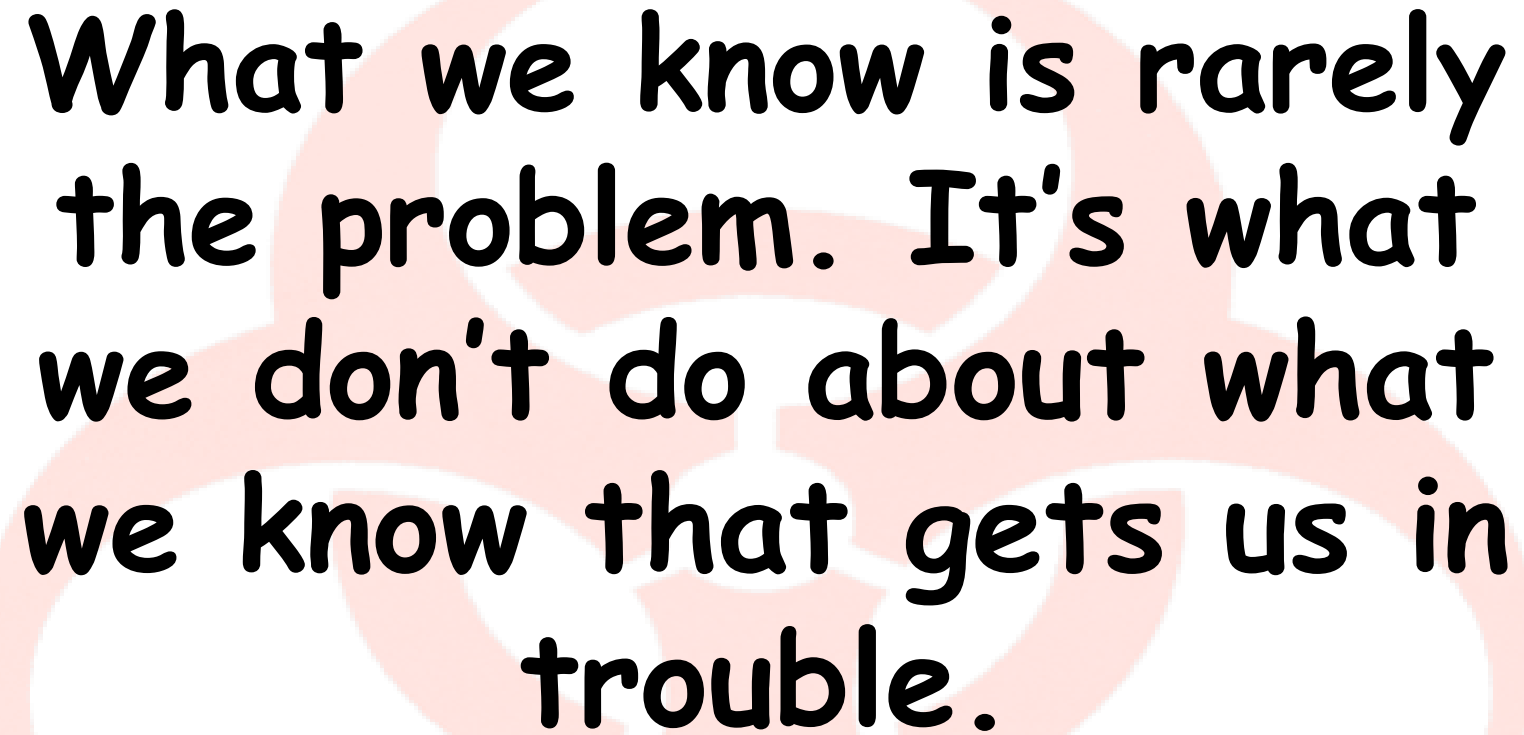
# The Code of the West

## 10. Know where to draw the line

- Guidelines, Regulations, Training
- What is "the right thing?"
- Just because something isn't illegal doesn't mean it's **RIGHT!**

# from Bob Ellis

- We have rules, regulations, guidelines, standard operating procedures, risk assessments, etc.
- We need some of these documents as standards upon which to base our biosafety programs
- We need to do “what is right” for a biosafety program to be successful.



**What we know is rarely  
the problem. It's what  
we don't do about what  
we know that gets us in  
trouble.**

**John R. Erickson**



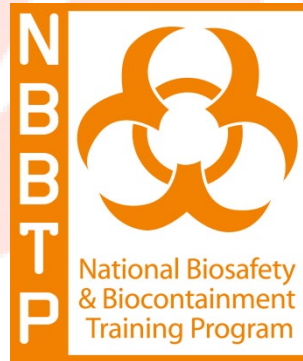
**Look for solutions to the problem,  
not who to blame.**

**Fortune Cookie**

**Computers can barrage us  
with more facts, opinions, and gossip  
than we can possibly absorb;  
the key to giving it value is  
YOUR ability to sort  
the snowflakes from the blizzard.  
Baxter Black, in 'Lessons from a Desperado Poet'**



# The collateral damage of unsafe research is all research.



**In research, somebody has to be responsible for biological safety.**

**Be somebody.**



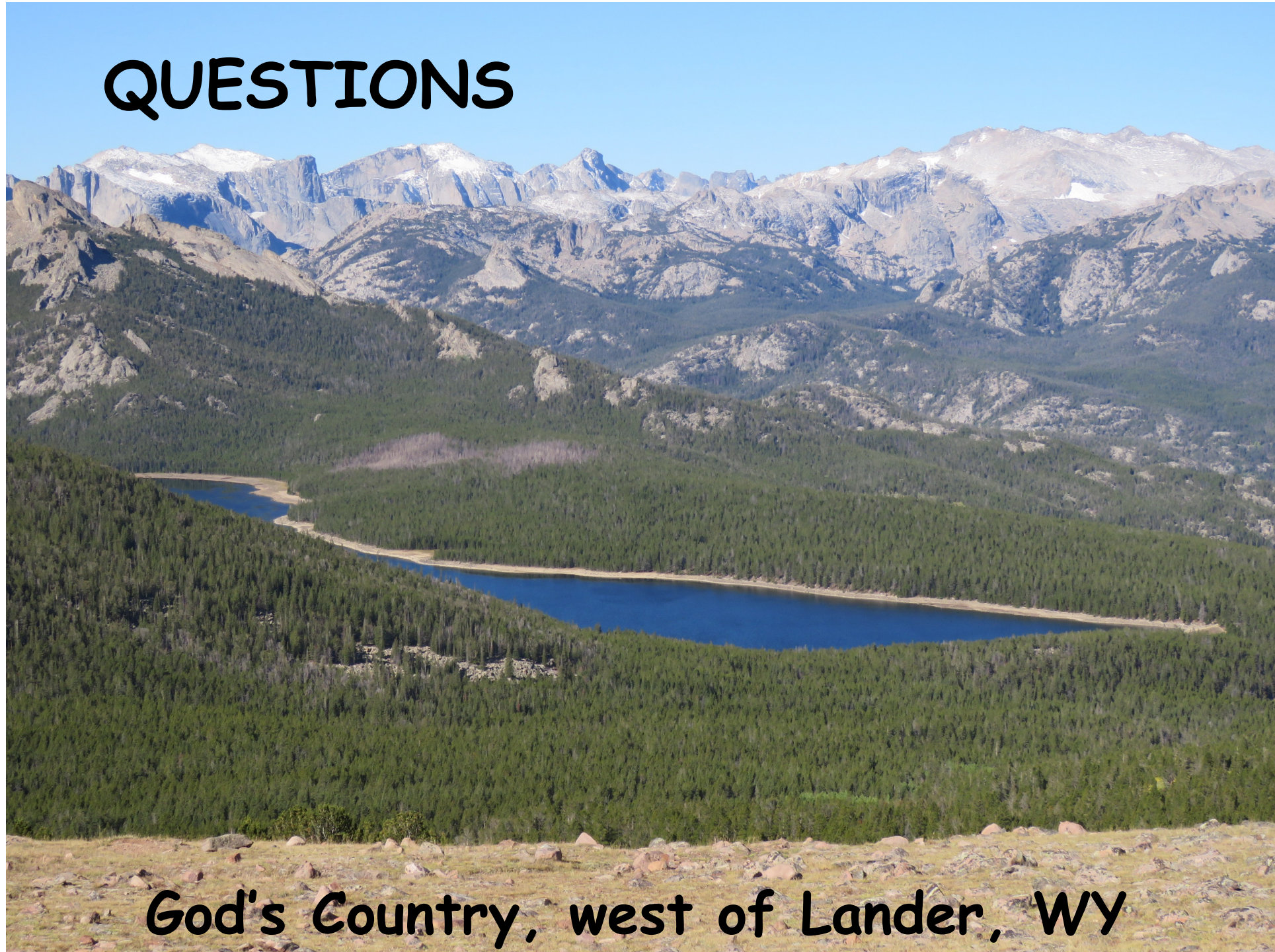


# **"Somebody"**



- **Heather Blair**
- **Hongliang Yang**
- **Steve Greiner**
- **Heather Sullivan**
- **Current PhD student**
- **Current MS student**

# QUESTIONS



**God's Country, west of Lander, WY**