Geologic Field Studies Experience for People with Visual Impairments: What Works and What Doesn’t
(or The Blonde Leading the Blind)

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Outline

• Field Studies Course
• Gina’s Visual Impairment
• Classroom and Field Methods
• What worked and What didn't
• Gina’s Suggestions
Field Studies Course

- Summer 2005
- Three-week intensive field experience
- Utah, Nevada, California
Field Work

- Intensive field work 7 days a week
- 8 hours a day in the field
- **Mapping, measuring strat columns, constructing cross-sections, using a compass**
Gina’s Visual Impairment

• Atypical Clumped Pigmentary Retinal Degeneration
  - Like retinitis pigmentosa
  - Very rare condition
    • Less than 100 people worldwide

• Symptoms
  - Missing spots (centrally)
  - Shimmering (constant movement)

• Mitchell
  - Leader Dogs for the Blind
  - With Gina for approximately 1 year
Why have a Sighted Guide?

- Very foreign environment
  - Safety first!
  - Some things the dog can’t do
Why have a Sighted Guide

• Full and complete descriptions of geology and environment
  - Important to know geology
Classroom Methods

• Presentations
  - Laptop for close-up views
  - Enlarged copies of slides before class

• Clarity Desktop – large screen monitor
  - Viewing samples and thin sections

• Individual Assistance
  - One-on-one work with instructor
  - Student to take notes

• Enlargements and magnification
Field Methods

- Enlarged maps and diagrams
- Tablet PC / Handheld PDA
- Photography
- Drawn illustrations
- High powered hand-lens / Binocular glasses
- Verbal descriptions / Geologic hand-waving
- Software for readings
Enlarged Maps and Diagrams

• All maps and diagrams enlarged 200%
• Large mylar overlays for mapping
• Guide as scribe
Tablet PC / Handheld PDA

• Handheld PDA
  - Used for computer-based mapping by other students
  - Too small for Gina to see

• Tablet PC
  - Use Tablet to view digital forms of maps
  - Map directly on screen
  - View photos of field sites
Photography

- Take photos in field and transfer to Tablet PC
- Zoom in on photos to view geology
Drawn Illustrations

• 11 x 17 inch paper
  - Artists sketch book
  - Heavy paper
• Sketches of topography and geology
• Sketches of visible structures
  - Large and small scale
High-Powered Hand-Lens / Binocular Glasses

• 20 x hand lens for rock and mineral samples

• Binocular glasses for distance viewing
Verbal descriptions / Geologic hand-waving

- Complete and precise descriptions of rocks, minerals, structures
  - Need a guide who knows the geology
  - What’s important and what isn’t
  - How to describe without giving away the answers
Assignments and Readings

• Work on maps, stratigraphic columns, cross-sections, and readings usually done in evenings after field work

• Usually done after dark
  - Multiple flashlights and lanterns
  - Need bug spray!
Readings / Software

• Tablet PC and ZoomText
  - Enlarge text
  - Provide verbal descriptions of mouse-overs

• Reading Software
  • Takes text and converts it to sound
  • Highlights words

• Great when it worked
Evening Assignments / Drafting

- Assistance with re-copying field maps into clean and more readable form
Evening Assignments / Drafting

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Evening Assignments / Drafting

• Assistance with drafting of fine lines, lettering, and scales
• Assistance with organization of materials
What Worked and What Didn’t

• Technology
  - Not viable in the field
  - Screen not readable
  - Heavy and awkward when combined with other field equipment

• Reading software needed improvement
  - Too much time spent getting it to work
  - Would sound out or spell words
  - Reading citations
What Worked and What Didn’t

• Mitchell - Leader
• Dog – Heat, rough terrain
• Booties – Not used to wilderness environment
• Trained to work in cities / towns
What Worked and What Didn’t

• Old Fashioned Pen and Paper
  - Big, bold colored markers
  - Large sheets of heavy paper

• Verbal descriptions
  - Most successful method
Gina’s Suggestions

• Need a guide experienced in geology of area
• Technology could work with screen improvement
• Readable compass (talking compass)
• Clear reproductions and enlargements of aerial photos and maps
Questions?