Leading the Charge: Universities, Title II, and Universal Design
THREE QUICK QUESTIONS:
Where did disability rights movements come from?
What is the Rehabilitation Act of 1973, and what was its effective date?
Why are research universities “leading the charge”?

In the beginning, there was no access...
PERCEPTION
is the core problem
How the community sees accessibility
How the community sees accessibility
How architects see accessibility

- code compliance
How architects see accessibility

• code compliance

• focussed on wheelchairs
How architects see accessibility

- code compliance
- focussed on wheelchairs
- emphasis on toilet rooms
How architects see accessibility

- code compliance
- focussed on wheelchairs
- emphasis on toilet rooms
- minimum = maximum
How architects see accessibility: minimum = maximum
How architects see accessibility: minimum = maximum?
How architects see accessibility

How does that fit into their world?
Statistics vs. Perceptions

Percentage of ADA standards that are mobility-related

Where does this come from?
Prevalence of disability among non-institutionalized people ages 65 to 74 in the United States in 2011

Prevalence Rates: Age 65 to 74 years (%)

- Any Disability: 25.6%
- Visual: 4.1%
- Hearing: 9.1%
- Ambulatory: 16.0%
- Cognitive: 5.5%
- Self-Care: 4.7%
- Independent Living: 8.3%
Statistics: percentages of US population with a disability (2011)

25% of population has a disability by age 74
(www.disabilitystatistics.org 2011 report)

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(www.disabilitystatistics.org 2011 report)

1.5% of population uses a wheelchair
(2005)
(www.census.gov/prod/2008pubs/p70-117.pdf)

Statistics: percentages of US population with a disability (2011)

Prevalence of disability among non-institutionalized people ages 65 to 74 in the United States in 2011

Prevalence Rates: Age 65 to 74 years (%)
In the beginning, there was no access...
A brief history of accessible schools

1920s-1950s: no access...front door or rear
A brief history of accessible schools

1960s: some feeble...and dangerous...attempts
1970s Rehabilitation Act: response and ineffectiveness
A brief history of accessible schools

1980s: change happens!

- Elevator installed: 1979
- Minimum per ANSI standard: 1980
The ever-changing landscape of Federal accessibility standards
The ever-changing landscape of Federal accessibility standards
**Chapter 6: Plumbing Elements and Facilities**

604.8.1.2 Doors. Toilet compartment doors, including door hardware, shall comply with 404 except that if the approach is to the latch side of the compartment door, clearance between the door side of the compartment and any obstruction shall be 42 inches (1065 mm) minimum. Doors shall be located in the front partition or in the side wall or partition farthest from the water closet. Where located in the front partition, the door opening shall be 4 inches (100 mm) maximum from the side wall or partition farthest from the water closet. Where located in the side wall or partition, the door opening shall be 4 inches (100 mm) maximum from the front partition. The door shall be self-closing. A door pull complying with 404.2.7 shall be placed on both sides of the door near the latch. Toilet compartment doors shall not swing into the minimum required compartment area.

1991 ADA Standards/ADAAG

2010 ADA Standards
A brief history of accessible schools

1995 to present: accessible design
School Mobility Case

Inaccessible routes

Barriers
School Mobility Case

accessible routes
inaccessible routes
barriers
School Mobility Case

but does this work?

accessible routes

inaccessible routes

barriers
School Mobility Case: Legal yet not effective

Social isolation: if you had to use the blue routes?

Practicality?
Where now? Going beyond the standards...
Seven Principles of Universal Design

1. Equitable Use:
The design is useful and marketable to people with diverse abilities.

2. Flexibility in Use:
The design accommodates a wide range of individual preferences and abilities.

3. Simple and Intuitive:
Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

4. Perceptible Information:
The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

5. Tolerance for Error:
The design minimizes hazards and the adverse consequences of accidental or unintended actions.

6. Low Physical Effort:
The design can be used efficiently and comfortably and with a minimum of fatigue.

7. Size and Space for Approach and Use:
Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

(from http://www.design.ncsu.edu/cud/univ_design/princ_overview.htm and other sources)

These don’t always apply well in design fields. Perhaps follow them up...
Universal Design: Four Questions to Test a Design

1. Is it universal?
   Is it designed for a wide range of abilities and needs?

2. Is it effective?
   Does it actually work for the specific needs?
   Has it been tested or at least reviewed by representatives of a wide range of users?
   Is it supported by research, design standards, or other sources?

3. Is it welcoming?
   Does it feel natural and comfortable for all users?
   Does it discriminate unnecessarily on the basis of ability?
   Does it give the impression of disability-based discrimination?

4. Will the design solution be durable over time?
ADA Title II vs. Title III

or: Is program accessibility dead?
and: What can be inaccessible?
ADA Title II vs. Title III

or: Is program accessibility dead?

no: Rehabilitation Act/Section 504 and ADA still apply
ADA Title II vs. Title III

ADA Title II: What can be inaccessible?
ADA Title II vs. Title III

ADA Title II: What can be inaccessible?

Almost nothing: just mechanical rooms, furniture for individual employees, etc.
Other issues for the Title II owner

Am I grandfathered?
What’s prudent?

elevator installed 1979

minimum per ANSI A117.1-1980
Other issues for the Title II owner

Am I grandfathered?
What's prudent?

Depends on whether it meets program access needs

elevator installed 1979

minimum per ANSI A117.1-1980
Other issues for the Title II owner

Am I grandfathered?
What’s prudent?

- Elevator installed 1979
- Minimum per ANSI A117.1-1980
Other issues for the Title II owner

Am I grandfathered?

What’s prudent?

Do the right thing: Universal Design

elevator installed 1979

minimum per ANSI A117.1-1980
Issues for the owner Title II owner

Am I grandfathered?
What’s prudent?

Is it effective?
Is it safe?

elevator installed 1979

minimum per ANSI A117.1-1980
Universal Design: The Closed Fist Test for Controls

Pattern:
Can the control be operated with a closed fist?

Many standard plumbing, electrical, and hardware controls can be. However, others can't, in particular door knobs, thumb latch locks, faucets that require grip, and so forth.
The standard uninspired solution to grade differences is to pick a ramp from the building code or from the ADA Standards. The results are seldom beautiful and sometimes don't work well for almost anyone.
Universal Design: site mobility

PATTERNS:

**Integrated Path**
Make sure that accessible routes are a meaningful main route used by all.

Cascade Court, UO
long zig zag ramp

**Low Slopes / Short Ramps**
Keep slopes at 5 percent or less except for short ramps (up to 12 – 15 feet long)

**Shortest Path**
Make accessible routes a direct and as short as possible (within the context of Low Slopes / Short Ramps). This suggests integrating grade changes into the direction of desired travel. [add UHCC examples]

Inaccessible ext. stair, Johnson Hall, UO
Universal Design: vision

Protrusion
Shoreline
Safe crossing
Wayfinding
Universal Design: Vision

PATTERNS:

No Protrusion Hazards
Avoid items that protrude more than 4" above 24" (ADA Standards say 27") so that blind and low vision users are safe

Effective Shorelines
Provide consistent edges to guide cane users and others
- vertical edges such as walls and curbs, or
- textural contrasts such as pavement to planting, or concrete to gravel, or paving type, and
- provide visual contrast along shorelines as appropriate

Safe Crossings
Design vehicular areas with clear separation from pedestrian areas, either
- curbs at 1:12 slope, or
- 3' band of tactile pavement, or
- bollards with 3' maximum gaps

Wayfinding: 90 Degree Corners, No Curves
Provide clear circulation to enhance imageability
  Avoid curves and angles, use a rectilinear organization for circulation

Wayfinding: Visual Contrast
Use light/dark contrast to emphasize stair hazards, shorelines, etc.
Universal Design: Vision

**Figure 307.2**
Limits of Protruding Objects

**Figure 307.4**
Vertical Clearance
Universal Design: Vision

Figure 307.2
Limits of Protruding Objects

Figure 307.4
Vertical Clearance
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding
Universal Design: vision

Shoreline

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Protrusion
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Wayfinding: Shoreline
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline
Universal Design: vision

Protrusion

Shoreline

Safe crossing

**Wayfinding: Shoreline**
Universal Design: vision

Protrusion
Shoreline
Safe crossing

Wayfinding: Shoreline
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline
Universal Design: vision
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Protrusion

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Safe crossing

Wayfinding: Shoreline
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline
Universal Design: vision
Protrusion
Shoreline
Safe crossing
Wayfinding: Shoreline
Universal Design: vision

Protrusion

Shoreline

Safe crossing

Wayfinding: Shoreline
Universal Design: vision
Protrusion
Shoreline
Safe crossing
Wayfinding: Light and Contrast
Universal Design: vision
Protrusion
Shoreline
Safe crossing
Wayfinding: Light and Contrast
Universal Design: vision

Protrusion
Shoreline
Safe crossing
Wayfinding

**STANDARDS**: generation of new approaches through
- user involvement
- research
... and

- hearing impairments
- autism spectrum disorder
- psychiatric disorders
- etcetera
Universal Design: Hearing

Integrated Design to solve multiple problems simultaneously through an integrated team

Who: Integrated design team
Owner: professional staff
End users

Design team
architect
engineers and other consultants

Contractor

Ed Roberts campus, Berkeley, CA
Controls: usable with a closed fist
Side reach: 48” max height, 15” min
Front reach 48” max height, 15” min
Reach range over an obstruction: see ADA Standards 308.2 and 308.3
Protrusion hazards protrude into an accessible route more than 4”
above 27” (better to use 24”) below 80”
Parking

Oregon stds. vs. ADA stds.
Stall width 9’
Sign on pavement and at stall
Aisle width 8’ for van-accessible, 5’ otherwise
Accessible route from access aisle to building that:
1. doesn’t pass behind parked cars
2. always crosses travel lanes in crosswalks

Sidewalks (and accessible routes in general):
width min = 36”, turnouts or wide for long lengths
running slope max = 5%
slope>5%: see ramps
cross slope max = 2%
Ramps

- maximum slope 1:12, better 1:12.5
- minimum width 36”
- maximum length between landings 30’
- minimum landing length 5’
- minimum landing width 5’ if ramp turns
- handrails both sides, continuous through landings
- level handrail extensions top and bottom, 12” minimum
- edge protection through curbs or other devices
Do-It-Yourself Architectural Barrier Evaluation Kit

Entrances and doors:
- clear width min = 32” clear not counting door hardware
- door pressure and delay requirements: 5 lbs, 5 seconds
- 50% minimum of entrances accessible
- entrances provide adequate fire exits
- 18” pull-side latch-side clearance
- 12” push-side latch-side clearance (if both latch and closer)

Toilet rooms
- toilet stall 60” wide, 56” (wall hung) or 59” deep (floor mt)
- stall door 32” wide, clear, not counting door hardware
- toilet 18” from side wall
- 42” long grab bar at side of toilet
- 36” long grab bar at rear of toilet
- sink with kneespace under
- bottom reflecting surface of mirror no higher than 40” minimum
Fred Tepfer - ftepfer@uoregon.edu
web home: http://pages.uoregon.edu/ftepfer/
accessibility page: http://pages.uoregon.edu/ftepfer/access/
Oregonized version of ADA Standards:
   http://pages.uoregon.edu/ftepfer/access/ADAAGuplan/adaag.htm
   [new version based on 2010 standards coming soon]