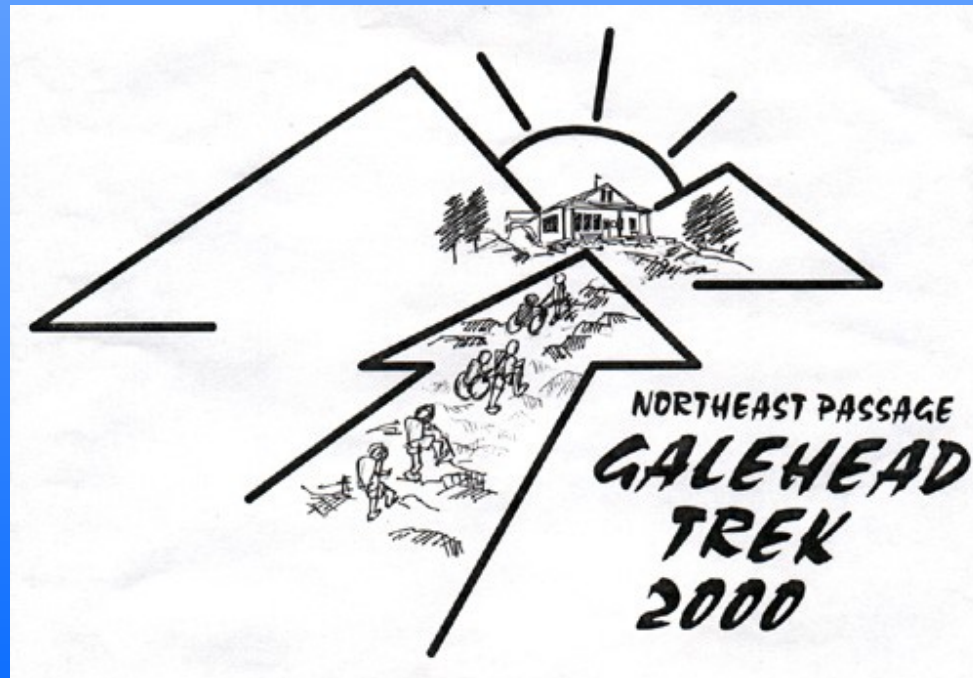


IPRO 310

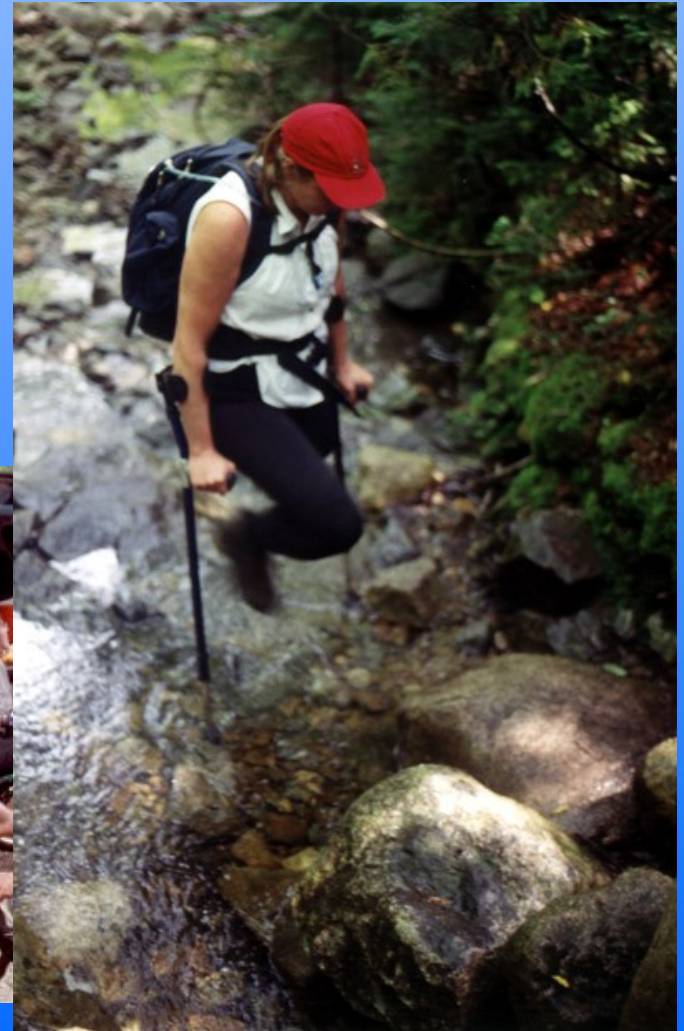
*Opportunities for Innovation in Assistive
Technology – Focus on AVOIDATRAK*

The IPRO

- Computer game to improve hand-eye coordination
- Galehead trek



Galehead Trek



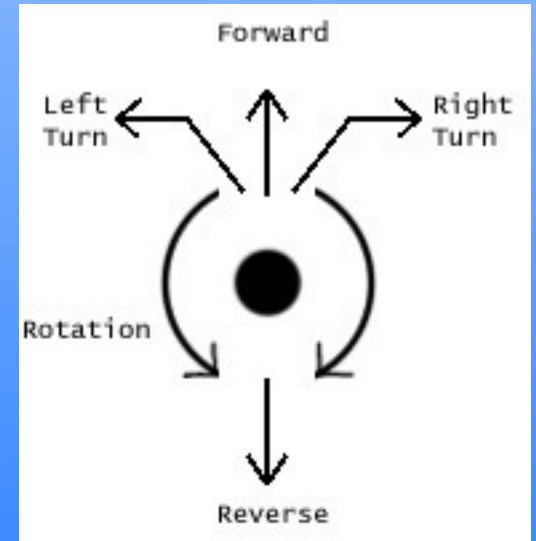
Obstacles

With the assistance of
Jill Gravink and Nicole Haley

- Lack of elevators
- Reaching high places
- Crossing streets
- Passing narrow doors and hallways
- Entering buildings

Our Idea

- Realistic wheelchair movements
- 3-D Environment
- First / Third person view
- Real-life dilemmas
- Useful scoring data



Our Experiment

Accessibility in Life Sciences

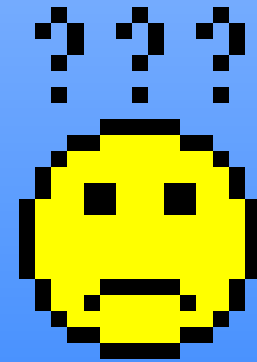
- Narrow walkways
- Ability to reach upper floors
- High drinking fountain
- Unfriendly lecture rooms



Development Solutions

What to look for:

- Easy to learn
- Rapid Development
- User friendly



Solutions:

- VRML or C++ Based?

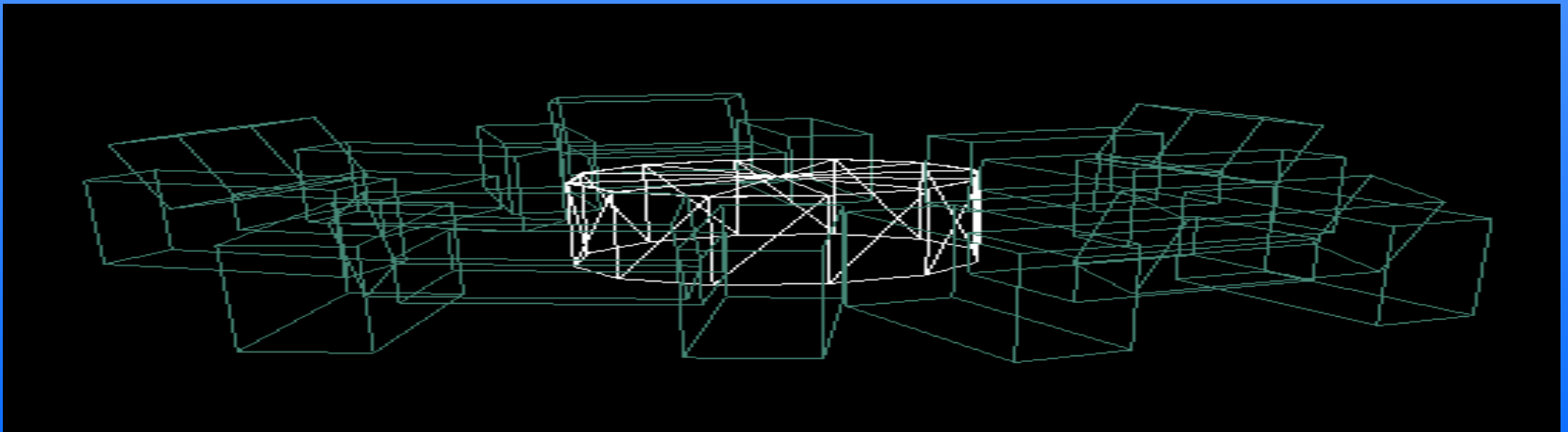
VRML

Pros

- Easy to learn
- Rapid implementation
- Platform independent

Cons

- Browser dependent
- Limited capabilities



C++ Based

Pros

- Taught at IIT
- Stand-alone executables
- More robust

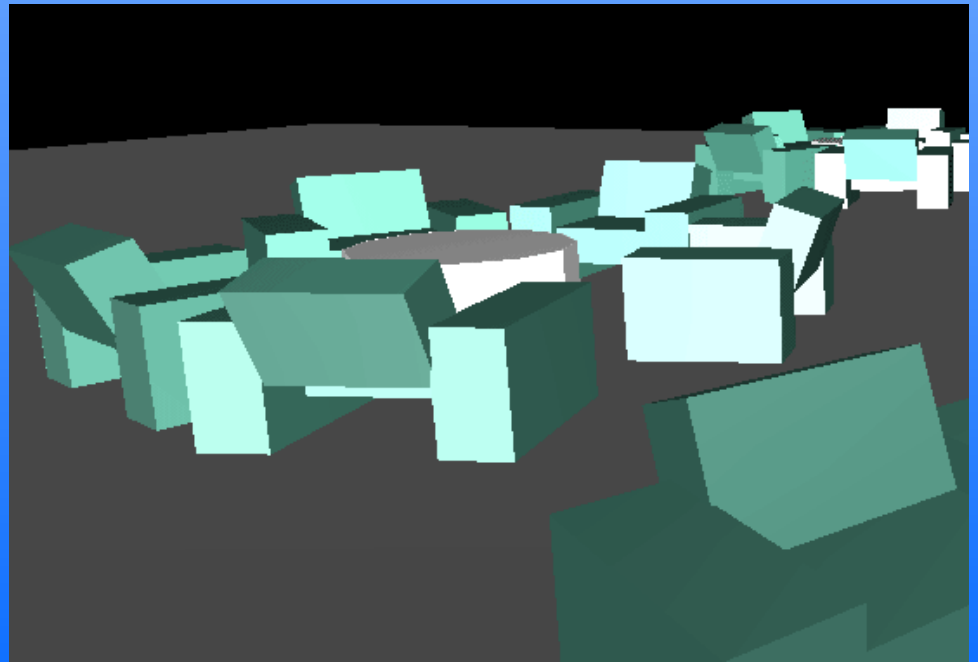
Cons

- Longer design time
- Harder to learn

```
GLdouble aspect,  
GLdouble zNear,  
GLdouble zFar);  
  
void APIENTRY gluPickMatrix (  
    GLdouble x,  
    GLdouble y,  
    GLdouble width,  
    GLdouble height,  
    GLint viewport[4]):  
  
void APIENTRY gluLookAt (  
    GLdouble eyex,  
    GLdouble eyey,  
    GLdouble eyez,  
    GLdouble centerx,  
    GLdouble centery,  
    GLdouble centerz,  
    GLdouble upx,  
    GLdouble upy,  
    GLdouble upz);
```

Why VRML?

- Less expensive development tools
- Simplest approach to 3D modeling
- Faster development
- Easier to learn



Show Demo

Future of IPRO

- Research other 3D engines
- 3D API - OpenGL, Glide, Direct3D
- More features
- More user friendly



The IPRO Team

- Worked as a team
- Organized



lproCredits2.swf

Questions and Answers

Any Questions?