User-Centered Design (UCD)

- Several different approaches:
  - User-Centered Design (USA)
  - Participatory Design (Scandinavia)
  - Socio-Technical Design (UK)
- UCD focuses on the actual production of the product
- Others emphasize social implications

General idea

- Has stood the test of time
- Developed independently by several groups
- Main principle:
  - Only direct interaction with the users and direct use of the (actual or prototype) system by actual users can produce a usable system
- It is not sufficient to construct analytic models or use descriptions of users

Four principles

- Early—continual—focus on users
- Integrated design
- Early—and continual—user testing
- Iterative design

Early focus on users

- Begin with a detailed definition of who users are
- Better to be too specific than too vague
  - (you can revise it later)
- Directly interact with them
- Be on-site, observe them working
- Do their job
- Have some on your design team

Testable goals

- You can make measurable goals
- Measure => control => manage
- Fits in well with with projects that use other kinds of performance goals
- Works best with highly structured tasks
  - Otherwise pick a few common tasks
- Qualitative methods still required

Integrated design

- One person in charge
- Political statement
- User manual, help, web site, evaluations, internationalization, ....
Early and continual testing

- Rough sketches at start
- Increased realism as project proceeds
- Write the user manual (if any) first
  - Mathematica
- Prototypes (Hypercard, Director, TCL, Visual Basic, Flash, …)
- But also use other (non-user) evaluation methods

Getting user feedback

- Demonstrations and comments
- Thinking aloud
- Hallway / storefront design
- Usability tests
- Formal experiments
- Bulletin boards, Web sites, Newsgroups
- Hot-line calls

Iterative design

- Identify changes…and make them
- “Developing user-oriented systems requires living in a sea of changes”
- Tools required