CS449/649:
Human-Computer Interaction
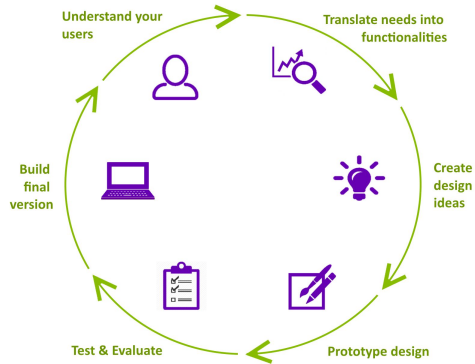
Winter 2018

Lecture XVIII

Anastasia Kuzminykh

User Centered Design Process
January 4 - March 1

Understand your users

Translate needs into functionalities

Create design ideas

Prototype design

Test & Evaluate

Build final version

History of user centered design in HCI
March 6, March 8

Academic HCI
March 13, March 15

Special topics in HCI
March 20, March 22

Course Review
March 27

Presentation 2
March 29

Last class
April 3

Academic HCI

Human-Computer Interaction -

a discipline concerned:

- with the design, evaluation and implementation of interactive computing systems for human use

and

- with the study of major phenomena surrounding them

Hewett; Baecker; Card; Carey; Gasen; Mantei; Perlman; Strong; Verplank. "ACM SIGCHI Curricula for Human-Computer Interaction". ACM SIGCHI.

Academic HCI

SIGSOC - ACM Special Interest Group
on Social and Behavioral Computing

1969-1982

Greg Marks, Chair of the SIGSOC

Lorraine Borman, Editor of the SIGSOC Bulletin

Academic HCI

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"I believe that SIGSOC has a responsibility to become actively concerned with the social and behavioral aspects of computing...SIGSOC can serve both a coordination and a dissemination of information function for current research in the areas of the user interface to interactive systems, the human factors that affect use of languages, packages, terminals, etc. ... In every journal, in every discussion these days, we hear that systems aren't being used as the designers envisioned: it is time to emphasize research directed towards the users. The days of computer-oriented people are passing: the new era must lead towards people-oriented computers."

Lorraine Borman, SIGSOC Bulletin, Spring 1978, Volume 9

Academic HCI

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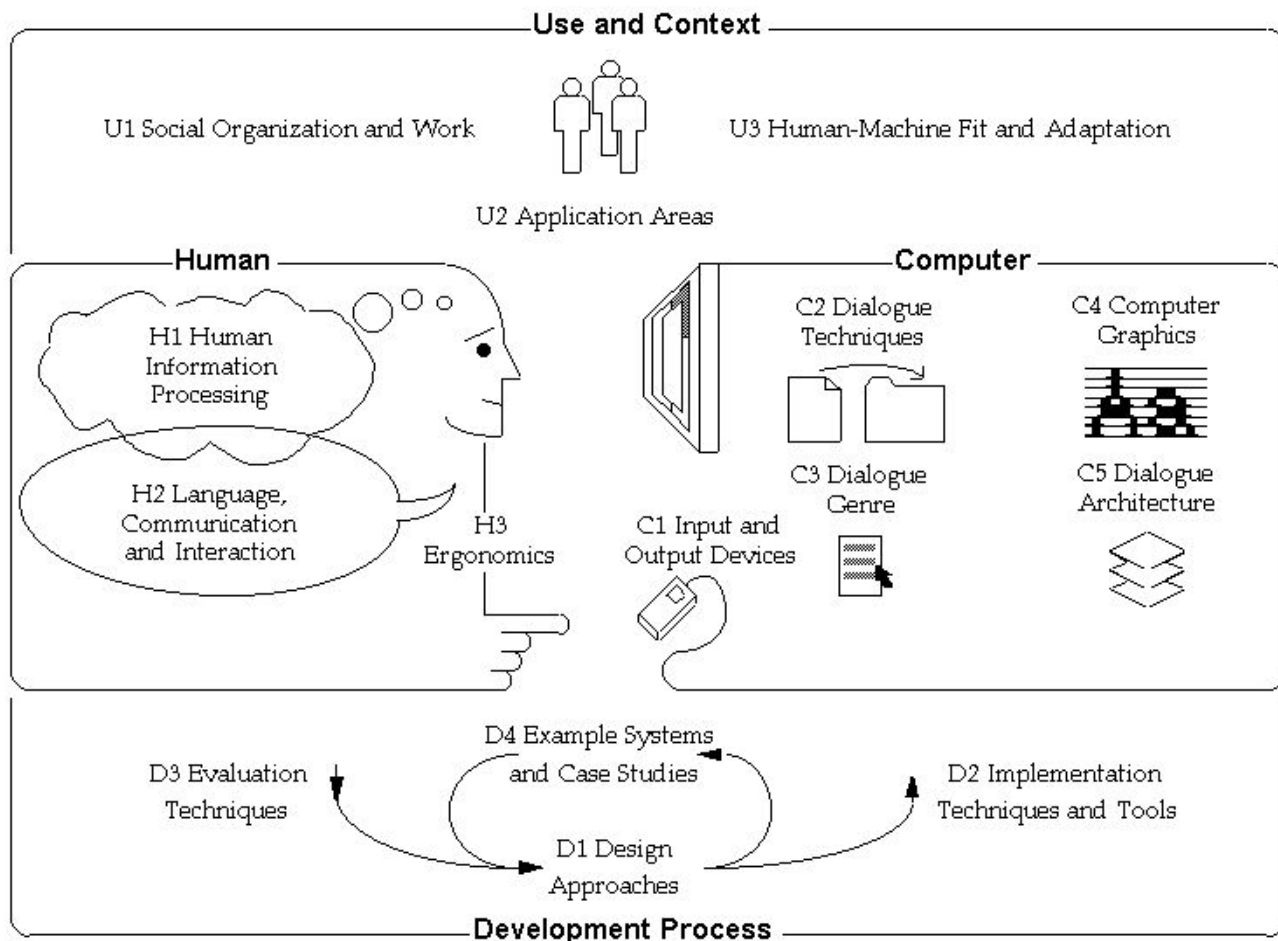**SIGCHI -** ACM Special Interest Group on Computer-Human Interaction

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Lorraine Borman, Editor of the SIGSOC Bulletin

Lorraine Borman, first Chair of the SIGCHI

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Lorraine Borman, SIGSOC Bulletin, Spring 1978, Volume 9

Use and Context

U1 Social Organization and Work

U2 Application Areas

U3 Human-Machine Fit and Adaptation

Human

H1 Human Information Processing

H2 Language, Communication and Interaction

H3 Ergonomics

Computer

C2 Dialogue Techniques

C4 Computer Graphics

C3 Dialogue Genre

C5 Dialogue Architecture

C1 Input and Output Devices

Development Process

D3 Evaluation Techniques

D4 Example Systems and Case Studies

D2 Implementation Techniques and Tools

D1 Design Approaches

Hewett; Baecker; Card; Carey; Gasen; Mantei; Perlman; Strong; Verplank. "ACM SIGCHI Curricula for Human-Computer Interaction". ACM SIGCHI.

Academic HCI

Content of HCI field

Nature Of HCI	Use and Context of Computers	Human Characteristics	Computer System and Interface Architecture	Development Process
(Meta-)Models of HCI	Human Social Organization and Work	Human Information Processing	Input and Output Devices	Design Approaches
	Application Areas	Language, Interaction, Communication	Dialogue Techniques and Genre	Implementation Techniques
	Human-Machine Fit and Adaptation	Ergonomics	Dialogue Architecture	Evaluation Techniques

Hewett; Baecker; Card; Carey; Gasen; Mantei; Perlman; Strong; Verplank. "ACM SIGCHI Curricula for Human-Computer Interaction". ACM SIGCHI.

Academic HCI

Some SIGCHI <u>conferences</u>

CHI - Computer-Human Interaction

UIST - User Interface Software and Technology

CSCW - Computer Supported Cooperative Work

IUI - Intelligent User Interfaces

DIS - Designing Interactive Systems

Ubicomp - Pervasive and Ubiquitous Computing

MobileHCI - HCI with Mobile Devices and Services

PerDis - The International Symposium on Pervasive Displays

ICMI - International Conference on Multimodal Interaction

CHIPlay - Computer-Human Interaction in Play

GI - Graphics Interface

TVX - Interactive Experiences for TV and Online Video

Academic HCI

Ubiquitous Computing -
Paradigm in which computing is made to appear anytime and everywhere, through distributed networked processing devices

Academic HCI

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Paradigm in which computing is made to appear anytime and everywhere, through distributed networked processing devices

Term coined by Mark Weiser in late 1980s

Weiser, Mark. "The computer for the 21st century." *Scientific american* 265.3 (1991): 94-104.

The most profound technologies are those that disappear into the background and become indistinguishable from the everyday environment

Academic HCI

Ubiquitous Computing -
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Scientific american 265.3 (1991): 94-104.

Two crucial issues: location and scale

A. Chua et al. "Shared Bicycling Over Distance", CHI'17

Academic HCI

Computer-Supported Cooperative Work (CSCW) - area concerned with understanding of the way people work in groups with the enabling technologies of computer networking, and associated hardware, software, services and techniques (Paul Wilson, 1991)
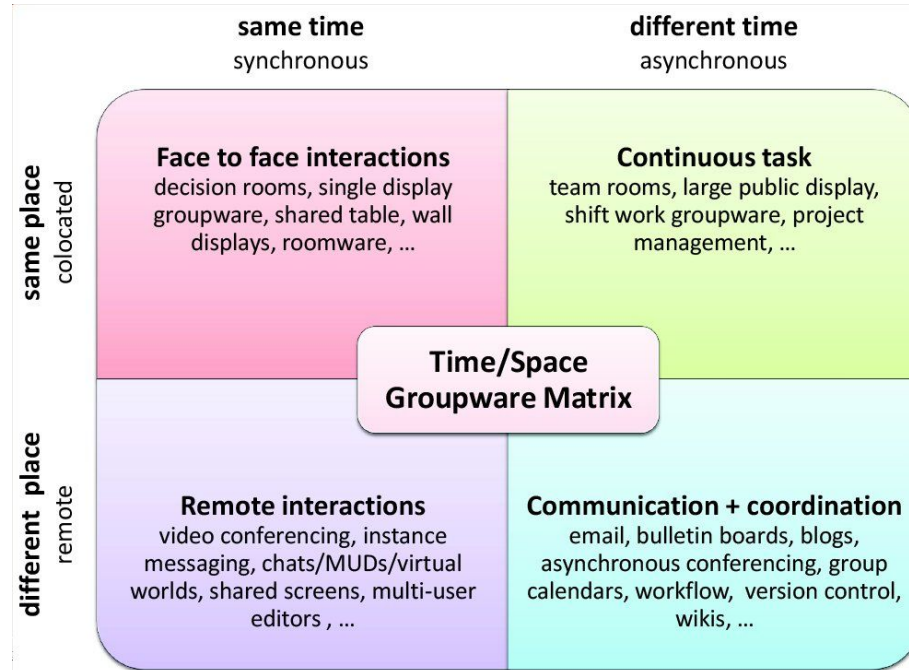
Term coined by Irene Greif and Paul Cashman in 1984

Irene Greif, Computer-Supported Cooperative Work: A Book of Readings. (1988)

Groupware - software designed to support collaborative activities and their coordination. Term coined by Trudy and Peter Johnson-Lenz, 1978-1981

Academic HCI

	same time synchronous	different time asynchronous
same place colocated	**Face to face interactions** decision rooms, single display groupware, shared table, wall displays, roomware, …	**Continuous task** team rooms, large public display, shift work groupware, project management, …
different place remote	**Remote interactions** video conferencing, instance messaging, chats/MUDs/virtual worlds, shared screens, multi-user editors , …	**Communication + coordination** email, bulletin boards, blogs, asynchronous conferencing, group calendars, workflow, version control, wikis, …

Time/Space Groupware Matrix

Johansen, R. Groupware: Computer Support for Business Teams, 1988

Academic HCI

	Real time	Asynchronous
Communication	• Telephone • Video conferencing • Instant messaging • Texting	• Email • Voice mail • Blogs • Social networking sites
Information sharing	• Whiteboards • Application sharing • Meeting facilitation • Virtual worlds	• Document repositories • Wikis • Web sites • Team workspaces
Coordination	• Floor control • Session management • Location tracking	• Workflow management • CASE tools • Project management • Calendar scheduling

Analyzing disasters on social media: <u>Kate Starbird</u> at the GeekWire Summit

Academic HCI

HCI for Development (HCI4D) -

area concerned with understanding the use and appropriate design of information and communication technologies (ICTs) in the context of developing regions

The **first workshop** on user-centered design and international development at CHI 2007 - Dearden, Andy, et al. "User centered design and international development." *Extended Abstracts on Human Factors in Computing Systems*. ACM, 2007.

Ho, Melissa R., et al. "Human-computer interaction for development: The past, present, and future." *Information Technologies & International Development* 5.4 (2009)

Kumar, Neha, et al. "Development consortium: HCI across borders." Extended Abstracts on Human Factors in Computing Systems. ACM, 2016.