

## Tutorials

Tutorials are courses that offer extended interactions with expert instructors. The courses available at CHI 2000 represent the leading edge of current practice and research in human-computer interaction.

Tutorials cover emerging technologies and markets, along with usability methods and techniques. In-depth training in specialized areas is also provided. The tutorial program has been designed to provide diversity and depth, and to appeal to researchers and practitioners.

### Tutorial Schedule

Full-day	8:30 to 17:00
Evening	18:00 to 21:30

### Evening Tutorials

- 1 **Human-Computer Interaction: Introduction and Overview**
- 2 **System Design for the Older User**
- 30 **Speech User Interfaces for Mobile Devices**
- 31 **Usability Techniques for Web-Based Services: Diversity and Technology**

### Earn Continuing Education Units (CEUs)

SIGCHI has been approved as an Authorized CEU Sponsor by the International Association for Continuing Education and Training (IACET). This approval is a recognition of the outstanding professional training available through CHI tutorials. The CEU is a recognized unit of measure for continuing education and professional training programs. Each CEU requires the successful completion of 10 hours of instruction. Successful completion of a CHI tutorial requires that you attend the entire session and participate fully in the learning activities.

You can earn 0.6 CEUs for each full-day tutorial (6 hours of instruction), and 0.3 CEUs for each evening tutorial (3 hours of instruction).

To obtain CEU credit, you must register for CEUs at the same time you register for your tutorials. There is a small administrative charge. The IACET registry (ACE) will send you a letter confirming registration of your CEUs. In most cases, this letter is adequate proof that you have completed CEUs. In the rare case that it is not, ACE can issue an official transcript for a small fee. Please note that the conference does not issue certificates of completion. For further inquiries about obtaining CEU transcripts, call ACE at +1 202 939 9433.

### Recommended Groupings

#### Newcomers

- 1 Human-Computer Interaction (Saturday evening)
- 3 Cognitive Factors in Design (Sunday)
- 24 Understanding Users and Work in Context (Monday)

#### Designing For The Web

- 12 Styling the New Web (Sunday)
- 19 Web Sites that Work (Monday)
- 23 Design and Rapid Evaluation of Usable Web Sites (Monday)
- 25 Cultivating Convergence (Monday)
- 31 Usability Techniques for Web-Based Services (Monday evening)

#### Gathering Consumer Data/User Data

- 9 Using Customer Work Models to Drive Systems Design (Sunday)
- 13 Cross-Cultural User-Interface Design (Sunday)
- 14 Successful Strategies for Selling Usability into Organizations (Sunday)
- 24 Understanding Users and Work in Context (Monday)

#### Usability Engineering

- 6 Scenario-Based Usability Engineering (Sunday)
- 10 Test Design and Statistical Analysis for Usability Evaluation (Sunday)
- 21 Improving Your Skills in Usability Testing (Monday)
- 23 Design and Rapid Evaluation of Usable Web Sites (Monday)
- 31 Usability Techniques for Web-Based Services (Monday evening)

#### Design

- 5 Activity Theory (Sunday)
- 7 Card Games for Participatory Analysis and Design (Sunday)
- 8 Usage-Centered Design (Sunday)
- 11 Planning and Implementing User-Centered Design (Sunday)
- 16 Drawing on the Right Side of the Brain (Sunday or Monday)
- 17 Video Techniques for Participatory Design (Monday)
- 29 Visual Perception for Data Visualization (Monday)

#### Speech Interfaces

- 4 Designing Speech User Interfaces (Sunday)
- 30 Speech User Interfaces for Mobile Devices (Monday evening)

#### Future Interfaces

- 2 System Design for the Older User (Saturday evening)
- 4 Designing Speech User Interfaces (Sunday)
- 20 CSCW and Groupware (Monday)
- 22 Enabling Technology for Users with Special Needs (Monday)
- 27 Developing User Interfaces for Information Appliances (Monday)
- 30 Speech User Interfaces for Mobile Devices (Monday evening)

#### Emerging Markets

- 15 Designing Multimedia Presentations (Sunday)
- 26 Interface Design for Interactive TV (Monday)
- 28 Designing Usable Mobile Services (Monday)
- 30 Speech User Interfaces for Mobile Devices (Monday evening)

### Saturday, Evening

Keith A. Butler •

*Boeing Information and Support Services, USA*

Robert J.K. Jacob • *Tufts University, USA*

Jennifer Preece •

*University of Maryland Baltimore County, USA*

### Benefits

This is a tried-and-true introduction to HCI and a CHI conference tradition, an important course for newcomers to HCI.

### Origins

Given each year at CHI since CHI 92.

### Features

- What is HCI and why is it important
- Brief history of HCI
- Introduction to building usable systems
- Introduction to the psychology of HCI
- Introduction to computer technologies for HCI
- Future directions of HCI
- Where to learn more at CHI 2000
- Where to learn more in HCI literature

### Audience

Mainly first-time CHI attendees and, typically, professionals from computing-related fields who are new to HCI.

### Presentation

Primarily lecture style, plus some videos and/or demos.

### Instructors

Keith Butler is a senior principal scientist for user-centered design at Boeing Information and Support Services. Before joining Boeing, he was a member of the technical staff at Bell Labs. Rob Jacob is an Associate Professor of Electrical Engineering and Computer Science at Tufts University. He is a member of the editorial board of ACM *Transactions on Computer-Human Interaction* and ACM *Interactions* magazine and former Vice Chair of SIGCHI. Before joining Tufts, he was in the Human-Computer Interaction Lab at the Naval Research Laboratory. Jennifer Preece is Chair and Professor of Information Systems at the University of Maryland, Baltimore County. She was previously Professor of Information Systems and Human-Computer Interaction, and Director of the Center for People and Systems Interaction at South Bank University in London. She spent fifteen years at the British Open University where she led teams in the development of distance education courses.

## 2 System Design for the Older User

### Saturday, Evening

Wendy A. Rogers •

Georgia Institute of Technology, USA

Sara J. Czaja • University of Miami, USA

#### Benefits

You will learn how age-related perceptual, cognitive, and movement control differences influence use of technology. You will also learn how to improve age-related design and develop product design strategies; understand how training can overcome problems associated with technology usage; and apply basic information about age-related changes to design and training in a broad range of systems.

#### Origins

An outgrowth of previous CHI conferences: the 1998 workshop titled *Making Technology Accessible for Older Adults*, the 1999 Senior CHI Development Consortium, and the 1999 panel session, *How Can We Make Technology "Elder-Friendly?"*.

#### Features

- Identify the older user
- Learn what is known about older adults and computer systems
- Discuss training issues
- Discuss interface issues for hardware and software
- Learn methodology
- Participate in an interactive session: critique and redesign

#### Audience

Individuals in human-computer interaction interested in system design for the older user. The materials will be presented at the beginner level. No background on older adult users necessary.

#### Presentation

The tutorial will consist of lectures, exercises, and group discussion.

#### Instructors

Wendy Rogers is an associate professor at Georgia Institute of Technology. Her research focus is human factors issues of skill acquisition, training, and system design in the context of enabling older adults to interact with new technologies. Sara Czaja is a professor at the University of Miami. The focus of her research is aging and cognition, human-computer interaction, and care giving. She has published extensively in these areas.

## 3 Cognitive Factors in Design: Basic Phenomena in Human Memory and Problem Solving

### Sunday, Full-Day

Thomas T. Hewett • Drexel University, USA

#### Benefits

You will learn some theoretical underpinnings and practical aspects of how people remember and how they solve problems. You will also gain ideas about how to use that knowledge during product design and how to take advantage of some of the capabilities of your most important interface component: the human mind.

#### Origins

This "CHI Classic" has been a top-rated tutorial for five years.

#### Features

- Understand intuitively a variety of phenomena through, "minds-on" exposure
- Learn to avoid some common errors
- Develop a basis for making educated design choices when guidelines fail
- Relate cognitive phenomena to HCI
- Gain the resources needed for self-directed study in cognitive psychology
- Obtain a useful set of teaching materials for cognitive aspects of human-computer interaction

#### Audience

Interaction designers and developers, and anyone interested in human-computer interaction and interactive system design who has not done course work in cognitive psychology. This tutorial is not intended for the human factors specialist, for the individual with extensive training in psychology, or for the person seeking a state-of-the-art literature of the latest research in cognitive psychology.

#### Presentation

Interactive presentation and "minds-on" demonstrations.

#### Instructor

Tom Hewett is Professor of Psychology at Drexel University. He has offered variants of this tutorial to hundreds of interface designers. He is a published courseware author, has worked on the development and evaluation of several projects, and is currently working with a group of computer scientists who developing a Scientific Problem Solving Environment which integrates symbolic and numeric computing. He is also part of a team of six researchers developing a project in networked engineering design.

## 4 Designing Speech User Interfaces

### Sunday, Full-Day

Jennifer Lai •

IBM T.J. Watson Research Center, USA

#### Benefits

You will learn how to design an effective speech interface by understanding the challenges and benefits of using speech technology. You will also learn strategies for designing effective prompts, methods for handling user and system errors, as well as techniques for providing user feedback.

#### Origins

An updated version of a highly regarded CHI 99 and CHI 98 tutorial.

#### Features

- An introduction to the basic concepts of speech input (recognition) and output (synthesis)
- Examples of speech products and application areas
- Design issues that affect both multi-modal and speech-only systems including techniques for providing user feedback, strategies for designing effective prompts, methods for handling user and system errors
- User studies that are appropriate at different stages of a speech application's life cycle

#### Audience

Intended for user interface designers and application developers who are interested in understanding the issues involved in designing effective speech interfaces. No prior knowledge of speech input or output is assumed.

#### Presentation

This tutorial uses a combination of lecture and small group exercises. Examples of existing products and research prototypes, both live demonstrations and recorded audio and video, are used to illustrate system features and design techniques.

#### Instructor

Jennifer Lai is a Speech Interface designer at IBM Research. She has published papers on the use of speech in multi-modal systems and the development of statistical language models, and holds three patents in natural language translation.

## 5

Activity Theory:  
Basic Concepts and  
Applications**Sunday, Full-Day**

Victor Kaptelinin •  
Umeå University, Sweden

Bonnie A. Nardi •  
AT&T Labs-Research, USA

**Benefits**

You will learn basic concepts and principles of activity theory and will acquire practical skills for applying these concepts to the analysis of problems of human-computer interaction. Tutorial participants will gain a vocabulary for talking about issues of human-computer interaction and a conceptual structure for approaching field studies, evaluation work, and design.

**Origins**

Successfully given several times, including CHI 97 and CSCW 98. Materials updated.

**Features**

- Five basic principles of activity theory
- Where activity theory is situated with respect to other theories such as those of cognitive science, distributed cognition, situated action, actor-network theory as well as approaches such as task analysis and scenario-based design
- How to apply activity theory to real world problems of design and evaluation
- How to select an appropriate methodology for the problem to be studied

**Audience**

Researchers, designers, engineers, or managers who want to understand how computers are used in the context of real activity.

**Presentation**

Lecture, group discussion, and group exercise. HCI-based examples used throughout.

**Instructors**

Victor Kaptelinin is a Senior Researcher at the Department of Informatics, Umeå University, Sweden. He received his Ph.D. in psychology from Moscow State University and has held several research and teaching positions. His current research is on contextual factors of human-computer interaction and skill automatization in computer use. Bonnie A. Nardi is an anthropologist at AT&T Labs-Research and is currently working on social networks in the workplace. She is the editor of *Context and Consciousness: Activity, Theory and Human-Computer Interaction*; the author of *A Small Matter of Programming: Perspectives on End User Computing*; and co-author of *Information Ecologies: Using Technology with Heart*.

## 6

Scenario-Based  
Usability Engineering**Sunday, Full-Day**

John M. Carroll •  
Virginia Polytechnic Institute, USA

Mary Beth Rosson •  
Virginia Polytechnic Institute, USA

**Benefits**

You will learn about the interdisciplinary history and foundations of scenario-based design. You will learn an iterative, scenario-based development methodology.

**Origins**

This tutorial is new for CHI 2000.

**Features**

- General analysis of why and how scenarios are effective design tools
- Example project walk-through
- Interactive exercises

**Audience**

This tutorial is especially appropriate for software developers, user interface designers, usability engineers, and project managers seeking a broad, methods-oriented introduction to scenario-based design. It is also appropriate for those who are already experienced with scenario-based methods, and interested in an integrative methodology.

**Presentation**

Brief lecture segments followed by project walkthroughs and interactive exercises.

**Instructors**

John M. Carroll is Director of the Center for Human-Computer Interaction at Virginia Tech. His recent books include *Scenario-Based Design: Envisioning Work and Technology in System Design* (John Wiley, 1995), *Design Rationale: Concepts, Techniques and Use* (with Tom Moran; Erlbaum, 1996), and *Making Use: Scenario-Based Design of Human-Computer Interactions* (MIT Press, 2000)

Mary Beth Rosson is an Associate Professor of Computer Science at Virginia Polytechnic Institute. She is author of *Instructor's Guide to Object-Oriented Analysis and Design with Applications*, along with numerous articles, book chapters, and tutorials. She is General Chair of OOPSLA 2000.

## 7

Card Games for  
Participatory Analysis  
and Design: Variations**Sunday, Full-Day**

Michael J. Muller •  
Lotus Development Corporation, USA

Daniel Lafrenière •  
GESPRO Technologies, Canada

Tom Dayton • Sun Microsystems, USA

**Benefits**

You will learn three proven card-based techniques for participatory analysis and design: CARD, CUTA and TOD. Benefits are both tangible (improved task analyses, high-level designs, object-oriented designs) and intangible (enhanced collaboration and shared vision, analysis, and design). This dynamic and action-oriented tutorial provides hands-on experience.

**Origins**

This tutorial was taught at CHI 99 and UPA 98.

**Features**

- Learn how to conduct participatory sessions facilitating collaborative problem-solving with diverse teams
- Develop hands-on competence with three techniques
- Learn how to adapt the practices to meet one's own needs
- Understand the diversity of participatory practices

**Audience**

Intermediate level, for people with some experience in usability work or software lifecycles.

**Presentation**

Exercises (three hours of practical work), participatory discussions, and lectures.

**Instructors**

Michael Muller is an internationally-recognized expert in participatory design, currently a research scientist at Lotus Development Corporation (USA).

Daniel Lafrenière is a usability consultant at GESPRO Technologies (Canada), with extensive contract work in software systems, and a book on HCI.

Tom Dayton has invented participatory methods, and is a Senior Usability Engineer in Sun Microsystems (USA).

## 8

## Usage-Centered Design: Practical Abstract Modeling with Use Cases

**Sunday, Full-Day**

Larry Constantine •  
*University of Technology, Australia*  
Lucy Lockwood •  
*Constantine & Lockwood, USA*

**Benefits**

You will learn advantages of abstract models for UI design, especially performance support and task-centered applications, task modeling with essential use cases and user roles, and abstract prototyping. You will also gain experience applying abstract models systematically.

**Origins**

Newly revised; earlier tutorials include OZCHI 98 and TorCHI.

**Features**

- Model driven process overview
- Understanding user-system relationships with user roles
- Advantages of essential use cases over concrete use cases and scenarios
- Constructing and simplifying use cases
- Prototyping with abstract content and navigation models
- Designing from abstract models

**Audience**

Professionals with direct responsibility in usability and UI design, including designers, usability specialists, and developers, as well as managers, academics, and researchers. Assumes basic knowledge/experience in usability and UI design.

**Presentation**

Multimedia, demonstrations, individual and small group exercises.

**Instructors**

Larry Constantine is a Professor of Computing Sciences at the University of Technology, Sydney, and a software engineering pioneer. He is also the author of several books and articles, chair of the Software Development Conference, and an editorial advisor to IEEE Software, CACM, and others. Lucy Lockwood, President of Constantine & Lockwood, has 15 years design and development experience. She is the UI track chair for the Software Development Conference, and is on advisory boards of Performance Support and other conferences.

## 9

## Contextual Design: Using Customer Work Models to Drive Systems Design

**Sunday, Full-Day**

Hugh Beyer • *InContext Enterprises, USA*  
Karen Holtzblatt •  
*InContext Enterprises, USA*

**Benefits**

You will learn the latest methods for representing detailed information about work practice and using these representations to drive the design of products and systems. The customer work models presented synthesize a wealth of details into a structured, comprehensible representation which reveals the structure and strategies of work and supports the design of systems.

**Origins**

This has been a popular tutorial at CHI for the last five years.

**Features**

- Learn work modeling techniques
- Learn how to construct one set of models to represent a system's users
- Learn how to drive design conversations from work models

**Audience**

Anyone interested in customer-centered design, requirements analysis, or tailoring products and systems to people's work. Most valuable to those with prior experience with customer field interviews, and for those who have taken the Contextual Inquiry tutorial.

**Presentation**

A combination of lecture, video, and group exercises.

**Instructors**

Karen Holtzblatt and Hugh Beyer are the developers of Contextual Design, a customer-centered design process extending the Contextual Inquiry data gathering technique. Dr. Holtzblatt originated the Contextual Inquiry approach to field data collection and has pioneered the introduction of this technique into working engineering teams. Hugh Beyer has been a programmer, architect, and consultant; has designed and developed object-oriented repositories and integrated CASE systems; and has developed processes for using customer data to drive object-oriented design. Holtzblatt and Beyer are co-founders of InContext Enterprises Inc., a firm which works with companies throughout the computer industry, coaching teams to design products, product strategies, and information systems from customer data.

## 10

## Test Design and Statistical Analysis for Usability Evaluation

**Sunday, Full-Day**

Andrew Dillon • *Indiana University, USA*  
Cliff McKnight •  
*Loughborough University, UK*

**Benefits**

You will learn how to plan and identify reliable and valid statistical tests of user interfaces. You will get hands-on experience with data analysis, learn to plan usability evaluations and to analyze and interpret the resulting data.

**Origins**

This tutorial is new for CHI 2000.

**Features**

- How to design experiments to get maximum information
- How to analyze data in a statistically appropriate manner
- How to interpret results of analysis
- How to critique usability tests and user data analyses

**Audience**

Everyone who must gather and analyze usability data but who has no formal training in experimental design or statistical analysis.

**Presentation**

Brief lecture segments, discussion sessions, small team exercises and individual exercises.

**Instructors**

Andrew Dillon is an Associate Professor of Information Science at Indiana University. He received his Ph.D. in 1991 from Loughborough University; has published over 70 articles and four books on various aspects of HCI; and has consulted widely in the software industry. He serves on the editorial board of the *International Journal of Human-Computer Studies* and the *New Review of Hypermedia and Multimedia*. Cliff McKnight is Professor of Information Studies and Head of the Department of Information Science at Loughborough University. He received his Ph.D. in 1976 and has worked in a wide variety of industrial and academic settings. He is Editor in Chief of the *Journal of Digital Information* and is on the editorial board of several other journals. He is an associate fellow of the BPS, a fellow of the BCS, and a member of ACM SIGWEB.

## 11

## Planning and Implementing User-Centered Design

### Sunday, Full-Day

Nigel Bevan • *Serco Usability Services, UK*

#### Benefits

You will learn a structured approach to user-centered design based on the principles of the forthcoming International Standard, "Human Centered Design Processes for Interactive Systems" (ISO 13407), and other associated standards.

#### Origins

An improved version of a tutorial given at CHI 98 and CHI 99.

#### Features

- Receive an introduction to user-centered design
- Learn how ISO 13407 can be used in conjunction with other standards
- Gain practical experience of core techniques to support user-centered design
- Learn how to assure usability
- Learn how to select appropriate methods within a limited budget
- Receive a copy of the handbook of user centered design

#### Audience

This introductory tutorial is intended for Project Managers and Business Managers who wish to improve the usability of their systems, IT Procurers who wish to ensure their suppliers have a human-centered design process in place, and Human Factors Consultants interested in the practical application of appropriate methods. Some knowledge of usability is an advantage, but the tutorial is not aimed at experienced usability professionals or researchers.

#### Presentation

Lecture and small group exercises.

#### Instructor

Nigel Bevan is Research Manager of Serco Usability Services. He has a Ph.D. in man-machine interaction. He managed the EC INUSE project which established a network of Usability Support Centers around Europe. Nigel currently provides commercial consultancy in user centered design, and manages the TRUMP project that is incorporating user centered design into the development processes of two large organizations. He contributed to the development of ISO 13407, and is editor of several other standards.

## 12

## Styling the New Web: Web Usability with Style Sheets

### Sunday, Full-Day

Steven Pemberton, *CWI, The Netherlands*

#### Benefits

You will learn how to use Cascading Style Sheets (CSS) to style the presentation of pages using HTML, XHTML (the new HTML) and XML, and how this helps usability. Emphasis is on the structuring of documents, and why using CSS is essential for usability, including accessibility for the elderly and sight impaired, device independence, reduced download times, and increased user preferences.

#### Origins

The tutorial is based on tutorials given several times, and has been updated for developing material within W3C.

#### Features

All of CSS1, the level currently best implemented, is handled, as well as much of CSS2, and how to find out more. Details of what to expect in CSS3 will be given.

#### Audience

The tutorial is for people who want to learn about new developments in Web technology, and how to apply them. They should have a working knowledge of how to write HTML.

#### Presentation

The tutorial will be given in alternating sessions of 45 minutes lecture, 45 minutes hands-on experience.

#### The Instructor

Steven Pemberton is a researcher at the CWI, Amsterdam, currently involved in research on usability of web-based services. He has been involved with the Web from the start, organizing two workshops at the first WWW conference in 1994, and chairing the first Style Sheets Workshop in 1995. He is a member of the CSS working group, and chair of the HTML working group. He has given tutorials on CSS and XHTML several times before. He is editor-in-chief of *ACM/interactions*.

## 13

## Cross-Cultural User-Interface Design: Accommodating Cultural Preferences, Acceptance, and Constraints

### Sunday, Full-Day

Aaron Marcus •

*Aaron Marcus and Associates, USA*

Emilie West Gould, •

*Rensselaer Polytechnic Institute, USA*

Donald L. Day • *Towson University, USA*

Pia Honold • *Siemens AG, Germany*

#### Benefits

- You will learn terminology, principles, and guidelines
- Gain practical experience through group exercises
- Improve ability to make user-interfaces more acceptable/preferable
- Discover research issues

#### Origins

CHI SIGs and panels from 1990-1999.

#### Features

- Introduction to cultural models for analysis of user interfaces
- Group design/evaluation exercises

#### Audience

Basic knowledge of user-interface design required. Valuable for user-interface and information-visualization designers, software developers, human factors specialists, cognitive scientists, technical documentation specialists, teachers, and researchers.

#### Presentation

Illustrated lectures and group pen-paper exercises with role-playing, and group discussion/evaluation.

#### Instructors

Aaron Marcus has been a Tutorial presenter at CHI and SIGGRAPH. He is the author/co-author of four books, including *Graphic Design for Electronic Documents and User Interfaces*. He has authored/co-authored 100 articles and has led international communication projects. Emilie W. Gould is an human factors engineer and communication researcher, and is a faculty member of Rensselaer Polytechnic Institute's Sino-US MBA program. Donald Day is a guest editor of *Interacting with Computers* and co-editor of *Computers, Communication & Mental Models*. Pia Honold is currently researching cultural diversity for her Ph.D. thesis and has presented the findings at IWIPS 99, HCII 99.

14

## Successful Strategies for Selling Usability into Organizations

### Sunday, Full-Day

Sarah Bloomer • *The Hiser Group, Australia*  
Rachel Carey • *Serco Usability Services, UK*

#### Benefits

You will learn techniques for building a case for usability. Selling usability into organizations involves convincing a range of stakeholders from upper management to end users, each with different agendas. Efforts to incorporate usability must consider people, processes and tools across an organization, and analyze the needs, objectives and culture of the business. Each topic is illustrated with real world case studies, and participants practice techniques on a mock organization.

#### Origins

Successful Strategies was presented at CHI 97, CHI 98, CHI 99, Interact 97, BayCHI, UI 98 and UI 99 West.

#### Features

Participants will learn:

- To understand where usability can make a difference to your organization
- To present those opportunities in terms understood by different audiences
- How to identify barriers and opportunities that can hinder or support usability initiatives intended

#### Audience

Experienced usability professionals, user interface designers, developers and management who are working to improve the acceptance of usability activities within their organizations.

#### Presentation

Brief presentation, hands-on exercises, and group discussion.

#### Instructors

Sarah Bloomer is director of The Hiser Group with over 10 years consulting experience. Relocating to Australia after 5 years at Citicorp, Sarah established The Hiser Group, consulting in user interface design, usability and strategy development. Sarah presented this tutorial at CHI 97. Rachel Carey is Manager of Serco Usability Services, and consults on a wide range of user interface design projects. Before joining Serco Usability Services, Rachel was a Senior Consultant at The Hiser Group. Rachel has seven years experience in human factors. She presented this tutorial at CHI 97.

15

## Designing Multimedia Presentations

### Sunday, Full-Day

Alistair Sutcliffe • *UMIST, UK*

#### Benefits

You will learn design principles and guidelines for multimedia user interface design with the cognitive psychology that motivates them, and how to apply a soundly based design method that addresses user requirements, mapping media to information content, integrating multimedia for effective understanding, dialogue design and scripting.

#### Origins

This new tutorial for CHI 2000 is based on 7 years research published in CHI and the forthcoming ISO 14915 (part 3) standard.

#### Features

- Basic psychology to understand multimedia interaction
- Design method covering user requirements and information content, media selection, combination and integration, navigation and dialogue control
- Design principles based on psychology
- Guidelines for media integration, directing users' attention and navigation control

#### Audience

Everyone who is involved in design of multimedia systems including CDROM authors, Web site, VR and UI designers; HCI researchers and educators and anyone interested in effective use of ISO 14915 standard, part 3: Media Selection and Combination. Suitable for beginners and seasoned designers.

#### Presentation

Lectures interleaved with case study exercises and critique of design examples using video, CDROM, and the Web.

#### Instructor

Alistair Sutcliffe is Professor of Systems Engineering in the Department of Computation, UMIST. He has more than 15 years research experience in HCI; has authored more than 150 publications; is chair of IFIP TC-13 Working Group 13.2 'Methodology for User Centered Design'; is a member of the IEEE, ACM and BCS; serves on the editorial board of *IJHCS*; and is editor of ISO Standard 14915, on Multimedia User Interface Design, part 3 (Media Combination).

16  
17

## Drawing on the Right Side of the Brain

### (16) Sunday, Full-Day

### (17) (Repeated) Monday, Full-Day

Brian Bomeiseler •  
*Drawing on the Right Side of the Brain, LLC, USA*

#### Benefits

Drawing on the Right Side of the Brain is one of the most effective teaching methods for drawing ever developed. In this tutorial, you will learn the underlying theory behind the method. The bulk of the session will involve practical hands-on exercises, which demonstrate the participants' ability to learn to draw, and to learn to "see things more clearly."

You will learn basic strategies for accessing the visual, perceptual mode of thinking. This type of thinking is learned through the acquisition of very basic drawing skills and the acquisition of an understanding of the nature of drawing.

#### Origins

This top-rated tutorial from CHI 97, CHI 98, and CHI 99 is a one-day version of Betty Edwards' renowned drawing course.

#### Features

- An understanding of the nature of drawing
- Basic drawing skills

#### Audience

Intended for a wide audience. No previous drawing experience required. In fact, it is designed for people who believe they cannot draw.

#### Presentation

Lecture with hands-on drawing exercises.

#### Instructor

Brian Bomeiseler is an exhibiting New York painter and instructor of drawing. He holds a bachelor's degree in fine art from the Pratt Institute of New York. His work appears in the permanent collection of the San Diego Museum of Contemporary Art and in corporate and private collections worldwide. He has taught with Betty Edwards for over 10 years.

## 18

## Video Techniques for Participatory Design: Observation, Brainstorming and Prototyping

### Monday, Full-Day

Wendy E. Mackay •  
University of Aarhus, Denmark

#### Benefits

Video is a flexible tool for supporting participatory design. You will learn how to use video to observe users, analyze multimedia data, capture brainstorming sessions, simulate and test interaction styles, prototype new designs, and present design ideas, gaining hands-on experience using video equipment and addressing ethical issues.

#### Origins

This is a repeat of a highly-rated tutorial from CHI 99. Variations of this course have been taught to university and post-graduate students, as well as to practicing HCI developers in industry. The techniques are derived from the authors' experiences in multimedia research and product development.

#### Features

- General participatory design techniques
- Technical aspects of video
- Video observation of users
- Video data analysis
- Video brainstorming
- Video prototyping
- Video presentations
- Ethics of using video

#### Audience

HCI designers in industry and researchers interested using video to support participatory design. Basic knowledge of video is useful, but not essential.

#### Presentation

Lecture, video, demonstrations, hands-on video exercises, and student presentations.

#### Instructor

Wendy Mackay received her Ph.D. from MIT and has worked as a designer and manager responsible for over 30 multimedia products and the industry's first interactive video computer system (IVIS). She has managed multimedia research and development groups at Digital, MIT and Xerox EuroPARC. She was a Professor at University de Paris-Sud and is currently a Visiting Professor at the University of Aarhus, in Denmark.

## 19

## Web Sites that Work: Designing with Your Eyes Open

### Monday, Full-Day

Jared M. Spool, Tara Scanlon,  
Will Schroeder, Matthew Klee,  
Paul Sawyer, and Lori Landisman •  
User Interface Engineering, USA

#### Benefits

You will learn about design factors that affect users' success in finding information on a web site. Includes unpublished results of recent research.

#### Origins

This course was presented at CHI 98 and CHI 99 and has been updated for CHI 2000.

#### Features

- Importance of links, and design factors that contribute to their success
- Why traditional ideas about branding aren't effective on the web
- Where users actually look on web pages and how uniform page designs may discourage users from looking at what you want them to see
- Why matching your site's goals to your users' goals will let you market to users at their "seducible moments"
- Page layout factors that make a difference

#### Audience

Anyone who has experience designing a web site or creating content for one.

#### Presentation

Lively lecture/discussion, numerous examples including screen shots, and live demonstrations.

#### Instructors

Jared M. Spool is Founding Principal of User Interface Engineering. He has more than 16 years of experience conducting usability evaluations on a variety of products and web sites. Tara Scanlon, Will Schroeder, Matthew Klee, Paul Sawyer, and Lori Landisman are Jared's usability cohorts. Collectively, they've spent almost a century working to make products more usable. At User Interface Engineering, they conduct a variety of research, including usability testing and field studies, to help clients design more usable and effective products and web sites. The folks at User Interface Engineering wrote the book *Web Site Usability: A Designer's Guide* and the new report series *Designing Information-Rich Web Sites*.

## 20

## CSCW and Groupware: Experiences, State of Art, Future Trends

### Monday, Full-Day

Jonathan Grudin • Microsoft Research, USA  
Steven Poltrock •  
The Boeing Company, USA

#### Benefits

You will learn about groupware technologies being used, problems people encounter, and successes with groupware that have been attained. You will learn how different disciplines contribute to collaborative systems and how these technologies affect individuals, groups, organizations, and society.

#### Origins

This is an update of a tutorial presented at many CHI and CSCW conferences.

#### Features

- Discover the multi-disciplinary nature of CSCW
- Discuss experiences with technologies that support communication, collaboration, and coordination
- Understand behavioral, social, and organizational challenges to developing and using these technologies
- Learn successful development and usage approaches
- Anticipate future trends in groupware and global social impacts

#### Audience

This introductory tutorial is for actual and potential users, developers, researchers, marketers, or managers of CSCW or groupware systems. Broad experience with collaborative technologies is not expected.

#### Presentation

Lecture, video, and group discussions.

#### Instructors

Jonathan Grudin and Steven Poltrock, co-chairs of CSCW 98, began collaborating in 1986. Jonathan Grudin, Editor in Chief of *ACM Transactions on CHI*, has worked as developer and researcher in this area. Steven Poltrock introduces, evaluates, and deploys groupware systems to support teamwork, knowledge management, and workflow management. They have co-authored several overviews of CSCW and groupware.

## 21 Improving Your Skills in Usability Testing

### Monday, Full-Day

Rolf Molich • *DialogDesign, Denmark*

Erika Kindlund • *Intraspect Software, USA*

#### Benefits

You will compare your own approach to usability testing with those used by eleven professional labs during controlled usability tests in realistic, industrial settings. This tutorial gives a rare insight in the practical doings of usability professionals.

#### Origins

This tutorial is new for CHI 2000.

#### Features

- Gather insight from (good and bad) examples of usability work done by other professional labs
- Improve your abilities in usability test planning, scenario design, and usability reporting
- Improve your abilities in identifying usability problems
- Learn about effective usability problem communication

#### Audience

Practitioners with experience in running usability tests under industrial conditions. The tutorial is also relevant for teachers of usability methods. While not aimed at novices, novices can get a good look at a number of realistic problems and suggested solutions in practical usability testing.

#### Presentation

Lecture segments interspersed with group exercises and discussions.

#### Instructors

Rolf Molich owns and manages DialogDesign, a small Danish consultancy company specializing in usability. He has recently supervised a number of large-scale comparative usability tests of commercial Web sites in order to determine common strengths and pitfalls in design and usability test processes. Erika Kindlund is the lead User Interface Designer at Intraspect Software, a Silicon Valley start-up developing Collaborative Enterprise Portal solutions for the Web. She was a usability engineer for Sun Microsystems, conducting usability studies on emerging web technologies.

## 22 Enabling Technology for Users with Special Needs

### Monday, Full-Day

Alistair Edwards • *University of York, UK*

Elizabeth Mynatt •

*Georgia Institute of Technology, USA*

#### Benefits

You will learn how the fields of HCI and assistive technology can work together to design technology to enable all users.

#### Origins

Earlier tutorial at INTERCHI 93, CHI 94 and CHI 95.

#### Features

- Discuss how we are all disabled and how interfaces should be designed for all users.
- Survey five major types of impairments (mobility, vision, speech, hearing, and cognitive) and technology that addresses these impairments
- Discuss US and European legislation
- Focus on technology for elderly individuals
- Obtain design guidelines
- Solve a group design problem

#### Audience

User interface designers, developers, managers, and researchers. No specific background is needed to benefit from this tutorial.

#### Presentation

Lecture format augmented with 35mm slides, videotape footage, and live demonstrations of enabling technology. Group design exercises.

#### Instructors

Alistair Edwards is a lecturer in the Department of Computer Science at the University of York, England. He researches the use of multiple modalities of interaction to make computers accessible to people with disabilities. He is the author of *Speech Synthesis: Technology for Disabled People* and editor of, *Extra-Ordinary Human-Computer Interaction*. Elizabeth Mynatt is an Assistant Professor in the College of Computing at the Georgia Institute of Technology. She developed the Mercator Environment that provides access to GUIs for people who are blind. She worked for three years at Xerox PARC on ubiquitous computing and most recently, she started the "Aging in Place" project focusing on helping elderly individuals live in their own homes longer.

## 23 Design and Rapid Evaluation of Usable Web Sites

### Monday, Full-Day

Gene Lynch •

*Design Technologies, Inc., USA*

#### Benefits

You will learn a scenario-design process for creating usable web sites and a quick and effective web site usability evaluation method.

#### Origins

New to CHI, an early version was given in 1998. It was one of the UPA 99 tutorials.

#### Features

- Key factors in web site usability
- Personas and tasks in scenario-based design of web sites
- Critiques of web sites with 4 simple graphic design rules
- Frameworks for expert heuristic usability reviews and reports
- Team usability walk-throughs to identify, clarify, and prioritize web site issues

#### Audience

Some experience in either usability work or web site design, management, or development is recommended.

#### Presentation

Illustrated presentations, group discussions, and individual and group exercises.

#### Instructor

Gene Lynch has 12 years of consulting on usability and product design and 15 years industry experience in product development and in leading the research, development, and implementation of a customer-centered design process for interactive products. Prior to the founding of Design Technologies, Dr. Lynch directed Tektronix Design Technology Laboratory, where he was responsible for Corporate Customer-Centered Research & Design, Software Tools, Software Process Improvement Program, and Corporate Industrial Design. Dr. Lynch holds patents in graphical input devices and video information control.

He chaired the ANSI/HFS 100 Committee, Co-Chaired CHI 90, and has been a frequent technical contributor to CHI. He was a technical Co-Chair for CHI 92, and was ACM/SIGCHI's Vice-Chair for Conferences from 1993-1998. Gene holds a Ph.D. in Engineering from the University of Notre Dame.

## 24

## Understanding Users and Work in Context: Practical Observation Skills

### Monday, Full-Day

Susan M. Dray •  
Dray & Associates, USA

#### Benefits

You will learn how to plan for and carry out observations of users. Heavy emphasis is on practical steps for the designer that will lead to success. You will practice two types of observations (Naturalistic Observation and Contextual Inquiry).

#### Origins

This is an update of a highly rated tutorial from CHI 96, CHI 97, CHI 98 and CHI 99, including additional exercises and revised materials.

#### Features

- Learn about Structured Observation techniques and how to use them
- Learn three types of techniques:
  - Naturalistic Observation
  - Contextual Inquiry
  - Artifact Walk-throughs
- Practice doing Naturalistic Observation and Contextual Inquiry
- Identify next steps for data analysis and use in design
- Learn when and how to apply these tools to customer-centered design

#### Audience

This hands-on session will focus on practical solutions and skills and will provide tools for participants to use with their own work. It is aimed at practitioners who want to understand how users work in order to do a better job of system design. This is an introductory tutorial, but will also be useful for those with some experience observing users.

#### Presentation

Lecture, group discussion, and small group hands-on exercises.

#### Instructor

Susan M. Dray has a Ph.D. in Psychology and has worked as researcher, manager and consultant in the design of technology at Honeywell, American Express and, for the past seven years, as an independent consultant. She has published numerous articles on this and other relevant topics. She is a Fellow of the Human Factors and Ergonomics Society (HFES), and has been active in CHI since CHI 85. She is the Business column editor of *Interactions*.

## 25

## Cultivating Convergence: Cross-Product UI Design for Applications and Web Sites

### Monday, Full-Day

Kevin Mullet • *Icarian, USA*  
Erric Solomon • *Synopsis, USA*

#### Benefits

You will learn the characteristics of effective software systems that form the basis for successful cross-product UI design. We illustrate proven techniques that you can use to design and build effective software systems within your own development team. By the end of the day, you will be able to produce a personal Convergence Plan for advancing the cause of cross-product UI design in your organization.

#### Origins

This tutorial is new for CHI 2000.

#### Features

- How to recognize an effective software system
- How to develop systematic conceptual, presentation, and interaction designs
- How to organize the design and development teams for maximum effectiveness
- How to achieve convergence in the real world

#### Audience

This is an intermediate-level tutorial in which we assume you've had at least some exposure to "real world" software development environments. It is appropriate for anyone involved in the design, development, or management of cross-product software systems or (in particular) the individual applications or web pages being created within those systems.

#### Presentation

A lecture featuring real-world examples, and participatory work including extended group discussions and hands-on exercises that give you a chance to put theory into practice.

#### Instructors

Kevin Mullet is User Interface Architect at Icarian, designing a system of interlocking web-based applications for workforce management in high tech companies. He has been designing convergent software systems for the past ten years at companies like Sun, Macromedia, and Netscape. Erric Solomon is Director of the Interactive Visualization Group at Synopsis Inc. The mission of the group, which he founded, is to provide and promote improved user interfaces, enhanced visualization, and common look and feel across the Synopsis product line.

## 26

## Interface Design for Interactive TV: New Possibilities, Techniques, and Metrics

### Monday, Full-Day

Eric Gould • *MONKEYmedia, USA*  
Nick West • *MONKEYmedia, USA*

#### Benefits

- You will explore new design possibilities for interactive broadband – both streaming video on the web and interactive television
- Learn how designing interactive video is qualitatively different than designing static screens.
- See why applying old metrics of success may lead to poor results.
- Understand new design options for interactive TV

#### Origins

This tutorial is new for CHI 2000.

#### Audience

The tutorial will interest a wide spectrum of CHI attendees: designers currently considering work in interactive broadband; teachers and project managers; and general designers.

#### Features

- Evaluating user experience for interactive TV
- How current interactive TV standards affect UI design
- New interface controls for interactive TV
- Specific new design techniques

#### Presentation

Brief lectures, small group exercises in specific design techniques, and two large group brainstorm to explore new design territory.

#### Instructors

Eric Gould, MONKEYmedia's CEO, has designed award-winning human-computer interfaces since 1984, published numerous articles on the subject, and has been granted U.S. patents for cutting-edge techniques. *Communication Arts* recently described Gould as "one of the most thoughtful and provocative interface and interaction designers working in the field." Nick West, MONKEYmedia's Advanced Technology Director, has spent over ten years researching new media at Apple, Paramount, New York University, and the Museu Nacional in Rio de Janeiro. *HotWired* dubbed him "the man behind the curtain in the multimedia industry for the past decade."

## 27 Developing User Interfaces For Information Appliances

### Monday, Full-Day

Raghu Kolli •  
Meru Research b.v., The Netherlands

Arnold Vermeeren •  
Delft University of Technology,  
The Netherlands

Gert Pasma •  
Delft University of Technology,  
The Netherlands

### Benefits

You will:

- Understand issues applicable to the domain of information appliances
- Prepare a development process model covering all phases of the project
- Select techniques for concept design, evaluation and prototyping tasks

### Origins

The tutorial was developed from courses taught at Delft University of Technology. See [www.maypole.org](http://www.maypole.org) for details.

### Features

- Multi-disciplinary collaborative process covering start-up, context scenarios, application concept, prototyping, and trial phases
- Practical techniques for understanding context, exploring ideas, designing concepts, prototyping, and communication
- Examples of innovative information appliances
- Intelligent communicators, home care systems, interactive toys, smart card devices, and more

### Audience

HCI practitioners, product managers, multi-disciplinary team members, educators, and students. No previous experience necessary.

### Presentation

Four illustrative lectures and three hands-on exercises in small groups designing a restaurant system. Display and presentation at the end of each exercise.

### Instructors

Raghu Kolli is Director of Meru Research, a company specializing in user interface development for information appliances and software products. Arnold Vermeeren is an Assistant Professor at Delft University of Technology and has been teaching interaction design and human factors in product design for 12 years. Gert Pasma is an Assistant Professor at the Delft University of Technology, teaching interactive techniques to industrial design students.

## 28 Designing Usable Mobile Services

### Monday, Full-Day

Anne Kaikkonen •  
Nokia Research Center, Finland

David Williams •  
Motorola UK Research Center, UK

### Benefits

You will learn about the characteristics of the mobile environment. You will get hands-on experience of how to design and evaluate the services for mobile phones. Moreover, you will acquire understanding on how the usability process and tools can be used in mobile service development to make easy-to-use mobile services.

### Origins

This tutorial is new for CHI 2000.

### Features

- How mobile service usage differs from using the same service built for web
- How to select the right features for mobile service
- Eight steps of developing easy to use services for mobile use
- How to evaluate the mobile services

### Audience

Anybody interested in mobile devices and mobile service development, including usability specialists, user interface designers, engineers, and marketing oriented people. Appropriate for beginners and experienced usability professionals interested in mobile service development.

### Presentation

Introductory lecture about the characteristics of mobile phones and how they are used. Brief segments of lectures and group works.

### Instructor

Anne Kaikkonen has been the human factors specialist at Nokia Research Center since autumn 1998. She acquired a M.Sc. in Psychology from Helsinki University in 1994. Before Nokia she worked as Usability Specialist at ICL Personal Systems and Fujitsu Computers from 1994 to 1998. During 1990 to 1993 she worked at the University of Helsinki in research projects concerning traffic psychology and social psychology. David Williams is the lead human device interaction researcher in Application Research in Motorola Research Center in the UK.

## 29 Visual Perception for Data Visualization

### Monday, Full-Day

Colin Ware •  
University of New Brunswick, Canada

Ed Chi • Xerox PARC, USA

Rich Gossweiler • Xerox PARC, USA

### Benefits

You will learn to make data visualizations more effective, through an understanding of human perception. Appreciate what makes icons or data glyphs more visible, and how information should be organized for patterns to be perceived.

### Origins

Based on a tutorial given by Colin Ware to Bay CHI and parts of SIGGRAPH tutorials given by Rich Gossweiler.

### Features

- Pre-attentive processing theory and how it can be applied to grab attention
- Effective use of color in classifying data
- Making patterns in data easier to perceive
- Object perception and the object display
- Use and misuse of 3D viewing
- Visualization for problem solving

### Audience

Anyone who is interested in understanding human perception and applications in data visualization. It should be of special interest to people designing data visualization applications or engaged in visualization research.

### Presentation

Lectures, demonstrations, and hands-on exercises.

### Instructor

Colin Ware is Professor and Director of the Data Visualization Research Lab at the University of New Hampshire. His book *Information Visualization: Perception for Design* was recently published. Ed Chi has a Ph.D. in Computer Science from the University of Virginia, and is currently doing visualization research at Xerox PARC. He has won awards for both teaching and research. Rich Gossweiler also received his Ph.D. from the University of Virginia where he developed DIVER, a distributed virtual reality system. He is currently working as a Research Scientist at PARC on interactive 3D graphics user interfaces and visualization.

## 30

## Speech User Interfaces for Mobile Devices

**Monday, Evening**

Elisa del Galdo •

Cambridge Technology Partners, UK

Tony Rose • Canon Research Centre, UK

**Benefits**

You will gain a basic understanding of speech recognition technology and the ways in which speech may be used to enhance user interfaces. In addition, participants will be given the opportunity to apply this knowledge to existing mobile devices in a practical exercise.

**Origins**

This tutorial was presented at CHI 99. A similar tutorial was given by the authors at HCI'98 in Sheffield and at Interact'99 in Edinburgh.

**Features**

- An explanation of the fundamental concepts in speech recognition
- Demonstrations of speech recognition technology
- Examination of the interfaces to existing mobile devices
- Techniques and guidelines for the design of speech user interfaces
- Practical experience in the application of those techniques and guidelines

**Audience**

Intended for individuals who have some user interface design experience and who are interested in the design of user interfaces that incorporate speech recognition technology. No knowledge of speech recognition required.

**Presentation**

Brief lectures and small-group practical exercises.

**Instructors**

Elisa del Galdo has worked as a principal human factors engineer with DEC and has run her own human factors consultancy. She joined Canon Research Centre in January 1997 to work on the design and prototyping of speech-driven devices. She is now a human factors consultant with Cambridge Technology Partners. Tony Rose has published widely in the area of speech and language technology. He joined Canon Research Centre in November 1996, and is currently working on a variety of technologies including interface design for information retrieval systems.

## 31

## Usability Techniques for Web-Based Services: Diversity and Technology

**Monday, Evening**

Steven Pemberton • CWI, The Netherlands

Mark Neerincx • TNO, The Netherlands

Olaf Donk •

University of Twente, The Netherlands

Jasper Lindenberg • TNO, The Netherlands

**Benefits**

You will gain a broad overview of usability techniques and related technologies for creating usable and inclusive Web services. The subject is treated broadly rather than deeply, so that attendees will leave with an understanding of what there is, and where to focus when designing Web services.

**Origins**

The tutorial is based on a number of earlier tutorials and lectures, which have been brought together and unified for CHI 2000.

**Features**

- Internationalization
- Universal accessibility and design for all
- Use of Web technology for structuring, internationalization and accessibility
- Individualization
- Specification Techniques

**Audience**

This tutorial is for people who wish to obtain a broad overview of usability techniques and methods for the Web. Experience with using the Web is expected, but not with creating web sites.

**Presentation**

The tutorial will consist of a series of short lectures, punctuated with a paper exercise.

**Instructors**

All the presenters are members of a team working together on a project Uwish: Usability of Web-based Information Services for Hypermedia. The team was originally selected to represent the many sub-areas of usability and the Web, and therefore are responsible for their own area of expertise in the tutorial.

## Consortia

**Development Consortium:  
Beyond the Desktop**

Sunday and Monday, 2-3 April

Each year, the Development Consortium sets out to look at issues and directions that the HCI community and SIGCHI should develop in the coming years. For CHI 2000, the Development Consortium will focus on *Beyond the Desktop* – the extraordinary growth of computer based devices and services worldwide that are becoming embedded in the way we live. *Beyond the Desktop* will highlight emerging technologies and their users, interaction techniques, and contexts of use.

The Consortium is made up of an interdisciplinary group of participants representing a variety of perspectives: professional, occupational, and geographical. Participants have been invited on the basis of position papers submitted to the Consortium's organizer.

Ian McClelland

Philips Consumer Electronics

**Doctoral Consortium:  
The CHI 2000**

Sunday and Monday, 2-3 April

The Doctoral Consortium is a closed session that provides an opportunity for doctoral students to explore their research interests in an interdisciplinary workshop with a group of established researchers. Participants receive feedback on their work and guidance for its future directions. The Consortium aims to develop a supportive community of scholars and a spirit of collaborative research. Consortium participants, who represent a wide range of disciplines within HCI, have been invited on the basis of submissions about their research projects.

**Doctoral Consortium Faculty**

Gilbert Cockton, *Chair*  
University of Sunderland

Stéphane Chatty,  
Centre de *Etudes de la Navigation Aérienne*

Sara Kiesler,  
*Human Computer Interaction Institute,*  
Carnegie Mellon University

Lisa Tweedie, *Oracle Corporation*