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# IPM 11/12 – T1.5

## Iterative HCI Design Process

Licenciatura em Ciência de Computadores

*Miguel Tavares Coimbra*

**Acknowledgements:** Most of this course is based on the excellent course offered by Prof. Kellogg Booth at the British Columbia University, Vancouver, Canada. Please acknowledge the original source when reusing these slides for academic purposes.

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# Summary

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- Evaluation as the key to good design.
- Iterative HCI Design
- Design Methods
- Stakeholders

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# Review

## Conceptual models: **Learning goals**

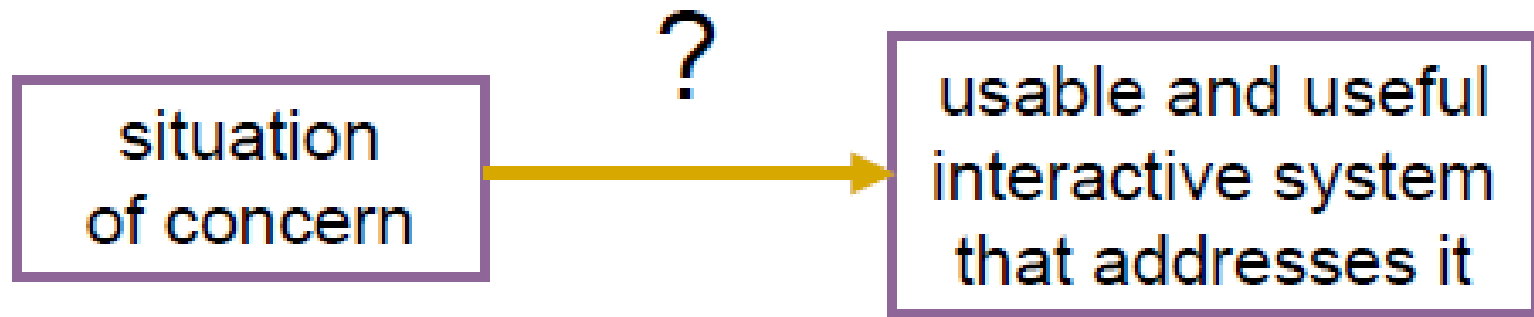
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- People have “**mental models**” of how things work
- We **build** our conceptual models from **many things**, inc:
  - affordances
  - causality
  - constraints
  - mapping
  - positive transfer
  - population stereotypes/cultural standards
  - instructions
  - interactions (inc. w/ other people)
  - familiarity with similar devices (positive transfer)
- Models **may be wrong**, esp. if attributes are misleading
- Models allow us to **mentally simulate** device operation
- The designer has control over the **system image**

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# Design Process

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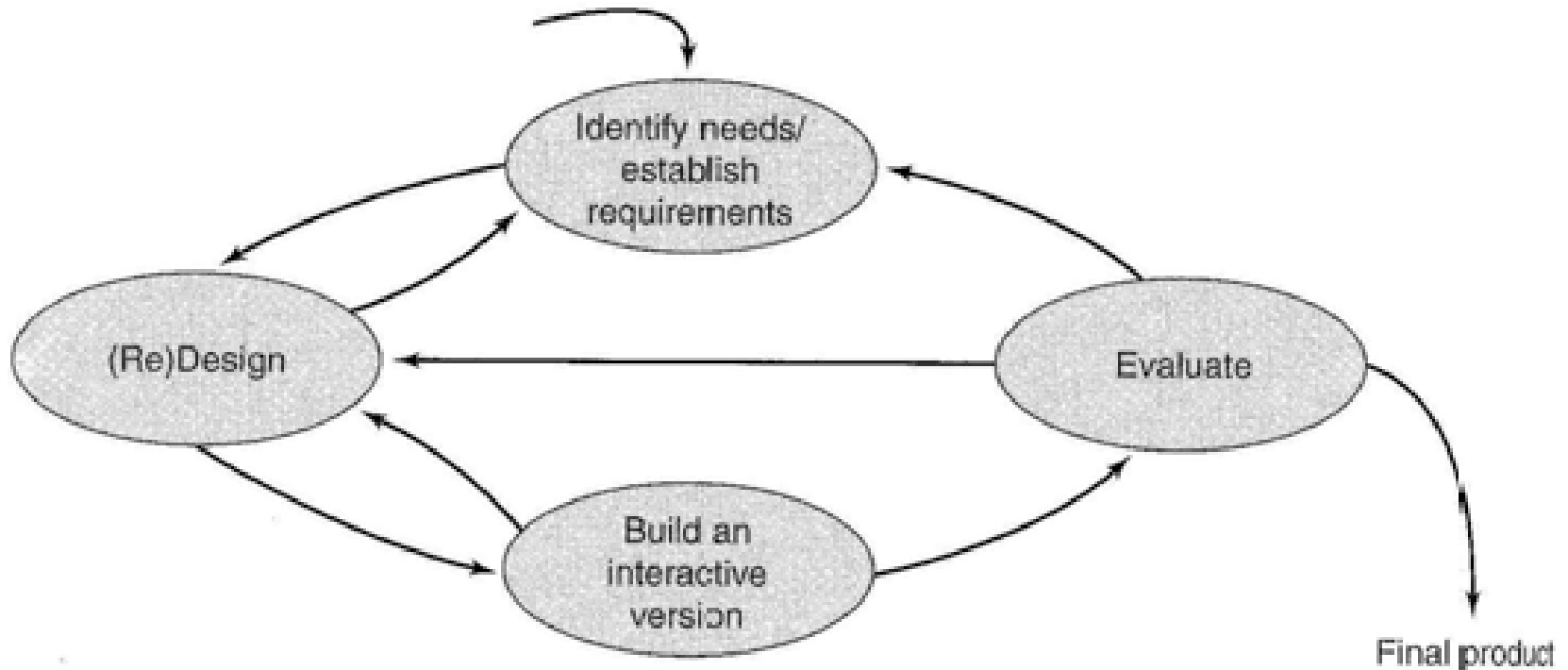
Different design process models have been proposed

Who and what are these models for?

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# Simple interaction design model

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Interaction Design: Beyond Human Computer Interaction  
Preece, Rogers & Sharpe, 2002

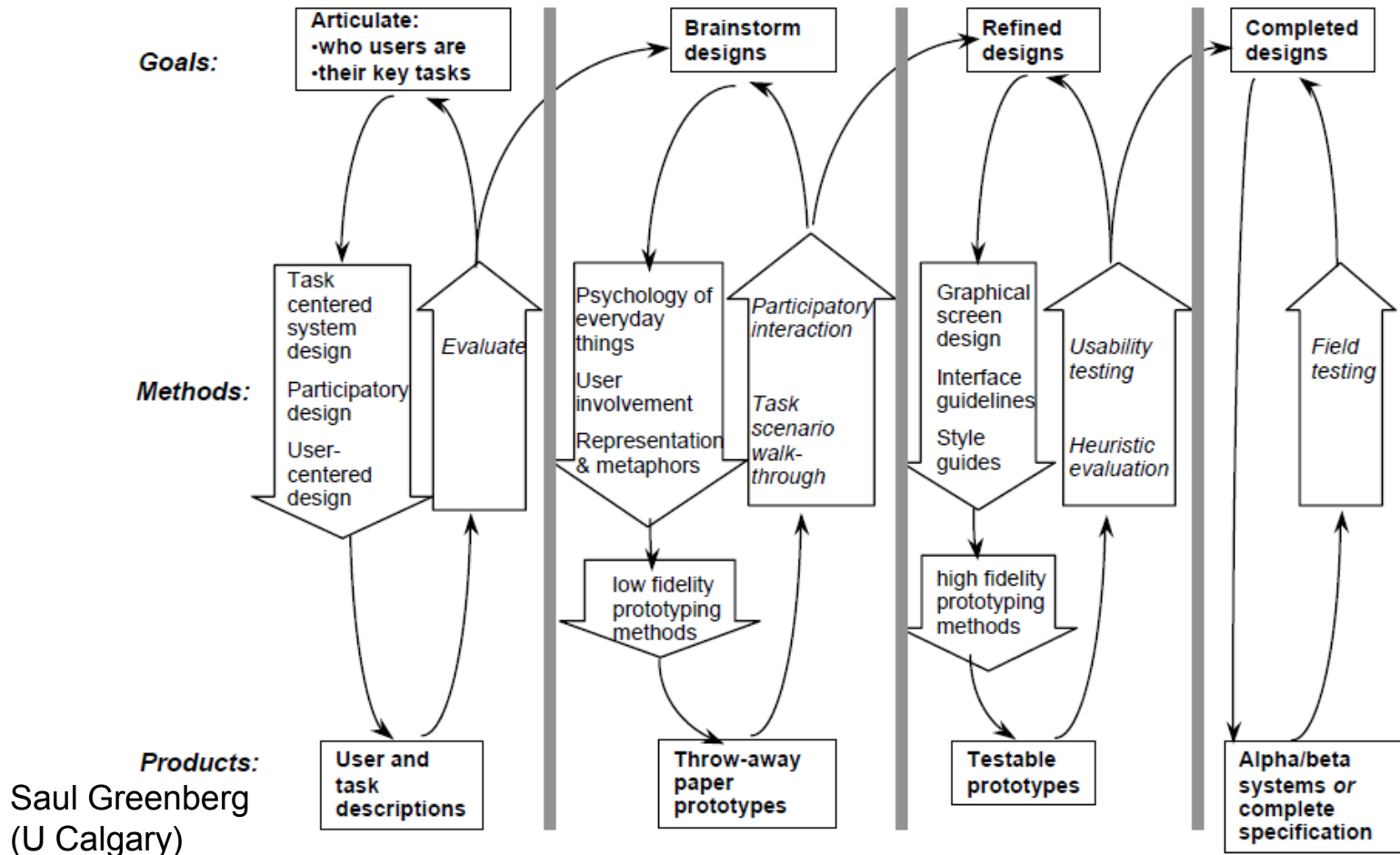
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# Four components

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1. **Identify needs/establish requirements:**
  - Core to design process – know thy user!
2. **Developing alternative designs**
  - Includes both conceptual design and physical design
3. **Building interactive versions of the designs**
  - Not necessarily software: create prototypes (including simple mock-ups) that can be evaluated by users
4. **Evaluating designs**
  - Ideally involving users at every stage, feeding evaluations back into the design process
  - Much easier to do if clear usability and user experience goals have been identified up front

# Interface Design and Usability Engineering



**Products:**  
Saul Greenberg  
(U Calgary)

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# Bowing to reality

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- What makes it hard to follow the “ideal” process?
  - Deadlines
  - Budget
  - Access to appropriate users
  - Involvement late in design cycle
  - Valuation of HCI input by other parts of the organization

What do you do then?



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# Stakeholders

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**Stakeholder** = anyone who has some reason to care about the interface

- Can be lots of them!
  - Needs may conflict
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- User: convenience, functionality, ...
  - Boss: price, worker efficiency
  - Developer: ease of development - deadlines, budget
  - Manufacturer: cost of production
  - Advertiser: visibility
  - ... more

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# How to figure out who your stakeholders are

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- Who will ask for it?
- Who will use it?
- Who will decide whether to use it (or if someone else will use it?)
- Who will pay for it?
- Who has to make (design / build) it ?
- Who has to make a profit from it?
- Who will otherwise make your life miserable if they don't like it?
- ???

# roadmap to evaluation types

## pre-design

ethnography  
interviews,  
focus groups  
questionnaires,  
surveys

## early design

interviews,  
focus groups,  
observation  
questionnaires,  
surveys  
contextual inquiry &  
work modeling  
task analysis,  
task / cognitive  
walkthroughs  
participatory design  
heuristic evaluation

## mid-late design

observation,  
interviews,  
questionnaires  
*using advanced  
prototypes*  
heuristic evaluation  
formal  
performance /  
usability testing

→ *evaluation material (prototype) evolves* →

## pre design

## early design

## mid-late design

### Goals:

**Articulate:**  
-who users are  
-their key tasks

**Brainstorm  
designs**

**Refined  
designs**

**Completed  
designs**

### Methods:

Task  
centered  
system  
design

*Evaluate*

Participatory  
design  
User-  
centered  
design

Psychology of  
everyday  
things  
User  
involvement  
Representation  
& metaphors

*Participatory  
interaction*  
*Task /  
Cognitive  
scenario  
walk-  
through*

Graphical  
screen  
design  
Interface  
guidelines  
Style  
guides

*Usability  
testing*  
*Heuristic  
evaluation*

*Field  
testing*

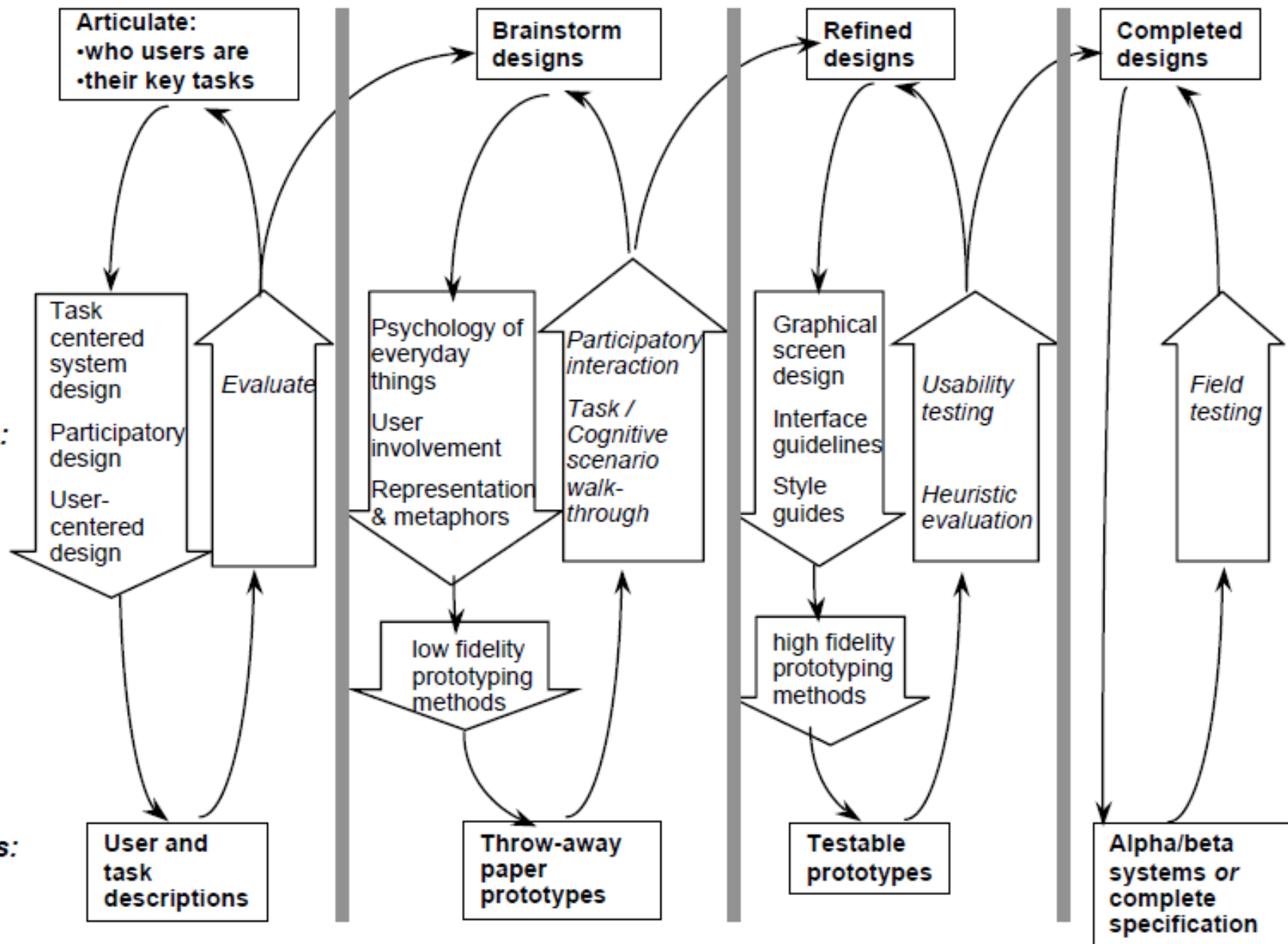
### Products:

**User and  
task  
descriptions**

**Throw-away  
paper  
prototypes**

**Testable  
prototypes**

**Alpha/beta  
systems or  
complete  
specification**



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# Important things for today

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- Design is an iterative process
  - Evaluation is key!
- There are several HCI design models
  - Choose one? Adapt one?
- Identifying stakeholders
  - Vital since they are the ones that **care**.

Next: Evaluation methods

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# Resources

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1. Kellogg S. Booth, Introduction to HCI Methods, University of British Columbia, Canada  
<http://www.ugrad.cs.ubc.ca/~cs344/current-term/>