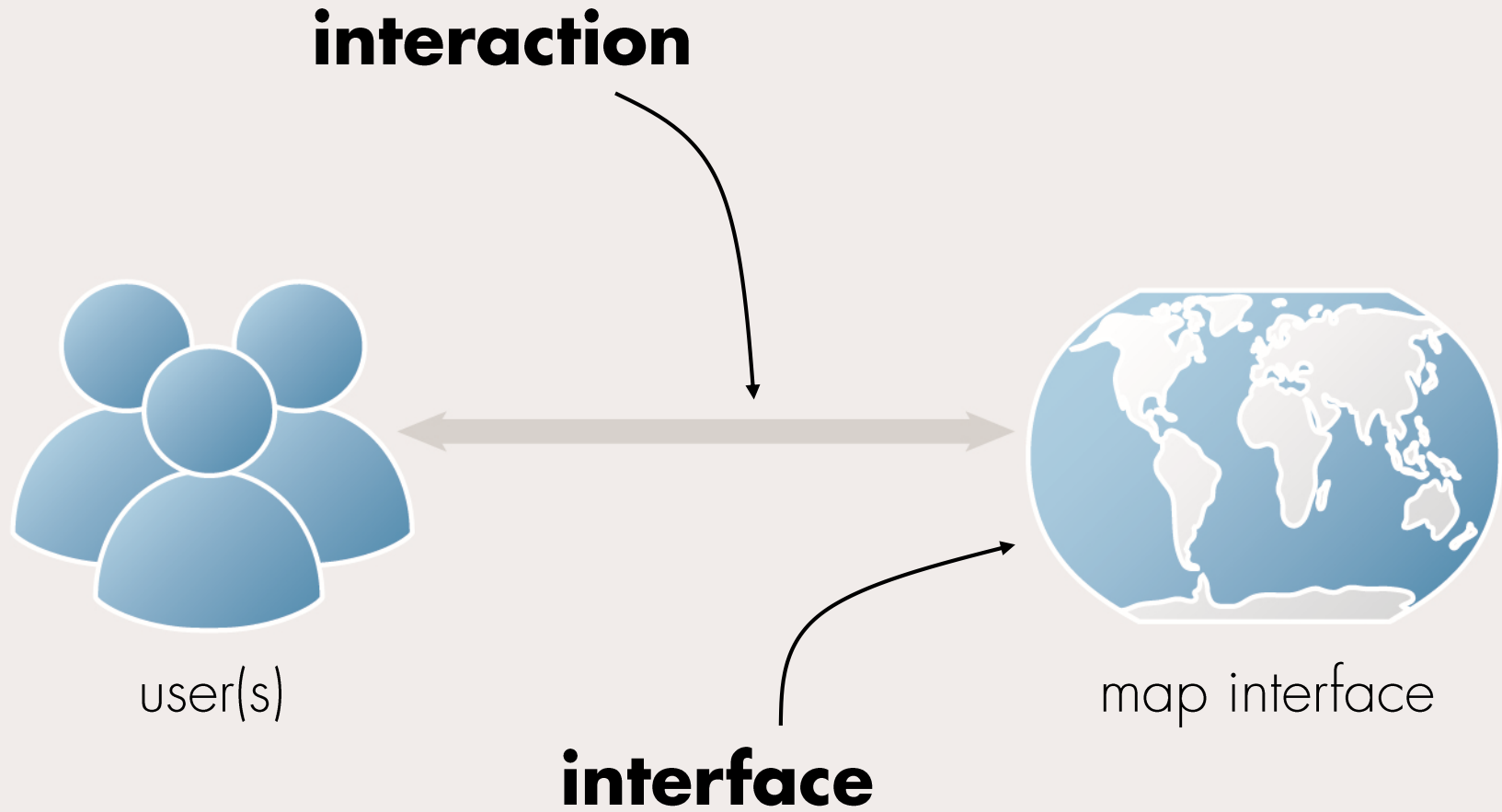


ICA Commission on the User Experience

2021 Business Meeting
15 December | Florence, Italy

Commission Chair
Robert E. Roth, PhD | reroth@wisc.edu

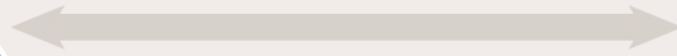




humans experience
interactions



user(s)



map interface

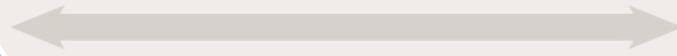
humans use
interfaces

What? is
UX design

UX design (eXperience)



user(s)



map interface

UI design

Creative Director

Client-side Developer

Usability Engineer

Web Designer

UI/UX Designer
Cartographer

Visual Analyst

Graphic Designer

Information Architect

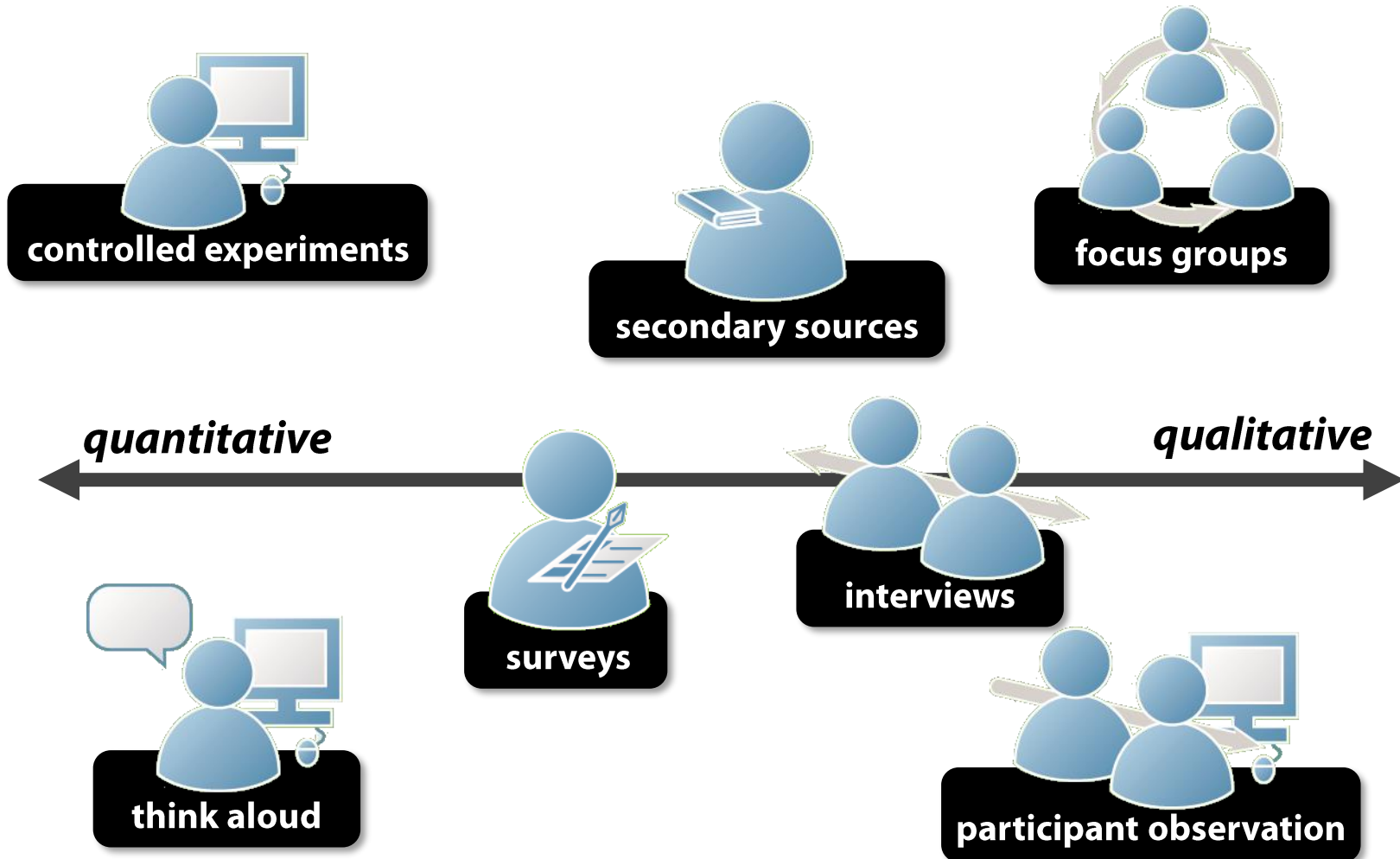
Artist

Data Scientist

User-centered Designer

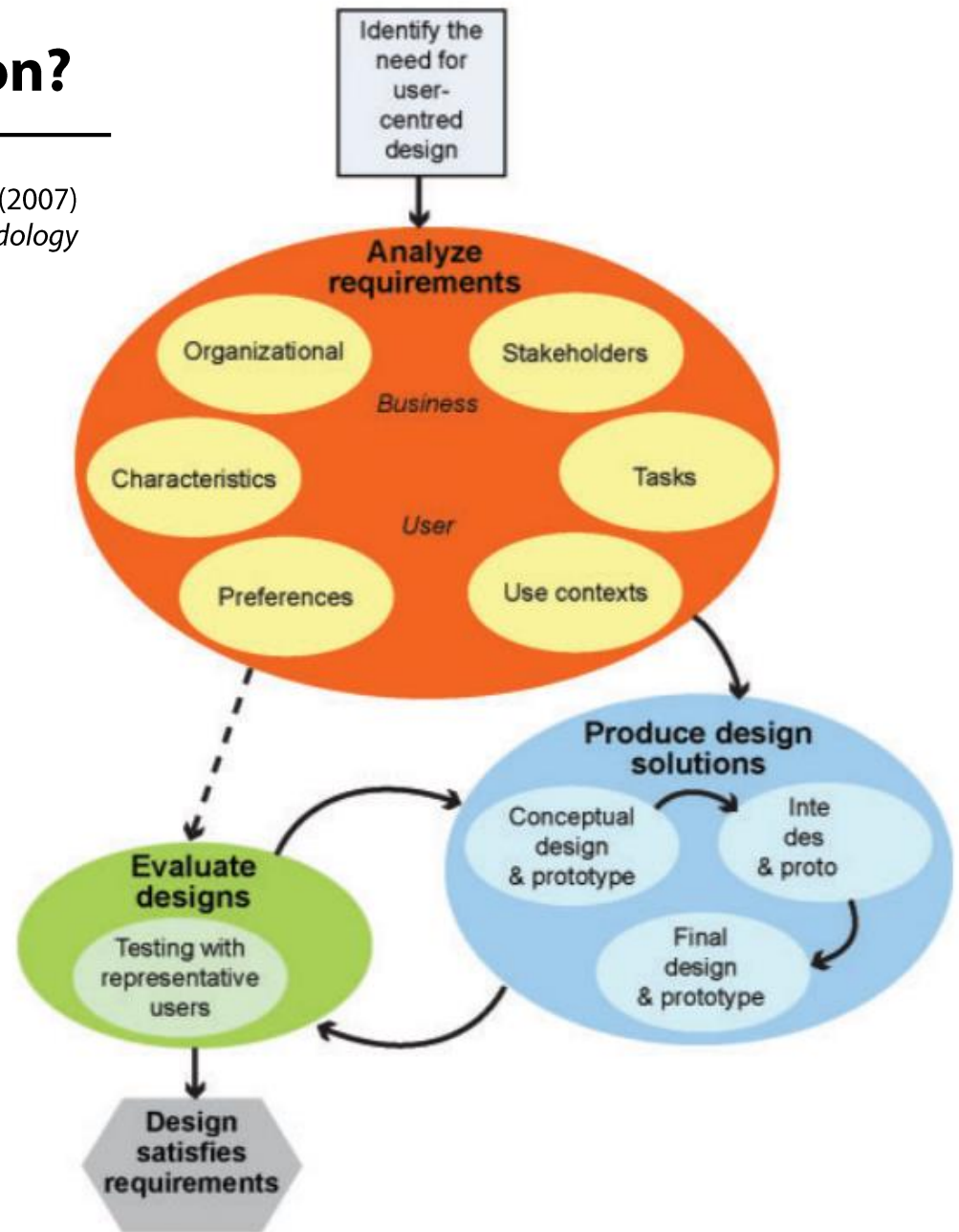
What is the “UX” Commission?

Image: Use Commission Workshop on Designing & Conducting User Studies



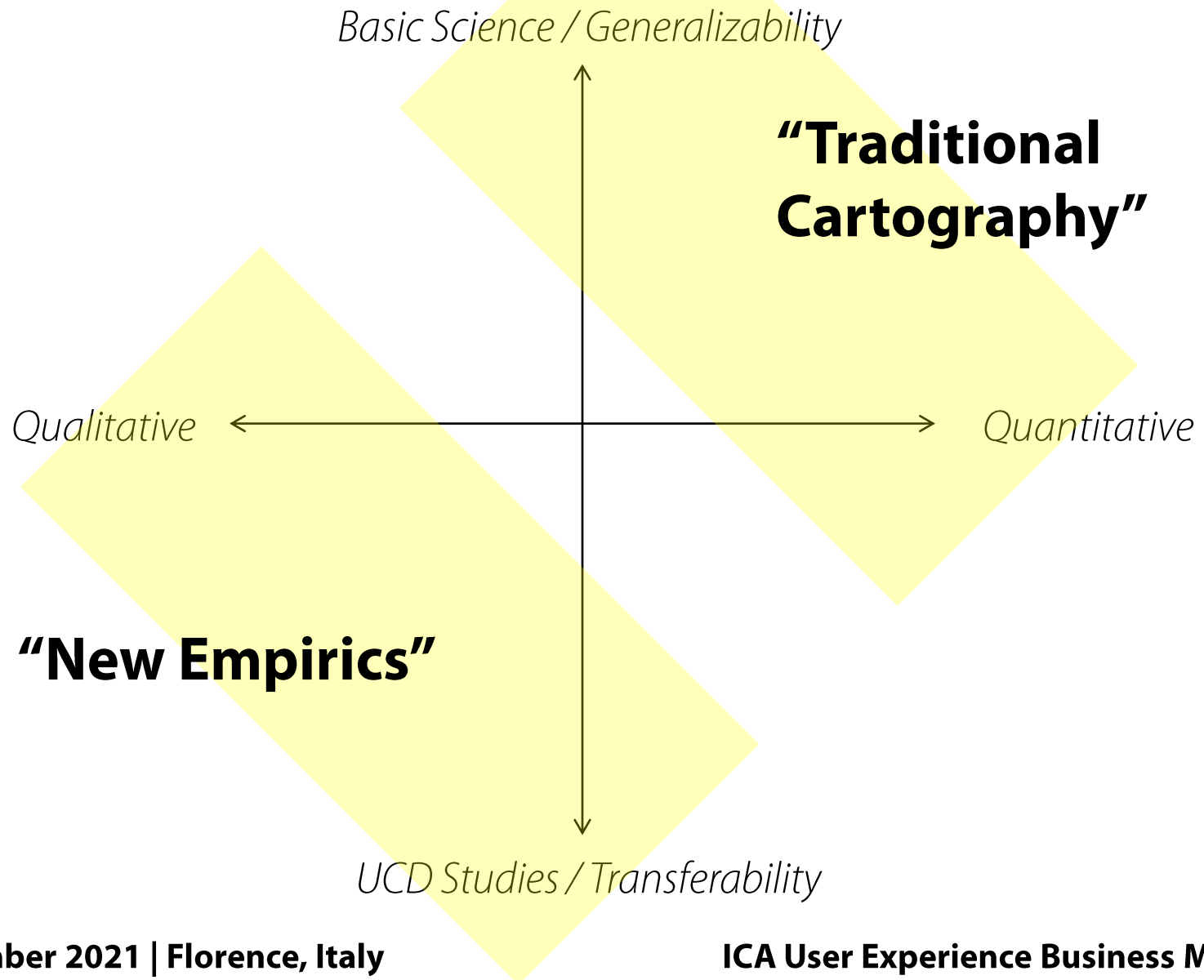
What is the “UX” Commission?

Source: van Elzakker et al. (2007)
Field-based usability evaluation methodology



What is the “UX” Commission?

Source: Roth et al. (2017) *User studies in cartography: Opportunities for empirical research on interactive maps & visualizations*



Leadership: 2011–2015



Corné van Elzaker | Netherlands
Chair: 2007–2015



David Forrest | United Kingdom
Vice-Chair:
2007–2015



Kristien Ooms | Belgium
Vice-Chair: 2011–2015



Alex Pucher | Austria
Vice-Chair: 2007–2015

Leadership: 2015–2019



Kristien Ooms | Belgium

Chair: 2015–2018

Vice-Chair: 2018–2019



**Alena Vondráková |
Czech Republic**

Vice-Chair

Webmaster



Robert Roth | USA

Vice-Chair: 2015–2018

Chair: 2018–2019



**Artemis Skarlatidou |
United Kingdom**

Vice-Chair

Leadership: 2019–2023



Robert Roth | USA

Chair: 2018–2023

Vice-Chair: 2015–2018



Luciene Delazari | Brazil

Vice-Chair



Katarzyna Słomska-Przech | Poland

Vice-Chair



Zdeněk Stachoň | Czech Republic

Vice-Chair

Terms of Reference for 2019–2023

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<https://use.icaci.org/>.

2. Bibliography: Maintain & expand the bibliographic reference for UX design & user studies in cartography & related field.

UX: Designing the User Experience

A Commission of the International Cartographic Association

[AIMS & ORGANISATION](#) ▾[ACTIVITIES](#) ▾[RESOURCES](#) ▾[BIBLIOGRAPHY](#)[MEMBERS & CONTACT](#)

Latest Posts

Registration is mandatory for participation in the ICC pre-conference workshops.

Zdeněk Stachoň | 23/11/2021

The workshops are organized at the University of Florence. Due to COVID19 pandemics, access to the University of Florence is allowed only with a QR code issued by Unifi to authorized persons (for reasons of contagion control). So BEYOND the...

[READ MORE](#)

Uncategorized

ICC 2021 Florence

Zdeněk Stachoň | 05/10/2021

ICC 2021, 30th ICC will be organized as a hybrid event on 14-18th December in Florence, Italy. The UX Commission will co-host a workshop entitled "Immersive Cartography / Cartography for Immersive Environments" on Monday December 13th (2 pm). The event...

[READ MORE](#)

Uncategorized

ICA Joint Commission Workshop – Usability 4All

Luciene Delazari | 24/09/2020

Date: Monday November 23, 2020. Location: Federal University of Paraná- Curitiba – Brazil We invite papers to be submitted to a joint Commission Workshop of the Commission on User Experience together with Commission on Cartography and Children, Commission on Maps...

[READ MORE](#)

News

- [Registration is mandatory for participation in the ICC pre-conference workshops.](#)
- [ICC 2021 Florence](#)
- [ICA Joint Commission Workshop – Usability 4All](#)
- [Postponed: ICA Joint Commission Workshop on Analytical Reasoning for Cartography, Visualization, and Design](#)
- [First Call For Papers: 2020 ICA Workshop on Analytical Reasoning](#)

Recent Comments

- Eric Swett on [Workshop on lessons learned from volunteers' interactions with geographic citizen science applications, 27 April 2018, London](#)

Archives

- [November 2021](#)
- [October 2021](#)
- [September 2020](#)
- [May 2020](#)
- [February 2020](#)

Sign-up to our listserv!!!

15 December 2021 | Florence, Italy

ICA User Experience Business Meeting

Group Libraries

- UUUI

3D Augmented reality

cognitive walkthrough Colour colour

combined techniques digital maps

digram-balanced Latin Squares experiment...

eye tracking HCI heuristic evaluation

human-computer interaction

indoor navigation interactive maps

Internet cartography lbs map animations

Filter Tags

Title	Creator	Date
A comparison of usefulness of 2D...	Herbert and Chen	2015
A Meta-evaluation of User Studie...	Schobesberger	2011
A Methodological Framework for...	Kveladze et al.	2013
A Qualitative Evaluation of MapTi...	Slocum et al.	2004
A study of point symbol design f...	Morrison and Forrest	1995
A Usability Evaluation of Web Ma...	You et al.	2007
A User Study of a Map-Based Slid...	Fujita and Arikawa	2011
A User Study of Experimental Ma...	Oksanen et al.	2014
Accurately interpreting clickthrou...	Joachims et al.	2005
Adaptation to Context - A Way to...	Nivala and Sarjakoski	2005
Adapting Map Symbols for Mobil...	Nivala and Sarjakoski	2005
Adding Social Constraints to Loc...	McKenzie and Raubal	2011
An empirical assessment of the i...	Biland and Çoltekin	2017
An empirical evaluation of three ...	Brügger et al.	2016
An empirical evaluation of three-...	Schnürer et al.	2020-01-21
An Empirical User Study for Meas...	Brychtova and Coltekin	2016-08
An experimental analysis of three...	Korpi et al.	2014
An investigation into challenges ...	Koletsis et al.	2017
Analysing the spatial dimension ...	Ooms et al.	2012
Anforderungen an die Mensch-C...	Dransch	2000
Anwenderwissen als Parameter k...	Schulz	2005
Applications of Signal Detection ...	Griffin and Bell	2009
Applying the eye-movement trac...	Brodersen et al.	2001
Assessing the Effectiveness and E...	Dong et al.	2016
Assessing the Effectiveness of Dy...	Lai and Yeh	2004
Augmented Reality and Spatiality...	Trojan and Å inogl	2011
Augmenting Printed School Atlas...	Schnürer et al.	2020-06
Automated eye-movement proto...	Salvucci and Anderson	2001

Info Notes Tags Attachments Related

Item Type Journal Article

Title Augmenting Printed School Atlases with Thematic 3D Maps

Author Schnürer, Raimund

Author Dind, Cédric

Author Schalcher, Stefan

Author Tschudi, Pascal

Author Hurni, Lorenz

Publication Multimodal Technologies and Interaction

Volume 4

Issue 2

Pages 23

Date 2020/6

Language en

DOI 10.3390/mti4020023

URL https://www.mdpi.com/2414-4088...

Accessed 9/17/2020, 3:38:21 AM

Library Catalog www.mdpi.com

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Date Added 9/17/2020, 3:38:22 AM

Date Modified 9/17/2020, 3:38:22 AM

Added By uuui

Abstract

Digitalization in schools requires a rethinking of teaching materials and methods in all subjects. This upheaval also concerns traditional print media, like school atlases used in geography classes. In this work, we examine the cartographic technological feasibility of extending a printed school atlas with digital content by augmented reality (AR). While previous research rather

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- 3. Student Services:** Hold listening sessions with students to promote and advertise student research & opportunities.
- 4. Educational Workshops:** Organize training workshops on UX design & user studies for students & non-specialists.

Modules of Training Workshops

Search here...



3rd Edition – Interactive Training Workshop on ‘Conducting and Designing User Studies’

@ICCGIS, Albena (Bulgaria)

June 15, 2016

The invitation to this workshop can be found [here](#).

Module 1:

Methods and techniques of use, user and usability research in geo-information processing and dissemination.

Kristien Ooms, Ghent University

The first module will introduce you to use, user & usability research in geo-information processing and dissemination. Reasons for doing such research are to understand and explain how GI tools work for their users and to design more usable tools. In this first module, the focus will be on the latter. The concept of User Centred Design will be presented and an overview will be given of the most commonly applied research techniques, along with tips & tricks on how and when to use them. Experiences will be shared in interactive sessions. □

[See slides →](#)

Module 2:

Quantitative versus Qualitative user research: selecting the right approach.

Robert Roth, University of Wisconsin Madison

When setting up a user study in cartography and GIS, it can be a difficult task to select the right method from the long list of available options. Methods commonly are divided between quantitative and qualitative approaches with an increasing recommendation to mix these methods across a

News

- [Joint Pre-Conference Workshop Immersive Cartography – program](#)
- [Registration is mandatory for participation in the ICC pre-conference workshops.](#)
- [ICC 2021 Florence](#)
- [ICA Joint Commission Workshop – Usability 4All](#)
- [Postponed: ICA Joint Commission Workshop on Analytical Reasoning for Cartography, Visualization, and Design](#)

Recent Comments

- Eric Swett on [Workshop on lessons learned from volunteers’ interactions with geographic citizen science applications, 27 April 2018, London](#)

Archives

- [December 2021](#)
- [November 2021](#)
- [October 2021](#)

<https://www.zotero.org/groups/928693/uuui/items/5AGCKS8I/library>

Workshop on Adaptable Research Methods For Empirical Research with Map Users

Thursday 6 May 2021

Everyone globally has been affected by the COVID-19 in planned research projects as a result of restrictions on m despite these challenges, people have been successful i experiences in adapting user research methods for remo help each other solve unsolved problems.



Session 1

22:00-22:20 (AEST)

14:00-14:20 (CET)

8:00-8:20 (US EST)

5:00-5:20 (US PST)

[Experiences with Collaborative Map Use Interface in Remote Courses of Maritime Spatial Planning](#)

Pyry Kettunen, Christian Koski, Mikko Rönneberg

15 minutes presentation + 5 minutes discussion, [slides](#), [recording](#)

22:20-22:40 (AEST)

14:20-14:40 (CET)

8:20-8:40 (US EST)

5:20-5:40 (US PST)

[Investigating Differences in Perception & Cognition of Map Symbols Through Laboratory & Online User Experiments](#)

Bradley Denney, Amy L. Griffin, Zdeněk Stachoň

15 minutes presentation + 5 minutes discussion, [slides](#), recording

22:40-23:00 (AEST)

14:40-15:00 (CET)

8:40-9:00 (US EST)

5:40-6:00 (US PST)

[Performing cartographic visual search experiments online: opportunities and challenges](#)

Vassilios Krassanakis, Anastasios L. Kesidis, Athina Pappa, Loukas-Moysis Misthos

10 minutes presentation + 10 minutes discussion, [slides](#)

https://cogvis.icaci.org/21_adaptable.html



All Topics <https://gistbok.ucgis.org/>

Knowledge Area

Cartography and Visualization

APPLY

History & Trends

Cartography & Science

Cartography & Art

Cartography & Power

Data Considerations

Vector Formats & Sources

Raster Formats & Sources

Map Design Fundamentals

Scale & Generalization

Statistical Mapping (Enumeration, Normalization, Classification)

Map Projections

Visual Hierarchy & Layout

Symbolization & the Visual Variables

Color Theory

Typography

Design and Aesthetics

Map Production and Management

Map Design Techniques

Common Thematic Map Types

Multivariate Mapping

Spatio-Temporal Representation

Representing Uncertainty

Terrain Representation

Cartograms

Map Icon Design

Narrative & Storytelling

Flow Maps

Collaborative Cartography

Map Use

Lesson Design in Cartography Education

Map Reading

Map Interpretation

Map Analysis

Interactive Design Techniques

User Interface and User Experience (UI/UX) Design

Web Mapping

Virtual & Immersive Environments

Big Data Visualization

Mobile Maps & Responsive Design

Usability Engineering & Evaluation

Geovisual Analytics

Geovisualization

1. Roth RE. 2017. **User Interface & User Experience Design.** In: *The Geographic Information Science & Technology Body of Knowledge* (Ed: J Wilson). University Consortium of Geographic Information Science.
2. Ooms K and A Skarlatidou. 2018. **Usability engineering and evaluation.** In: *The Geographic Information Science & Technology Body of Knowledge* (Ed: J Wilson). University Consortium of Geographic Information Science.
3. Ricker & Roth. 2018. **Mobile maps & responsive design.** In: *The Geographic Information Science & Technology Body of Knowledge* (Ed: J Wilson). University Consortium of Geographic Information Science.
4. Stachoň, Kubicek, & Herman. 2020. **Virtual & Immersive Environments.** In: *The Geographic Information Science & Technology Body of Knowledge* (Ed: J Wilson). University Consortium of Geographic Information Science.
5. Golebiowska, Korycka-Skorupa, & Slomska-Przech. 2021. **Common Thematic Map Types.** In: *The Geographic Information Science & Technology Body of Knowledge* (Ed: J Wilson). University Consortium of Geographic Information Science.

[→ Topic Description](#)[→ References](#)[→ Author and citation info](#)[→ Instructional Resources](#)[→ Related Topics](#)[→ Keywords](#)

CV-38 - Usability Engineering & Evaluation

In this entry, we introduce tenets of usability engineering (UE) and user-centered design (UCD), interrelated approaches to ensuring that a map or visualization works for the target use. After a general introduction to these concepts and processes, we then discuss treatment of UE and UCD in research on cartography and geographic visualization. Finally, we present a classification of UE evaluation methods, including a general overview of each category of method and their application to cartographic user research.

Author and Citation Info:

Ooms, K. and Skarlatidou, A. (2018). Usability Engineering and Evaluation. *The Geographic Information Science & Technology Body of Knowledge* (1st Quarter 2018 Edition), John P. Wilson (ed). DOI: 10.22224/gistbok/2018.1.9

This entry was first published on March 9, 2018. No earlier editions exist.

Topic Description:

1. Definitions
2. Overview
3. UE Approaches and Applications
4. UE Evaluation Methods

1. Definitions

evaluation: the assessment of the extent to which a product, mapping or otherwise, supports user needs

conceptual development: the outline of a product's functional requirements prior to product development, as identified from the work domain analysis

debugging: the process of fixing errors and optimizing code before final release of a product to the end users

Source: Ooms & Skarlatidou (2018)
<https://gistbok.ucgis.org/bok-topics/usability-engineering-evaluation>

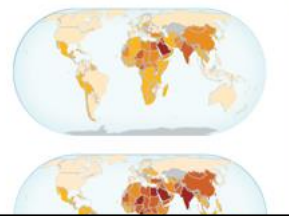
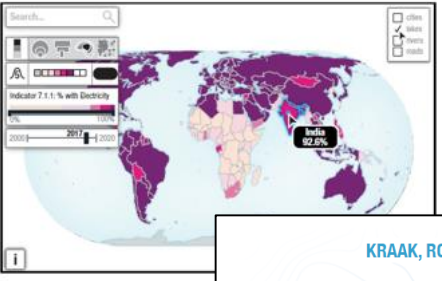
Relative Values

Northern Europe (2015) Passenger Rail Density (Kilometers/km²)



Nominal Values

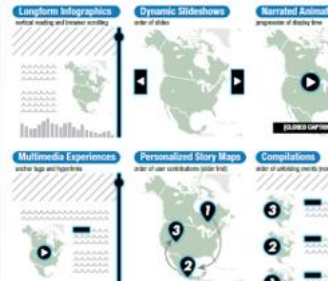
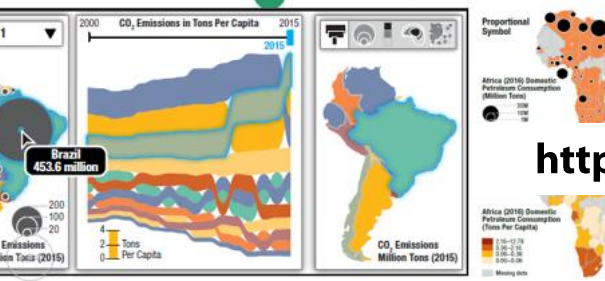
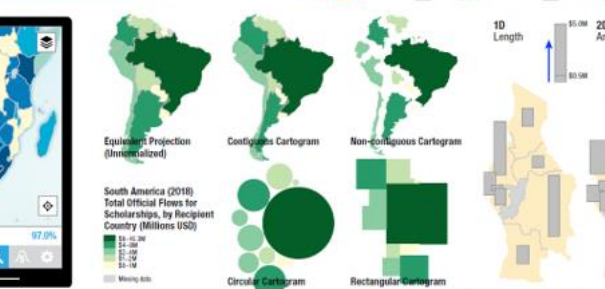
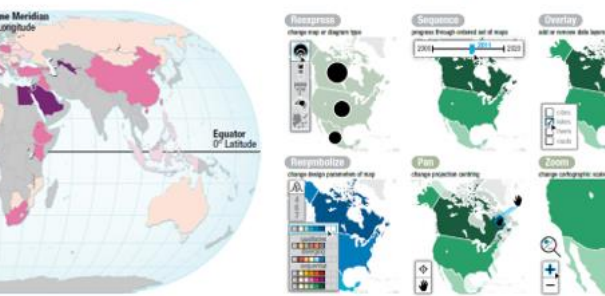
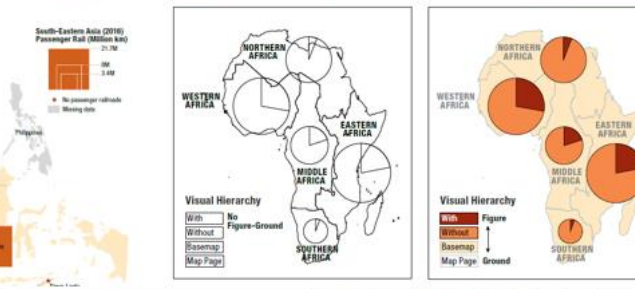
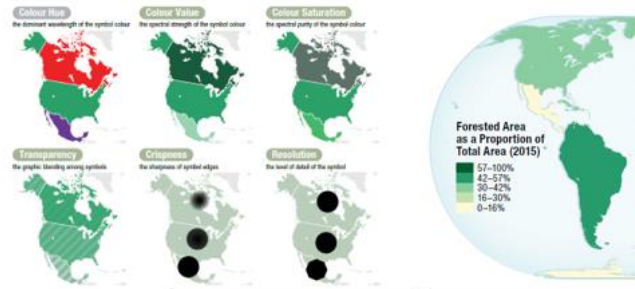
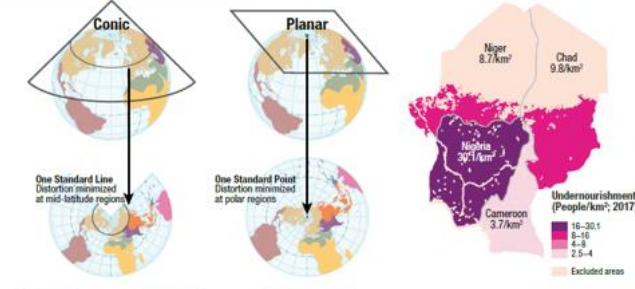
Northern Europe (2015) Existence of Passenger Rail



KRAAK, ROTH, RICKER, KAGAWA, and LE SOURD

MAPPING FOR A SUSTAINABLE WORLD

United Nations ICA



<https://digitallibrary.un.org/record/3898826>

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https://www.youtube.com/playlist?list=PLGqsHedNsYJlaYDAL-IQU8-_rmhACTR2o

Commission on User Experience

Commission on Cartography and Children

Commission on Maps and Graphics for Blind and Partially Sighted People

Commission on Open Source Geospatial Technologies

Programming:

Morning - ICA Chairs presentations

Afternoon - Presentation of selected papers.

Send your contribution (max 2 pages, pdf format) until October 10th to luciene@ufpr.br

ICA Joint Commission

Workshop Usability 4All



Inclusive Design

Recognize exclusion; solve for one, extend to many; learn from diversity

Recognize exclusion

Designing for inclusivity not only opens up our products and services to more people, it also reflects how people really are. All humans grow and adapt to the world around them and we want our designs to reflect that.



Solve for one, extend to many













Everyone has abilities, and limits to those abilities. Designing for people with permanent disabilities actually results in designs that benefit people universally. Constraints are a beautiful thing.



Learn from diversity

Human beings are the real experts in adapting to diversity. Inclusive design puts people in the center from the very start of the process, and those fresh, diverse perspectives are the key to true insight.



	Permanent	Temporary	Situational
Touch	 One arm	 Arm injury	 New parent
See	 Blind	 Cataract	 Distracted driver
Hear	 Deaf	 Ear infection	 Bartender
Speak	 Non-verbal	 Laryngitis	 Heavy accent

Source: Microsoft Inclusive Design Toolkit
<https://www.microsoft.com/design/inclusive/>

Inclusive
 A Microsoft Design Toolkit

Pre-Conference Workshop Immersive Cartography / Cartography for Immersive Environments

Monday, December 13 - Firenze, Via Laura, 48 Room A2.09

Webex link:

<https://unifirenze.webex.com/unifirenze/j.php?MTID=mcc5491e2b25e30d8e585633b5a33a831>

14:00 - 14:10 Introduction

- Commission on User eXperience (UX) - Zdeněk Stachoň
- Commission on Cognitive Issues in Geographic Information Visualization - Petr Kubíček

Part 1 - Keynotes (Petr Kubíček, Chair)

14:10 - 14:30

Alex Klippel - Thinking within - explorations toward a science of

14:30 - 14:50

Arzu Coltekin - Extended (virtual, augmented, mixed) reality in

14:50 - 15:10

Ioannis Giannopoulos - Geographic Aware Augmented Reality

15:10 - 15:30

Čeněk Šašík - Collaborative Immersive Virtual Environments
learning

15:30 - 15:45 Break

Part 2 - Practical Examples (Zdeněk Stachoň, Chair)

15:45 - 16:10

Ravel Litwiz, Diana Šponková - Evacuation in iVE: How to measure activities and interaction



Activities: Events

- ▶ Training Workshop
- ▶ Research Workshop
- ▶ International Cartographic Conference

Workshop on Designing & Conducting User Studies

Curitiba, Brazil | 20 August 2015

ICA Commission on Cognitive Visualization
ICA Commission on Use, User, and Usability Issues

Workshop on

Envisioning the Future of Cartographic Research

Curitiba, Brazil | 21 August 2015

ICA Commission on Cognitive Visualization
ICA Commission on Geovisualization
ICA Commission on Map Design
ICA Commission on Use, User, and Usability Issues

International Cartographic Conference

Rio de Janeiro, Brazil | 23–28 August 2015

Workshop on Designing & Conducting User Studies

Albena, Bulgaria | 15 June 2016

ICA Commission on Use, User, and Usability Issues

Follow-up Workshop on

Envisioning the Future of Cartographic Research

San Francisco, USA | 29 March 2016

ICA Commission on Cognitive Visualization
ICA Commission on Map Design
ICA Commission on Use, User, and Usability Issues
ICA Commission on Visual Analytics

Joint Symposium on the History of Cartography

Dubrovnik, Croatia | 13–14 October 2016

ICA Commission on the History of Cartography
ICA Commission on Geoinformation Management
ICA Commission on Map Production
ICA Commission on Use, User, and Usability Issues

International Cartographic Conference

Washington, D.C., USA | 2–7 July 2017

Workshop on Lessons Learned from Volunteers' Interactions with Geographic Citizen Science Applications

London, UK | 12 December 2017

ICA Commission on Use, User, and Usability Issues
European Union COST Action Program
ISPRS Working Group V/3: Regional Collaboration in Citizen Science

Workshop on Reproducibility in Cartography

Olomouc, Czechia | 27 April 2018

ICA Commission on Cognitive Visualization
ICA Commission on Use, User, and Usability Issues
ISPRS Working Group IV/9: Geovisualization, Augmented & Virtual Reality

Joint Workshop on Atlases, Cognition, & Usability

Olomouc, Czechia | 27–30 April 2018

ICA Commission on Atlases
ICA Commission on Cognitive Visualization
ICA Commission on Use, User, and Usability Issues

Workshop on Designing & Conducting User Studies

Nanjing, China | 3 July 2019

ICA Commission on Use, User, and Usability Issues

Workshop on Mobile User Experience (UX) Design

Beijing, China | 11 July 2019

ICA Commission on Cognitive Visualization
ICA Commission on Location-based Services
ICA Commission on Use, User, and Usability Issues

Workshop on User Experience Design for Mobile Cartography: Setting the Agenda

Beijing, China | 12 July 2019

ICA Commission on Cognitive Visualization
ICA Commission on Location-based Services
ICA Commission on Use, User, and Usability Issues

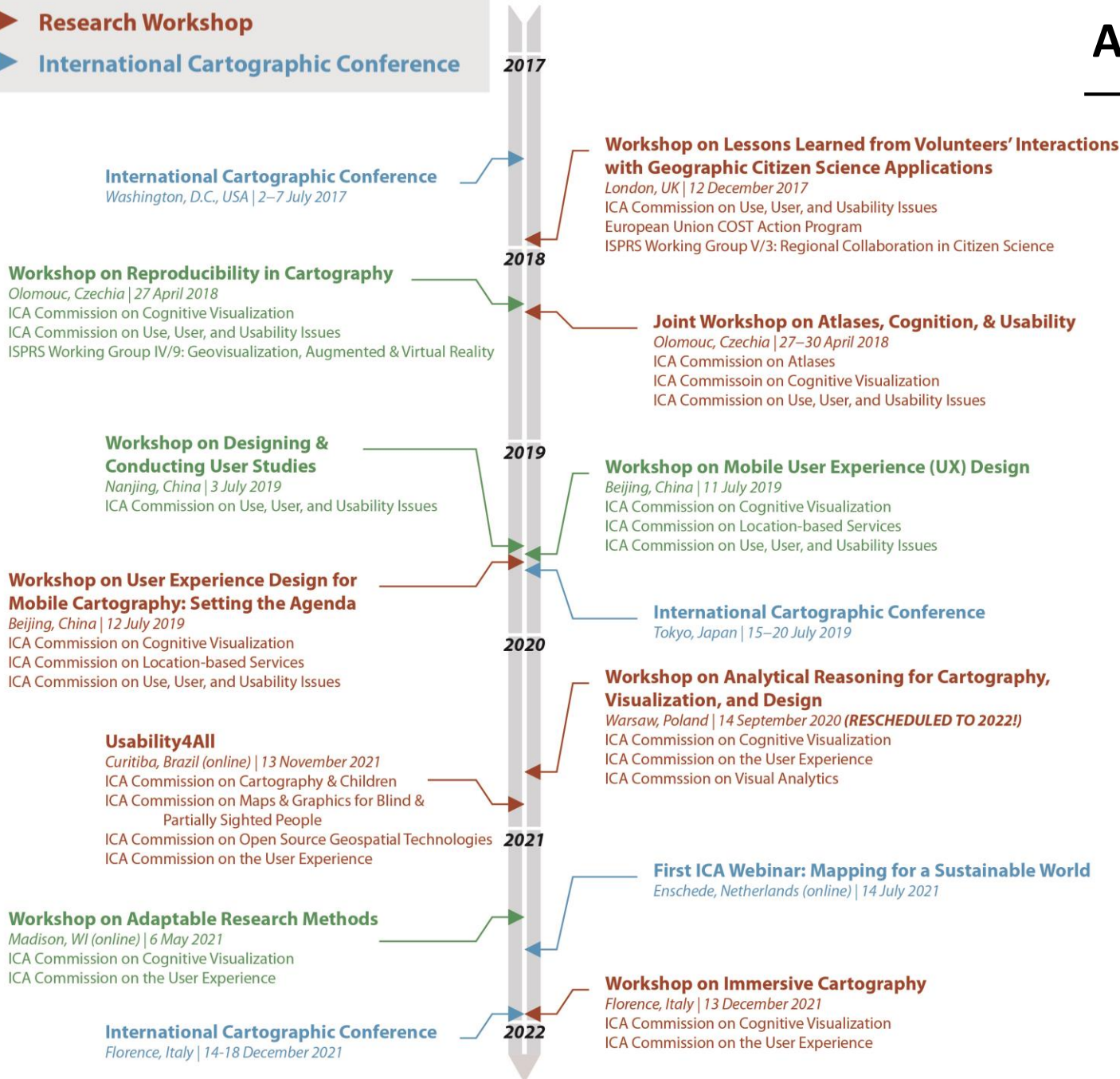
International Cartographic Conference

Tokyo, Japan | 15–20 July 2019

2020

Activities: Events

- ▶ Training Workshop
- ▶ Research Workshop
- ▶ International Cartographic Conference



SUNDAY
12 Dec

MONDAY
13 Dec

TUESDAY
14 Dec

WEDNESDAY
15 Dec

THURSDAY
16 Dec

FRIDAY
17 Dec

SATURDAY
18 Dec

**25 talks over
4 sessions!**

8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00

8:45-10:15
User, Users, &
Usability I

11:45-13:15
User, Users, &
Usability II

14:00-18:45
Joint Commission
Workshop: Immer-
sive Cartography

14:45-16:30
User, Users, &
Usability III

17:00-18:45
UX Commission
Business Meeting








15:00-18:45
User, Users, &
Usability IV

What is the Plan for 2019–2023?

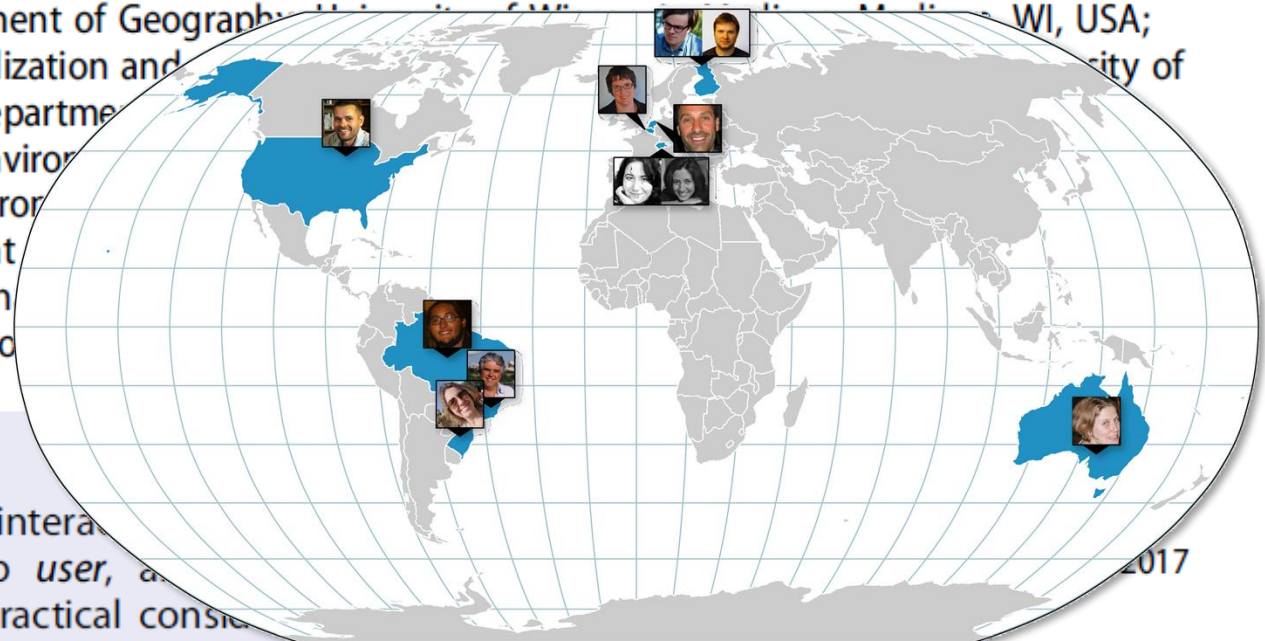
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- 6. ICA Sessions:** Organize sessions on user studies and UX design at the 2021 & 2023 International Cartography Conferences.
- 7. UX Research Agenda:** Jointly develop a research agenda on map UX.
- 8. User Studies Handbook:** Jointly organize an overview reference on designing & conducting user studies in cartography.



User studies in cartography: opportunities for empirical research on interactive maps and visualizations

Robert E. Roth ^a, Arzu Çöltekin ^b, Luciene Delazari^c, Homero Fonseca Filho ^d, Amy Griffin ^e, Andreas Hall ^f, Jari Korpi^f, Ismini Lokka^b, André Mendonça ^g, Kristien Ooms ^h and Corné P.J.M. van Elzakkerⁱ

^aUW Cartography Lab, Department of Geography, University of Wisconsin-Madison, WI, USA; ^bGeographic Information Visualization and Cartography, University of Zurich, Zurich, Switzerland; ^cDepartment of Geography, University of São Paulo, São Paulo, Brazil; ^dGeospatial Computing Lab, Environmental Systems Research Institute, University of Brasília, Brasília, Brazil; ^eSchool of Physical, Environmental and Earth Sciences, Australian National University, Canberra, Australia; ^fDepartment of Geography, University of Jyväskylä, Jyväskylä, Finland; ^gSchool of Technology, Amazon University, Ghent, Belgium; ^hGeography Department, University of Twente, Enschede, The Netherlands; ⁱGeography Department, University of Twente, Enschede, The Netherlands



ABSTRACT

The possibility of digital interaction has transformed the map reader as the map user, and this transformation has implications for cognitive, cultural, and practical considerations. This paper explores the user's experience with interactive maps and visualizations. In this

KEYWORDS

Empirical cartography;

Table 1. Opportunities for empirical research on the design and use of interactive maps and visualizations.

Basic research on interactive maps and visualizations

1. Expand qualitative and mixed-method research to confirm and enrich quantitative research in cartography
2. Improve consistency and detail in the reporting of method designs
3. Promote purposeful sampling of study participants and limit convenience sampling
4. Adopt new approaches to treat interactive, online, and mobile maps and visualizations as unique study materials
5. Define and assess high-level, insight-based tasks to complement benchmark tasks in user studies
6. Complement laboratory and online studies with field studies

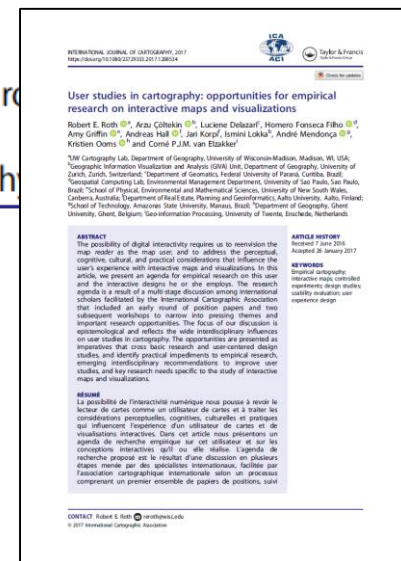
Adapting methods for UCD studies

7. Establish gold standards for administering and assessing UCD studies on interactive maps and visualizations
8. Streamline and contextualize the UCD process for interactive cartography and visualization
9. Promote comprehensive UCD case studies
10. Leverage UCD studies for participatory action research
11. Conduct user-centered studies on the political economy of interactive cartography and visualization

Additional empirical needs in interactive cartography and visualization

12. Articulate dimensions of interface complexity in user studies
13. Develop strategies to compare static and interactive maps
14. Investigate the value of interactivity in new map use cases
15. Evaluate non-cartographic and neocartographic interfaces supporting map design and production
16. Evaluate mobile interactions
17. Develop and integrate design guidelines for interaction and representation in cartography

Source: Roth et al. (2017) *User studies in cartography: Opportunities for empirical research on interactive maps & visualizations*






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Call for Papers: Special Focus Issue of the International Journal of Cartography on the **State of the Art & Science in Cartography**

Guest Editors: Arzu 3uļtekin, Anthony C. Robinson, Luciene Delazari, Pyry Kettunen



The ICA Commissions on Visual Analytics, Cognitive Issues in Geographic Visualization, and User Experience (UX) invite paper submissions for a special focus issue of the International Journal of Cartography

(<https://www.tandfonline.com/toc/tica20/current>). The theme for this special issue



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ICA Commission on Visual Analytics Retweeted

Robert E. Roth
[@RobertERoth](#)

The [@UWMadisonGeog](#) dept is excited to announce *TWO* (!!) tenure-track positions in GIScience: (1) Assistant Professor in Geospatial Tech & Director of [@UWMadisonGIS](#) jobs.hr.wisc.edu/en-us/job/5111... (2) Assistant Professor in Cartographic Design & Geovisualization jobs.hr.wisc.edu/en-us/job/5111...

Nov 5, 2021

ICA Commission on

2019 ICA Workshop on Mobile Map UX

2019年国际制图协会 (ICA) 移动地图用户体验设计论坛



Beijing 2019!



in design at different points

EXPERIENCES

SCALE / GENERALIZATION

Communication theory

PROJECTION

ADAPTIVE MAP DESIGN

Typography / typography

level of automation

DASHBOARDS

INTERACTION

351

MEASUREMENT

AFFORDANCES

VEVARS

Bradley Damm

SYMBOLIZATION

Icon design

image combination

CONSIDER FAILURE

VISUAL HIERARCHY

THEMATIC MAPS

1. SIG

2. BACKGROUND

3. N | R.A.

6. CALL TO ACTION

TABLE

data

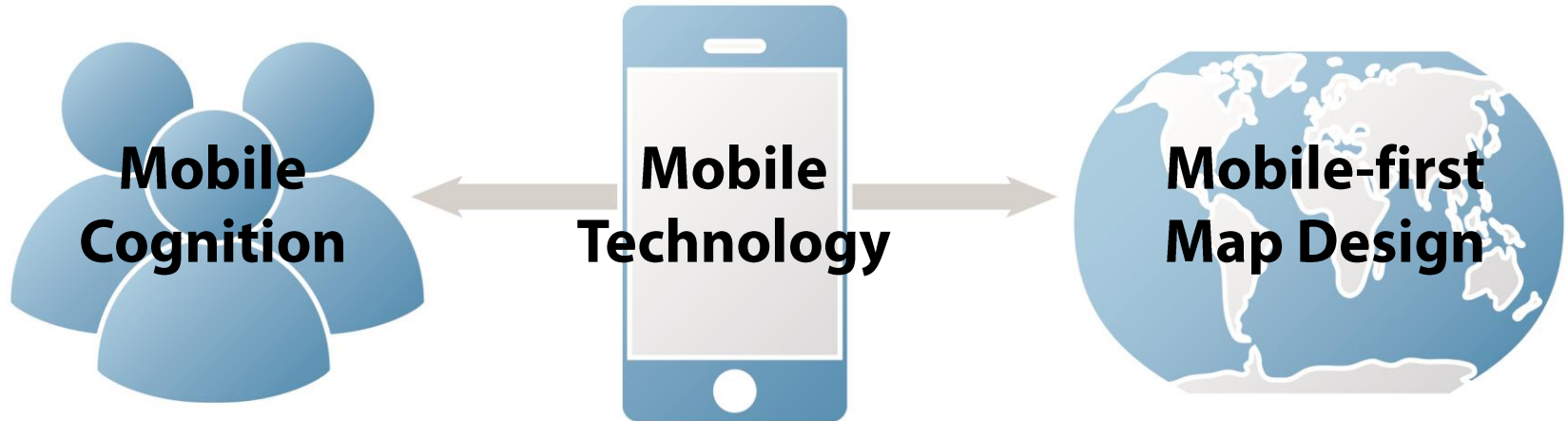
ethics

sensors

ownership

users

Mobile Map UX Research Agenda: ~2022



ICA Commission on Cognition

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Hua Liao | China
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Switzerland
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Wangshu Wang | Austria
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Zdeněk Stachoň | Czechia
Mingguang Wu | China



About GeoFort

GeoFort is an educational attraction on an exciting fort in the New Dutch Waterline in the field of cartography and navigation. On GeoFort the visitor will meet old and new geotechniques in the GeoExperience, the 'intelligent' maze and Bat Trail Garden. Also on GeoFort is a restaurant, the 3D Cafe and several meeting rooms.

- [>> What is Geo?](#)
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~~2022~~

2024!?

ICA Commission on the User Experience (UX)

2021 Business Meeting
15 December | Florence, Italy

**How can we better support
your user needs!?**

Commission Chair
Robert E. Roth, PhD | reroth@wisc.edu

