Visual Medicine: Techniques, Applications and Software

D. Bartz, G. Kindlmann, F. Link, K. Mueller, S. Oeltze, B. Preim, M. Wacker

Introduction

Steffen Oeltze

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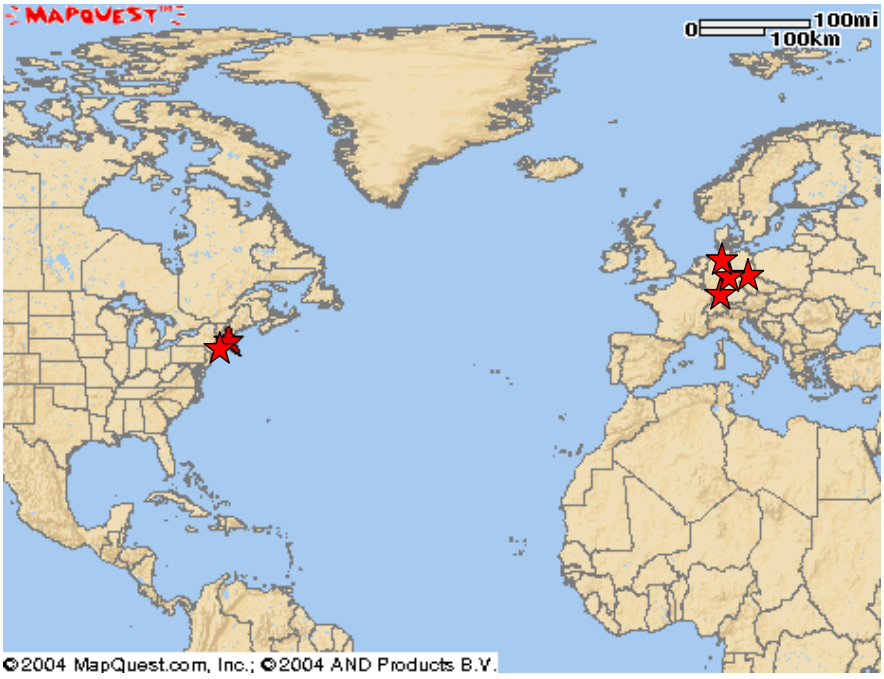
Cross-Atlantic Speakers



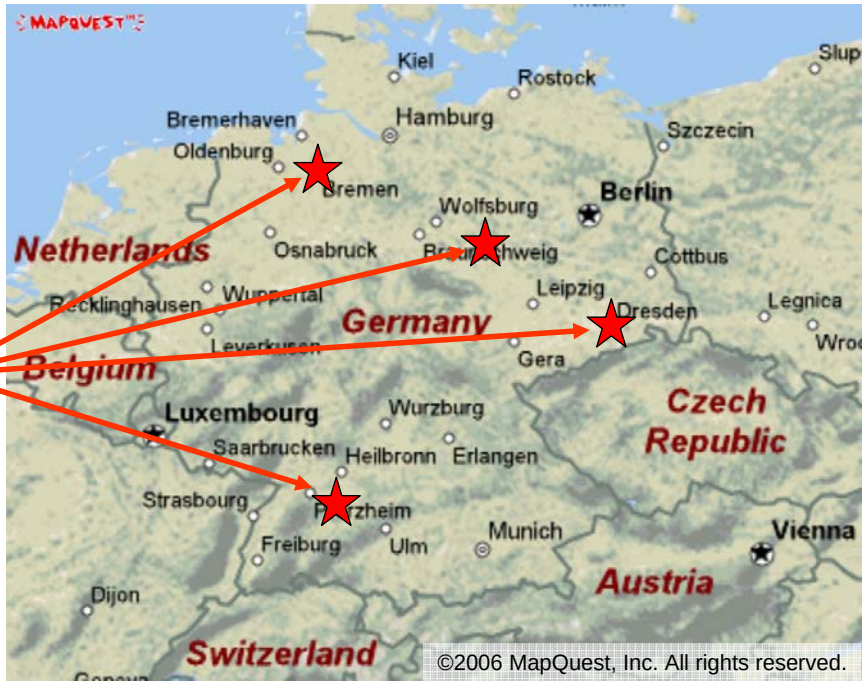
Speakers from Germany

Florian Link
Dir. Software Engr.,
MeVis, Bremen

Bernhard Preim
Prof. of Vis',
Steffen Oeltze
PhD Student Vis',
Univ. of Magdeburg,
Magdeburg

Markus Wacker
Prof. of CG, HTW
Dresden, Dresden

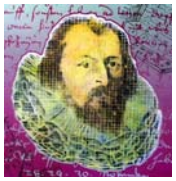
Dirk Bartz
Head of VCM,
Univ. of Tübingen,
Tübingen



University of Tübingen

Dirk Bartz

Head of VCM,
Univ. of Tübingen,
Tübingen, Germany



Wilhelm Schickard,
1592 - 1635

Prof. of Orientalic Languages, Astronomy, Mathematics, and Geodesy at Univ. of Tübingen

1623 invention of first calculation machine
(Blaise Pascal's Pascaline 1642)

University of Applied Sciences Dresden

Marcus Wacker

Prof. of CG,
HTW Dresden,
Dresden, Germany

MeVis - Center for Medical Diagnostic Systems and Visualization GmbH

Florian Link

Director of Software Engineering, MeVis, Bremen, Germany

University of Magdeburg

Bernhard Preim

Prof. of Visualization,
Univ. of Magdeburg,
Magdeburg, Germany

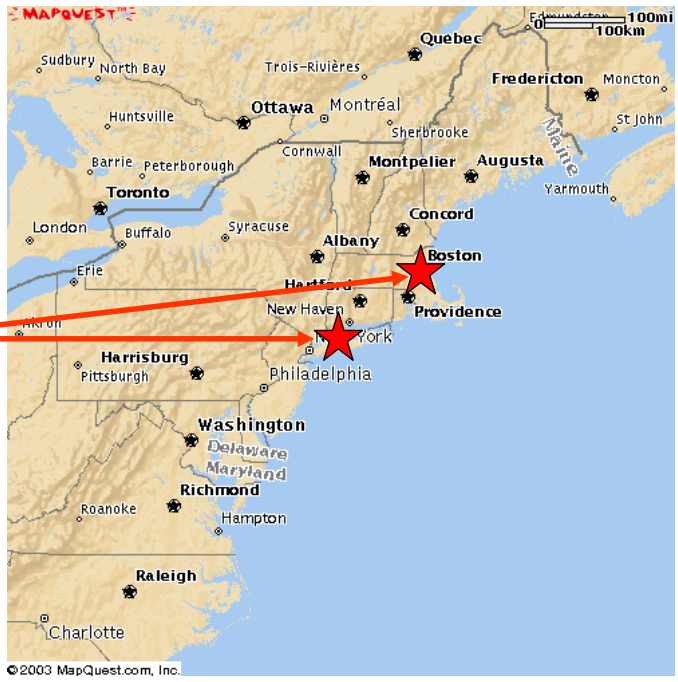
Steffen Oeltze

PhD Student Vis',
Univ. of Magdeburg,
Magdeburg, Germany

Speakers from the United States

Gordon Kindlmann
Post-Doc. Research Fellow, Lab of Math' in Imaging, Brigham and Women's Hospital, Boston, MA

Klaus Mueller
Associate Prof., Center of Visual Computing, Stony Brook University, Stony Brook, NY



Brigham and Women's Hospital

Gordon Kindlmann

Post-Doc. Research Fellow, Lab of Math' in Imaging, Brigham and Women's Hospital, Boston, MA

Stony Brook University

Klaus Mueller

Associate Prof., Center of Visual Computing, Stony Brook University, Stony Brook, NY

STONY BROOK
STATE UNIVERSITY OF NEW YORK

Outline (1)

Morning (*9:00 – 12:00*) - *Beginner Level*

Introduction (Oeltze), 10min

Part One - Foundations of Medical Imaging, 140min

- Data Acquisition and Preprocessing (*Bartz*), *60*min
- Rendering and Navigation (*Mueller / Kindlmann*), *45*min
- Visual Programming for Prototyping of Medical Imaging Applications (*Link*), *35*min

Outline (2)

Afternoon (*1:30 – 6:00*) - *Intermediate/Advanced Level*

Part two - Advanced Topics in Visual Medicine, 225min

- Visual Analysis of Perfusion Data (*Preim*), 35min
- Image-guided Surgery and Med. Mixed Reality (*Bartz*), 30min
- Diffusion Tensor Imaging (*Kindlmann*), 30min
- Visualization of Vasculature (*Oeltze*), 35min
- Fast Tagged Multi-res. Volume Rendering (*Link*), 30min
- CT Reconstruction and Functional Imaging (*Mueller*), 30min
- Soft-Tissue Simulation (*Wacker*), 35min

Questions and Answers (All), 15min

Outline (3)

Breaks:

- Coffee Breaks:

10:15am – 10:45am

3:10pm – 3:40pm

- Lunch Break:

12:00am – 1.30pm

Additional Tutorial Material

Conference DVD contains additional material:

- Videos for illustration purposes
- Links to related papers (to avoid copyright clashes …)
- and the slides, of course

Updates of Tutorial Notes

New and updated material will be available at:

http://isgwww.cs.uni-magdeburg.de/cv/tutorials.html

Prerequisites

- Basic 3D graphics
  (polygons, triangles, shading, ...)
- (Very) basic medical-imaging knowledge
- Scientific visualization helps as well