

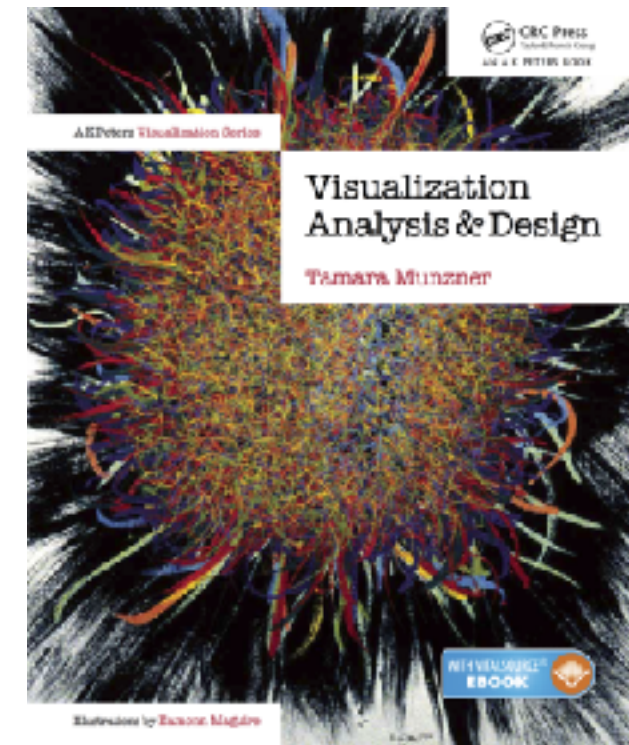
Intro

Tamara Munzner

Department of Computer Science
University of British Columbia

*Utah Viz Course Intros
Mar 1 2021*

<http://www.cs.ubc.ca/~tmm/talks.html#utah2|intro>

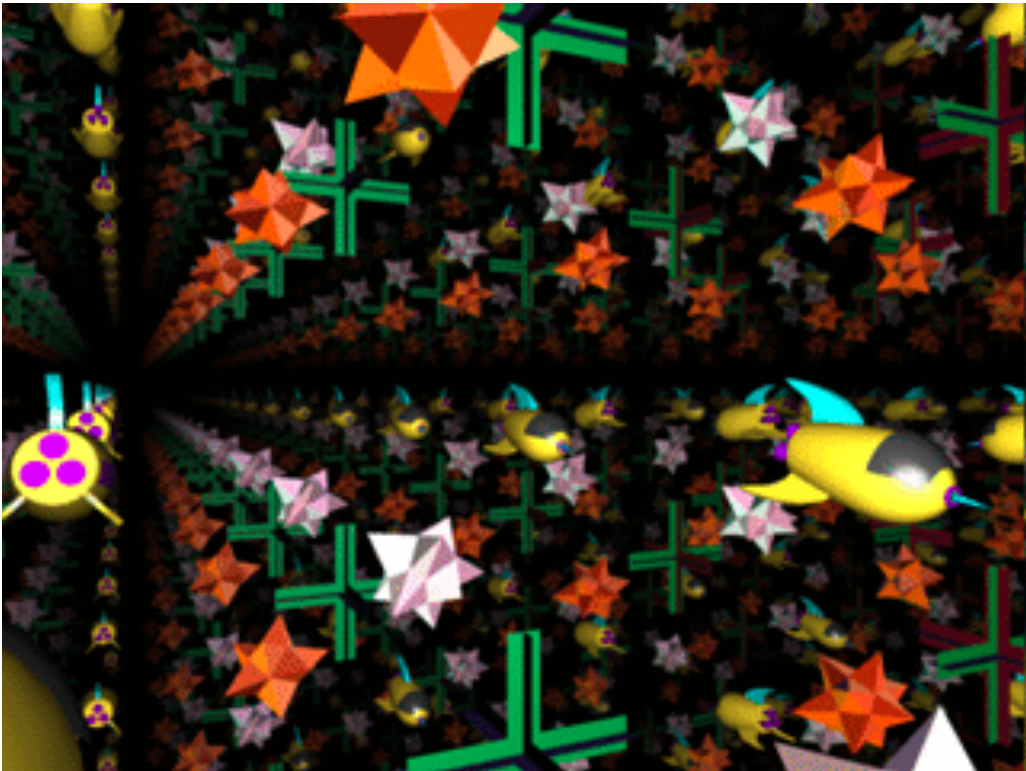


[@tamaramunzner](https://twitter.com/tamaramunzner)

About me

- technical staff, Geometry Center 1991-1995

Geometry Center: math vis videos, software



Outside In

The Shape of Space

Stuart Levy

Mark Phillips

Delle Maxwell

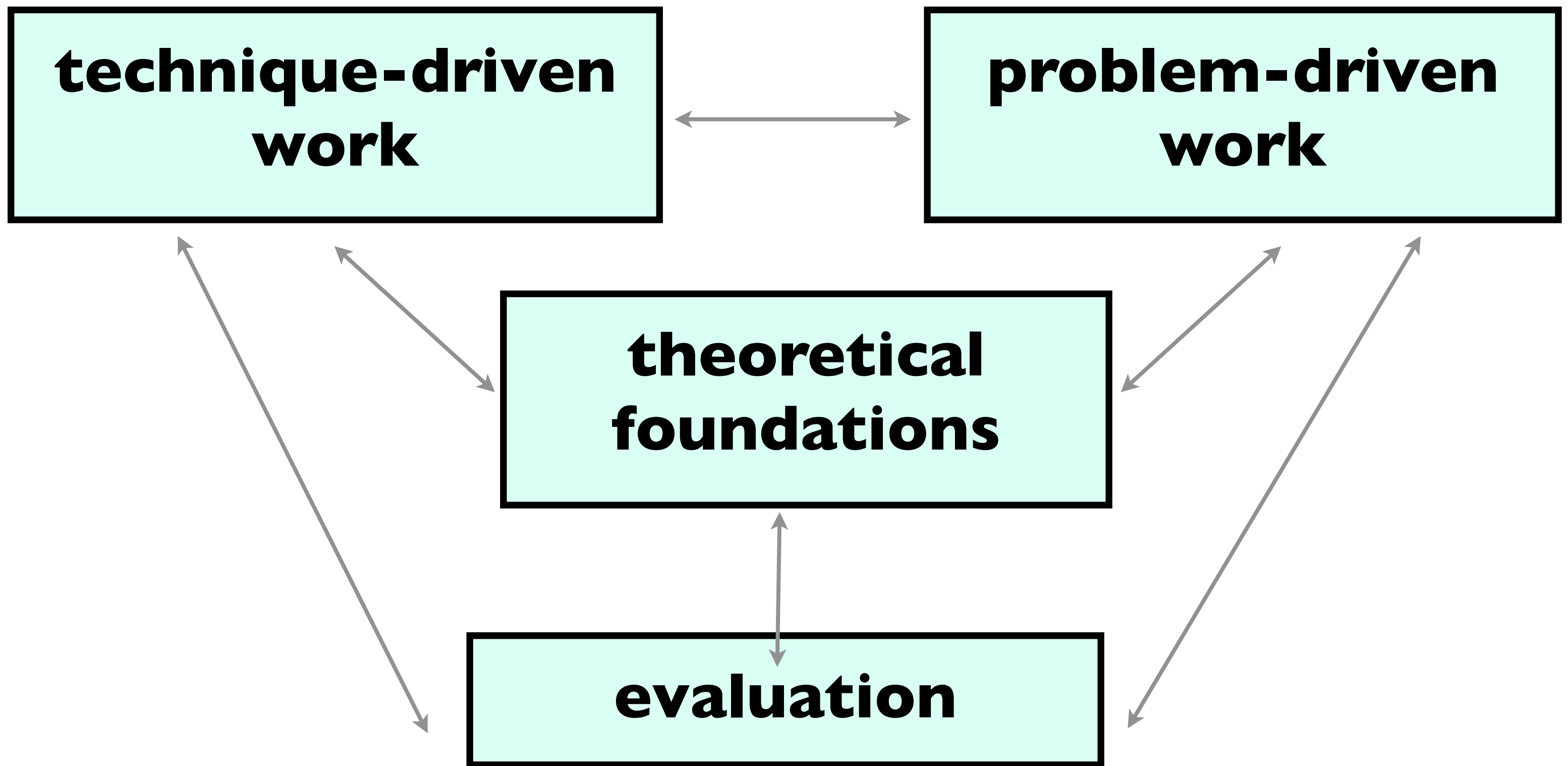


Geomview

About me

- technical staff, Geometry Center 1991-1995
- PhD @ Stanford w/ Pat Hanrahan, 1995-2000
- [DEC/Compaq] Systems Research Center (SRC), 2000-2002
- UBC, 2002-now

A quick taste of my own work!



Technique-driven: Graph/network drawing

T

P

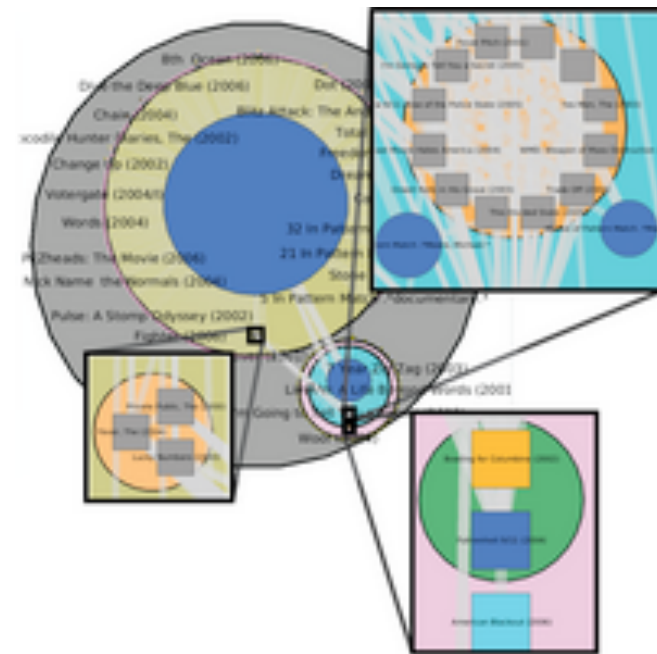
F

E

Daniel Archambault



David Auber (Bordeaux)



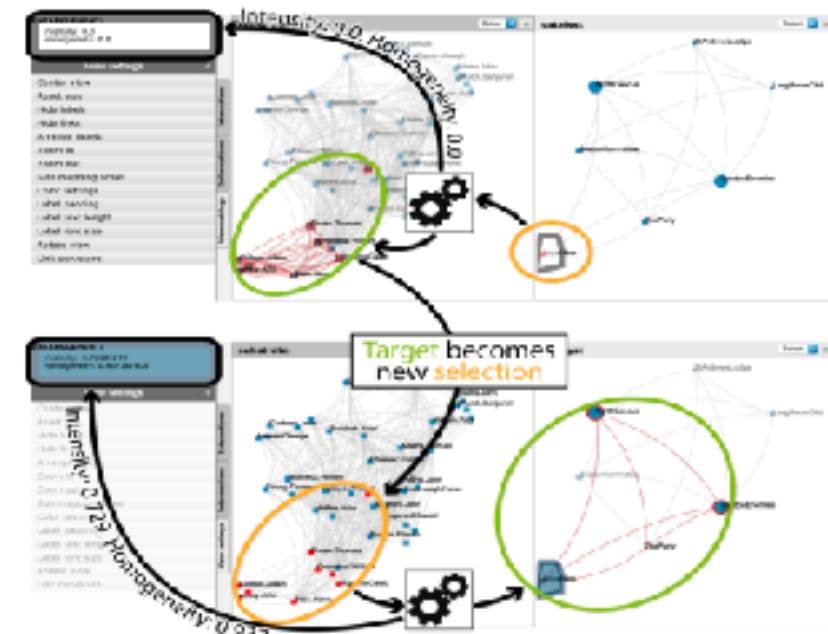
<https://youtu.be/AWXAe8zvkt8>

TopoLayout
SPF
Grouse
GrouseFlocks
TugGraph

Benjamin Renoust



Guy Melançon (Bordeaux)



Detangler

<https://youtu.be/QOtnHSsUV6k>

Technique-driven: Tree drawing

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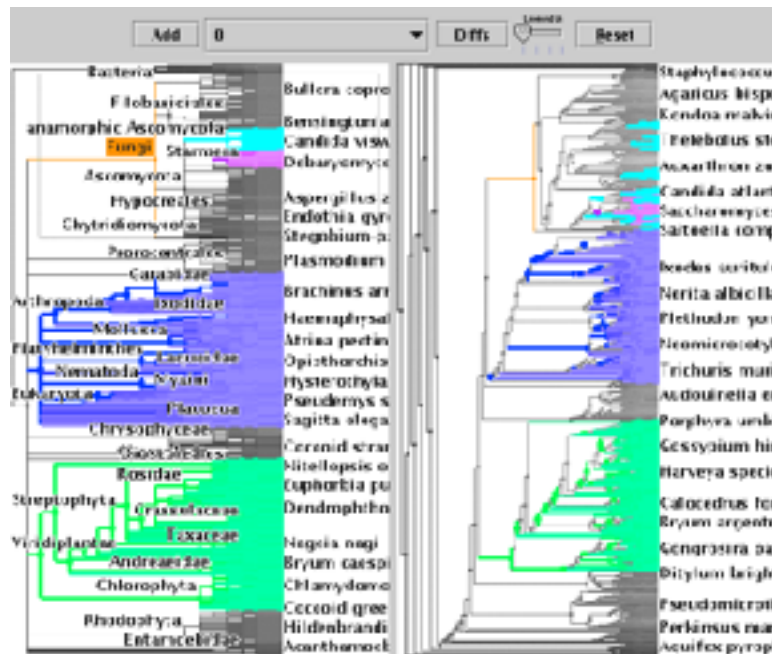
Zipeng Liu

Shing Hei Zhan



Aggregated Dendrograms

<https://youtu.be/2SLcz7KNLJw>



TreeJuxtaposer

<https://youtu.be/GdaPj8a9QEO>

Evaluation experiments: Graph/tree drawing

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Dmitry
Nekrasovski



Adam Bodnar



Joanna
McGrenere

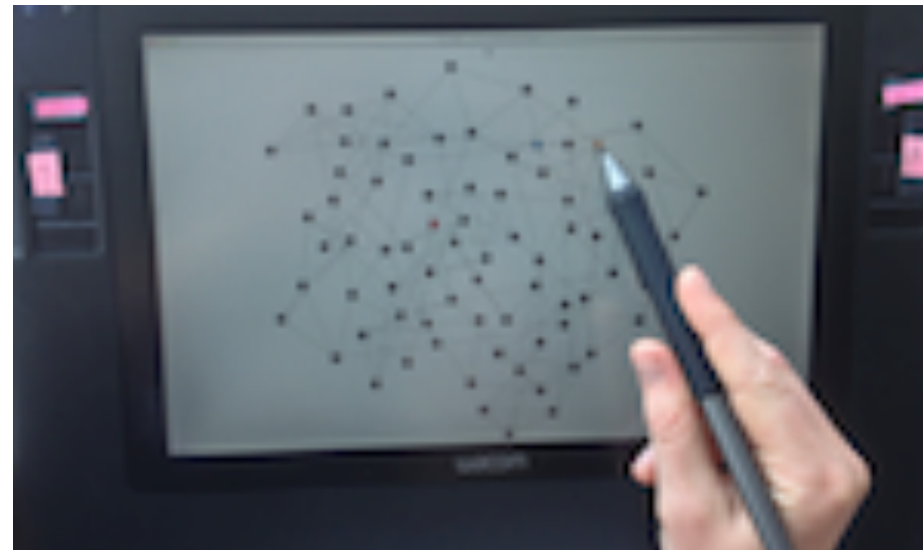


Stretch and squish navigation

Jessica Dawson



Joanna
McGrenere



Search set model of path tracing

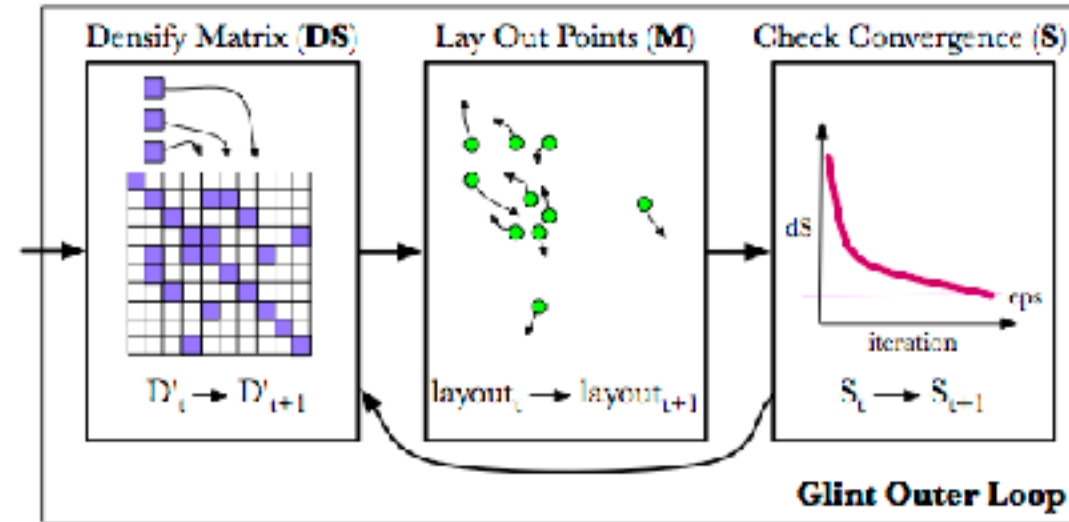
Technique-driven: Dimensionality reduction

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Stephen Ingram



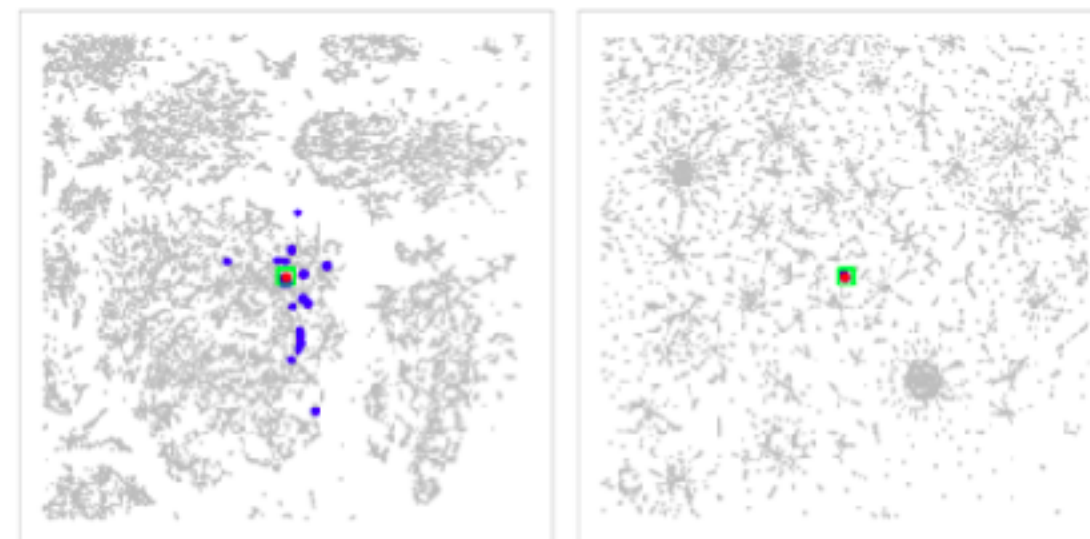
Glimmer



Glint



DimStiller



QSNE

Evaluation experiments: Dimensionality reduction

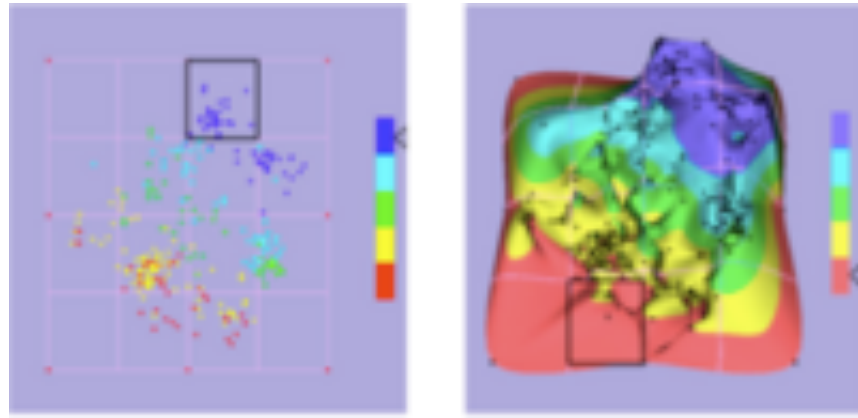
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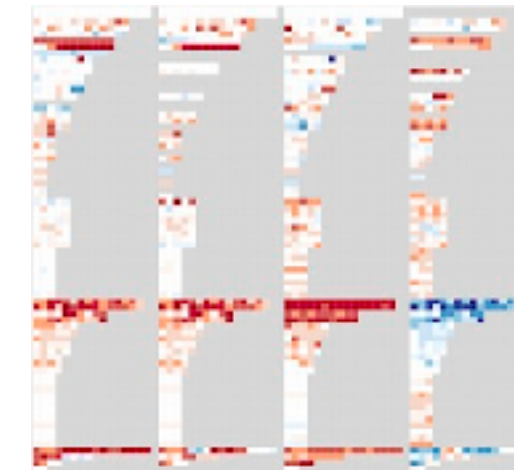
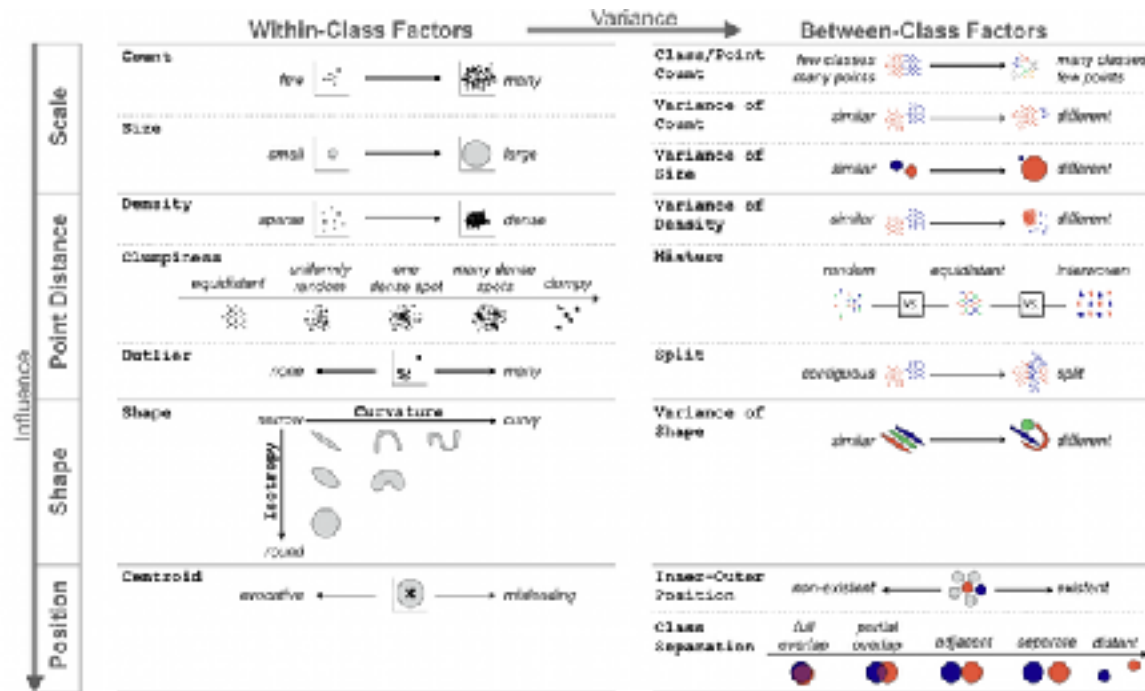
E

Melanie Tory



Points vs landscapes for dimensionally reduced data

Michael Sedlmair Melanie Tory



Guidance on DR & scatterplot choices

Taxonomy of cluster separation factors

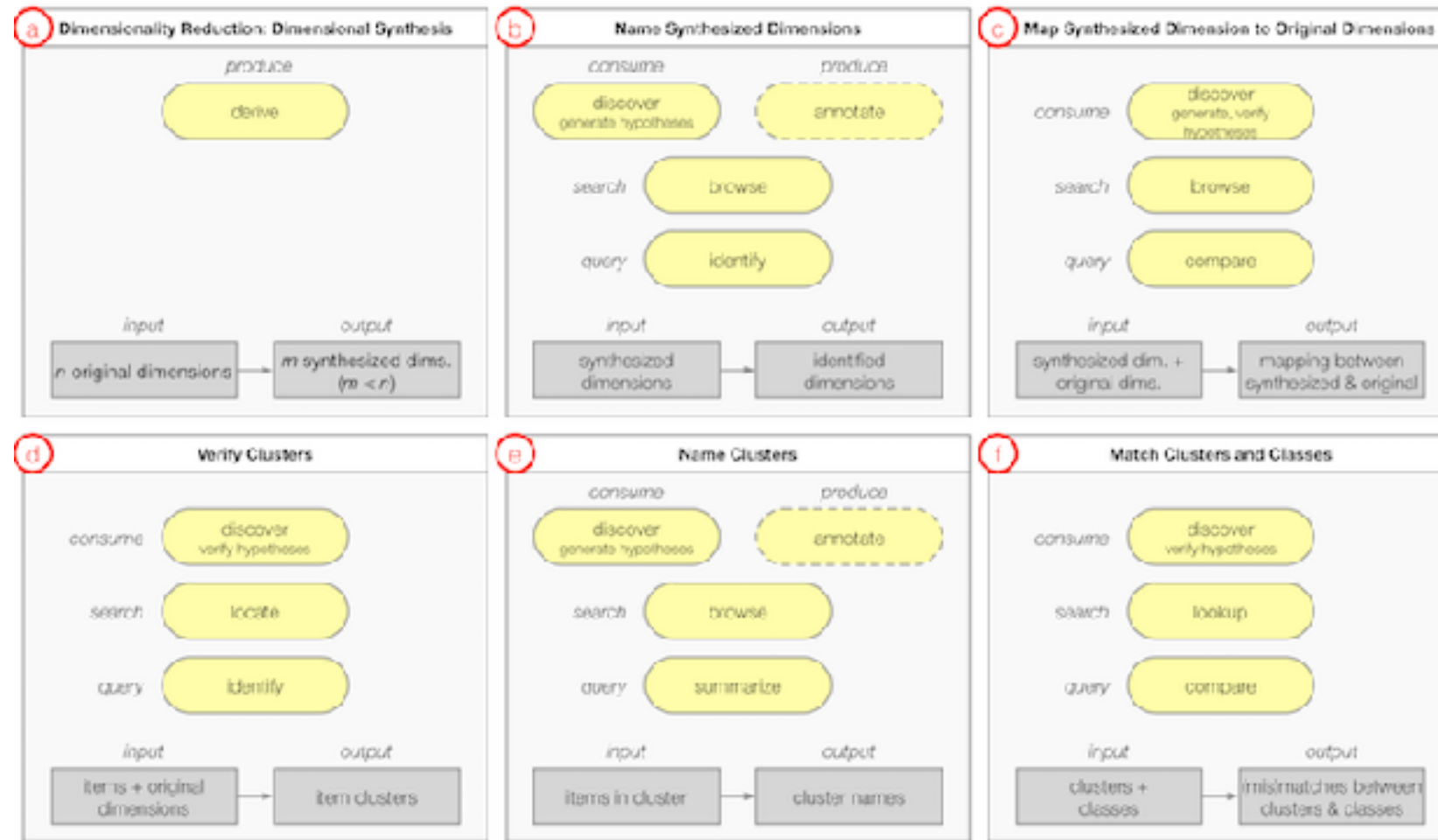
Evaluation in the field: Dimensionality reduction

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DR in the Wild

Matt Brehmer Michael Sedlmair Melanie Tory Stephen Ingram



Problem-driven: Genomics

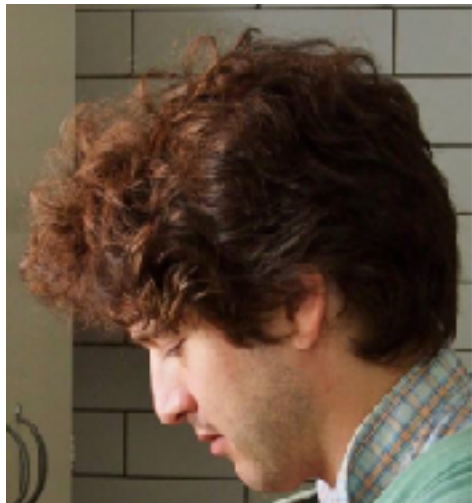
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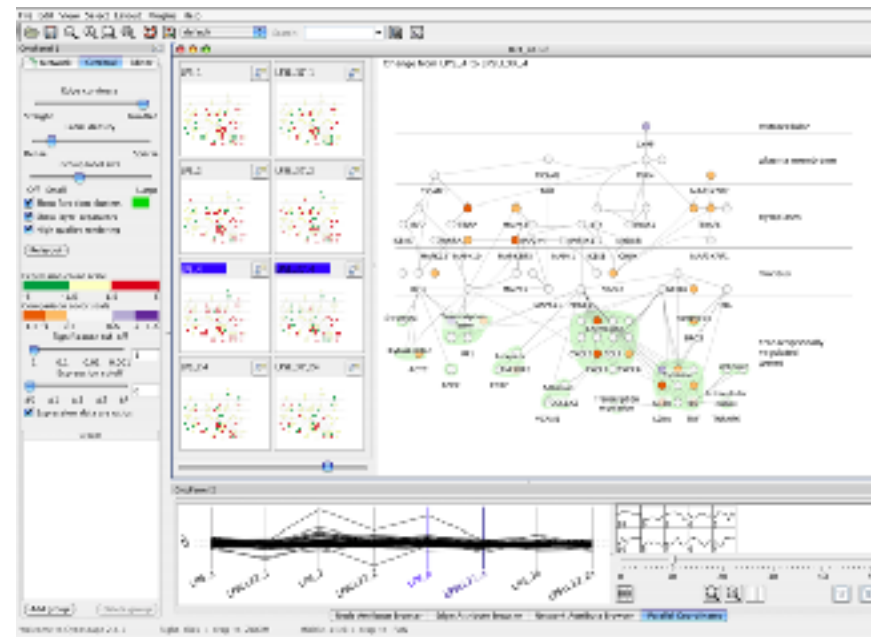
Aaron Barsky



Jenn Gardy
(Microbio)



Robert Kincaid
(Agilent)



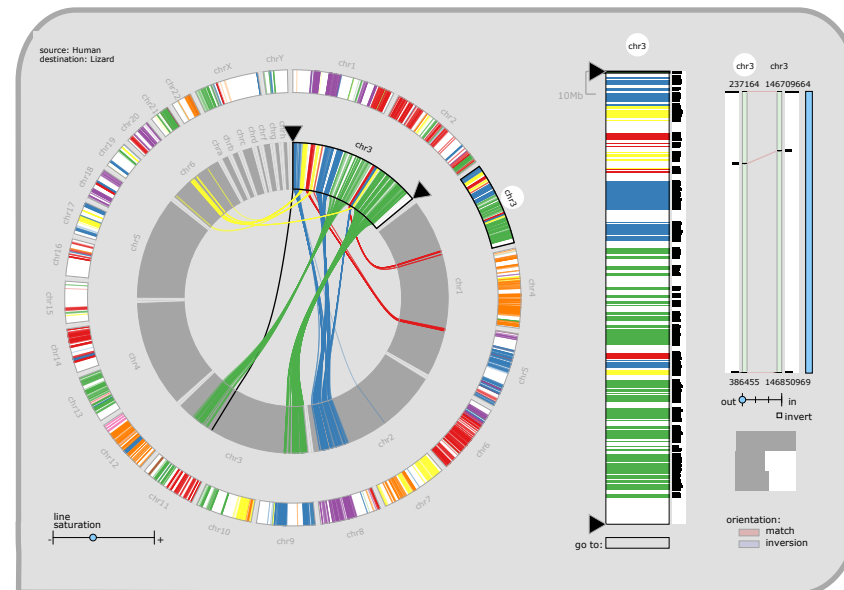
Cerebral

<https://youtu.be/76HhG1FQngI>

Miriah Meyer

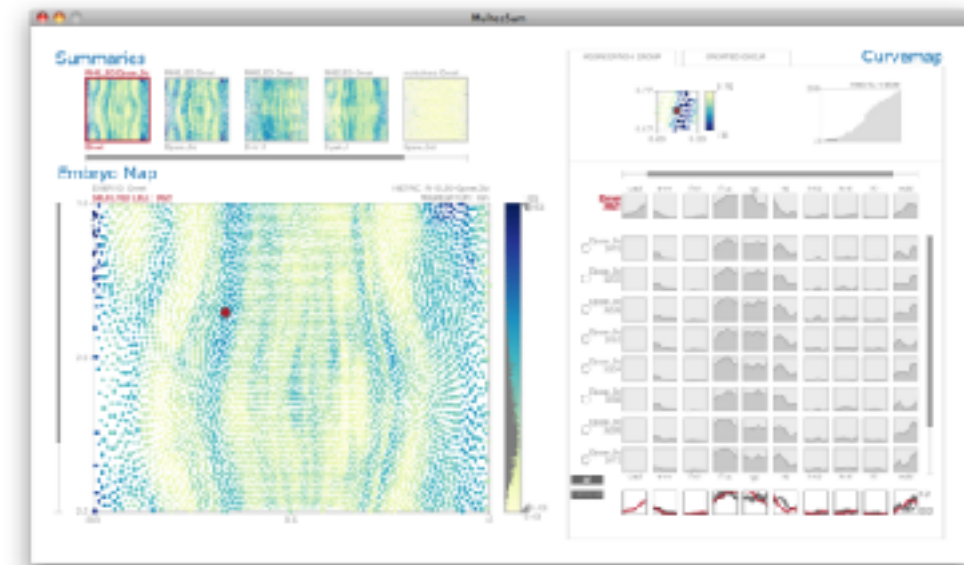


Hanspeter Pfister
(Harvard)



MizBee

<https://youtu.be/86p7brwuz2g>



MulteeSum, Pathline

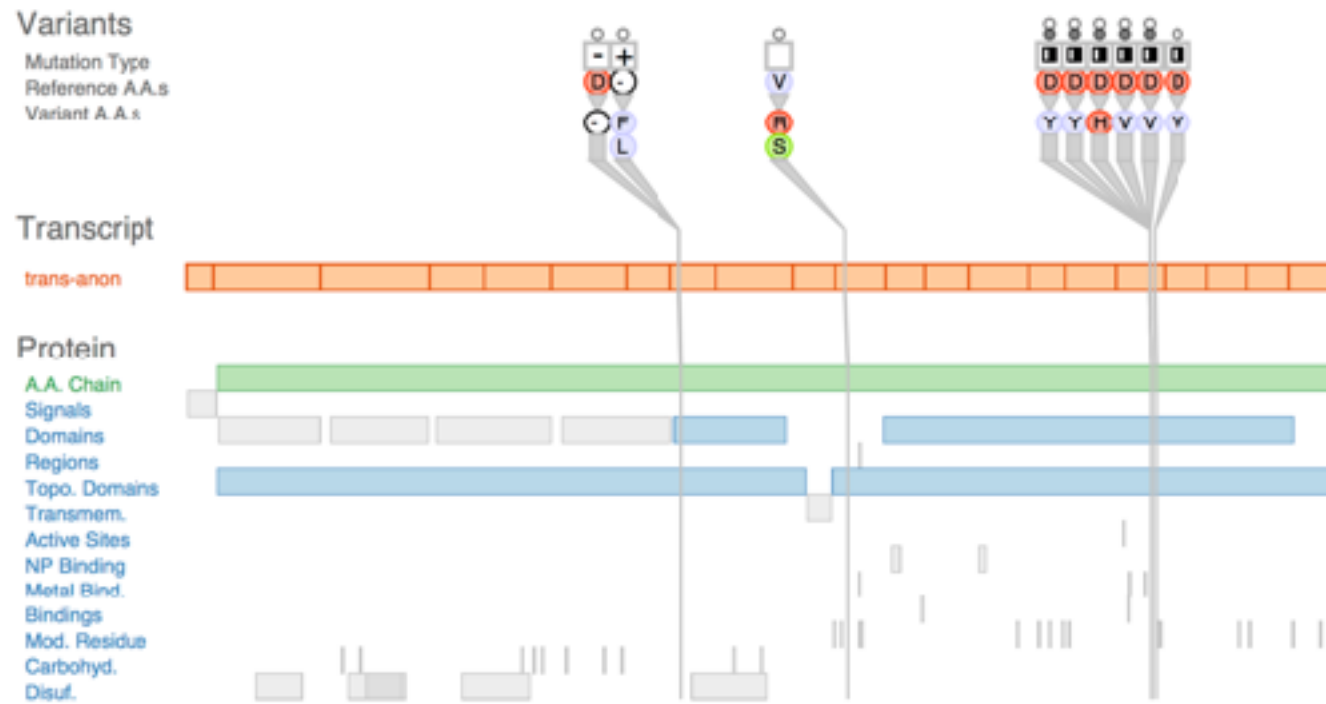
Problem-driven: Genomics, fisheries

T F E P

Joel Ferstay



Cydney Nielsen
(BC Cancer)



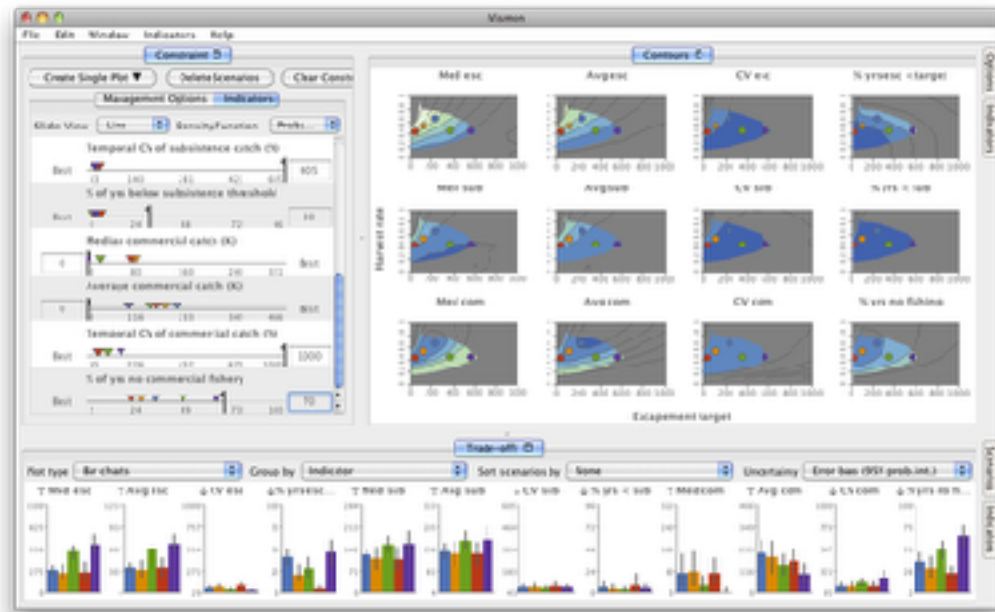
Variant View

https://youtu.be/AHDnv_qMXxQ

Maryam Booshehrian



Torsten Moeller
(SFU)



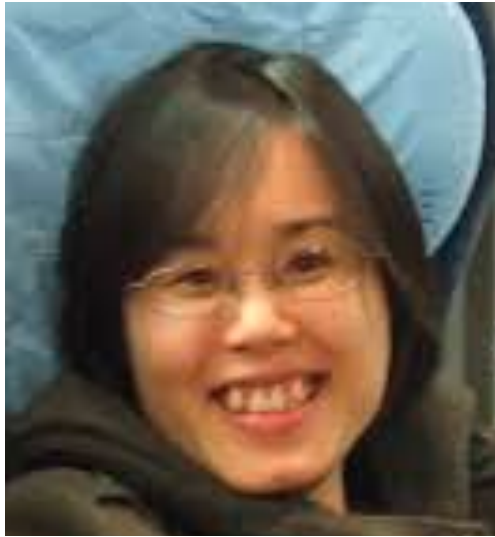
Vismon

<https://youtu.be/h0kHoS4VYmk>

Problem-driven: Tech industry

T F P
F E

Heidi Lam



Diane Tang
(Google)

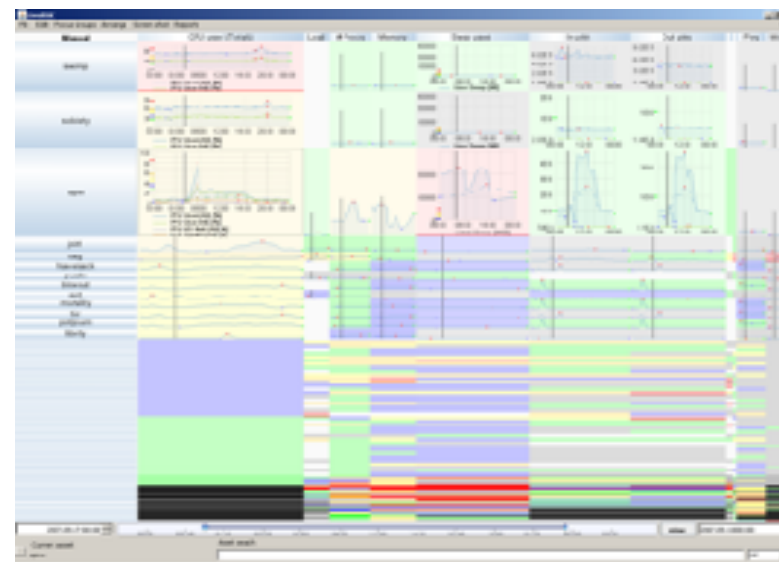


Session Viewer: web log analysis
<https://youtu.be/T4MaTZd56G4>

Peter McLachlan



Stephen North
(AT&T Research)



LiveRAC: systems time-series <https://youtu.be/ld0c3H0VSkw>

Problem-driven: Building energy mgmt, journalism

T F E P

Matt Brehmer



Kevin Tate
(Pulse/EnerNOC)



Energy Manager

Matt Brehmer



Stephen Ingram



Jonathan Stray
(Assoc Press)



Overview

<https://vimeo.com/71483614>

Problem-driven: Current data science

T F E P

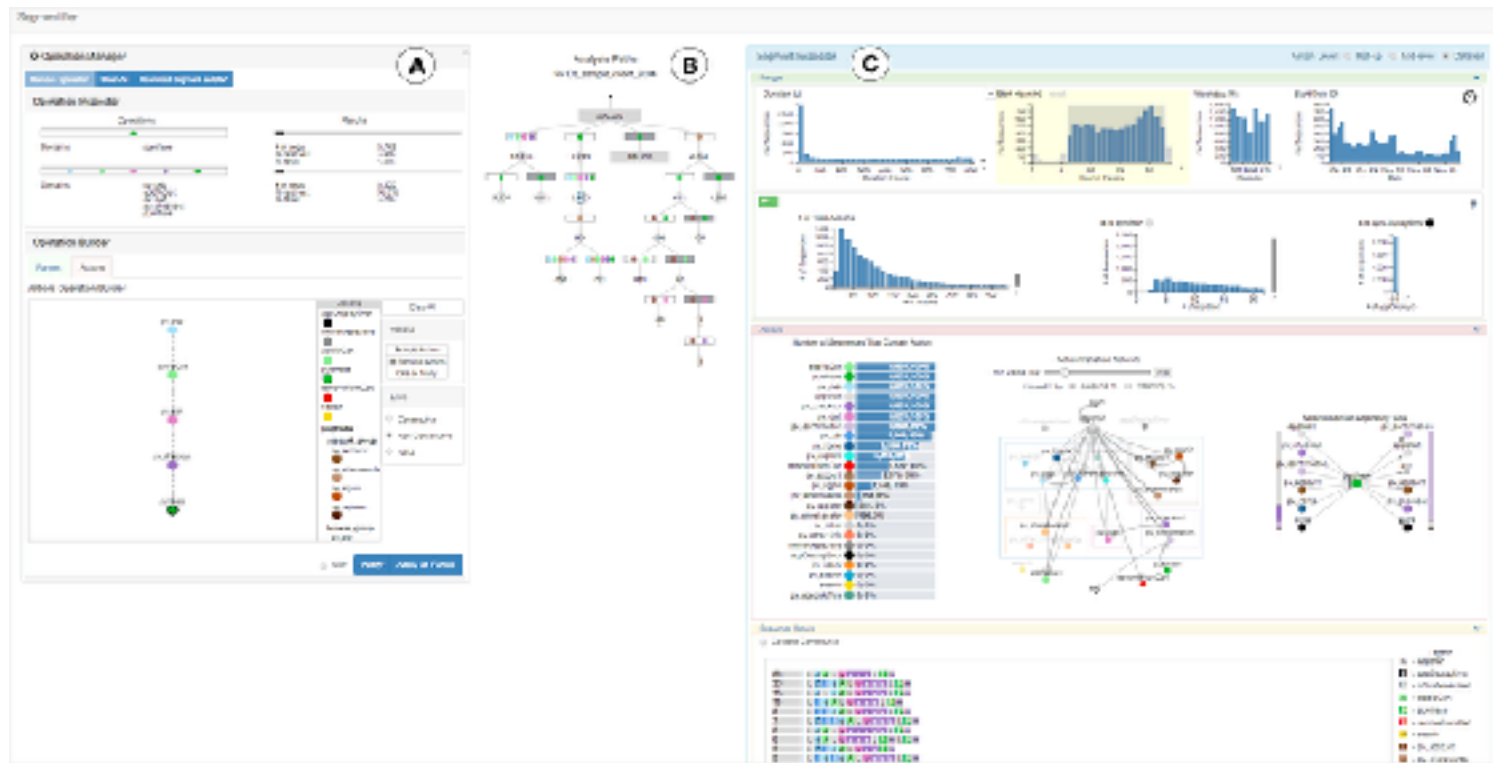
Kimberly Dextras-Romagnino



recent work:
Segmentifier
(Mobify)

e-commerce clickstreams

build tools for human-in-the-loop
visual data analysis



<https://youtu.be/TobYDFeISOg>

Michael Oppermann



recent work:
Ocupado
(Sensible Building Science)

wifi proxy for real-time building occupancy

visual analytics for facilities management



<https://youtu.be/KcwjVK8eUdw>

Curation & Presentation: Timelines

T F E P



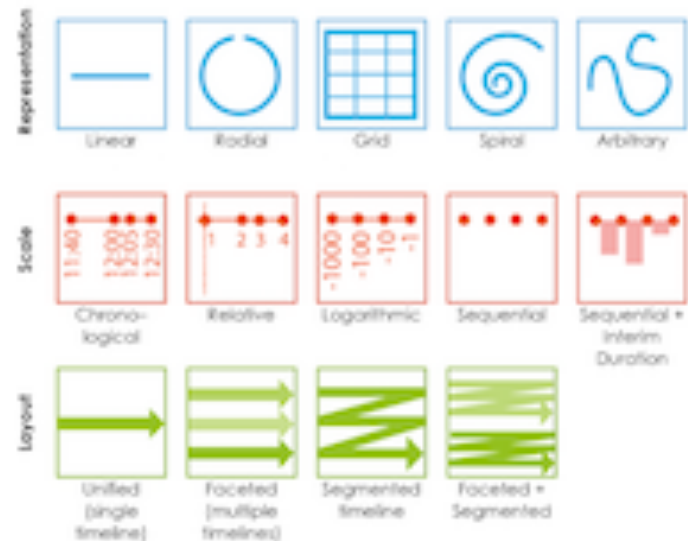
TimeLineCurator

<https://vimeo.com/123246662>

Matt Brehmer



**Johanna Fulda
(Sud. Zeitung)**



Timelines Revisited

timelinesrevisited.github.io/

Matt Brehmer



**Bongshin Lee
(Microsoft)**



**Benjamin Bach
(Microsoft)**



Nathalie Henry-Riche

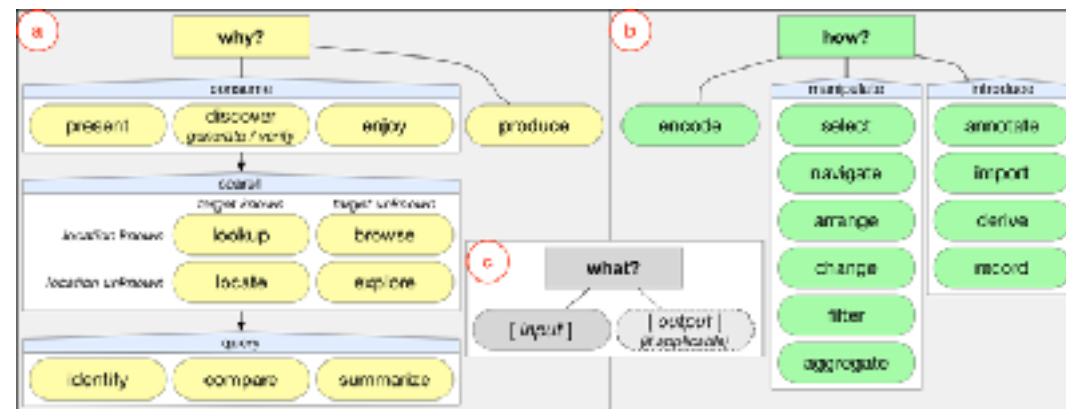


www.cs.ubc.ca/~tmm/talks.html#utah2 | intro

Theoretical foundations: Typologies

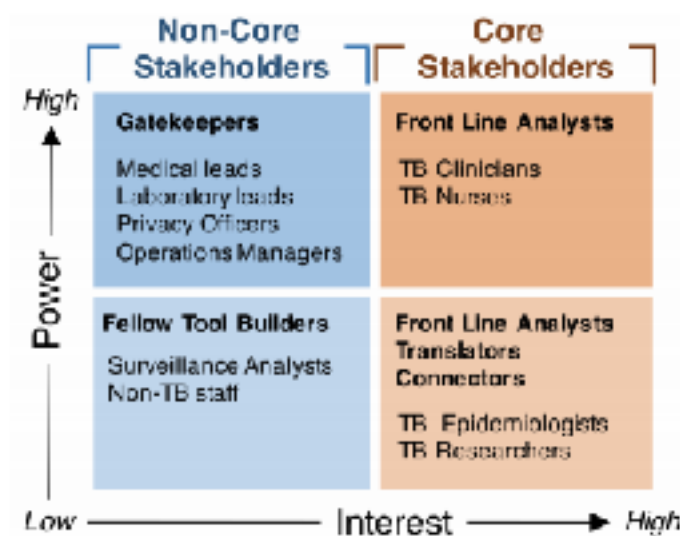
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Matt Brehmer

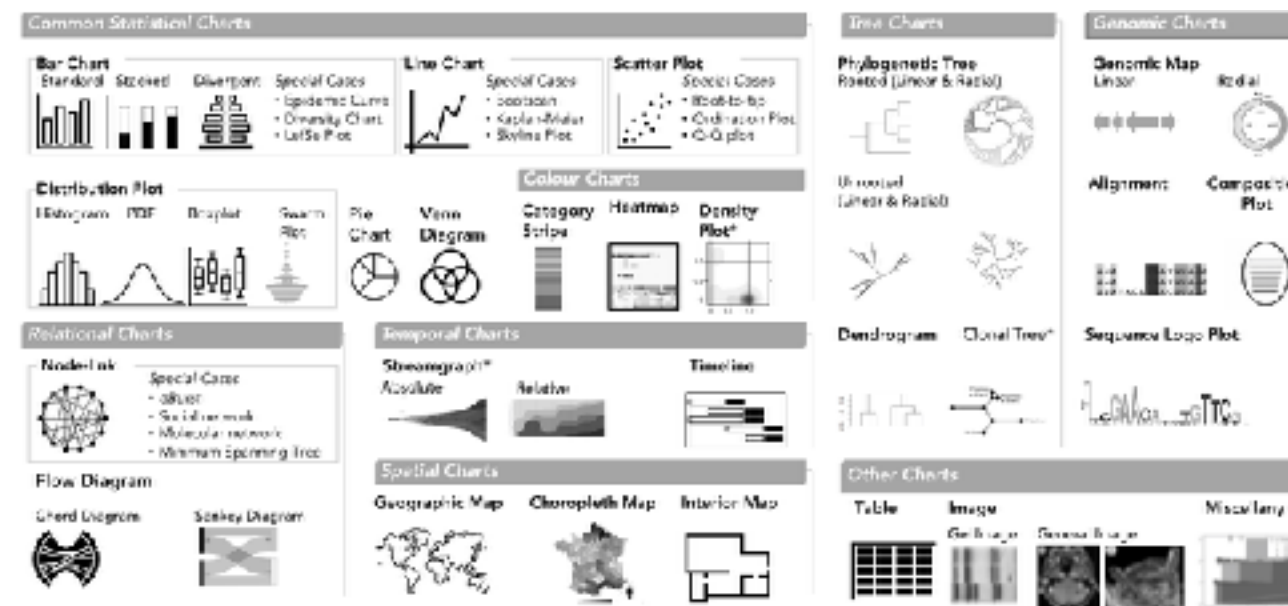


Abstract Tasks

Anamaria Crisan



Regulatory & Organizational Constraints



GEViT: Genomic Epidemiology Visualization Typology

Theoretical foundations

T F P
E

- Visual Encoding Pitfalls
 - Unjustified Visual Encoding
 - Hammer In Search Of Nail
 - 2D Good, 3D Better
 - Color Cacophony
 - Rainbows Just Like In The Sky
- Strategy Pitfalls
 - What I Did Over My Summer
 - Least Publishable Unit
 - Dense As Plutonium
 - Bad Slice and Dice

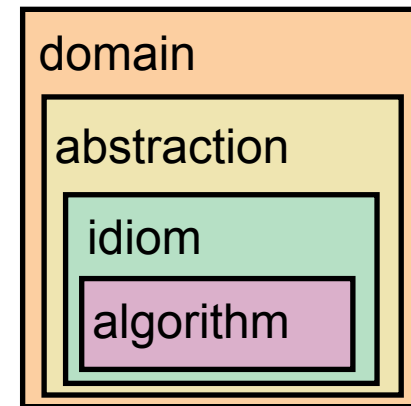
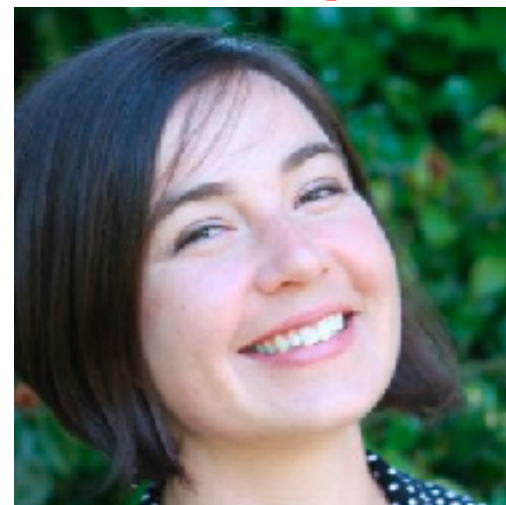
Papers Process & Pitfalls



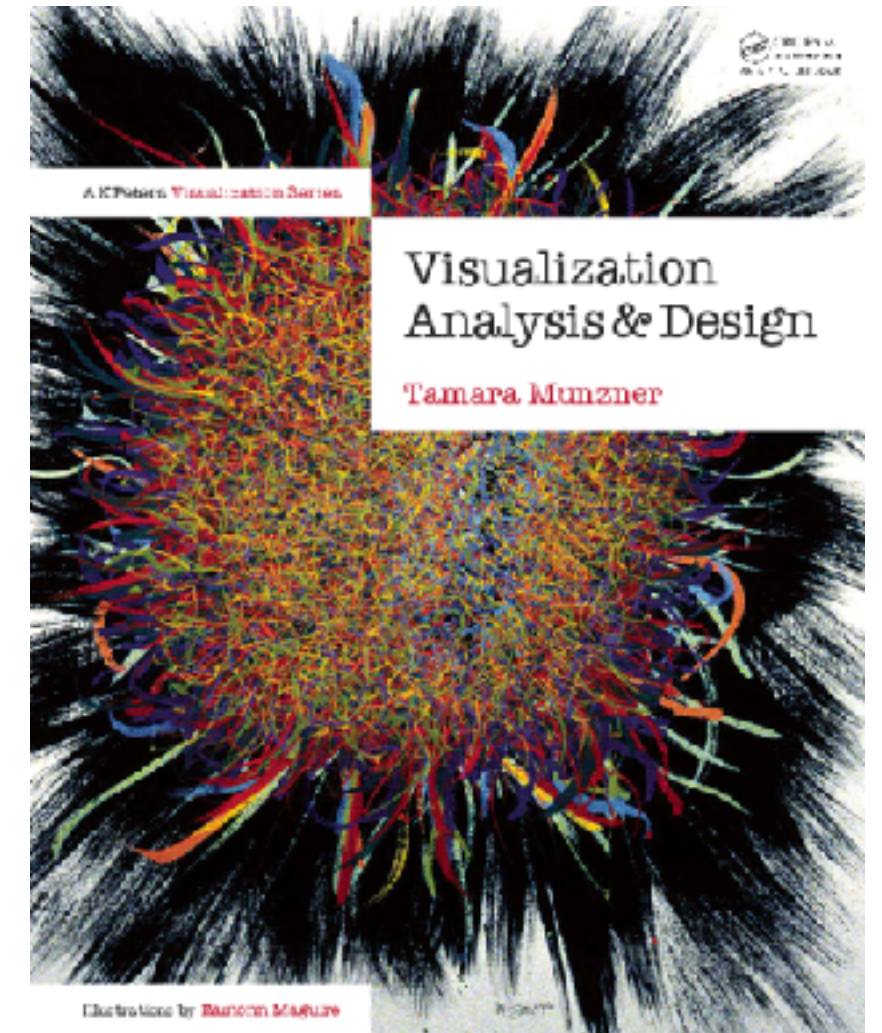
Design Study Methodology

Michael Sedlmair

Miriah Meyer



Nested Model



Visualization Analysis & Design

More Information

[@tamaramunzner](https://twitter.com/tamaramunzner)

- this talk

<http://www.cs.ubc.ca/~tmm/talks.html#utah2|intro>

- book page (including tutorial lecture slides)

<http://www.cs.ubc.ca/~tmm/vadbook>

– 20% promo code for book+ebook combo: HVN17

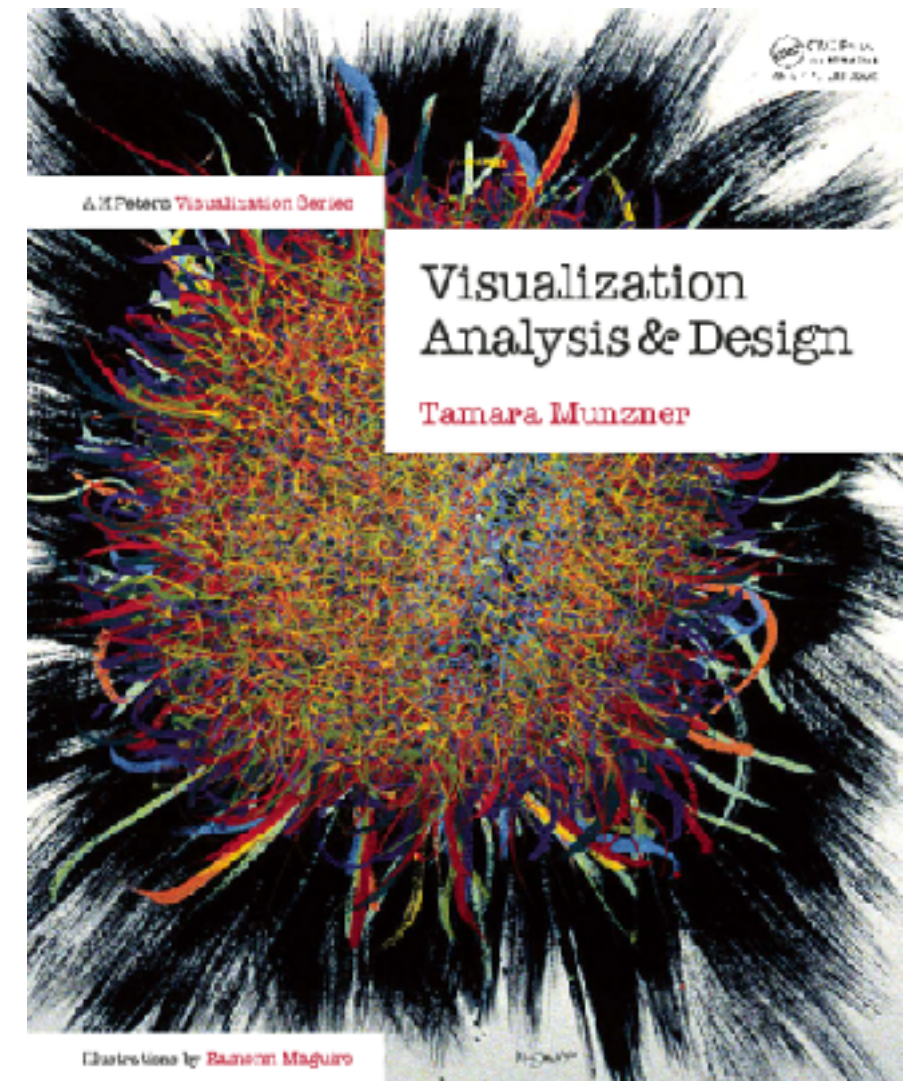
– <http://www.crcpress.com/product/isbn/9781466508910>

– illustrations: Eamonn Maguire

- papers, videos, software, talks, courses

<http://www.cs.ubc.ca/group/infovis>

<http://www.cs.ubc.ca/~tmm>



Visualization Analysis and Design.
Munzner. A K Peters Visualization Series, CRC Press, Visualization Series, 2014.