# ICA Commission on Visual Analytics

## Activities from 2015 - 2019

Co-Chairs: **Urška Demšar** & **Anthony Robinson**
University of St Andrews — The Pennsylvania State University

## Terms of Reference

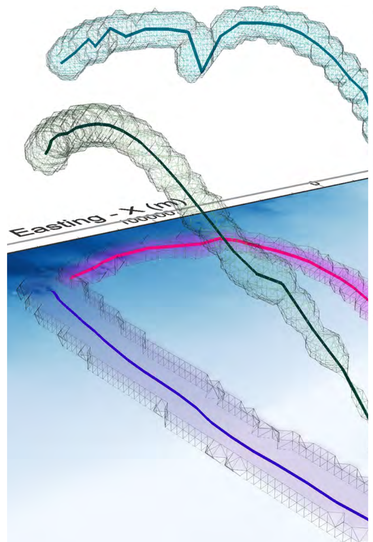
**In 2015, the ICA Commission on Visual Analytics proposed the following terms of reference for the period until 2019:**

**Develop a new research agenda for visual analytics in cartography that couples key scientific and societal challenges in collaboration with related ICA Commission.**

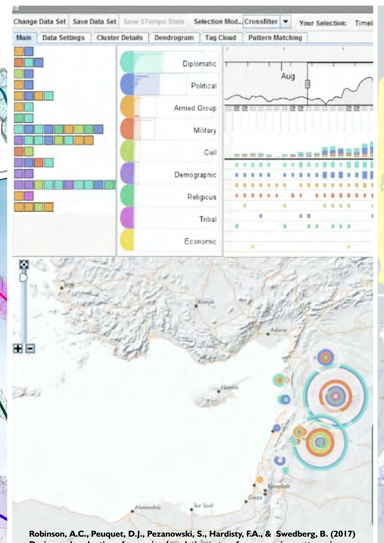
**Actively disseminate technical and methodological advances in cartographic visual analytics through workshops, seminars, and peer-reviewed publications – with linkages to other ICA Commissions and allied organizations in other fields.**

**Conduct annual meetings to develop research in key thematic areas, partnering with international conferences and other ICA commissions to expand our reach beyond traditional venues and audiences.**

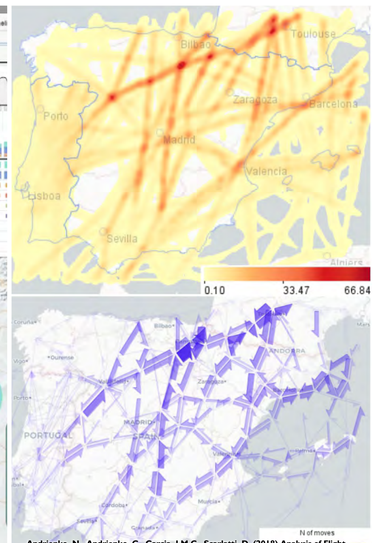
**Maintain a dedicated web presence and engage with members via social media to highlight Commission activities and promote participation beyond attendance at in-person meetings through new forms of distance collaboration.**




Demšar, U. and Long, J.A. (2019) Potential path volume (PPV): a geometric estimator for space use in 3D, Movement Ecology, 7(14), https://doi.org/10.1186/s40462-019-0158-4




Robinson, A.C., Peuquet, D.J., Pezanowski, S., Hardisty, F.A., & Swedberg, B. (2017) Design and evaluation of a geovisual analytics system for uncovering patterns in spatio-temporal event data, Cartography and Geographic Information Science, 44:3, 216-228, DOI: 10.1080/15230406.2016.1139467




Andrienko, N., Andrienko, G., Garcia, J.M.C., Scarlatti, D. (2018) Analysis of Flight Variability: a Systematic Approach, IEEE Transactions on Visualization and Computer Graphics, 25(1): 54-64, doi: 10.1109/TVCG.2018.2864811

## Publications

**The Commission on Visual Analytics has collaborated to develop a range of articles to support the goals outlined in the Terms of Reference, including:**

**Griffin, A.L., Robinson, A.C., Roth, R.E. (2017). Envisioning the Future of Cartographic Research. International Journal of Cartography. 3(sup 1): 1-8.**

**Robinson, A.C., Demsar, U., Moore, A.B., Buckley, A., Jiang, B., Field, K., Kraak, M-J., Camboim, S., Sluter, C.R. (2017) Big Data and Cartography: Research Challenges and Opportunities for Making Maps that Matter. International Journal of Cartography. 3(sup 1): 32-60.**

**Robinson, A. (2017). Geovisual Analytics. The Geographic Information Science & Technology Body of Knowledge (3rd Quarter 2017 Edition), John P. Wilson (ed.).**

**In addition, the Commission has edited and co-edited the following journal special issues:**

**2019 - Information Visualization - Special Section on Visual Movement Analytics: https://journals.sagepub.com/toc/ivia/18/1**

**2019 - ISPRS International Journal of Geographic Information - Special Issue on Geovisualization: https://www.mdpi.com/journal/ijgi/special_issues/Geovisualization**

**2017 - International Journal of Cartography - Special Issue on Research Agendas in Cartography: https://www.tandfonline.com/toc/tica20/3/sup1**


ICC Workshop 2015, Curitiba


GVIZ2018, Melbourne


SpatialVA 2016, Montreal

## Workshops & Conferences

**Since 2015 the Commission on Visual Analytics has led the following meetings and workshops:**

**2018 - New Directions in Geovisual Analytics: Visualization, Computation, and Evaluation (GVIZ2018), Workshop at GIScience 2018 in Melbourne, Australia**

**2016 - Understanding Spatial Data (Big and Small) with Visual Analytics (SpatialVA 2016), Workshop at GIScience 2016 in Montreal, Canada.**

**The Commission has also co-sponsored events with other ICA Commissions and non-ICA sister organizations:**

**2019 - Pre-ICC 2019 Workshop on User Experience Design for Mobile Cartography: Setting the Agenda, in Beijing, China.**

**2016 - Visually-supported Computational Movement Analysis, Workshop at AGILE 2016 in Helsinki, Finland.**

**2015 - Pre-ICC 2015 Workshop on Envisioning the Future of Cartographic Research in Curitiba, Brazil.**

INTERNATIONAL JOURNAL OF CARTOGRAPHY, 2017
VOL. 3, NO. S1, 32–60
https://doi.org/10.1080/23729333.2016.1278151

Taylor & Francis

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**Geospatial big data and cartography: research challenges and opportunities for making maps that matter**

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**ABSTRACT**
Geospatial big data present a new set of challenges and opportunities for cartographic researchers in technical, methodological and artistic realms. New computational and technical paradigms for cartography are accompanying the rise of geospatial big data. Additionally, the art and science of cartography needs to focus its contemporary efforts on work that connects to outside disciplines and is grounded in problems that are important to humankind and its sustainability. Following the development of position papers and a collaborative workshop to craft consensus around key topics, this article presents a new cartographic research agenda focused on making maps that matter using geospatial big data. This agenda provides both long-term challenges that require significant attention and short-term opportunities that we believe could be addressed in more concentrated studies.

**RÉSUMÉ**
Les Big Data géospatialisées représentent un nouvel ensemble de défis et d'opportunités pour les chercheurs en cartographie dans les domaines technique, méthodologique et artistique. Les nouveaux paradigmes informatiques et techniques en cartographie suivent la progression des big data géospatiales. De plus, les composantes artistiques et scientifiques de la cartographie doivent actuellement concentrer leurs efforts sur les travaux de mise en relation avec d'autres disciplines et se fondent sur des problèmes qui sont importants pour l'humanité et sa durabilité. A partir de papiers de position et d'un atelier collaboratif pour élaborer un consensus sur des sujets clés, ce papier présente un nouvel agenda de recherche en cartographie centré sur la fabrication de cartes qui comptent pour la société, conçues à partir de Big Data géospatiales. Cet agenda propose

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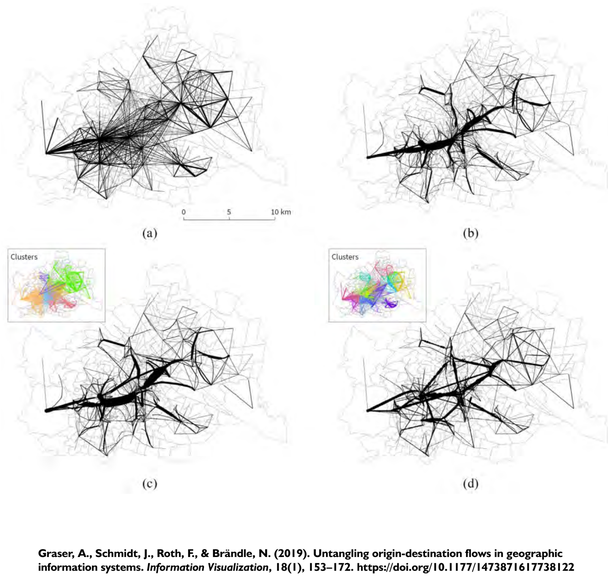


Graser, A., Schmidt, J., Roth, F., & Brändle, N. (2019). Untangling origin-destination flows in geographic information systems. *Information Visualization*, 18(1), 153–172. https://doi.org/10.1177/1473871617738122

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**We welcome new members to help shape the future of visual analytics in Cartography.**

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