**Mark N. Gahegan**

**Gahegan** is an active member of several cyberinfrastructure projects including the GEON—the Geosciences Network (www.geongrid.org), HERO—Human-Environment Regional Observatories (http://hero.geog.psu.edu) and Dialog-PLUS:, Digital Libraries in Support of Innovative Approaches to Learning and Teaching in Geography (www.dialogplus.org/). In each of these projects he has responsibilities for capturing, representing and communicating conceptual understanding between individuals and groups engaged in geoscience and education. He is also the director of the GeoVISTA *Studio* and *ConceptVista* projects (http://www.geovistastudio.psu.edu/; http://www.geovista.psu.edu/ConceptVISTA). He has recently been funded by NGA to research knowledge infrastructure for describing and building information workflows and by ARDA (subcontract to PNNL) to investigate uncertainty visualization for intelligence analysis.

**Professional Preparation**

- University of Leeds, UK, School of Computer Studies, B.S. with honors (1984).
- Curtin University of Technology, Australia, School of Computing Science, Ph.D. Thesis title: "*An architecture for a geographic information system to support full data integration and contextual reasoning*" (1997).

**Appointments**

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| 2002- | Full Professor, Department of Geography, and affiliate Professor in the School of Information Science and Technology, The Pennsylvania State University. |
| 1999-2002 | Associate Professor, The Pennsylvania State University, (Geography), |
| 1993-1998 | Lecturer (Senior since 1997), Curtin University (Computing Science), Australia. |
| 1991-1993 | Lecturer, University of Leeds (Computer Studies), UK. |
| 1989-1991 | Research Officer, University of Leeds (Computer Studies), UK. |
| 1988-1989 | Software Engineer, Systime Computers, UK. |
| 1986-1988 | Research Scientist (computing officer), University of Leeds (Comp. Studies) UK. |
| 1985-1986 | Research Scientist, University of Leeds (Geography) UK. |

**Most Relevant Publications**


1. **Gahegan, M.** and Brodaric, B. (2002) Computational and Visual Support for Geographical Knowledge Construction: Filling in the gaps between Exploration and Explanation. In: *Advances in Spatial Data Handling, 10th International Symposium on Spatial Data Handling*, D. Richardson and P. van Oosterom (eds.), Springer, New York, pp. 11-26.

2. Pike W. A., Ahlqvist O., **Gahegan M.**, Oswal S., Capturing context in collaborative science: Supporting collaborative science through a knowledge and data management portal, workshop on Semantic Web Technologies for Searching and Retrieving Scientific Data, at *Second International Semantic Web Conference*, Sanibel Island, FL, October 2003.

3. Brodaric, B. and **Gahegan, M**. (2001). Learning geoscience categories in situ: Implications for geographic knowledge representation. Proc: *9th ACM International Symposium on Advances in GIS*, Nov. 9-10, 2001, Atlanta, GA, ACM Press: New York, 130-135.
4. **Gahegan, M.**, Takatsuka, M., Wheeler, M. and Hardisty, F. (2002). GeoVISTA *Studio*: a geocomputational workbench. *Computers, Environment and Urban Systems*, Vol. 26, pp. 267-292.
5. MacEachren A. M., **Gahegan** M. and Pike W. (2004), Geovisualization for constructing and sharing concepts, Proceedings of the National Academy of Science, Vol. 101, Suppl. 1, pp. 5279-5286.
6. **Gahegan, M.** (1999). Systems integration within the geosciences (guest editor of special issue) *Computers and Geosciences*. Vol. 25, No. 1.
7. O'Brien, J. and **Gahegan, M**. (2004). A knowledge framework for representing, manipulating and reasoning with geographic semantics. *International Conference on Spatial Data Handling*, Leicester, 2004, pp. 584-603.
8. **Gahegan, M. N.** (1999). Characterizing the semantic content of geographic data, models, and systems. In *Interoperating Geographic Information Systems* (Eds. Goodchild, M.F., Egenhofer, M. J. Fegeas, R. and Kottman, C. A.). Boston: Kluwer Academic Publishers, pp. 71-84.
9. Pike W., **Gahegan M**, 2003, Constructing semantically scalable cognitive spaces, *in:* Spatial Information Theory: Foundations of Geographic Information Science. Conference on Spatial Information Theory COSIT03, Lecture Notes in Computer Science 2825, Kuhn W, Worboys M, and Timpf S (Eds.). Springer-Verlag, Berlin: 332-348.
10. Takatsuka, M. and **Gahegan, M**. (2002) GeoVISTA *Studio*: A codeless visual programming environment for geoscientific data analysis and visualization. *Computers and Geosciences*, Vol. 28, No. 10, pp. 1131-1144.

## Synergistic Activities

- Associate director of the GeoVISTA Center for geographic visualization and analysis. Director of the GeoVISTA *Studio* project to develop an integrated visualization, geocomputational and conceptual analysis environment. (www.geovistastudio.psu.edu)
- In Australia, consultancy experience in the Minerals Exploration (Goldfields of Western Australia (Placer pacific, Mount Isa Mines, Sons of Gwalia, North) on the use of visualization and machine learning for characterizing gold deposits. Also member of two large Geoscientific co-operative research centers (Mineral Exploration Technologies and Geodynamics) examining new information resources for exploration geophysics.
- Editorships: Editor of: *International Journal of Geographical Information Science*, Journal editorial board memberships: *Computers and Geosciences*, *Geographical Analysis*, *Computers, Environment and Urban Systems* and *Transactions in GIS*, *Cartographica*.