

Nicholas Ramsey Chrisman

Education

- 1979-82 University of Bristol (England), **Ph.D.** in geography
Thesis titled: *Methods of spatial analysis based on error in categorical maps*
- 1968-72 University of Massachusetts–Amherst, **B.A.**, *magna cum laude*, geography.
- 1970 Université de Strasbourg (France) auditeur libre

Employment

- 2014- Editor, *Cartography and Geographic Information Science* (volunteer position)
- 2013-14 Professor, RMIT University; Head of Discipline, Geospatial Sciences
- 2013- Professeur associé, Université Laval, Sciences géomatiques
- 2005-12 Professeur titulaire, Université Laval, Sciences géomatiques
Directeur scientifique, Réseau GEOIDE Network
- 1987-2004 Assistant to Full Professor, University of Washington, Geography
- 1982-87 Assistant Professor, University of Wisconsin–Madison
Department of Landscape Architecture & Institute for Environmental Studies
- 1972-82 Programmer/Analyst, Laboratory for Computer Graphics and Spatial
Analysis, Graduate School of Design, Harvard University

Research Interests

Geographic Information Systems (GIS): 46 year experience; output: 2 books; over 100
scientific articles (over 65 reviewed outlets); h-index: 35 (*35 works with over 35 citations*)

Science and Technology Studies (STS): 12 year engagement
See Bibliography for titles and places of publication.

Science Management

GEOIDE Network (2005-12): Direction of interdisciplinary teams at 30 Canadian
Universities (134 researchers, 247 students, 25M\$ from NCE & 9M\$ from others)

Personal Details

Born 18 September, 1950 in Northampton, Massachusetts USA; US Citizen
Fluent in French, Functional basic Spanish.

Research Grants and Contracts

At RMIT University

2014-17 *Disaster landscape attribution: thermal anomaly surveillance and hazard mapping, data scaling and validation*, Bushfire and Natural Hazards CRC, Chief Investigator with Karen Rienke and Simon Jones (PI), 847,000\$

At Université Laval

2012-13 *GEOIDE Network Management Funds*, Networks of Centres of Excellence, 408,000\$

2009-12 *GEOIDE Network Phase IV*, Networks of Centres of Excellence, Scientific Director, 3,500,000\$CAD/ year; 1.3M\$/year non-NCE cash contributions

2008-12 *Situating geographic information analysis: Retrospective case studies*, Social Sciences and Humanities Research Council of Canada, PI, 25,000\$CAD /year

2005-09 *GEOIDE Network Phase III*, Networks of Centres of Excellence, Scientific Director, 3,500,000\$CAD/ year; 6,120,000\$ non-NCE funds (total)

At University of Washington

2000 Invited for 3 months as Chercheur associé, Unité Mixte de Recherche ESPACE, Centre Nationale de la Recherche Scientifique, Montpellier France.

1998-01 *Social Construction of GIS*, National Science Foundation, PI, \$84,000

1998-00 *Clearinghouse for GIS Data*, Olympic Natural Resource Center, US Forest Service, US Geological Survey, Co-PI (D. Peterson PI), \$43,000 + \$61,000

1995-96 *Social Practice of GIS: LLRW Siting*, Royalty Research Fund, \$12,000

1994-95 *Facilitating Collaborative Learning and Critical Thinking in a GIS Laboratory for Undergraduate Education*, National Science Foundation Instrumentation Grant, Timothy Nyerges, Principal Investigator, \$25,000

1994 *Issues in Data Quality*, Institut Géographique Nationale (France), \$3,000

1993-94 *Accuracy Study for California Timberland Task Force*, subcontract with University of California-Santa Barbara, Michael Goodchild PI, \$12,000

1988-91 *Modelling Error in Overlaid Categorical Maps*, National Science Foundation, Principal Investigator. \$80,000

At University of Wisconsin

1986-87 *Evaluate Alternatives for Conservation Planning*, USDA Hatch \$40,000

1985-86 *National Charting Accuracy Standards*, Charting and Geodetic Services, National Ocean Service, NOAA [sole principal investigator] \$68,000

1983-86 *Dane County Land Records Project*, cooperative project with multiple partners at all levels of government [with four others] \$100,000

At Harvard Laboratory for Computer Graphics

1979-81 *Countervailing Population Redistribution: Factors Influencing Inner-City Revitalization*, National Science Foundation, Geography Program [Brian Berry PI] \$100,000

1974-77 *Topological Information Systems for Urban and Environmental Research*, National Science Foundation, Computer Science Div., [named coprincipal] \$230,000

Professional Service

- 2010-14 President, Global Spatial Network
- 2011-13 member, Panel on Developing Science, Technology and Innovation Indicators for the Future, Committee on National Statistics, National Research Council (USA).
- 2011 member, Committee 09, Social Science and Humanities Research Council (Canada)
- 2009-11 member (Board of Directors), Centre of Excellence for Integrated Resource Management (now Tecterra), Alberta (NCE-funded CECR)
- 2007-12 member, GeoBase Steering Committee, Natural Resources Canada
- 2007-10 member Working Group on National Mapping Strategy, Canada
- 2006-11 member, Science and Technology Committee, GEO Consortium, Geneva
- 2006 External review, Université du Québec à Trois-Rivières, Masters in envir. sciences.
- 2004 Program Committee, Society of the Social Studies of Science, Paris.
- 2000-10 Program Review, GIScience 2000; 2004; 2006; 2008; 2010.
- 1999 Program Committee, GISOC, Minneapolis.
- 1998 Chair, Technical Programme Committee, Spatial Data Handling 98, Vancouver
- 1997-99 member, Mapping Sciences Committee, National Research Council
- 1997 Director, AUTO-CARTO 13
- 1995-7 Elected Chair, GIS Specialty Group, Association of American Geographers
- 1994 Local arrangements, *GIS and Society Workshop*. NCGIA.
- 1993 Peer Review Panel, National Research Council, Global Change Data & Information
- 1993-99 Committee on Standards, Association of American Geographers
- 1993- Comité de Rédaction, **Revue Internationale de Géomatique**, Paris.
- 1993-99 Program Review, Conference on Spatial Information Theory 93; 95; 97; 99.
- 1992-94 Director, American Cartographic Association
- 1991-93 Technical Program Review, AUTO-CARTO 10; 11 (1993); 12 (1995)
- 1988-90 Editorial Board, **The American Cartographer**, ACSM
- 1987-88 Director, Specialty Group on GIS, Association of American Geographers
- 1987 Program Advisory Committee, International GIS Symposium, (AAG)
- 1986-87 Director, AUTO-CARTO 8 (awarded Presidential Citation by ASPRS)
- 1985-86 Subcommittee on Standards, Wisconsin Land Records Committee
- 1982-87 Chair, Working Group on Data Set Quality, National Committee for Digital Cartographic Data Standards (ACSM)
- 1983-85 Technical Program Advisor, AUTO-CARTO 6 & 7
- continual Review of research proposals for research councils in France, USA, Canada, etc.

University Service

Université Laval

- 2008-14 membre, Commission de la recherche, Université Laval
- 2008-10 directeur (par intérim) Centre de recherche en géomatique

University of Washington

- 2001 Program Review, Department of Civil and Environmental Engineering (chair)
- 1999-00 Search Committee for Chair of Earth and Space Sciences (chair)
- 1998-00 Steering Committee, Interdisciplinary Group for PhD in Urban Design and Planning
- 1996-01 Faculty Senate
- 1994-04 State Environmental Policy Committee (reviews SEPA documents)
- 1993-99 President, UW Consortium for Geographic Information and Analysis

University of Wisconsin–Madison

- 1986-87 Computing Center Advisory Committee
- 1986 *ad hoc* Committee on the Mission of the Academic Computing Center
- 1982-87 Information Technology Committee, College of Agricultural & Life Sciences

Departmental Service

RMIT University

- 2013-14 member, Executive, School of Mathematical and Geospatial Sciences

Université Laval

- 2010-12 Comité de programme deuxième et troisième cycles, département des sciences géomatiques
- 2005 Search Committee for Junior Chair of Canada position

University of Washington

- 1999-00 Strategic Planning Committee
- 1998-99 Outreach and Fund-raising Committee
- 1988-03 Graduate Admissions Committee
- 1997-98 Curriculum Committee
- 1994-95 Executive Committee
- 1991-92 Graduate Program Coordinator (chairs Admissions Committee; advises students)

Community Service

- 1991-92 Land Use Transition Advisory Committee, City of Bainbridge Island
1991 Environmentally Sensitive Advisory Committee, City of Bainbridge Island
1989-95 South Bainbridge Community Association: environmental advocacy

Technical Roles

- 1997-98 49th Parallel International Boundary, Public Defender, Whatcom County.
1991-94 Accuracy Assessment Task Force, California Forestry Dept. (UC Santa Barbara)
1991-95 Coastal Wetland Change Program, US National Marine Fisheries Service
1982-87 substantial interactions with local governments in Wisconsin
1971-72 Consultant, Bureau of Equal Educational Opportunities, Commonwealth of Massachusetts

Editorial Responsibilities

- 2014- Editor, *Cartography and Geographic Information Science*, journal of CAGISociety
2012 co-editor, Proceedings, Global Geospatial Conference 2012. *The Added Value of Scientific Networking: Perspectives from GEOIDE Network Members 1998-2012*, editors: N. Chrisman and M. Wachowicz, ISBN 978-1-927371-68-8.
2009 Guest Editor, special issue of *Geomatica*, GEOIDE Student papers.
1998 Editor (with Thomas Poiker), **Proceedings Spatial Data Handling 98**.
1997 Editor, **Proceedings AUTO-CARTO 13**.
1996-99 Associate Editor, **Cartography and Geographic Information Systems**
1986-87 Editor, **Proceedings AUTO-CARTO 8**.
1983-85 Co-editor, **Wisconsin Land Information Newsletter**, (4 issues).
1977-81 Paper selection for 1977 Symposium on topological data structures and Harvard Graphics Weeks 1978-81.
Reviewing of articles for many journals including **Cartography and Geographic Information Systems, Cartographica, International Journal of Geographical Information Science, Photogrammetric Engineering and Remote Sensing, Transactions in GIS, GeoInformatica, Annals AAG, Communications of the Association of Computing Machinery, IEEE Computer Graphics & Applications, Canadian Journal of Statistics, URISA Journal, The Information Society**, etc.
Reviewing book manuscripts for Guilford Press, Prentice Hall, Butterworth, Taylor Francis, Wiley, MIT Press.

Programming Experience

- Experience with compilers, graphics, packages on 18 operating systems.
1975-81 *ODYSSEY: a system for geographic information processing*
original design (with D. White), participated in pre-commercial development;
wrote *WHIRLPOOL: a program for polygon overlay* (with J. Dougenik)
1972-74 *POLYVRT: a program to convert geographic base files*

Consulting

- 2007 Kim Geomatics, evaluation of geomatics prospects for Québec region, Pole QCA
- 2002-03 Geotrac, Dublin OH: Natural Hazards risk models for insurance industry
- 1996-97 ESRI, Redlands CA: database design for synthetic environments
- 1995 ESRI, Redlands CA: database design strategies for Defense Mapping Agency
- 1993-94 GIS advice for China in Space and Time. (University of Washington)
- 1993 Bliss Riordan, Anchorage AK (law firm); data quality of nautical charts
- 1992 IRIS Data Management Center: applicability of GIS to seismology
- 1990-92 ESRI, Redlands CA: database design and quality assurance for Digital Chart of the World project for Defense Mapping Agency (DMA)
- 1989 Battelle, Pacific Northwest Lab Richland: peer review of environmental database management system for Hanford site cleanup
- 1988-89 King County WA, Planning Graphics: assist in selection of GIS software
- 1987-89 ESRI, Redlands CA: consulting on indexing methods and data quality

Short Courses, etc.

- 2011 Advantages of networking in geomatics, Semana geomatica, IGAC, Bogota, Colombia (1 day)
- 2005 GIS Analysis, GEOIDE Summer School (2 day)
- 2001 Technical issues in GIS, University of Redlands MGIS (1 week)
- 1996 Measurement Frameworks and Transformations, ESRI (2 day)
- 1996 Teaching GIS; Association of American Geographers, Charlotte (1 day)
- 1996 Cartography and GIS, Sylviculture Workshop, US Forest Service; (1 day)
- 1995 Visualization and Data Management, Sylviculture Workshop, US Forest Service; (half day)
- 1994 Data Quality in GIS; Swiss Computer Graphics Assoc., Zurich (2 day)
- 1993 Presentation on Digitizing and Data Quality; FORMEZ, Naples Italy (2 day)
- 1986 Course for state government officials on GIS & Natural Resources (week)
- 1983 Workshop on Alternative Land Registration Policies (week)
- 1981 GIS Workshop at Soil Survey, Rothampsted (UK) (day)
- 1980 Workshop on Topological Data Structures; Ordnance Survey UK (day)
- 1976 Workshop on GIS and Digital Cartography; Manila, Philipines (week)
- 1973-5 Workshop on Topological Data Structures; Harvard Univ. (3 1-week courses)

Bibliography

Peer-reviewed works (sorted by date);

(citation counts on Google Scholar at end; from 6 March 2018)

- Chrisman, N.R. 2017: Calculating on a round planet. *International Journal of Geographic Information Science*. 31(4) 637-657. [doi:10.1080/13658816.2016.1215466](https://doi.org/10.1080/13658816.2016.1215466) (3 citations)
- Pourali, S. Arrowsmith, C., Chrisman, N., Matkan, A. and Mitchell, D. 2016: *Topographic wetness index application in flood-risk-based land use planning*. **Applied Spatial Analysis and Planning**, 9(1) 39-54. doi: 10.1007/s12061-014-9130-2. (2 citations)
- Chrisman, N.R. and Girres, J-F. 2015: First, do no harm: Eliminating systematic error in analytical results of GIS applications. Chapter 3, 27-44 In: W. Shi, B. Wu and A. Stein (eds.) *Uncertainty Modelling and Quality Control for Spatial Data*, CRC Press, Boca Raton FL. Prior version presented at ISSDQ 2013, Hong Kong. (5 citations)
- Samany, N, Delavar, M, Chrisman N., Malek, M. 2014: *FIA_s: A customized Fuzzy Interval Algebra for modeling spatial relevancy in urban context-aware systems*, **Engineering Applications of Artificial Intelligence**, 33 116-126, [doi:10.1016/j.engappai.2014.04.004](https://doi.org/10.1016/j.engappai.2014.04.004).
- Panel on developing science, technology, and innovation indicators for the future, 2014. *Capturing Change in Science, Technology, and Innovation: Improving Indicators to Inform Policy*. Litan, R., Wyckoff, A. and Fealing K. editors. National Academies Press, Washington DC. http://www.nap.edu/openbook.php?record_id=18606 (9 citations)
- Samany, N, Delavar, M, Chrisman N., Malek, M. 2013: *Modelling Spatio-Temporal Relevancy in Urban Context-Aware Pervasive Systems using Voronoi Continuous Range Query and Multi-Interval Algebra*, **Journal of Mobile Information Systems**, 9(2013) 189-208, doi:10.3233/MIS-130154. (7)
- Samany, N, Delavar, M, Chrisman N., Malek M. 2013: *Spatial Relevancy Algorithm for Context-aware Systems (SRACS) in Urban Traffic Networks using Dynamic Range Neighbour Query and Directed Interval Algebra*, **Journal of Ambient Intelligence and Smart Environments** 5(6) 605-619.
<http://iospress.metapress.com/content/a83778w7576141q3/>
- Chrisman, N.R. 2012: A deflationary approach to fundamental principles in GIScience, In Harvey, F. (ed.) *Are there fundamental principles in Geographic Information Science?* Washington, DC: AAG GIS Speciality Group. <https://www.createspace.com/3932452> (4 citations)
- Devillers, R, Stein, A, Bédard, Y, Chrisman, N, Fisher, P, Shi, W. 2010: *30 years of research on spatial data quality – Achievements, failure and opportunities*. **Transactions in GIS** 14 (4) 387-400, doi: 10.1111/j.1467-9671.2010.01224.x (89 citations)
- Poore, Barbara and Chrisman, N.R. 2006: *Order from Noise: Towards a social theory of information*, **Annals AAG** 96(3) 508–523. (44 citations)
- Chrisman, N.R. 2006: **Charting the Unknown: How computer mapping at Harvard became GIS**. ESRI Press. 240 pp. (94 citations)

- Chrisman, N.R. 2005: *Communities of Scholars: Places of Leverage in the History of Automated Cartography*. **Cartography and Geographic Information Science** 35(4) 425-433. (7 citations)
- Chrisman, N.R. 2005: *Full Circle: More than just Social Implications of GIS*. in Harvey, F. (special issue editor) **Cartographica** 40(4) 23-35. (106 citations)
- Chrisman, N.R. 2005 : *Traitement de la qualité: perspective historique*. Chapitre 2, p. 25-35 in Devillers, R. & Jeansoulin, R. (eds.) **Qualité de l'information géographique**, Hermès. also issued in English (2006) as *Fundamentals of Spatial Data Quality*, p. 21-30, Chapter 1 Development in the treatment of spatial data quality. (7)
- Chrisman, N.R. 2004: *Les SIG: un processus historique: Passé comme point d'appui vers le futur*. Chapter 1, p. 25-54 in Roche, S. and Caron, C. (editors), **Aspects organisationnelles des SIG**. Hermès.
- Harvey, Francis, and Chrisman, N. 2004: *The Imbrications of Geography and Technology: The Social Construction of Geographic Information Systems*. Ch. 4, pp. 65-80 in S. Brunn, S. Cutter & J. W. Harrington Jr. (eds), **Geography and Technology**. Kluwer. (34)
- Chrisman, N.R. 2002: *Revisiting Fundamental Principles*, Chapter 2, p. 9-18 In Kidner, Higgs and White (eds) **Innovations in GIS**, Taylor & Francis. (4)
- Sismondo, Sergio and Chrisman, N. 2001: *Deflationary metaphysics and the natures of maps*, *Philosophy of Science* 68(3), Supplement: S38-S49. doi: 10.1086/392896 (30 citations)
- Chrisman, N.R., 2001: **Exploring Geographic Information Systems**. Wiley. 270 pp. (Second edition) (794 citations)
- Chrisman, N.R. 1999: *A Transformational Approach to GIS operations*, **International Journal of GIS** 13(7) 617-637. (58 citations)
- Chrisman, N.R. 1999 *What does GIS mean?* **Transactions in GIS** 3(2) 175-186. (106)
- Chrisman, N.R. 1999: *Speaking Truth to Power: An Agenda for Change*. Chapter 3, p. 27-31 in K. Lowell & A. Jaton (editors) **Spatial Accuracy Assessment: Land Information Uncertainty in Natural Resources**, Ann Arbor Press. (18)
- Khorram, S., Biging, G.S, Chrisman, N.R., Colby, D.R., Congalton, R.G., Dobson, J.E., Ferguson, R.L., Goodchild, M.F., Jensen, J.R., and Mace, T.H. 1999: *Accuracy Assessment of Remote Sensing- Derived Change Detection*. ASPRS Monograph; ASPRS. (ISBN [1570830584](#)) (188 citations)
- Chrisman, N.R., 1998: *Academic Origins of GIS*, Chapter 3, p. 33-44 in T. Foresman (ed.) **The History of Geographic Information Systems: Perspectives from the Pioneers**, Prentice Hall. (30)
- Chrisman, N.R. 1998: *Rethinking Levels of Measurement in Cartography*. **Cartography and GIS**, 25 (4) 231-242. (39)
- Harvey, Francis and Chrisman, N. 1998: Boundary objects and the social construction of GIS technology. **Environment and Planning A**, 30(9): 1683-1694. (288 citations)
- Chrisman, N. and Harvey, F. 1998: *Extending the classroom: Closed and open corpus hyper-media supported learning*. **Journal of Geography in Higher Education**, 22(1), 11-18.

(27 citations)

- Chrisman, N.R., 1998: *Beyond the snapshot: Changing the approach to change, error and process*, In M. Egenhofer and R. Golledge (editors) **Spatial and Temporal Reasoning in Geographic Information Systems**, Oxford Univ. Press. (55 citations)
- Chrisman, N.R., 1997: **Exploring Geographic Information Systems**. John Wiley. 298pp. (First edition) (citations included with Second Edition)
- Chrisman, N.R. 1997: *John Sherman and the Origin of GIS*. **Cartographic Perspectives**, (27) 8-13. (1 citation)
- Chrisman, N.R., 1994: *Metadata required to determine the fitness of spatial data for use in environmental analysis*, Chapter 12, p. 177-190 in Michener, Brunt and Stafford (editors) **Environmental Information Management and Analysis**, Taylor & Francis. (18)
- Chrisman, N.R. and Lester, M.K., 1991: *A Diagnostic Test for Error in Categorical Maps*, **Proceedings AUTO-CARTO 10**, 330-348. (42 citations)
<http://cartogis.org/docs/proceedings/archive/auto-carto-10/pdf/a-diagnostic-test-for-error-in-categorical-maps.pdf>
- Chrisman, N.R., 1991: *Determination de la Qualité des Données dans les S.I.G.*, **Bulletin de la Société Française de Photogrammétrie et Télédétection**, 122: 18-23.
- Chrisman, N.R., 1991: *The error component in spatial data*, Chapter 12, p. 165-174 in Maguire, D.J., Goodchild M.F. and Rhind, D.W. (editors) **Geographical Information Systems: Overview Principles and Applications**, Longmans. (270 citations)
- Chrisman, N.R., 1991: *Institutional and Societal Components of Cartographic Research*, Chapter 11 in Müller, J-C. (ed.) **Advances In Cartography**, Elsevier. (13)
- Chrisman, N.R., 1990: *Deficiencies of Sheets and Tiles: Building Sheetless Data bases*, **International Journal of Geographical Information Systems**, 4: 157-167. (33)
- Nyerges, T.L. and Chrisman, N.R., 1989: *A Framework for Model Curriculum Development in Cartography and Geographic Information Systems*, **Professional Geographer**, 41: 283-293. (64 citations)
- Chrisman, N.R., 1989: *Modelling error in overlaid categorical maps*, p. 21-34 in Goodchild, M.F. & Gopal, S. (editors) **Accuracy of Spatial Databases**, Taylor & Francis, London. (144 citations)
- Chrisman, N.R., Cowen, D.J., Fisher, P.F., Goodchild, M.F, and Mark, D.M., 1989: *Geographic Information Systems*, p. 776-796 in Gaile G.L. and Willmott, C.J. (eds) **Geography in America**, Merrill, Columbus. (many citations)
- Chrisman, N.R., 1988: *The Risks of Software Innovation, a Case Study of the Harvard Lab*, **The American Cartographer**, 15: 291-300. (51)
- Langran, G. and Chrisman, N.R., 1988: *A Framework for Temporal Geographic Information*, **Cartographica**, 25(3): 1-14. (474 citations)
- Chrisman, N.R. and Yandell, B.S., 1988: *Effects of Point Error on Area Calculations: A Statistical Model*, **Surveying and Mapping**, 48: 241-246. (50 citations)
- Ventura, S.J., Chrisman, N.R., Connors, K., Gurda, R.F., and Martin, R.W., 1988: *A Land*

- Information System for Soil Erosion Control Planning*, **Journal of Soil and Water Conservation**, **43**: 230-233. (49 citations)
- Beard, M.K., and Chrisman, N.R., 1988: *Zipper: a localized approach to edgematching*, **The American Cartographer**, **15**:163-172. doi:10.1559/152304088783887071: earlier version 1986: *Zippering: software for merging maps*, **Proceedings ACSM**, **1**:153-161. (27 citations)
- Chrisman, N.R., 1987: *Design of information systems based on social and cultural goals*, **Photogrammetric Engineering and Remote Sensing**, **53**: 1367-1370; earlier version 1987: *Fundamental principles of geographic information systems*, **Proceedings AUTO-CARTO 8**: 31-40. (170 citations) <http://cartogis.org/docs/proceedings/archive/auto-carto-8/pdf/fundamental-principles-of-geographic-information-systems.pdf>
- Niemann, B.J. Jr., Sullivan, J.G., Ventura, S.J., Chrisman, N.R., Vonderohe, A.P., Mezera, D.F., and Moyer, D.D., 1987: *Results of the Dane County Land Records Project*, **Photogrammetric Engineering and Remote Sensing**, **53**: 1371-1378. (12)
- Chrisman, N.R., 1987: *Accuracy of map overlays: a reassessment*, **Landscape and Urban Planning**, **14**:427-439. reprinted 1990: p. 308-320 in **Introductory Readings in Geographic Information Systems**, D. Peuquet & D. Marble (editors), Taylor Francis. (109 citations)
- Chrisman, N.R., 1987: *A draft proposed standard for digital cartographic data quality*, in H. Moellering (ed.), **Report 8**, NCDCCDS, Columbus OH. [appeared unchanged, but unattributed in **The American Cartographer**, **15**(1)] (3 citations)
- Chrisman, N.R., 1987: *Efficient digitizing through the combination of appropriate hardware and software for error detection and editing*, **International Journal of Geographical Information Systems**: **1**: 265-277. reprinted 1990: p. 233-245 in **Introductory Readings in Geographic Information Systems**, D. Peuquet & D. Marble (editors), Taylor Francis. Earlier version: 1986: *Effective digitizing: advances in software and hardware*, **Proceedings ACSM**, **1**:162-171. (37)
- Dougenik, J.A., Chrisman, N.R., Niemyer, D.R., 1985: *An algorithm to construct continuous area cartograms*, **Professional Geographer**, **37**:75-81. (164 citations)
- Chrisman, N.R., 1985: *An interim proposed standard for cartographic data quality*, 17-22 in H. Moellering (ed.), **Report 6**, NCDCCDS, Columbus OH; *Supporting documentation*, 113-134. and **Proceedings AUTO-CARTO 7**, <https://cartogis.org/docs/proceedings/archive/auto-carto-7/pdf/an-interim-proposed-standard-for-digital-cartographic-data-quality.pdf> (5)
- Chrisman, N.R., 1984: *On storage of coordinates in geographic information systems*, **Geoprocessing**, **2**:259-270. (15)
- Chrisman, N.R., Kaufman, J.L., Keifer, R.W., Lillesand, T.M., Mezera, D.F., Moyer, D.D., Muehrcke, P.C., Niemann, B.J., Scarpace, F.L., Scherz, J.P., Stanfield, J.D., Strasma, J.D., Vonderohe, A.P., Wolf, P.R., Woodward, D.A., 1984: *Land records modernization: centers of excellence from a Wisconsin perspective*, **Computers, Environment and**

- Urban Systems**, 9:219-227; later version with expanded authorship, 1984. **Wisconsin Land Information Reports: 2**, Institute for Envir. Studies, Madison. (6)
- Chrisman, N.R., 1984: *Alternatives for specifying quality standards for digital cartographic data quality*, 43-71 in H. Moellering (ed.), **Report 4**, NCDCCS, Columbus OH. (5)
- Beard, M.K., Chrisman, N.R. and Patterson, T.D., 1984: *Integrating data for local resource planning: a case study of sand and gravel resources*, **Proceedings URISA**, 513-524. Also in W. Ripple (ed.) 1987: **GIS for Resource Management: A Compendium**, American Society for Photogrammetry and Remote Sensing, 87-98. (5)
- Chrisman, N.R., 1983: *The role of quality information in the long-term functioning of a geographic information system*, **Proceedings AUTO-CARTO 6**, 2:303-321; reprinted 1984: **Cartographica**, 21 (2&3):79-87 (Selected Papers from AUTO-CARTO 6). (259 citations) <https://cartogis.org/docs/proceedings/archive/auto-carto-6/pdf/the-role-of-quality-information-in-the-long-term-functioning.pdf>
- Chrisman, N.R., 1978: *Concepts of space as a guide to cartographic data structures*, 5: (34 pp.) in G. Dutton (ed.), **Harvard Papers on Geographic Information Systems**, Addison Wesley, Reading MA. (45 citations)
- Chrisman, N.R., 1978: *Comments on data structures to be discussed at an advanced study symposium on topological data structures for geographic information systems*, 1: 117-127 in G. Dutton (ed.), **Harvard Papers on Geographic Information Systems**, Addison Wesley, Reading MA.
- Peucker, T.K. and Chrisman, N.R., 1975: *Cartographic data structures*, **American Cartographer**, 2:55-69. (259 citations)

Reviewed work in published encyclopedia volumes

- Chrisman, N. R., 2017: *Measurement Theory*. in **The International Encyclopedia of Geography**, edited by D. Richardson N. Castree, M. Goodchild, A. Kobayashi and R. Marston. Wiley. 1–13. DOI: 10.1002/9781118786352.wbieg0438
- Chrisman, N. R., 2016: *History of GIS*. in **Oxford Bibliographies in Geography**. Ed. Barney Warf. Oxford University Press. DOI: 10.1093/obo/9780199874002-0143
- Chrisman, N.R. and Roche, Stéphane 2012: **1 article** (*Brian Harley*) in **Dictionnaire de la Géographie**, edited by Jacques Lévy and Michel Lussault.
- Chrisman, N.R. 2008: **4 articles** (*Scales of Measurement, Geometric Primitives, Polygon Operations, Harvard Lab for Computer Graphics*) in **Sage Encyclopedia of Geographic Information Science**, edited by Karen Kemp.

Proceedings or journals with competitive selection or invitation

- Koletsis, Erin, Cartwright, W. and Chrisman, N. 2014: Identifying approaches to Usability Evaluation. Geospatial Science Research 3, RMIT, Melbourne. <http://ceur-ws.org/Vol-1307/paper4.pdf> (2 citations)
- Chrisman N.R. 2014: Integrated land evaluation: Story of a track not taken, in: Winter S. and Rizos, C (editors) Research @ Locate14. Canberra. (peer-reviewed paper online: <http://ceur-ws.org/Vol-1142/paper19.pdf>) ISSN: 1613-0073, urn:nbn:de:0074-1142-3.
- Pourali, Sayedhossein, Arrowsmith, C., Chrisman, N. Matkan, A. 2014: Vertical accuracy assessment of LiDAR ground points using minimum distance approach, in: Winter S. and Rizos, C (editors) Research @ Locate14. Canberra. (peer-reviewed paper online: <http://ceur-ws.org/Vol-1142/paper10.pdf>) ISSN: 1613-0073, urn:nbn:de:0074-1142-3. (5 citations)
- Chrisman N.R. 2013: Challenges in the geospatial sector, in: Denys, P. Strack, M. Moore, A.B. and Whigham, P (editors) Joint Proceedings of the NZIS Conference and the SIRCENZ 2013 Conference. Dunedin. (invited presentation, extended abstract)
- Chrisman N.R. 2013: Progress and Missed Opportunities in Spatial Analysis for Digital Earth, IGARSS 2013, Melbourne, p. 1163-1165. DOI: [10.1109/IGARSS.2013.6721372](https://doi.org/10.1109/IGARSS.2013.6721372) (<http://ieeexplore.ieee.org/xpls/icp.jsp?arnumber=6721372>)
- Chrisman, N.R. and Thomson, K.B.T. 2012: A short history of the GEOIDE Network. In *The Added Value of Scientific Networking: Perspectives from GEOIDE Network Members 1998-2012*, editors: N. Chrisman and M. Wachowicz, ISBN 978-1-927371-68-8, p. 1-30.
- Chrisman N.R. 2012: Has Moore's Law been protecting us from our lack of innovation? (Invited lecture) In *Multidisciplinary Research on Geographical Information in Europe and Beyond*, editors: J. Gensel, D. Josselin and D. Vandenbroucke, Proceedings of the AGILE'2012 International Conference on Geographic Information Science, Avignon, April, 24-27, 2012, ISBN: 978-90-816960-0-5, p. 398-401.
- Samany, N., Delavar, M., Chrisman, N., Malek, M. 2012: An Ontology for Spatial Relevant Objects in a Location-aware System: Case Study- A Tourist Guide System, Proceedings UDMS-11 (World Academy of Science, Engineering and Technology). <http://www.waset.org/publications/9529> (4 citations)
- Chrisman, N.R. 2011: Lessons learned from 14 years of the GEOIDE Network, in *Fonder les Sciences du Territoire*, Karthala, Paris, France, pp. 219-228 ISBN: 9782811107949.
- Chrisman, N.R. 2011: Mapping controversies: the case of low-level radioactive waste repositories. *Selected for Mapping Ethics, Lausanne; not presented.*
- Chrisman, N.R. 2011: In search of the data effect: When best available data overrides the real requirement, AGILE 2011, Utrecht. Proceedings online: http://agile.gis.geo.tu-dresden.de/web/Conference_Paper/CDs/AGILE%202011/contents/pdf/shortpapers/sp_132.pdf

- Samany, N., Delavar, M., Chrisman, N., Malek, M. 2011: Modeling Spatial Relevancy in Context-Aware Systems Using Fuzzy Intervals, Proceedings Geocomputation-11.
- Chrisman, N.R. 2010: GEOIDE Network: Thirteen years of innovation in Canada. Proceedings, Auto-Carto 2010, Orlando.
- Nyaminani, E, and Chrisman, N. 2010: Geographical Information Systems and Site Selection for the Establishment of Refugee Camps in Wartime. Proceedings, AutoCarto 2010, Orlando.
- Chrisman, N.R. 2010: Detecting the social influences in GIS technology: Getting value from comparative retrospective studies, Proceedings GIScience 2010, Zurich. http://www.giscience2010.org/pdfs/paper_113.pdf (1 citation)
- Bédard, Y., Bernier, E., Badard, T., Chrisman, N., Roche, S., Edwards, G., Mostafavi, M.A., Pouliot, J., Gervais, M., Hubert, F., Larrivée, S., Proulx, M.-J., Rivest, S., Nadeau, M., Dubé, É., Brodeur, J. and Devillers, R. 2007: Research in Geographic Information Systems, Data Management and Dissemination, and New Geospatial Technologies. **Geomatica**, 61(3):299-314.
- Chrisman, N.R., Daniel, S., Roche, S., Santerre, R., Bédard, Y., Roy, F. 2007: Where is geomatics teaching going? Towards geospatial infrastructures for the instruction of geomatics. **Geomatica** 61(3):331-343.
- Chrisman, N.R. 2007: GEOIDE's Research Directions: A Network of Centres of Excellence across Canada, **Proceedings AGILE**, Aalborg, Denmark, May 2007 (extended abstract, 3 pages). http://agile.gis.geo.tu-dresden.de/web/Conference_Paper/CDs/AGILE_2007/PROC/PDF/174_PDF.pdf
- Gervais, M., Y. Bédard, S. Larrivée, N. Chrisman, J. Levesque, and R. Devillers 2006: Auditing Spatial Data Suitability for Specific Applications: Professional and Technological Issues. paper presented at Workshop on Quality Assurance in Geographic Data Production, AGILE / EURO SDR, Marnes-la-Vallée, France.
- Cheyland, Jean-Paul and Chrisman, N.R. 2001: *Comment le sens vient à l'information géographique*. In Libourel, T. (ed) *Geomatics and Rural Space*, 189-202 (Proceedings Cassini). (9)
- Chrisman, N.R. 2001: Configuring the User: Social Divisions of Labor in GIS Software, paper presented at Society and GIS Workshop, Columbus Ohio. (5)
- Chrisman, N.R. 2000: Information flows in a distributed collective memory: the geography of land ownership recording. Distributed Collective Practices Workshop, Paris.
- Chrisman, N.R. 2000: Building GIS without foundations: ontology from a social practice perspective. Invited plenary, GIScience 2000, Savannah. (8 citations)
- Chrisman, N.R., 1997: *Understanding transformations of geographic information*, **Proceedings AUTO-CARTO 13**, 33-41. (1) <http://cartogis.org/docs/proceedings/archive/auto-carto-13/pdf/understanding-transformations-of-geographic-information.pdf>

- Chrisman, N.R., 1995: *Living with error in geographic data: Truth and responsibility*, **Proceedings GIS '95**, 12-17. [invited plenary session] (8)
- Chrisman, N.R., 1995: *Beyond Stevens: A revised approach to measurement for geographic information*, **Proceedings Auto-Carto 12**, 271-280. (26)
<http://cartogis.org/docs/proceedings/archive/auto-carto-12/pdf/beyond-stevens-a-revised-approach-to-measurement.pdf>
- Chrisman, N.R., 1993: *Beyond spatio-temporal data models: A model of GIS as a technology embedded in historical context*, **Proceedings Auto-Carto 11**, 23-32. (19)
<http://cartogis.org/docs/proceedings/archive/auto-carto-11/pdf/beyond-spatio-temporal-data-models-a-model-of-gis-as-a-technology-embedded-in-historical-context.pdf>
- Chrisman, N.R., 1992: *Ethics for the practitioners of Geographic Information Systems embedded in 'Real World' constraints of guilds, professions and institutional sponsorship*, **Proceedings GIS/LIS 92**, 1: 129-137. (8)
- Chrisman, N.R., Dougenik, J.A and White, D., 1992: *Lessons for the design of polygon overlay processing from the ODYSSEY WHIRLPOOL algorithm*, **Proceedings 5th International Symposium on Spatial Data Handling**, 2: 401-410. (37)
- Lester, M.K. and Chrisman, N.R., 1991: *Not all slivers are skinny: A comparison of two methods for detecting positional errors in categorical maps*, **Proceedings GIS/LIS 91**, 2:648-658. (16)
- Chrisman, N.R., 1991: *Building a Geography of Cartography: Cartographic Institutions in Cultural Context*, **Proceedings, 15th International Cartographic Association Conference**, 1: 83-92. (7)
- Chrisman, N.R., 1989: *A Taxonomy of Cartographic Error applied to Categorical Maps*, **Proceedings, 14th International Cartographic Conference**, 82-83.
- Chrisman, N.R., 1989: *Error in Categorical Maps: Testing versus Simulation*, **Proceedings AUTO-CARTO 9**, 521-529. (23) <http://cartogis.org/docs/proceedings/archive/auto-carto-9/pdf/error-in-categorical-maps-testing-versus-simulation.pdf> (30)
- Chrisman, N.R., 1987: *Challenges for Research in Geographic Information Systems*, **Proceedings 1**: 101-112, International GIS Symposium, AAG. (9)
- Chrisman, N.R., 1986: *Obtaining information on quality of digital data*, **Proceedings AUTO-CARTO London 1**: 350-358. (19)
<http://cartogis.org/docs/proceedings/archive/auto-carto-london-vol-1/pdf/obtaining-information-on-quality-of-digital-data.pdf>
- Chrisman, N.R., Mezera, D.F., Moyer, D.D., Niemann, B.J. Jr., Sullivan, J.G., and Vonderohe, A.P., 1986: *Soil erosion planning in Wisconsin: an application and evaluation of a multipurpose land information system*, **Proceedings ACSM**, 3:240-249; also in **Proceedings Fédération Internationale des Géomètres**, 7:279-290. [Reprinted p. 185-194 in Onsrud, H.J. and Cook, D.W. (editors) 1990: **Geographic and Land Informations Systems for Practicing Surveyors: A Compendium**, American

- Congress on Surveying and Mapping, Bethesda MD.] (5)
- Chrisman, N.R., and Niemann, B.J. Jr., 1985: *Alternative routes to a multipurpose cadastre: merging institutional and technical reasoning*, **Proceedings AUTO-CARTO 7**, 84-94. (48 citations) <http://cartogis.org/docs/proceedings/archive/auto-carto-7/pdf/alternative-routes-to-a-multipurpose-cadastre-merging.pdf>
- Vonderohe, A.P., and Chrisman, N.R., 1985: *Tests to establish the quality of digital cartographic data: some examples from the Dane County Land Records Project*, **Proceedings AUTO-CARTO 7**, 552-559. (16 citations) <http://cartogis.org/docs/proceedings/archive/auto-carto-7/pdf/tests-to-establish-the-quality-of-digital-cartographic-data-some-examples-from-the-dane-county-land-records-projects.pdf>
- Sullivan, J.G., Niemann, B.J., Chrisman, N.R., Moyer, D.D., Vonderohe, A.P., Mezera, D.F., 1984: *Institutional reform before automation: the foundation for modernizing land records systems*, 383-391 in A. Hamilton and J. McLaughlin (ed.), **The Decision Maker and Land Information Systems**, Federation International des Géometres Symposium, Toronto; also in 1985: **Proceedings ACSM**, 116-125. (6 citations)
- Chrisman, N.R. and Moellering, H., 1983: *Issues involved in the development of national digital cartographic data standards*, **Proceedings Harvard Computer Graphics Conference**, 1:41-51. (2)
- Chrisman, N.R., 1982: *A theory of cartographic error and its measurement in digital data bases*, **Proceedings AUTO-CARTO 5**, 159-168. (199 citations) <http://cartogis.org/docs/proceedings/archive/auto-carto-5/pdf/a-theory-of-cartographic-error-and-its-measurement-in-digital-data-bases.pdf>
- Chrisman, N.R., 1975: *Topological information systems for geographic representation*, **Proceedings URISA**, 1:194-200; also **Proceedings AUTO-CARTO II**, 346-351. (24) <http://cartogis.org/docs/proceedings/archive/auto-carto-2/pdf/topological-information-systems-for-geographic-representation.pdf> (30)
- Chrisman, N.R., 1974: *The impact of data structure on geographic information processing*, **Proceedings AUTO-CARTO I**, 165-177. expanded version printed as **Internal Report 74-4**, Harvard Laboratory for Computer Graphics. (12) <http://cartogis.org/docs/proceedings/archive/auto-carto-1/pdf/cartographic-data-structures-panel.pdf>

Proceedings of meetings without selection

- Ngo, M, Mitchell, D, Grant, D and Chrisman, N 2016: Accessibility to land administration by grassroots stakeholders in Vietnam: Case study of Vinh Long province, in Proceedings of the 3rd FIG Young Surveyors Network Conference, FIG Working Week. Christchurch, NZ, 2-6 May 2016, pp. 1-20. http://fig.net/resources/proceedings/fig_proceedings/fig2016/techprog.htm
- Ngo, M., Mitchell, D., Grant, D. and Chrisman, N., 2016: Stakeholder perceptions of land administration in Vinh Long Province, Vietnam. in Land and Poverty

- Conference 2016: Scaling up Responsible Land Governance (pp. 1-17). World Bank.
https://www.researchgate.net/profile/Mau_Ngo/publication/298687910_Stakeholder_Perceptions_Of_Land_Administration_In_Vietnam_An_Analysis_Of_Stakeholder_Consultations/links/56ea423008ae25ede8311700.pdf
- Chrisman, N.R. 2011: Arguing for a spatial component in Science and Technology Indicators, Paper presented at 4S, Cleveland Ohio.
http://www.4sonline.org/files/Print_Program_Abstracts_final.pdf
- Chrisman, N.R. 2011: Cartographic Transformations for Informed Decisions, International Cartographic Congress 2011, Paris. ISBN 978-1-907075-05-6, CO-224 ;
http://hostmaster.icaci.org/files/documents/ICC_proceedings/ICC2011/Oral%20Presentations%20PDF/C2-Spatial%20analysis%20and%20decision%20making/CO-224.pdf
- Chrisman, N.R. 2011: What happened to Overlay Engines: A Story of Technological Shifts, paper presented at SKI Canada, Fernie BC. abstract:
<http://rose.geog.mcgill.ca/ski/system/files/fm/2011/Chrisman.pdf>
- Chrisman, N.R. 2007: Interdisciplinary networks and the flavours of money, 4S Montréal.
- Chrisman, N.R. 2007: Networks make a difference: The GEOIDE Story. Proceedings IPY GeoNorth, Yellowknife, August 2007.
- Chrisman, N.R. 2006: Balancing the wet and the dry: STS researcher becomes science manager. Paper presented at 4S Vancouver.
- Chrisman, N.R. 2004: Snapshots from the oligopticon: more contributions to the geographic divisions of knowledge, Proceedings 4S/EASST, Paris, pp. 987-988.
- Chrisman, N.R. 2002: Paper presented at 4S Milwaukee.
- Chrisman, N.R. 2000: Geography of geographic information: Understanding the practices of situated knowledge in the emerging technosciences of geographic information systems, paper presented at 4S/EASST, Vienna.
- Norheim, R.A., Peterson, D.L., Alcock, T.Z., Chrisman, N.R. 2000: *Metadata SWAT Teams: A Success Story in Creating a Regional Clearinghouse Node*, Proceedings, ESRI 2000 User Conference, San Diego, June. (2 citations)
- Norheim, R.A., Peterson, D.L., Alcock, T.Z., Chrisman, N.R., and Schreiner, E.W. 1999: *Developing an NSDI and NBII Clearinghouse Node for the Olympic Peninsula, Washington State*. Proceedings ACSM Annual Meeting. (2)
- Chrisman, N.R. 1999: Trading zones or boundary objects: Understanding incomplete translations of technical expertise, paper presented at 4S San Diego. (37 citations)
- Chrisman, N.R. and Harvey, F. 1998: Beyond the metaphor of mapping: searching for socio-technical linkages in the use of GIS technologies, paper presented at 4S Halifax NS.
- Chrisman, N.R., Mezera, D.F., Moyer, D.D., Niemann, B.J. Jr., Sullivan, J.G., and Vonderohe, A.P., 1986: *Soil erosion planning in Wisconsin: order of magnitude implications of integrating new technologies*, **Proceedings URISA**, 1:117-128. Awarded

- Honorable Mention in Horwood Critique Prize Competition (3)
- Ventura, S.J., Sullivan, J.G., and Chrisman, N.R., 1986: *Vectorization of Landsat TM land cover classification data*, **Proceedings URISA**, 1:129-140. (7 citations)
- Chrisman, N. 1986: *Effective Digitizing: Advances in Software and Hardware*. **Proc. ACSM**, 1: 162–171.
- Chrisman, N.R., 1986: *Error in overlaid categorical maps*, presented at AAG meeting, abstract in proceedings.
- Sullivan, J.G., Chrisman, N.R., and Niemann, B.J. Jr., 1985: *Wastelands versus wetlands in Westport Township, Wisconsin*, **Proceedings URISA**, 1:73-85. (8 citations)
- Sullivan, J.G., Beard, M.K., Sonza-Novera, J., Chrisman, N.R., and Niemann, B.J. Jr., 1985: *Multipurpose land information systems: institutional innovations, technological trends, implications for landscape architecture education*, **Proceedings Council of Educators in Landscape Architecture**, 10-14. (1)
- Chrisman, N.R., Mezera, D.F., Moyer, D.D., Niemann, B.J., Vonderohe, A.P., 1984: *Modernization of routine land records in Dane County, Wisconsin: Implications to rural landscape assessment and planning*, **URISA Professional Papers**, 84-1, (44 pp.). Also in Proceedings AUTO-CARTO 7 poster session (1985). (13 citations)
<https://cartogis.org/docs/proceedings/archive/auto-carto-7/pdf/dane-county-land-records-project.pdf>
- Chrisman, N.R., 1983: *Epsilon filtering: a technique for automated scale changing*, **Proceedings ACSM**, 322-341. (42 citations)
- Chrisman, N.R., 1982: *Beyond accuracy assessment: correction of misclassification*, **Proceedings International Society of Photogrammetry and Remote Sensing, Commission IV**, 24-IV:123-132. (19)
- Chrisman, N.R., 1979: *Analyzing spatial coverages using the ODYSSEY system*, **Proceedings First International HBDS Seminar**.
- Marsh, P.E., and Chrisman, N.R., 1979: *The use of computer mapping in policy studies by state government*, vol. 3, 109-118 in P. Moore (ed.), **Harvard Library of Computer Graphics**, Harvard Laboratory for Computer Graphics, Cambridge MA.
- Goldberg, M.P., Schmidt, A.H., and Chrisman, N.R., 1979: *Integration and Analysis of Multiple Geographic Data Bases: An Application of ODYSSEY*, vol. 2, 81-98 in P. Moore (ed.), **Harvard Library of Computer Graphics**, Harvard Laboratory for Computer Graphics, Cambridge MA. (3)

Reports and other publications

- Chrisman, N.R. 2014: Why spatial reference should eschew projections, in Spatial reference in the Semantic Web and in Robotics, Report from Dagstuhl 14142, p. 188. http://drops.dagstuhl.de/opus/volltexte/2014/4613/pdf/dagrep_v004_i003_p181_s14142.pdf#page=8
- Chrisman, N.R. 2013: The Long-term Functioning of Geographic Information Systems, Chapter 7, p 55-60 In B. Wellar (ed.) *AutoCarto Six Retrospective*. Ottawa: Information Research Board. ISBN: 978-0-9921435-0-3, http://www.wellar.ca/wellarconsulting/AutoCarto_Six_Retrospective.pdf
- Chrisman, N. et Cotteret, G. 2009: *Avant-propos*. **Géomatica**, 63(4):311-312. (GEOIDE Student special issue).
- Chrisman, N.R. 2007: *Living inside networks of knowledge*, ArcNews, Fall. Reprinted in Getis, A. ed. (2008) **Essays on Geography and GIS**, volume 1, ESRI Press, 25-35. <http://www.esri.com/library/bestpractices/essays-on-geography-gis.pdf>
- Chrisman, N.R. 2007: *Réseau GEOIDE Network 2004-2007*, **Geomatica**, 61(2) p. 220, Canadian report to International Cartographic Association.
- Chrisman, N.R. 1996: GIS as social practice. Scientific Report for the Initiative 19 Specialist Meeting: GIS and Society: the implications of how people, space and environment are represented in GIS, NCGIA. (9 citations)
- Goodchild, M.F., Biging, G.S., Congalton, R.G., Langley, P.G., Chrisman N.R. and Davis, F. 1994: *Final Report of the Accuracy Assessment Task Force*. California Assembly Bill AB1580, Santa Barbara: University of California NCGIA. (24 citations)
- Chrisman, N.R. 1994: *Database design for Chinese counties in time*. unpublished report submitted to China in Space and Time project.
- Chrisman, N.R. 1994: *Report to CITAS concerning the spatial data quality of China GIS data from the SIASA project at Griffith University, Queensland*. unpublished report.
- Chrisman, N.R., Gurda, R., and Beard, M.K., 1987: *National Charting Quality Standards*, unpublished report (91 pp.).
- Ventura, S.J., Chrisman, N.R., and Vonderohe, A.P., 1986: *Quality analysis of digital line graph data for the Dane County Land Records Project*, unpublished report (22 pp.). (5)
- Chrisman, N.R., 1986: *Testing the interim proposed standard for digital cartographic data quality*, 53-55 in H. Moellering (ed.), **Report 7**, NCDCCDS, Columbus OH. (4)
- Chrisman, N.R., 1986: *Quality report for Dane County soil survey digital files*, 78-88 in H. Moellering (ed.), **Report 7**, NCDCCDS, Columbus OH. (4 citations)
- Chrisman, N.R., 1983: *Issues in digital cartographic quality standards: a progress report*, 23-31 in H. Moellering (ed.), **Report 3**, NCDCCDS, Columbus OH. (2)
- Chrisman, N.R., 1982: *Methods of spatial analysis based on error in categorical maps*, unpublished Ph.D. thesis, University of Bristol. (76 citations)
- Chrisman, N.R., 1980: *Assessing Landsat accuracy, a geographic application of misclassification analysis*, presented at Second Colloquium on Quantitative and

- Theoretical Geography, Cambridge, England. (4)
- Chrisman, N.R., 1980: *Ensuring spatial content in analysis through the use of cartographic data bases*, presented at Social Science Research Council Symposium on Social Geography, Oxford, England.
- Chrisman, N.R., 1979: *A multi-dimensional projection of ODYSSEY*, Harvard Laboratory for Computer Graphics, Cambridge MA. (8 citations)
- Chrisman, N.R., 1976: *Local versus global: the scope of memory required for geographic information processing*, presented at Segment Oriented Referencing Systems Association; also **Internal Report 76-14**, Harvard Laboratory for Computer Graphics, Cambridge MA. (2)

Book Reviews

- 2012: Review of *SIG. La dimension géographique du système d'information*, by Henri Pornon. **Cahiers Géographiques du Québec** (158) 509-510.
- 2002: Review of *Multidimensional Geographic Information Science*, **International Journal of Geographical Information Science** **16**: 203-204.
- 2001: Review of *Digital Places*, **Society and Space** **19(2)**: 249-250.
- 1999: Review of *Geographic Objects with Indeterminate Boundaries*. **International Journal of Geographical Information Science** **13**: 615-616.
- 1998: Review of *Elements of Data Quality*. **Cartography and Geographic Information Systems** **25**: 259-260. doi: 10.1559/152304098782382990 (2 citations)
- 1994: Review of *Cadastral Maps in the Service of the State*, **Cartography & Geographic Information Systems**, **21**: 100-101. doi: 10.1559/152304094782610251
- 1990: Review of *Building Databases for Global Science*, **Annals AAG**, **80**: 149-151. (1)
- 1989: Review of *Measurements from Maps: Principles and Methods of Cartometry*, **Cartographica**, **26**: (3&4), 138-141.
- 1984: Review of *Cartographic Drawing with Computers*, **Cartographica**, **21**:110-112.

Other Writing

- Chrisman, N.R. 2018: Thanks to reviewers: 1 July 2017–30 June 2018, *Cartography and Geographic Information Science*, 45(6): 570, doi: 10.1080/15230406.2018.1497919
- Chrisman, N.R. 2017: Thanks to Reviewers: 1 July 2016–30 June 2017! (Editorial) *Cartography and Geographic Information Science* 44(6): 473. doi: 10.1080/15230406.2017.1358002
- Chrisman, N.R. 2017: Maps that move: Introduction to special content section on 3D and dynamic illustrations. (Editorial) *Cartography and Geographic Information Science* 44(4): 283-283.
- Chrisman, N.R. 2017: Aims and scope of Cartography and Geographic Information Science. (Editorial) *Cartography and Geographic Information Science* 44(3): 185-185.

- Chrisman, N.R. 2016: Thanks to reviewers. (Editorial) *Cartography and Geographic Information Science* 43(5): 469-469.
- Chrisman, N.R. 2015: Special content related to ICC 2015 in Rio de Janeiro. (Editorial) *Cartography and Geographic Information Science* 42(4): 305-305.
- Chrisman, N.R. 2000. Préface: Batir une géographie de l'information géographique. p. 5-6 In Roche, Stéphane, **Les Enjeux des Systèmes d'Information Géographique: Les cas de la France et du Québec**. Paris: L'Harmattan
- Chrisman, N.R. 1999. Editorial: Object Dynamics. **Geoinformatica** 3(4) 303-304.
- Mark, D. M., Chrisman, N., Frank, A. U., McHaffie, P. H. & Pickles, J. 1997. *The GIS history project*. (53 citations) http://www.ncgia.buffalo.edu/gishist/bar_harbor.html
- Chrisman, N.R. 1997: **Leading an Exploration**. (Instructor's Manual for Exploring GIS), digital publication of John Wiley and Sons.
<http://www.wiley.com/college/chrisman/leading.html>
- Chrisman, N.R. 1996: *Risks of Reductionism*. **Geography: a newsletter for educators**, 6(4) 3-4, published by John Wiley and Sons.
- Chrisman, N.R. 1995: *Course content on the Internet*. **Geography: a newsletter for educators**, 5(2) 1-3, New York: Wiley.
- Chrisman, N.R. 1994: *A vision of digital libraries for geographic information or How I stopped trying to find the on-ramps to the information superhighway*. **GeoInfo Systems**, 4(4): 21-24. (2 citations)
- Chrisman, N.R. 1993: *Cartography: Year in Review*. **ACSM Bulletin**, 141: 41-44.
- 1973-80 co-author or editor, manuals for POLYVRT, CALFORM, ASPEX, ODYSSEY

Appendix A: Professional Presentations

| <i>Date</i> | <i>Conference or Organizer</i> | <i>Location</i> |
|-------------|--|----------------------|
| 2018 | Publishing in academic journals, AutoCarto 2018 | Madison, WI |
| 2017 | Meet the Editors (Cartography & GIScience) – AAG | Boston, MA |
| 2017 | Kochi – Muziris Biennale (Art and Science) | Kochi, India |
| 2016 | Computer Science lecture series | Utrecht, NL |
| 2015 | Invited Lecture, UW GIS Day | Seattle, WA |
| 2015 | Invited Lecture, Centro Geo | Mexico, DF |
| 2015 | Geospatial Summit (Wisconsin Land Info Society) | Madison, WI |
| 2015 | 50 th anniversary LCGSA, Harvard University | Cambridge, MA |
| 2015 | SKI 2015 | Fernie, BC |
| 2014 | Research@Locate 2014 | Canberra, ACT |
| 2014 | Dagstuhl Workshop on Spatial Reference | Dagstuhl, Germany |
| 2014 | Invited lecture, ITC University of Twente | Enschede, NL |
| 2014 | Invited lecture, CNRS | Lyon, France |
| 2013 | Invited keynote, SIRCNZ, NZIS | Dunedin, NZ |
| 2013 | ISSDQ 2013 | Hong Kong |
| 2013 | Invited, Institute of Surveyors, Victoria | Ballarat, VIC |
| 2013 | IGARSS 2013 | Melbourne, VIC |
| 2012 | Public lecture, RMIT | Melbourne, Australia |
| 2012 | Global Geospatial Conference 2012, Co-Director | Québec, QC |
| 2012 | AGILE 2012 (Invited keynote) | Avignon, France |
| 2012 | AAG, Invited Waldo Tobler Lecture, GIS Specialty Group | New York, NY |
| 2011 | CIST-GIS, sciences du territoire | Paris, France |
| 2011 | 4S (Society for Social Studies of Science) | Cleveland, OH |
| 2011 | Géomatique 2011, ASCG Section Montréal | Montréal, QC |
| 2011 | Invited lecture, Semana geomatica (IGAC) | Bogota, Colombia |
| 2011 | International Cartographic Congress | Paris, France |
| 2011 | AGILE Conference | Utrecht, NL |
| 2011 | SKI Canada | Fernie, BC |
| 2010 | Gravel Bed Rivers 7 | Tadousac, QC |
| 2010 | GIScience 2010 | Zurich, CH |
| 2010 | Auto-Carto 2010 | Orlando, FL |
| 2010 | Geomatics Seminar, University of Melbourne | Melbourne, Australia |
| 2010 | Canadian Geomatics Conference | Calgary AB |
| 2010 | Int. Society for Voronoi Diagrams | Québec, QC |
| 2010 | International Cluster Conference | Biloxi, MS |
| 2009 | International Cartographic Congress | Santiago, Chile |
| 2009 | Workshop on Earth Observation, Chilean Space Agency | Santiago, Chile |
| 2009 | Centro-Geo | Mexico DF, Mexico |
| 2009 | CEAZA | La Serena, Chile |
| 2009 | Universidad de Concepcion | Concepcion, Chile |
| 2009 | Universidad Austral de Chile | Valdivia, Chile |
| 2009 | Universidad Catolica | Santiago, Chile |
| 2008 | CRCSI Annual Conference | Brisbane, Australia |

| | | |
|------|---|---------------------|
| 2008 | Invited Keynote, Temporal Workshop, GIScience 08 | Park City, UT |
| 2008 | Invited, StratAG launch | Maynooth, Ireland |
| 2008 | Network for Networks workshop, ISPRS Congress | Beijing, China |
| 2008 | CAG Annual Convention | Québec QC |
| 2008 | Institute for Catastrophic Loss Reduction | Toronto, ON |
| 2008 | Spatial Knowledge and Information | Fernie, BC |
| 2008 | Korean Land Surveying, Geodesy and Cartography | Calgary, AB |
| 2008 | Ontario Centres of Excellence | Niagara College, ON |
| 2007 | 4th jMap User Conference, Kheops Technologies | Montréal, QC |
| 2007 | 4S (Society for Social Studies of Science) | Montréal QC |
| 2007 | AGILE Conference | Aalborg, Denmark |
| 2007 | Invited Plenary, GISRUK | Maynooth, Ireland |
| 2006 | PAIGH Council | Santiago, Chile |
| 2006 | 4S | Vancouver, BC |
| 2006 | SARSCENE (Search & Rescue Canada) | Ottawa |
| 2006 | Geo-Tech 2006; invited panelist | Ottawa |
| 2006 | Software Human Resources Council | Ottawa |
| 2006 | Institut M. Lamontagne (DFO) | Mont Joli, QC |
| 2006 | Environmental Geomatics Lecture, Rutgers Univ. | New Brunswick, NJ |
| 2005 | PEER Geomatics Pillar Conference | Montpellier, France |
| 2005 | GSDI Seminar, Atlantic Institute, MIT | Cambridge, MA |
| 2005 | SAGEO 2005 | Avignon, France |
| 2005 | Geo-Tech 2005 | Vancouver, BC |
| 2005 | AUTO-CARTO 2005 | Las Vegas, NV |
| 2004 | ACFAS | Montréal, QC |
| 2004 | US Geological Survey, EROS Data Center | Sioux Falls, SD |
| 2004 | 4S/ EASST | Paris, France |
| 2003 | ICHC (Int Conference on History of Cartography) | Cambridge, MA |
| 2002 | 4S | Milwaukee, WI |
| 2001 | 4S | Cambridge, MA |
| 2001 | GISRUK 2001, Invited Speaker | Cardiff, Wales |
| 2000 | Distributed Collective Practices Workshop | Paris, France |
| 2000 | 4S/ EASST | Vienna, Austria |
| 2000 | Journées Cassini | La Rochelle, France |
| 2000 | CIRAD | Montpellier, France |
| 2000 | UMR Espace | Avignon, France |
| 2000 | Dangermond Invited Lecture: University of Cal-SB | Santa Barbara CA |
| 2000 | Association of American Geographers | Pittsburgh PA |
| 1999 | Society for the Social Studies of Science (4S) | San Diego CA |
| 1999 | GISOC (Geographic Information and Society) | Minneapolis MN |
| 1998 | Society for the Social Studies of Science (two papers) | Halifax NS |
| 1998 | Third International Symposium on Spatial Accuracy Assessment in Natural Resources and Environmental Sciences (invited plenary) | Québec City, QC |
| 1998 | Workshop on Geolibraries (National Academy of Sciences) | Washington, DC |
| 1998 | Washington Chapter Urban and Regional Science Association | Tukwilla, WA |
| 1997 | Swiss Federal Institute of Technology (public lecture) | Lausanne, CH |
| 1997 | Symposium on Accuracy of Spatial Data (Cassini / IGN) | Paris, France |
| 1997 | Association of American Geographers | Fort Worth, TX |

| | | |
|------|--|---------------------|
| 1997 | Thirteenth International Symposium on Computer-Assisted Cartography (AUTO-CARTO 13) Conference Director | Seattle, WA |
| 1997 | University of Hong Kong (two public lectures) | Hong Kong |
| 1997 | Hong Kong Polytechnic University (public lecture) | Hong Kong |
| 1996 | University of Oregon (Visiting Geographical Scientist Program, AAG) | Eugene, OR |
| 1996 | Oregon State University (Visiting Geog. Scientist Program, AAG) | Corvallis, OR |
| 1996 | Specialist Meeting, Initiative 19 (GIS and Society) | |
| | National Center for Geographic Information and Analysis | South Haven, MN |
| 1996 | "Social Practice of GIS" (public lecture) ESRI | Redlands, CA |
| 1996 | Association of American Geographers | Charlotte, NC |
| 1995 | GIS '95 (GIS World, Organizer) (Keynote Speaker) | Vancouver, BC |
| 1995 | Twelfth International Symposium on Computer-Assisted Cartography (AUTO-CARTO 12) | Charlotte, NC |
| 1994 | "Is Climate Warming" series, Quaternary Research Center UW | Seattle, WA |
| 1994 | Natural Resource Refresher Workshop, National Park Service | Seattle, WA |
| 1994 | GIS and Society Workshop (local organizer, paper) NCGIA | Friday Harbor, WA |
| 1994 | University of Zürich (public lecture and workshop) | Zurich, Switzerland |
| 1994 | Institut Géographique Nationale (workshops and public lecture) | Paris, France |
| 1994 | Association of American Geographers | San Francisco, CA |
| 1994 | Northwest Computer Aided Mapping Association (keynote) | SeaTac, WA |
| 1993 | GIS Analysis Workshop (organized by UW grad students) | Seattle, WA |
| 1993 | Association of American Geographers | Atlanta, GA |
| 1993 | Eleventh International Symposium on Computer-Assisted Cartography (AUTO-CARTO 11) | Minneapolis, MN |
| 1992 | GIS/LIS 92 | San Jose, CA |
| 1992 | 5th International Symposium on Spatial Data Handling | Charleston, SC |
| 1992 | Spatial Data Transfer Standard Implementation Workshop | Gaithersburg, MD |
| 1992 | Automated Mapping/ Facilities Management Ass. (panel moderator) | San Antonio, TX |
| 1991 | International Cartographic Association 15th Conference | Bournemouth, UK |
| 1991 | Specialist Meeting, Initiative 7 (Visualization of Data Quality) | |
| | National Center for Geographic Information and Analysis | Castine, ME |
| 1991 | Tenth International Symposium on Computer-Assisted Cartography (AUTO-CARTO 10) | Baltimore, MD |
| 1991 | Association of American Geographers | Baltimore, MD |
| 1990 | Specialist Meeting, Initiative 10 (Remote Sensing & GIS) | |
| | National Center for Geographic Information and Analysis | Sioux Falls, SD |
| 1990 | Colloque "Intégration de la Photogrammétrie et de la Télédétection dans les S.I.G." Société Française de la Photogrammétrie et Télédétection | Strasbourg, France |
| 1989 | International Cartographic Congress | Budapest, Hungary |
| 1989 | Ninth International Symposium on Computer-Assisted Cartography (AUTO-CARTO 9) | Baltimore, MD |
| 1988 | Specialist Meeting, Initiative 1 (Accuracy of Spatial Databases) | |
| | National Center for Geographic Information and Analysis | Santa Barbara, CA |
| 1987 | International Geographic Information System Symposium | Crystal City, VA |
| 1987 | Ohio State University, Department of Geodetic Sciences | Columbus, OH |
| 1987 | Eighth International Symposium on Computer-Assisted Cartography (AUTO-CARTO 8) Conference Director | Baltimore, MD |
| 1987 | Association of American Geographers | Portland, OR |

| | | |
|------|---|------------------|
| 1986 | Université Laval (public lecture) | Québec, QC |
| 1986 | AUTO-CARTO London | London, UK |
| 1986 | Fédération Internationale des Géometres | Toronto, ON |
| 1986 | American Congress on Surveying and Mapping | Washington, DC |
| 1986 | Association of American Geographers | Minneapolis, MN |
| 1985 | Digital Charting Data User's Workshop | Gaithersburg, MD |
| 1985 | Seventh International Symposium on Computer-Assisted Cartography (AUTO-CARTO 7) | Washington, DC |
| 1985 | American Congress on Surveying and Mapping | Washington, DC |
| 1984 | Urban and Regional Information Systems Association | Seattle, WA |
| 1984 | American Congress on Surveying and Mapping | Washington, DC |
| 1983 | Sixth International Symposium on Automated Cartography (AUTO-CARTO 6) | Ottawa, ON |
| 1983 | American Congress on Surveying and Mapping | Washington, DC |
| 1983 | Harvard Computer Graphics Conference | Cambridge, MA |
| 1982 | Fifth International Symposium on Computer-Assisted Cartography (AUTO-CARTO 5) | Crystal City, VA |
| 1982 | International Society of Photogrammetry and Remote Sensing (ISPRS) Commission IV Symposium | Crystal City VA |
| 1982 | Harvard Computer Graphics Conference | Cambridge, MA |
| 1980 | 2 nd Colloquium on Quantitative and Theoretical Geography | Cambridge, UK |
| 1980 | Social Science Research Council Symposium on Social Geography | Oxford, UK |
| 1979 | Premier Seminaire Internationale HBDS | Lisbon, Portugal |
| 1979 | Harvard Graphics Week | Cambridge, MA |
| 1978 | Harvard Graphics Week | Cambridge, MA |
| 1977 | First International Advanced Study Symposium on Topological Data Structures for Geographic Information Systems | Dedham, MA |
| 1975 | Urban and Regional Information Systems Association | Seattle, WA |
| 1975 | International Symposium on Computer-Assisted Cartography (AUTO-CARTO II) | Reston, VA |
| 1975 | Northeast Regional Science Association | Amherst, MA |
| 1974 | International Conference on Automation in Cartography (AUTO-CARTO I) | Reston, VA |