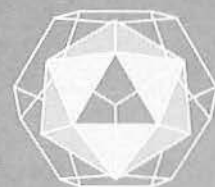


Cartouche



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Bulletin de l'Association canadienne de cartographie

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Numéro 53, printemps, 2004

**Geomatics Institute
AT FLEMING**

**Canadian Cartographic Association (CCA) Conference
Conférence de l'Association canadienne de Cartographie (ACC)**

CCA 2004 ACC

**Geomatrics—A Cartographic Revolution
Géomatiques—Une Révolution Cartographique**

Tuesday, June 8 to Thursday, June 10, 2004
Du mardi, 8 juin au jeudi, 10 juin 2004
Lindsay, Ontario, Canada

www.geomaticsatfleming.ca/cca2004/

hosted by the Geomatics Institute and Fleming College / organisé par l'Institut de la géomatique du Collège Fleming

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#55 (Fall)	Jul. 15	Aug. 15
#56 (Winter)	Oct. 15	Nov. 15

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Mot du Président/ President's Message

Clarie Gosson, Geomatics Canada

Over the past few months there have been a number of changes for the CCA. Our Secretary, Diane Lacasse, is currently on long-term sick leave since she is fighting a battle with breast cancer. Diane has managed to keep up her bright spirits despite all this. I know we all wish her the best at this very difficult time and we hope to see her back when she well again. Diana Hocking has agreed to take on the duties of Secretary therefore I would like to take this opportunity to welcome Diana to the Executive. This also means that the CCA address will change. The University of Victoria has kindly agreed to let us use their mailing address and a computer for Diana to use. The mailing address is now posted on our web site and on the back cover of *Cartouche*.

There have been a lot of good things happening with *Cartographica*. Please read more about it in this issue of *Cartouche* [see page 6]. The Journal is on its way to become more regular thanks to the efforts of the new editorial team of Cliff Wood, Peter Keller and Roger Wheate.

Our Annual General Meeting will take place at the Geomatic Institute in Lindsay. The team organizing the conference is planning an exciting program so plan to be in Lindsay, Ontario in early June. There is more information about this event in this issue of *Cartouche* [see page 10].



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About the cover...

This issue's cover is meant to get you thinking about the 2004 Conference. If you have not already started to prepare for the Conference, now is the time to start getting ready for your trip to Fleming College in Lindsay, Ontario. See page 10 for more information. These graphics were created and kindly provided by Ron Schepper. See you there.

Welcome New Members

Bienvenue aux nouveaux membres !

Mohammed Aldooseri	Jeddah, Saudi Arabia
Crystal Breon	Deer Lake, NL
Rex Cammack	Springfield, MO
Brian Morber	Guelph, ON
Graeme Parry	Toronto, ON
James Strathdee	Greenfield Park, QC
David D. Watkins	Redlands, CA

Managing Colour (Part I): Selecting Colour Schemes for Thematic Maps in an Atlas Series

Introduction to the Socioeconomic Atlas Project for National Parks

I manage a project to develop atlases of socioeconomic trends for individual US national parks. For each atlas, data are mapped for an aggregate of counties that comprise a region surrounding the park (see Figure 1 for an example). All of the data are available from a combination of public and private sources in the US, and include information about population, social and cultural characteristics, commerce, government, land use, and tourism. Approximately 35 individual maps of socioeconomic trends are included in each atlas. The objective of the project is to improve understanding of the changing character of areas adjacent to parks and provide managers with a critical planning, management, education, and public participation tool.

Creating the atlases and managing the project have provided many learning opportunities. The biggest challenge involved establishing a consistent and streamlined approach to data collection, data classification, map design, and atlas production so that multiple atlases could be produced *quickly* and *inexpensively*. Since 1999, atlases have been completed for six parks. Now, with a well-established process in place that now includes collaboration with colleagues in the Department of Geography at The Pennsylvania State University, 12 atlases are planned in 2004. Limited copies of each atlas are printed from a desktop colour laserjet printer. (A press run was not an option and printing directly to a high-end colour copier did not produce acceptable results.)

From the very beginning of the project, one of the specific design challenges was the selection and use of colour schemes for the atlas maps — this will be the focus of the rest of this article.

Selecting and Using Colour for the Atlas Project

Most of the maps in each atlas are choropleth maps. The role of colour in choropleth mapping is important in revealing the underlying spatial patterns in an individual data set. Colour can also play a role in differentiating among maps grouped by topic or theme in an atlas. Certain guidelines for using colour in choropleth mapping are quite familiar to cartographers, such as using different hues for qualitative data or using sequential schemes that range from light to dark for ordered data. However, the selection of effective colour schemes for specific maps can still be challenging. The colour schemes should be “attractive” (yes, a subjective term) with clear perceptual differences between the data classes.

With six broad categories of data (population, social and cultural characteristics, commerce, government, land use, and tourism), we assigned a different hue to each category, such as blue to datasets about population, green to land use, yellow to tourism, and so forth (the terms used to describe the hues are general). Since most of the datasets were quantitative (e.g., percent population change, percent land in farms, percent of population in poverty), the next decision was to develop sequential colour schemes for each hue. As a starting point, we drew from an article (Brewer 1989) describing the development of process-printed Munsell colour charts. Specific Munsell colours (expressed in the three dimensions of hue, value, and chroma) were approximately reproduced with process inks (cyan, magenta, yellow, black). Ten process charts were provided. Using the charts as a guide, we developed six distinct colour schemes using CMYK combinations, each with four classes.

The next step was to try these colour schemes on our desktop colour laserjet printer. We laid out six separate map legends on a single page. As expected, there were some differences between what we expected to see and what the printer produced. Since we planned to print multiple copies from this printer, we knew we had to adjust our “colour palette” to the printer. We made some small changes to the CMYK combinations to try to achieve colour schemes that remained true to each hue and provided enough of a visual difference between each class. In addition, the class corresponding to the highest values — the darkest class — had to be light enough so that roads and labels on each map would not be obscured. We then tried each colour scheme with classed data on actual maps. Sometimes, a colour scheme would work on a legend in isolation, but not show enough differences on a map or vice versa, and additional adjustments were made.

All decisions about adjusting the colours were fairly subjective. No formal experimental tests were conducted because this was outside the scope of the project. However, the users of each of the atlases are provided with review drafts and can comment on the colour schemes. We receive occasional comments that it is difficult to distinguish between two adjacent classes. However, this is not universal among the reviewers. In addition, early in the project, as we repeatedly adjusted and tested our palette of colours, we discovered that a change that solved a problem in one class would inevitably create problems elsewhere for another class.

Finally, several technical variables associated with the laserjet printer affect continuity of colour output from one atlas to another. The amount of colour toner in the four toner cartridges declines at

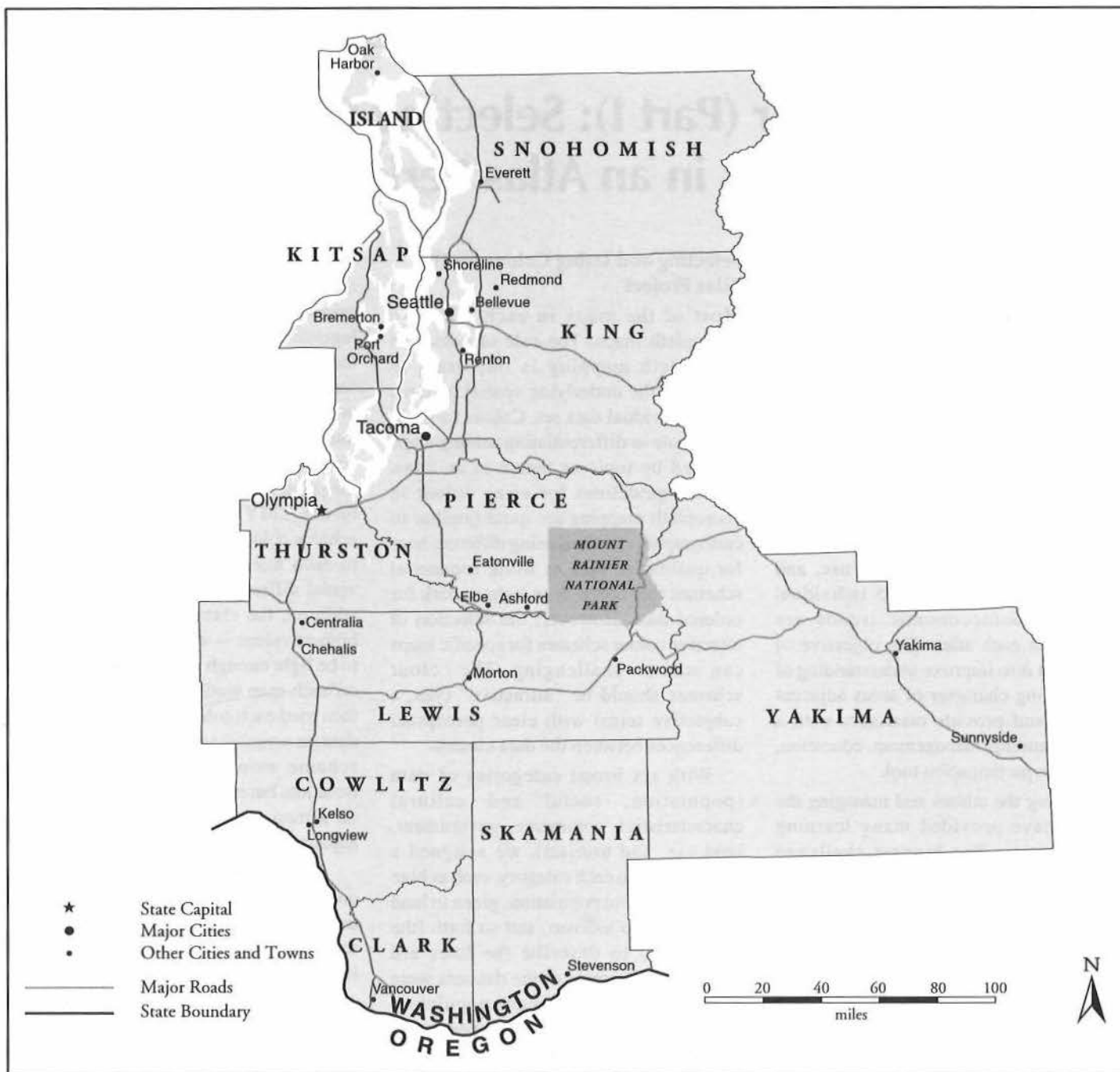


Figure 1. Region for Mount Rainier National Park, Washington, USA

variable rates. The colour laserjet printer has other “consumable” parts that affect the transfer of colour images and fills to paper, such as a replaceable imaging drum. Different types of paper, with or without gloss, also produce different results.

Maintaining strict consistency in colour output for the atlases is not fully realized, but we are pleased with what we

have been able to achieve under the circumstances.

A Helpful Tool for Selecting Colour Schemes

In this digital age, the selection of colour for choropleth mapping remains a challenge. What are the best colour schemes to use for specific datasets and for different output

devices? Many government agencies, news organizations, and other institutions use GIS and cartography to create thematic maps that present information ranging from crime to health statistics, and from biodiversity to hazardous waste information. The atlas project described above is just one of many such projects.

One specific mapping tool is available, called *ColorBrewer*, to help with testing and



Comment

Andrew Millward's article in *Cartouche* Number 52, attributes "An Origin With Dubious Motivation" to the technique of overlaying one set of map data on another to obtain correlations. Millward and his 'mentor', Professor Emeritus Dr. Cloud, apparently claim that "layering" was invented for nefarious purposes by bad guys in the Establishment in the class struggle in the 1930s in the U.S.A. — that's the "origin with dubious motivation".

"Layering" to obtain correlations is at least as old as Ptolemy: topographical data is overlaid on a geodetic grid to obtain correlation between features and location-by-coordinates. It requires only the most rudimentary insight into cartography, topographic or thematic, to understand correlation by this technique. To claim recent invention of it is nonsense.

Gerald Fremlin

7 January 2004

Author's response to Gerald Fremlin:

I'd like to thank the reader for providing a written critique of a piece that I contributed to *Cartouche* 52 entitled: "An origin with dubious motivation: 'unlayering' the history of GIS." To my knowledge, it is not often that *Cartouche* contributions receive feedback. For this I am pleased and wish to respond in brief. First, I would like to clarify that Dr. John Cloud is not a 'mentor' of mine, but was an invited speaker for an event in which I was in attendance. Gerald Fremlin is correct in saying that the 'absolute' origins of the map overlay procedure certainly predate the 1930s class struggle described. To clarify, my remarks reflect content that was delivered in Professor Cloud's lecture, which may be over zealous in their attribution of historical beginnings. It is fair to say, however, that the Roosevelt Administration's expansive project made important contributions to the systematization of the map overlay. But to dwell on this point is to miss the essence of the article. I maintain that GIS may have had an historical root in racism. This statement of origin is not exclusive. Most in the field of cartography acknowledge the likelihood of many contributions to the development of GIS. My goal was to describe an historical set of events that some in the field might not be aware of. The potential of maps as political tools is undisputed; acknowledgement of their historical (mis)use should have a place in the education of the GIS professional.

Andrew Millward

selecting colour schemes for choropleth maps. *ColorBrewer* is an online tool available to anyone with a web connection at <www.ColorBrewer.org>. "ColorBrewer is designed to take some of the guess-work out of [selecting good colour schemes for maps]. The system suggests possible colour schemes by prompting the user to identify how many data classes they have and what kind of colour scheme best suits their data and map message (i.e., sequential, diverging or qualitative; ..." (Harrower and Brewer 2003:28). ColorBrewer provides advice on how a colour scheme might work for different display types, such as a CRT or laser printer. The system will also provide some guidance as to whether a specific colour scheme might cause colour-blind confusions. Colour specifications for CMYK, RGB, hexadecimal, Lab, and ArcView 3.x can be output.

Conclusion

The atlas project for national parks continues with the addition of CD-ROM versions of each atlas that can be readily duplicated. We are moving away from distributing printed versions of the atlas and encouraging users to print their own copies if desired. We have had to accept and advise these users that the output colours will vary due to the printer being used. Also, the colour schemes we use were adjusted for printer output (CMYK). We may need to take another look at how the schemes work for CRT and LCD displays (RGB) although like printers, there is variability among these devices as well.

Working with colour and colour management in mapping continues to be a learning experience. The next topic I would like to try to address in *Cartouche* will focus on colour profiles and their role in colour management (Part II).

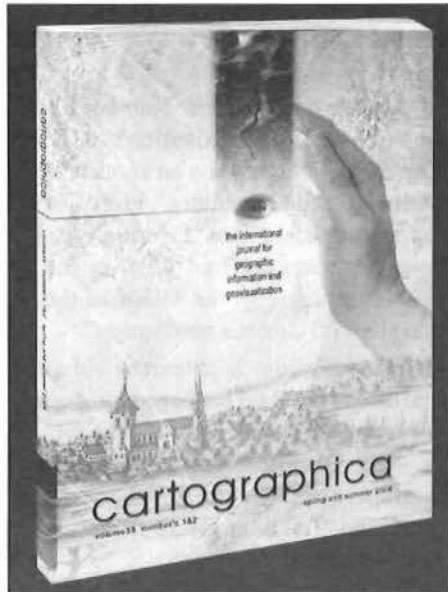
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Holy Variables, Batman!

Thinking about moving to New York and wondering about some social-economic related issues in your prospective neighbourhood? Check out the maps posted at the *Gotham Gazette's* web space (<http://www.gothamgazette.com/arch.maps.shtml>). If nothing else, the map titles are intriguing: "Lead Poisoning in Children," "Concentrations of Mice and Rats," "Heroin-Related Hospitalizations by Zip Code," just to name a few. At the bottom of some maps there is a brief synopsis. Most of the maps appear to do the 'job', but a few may be questioned. Some of the maps have been created by the New York Public Interest Research Group's Community Mapping Assistance Project, or CMAP. (<http://www.cmap.nypirg.org/>). Check out both these sites, and if you care to comment, let me know (Gary at gmcmanus@cartodesgin.com).

cartographica TAKES ON NEW EDITORIAL TEAM AND LOOK!



University of Toronto Press announces the formation of a new *cartographica* editorial team. The team consists of Professor Clifford Wood, Memorial University of Newfoundland; Professor Roger Wheate, University of Northern British Columbia; and Professor Peter Keller, University of Victoria. We would like to thank Professor Brian Klinkenberg, outgoing *cartographica* editor, for his years of dedicated service to the journal.

Although there have been a number of efforts to bring the journal's publishing schedule up to date, this is very difficult in the face of such a severe delay, and these efforts have not been successful, despite the work invested in them. The new editorial team is committed to publishing *cartographica* on schedule and has instituted a number of editorial changes to achieve this goal. Primarily, after publishing volume 38, issue 3/4 (2001), the journal will publish volume 39, issue 1 (2004), essentially skipping two years. Individuals and institutions who have paid for the missed volumes will have their subscriptions extended to cover the 2004 volume. This will allow the new editorial team to publish without a backlog of catch-up issues. Subsequent issues will be published in sequence (March, June, September, and December).

cartographica is dedicated to publishing articles on all aspects of cartographic and geovisualization research while maintaining its tradition of publishing material on cartographic thought, the history of cartography, and cartography and society. *cartographica* also plans to consolidate its trend towards publishing research contributions that focus primarily on

geographic information. Finally, *cartographica* plans to launch a new section in the journal devoted to technical notes of interest. To emphasize these directions, starting with volume 39, number 1, 2004, *cartographica* will publish with a new look and a new subtitle:

the international journal for geographic information and geovisualization

We look forward to your full support during the transition period and to your active encouragement of article submissions to *cartographica*. Until further notice, please submit new manuscripts and enquiries about manuscripts in the review process to pkeller@uvic.ca or mail to: Professor Peter Keller, *Cartographica* Editorial, c/o Department of Geography, University of Victoria, PO Box 3050, Victoria, BC V8W 3P5 Canada. Telephone: 250-721-7333.

Canada and France Launch Joint Project

On November 26, 2003, Mr. Ian E. Wilson, National Archivist, Library and Archives Canada, and His Excellency, Philippe Guelluy, Ambassador of France in Canada, unveiled in Canada the world's most comprehensive research portal on source material from the French colonial period in America. Canada and France are the first two countries to have this type of joint database on their common history, and the first to make it available in its entirety on the Web.

Entitled *New France, New Horizons: On French Soil in America*, this portal presents a vast documentary corpus, which consists of a virtual exhibition and an impressive database with 22,000 documents reproduced in more than 400,000 digitized images. It offers maps and plans, letters and reports, and other archival documents related to New France - a fundamental period in Canada's history. In addition, many documents previously inaccessible to the public may now be consulted online.

Come see for yourself and explore New France, New Horizons: On French Soil in America at: www.archivescanadafrance.org

Le Canada et la France lancent le projet commun

Monsieur Ian E. Wilson, archiviste national de Bibliothèque et Archives Canada, et Son Excellence, monsieur Philippe Guelluy, ambassadeur de France au Canada, dévoilaient le 26 novembre 2003 dernier au Canada le plus important portail de recherche au monde sur les sources de la période coloniale française en Amérique. Le Canada et la France sont ainsi les deux premiers pays à posséder une telle base de données sur leur histoire commune et à la rendre entièrement disponible sur le Web.

Intitulé *Nouvelle-France, horizons nouveaux. Histoire d'une terre française en Amérique*, ce portail est un important corpus documentaire constitué d'une exposition virtuelle et d'une imposante base de données. Celle-ci est constituée de 22 000 documents reproduits sur plus de 400 000 images numérisées. Elle offre des cartes et plans, des lettres et mémoires et autres documents d'archives qui sont autant de témoins de la Nouvelle-France, période fondamentale de l'histoire du Canada. En outre, de nombreux documents qui, jusqu'à présent, étaient très difficilement accessibles au public, peuvent dorénavant être consultés en ligne.

Histoire d'une terre française en Amérique à l'adresse : www.archivescanadafrance.org

The Catch-up Game: Policy and Technology in Remote Sensing

Tiffany MacGregor*
& Andrew Millward**

Student's Corner

An opportunity to showcase student projects and research initiatives in the fields of Cartography and Geomatics.

Preface

Increasingly, spatial data obtained from the acquisition and classification of remotely sensed data are being incorporated into cartographic works in the form of base data. With this as the context, it is important that we as mapmakers have some awareness of the potential controversial nature of the data which we may access and use.

Andrew Millward

Abstract

There have been significant technological advances in remote sensing within the past two decades. However, policy and legislation pertaining to these progressions have not kept pace. Present policies are only relevant for technology that was cutting-edge in previous years. The lag time between technological development and policy formation has become a major area of discussion in the remote sensing community. This lag has implications for conflicts relating to national security, economics and information dissemination. Furthermore, remote sensing policy lacks consistency across international borders; what is legal in one country may not be in another. With increasing international partnerships and agreements that span civilian/government boundaries, consistent and timely policy is needed to ensure certain levels of privacy protection while at the same time not overly restricting access to these data for

important scientific and socially beneficial uses. Space policy, as it relates to remote sensing technology, must be inclusive of the concerns of both private and public actors as well as considerate of equitable input from developed and developing countries.

Introduction

The field of remote sensing has made great advancements during the past 20 years, from both a technological and information dissemination standpoint. The history of remote sensing is relatively short with the first aerial photograph having been taken by Gaspard Felix Tournachon in 1858 (Lillesand and Kiefer, 2000). Space-based remote sensing gained momentum from 1946 to 1950 during which time cameras were launched on rockets (Lillesand and Kiefer, 2000). However, the images retrieved from these early cameras pale in comparison to the technology of today. The American satellite Landsat-1 (ERTS-1) was launched in 1972 with a spatial resolution of 80m. It is touted as one of the first sensors to provide data describing the earth to a wide audience. In 2001, the civilian company Digital Globe launched the QuickBird satellite with a spatial resolution of 2.44 m and 0.61 m in multispectral and panchromatic format respectively (Jasani, 2002). For a commercial satellite, the spatial resolution of Quickbird is revolutionary compared with that which has gone before it. This improvement in spatial resolution raises many questions about privacy and security. These are two concerns that are of tremendous importance given the present lack of international policy to regulate the collection and dissemination of contemporary remotely sensed data.

History of space policy

Discussion of remote sensing policy began during World War I with the *Paris Convention* (Wasowski, 1991). The issues raised at this time dealt with airspace sovereignty. It was decided that a nation would have dominion over both its land and the airspace above said land territory. The *Convention* was ratified by 33 nations, which included all of the Allied Powers except the United States (Wasowski, 1991). The next significant meeting was the *Convention of International Civil Aviation* held in Chicago in 1944. This convention re-affirmed the importance of national airspace sovereignty, and went further to grant signatory nations the right to prohibit the operation of imaging devices in their airspace (Wasowski, 1991). The success of early outer-space exploration changed this drastically. With the launch of Sputnik-1 by the Soviets and Explorer-1 by the United States, nations capable of outer space flight were able to overfly any territory without first gaining permission (i.e., national sovereignty from the perspective of remote imaging devices was jeopardized). While the UN Outer Space Treaty of 1966 discussed the use of military satellites for reconnaissance, it failed to address non-military satellite observations (Wasowski, 1991).

In the years prior to a more recent 1986 UN Remote Sensing Principles meeting, the main focus of concern shifted from the collection of data to unease regarding its dissemination (Wasowski, 1991). A principal conclusion of this meeting was that outer space was a free flight zone, reinforcing in policy the general superiority of nations capable of space exploration (i.e., USA and former USSR) (von Kries, 2000). While the 1986 UN

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**Remote Sensing Project Instructor, University of Waterloo

Remote Sensing Principles meeting outlined a variety of ethical guidelines dealing with remote sensing and acceptable end uses, these are now aged and lack consideration of contemporary concerns brought about by recent technology advancements. Currently, there is a necessity for new conventions relating to the application and dissemination of remotely sensed technologies, yet nothing to replace the 1986 UN Remote Sensing Principles.

Implications of outdated policy

There have been many changes in the remote sensing field and they include the shift from a strictly government-driven industry to one that is much more heavily commercialized (Slonecker *et al.*, 1998). These changes, as well as an upgrading of sensor resolution, have led to problems with current regulatory policy. Imagery that is publicly available could be viewed as an infringement on privacy rights between government and private business. Partnerships have arisen for economic reasons. The economic restraints on the governments involved include limited funds and the observed need for global distribution networks (Tahu, 1998). Partnerships between governments and private companies have come about as a result of self-interest and economics (Thomas *et al.*, 1995). For example, the United States had 490 international agreements in remote sensing and earth observation as of 1997. These agreements involved 76 countries and six multinational organizations.

While the international remote sensing policy in the form of the 1986 UN Principles discusses technical definitions as they relate to the *open skies* policy, regulation and adherence to policies lies with the country that owns and operates the imaging satellite (Slonecker *et al.*, 1998). This has obvious implications for developing countries. Some provision for general concerns expressed by the developing world, as they relate to space-based remote sensing, were addressed with the 1984 formation of the Committee on Earth Observation Satellites (CEOS) which was established to serve as a focal

group for international coordination in remote sensing (Embleton and Kingwell 1997). However, with a lack of ownership in satellite-based sensors, developing countries are at a definite disadvantage when it comes to controlling the distribution of data describing their territory. George (2000) cites many of the African countries as falling into this category.

Much of the literature addressing remote sensing policy presents cases that have occurred in the United States, and only briefly discusses events in other space-capable nations. Von Kries (2000) is correct in stating in his article "*Towards a new remote sensing order?*" that there is a policy gap. He reports that while many countries have developed privacy and sovereignty laws, only the United States has moved aggressively to enact and reinforce theirs on the international stage. However, von Kries (2000) concludes by stating that more research and reporting on the current state of international policy and coordination are needed to fully evaluate the place of each nation in the remote sensing community.

Easy access to high-resolution spatial imagery, and a lack of consistent laws and policies pertaining to these data, has become an issue for the courts in the form of constitutional violations. These violations include dealing with this new form of evidence (satellite image), the way in which the evidence was gathered, and privacy issues (Slonecker *et al.*, 1998). Much of the literature on this topic is focused on landmark cases in the American judicial system. An example is the Dow Chemical Company versus the United States of America (Slonecker *et al.*, 1998). This case dealt with proving an expectation of privacy with regard to what could be considered as evidence in the court. The law was interpreted as follows: publicly available imagery could be considered as evidence in a court proceeding, privacy is not explicitly granted to individuals under the US Constitution (Slonecker *et al.*, 1998). Implications of this are important when considering publicly available 1 m resolution spatial imagery. Closely tied to

laws are ethical considerations. The ethics behind the use of remote sensing technologies must also be examined when use of this evidence could impinge upon the rights of a citizen or the sovereignty of a nation (Ciesla, 1991). A very recent development in remote sensing technology is the use of commercial unpiloted aerial vehicles (UAVs) to carry ground observation sensors. Presently there is no case law or jurisdiction to monitor the use of these vehicles (Gabrynowicz, 1996).

Summary

Guidance offered by available remote sensing policy has been all but nullified by the recent advancements in remote sensing technology. Since technology has surpassed the level at which the majority of policy is targeted, it is now necessary to modify existing laws and to create new international policy addressing privacy and national sovereignty as they relate to acquisition and dissemination of remotely sensed data. This will benefit all stakeholders in the remote sensing field from national security agencies to developing countries. These policies should enforce new privacy laws and rights at the national level while at the same time offering a set of guidelines for personal privacy for the individual citizen (i.e., aerial reconnaissance of personal property). International policy could also offer governance for information dissemination, thus insuring that developing countries have access to imagery of their territory and rights in regarding its distribution. In order for policy to mirror advances in technology, international communities will need to come together and create overseeing boards that make policy updates in accordance with the state of technological advancement. This may be necessary on an annual basis. This will ensure that policy is relevant to the technology in use.

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Some More Thoughts on Digital Archiving

Christine Earl
Carleton University

In *Cartouche* 50, Tracey Lauriault and I presented an essay on the issues of archiving of electronic cartographic data and maps, issues which are only now coming into general consciousness. An example of digital archiving has recently come to my attention* and I thought I would provide *Cartouche* readers with a brief summary.

The Museum of the History of Science in Florence has a special collection devoted to Galileo Galilei, the well-known champion of the Copernican planetary system whose empirical astronomy paved the way for what Alexandre Koyré has called the "geometrization of the universe." The latter phenomenon is something cartographers of modern times may be said to be inherently familiar with, to put it mildly.

The Galileian collection in Florence preserves the only original instruments which Galileo used or constructed including telescopes, compasses, and a lens. Of special note: the collection contains the index finger of Galileo's right hand in a glass mounted on an eighteenth century marble stand. The finger was removed from Galileo's body by an antiquarian during the transferral of his remains on March 12, 1737 to the main body of the church of Santa Croce in Florence and its preservation is an example of a reverence for Galileo amounting to cultic fascination. It is also a very early example of digital archiving!

Incidentally, the Museum is developing an impressive website with a range of multimedia products for virtual visitors as can be seen in the site map at <http://galileo.imss.firenze.it/mappa/index.html>. *Cartouche* readers may be interested in a report (albeit three years old) on an International Laboratory held to investigate the "Art, Science, and Techniques of Drafting in the Renaissance" accessible from there.

* see "Pixels and Piety" by Martin Kemp in *Nature*, vol. 425, p. 128.



Calendar/ calendrier

March 14 - 19 mars, 2004
100th AAG Annual Meeting
Philadelphia, PA
For information/pour
renseignements: www.aag.org

March 28 - 31 mars, 2004
The GeoTec Event - Pathways to Integration
Toronto, ON
For information / pour
renseignements:
EventInfo@GeoTecEvent.com or
phone Matt Ball @ 303-544-0594

May 23 - 28 mai, 2004
ASPRS 2004 Annual Conference
Denver, Colorado
For information / pour
renseignements:
<http://www.asprs.org/denver2004>

June 8 - 10 juin, 2004
CCA 2004 ACC
Fleming College
Lindsay, ON
For information / pour
renseignements:
www.geomaticsatfleming.ca/CCA2004

June 20 - 23 juin, 2004
97th Annual Canadian Institute of Geomatics Conference
Ottawa, ON
For information / pour
renseignements:
www.cig-acsg.ca/page.asp

August 9 - 12 août, 2004
ESRI International User Conference
San Diego, CA
For information / pour
renseignements: uc@esri.com or
909-793-2853 ext. 1-1363

October 6 - 9 octobre, 2004
NACIS XXIV
Annual Meeting
Portland, ME
For information / pour
renseignements: www.nacis.org



Geomatics Institute
AT FLEMING



CCA 2004 ACC

Canadian Cartographic Association (CCA) Conference /
Conférence de l'Association Canadienne de Cartographie (ACC)

Geomatics—A Cartographic Revolution Géomatiques—Une Révolution Cartographique

Tuesday, June 8 to Thursday, June 10, 2004 / Du mardi, 8 juin au jeudi, 10 juin 2004
Lindsay, Ontario, Canada

Conference details are available at: / Détails de la conférence sont disponible sous:
www.geomaticsatfleming.ca/cca2004/

Program Overview / Vue d'ensemble du programme; **Abstract Submission Details** / Détails de soumission d'un résumé
Registration Details / Détails d'inscription; **Workshop Details** / Détails des ateliers; **Accommodation** / Hébergement

Deadlines

- Organization of a special session, special illustrated paper session, or panel discussion: **March 1, 2004**
- Submission of a paper, illustrated paper or poster abstract: **March 1, 2004**
- **Registration:** starts **March 1, 2004**; early Registration until **April 23, 2004**
- **Accommodation:** book as early as possible. Accommodation at the College residences is limited.

Dates limites

- Organisation d'une séance spéciale, séance spéciale de communications illustrées ou panel de discussion: **1 mars 2004**
- Soumission d'une communication, d'une communication illustrée ou d'un résumé d'affiche: **1 mars 2004**
- **Inscription:** débute le **1 mars 2004**, pré-inscription jusqu'au **23 avril 2004**
- **Hébergement:** réservez le plus tôt possible. L'hébergement aux résidences du collège est limité.

For other information, please contact / Pour autre information, veuillez contacter:

Geomatics—A Cartographic Revolution / Géomatiques—Une Révolution Cartographique
Geomatics Department, Fleming College, P.O. Box 8000, Lindsay, Ontario, Canada K9V 5E6
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hosted by the Geomatics Institute and Fleming College /
organisé par l'Institut de la géomatique du Collège Fleming

Fleming College
EXPERIENCE • SUCCESS

Vinland Map Exonerated?

David Mercer

Memorial University of Newfoundland

The Vinland Map appears to be authentic. After decades of debate surrounding the validity of this map, recent test results appear to have settled the question of whether the map predates Columbus' voyage of discovery or if it is a forgery.

The Vinland Map first surfaced in 1957 and became part of the collection at the Beinecke Rare Book and Manuscript Library of Yale University in the early 1960's. The map is drawn in ink on parchment and clearly shows Britain, Ireland, Europe, the Mediterranean region, as well as Scandinavia. To the west of Scandinavia in the North Atlantic, it shows Iceland, Greenland, but more significantly, another island that is identified on the map as Vinlandia Insula. This island bears a close resemblance to the coast of Labrador and the Northern Peninsula of Newfoundland. Even more remarkable is that evidence gathered from the map indicates that the map dates to approximately 1440, over fifty years before Columbus apparently discovered the New World.

The lands shown on the map were known to the Vikings. The Norse settlement discovered at L'Anse aux Meadows, on the tip of Newfoundland's Northern Peninsula, has been dated to approximately 1000 AD. The area represented on the map, therefore, could be the lands referred to in the Norse Sagas as Helluland, Markland, and Vinland. Earlier investigations reported that the map appeared to be the work of a single cartographer but to have been compiled from two different sources¹. The main portion of the map was most likely compiled from existing maps and closely resembles the *Mappa Mundi* prepared by Andrea Bianco². The lands to the west, however, were apparently mapped from descriptions contained in transcriptions of the Norse Sagas.

The Vinland Map, having been previously unknown and with no record of previous ownership, immediately became the subject of intense scrutiny. An investigation of the composition of the ink during the early 1970's revealed that it contained anatase which is a form of titanium dioxide, a chemical that was unknown until the twentieth century. Based on this result, it was argued that the map was a forgery. Subsequent testing of the ink revealed only trace amounts of anatase and it was argued that it could have been a by-product of the natural decomposition of the ink. Radiocarbon dating of the parchment performed in 2002 indicates that the map dates to approximately 1434, consistent with the date suggested from earlier evidence. Given the age of the material, it has been argued that the map could have possibly been drawn on a blank parchment. The conclusive piece of evidence, therefore, would remain to be the ink that was used to draw the map.

Recent research conducted by Jacquelin Olin and published in *Analytical Chemistry*³ once again focused on the composition of the ink. Preparation of inks during the 15th century used green vitriol as a source of iron. Olin created an ink using similar techniques and the mineral ilmenite to create the green vitriol. The resulting ink contained anatase, but no ilmenite, matching the composition of the original ink. The ink used to create the Vinland Map also contained copper, aluminum, and zinc and this is reported by Olin to be consistent with techniques used to create the green vitriol. Olin claims that no forger would have known of the presence of these components and therefore, the ink must be genuine.

While the debate surrounding the authenticity of the Vinland Map has gone back and forth with credible arguments made on both sides, these new pieces of evidence seem to indicate that the map is in fact authentic.

¹ Skelton, R.A.; Manston, T.E.; and Painter, G.D. *The Vinland Map and the Tartar Relation*; Yale University Press: New Haven and London, 1995.

² Wilford, J.N. *The Mapmakers*; Random House: New York, 1981.

³ Olin, J.S. "Evidence that the Vinland Map is Medieval." *Analytical Chemistry*, 2003; 75 (23): 6745-6747.

Map Porn

Some time ago someone (I can't recall who) used the term "weather porn" when referring to the sensualisation and even the almost sexualisation of weather events by the TV and print media. Recently, an article by Katherine Dedyna published in the *Vancouver Sun* (January 10, 2003, page F5) describing *Geist* magazine's amusing placename maps reminded me of this expression and prompted me to think of the above title.

Geist is a quarterly West-Coast-culture-oriented magazine that publishes what I would call an MLO (map like object) in its end pages. The topics of these maps vary but are based on specific placename searches. They appear in a section header humorously entitled: "Caught Mapping." According to Dedyna, *Geist* has been doing this since 1999 and it was the concept of Steven Osborne, *Geist*'s publisher. The actual task of making the maps falls to Melissa Edwards. Her first map, "The Erotic Map of Canada", was such a great success that there has been no going back. Recent entomological maps include the themes: bugs, meat, and the menstrual cycle. I'll let you to do the name searches to see what places you think she put on the maps!

To be fair, Edwards makes no claim to be a cartographer. "We definitely do not want to present me as a cartographer, except just tongue-in-cheek, because that's a very very precise science that I do not know." In the latest issue of *Geist* (No. 51, Winter 2003), "Would You Like Sprinkles on That? The Doughnut Map of Canada" featured such place names as Yum Yum Point, The Hole, Dunkin and Twist Lake. The more than a hundred place names were drawn on a "Modified *Geistonic* Projection." The 'projection' looks like a map of Canada stretched in the north-south direction. It's all a bit of fun although as I never see articles about cartographers in the newspaper with a full 1/3 of a page and a four-column colour photo, I guess I'm just a little jealous.

~GEM

GeoSkills - A world of resources for students, teachers, and geomatics professionals

Whether you're a high-school student evaluating career options, a post-secondary student in a geomatics program, a teacher looking to enliven your curriculum, or a geomatics professional, GeoSkills offers you an array of helpful resources and services.

GeoSkills is part of GeoConnections—a national partnership initiative led by Natural Resources Canada to make Canada's geographic information available on the Internet by developing the Canadian Geospatial Data Infrastructure (CGDI). GeoSkills has two main objectives. First, it fosters growth of the geomatics industry by promoting geomatics. Second, the GeoSkills program helps those already in the industry to enhance their skills and knowledge.

A network of resources for students

The GeoSkills program demonstrates geomatics applications to high-school students, teachers, and career counsellors. GeoSkills also offers online information and links to resources that assist high-school students to choose post-secondary geomatics programs.

Post-secondary geomatics students too can capitalize on a number of GeoSkills services and resources, including scholarships. Funded by GeoSkills and Geomatics Canada and administered by the Geomatics Institute of Canada (www.cig-acsg.ca), the Geomatics Canada Scholarship Program awards 20 scholarships each year: four at the university graduate level, eight at the university undergraduate level, and eight at the college or technical institute level.

New knowledge for geomatics practitioners

Moreover, professionals can rely on GeoSkills to stay on top of the geomatics industry. For instance, GeoSkills has developed free training materials such as a half-day seminar about the CGDI, as well as a technical manual, and online technical training on CGDI standards and services.

Lastly, in partnership with national associations, GeoSkills offers one-day workshops on project management, proposal writing, and sales—all focusing on geomatics. The seminar materials are also available for free to post-secondary teachers for use in their classrooms.

For more information about GeoSkills, visit www.geoconnections.org.

GéoCompétences - Un monde de ressources pour les étudiants, les enseignants et les spécialistes en géomatique

Que vous soyez un élève du secondaire à la découverte de possibilités de carrière, un étudiant en milieu universitaire inscrit à un programme en géomatique, un enseignant voulant rafraîchir son programme scolaire ou un spécialiste en géomatique, le programme GéoCompétences vous offre toute une gamme de ressources et de services.

GéoCompétences fait partie du programme GéoConnexions, cette initiative menée par Ressources naturelles Canada afin d'ouvrir l'accès à l'information géospatiale canadienne par Internet en construisant l'Infrastructure de données géospatiales (ICDG). Le programme GéoCompétences poursuit deux objectifs principaux. Premièrement, il veut favoriser l'essor de l'industrie canadienne de la géomatique en faisant la promotion de ce domaine d'activité. Et deuxièmement, il contribue à parfaire les connaissances et les compétences des personnes déjà engagées dans ce secteur.

Un réseau de ressources pour les étudiants

Le programme GéoCompétences fait découvrir les diverses applications de la géomatique aux enseignants et conseillers d'orientation. Il offre également de l'information en ligne ainsi que des liens vers des ressources permettant aux élèves du secondaire de choisir parmi les programmes d'étude postsecondaire en géomatique.

Les étudiants en géomatique peuvent également tirer parti des ressources et services offerts par GéoCompétences. Pensons notamment au Programme de bourses d'étude de Géomatique Canada. Financé par le programme GéoCompétences et Géomatique Canada, et administré par l'Association canadienne des sciences géomatiques (<http://www.cig-acsg.ca>), ce programme décerne annuellement 20 bourses d'études : 12 au niveau universitaire (soit 4 à des étudiants des deuxième et troisième cycles et huit à ceux du premier cycle), et 8 au niveau collégial ou technique.

Nouvelles connaissances pour les spécialistes en géomatique

Les spécialistes peuvent aussi compter sur les outils didactiques créés par le programme GéoCompétences pour remettre à jour et entretenir leurs connaissances en géomatique. Ainsi, GéoCompétences a mis au point et offre gratuitement un séminaire d'une demi-journée sur l'ICDG, un manuel technique de même qu'une formation technique en ligne sur les normes et les services de l'ICDG.

En partenariat avec diverses associations nationales, GéoCompétences offre des ateliers d'une journée sur la gestion de projet, la rédaction de propositions de projet et les techniques de vente dans le contexte particulier de la géomatique. Le matériel didactique lié à ces formations est aussi offert gratuitement sur demande aux professeurs de niveau postsecondaire.

Pour de plus amples renseignements sur GéoCompétences, visitez www.geoconnexions.org.

Minutes – Canadian Cartographic Association Annual General Assembly

May 30th, 2003.

Victoria, British Columbia.

This year, the Annual General Meeting was extremely short (about 30 minutes) due to a very tight conference schedule.

1. Ute Dymon read the names of the 2003 President's Prize winners (see *Cartouche* No. 50, summer 2003, for the names of the winners, or www.cca-acc.org).
2. Patricia Connor presented the award for Exceptional Contributions to the CCA to Roger Wheate.
3. Clifford Wood presented the award for Exceptional Contributions to the CCA to Peter Keller.
4. Henry Castner presented the award for Exceptional Scholarly Contributions to the Practice of Cartography to Richard Ruggles.
5. Motion to approve the agenda by Janet Mercer, seconded by Gary McManus.
The quorum is met.
6. Approval of the minutes from the last AGM:
Motion to approve by Peter Keller, seconded by Brian Klinkenberg.
7. On behalf of Charles Conway, Claire Gosson gave the treasurer's report.
CCA has an excess of revenue over expenditures of \$10,653 for the year ended 31 Dec. 2002 resulting from the meeting in Montréal (\$6,312), the publication of only two issues of *Cartouche*, and the transfer of Carto-Québec funds (\$10,144) with specific instructions that this money is to be used for scholarships until the fund is depleted.
8. Clint Loveman reported on membership.
The membership for 2002 has decreased.
9. David Broscoe reported on the CIG certification for cartographers.
The certification process is on hold because of lack of interest from the cartographic communities. David B. is waiting for feedback from members to see if this avenue should be pursued.

10. Due to lack of time, the president Ute Dymon suggested that members read all the other executive reports given at this meeting.
Motion to accept the reports by David Mercer, seconded by Gary McManus
11. Next CCA meeting will be held in Lindsay, Ontario. Tim Wykes of Fleming College invited CCA to meet in Lindsay in 2004.
12. CCA and ICA
 - i) Ute thanked Alberta Wood and Peter Keller for representing CCA at ICA. Janet Mercer will take over.
 - ii) Ute thanked Diane Lacasse and Claire Gosson for organizing the Canadian participation in the ICA map exhibit for Durban, South Africa.
 - iii) Ute thanked Erin Richmond for organizing the Canadian participation in the ICA childrens map exhibit.
13. New executive members
 - i) Ute thanked Patricia Connor for her good work as past president of CCA and welcomed Christine Earl as new vice-president.
 - ii) Ute thanked Ka-iu Fung and Weldon Hiebert for their good work as chairs of thier interest groups and welcomed the two new executive members: Paul Heersink as chair of Cartographic Education and Jean MacKendry as chair of Map Production and Technology.
 - iii) Ute welcomed John Fowler, the new student representative.
 - iv) Carolyn Weiss will continue to represent CCA on the CNC.
 - v) Ute also thanked Anita Müller for the redesign of the CCA Web site.
14. New business
 - i) Appointees: to avoid the situation that would see all the appointee positions changed at the same time and for continuity, we need to reappoint the secretary position for three years, the membership coordinator for 1 year and the treasurer for 2 years. The members are asked to think about it and send their comments to the executive. The executive will act according to the feedback recieved from the members.
 - ii) Nomination committee.
Peter Keller proposed Byron Moldofsky and Gary McManus proposed Roger Wheate. Both of them accepted the task.
 - iii) The award committee will be composed of Ute Dymon as the chair with Christine Earl and Claire Gosson.
15. Other business
 - i) Ute thanked Peter Keller for organizing this very interesting conference and Diana Hocking for organizing the very successful orienteering event.

Motion to adjourn the AGM by Patricia Connor, seconded by David Broscoe.

POSITION AVAILABLE

POSTDOCTORAL

A postdoctoral position is available at Carleton University. The successful candidate would join a multidisciplinary team of researchers from Geography, Psychology, English, and Music who are collaborating to develop a new approach to multi-media learning of geographic and cartographic information termed 'cybercartography'. See www.carleton.ca/geography/geography/Taylor_research.html for a description of the project.

The ideal candidate would have a Ph.D. in Psychology, Education, Educational Psychology, Geography or a related discipline, with a thorough understanding of the role of technology in learning. The successful candidate will have been involved in projects that included some combination of web-based learning, technology, and multimedia. A completed (or nearly completed) Ph.D. and evidence of scholarly productivity is required. The position will involve coordinating the research activities of different groups, so some experience with managing research projects or activities would be highly desirable. The successful applicant will be expected to co-ordinate the educational component of the product development, conduct research, write papers, and facilitate interactions among faculty and graduate students.

Applications should be forwarded to Professor D. R. F. Taylor, Department of Geography, Carleton University, 1125 Colonel By Drive, Ottawa, ON K1S 5B6 or by email to tlauriau@connect.carleton.ca. The applications should include a curriculum vitae, copies of recent publications, and the names and contact information of three academic referees. This position is initially for one year, with the possibility of extension for a second year. The salary is \$43,250 plus 4% vacation pay. The position will start as soon as possible. The closing date for applications is March 1, 2004 at 5:00 p.m.

Carleton University is committed to equality of Employment of Women, Aboriginal Peoples, Visible Minorities and persons with disability. Persons from these groups are encouraged to apply.

Get Ye to Summer School!

SEPTEMBER 6-9, 2004, BRISTOL, UNITED KINGDOM. The University of Bristol will host the **40th anniversary Society of Cartographers Summer School**. Sessions, workshops and exhibitions will be held in the School of Geographical Sciences. The Society aims to provide delegates with a stimulating and enjoyable summer school including sessions, workshops, visits and social events. Please visit 2004 Summer School Website: <http://www.ggy.bris.ac.uk/soc2004/index.htm>. General enquiries to Drew Ellis or Jon Tooby Tel: 0117 954 5973 or email drew.ellis@bris.ac.uk or j.tooby@bris.ac.uk.

CCA AWARDS

The Canadian Cartographic Association presents several awards each year to deserving members of the cartographic community which it serves. These awards are meant to recognize and encourage the achievements of outstanding individuals in the field.

⊗ **President's Prize Student Map Competition**
(\$100 prizes in several categories)

⊗ **Norman Nicholson Memorial Scholarship in Cartography**
(\$500 scholarship)

To recognize and encourage exceptional student achievement and ability in any aspect of cartography.

⊗ **Awards of Distinction**

To acknowledge exceptional professional or scholarly contributions to the field of cartography or an exceptional contribution to the Association.

For information about eligibility and how to apply or nominate individuals for these awards, see the CCA web site: www.cca-acc.org or contact any member of the executive.

Prix de l'ACC

L'Association canadienne de cartographie présente, à chaque année, plusieurs prix à ses membres méritants. L'attribution de ces prix a pour but de reconnaître et d'encourager l'accomplissement exceptionnel d'individus dans le milieu cartographique.

⊗ **Le prix du Président pour la compétition des étudiants**
(Des prix de \$100 pour différentes catégories.)

⊗ **Bourse Norman Nicholson** (Bourse de \$500) Bourse attribuée afin de reconnaître et d'encourager un étudiant pour son accomplissement exceptionnel et ses capacités dans tous les aspects de la cartographie.

⊗ **Prix de distinction** Prix pour reconnaître les contributions professionnelles ou académiques exceptionnelles dans le domaine de la cartographie ou pour une contribution exceptionnelle à l'Association.

Pour de plus amples renseignements concernant l'éligibilité, comment postuler ou proposer un candidat pour ces prix, s'il vous plaît, veuillez visiter le site web de l'ACC à l'adresse URL suivante: www.cca-acc.org, ou veuillez contacter un membre du comité exécutif.

The Canadian Cartographic Association L'Association canadienne de cartographie

www.cca-acc.org

New! CCA Mailing Address /
Nouveau! Adresse pour l'ACC

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The CCA was founded in 1975 to promote interest and education in maps and cartographic data, and to provide for the exchange of ideas and information, at the regional, national, and international levels, via meetings and publications. Membership in the Canadian Cartographic Association is open to all individuals, and public and private institutions which have an interest in maps and the aims and objectives of the Association. Membership is available in the following categories at the annual rates listed below (\$CND):

Regular	\$80
Student	\$40
Institutional	\$100
Corporate	\$200
Family	\$95
Retired	\$40
Associate	\$40

To cover mailing costs US residents please add \$5 CDN and Overseas residents please add \$10 CND to the applicable membership category.

Members receive the quarterly journal *Cartographica*, published by the University of Toronto Press and endorsed as the journal of the CCA; four issues of *Cartouche*, the CCA newsletter and the International Cartographic Association Newsletter. The Association also provides an annual conference to promote discourse and access to a range of expertise through the interest groups and regional contacts.

For further information about membership qualifications and benefits contact the membership coordinator or any executive member or visit www.cca-acc.org

L'ACC a été créé en 1975 pour promouvoir les intérêts et l'enseignement des cartes et de la cartographie ainsi que pour permettre l'échange d'idées, d'informations tant sur les plans régionaux que nationaux et ce via des bulletins et des conférences. L'adhésion à l'association est ouverte à tous les individus et institutions (privées et publiques) qui sont intéressés par les cartes et par les buts et objectifs de l'association. Vous pouvez adhérer dans les catégories suivantes selon les taux indiqués (en \$) dans la liste ci-dessous:

Régulier	\$80
Étudiant	\$40
Institutionnel	\$100
Société	\$200
Famille	\$95
à la retraite	\$40
Associé	\$40

Un montant de \$5 (en \$) est ajouté pour couvrir les frais postaux aux membres américains (\$-U) et de 10\$ (en \$) pour les membres étrangers.

Les membres reçoivent la cartographie trimestrielle *Cartographica*, publiée par le University Toronto Press; 4 numéros du bulletin de nouvelle *Cartouche* et le bulletin de nouvelle de l'Association cartographique internationale (ACI). L'Association organise également une rencontre annuelle avec des conférences qui donne accès à l'expertise issue des groupes d'intérêts et des diverses régions du pays.

Pour plus d'information concernant l'adhésion et les bénéfices de l'association, contactez le coordonnateur des adhésions ou l'un des membres de l'exécutif ou encore, visitez notre site Internet: www.cca-acc.org

