Chapter 2

The GEOIDE Students’ Network and the GEOIDE Summer School:
History and Lessons Learned from Thirteen Years of Students’ Networking in Canada

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Abstract. Over its existence, the GEOIDE Network has contributed to the training of about 1400 students that now compose a significant part of the new generation of geomatics professionals and scientists working in Canada and abroad. From its start, GEOIDE recognized the need to create a network within the network that could improve students’ training and professional skills through collaborations across Canada. This chapter presents, through the history of the GEOIDE Students Network (GSN), the challenges of developing such broad interdisciplinary and bilingual network in a large country like Canada. We discuss the impact that leadership, communication tools and face-to-face meetings can have on the success of such network, and look at the synergy that existed between the GSN and its sister initiative, the annual GEOIDE Summer School (GSS). From this experience, we draw a number of recommendations that can be used by other organizations that would like to create and benefit from such network.

Keywords: GEOIDE Student Network, GEOIDE Summer School, research, networking, students.
1 Introduction

The GEOIDE Network has been a primary source of funding for collaborative and interdisciplinary geomatics research in Canada from 1999 to 2012. Beyond GEOIDE’s mandate to advance science and support policy, a key network objective was the training of highly qualified personnel (HQP) that were to become the new generation of geomatics professionals in the Canadian industry, government and academia. Since its start in 1999, GEOIDE has contributed to the training of over 1400 students. Graduate students have collectively, through their theses work and research assistantships, conducted the majority of GEOIDE’s research. Most of the projects funded by the network have involved researchers from multiple Canadian universities and provinces. Students involved in these projects composed a very heterogeneous group, coming from a number of different countries, speaking different languages, studying at different levels (undergraduate to post-docs) and in very different disciplines (e.g., computer science, biology, business, sociology, medicine). From its start, GEOIDE recognized this challenge and the need to encourage student networking in order to allow students, and Canada, to benefit from such large network.

This chapter presents two of the most successful GEOIDE initiatives. The first one is the GEOIDE Students’ Network (GSN), which has existed since the start of the GEOIDE network in 1999. The second one is the GEOIDE Summer School (GSS), which has been created in 2002 and organized each year since. The chapter is structured chronologically, describing those two student-driven initiatives from their conception to now. We describe the main stages in the development of those initiatives in addition to the different actors, discussing the successes but also the challenges and the failures. And drawing lessons from those facts, we come with a number of recommendations that can be used by other organizations that would like to create and benefit from such network.

2 GEOIDE Students’ Network - The Concept (1998-2000)

The idea of creating an entity that would encourage student networking finds its roots at the origins of the GEOIDE Network itself, being present in the initial proposal for funding submitted to the Networks of Centres of Excellence of Canada (NCE). Inspired by other similar initiatives, such as the doctoral symposia of the Conference on Spatial information Theory (COSIT) and the student’s involvement in the US National Center for Geographic Information and Analysis (NCGIA), Prof. Keith Thomson, Prof. Geoffrey Edwards and other founders of GEOIDE included this element in the proposal and defended the idea in front of the NCE review panel. The idea of having a student network turned to be a strong element that has contributed to the funding of the proposal. Once the network was funded, the newly created GEOIDE office turned this plan into action when Daood Aidroos, the first GEOIDE executive director, approached Alex Bruton, PhD student at the U. of Calgary at the time, to organize a student meeting at the first annual GEOIDE conference in Quebec City. At the time,
GEOIDE projects were only starting and most students coming from all across Canada had not had opportunities to meet yet. Bruton emailed invitations to the relatively small student body of the time and led the first students’ meeting on September 10, 1999, sharing the vision of a pan-Canadian student network in geomatics and gathering ideas from students present in the room. The number of students working in the GEOIDE projects at this time was estimated to 75, but was already representing 25 Universities and a large diversity of disciplines. At this initial meeting attended by probably about 25 students, Alex Bruton and another student, Chris Storie (Wilfred Laurier U.), were mandated by the group of students present to take the lead for this first year of activities.

During this first year, the two GSN directors worked on defining the basic role and structure of the GSN. Two months after the meeting, they submitted to the GEOIDE board of directors a plan of action that stated the GSN mission as being “to facilitate communication and create opportunities for students, both of which reflect their roles and activities within the GEOIDE Network”. This document also laid down some of the key activities that the network was to emphasize on in its early years and after, such as communicating information to its members and supporting a scholarship program that would encourage students networking and excellence. The need to have the GSN involved within GEOIDE governance was also recognized from the beginning, which led the GSN director to automatically sit as an observer on the GEOIDE board of directors. In addition, in order to ensure a synergy between GEOIDE and the GSN, the GEOIDE administrative office assigned a staff as the primary contact for GSN business. This last task was handled in the first years by Tom De Groeve, which played a significant role in getting the GSN off the ground by sharing ideas, enthusiasm, and be a catalyst of GEOIDE’s support. The two GSN directors worked in this first year with GEOIDE to secure an initial operating budget that would support the scholarship program and other networking activities.

Most of the work done in this first year was conducted by the two directors but did not really engage, or got the engagement from, other GSN students. The need for students’ participation encouraged initiatives that could bring the growing students membership together to increase knowledge exchange. One of such key early initiatives was the concept of a Digital City, later named “GeoVillage”, promoted by Pierre Marchand (Laval U.). GeoVillage was to be a digital geographic environment that could become a place where students and maybe other GEOIDE members could access and share information. The GeoVillage proposal won the GEOIDE contest “Design geomatics in 50 years time” but remained at the stage of a visual prototype. Marchand also proposed, with Rodolphe Devillers also from Laval U., an approach for knowledge management and dissemination within the GSN. This approach was awarded the first GSN network improvement award. It suggested allocating virtual credits to students that would achieve different networking tasks, from face-to-face meetings with students, to co-organizing workshops, co-publishing or proposing new research initiatives. These efforts would allow students to go through different phases of knowledge process known as socialization, externalization, combination and inter-
nalization. While most of these early ideas have never been turned into practice, they proved to be key to get the networking started, as they encouraged students to understand the value of networking, think about specific networking strategies, and start putting it into practice with other students through joint initiatives.

3 Setting the Foundations (2000-2002)

At the end of its first year of existence, the GSN student body met in Calgary during the 2nd GEOIDE annual conference. Alex Bruton, who was graduating, stepped down as director. Chris Storie became the director for the second year and the new GSN structure opened a position of assistant director that was given to Trisalyn Nelson (U. of Victoria). The weeks following the meeting witnessed some disagreement in the student body that resulted in Trisalyn Nelson becoming interim director of the GSN. These discussions triggered an unprecedented involvement of students that led to finalize the foundations of the GSN. A group of students developed a formal network agreement for the GSN, which has been voted by the students in October 2000 and used since. The agreement described the mission, objectives and rules governing the GSN, in addition to describing the positions on the GSN board of directors. The formal GSN membership reached 170 students in the summer 2000; however this is an underestimate of student involvement as many additional students were assisting with GEOIDE projects. Nelson and others worked on a number of initiatives that could help better reach the GSN membership, such as conducting phone and email surveys amongst GEOIDE students, analyzing and updating the students’ database.

Two specific approaches illustrate the type of issues faced by the GSN at the time, and in some extent for most of its existence. First, students having their research funded by the GEOIDE network were automatically member of the GSN. Many of those students were initially not listed as their supervisors and project’s leaders omitted to register them. Project’s leaders have then been contacted to make sure they registered every new student working in their project and a more systematic way of collecting this information has been developed over the years as part of the annual projects’ reporting. In many cases, students registered in GEOIDE were not made aware of this and did not see the benefit of being part of GEOIDE or the GSN. As early GSN communication was perceived as a nuisance from a number of students, the GSN had to be more explicit about what it was and had to offer to its members. It was explained that GSN memberships became an automatic benefit of any student funded by GEOIDE and that no registration fees were required. This led to the creation of a student package that has been distributed to all the students joining GEOIDE, indicating for instance that only GSN students could apply for GSN scholarships, in addition to mention other benefits, such as receiving relevant news or being invited to GSN sessions and workshops during the annual conference.

The second challenge was that GEOIDE membership was scattered across more than 20 universities in a large country. Trying to engage students in this context was chal-
lenging as, while some universities had a lot of GSN students and could generate some local synergy (e.g., U. of Calgary and U. Laval), others just had one or two students that were typically not studying in a geomatics or geography department and hence felt no sense of belonging to a geomatics group. This led to the creation of a group of GSN ambassadors that could act as an intermediate layer between the GSN director and the students. Ambassadors were identified and asked to meet with the other GEOIDE students in their university or region to explain what the GSN was, and make sure they received the appropriate information. The success of this initiative has been variable as it directly resulted from the leadership of each ambassador. These approaches proved to be very important in the start of the network and allowed to increase significantly the number of GSN student registered, in addition to get a larger number of students actively involved in the network.

The interim GSN director and some of the students that volunteered in projects organized elections in late October 2000 in order to elect the five GSN board of directors representatives that were defined in the new network agreement. The first GSN board was composed of Trisalyn Nelson (coordinator), Brad Corner (human resources councillor), Rodolphe Devillers (funding councillor), Zhe Liu (communication councillor), and Kris Morin (financial advisor). These positions reflected most of the challenges faced by the new board, which were related to the communication strategy, the ability to improve students networking and learning experience, but also the need for the GSN to secure the external funding necessary to match the funds provided by the GEOIDE network. The first GSN board met in February 2001 in Calgary, Alberta, and discussed a lot of initiatives, including a revision and expansion of the GSN award program, different funding strategies, and the need for a mentoring program. In the early stages of the network there were relatively few female project leaders. A partial response was to create opportunities for mentorship of female students. Two programs were launched. The first one was an award honouring mentors of women. Nominations for this program were typically put forward by female students to acknowledge a female faculty that had demonstrated mentoring excellence. The second award was to support female students interested in working with a female mentor from another university, although the program changed later to apply to both male and female students.

A new GSN Web site, independent from the GEOIDE one, was developed in the summer 2001, presenting the network agreement, the awards program and the other on-going initiatives. The Web site has been key to give the GSN an identity among students and improve the communication between the board and the GSN members.

This second year ended with the 3rd GEOIDE Annual conference in Fredericton, New Brunswick, with a series of initiatives organized by the GSN, including a talk between students and the industry regarding job hunting and a panel discussion for women working in geomatics. The GSN board presented their achievements to the students during the student session and conducted elections to create a new board for the next
year. At this point, most of the GSN operational structure was defined, allowing students to benefit from being part of a large national network.

4 The Rise of the Network (2001-2012)

Based on the foundations developed from 1999 to 2001, the GSN has been operating for another 11 years with yearly changes to its board of directors, allowing about 50 students to get involved in its governance over the years, and having more than 1400 students in total benefit from its activities. Some of the statistics about these students are presented on the Figure 1. It is worth noting that a number of international graduate students decided to become Canadian citizens after their graduation, supporting the goal of attracting and retaining geomatics HQP in Canada.

![Figure 1. Distribution of GSN students based, from left to right, on their nationality, gender, province and degree of study at the time of their involvement in the network (n=1396).](image)

While a number of GSN activities remained similar over the years, most GSN boards started new initiatives that allowed providing new educational opportunities and services to the GSN members. For example, a number of regional workshops have been regularly organized over the years on different themes. For instance, in 2005, a workshop organized at Dalhousie University (Nova Scotia) involved 5 speakers from the region that have presented their work in geomatics to an audience of about 40 local students and professionals. The same year, a workshop discussing challenges with
graduate studies was organized at York U. (Ontario) for about 30 graduate students from four different universities, and a third workshop was held at Laval University (Quebec) discussing research communication and open-source software. Those regional workshops helped bringing together GEOIDE students from the same region outside of the annual conference and the GSS, in addition to sometime involve local participants that were not part of GEOIDE. The advances of the Internet also allowed offering online seminars (webinars) that could benefit students distributed all across Canada. A first webinar presenting the LiDAR technology was offered to about 35 people in March 2009 by Greg McQuat, who became GSN coordinator two months later. A number of webinars were offered in the subsequent years. In 2003, the GSN also started to be more international, getting an increasing visibility in geomatics communities around the world and also linking with a number of other students groups (e.g., the European Geography Association for Students and Young Geographers – EGEA) or geomatics summer schools (e.g., Vespucci and MAGIS). In 2010, the GSN held its first “Student Showcase” as part of the general GEOIDE Annual Scientific Conference program, under the umbrella of the 1st Canadian Geomatics Conference. This showcase aimed at celebrating students’ research by having them present their work in a specific session for which papers had been peer-reviewed. The GSN has also regularly updated its Web site design as well as developed other communication strategies for promoting its activities. A constant struggle over the years has been to let new students know that they were part of the GSN and inform them of what the GSN was and the potential benefits of being members. While strategies to address this issue have changed over the years, trying to have ambassadors, to distribute information packages to new students, or simply contact them by phone or emails, no single solution was found and a constant effort to engage students has been necessary. The rise of Web 2.0 social networking tools, such as the GSN Facebook group, seems to have however significantly helped develop a stronger feeling of belonging amongst students.

During these 11 years, new students joined the GSN, some left after their graduation, others continued within GEOIDE for further degrees and a few former GSN students became involved with GEOIDE as industry or government partners or as university principal investigators. Figure 2 presents information about the field and country of employment from a smaller sample of alumni. The smaller sample size illustrates the difficulty to collect information on the alumni, a challenge shared by many similar networks. Note that the 34% appearing to be part of academia includes students that are still studying, but not within a GEOIDE-funded project. The sample shows however a significant number of students working for the Canadian geomatics industry. A number of GSN alumni worked for the GEOIDE office, helping to link with the GSN and GSS (e.g., Kim Tran, Amit Joshi, Gilles Cotteret). Others started their private business (e.g., MioVision, NSim, SimActive) and sometime became partners on new GEOIDE projects. And a number of former GSN students became university professors all across Canada, some of them leading or getting involved in new GEOIDE projects (e.g., Alex Bruton at Mount Royal U., Chris Storie at U. of Winnipeg, Rodolphe Devillers at Memorial U. of Newfoundland, Andrew Hunter and Steve
Liang at U. of Calgary, Mir Mostafavi and Marc Gervais at U. Laval, Trisalyn Nelson at UVic and Tarmo Remmel at York U.). Some of these new professors supervised graduate students that became in turn involved in the GSN and GSS, such as Krista Jones and Andrew Cuff (Memorial U.) and Leah Li (U. of Calgary), closing the loop.

Fig. 2. Distribution of GSN students after their graduation based on the field of employment (left) and the country of employment (right). N.B. Statistics are based on a smaller number of students for which the information was available (n=235).

5 The GEOIDE Summer School (GSS)

GEOIDE’s students have been organizing an annual international geomatics summer school from 2002 to 2012. The idea of holding a summer school was first suggested by Prof. Stewart Fotheringham (UK), an international GEOIDE board member, in the first two years of the GEOIDE network. Planning for the first school took place in the Spring 2001, while the first GSN board was ending its mandate. Rodolphe Devillers (U. Laval) that was ending his term on the GSN board took the lead of the organization of a first summer school that took place in Toronto’s region, together with the help of Tarmo Remmel (U. of Toronto), Yue Wu (Dalhousie U.) and Prof. Marie-Josée Fortin (U. of Toronto). Since 2002, the GSS has been managed independently from the GSN, with a specific board and a separate budget provided by GEOIDE. While most of the school program was framed around short-term courses, tutorials and keynote addresses, one of the main goals of the school has always been to reinforce students’ networking by bringing a limited number of Canadian and international students (typically 30 to 50) on a same site to network (Figure 3). The GSS committees often felt that the scientific program was more of a “bait” that could attract students. While courses were providing important skills for their research, the value of the school on the long-term often laid more in personal relationship developed with other students during social activities.
During this first year, some decisions were made that have been used for all of the other GSS. First, it was decided that the GSS would be organized either shortly before or after the GEOIDE annual conference, in order to reduce travel costs, accommodate people that could only attend such an event if they were to also attend a scientific conference, and increase student’s sense of belonging to the GEOIDE Network. Second, while the school was mainly targeting GEOIDE students, it was also made open to other Canadian students, professionals, professors, and to international students. The rationale was to foster collaborations between students and the Canadian geomatics professional community, in addition to increase GEOIDE’s international exposure and help students develop an international network. The international focus has been financially supported over the years through either the support of international student’s travel fees, or by waving their registration fees. Some of this support has been made possible in more recent years through formal agreements with international organizations (e.g., AGILE and MAGIS). This helped attracting a number of international students to the GSS over the years. Some of these students have decided to continue their graduate studies or career in Canada or developed work relationships with Canada from their home countries. Third, the GSS program was designed to provide students with expertise that extended beyond what they strictly required for their research. The core of the GSS program was typically framed around two 1.5 days short courses on topics thought to reflect recent developments in geomatics or being relevant to the Canadian community (e.g., distributed sensors, spatial statistics, climate change visualization, LiDAR). Instructors were typically high-profile Canadian or international professors with expertise in those fields. Students had to
choose among three courses for each of the two 1.5 days short course. Similarly, a number of shorter talks focused on soft-skills (e.g., project management, interpersonal relationships, intellectual property) typically not taught at University, in addition to key “vision talks” from industry, government or academic leaders discussing emerging trends in geomatics.

While the academic component of the GSS was the one that was the most advertised, the social program was key to develop stronger relationships between the GSS participants. This included icebreaker/team building activities (see Figure 4), half-day or evening tours of the region, barbecues, geocaching, special dinners, etc.

![Team building activities](image)

**Fig. 4.** Team building activities during the first GEOIDE summer school (2002) in Toronto, ON (left), and during the 2005 summer school in Quebec City, QC (right).

In the later years, the GSS developed linkages with other international geomatics schools. For instance, GEOIDE started in 2003 a scholarship program, which allowed 2-3 GEOIDE students or young scholars to attend the Vespucci Initiative Summer Institute on Geographic Information Science, organized yearly since 2003. While the GSS’s mainly targets Master’s and PhD students, the Vespucci Summer Institute is more designed around discussions and teamwork related to specific new research trends, having for target advanced PhD students, post-doctoral fellows and early-career researchers. The Vespucci Summer Institute is held in Firenze, Italy, during two weeks of the summer, each week having a different theme, group of students and guest instructors. All the instructors and students are together during the week and the program includes talks, discussions and teamwork related to the topic of the week. GEOIDE also developed in 2011 an agreement with the French geomatics network, the GDR MAGIS, which organizes since 2009 an annual summer school. The MAGIS summer school mainly targets French geography and computer science PhD students.
and post-doctoral fellows and is organized during a full week during which all the
students can follow half-day courses led by different instructors on different themes.
GEOIDE and MAGIS have a program that allows some of their student members to
attend the summer school of the other network.

While being independent from the GSN, the GSS and the GSN had a lot of connec-
tions as the GSS served as an important recruitment tool to involve new students in
the GSN board or activities, and on the next year’s GSS committee.

6 Lessons Learned – Keys to Successful Networking

Each year the GSN and GSS reached out to hundreds of students from various disci-
plines and locations in Canada. While some networking tools can be effective for any
student network, others successful strategies are context specific.

One challenge faced by GEOIDE was to connect students that could be up to 5000 km
apart, making face-to-face meetings rare and expensive. While a student network
operating in a large city could possibly organize weekly or monthly meetings that
could bring all of their members at the same time, networking across a large region
involves less frequent face-to-face meetings and often a smaller proportion of the
membership. As a consequence, a number of alternative tools were used to communi-
cate with and between members.

The experience from the GSN and GSS allowed identifying a number of key factors
that led to a successful student network.

6.1 Involving Student Leaders

Key to the success of such a network is to engage student leaders willing to volunteer
time and energy beyond their graduate requirements. Many students used the GSN
and GSS to develop leadership skills. Ideally, the network coordinator should be one
of those leaders, but should be also supported by likeminded students. Without stu-
dent leaders, the student network becomes a train without a locomotive, which will
either not move, or will not get in the right direction. The GSN and GSS experienced
variability in the strength and commitment in student leaders and, as a result, student
engagement varied through time. To cope with this challenge, it was helpful to have
members from the GEOIDE network, such as past students, professors, or GEOIDE
board members, actively recruit potential student leaders and motivate them to get
engaged with student initiatives. For example, the annual GSS served as a great venue
for the past GSN/GSS leaders to observe the students and to engage potential new
GSN leaders.
6.2 Obtaining Strong Organizational Support and Funding

The second most important factor is to have a strong support from the larger organization (i.e., GEOIDE). The GEOIDE network was always highly supportive of student initiatives and provided significant time and funding. In addition to providing support, GEOIDE gave students a large amount of freedom and were encouraging of new activity ideas. The degree of freedom did vary depending on the students involved in the GSN governance and their ability to use funds to develop or support networking activities. While the GEOIDE upper-level administration provided support in the early years, eventually specific staff was hired to link with the GSN and GSS.

6.3 Ensuring Continuity

An important factor that was a constant struggle with the GSN and GSS was the need to ensure continuity from one year to the next. Students’ terms on the GSN and GSS boards were for one year, and the new student board elected was rarely provided with clear directions of what was done the year before, or with experience of successes and failures. The resulting loss in organizational memory varied annually. While some rare students decided to stay on the executive for a second mandate, the continuity has often been ensured by the GEOIDE staff person in charge of the GSN and GSS.

6.4 Encouraging Students to be Involved in the Network’s Events

Another strategy is to encourage students to be involved in the network’s events, an example being the GEOIDE Annual Scientific Conference (ASC). All GEOIDE funded projects in a given year are required to share their results at the conference. Instead of asking project leaders (i.e., professors) to present the project progress, GEOIDE often required graduate students to present. GEOIDE also gave students opportunities to chair ASC sessions. In some years, GEOIDE even allocated specific presentation slots for GSN in plenary sessions, including the best hours of the day that are normally allocated to keynote speakers. The above strategies provided the following benefits. First, it raised the GSN profile within the GEOIDE network. Anyone looking at the conference programme could see that students are important in the GEOIDE network. Second, it reminded project leaders of the importance of students training in GEOIDE-funded projects. Third, it offered great training opportunities for students and helped students gain communication skills. Finally, such strategies also deliver a strong message to the students attending the ASC, letting them know they are a key component of the GEOIDE network and showing them some of the benefits to be involved in GSN activities.

6.5 Implementing an Appropriate Communication Strategy

From its start, the structure of the GSN required a careful communication strategy that would foster networking among students that were distant both spatially and in academic disciplines. One of the first steps was to collect and maintain, in association
with GEOIDE, an accurate database of the membership. This has been achieved through the registration of new students through the GEOIDE online database but also through an active reporting from GSN ambassadors of unlisted GSN students, and through various telephone, email and Internet surveys done over the years. In our case, the communication strategy involved a large number of tools, ranging from technological tools (e.g., Web site, emails and later Skype and social networking tools such as Facebook) to the involvement of students ambassadors, the development of a new student’s package, and the organization of students’ sessions during the annual conference. While the relationship between students and the GSN was more on an individual basis, the GSS created a group dynamic that favoured social networking tools, encouraging networking to continue after the school.

6.6 Encouraging Face-to-Face Meetings

A popular adage says “a picture is worth a thousand words”. We argue that “drinking a beer with another student is worth a thousand emails”. Nothing can replace face-to-face meetings. While we know other Canadian research networks that do not organize annual meetings, we believe that a successful network will only develop with in-person meetings, as face-to-face meetings develop the level of trust and familiarity necessary for developing a long-term work relationship. In our context, this involved significant funding from GEOIDE to bring together students from all across Canada to the annual scientific conference, the summer school, and regional workshops. To encourage project leaders to send their students to the annual scientific conference, GEOIDE created early on a matching fund that helped cover students’ travel costs. While some networking activities can be done remotely, the strongest work and personal relationships that have been developed over the years have clearly resulted from face-to-face meetings. Once those relationships are built, they can be maintained using less direct communication tools.

6.7 Encouraging Transparency and Providing Benefits to the Members

As it is the case for any organization, members have to understand how they benefit from network involvement. The student network needs to have clearly outlined goals and programs and has to be transparent and allow its members to be aware of its activities and functioning. This can be achieved by email communication, Internet, newsletter or during annual general meetings. The student network needs to be able to provide membership with regular activity updates and more formal annual reports. The network also needs to provide students with services that can include learning opportunities (e.g., summer school, workshops, webinars, mentoring program) and financial support (e.g., award and prizes).
7 Conclusions

Since its beginning, the GEOIDE Network has encouraged and supported two major student’s initiatives: the GSN and GSS. The GSN and GSS allowed GEOIDE students to see beyond their specific research projects and gain a more complete academic experience and professional training through collaborations with large interdisciplinary body of students. It has helped students’ transition from an academic environment valuing relationships with their supervisor and other students, to a professional environment valuing relationship with their peers that can benefit their entire professional life. While a number of GEOIDE students decided not to take this opportunity, those that did have realized that in such network, “the whole is greater than the sum of its parts”.

Measuring the success of initiatives like the GSN is not trivial as most of the benefits to students are indirect and can only be assessed on the long-term. In addition, it is hard to find a baseline that can be used for comparison to assess what specific benefits the network has provided. Examples of benefits include the professional network students have created, the added scientific knowledge gained through networking and the GSS, the soft-skills gained through GSN leadership experience, the GSS and workshops, the improved communication skills developed through networking, and the ability to work with people from other disciplines or cultures.

Perhaps one of the greatest successes for GEOIDE and the GSN/GSS was to enable a culture of collaboration amongst a new generation of geomatics professionals and scientists that came from very different backgrounds and cultures. Many of the students who engaged in the GSN now have careers that emphasize collaboration and multi-disciplinary work; collaboration comes naturally as they plan their projects. Additionally, the Canadian geomatics community is now much more connected than it was before GEOIDE, as most the 1400 HQP trained under GEOIDE now have geomatics-related jobs. Students trained at different universities, such as the authors of this paper, were connected through GEOIDE and are now geomatics colleagues initiating new pan-Canadian collaborations. Having a network of colleagues has supported GEOIDE graduates in early career stages by providing opportunities to seek advice, share students, and conduct research collaboratively.

The success of the GSN and GSS is to our knowledge unique amongst Canadian NCE networks. It has inspired other networks and has played an important role in the review GEOIDE received over the years. While the concept of a student network was a strong point in the initial proposal, its success has been positively received by the expert panels assessing the different GEOIDE funding renewals. This in term translated into a constant support from GEOIDE for student’s initiatives, which turned to be a win-win situation for both.

The experience gained from the GSN and GSS allows us to make recommendations for other organizations that would like to create large students’ network. While we
believe that a number of factors, such as the number of members, their geographic distribution or cultural differences may require different strategies, we think the following criteria can apply to most student networks. The most important criterion for the success of such network, as it is for most organizations in general, is likely to find natural leaders that can engage with the students and move such network forward. A second criterion is to have a strong support, both moral and financial, from the organization students belong to (i.e., GEOIDE in our case). Financial support is critical for implementing a number of programs (e.g., scholarships) and bringing students together, particularly in a large country like Canada. A third point is the importance of face-to-face meetings that are critical in ensuring a real and long-term networking. While Internet and social media can be effective in maintaining a network, we believe that a face-time is required to initiate networking relationships. Finally, the structure needs to support continuity from one year to the next, which allows learning from past mistakes and reinforcing successful initiatives.

The GSN and GSS are now facing their biggest challenge, which is to keep the network alive after the end of GEOIDE’s funding. The 11th and last GSN board of directors is currently working on strategies that could ensure the survival of the network and move from a student network to a larger network of Canadian geomatics students and professionals.

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THE ADDED VALUE OF SCIENTIFIC NETWORKING:
Perspectives from the GEOIDE Network Members
1998-2012

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