



Strategic leadership in an era of change: challenges and advances of the PAIGH Geography Commission, 2014-2021

Liderazgo estratégico durante una era de cambio: los retos y avances de la Comisión de Geografía del IPGH, 2014-2021

Patricia Solis¹

Jean Parcher Wintemute²

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Abstract

This article outlines the strategic vision of the leadership of the Geography Commission of the PanAmerican Institute for Geography and History over the past eight years, co-authored by the Presidents and Vice Presidents 2014-2017 and 2018-2021, respectively. Documenting the major strategies taken by and through this leadership team during a context of profound change, the article summarizes a rationale and main domains of action across the commission, featuring a course-level detail of the committees and working groups, and joint initiatives. The article acknowledges the highly participatory efforts of member state commissions, committees, participants, and responsible parties for technical assistance projects by pointing out some of the highlighted achievements and unrealized objectives alike. The authors also aim to inform and inspire future leadership throughout PAIGH to build upon and improve this trajectory in strategic ways.

Key words: *challenges, strategy, partnerships, Geography, PAIGH.*

¹ Arizona State University, United States of America, e-mail: patriciasolis@asu.edu

² Geographer, Emeritus, United States Geological Survey, Department of the Interior, United States of America, e-mail: jwparcher.spa@gmail.com

Resumen

Este artículo describe la visión estratégica del liderazgo de la Comisión de Geografía del Instituto Panamericano de Geografía e Historia durante los últimos ocho años, en coautoría con los Presidentes y Vicepresidentes 2014-2017 y 2018-2021, respectivamente. Al documentar las principales estrategias adoptadas por y a través de este equipo de liderazgo durante un contexto de cambio profundo, el artículo resume una justificación y los principales ámbitos de acción a través de la comisión, presentando en un nivel de detalle grueso sobre el trabajo de los comités y grupos de trabajo, e iniciativas conjuntas. El artículo reconoce los esfuerzos altamente participativos de las comisiones, los comités, los participantes y las partes responsables de los Proyectos de Asistencia Técnica de los Estados Miembros, señalando algunos de los logros destacados igual a los objetivos aun no realizados. Los autores también tienen como objetivo informar e inspirar al liderazgo futuro en el IPGH para aprovechar y mejorar esta trayectoria de manera estratégica.

Palabras claves: *retos, estrategia, asociaciones, Geografía, IPGH.*

Introduction

Over the previous decade, many aspects of society have changed across the Western Hemisphere – from the dynamic configuration of environmental threats and hazards we face, to the shifting landscapes of economic security and resources, from the fluctuations in well-being of our communities to our collective prospects for peace and prosperity. Similarly, our institutions have had to adapt and grow within this context to continue to meet their missions. The PanAmerican Institute for Geography and History is no different. As a scientific-technical and diplomatic entity, the members and commissions of PAIGH have necessarily evolved within an unprecedented setting of fast-paced global change.

In this article, we seek to outline the main trajectory that one of these commissions have generated, the Geography Commission of the PanAmerican Institute for Geography and History. The past two service periods have been led by elected members from the United States of America, namely co-authors Jean Parcher Wintemute serving as President of the Geography Commission from 2014 to 2017 and Patricia Solís as Vice President; then from 2018-2021 when Solís served as President and Parcher as Vice President. This eight-year period witnessed a number of major challenges and advances within the commission itself, and within PAIGH more generally.

The purpose of this article is three-fold. First, we seek to document the strategic actions taken by and through the Geography Commission from 2014-2021 in a context of profound change. This documentation will by no means comprehensively reflect all of the activities of every committee and working group, nor provide a high level of detail on every initiative. Instead, we will summarize the major domains of cross-cutting work during this octennial cycle and reflect on strategic outcomes. Second, we aim to acknowledge the highly participatory efforts of all of the member state commissions, committees, participants, and responsible parties for technical assistance projects —pointing out achievements even while discussing unfinished objectives. Third, we share our observations and reflections on this period here in the *Revista Geográfica*, hoping to inspire future leaders who are serving in commissions, journal boards, committees, national sections, and technical projects to build upon and improve this trajectory in ways that the following decades of change will demand from us as an institution —and as a disciplinary community spanning the hemisphere.

Institutional context for a strategic leadership approach

The fundamental objectives of the PAIGH are to promote, coordinate and disseminate cartographic, geographical, geophysical and historical and related sciences, of interest to the Americas; to promote and carry out studies, work and training in these disciplines; and to promote cooperation between the institutes of their disciplines in America and with related international organizations. Within this overarching mission, from 2014-2021, the Geography Commission articulated specific goals to create, focus, facilitate and promote PanAmerican geographic research and collaborate in a participatory way with the multi-sector geographic community towards the production of knowledge; provide scientific and geographical support that advances the Pan American Agenda of PAIGH, as well as aligning with the Sustainable Development Goals of the United Nations. The mechanisms of PAIGH and the interrelated structure of the organization offers the commission the opportunity to work towards these objectives together with the other commissions for the purpose of benefiting the citizens of the Americas.

The President and Vice President (i.e. co-authors Solís and Parcher in both roles) sought to work as a close-knit team throughout this period, defining and refining an approach to leadership that was a balance between a strategic alignment to institutional frameworks and an enabling, participatory platform for member states. Within an institution with such long-standing traditions and a strong reputation as PAIGH enjoys, the opportunity has been to balance the commission direction and catalyze positive engagements that offer a focused yet agile collective response to the changing context in the region.

The first quadrennial: inclusion, participation and multi-sector partnerships

The 2014-2017 Geography Commission work plan was established during the 2013 General Assembly and Technical Consultation meetings in Uruguay. The work plan provided the starting guidance and objectives for the Commission during this period. In order to carry out these objectives, the Geography Commission established three committees, formed three working groups, enhanced the *Revista Geográfica*, and funded numerous technical assistance projects.

The rationale for the approach centered upon a shared understanding that Geography has long been a strategic discipline, whose focus is essentially aimed at understanding the interactions between natural processes and societies, at different scales, both spatial and temporal. However, at this moment it is in a stage in which it needs to reaffirm and strengthen its leadership as an analytical and integrative discipline to take a leading position in inter, multi and transdisciplinary work, in order to provide a prompt and effective solution to local, national and global problems.

Additionally, members agreed that the contributions derived from the research carried out in the field of geography should also become a fundamental requirement for decision-making, public policy in planning, land use planning and disaster risk management, for example.

Corresponding to the dynamic needs of society and the scientific development of the discipline, the commission prioritized the imperative to create an organizational structure within the Geography Commission of the PAIGH and the national sections, which favors exchange, discussion and cooperation in conjunction with the different organizations and institutions that make up the Pan-American geographic community. In summary the resulting guiding objectives were:

1. Strengthening geography's leadership as an analytical and integrative discipline by taking a leading position in inter, multi and transdisciplinary work,
2. Assuring that contributions from geographic research become a fundamental requirement for decision-making, public policy on land use planning and disaster risk management and,
3. Promoting the exchange, discussion and cooperation in conjunction with different organizations and institutions that make up the Pan American geographic community.

During the prior presidential period, led by Dr. Hector Pena, Argentina, the commission inaugurated a significantly new structure, streamlined from a very large and proliferating number of sub disciplinary committees. These

had become cumbersome to replicate in every member country and populate with appropriate representatives according to the presence or absence of subdisciplines of geography, especially in smaller nations. The new structure comprised only three committees, tasked by particular functions: research, education and institutional strengthening. However, the need remained to replicate this structure throughout all member state national sections. During the Parcher Quadrennial, the commission consolidated this structure and advanced adoption throughout the national sections in accordance with – and building upon – the advantages and gains of the previous period. This strategic leadership approach offered continuity and allowed greater opportunities for intradisciplinary exchange, such as example between physical geographers and human geographers.

Clear purpose descriptions were defined for each of the committees, and goals identified for the period. The Research Committee, led by Dr. Nancy Aguirre, Colombia, articulated a program of work to advance interdisciplinary and international research in the Americas by facilitating collaboration among researchers from across the continent of the Americas. The Education Committee led by (the late) Bertha Olga Balbin Orday, Peru, articulated actions to promote distance learning / online approaches for geographic education to disseminate the interdisciplinary role of Geography and the use of geospatial information and remote sensing tools to assist decision makers. In addition, the committee acted to increase the visibility of PAIGH by participating in multinational forums related to the promotion of the value of geographic education, both at regional and national levels. The Committee dedicated to Institutional Strengthening led by Isis Tejada, Panama, worked to strengthen the network among PAIGH Geographers at regional and international conferences and promote virtual communication among institutions and sectors. Vice President Solís initiated cross-cutting activities to support the committees, to modernize and update online communications among leaders of the commission and with members of national sections, mainly by establishing a commission-led network database to issue news and institutional messages of PAIGH, and a stand-alone wiki page for timely and co-created content, both for operations of the commission and a public-facing dissemination space.

Working Groups were first formed under the Committees during this period. They are organically formed and approved, as long as they have multinational participation and have a specific objective or product consistent with the Committee(s) to which it belongs, with the commission's Work Plan and the PAIGH's Pan American Agenda. The Working Groups can generate projects destined to receive funds to achieve their objectives under the regulations of the Technical Projects of the PAIGH complying with all the requirements.

The new participatory meeting format put into place by Parcher started at the third annual Joint Technical Consultation meetings held in Mexico City, Mexico in June, 2015, allowing time for discussion and networking, was very well received and led to volunteers to lead working groups. The inaugural working groups that were formed were: The Working Group for an Online Geographic Learning Network (Education Committee) by Osvaldo Muñiz Solari, The Geography Census Working Group for 2015 Data Collection (Committees for Institutional Strengthening and Research) by Patricia Solis and Nancy Aguirre; and the Working Group on an Atlas of Climate Change in the Americas (across Research and Education Committees) led by David Salisbury.

The new commission structure and three guiding objectives helped the commission develop integrative activities with other disciplines, and multiple sectors, and added collaboration opportunities to the profile of the commission. While the commission duly fulfilled all statutory meetings, these were conducted in a highly participatory and inclusive manner, using agenda formats where members discussed and developed sets of activities together. Over the quadrennial, these activities evolved a number of significant advances. The nature of these activities that emerged from an inclusive and participatory leadership approach to elaborate the work plan resulted in having:

- Empowered PAIGH geography committees and technical projects to focus on high value strategic actions and seed projects that connect across countries in order to leverage resources for bigger impact. Researchers of single isolated geographic studies were encouraged to seek external sources of funding. A series of specialized workshops on the preparation of competitive research proposals; and the development and dissemination of a set of freely available materials for this purpose was provided for Geography Commission members.
- Drawn closer academic actors to the commission's work by engaging members in universities and students with the government sector actors of PAIGH in order to strengthen institutions in both sectors. The increased academic participation in the commission included adding academics as collaborators with government institutes on technical assistance projects, supporting university actors to propose and lead technical projects, and promoting attendance at meetings through presentation venues. In addition, the Census of Geography, a project to compile basic institutional and researcher data across academic, government, and institutes of geography that was began in 2005 by Dr. Solís endorsed by PAIGH, was formally adopted within the Geography Commission as a PAIGH strategic activity.
- Advocated for open data, shared harmonized geographic data within the ecosystem of information available to decision makers in order to improve

evidence-based decision making. This assured that contributions from geographic research could become a fundamental resource for cross-border land use planning and disaster risk management and built upon the inaugural participatory works led by Pacher in 2009 to achieve integration of the official geospatial datasets by national mapping institute technical data producers in Central America. During this Quadrennial, the Geography commission supported further series of workshops using participatory mapping methodologies like those that Pacher put in place in Central America and Southern Mexico to facilitate key government actors to build a digital integrated, seamless map of the entire region, and eventually an ambition to cover the entire hemisphere.

- Associated more closely the work of the commission to the themes of the Sustainable Development Goals (SDGs) of the United Nations (UN) in order to support member state contributions and commitments to these UN global targets, which many Geography national section representatives were engaged with. During this Quadrennial, this consisted of raising awareness of the relevance of various components and outputs of the commission to the SDGs.
- Advanced the status and reputation of the Geography journal to an indexed level within the LatinIndex process. Continued to explore ways in which to navigate a volatile publishing landscape in order to maintain and increase the quality and reach of the commission's work. During this period, the Geography Commission (via Vice President Solís and The *Revista Geográfica* Editor Dr. Hermann Manríquez) recommended to the Directing Council to form a special working group made up of the editors of the PAIGH publications, to be guided by the Secretary General. This group was ultimately formed and charged with the responsibility of identifying, developing and implementing strategies for the improvement of PAIGH publications, collectively.
- Conducted outreach by participating in many external meetings, conferences and working groups of Geography organizations, especially the Organization of American States. This extensive ambassadorship advanced awareness broadly of PAIGH and the commission, to deepen understanding of related organizations synergies, as well as to help to create and inclusive, multisectoral participatory environment. The vast majority of these encounters were supported by external funding sources. A partial list is rendered in Table 1.

Finally, regarding capacity building, the Ecuadorian-led CEPEIGE (Centro Panamericano de Estudios e Investigaciones Geográficas) continued to be an integral part of the Geography Commission, and strategic updates were made.

Table 1. Organizations and conferences engaged via Strategic Outreach on behalf of PAIGH Geography Commission by President Parcher and Vice President Solis, 2014-2017

Organization of American States, Washington DC
Association of American Geographers Annual Meetings
Caribbean Disaster Emergency Management Agency (CDEMA)
Conference of Latin Americanist Geographers
Congreso Panhispanica de Geografia
Encuentro de la Geografos en America Latina
Geografia de la Paz, La Paz, Bolivia (reception sponsored by the Geography Commission)
Humanitarian OpenStreetMap Summit, Ottawa, Canada
Inter-American Development Bank
Inter-American Emergency Aid Committee
International Cartographic Conference
International Geographical Union
Los Mecanismos de Atención, Respuesta y Manejo de Desastres en la OEA
Ministry of Education (MEDUCA), Panama
Observatorio Seguridad Hídrica
Pan American Development Foundation (PADF) (These meetings resulted in an MOU between PAIGH and PADF)
Peace Corps Innovation Office
State of the Map, Open Street Map
The White House (Mapathon Event), Washington, DC
United Nations Headquarters, New York, New York
US Agency for International Development Meeting of GIS Specialists of USAID Missions

Figure 1. President Jean Parcher Wintemute and Vice President Patricia Solis at the United Nations Headquarters, New York, New York, United States.

President Parcher served as an advisor to the Consejo Superior (Management Council) along with Dr. Bolivar Troncoso of the Dominican Republic, and the Director of the Military Geography Institute of Ecuador. The Geography Commission was represented on the Consejo Academico (Academic Council) by Dr. Osvaldo Muniz of the United States. The Geography Commission and the Consejo Academico recommended that CEPEIGE implement distance learning for the International courses offered. In addition, it was recommended that CEPEIGE gear their international training courses to more of a multi-disciplinary approach so as to request funding from more than one Commission in the Technical Assistance Programs. Currently only



Figure 1. President Jean Pacher Wintemute and Vice President Patricia Solis at the United Nations Headquarters, New York, New York, United States.

the Geography Commission offers funds to CEPEIGE although their content is applicable across multiple commissions. The Geography Commission funded three international courses taught in a distance-learning environment during this Quadrennial period.

During this time, President Pacher received the Private Sector and Government Award from the Conference of Latin Americanist Geographers (CLAG) in recognition of her contributions to enhancing and disseminating knowledge of geography to professionals in government and business in Latin America. This recognition reflects positively on the status of the PAIGH Geography Commission, as well.

The second quadrennial: greater capacity, expanded impact, and resilience

With solid groundwork laid for an inclusive and participatory commission, and with broadened visibility across sectors and disciplines, the following period has been characterized by efforts to continue a trajectory of progress and build upon it. The 2018-2021 Geography Commission work plan was established during the 2017 General Assembly and Technical Consultation meetings in Panama. The leadership team of Pacher and Solís remained, but through an election of Solís as President and Pacher, Vice President. The next work plan provided strategic objectives for the Commission during this period. The Geography Commission kept two of the committees, Research (led by Dr. Nancy Aguirre of Colombia) and Education (led by Dr. Rosser Bianchi Parraquez of Chile) and formed two more committees in an evolution of the Institutional Strengthening Committee, on the basis of the learning experience

and recommendations of members. Those added were the Communication and Diffusion Committee (led by Ing. María Jose Vizcaino of Ecuador), and the Committee of Participatory Initiatives and Integrated Projects (led by Ing. Eufrasio Zavala Corral of México).

Working Groups were expanded under the now four Committees during this period. Their formation remained as an organic process and approved by the leadership given multinational participation and a specific objective or product. Working Groups now are structured under just one committee rather than cross-cutting. Table 2 shows the working groups by committee as they had evolved by 2021.

Table 2. Working Groups by Committee, IPGH Geography Commission, 2021

<i>Research Committee</i>	<i>Education Committee</i>
<ul style="list-style-type: none"> • Climate Change in the Americas • Disaster Risk • Urban Studies • Spatial Analysis • Rural Studies • Recontextualization of Geography 	<ul style="list-style-type: none"> • Online Teaching and Learning of Geography • In-Presence Teaching and Pedagogy • Census of Geography 2020
<i>Communication and Diffusion Committee</i>	<i>Committee for Participatory Initiatives / Integrated Projects</i>
<ul style="list-style-type: none"> • Strengthening the Professional Network • Promoting Virtual Communication 	<ul style="list-style-type: none"> • Pan American Integrated Maps • Volunteered Geographic Information

The Plan of Work for this period continued and deepened a commitment to the SDG framework. While a robust and broad discipline like geography can contribute to all 17 SDGs, centered on alleviating poverty, protecting the planet and ensure prosperity for all, the commission collectively identified a list of six Objectives that correspond directly with the working focus of the Geography Commission and whose express articulation could increase the impact of our work:

- SDG4. Guarantee inclusive and equitable quality education and promote lifelong learning opportunities for all
- SDG 6. Guarantee the availability and sustainable management of water and sanitation for all
- SDG11. Make cities and human settlements inclusive, safe, resilient and sustainable
- SDG13. Adopt urgent measures to combat climate change and its effects
- SDG14. Conserve and sustainably use the oceans, seas and resources marine for sustainable development

- SDG15. Protect, restore and promote the sustainable use of ecosystems land, sustainably manage forests, combat desertification, stop and reverse land degradation and halt biodiversity loss

In addition, the President and Vice President added an emphasis on **SDG5**, promoting gender equity, as a key aspiration for the commission as well as **SDG17**, which promotes partnerships as a means to accomplish the goals. During this Quadrennial, the same participatory meeting format continued and inclusion remained a high priority, to increase collective impact. A poster session format was initiated during the Joint Technical Meetings in the Dominican Republic, 2019 in order to include greater numbers of participants and a more engaging interaction (see Figure 2).

Partnerships across multiple sectors were actively engaged and sought out strategically, especially to establish greater external funding competitiveness. Metrics on gender participation were gathered for technical assistance projects participation. A personal action taken by President Solís was to encourage



Figure 2. Attendees circulate and exchange knowledge at the poster session during the Fourth Joint Technical Meetings, Santo Domingo, Dominican Republic, July 2019.

national sections to contribute portraits and profiles of women and indigenous leaders to the IPGH's Gallery of Historians and Geographers of the Americas, whose virtual version launched in 2018 with a collection of forty-two (42) men and paintings on display at the PAIGH headquarters in Mexico City, Mexico. Dr. Solís added the first woman honoree to the gallery, recognizing geographer Thelma Glass, of the United States (1916-2012). Civil rights pioneer and professor of geography at Alabama State University, Glass used her knowledge of place and transit to support the Montgomery Bus Boycott of 1955. Her portrait was donated and added to the gallery in Mexico in 2020.



Figure 3. The portrait of Thelma Glass, civil rights pioneer and profesor of Geography from the United States, first woman profiled in the Gallery of Historians and Geographers at PAIGH headquarters in Mexico City, Mexico, 2020.

Over the quadrennial from 2018 to 2021, the body of work can be summarized in the following outcomes, with a few highlighted examples given:

1. Focus was established on strategic and cross-cutting actions, such as gender, technical capacity development, institutional strengthening and resource management.
 - For example, the commission added a new committee for integrative comprehensive projects which involved the Geography Commission with the various Mapas Integradas efforts of PAIGH during these years.
 - Explicit support for projects with broad regional impact were prioritized, such as the participatory governance work led by Dr. Salisbury in Amazon.
2. Support of the United Nations (UN) Sustainable Development Goals (SDGs) and the PanAmerican Agenda was accomplished by conceptually and systematically linking all approved PAT projects with one or more SDGs, including tracking and reporting them.
3. Reinvigorating the national sections enriched the framework of the current committee structure and into the work of the commission and PAIGH broadly.
 - For example, working groups were expanded, as noted above.
 - Also, strategic efforts reached out to various universities in Canada to help enlist renewal and add value to their potential membership with a

cohort of geographers ready to assume a national section role, including the University of Toronto, McGill University, University of Northern British Columbia, Queen's University, and Canadians at Louisiana State University and Ohio State University who wrote a letter directed to the Ministry of Foreign Affairs and Natural Resources Canada.

- Geographic entities across the Caribbean, especially Jamaica and Haiti, were included extensively and continuous engagement with Brazilian geographers, and many others through various activities, meetings, and projects, like the National Science Foundation sponsored project (below) as well as YouthMappers, etc.
- The Census of Geography was continued as a rich longitudinal dataset on the status of the discipline across the region, began in 2005 by Solís, with a survey repeated in 2010, 2015, and now 2020.
- The Participatory and Integrated Projects Committee lead the final efforts to complete the Integrated Map of the Americas (sparked by the early efforts of Pacher, noted above). This continental wide participatory project harmonizes official geographic data from all countries in the Americas into an integrated geospatial dataset. North America, including Mexico, United States, and Canada comprise of the final geographic regions to complete the Integrated Map of the Americas. While Canada is not a PAIGH official member, the Natural Resources of Canada enthusiastically participated with the U.S. and Mexico to integrate their data across the long borders with the U.S.

4. Advocating for open data, shared harmonized geographic data and incorporation of citizen generated Volunteer Geographic Information (VGI) open data within the ecosystem of information available to decision makers, was a key strategy to improve evidence-based decision making across the disciplinary priorities from climate change to migration to hazards/disasters to urban growth.

- An award for external funding from the U.S. National Science Foundation (Solís, PI; Pacher and Aguirre coPIs) was approved for the purpose of improved understanding of the barriers, opportunities, and impact of volunteered spatial data on official cartographies.
- The project enabled virtual fellowships by student mappers within national agencies to design and implement tailored capacity building, create technology tools, and connect local university students across the region, including the establishment of YouthMappers chapters.
- External funding provided for the participation of attendees in PAIGH meetings.
- The Research Committee conducted a multi-year interdisciplinary and multi-national project to construct a Web based Atlas of Climate

Change in the Americas, highlighting the effects of climate change locally and regionally within the Americas. The first phase of the project analyzed the availability of and access to the information and databases necessary to create an online digital Atlas of Climate Change in the Americas focused on the following themes: sea level rise, glacier retreat, extreme weather events, impacts on biodiversity, health, urban systems, climate induced migration, traditional societies, agricultural production, animal husbandry, food security. During the second phase, workshop participants and their graduate students composed vignettes highlighting the effects of climate change locally within their countries.

5. Reinforcement of the critical role of education was promoted through activities aimed at the teaching-learning of geography at all education levels and the strengthening of the training of geographers and geography teachers across the region in a concerted and impactful way.
 - A Resolution on the Importance of Geography Education was composed and approved by the Directing Council (Bolivia, 2018), and later shared with the Group of Ministers of Education (OAS) at their Decima Reunion Interamericana de Ministros de Educación, July 2019.
 - A very active Education Committee sparked multi-national efforts to amplify common issues around geography education across the region. For example, the Education Committee developed a project proposal in 2019 that was funded to enhance geographic education to train Latin American geography professors to apply spatial skills for interdisciplinary knowledge of the environment, its risks and sustainability.
 - A rich series of webinars on geography education was conducted throughout the Quadrennial.
6. Continuation of disseminating the results of the Geography Commission and the PAIGH was mainly focused on participating in meetings, working groups, sister entities of the Organization of American States (OAS).
 - For example, as noted, the conceptual and systematic linking of technical assistance projects to SDGs also included referral of some of the projects to other sister entities where synergies were observed.
 - The new Geography Scholarships (managed by CEPEIGE, see below) were disseminated to the OAS scholarship network for broadening awareness and participation, as well as reinforcing relevance of PAIGH work to the OAS.
7. Developing the capacity to seek and win external funding proposals remained a key strategy in order to garner additional resources for the Geography Commission specifically and PAIGH more generally.

- For example, the above mentioned US NSF project was awarded and brought multiple direct benefits as noted.
- o Collaborative efforts with a group of women scientists led to a proposed concept to the PanAmerican Development Foundation (PADF) seeking external funding to create a digital atlas on migration with a gender perspective. Albeit not funded, the concept paper remains a tangible artifact of an important intellectual collaboration and a resource for future opportunities to revisit.
- A proposal to build capacity among member nations in GeoAI (Artificial Intelligence) was written and submitted to a competition at Canada's International Development Research Council (IDRC). Although not funded, the process established a presence for PAIGH and the Geography Commission in cutting edge disciplinary innovations.
- Multiple trainings, multi-media, and workshop materials were provided on developing competitive proposals, in english and spanish.

8. Continuation of the work of the *Revista Geográfica* aimed at progressively improving content quality and dissemination.

- o For example, the leadership initiated a dedicated systematic effort to recruit past PAT recipients to publish their results.
- o The President and Vice President supported many other advancements on indexing, strategic content improvement, special issues, ad swaps with other journals, and the general modernization transition of the *Revista Geográfica* under the direction of Editor Manriquez, and then later under Invited Editor Dr. Rodrigo Barriga (Chile).

9. Support was dedicated to the modernization and track record of CEPEIGE's successes.

- An update of CEPEIGE regulations facilitated its growth in parallel with the Geography Commission. In 2018, the Vice President of the Geography Commission, the new Director of CEPEIGE , Ing. Nelson Ortega, and the President of PAIGH (Ing. Israel Sánchez Moreno, Panama) met to discuss revisions to the Reglamento (Regulation) and the Memorandum of Understanding (MOU) between CEPEIGE and PAIGH. The major revision to the Reglamento focused on how members of the Consejo Superior and Consejo Académico are elected by the National Sections of PAIGH.
- This facilitates cross-disciplinary engagement beyond geography, as the content and contributions of CEPEIGE's activities and resources are multi-disciplinary.
- Scholarships of the Geography Commission were created with the increase in the PAIGH budget afforded by a dues reform, and were appointed to be managed and implemented by CEPEIGE annually.

The new MOU focused on awarding scholarship funding from PAIGH's budget to CEPEIGE's International Course based on the OAS Professional scholarship mandates in preparation for future collaboration with the OAS on additional scholarship funding for CEPEIGE. Metrics for gender participation and national origin were included in the structure of monitoring and assessment for the scholarships in order to track inclusivity.

Such advances noted above were interrupted at the start of 2020, which ushered in new key challenges not only to the Geography Commission but also the PAIGH community as a whole. With the onset of the global COVID-19 pandemic, and resulting necessary travel restrictions, in-person meetings have become impossible, and were officially suspended for all of 2020 and 2021. The efforts and capacity invested through the communications committee became amplified in importance. The commission's ability to organize webinars and virtual sessions to adapt to needs to exchange and build knowledge became a critical resource. Similarly, attention given earlier to virtual research groups and online geographic education paid off in terms of critical knowledge and ability to adapt to new themes of urgent and timely importance. These capacities aided the commission leadership and membership to adapt, and advance despite the disruption, and are evidence of a resilient community of geographers across the hemisphere.

Results from Commission projects, 2014-2021

Through the PAIGH Technical Assistance program, the Geography Commission funds regional technical projects that support the following priority areas: sustainable development, climate change and natural disasters, vulnerability and risk reduction to hazards, land tenure, transborder social and economic issues, ecosystem services, and geography education at all levels. The UN Sustainable Goals were added as a reference to the types of research and projects desiring support at the PAIGH Directing Council, beginning in 2016, for principal investigators to label and frame their work in the proposals directly. Beginning in 2018, the Geography Commission began to explicitly track and monitor these SDGs for all projects since 2014 for the entire octennial cycle.

Figure 4 shows the amounts awarded by year, in U.S. dollars of the year indicated, for both new projects, and continuing projects (for multi-year awards). This represents 58 funded projects at a total value of \$352,746. Of these, 55 percent were capacity building project, 38 percent were research projects, and the remainder were seed grants.

The inclusion of representatives from every member country of PAIGH, and some observers, in participating in technical assistance projects was accomplished, whether as lead or co-investigator. The map of distribution

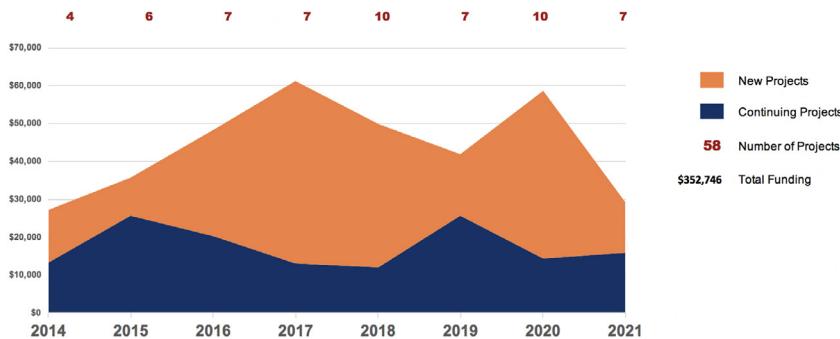


Figure 4. Awarded funds for Technical Assistance Projects from the Geography Commission, by year, 2014-2021.

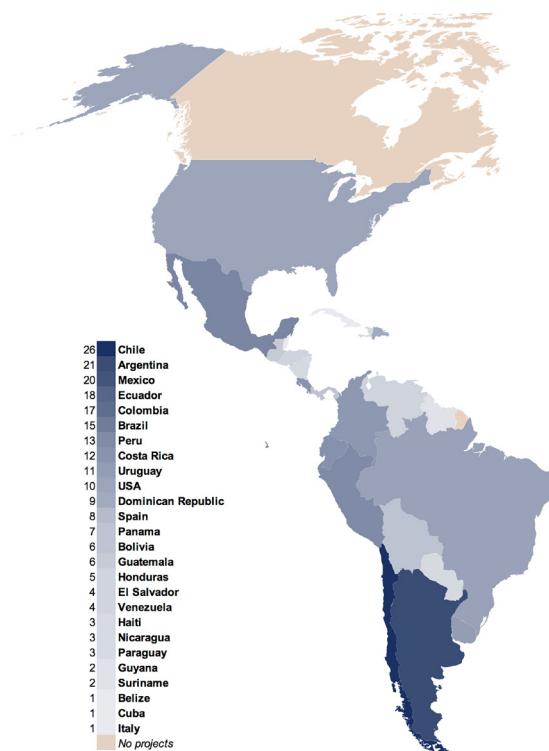


Figure 5. Participation in Technical Assistance Projects with funding from the Geography Commission, by country, 2014-2020.

of the number of projects by country through 2020 is represented in Figure 5. Chile, Argentina, Mexico, and Ecuador topped the list. Member states like Paraguay and in Central America participated at lower levels.

Technical Assistance Projects are required to be interdisciplinary, and may be sponsored by more than one commission. Figure 6 demonstrates the relative frequency of projects being sponsored either by the Geography Commission alone (42 percent of the time) or with one or more other commissions. An overlap with at least the Cartography Commission is the most frequent cross-disciplinary sponsorship, although participation with either the Geophysics and History Commissions is very common, although never both at the same time. All four commissions sponsoring a project is uncommon, happening less than 7 percent of the time.



Figure 6. Share of projects by commission sponsorship of Technical Assistance Projects with funding from the Geography Commission, 2014-2020.

A focus on promoting participation of women throughout the octennial was pronounced, although the rates of participation of women in funded technical assistance projects awarded through the Geography Commission did not change from 2014 to 2020. Notably, rates of female inclusion on Project teams fluctuated slightly from about 40 to 45 percent over the time period, with an average rate of 43 percent. Given that the geographic academy and geospatial industry may only be comprised of 30 to 35 percent women, this rate fares relatively well. Given the reported disproportionately negative effects of the

pandemic on women, the absence of a drop in women's participation during 2020 is notable, and perhaps a positive indicator. Nevertheless, there remains a gap in parity to proactively resolve in the future (Figure 7).

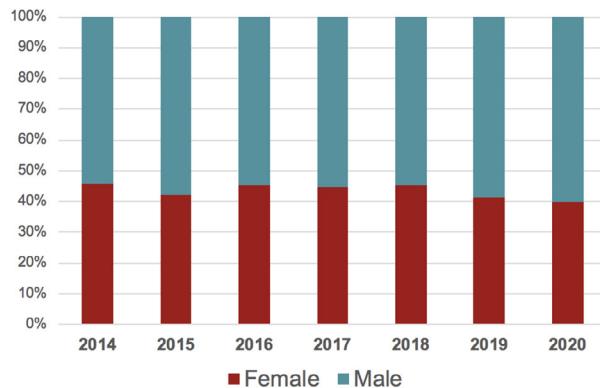


Figure 7. Participation rates of Women in Technical Assistance Projects with funding from the Geography Commission, by year, 2014-2020.

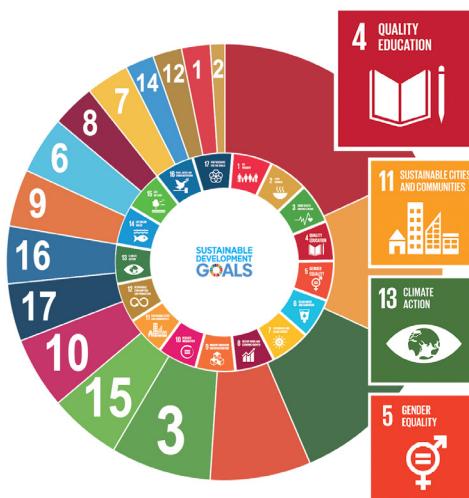


Figure 8. Linkages of themes in Technical Assistance Projects with funding from the Geography Commission to the UN SDGs, 2014-2021.

Overall, the collection of Technical Assistance Projects with funding from the Geography Commission during this octennial link to each of the 17 SDGs of the

United Nations. Figure 8 visualizes the distribution of projects across the set of goals, where the single most referenced SDG was for 4, quality education. Other strong linkages among the geography projects were to SDG11 Sustainable Cities and Communities, and SDG13 Climate Action. These align most strongly with the PanAmerican Agenda as well. The SDG5 reflecting priorities for gender equality also appeared frequently among projects supported by the commission. However, low representation of connections to SDG1 poverty reduction and SDG2 hunger, was measured, even though geographic perspectives can clearly contribute to these themes.

The International Geography Commission sponsored courses from CEPEIGE have addressed important themes of the period. The most recent three, beginning the series of virtual offerings, are summarized in Table 3. In 2018, the course centered on “Rapid Response Cartography in support of Decision-Making Processes for Natural Disasters.” In 2019, the course offered training on “Participatory Community Mapping, for Territorial Development with a Focus on Biocultural Patrimony.” The 2020 course was entitled “Building Capacity for Modeling with a Focus on Climate Change at Local and Regional Scales.” The course topic for 2021 has been proposed as “Spatial Data Infrastructure with a Focus on an Integrated Geospatial Information Framework, with Open Software.” In all, Ecuador has sent the greatest number of participants, followed by Costa Rica and Peru. The rate of participation by women averaged at 45.5 percent.

Table 3. Participation by country and gender in Geography
Commission supported CEPEIGE courses, 2018-2020

By country	Number of Participants		
	2018	2019	2020
Spain	1	0	0
Honduras	1	0	0
Nicaragua	0	0	1
El Salvador	2	0	0
Brazil	0	2	0
Mexico	0	1	1
Guatemala	1	0	2
Dominican Republic	0	0	3
Argentina	1	0	3
Paraguay	0	0	5
Colombia	7	2	0
Bolivia	1	4	6
Chile	4	5	3
Peru	3	1	12

Number of Participants			
By country	2018	2019	2020
Costa Rica	6	0	11
Ecuador	16	13	5
Yearly total	43	28	52
<i>Total</i>	<i>123 participants</i>		

By gender	2018	2019	2020
Female	51.2%	42.9%	42.3%
Male	48.5%	57.1%	57.7%
<i>Average</i>	<i>45% female</i>		

Reflecting on challenges and advances ahead for Geography in the region

The progress achieved in this octennial period aligned closely with the strategic objectives identified in each quadrennial, with respect to strengthening geography's interdisciplinary leadership, promoting geographic research contributions to decision-making, and enhancing international and multi-sectorial cooperation across the Pan American geographic community. A leadership approach that has focused on dynamically implementing strategies, building from one period to another, characterizes this era of the Geography Commission. Still, the above summary only captures high level details, and there are many more related advances and details of these activities available in the annual committee reports and reports of the Revista and CEPEIGE. Looking ahead to the next period of work, it is our hope that the subsequent commission objectives can draw from and build upon the accomplishments, as well as from lessons learned. The solid institutional infrastructure and communication mechanisms of the PAIGH Geography Commission may also remain a resource for the challenges ahead.

Reflecting upon this set of actions and outcomes, it is clear that the commission benefits from a posture to adapt and grow in concert with the changes in governments and mapping agencies, in academic institutions, funding landscapes, demographic change, migration, age, race, economics, and private sector developments. These are the driving forces which shape how our work unfolds within this diplomatic institution. Such a posture requires and benefits from the long-running historical reputation of PAIGH along with a spirit of participation and inclusion of young people, women, representatives from across all sectors of society.

Specially for the trajectory of the Geography Commission, there are three major strategic questions that we believe should be pondered:

1. How should we continue the tradition of a participatory and inclusive nature within the commission, in light of (a) the challenges that must be faced virtually given the continuing effects of the pandemic, (b) a context of partially addressed gender parity and (c) an appetite for engagement of potential new Member states?
2. What should we do to accelerate the adoption of disciplinary innovation in the technical and knowledge domains (VGI, GeoAI) and share these actions in our webinars, capacity building, journals and educational efforts in an integrated way, in order to advance geographic applications to solve real problems, from climate change impacts, to natural disasters, to migration and economic security?
3. What does it take to increase our collective impact, especially to seek additional external resources and seed funding competitively? And how might we leverage new partnerships to expand the recognition and relevance within the ever-evolving institutional context, such as the SDGs (2030, especially SDG17) and the OAS Strategic Plan (post-2021), as well as our own post-2020 internal Pan American Agenda?

Over the next eight-year period, PAIGH will begin to plan how to celebrate its' 100th (2028) and the quadrennial will begin to lay the groundwork for this institutional milestone. Unrealized ideas, unfinished business, interrupted ambitions, partially completed efforts, as well as follow on from successful initiatives and accomplishments by the geography commission community will ideally inform this trajectory. But we also anticipate new shocks and stresses, and unexpected turns in society that we need to continue to respond with resilience and innovation.

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