



The Brain Health Diplomat's TOOLKIT

Supporting Brain Health
Diplomacy Leaders in
Latin America and the
Caribbean

SUPPORTED BY

Latin American Brain Health Institute (BrainLat) at
Universidad Adolfo Ibáñez

Global Brain Health Institute (GBHI)

Layton Aging & Alzheimer's Disease Research Center at
Oregon Health & Science University (OHSU)

Centre for Dementia Research at Leeds Beckett University

A BRAIN HEALTH DIPLOMAT'S TOOLKIT: SUPPORTING BRAIN HEALTH DIPLOMACY LEADERS IN LATIN AMERICA AND THE CARIBBEAN

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EXECUTIVE SUMMARY

MAINTAINING BRAIN HEALTH

Maintaining and improving brain health is one of the greatest global challenges of the 21st century. Brain health is defined as a life-long dynamic state of cognitive, emotional, and motor domains underpinned by physiological processes. It is multidimensional and can be objectively measured and subjectively experienced.

Brain health is influenced by ecobiopsychosocial determinants, resulting in a continuum of quality of life and wellness (Chen et al., 2021). The emergence of SARS-COV-2 (COVID-19) negatively impacted brain health on a global scale, the effects of which are still being uncovered. From the long-lasting neurological effects of COVID-19 infections to the impacts of social isolation and loneliness endured by millions during the pandemic, to worldwide disruptions in research on the treatment and prevention of neurodegenerative disorders will all have enduring effects on brain health.

The COVID-19 pandemic has uncovered a need for greater cooperation and collaboration across national borders to address the global threat, which is instructive for the challenge of maintaining and improving global brain health.

In 2021, a multinational group of experts launched a brain health diplomacy agenda to support this challenge, in collaboration with the Organisation for Economic Co-operation and Development's (OECD) Brain Health Diplomacy Working Group and the Latin American Brain Health Institute (BrainLat).

This agenda aims to improve brain performance on a global scale. To help achieve this ambitious goal, the Brain Health Working Group has developed a prototype toolkit for emerging leaders to advance brain health diplomacy.



Photo taken by Alex Kornhuber

EXECUTIVE SUMMARY

MAINTAINING BRAIN HEALTH

The Brain Health Diplomacy Toolkit is a practical guide for brain health professionals and other allied professionals, in particular emerging professionals who are in the early stages of their professional careers, to support collaborations across disciplines, sectors, and national borders by providing case studies of exemplary initiatives, impact evaluation tools, resource identification, and a framework for stakeholder engagement.

This toolkit draws on a brain health diplomacy (BHD) framework proposed by Dawson et al., (2020) and Ternes et al., (2020), which aims to mitigate the complex threats to brain health at an individual, community, national, and international level through large-scale diplomacy.



Photo taken by Alex Kornhuber

Diplomacy is often thought of as the profession, activity, or skill of managing international relations, typically by a country's official representatives abroad. However, diplomacy is far broader in practice and application and can be carried out by a wide variety of professionals in their own work and collaborations. Brain health diplomacy builds on existing theoretical frameworks such as health diplomacy and science diplomacy with the aim of improving global brain health.

EXECUTIVE SUMMARY



DEMENTIA CARE IN LATIN AMERICA & THE CARRIBEAN

This toolkit further draws on a proposed action plan by Ibáñez et al., 2021 to fight inequalities in dementia care in Latin America via BHD.

This framework specifically aims to protect the world's populations from threats to brain health throughout the life course, with particular emphasis on advanced age, through enhanced collaboration in prevention, treatment, technological innovation, and care interventions.

This innovative approach seeks to connect brain health science with the concept of diplomacy, using the Toolkit as the catalyst to launch this framework.

The need to apply this framework is salient and increasing in Latin America and the Caribbean (LAC) as the cumulative burdens of brain diseases in the region are some of the highest globally (Ibáñez et al., 2021). At the same time, the rich cultural and linguistic diversity of the LAC Region necessitates solutions tailored to the unique needs of populations in specific countries, regions, and local communities.

Alongside this agenda is the development of a Toolkit, which will provide an introduction to supporting global brain health advancements for policy practitioners. It is designed for Brain Health Diplomats looking for a set of practical tools and examples to help them think about how to improve support for brain health collaboration.

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TOOLKIT AUDIENCE

This toolkit is for early career professionals with an interest in brain health who are based in Latin America and the Caribbean. It is intended to provide a practical guide with resources for building partnerships across nations as well as within countries or communities to build brain health capacity across the region.



Resources discussed within this Toolkit can also be applied to work that extends globally. This is a living (or evolving) document. While the best effort to provide up-to-date information and relevant resources has been made, the toolkit will likely evolve over time to reflect emergent needs.

BACKGROUND

BRAIN HEALTH DIPLOMACY

Brain health diplomacy aims to influence the global policy environment for brain health and bridge different disciplines to improve brain health around the globe. This framework also aims to protect the World's populations from threats to brain health throughout the life course, and to collaborate in expanding prevention and treatment interventions.

THREATS TO BRAIN HEALTH

Brain health threats that need to be addressed fall under three main levels: the micro or individual level, meso or community level, and the macro or national and transnational level.

MICRO LEVEL THREATS

Mental health conditions and lack of broadly available care for mental illness*

Unsafe living and working conditions

Inadequate access to health care

Poor diet and food insecurity

Inadequate treatment of chronic conditions**

Environmental exposures

Poor sleep

*Includes brain injury, trauma, depression and anxiety

**Often comorbid conditions such as hypertension & diabetes

MESO LEVEL THREATS

Lack of early childhood education & literacy

Inconsistent health care coverage

Lack of economic opportunities

Chemical contaminants & air pollution

Ineffective governance

High crime rate

Social isolation

MACRO LEVEL THREATS

Climate change

Population aging

Rising economic inequality

Future pandemics

Ongoing rural-urban migration

Megacities with disrupted social safety nets

Large-scale armed conflicts & wars

Mass digitization of life

Limitations on availability of research advances

BRAIN HEALTH ISSUES

The population of people with issues related to brain health is rising across the world. Dementia alone is one of the largest driving factors impacting brain health and is the leading cause of disability for older adults, with more than 55 million people estimated to be living with dementia worldwide (World Health Organization, 2022a).

The estimated economic cost of dementia is over 1 trillion US dollars per year, and is expected to increase substantially as the world's population ages (Organisation for Economic Co-operation and Development, 2018). Expansion of aging populations will occur mostly in low- and middle-income countries, meaning the burden of dementia will be felt most in those regions (GBD 2019 Dementia Forecasting Collaborators, 2022).



Photograph taken by Alex Kornhuber

At the same time, the potential for prevention is high. As much as 40% of all global cases of dementia could be prevented by addressing modifiable risk factors (Livingston et al., 2020). The benefits to be gained from widely available resources such as this Brain Health Diplomat's Toolkit are huge.

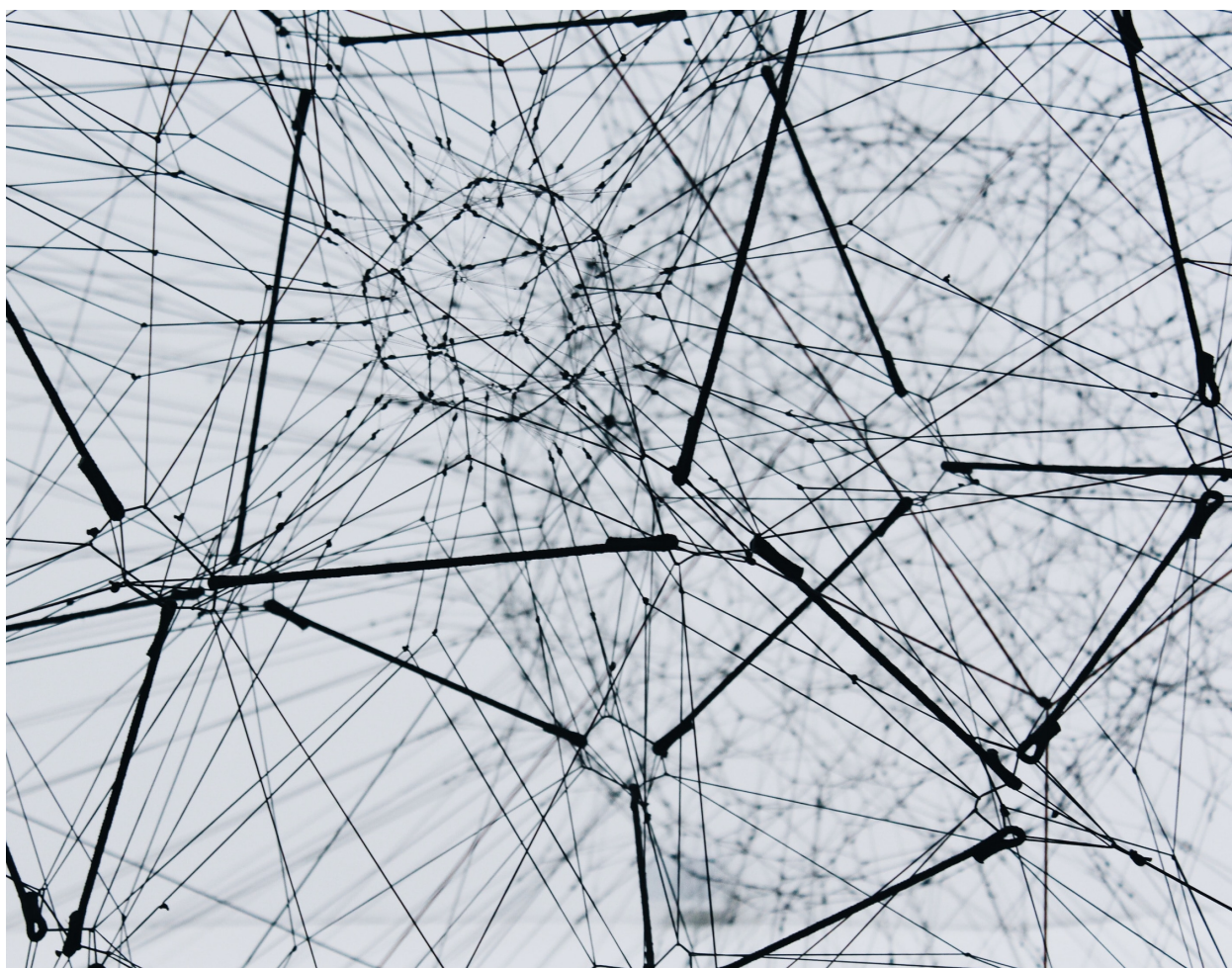
GLOBAL COLLABORATION IS CRITICAL

Improved outcomes may come from optimization of access to health care, prevention, screening, and treatment. COVID-19 has further amplified the importance and challenges of brain health innovation. Older adults and people living with underlying health conditions are at high-risk of complications, neglect, hospitalization, and death from COVID-19.

It is also important to note that people living with Alzheimer's disease and related dementias (ADRD) are at heightened risk of complications and death from COVID-19, and in some countries almost 1/4 of all deaths from COVID-19 are among people living with ADRD (Shahid et al., 2021; Suárez-González et al., 2020).

Fortunately, there are many innovative approaches to address these issues. Global collaboration is central to the success of these new innovations. International collaborations can be scaled to influence the global agenda for health – one example being the Davos Alzheimer's Collaborative.

Brain health must be integrated into international diplomacy at the global level and into public policies at the national government level.



OVERVIEW OF BHD

OVERVIEW OF BRAIN HEALTH DIPLOMACY

Maintaining brain health is one of the greatest global health challenges of our time. Given the breadth of factors affecting brain health, we believe that large-scale diplomacy is necessary.

Diplomacy is traditionally described as a formal exchange between countries, such as trade talks or negotiations to avoid armed conflict, carried out by formal representatives of nations (e.g., emissaries and ambassadors). Yet, the field of diplomacy is far more nuanced, and the way in which diplomacy affects humanity, including health, is informed by a broader understanding of the topic.

Large-scale diplomatic activities may include efforts to coordinate research across nations or the establishment of treaties (for example, to reduce air pollution). Activities of this type help to coordinate international projects in research, advocacy, clinical care, consumer participation, innovation, and public health. An example of activities to support large-scale diplomacy is that of the American Psychological Association (APA). The APA is an accredited, non-governmental organization (NGO) at the United Nations and its volunteer representatives advocate for the role of psychological science in relation to children's rights, minority rights, aging, mental health and well-being, the environment, and other issues related to UN development goals (Clinton, 2018).

An international team of collaborators has proposed a brain health diplomacy (BHD) model to transcend disciplinary boundaries and mobilize resources at sufficient scale to improve brain health. This model builds on several theoretical approaches, including health diplomacy, science diplomacy, innovation diplomacy, and convergence science (Katz et al., 2011; AAAS, 2020; Leijten, 2017; National Research Council, 2014).

Brain health diplomacy is aimed at tackling threats to brain health throughout the life course, but in particular in later life; training and connecting the next generation of leaders in brain health; collaborating in expanding prevention and treatment interventions; sharing knowledge; and engaging in advocacy.

DIPLOMACY WORK, PROGRESS & ACCOMPLISHMENTS

In 2020, the Brain Health Diplomacy network proposed a model of brain health diplomacy in *The Lancet Neurology* as a framework to support the aim of mitigating these multilevel threats to brain health (Dawson et al., 2020).

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This has been theoretically enhanced through a paper in Lancet Healthy Longevity, applying the concept to caregiving in Latin American and Caribbean Region (Ibáñez et al., 2021).

In partnership with the Neuroscience-Inspired Policy Initiative of the Organization for Economic Co-Operation and Development (OECD), a Brain Health Diplomacy Working Group was established that is working toward the establishment of country-level commitments to brain health through policy and investments.

This partnership has further developed through collaboration with the Brain Capital Alliance, with which the work of the Brain Health Diplomacy Working Group directly aligns (Brain Capital Alliance, 2022).

OVERVIEW OF & LEARNINGS FROM DIPLOMACY EXPERTS

Several NGOs have already established diplomacy fields focused on developing capacity in their specific areas. The following examples are subtypes of diplomacy.

TYPE	ORGANIZATION	DEFINITION
Science Diplomacy	American Academy for the Advancement of Science and the European Science Diplomacy Cluster Web link: www.aaas.org/focus-areas/science-diplomacy	Science diplomacy is a field which uses science as an instrument to achieve foreign policy objectives that serve to promote peace, sustainable development, and ethical research. It leverages “science” as a process and way of communicating, as well as the research outcomes (Ruffini, 2020). A major source of capacity building for science diplomacy was established in 2008, when the American Association for the Advancement of Science (AAAS) established the Center for Science Diplomacy (American Association for the Advancement of Science, 2020). The Center is a leader in positioning science diplomacy as a key aspect of 21st century science and international affairs. The Center has strengthened engagements between the scientific and diplomatic communities and developed the framework and training to support the practice of science diplomacy. Importantly, it has shown how science can work to strengthen relationships between countries when geopolitical strains are apparent. A range of education and capacity-building programs for early career academic innovators are outlined by Holford and Nichols (2018).

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TYPE	ORGANIZATION	DEFINITION
<p>Innovation Diplomacy</p>	<p>UK's NESTA</p> <p>Web link: www.nesta.org.uk/toolkit/innovation-policy-toolkit-tradecraft-for-innovation-diplomats/</p>	<p>Innovation diplomacy involves the use of diplomacy to further innovation for a country, as well as leverage innovation to improve the relations among countries in bi-, multi-, or transnational settings (Miremadi, 2016).</p> <p>Innovation diplomacy includes supporting partnerships with industry, academic, and nongovernmental organizations; supporting open innovation and collaboration; shaping intellectual property rights, ethical regulation, and use of technology; structuring global value chains; as well as developing, deploying, and scaling innovative solutions to global problems (Leijten, 2017).</p> <p>These practices sit between science diplomacy (mentioned above) and economic diplomacy, which focuses on trade, investment, and international regulations (Leijten, 2017).</p>
<p>Preventative Diplomacy</p>	<p>The American Academy of Diplomacy (AAD)</p> <p>Web link: https://www.academyofdiplomacy.org/</p>	<p>Preventive Diplomacy has been a key component of the UN toolkit for the past several decades, defined specifically as actions taken at the earliest possible stage of a conflict, with the intent "to prevent disputes from arising between parties, to prevent existing disputes from escalating into conflicts and to limit the spread of the latter when they occur" (Boutros-Ghali, 1992).</p> <p>Over the last several years Preventive Diplomacy has grown to include more types of actors and regions in which it has been implemented. While we can never truly be certain of the success of Preventive Diplomacy, it can be less costly than other diplomatic endeavors or the cost of wars themselves (Ban, 2011).</p> <p>The Office of the UN in Africa, which has been impactful in conflicts across the region, has a budget of less than \$8 million USD per year, compared to the estimated cost of civil wars, which can be more than 30 years of GDP (World Bank, 2011).</p>

A BRAIN HEALTH DIPLOMAT'S TOOLKIT:

TYPE	ORGANIZATION	DEFINITION
General Diplomacy	United Nations Web link: https://www.un.org/sg	The General Assembly approves budget for conflict prevention missions; the Security Council is primarily focused on international peace and security; the Peacebuilding Commission ensures continued attention to conflicts; the office of the Secretary General, envoys, and regional offices all play vital roles in Preventive Diplomacy.
Public Diplomacy	European Union Web link: https://www.eeas.europa.eu/eeas/public-diplomacy	Public diplomacy aims to inform and influence public audiences abroad through transparent methods of communication. Public diplomacy that is carried out by the EU focuses on engaging citizens and partners across the globe to build trust, mutual understanding, and facilitate future cooperation to address collective challenges such as climate change, global health, and poverty.
Health Attachés	WHO and United Nations Web link: https://www.who.int/	<p>“Core” health diplomacy practitioners are officially accredited “Health Attachés” charged with connecting public health organizations in one government to public health and related organizations in another government (e.g., departments of innovation, science, industry, aging, trade and investment, and social services).</p> <p>“Health Attachés” require formal credentialing which involves obtaining agreements between two state Foreign Affairs Ministries.</p> <p>“Multistakeholder” health diplomacy practitioners include government employees and multilateral representatives. “Informal” health diplomacy includes host country officials as well as a wide array of other stakeholders including universities, non-governmental organizations, private enterprises, and the general public.</p>
Science, Technology, and Innovation Attachés	Science & Innovation Network, Foreign Office UK Web link: https://www.gov.uk/world/organisations/uk-science-and-innovation-network	Through a network of approximately 100 officers in over 40 countries worldwide, the United Kingdom's Science and Innovation Network (or SIN) is focused on building partnerships and collaborations on science and innovation. The SIN officers work with the local science and innovation community in each country they are based to support UK policy overseas with the intent of mutual benefits to the UK and the host country.

A BRAIN HEALTH DIPLOMAT'S TOOLKIT:

TYPE	ORGANIZATION	DEFINITION
<p>Digital Diplomacy</p>	<p>Diplo</p> <p>Web link: https://www.diplomacy.edu/topics/digital-diplomacy/</p>	<p>Digital Diplomacy is concentrated in three main areas: changes in the environment diplomacy is conducted in, emergence of new issues linked to the internet, and the use of digital tools, such as social media (Diplo, 2023).</p> <p>Digital geopolitics and geoeconomics has also become increasingly important as tech companies have gained capital and political power. With 90% of all global internet traffic flowing through underwater cables, and shipping concentrated in key strategic points, internet access and transportation of information worldwide is relatively vulnerable (Diplo, 2023).</p> <p>Digital foreign policy has also become increasingly relevant and is concentrated in seven key areas, according to Diplo taxonomy:</p> <ul style="list-style-type: none"> • Technology • Security • Human Rights • Economy • Development • Sociocultural • Legal <p>The UN has become more involved in the last two years as digital diplomacy has grown in importance.</p> <p>While most digital diplomacy has focused on social media, COVID-19 has increased the availability of already existing online meetings or conferences. As the importance of the internet, and the tools it offers has evolved over the past 20 years, digital diplomacy has grown in significance and will continue to do so (Diplo, 2023).</p>
<p>Economic Diplomacy</p>	<p>Organisation for Economic Cooperation and Development (OECD)</p> <p>Web link: https://www.oecd.org/</p>	<p>Economic diplomacy may use diplomacy along with economic tools to advance a country or multiple countries economic, political and strategic goals. For example, to strengthen the economy and provide jobs through promoting investment or bilateral (between two countries) and multilateral (between multiple countries).</p> <p>The Organisation for Economic Co-operation and Development's (OECD) New Approaches to Economic Challenges (NAEC) work to develop and implement a Brain Capital framework is a key example of a multinational effort that draws on economic diplomacy to support the interplay between brain function, brain health, and the 21st century knowledge economy within the context of a world shaped by the COVID-19 pandemic (Smith et al., 2021).</p>

BRAIN HEALTH DIPLOMACY CASE STUDIES

The following are examples of BHD ventures.

Initiative	Mission
ACTIV	<p>Accelerating COVID-19 Therapeutic Interventions & Vaccines (ACTIV) is a public-private partnership to develop a coordinated research strategy for prioritizing and speeding development of the most promising treatments and vaccines.</p>
Alzheimer's Disease Data Initiative (ADDI)	<p>A not-for-profit medical research organization in partnership with the University of Washington dedicated to advancing scientific breakthroughs in the treatment of Alzheimer's disease and related dementias (Alzheimer's Disease Data Initiative, 2021).</p> <p>This organization aims to increase interoperability of existing data platforms globally, increase the sharing of dementia-related data from academic and industry sources, and empower scientists to find, search, combine, and analyze data that could lead to new discoveries in dementia research.</p> <p>ADDI also aims to enhance or fill gaps in data sets, including enabling the generation of demographically representative datasets.</p>
BrainLat	<p>The Latin American Brain Health Institute (BrainLat) was recently launched at the University Adolfo Ibáñez (Chile), and is guided by an international advisory board (60 institutions) and is affiliated with the Global Brain Health Institute (GBHI).</p> <p>BrainLat's focus is on strengthening regional and international multidisciplinary brain health research and diplomacy has empowered innovative brain health leaders across LACs (Duran-Aniotz et al., 2022).</p> <p>BrainLat is supporting the regional dementia research agenda through seed grants, postdoctoral positions, specialized infrastructure, educational programs, and permanent full-time research positions.</p>
COVAX	<p>COVAX (COVID-19 Vaccines Global Access) is a global initiative aimed at equitable access to COVID-19 vaccines.</p> <p>Launched in April 2020, COVAX coordinates international resources to enable equitable access to COVID-19 tests, therapies, and vaccines in low-to-middle-income countries.</p>
Davos Alzheimer's Collaborative (DAC)	<p>Davos Alzheimer's Collaborative (DAC) is a group working on behalf of patients and families to build a global response to the growing Alzheimer's disease pandemic.</p>

A BRAIN HEALTH DIPLOMAT'S TOOLKIT:

Initiative	Mission
Global Brain Health Institute	<p>Jointly based at the University of California, San Francisco and Trinity College Dublin, the Global Brain Health Institute (GBHI) focuses on reducing the risk factors to brain health and developing a global response to increasing dementia rates.</p> <p>The GBHI seeks to train brain health leaders dedicated to advancing equity in brain health through the Atlantic Fellows for Equity in Brain Health program. The Atlantic Fellows are a multinational, multidisciplinary group of professionals from medicine, law, business, social sciences, journalism, and the arts.</p>
Global CEO Initiative on Alzheimer's Disease (CEOi)	<p>The Global CEO Initiative on Alzheimer's Disease (CEOi), founded in 2013, is an organization of private-sector leaders who have joined together to provide business leadership in the fight against Alzheimer's.</p> <p>The CEOi believes that, during this era of aging populations, it will take visionary, coordinated, goal-oriented leadership of public and private leaders working together to solve our greatest challenges. It is convened by UsAgainstAlzheimer's.</p>
ReD-Lat Multi-Partner Consortium to Expand Dementia Research in Latin America	<p>ReD-Lat – Multi-Partner Consortium to Expand Dementia Research in Latin America (Ibáñez et al., 2021) is a multinational consortium aimed at studying genetic and social determinant risk factors for Alzheimer's disease (AD) and frontotemporal lobar degeneration (FTLD) spectrum in six Latin American countries.</p>
United for Global Mental Health	<p>A non-governmental organization (NGO) focused on mental health advocacy with a focus on rights, education, systems, and finance in order to achieve the goals of reduced stigma and ensuring accessible mental health services.</p>
Women's Brain Project	<p>A global, interdisciplinary organization, which has directed multiple international efforts in research and policy to better understand the role of sex and gender in brain and mental health. The Women's Brain Project (WBP) has helped generate evidence that sex and gender are important variables, which impact the course, risk factor profile, symptom presentation, and treatment of brain disorders, along with specific care needs. This is essential for developing research and policy strategies to promote health equity from a sex and gender perspective.</p>

RELEVANT DIPLOMACY TOOLKITS

Below are summaries of examples of toolkits related to brain health and/or diplomacy.

TITLE	FOCUS	PURPOSE
<p>“OECD Recommendation on Responsible Innovation in Neurotechnology” from the OECD</p>	<p>Goal is to guide governments and investors in addressing challenges associated with innovations in neurotechnologies.</p>	<p>By offering nine specific recommendations, this toolkit provides guidance at each step of the innovation process, and addresses the need for new innovations especially in the fields of mental health and neurological disorders.</p>
<p>"Using Science For/In Diplomacy For Addressing Global Challenges (S4D4C): Toolkits for Trainers." from S4D4C</p>	<p>This toolkit is focused on science diplomacy with the understanding that science diplomacy is a tool to be used in national, regional, or transnational efforts to address global challenges.</p>	<p>Designed to assist trainers who are planning, designing, implementing and/or evaluating a training program that is focused on science diplomacy (Josten et al., 2020).</p>
<p>“New Approaches to Economic Challenges: Systemic Thinking for Policy Making, The Potential of Systems Analysis for Addressing Global Policy Challenges in the 21st Century” from IIASA and OECD</p>	<p>Discussion and analysis of the multitude of uses of system thinking to better understand and tackle the problems of the modern world.</p> <p>It offers tools, perspectives, and concepts to improve thinking around complex global issues.</p>	<p>Argument for the potential of system analysis to impact a variety of topics from sustainability, to cities and urban politics, to the importance of linking education and aging.</p> <p>Also addresses need to create new systems and modeling tools, and suggests creating and combining existing tools from a variety of fields (Hynes, Lees & Müller, 2020).</p>
<p>“Science and Technology Agreements as Tools for Science Diplomacy: A U.S. Case Study” from Science and Diplomacy</p>	<p>Offers an argument for the importance of science and technology bilateral agreements between countries as a method for increasing diplomacy and inter-country relationships.</p>	<p>Dolan (2012) is an argument for the continued use of science and technology bilateral agreements, and provides successful examples of previous Science and Technology (S&T) agreements in which through scientific cooperation, a better diplomatic relationship was reached (Dolan, 2012).</p>

A BRAIN HEALTH DIPLOMAT'S TOOLKIT:

TITLE	FOCUS	PURPOSE
Geneva Science and Diplomacy Anticipator, by GESDA	Through science and diplomacy, a focus on public-private partnerships on an international scale as well as projects capable of providing solutions to current and future technological challenges, by turning them into opportunities and broadening the circle of beneficiaries of scientific and technological advances.	The GESDA Foundation aims to leverage the International Geneva ecosystem to anticipate, accelerate, and translate into concrete actions the use of emerging science-driven topics.
"Preventive Diplomacy: Delivering Results"	Mission of the toolkit is to provide an argument for the necessity of Preventive Diplomacy, and offer successful examples of it being used.	In five explicit sections, the toolkit's purpose is to convince readers of the beneficial impacts of Preventive Diplomacy, offering both concrete and theoretical examples of its use (Ban, 2011).
"Be he@lthy, be mobile: a handbook on how to implement mDementia" from WHO	The mDementia Handbook provides guidance in six key areas: <ul style="list-style-type: none"> • Operations • Management • Content development and adaptation • Promotion, participation and retention • Technology specifications • Monitoring and evaluation 	This provides details on the mDementia program, which uses mHealth to support individuals, families, and caretakers of those with dementia (World Health Organization & International Telecommunication Union, 2021).

RESOURCES FOR BHD

RESOURCES TO SUPPORT SYSTEMIC THINKING FOR BRAIN HEALTH DIPLOMACY

The OECD Systems of Thinking for Policy Makers highlights five key dimensions of inclusivity to help frame any challenge in which systems thinking is implemented (Hynes, Lees, & Müller, 2020).

The five dimensions of inclusivity – impacts, feedback, trade-offs, emergencies, and stakeholders – are outlined below with key examples for how they may relate to BHD. These were originally created by the OECD.

To learn more about the OECD, visit www.oecd.org

THE FIVE DIMENSIONS OF INCLUSIVITY

Impacts



Feedback



Trade offs



Emergencies



Stakeholders



1 IMPACTS

It is vital to consider the various impacts of a system in order to understand its full potential and influence. Without the consideration of externalities in economic or other systems, we cannot understand the full scope of a system and the true impact it has.

The boundaries and consideration of the impacts of systems should be wide in order to be useful in the largest variety of situations and issues.

BHD Example: A proposal generated at a conference does not reflect the work of other groups and individuals who helped to create it who helped create it prior to the final version.

2 FEEDBACK

It is vital to understand feedback especially when considering long-term impacts; during the short term a system may be accurate but it could prove inaccurate or different than intended in the long term.

It is also important to remember that feedback loops can be either positive or negative but understanding and paying close attention to feedback is vital to comprehending and analyzing a system.

BHD Example: Feedback loops between governments, drug companies, and patients. Governments invest in research, which allows new drugs to be created which help patients.

3 TRADE-OFFS

Without the consideration of trade-offs and synergies, elements of a system can be missed or not fully considered. With the example of sustainability many corporations view most sustainable practices as detrimental or a negative trade-off, but they are viewed on a broader world view as positive in the long run.

BHD Example: Global partnership comes with new voices and viewpoints but it is also more difficult to find inclusive time and spaces.

4 EMERGENCIES

It is important to consider the possibility of emergencies or events that drastically change the system in which they reside. While you cannot always account for what these emergencies will entail, there should be systems in place to allow for quicker reactions and responses. Preparedness is key.

BHD Example: The existence of climate change creates emergencies that cannot be planned for. However, crisis management and emergency preparedness officials must be sensitized to the prevalence and particular needs of people living with brain diseases to mitigate the impact.

5 STAKEHOLDERS

In any project it is vital to both represent and find all of the stakeholders impacted by a system. Without considering all stakeholders or groups involved, the end project or system suffers – both in terms of success in implementation and view by the stakeholders and the greater public.

BHD Example: Brain Health Diplomats, government actors, individuals affected by brain diseases, drug companies, all citizens impacted by changes to the market, etc. (only some of the stakeholders involved).

EVALUATING IMPACT

MEASURING IMPACT

To maintain and improve brain health at a national, regional or global level, some measurement of impact is needed. At a macro level this may include: formal agreements between nations to support brain health such as commitments to enacting brain-focused public policies or investments in brain-related research or care.

Evaluation materials from multiple sources and organizations are included here. Multiple sources are provided so that you may determine what approach might be most applicable to your work.

SAMPLE EVALUATION TEMPLATES

International Labour Organization, Guide on Measuring Decent Jobs for Youth: Monitoring, evaluation and learning in labour market programmes:



https://www.ilo.org/employment/areas/youth-employment/WCMS_627307/lang--en/index.htm

U.S. Centers for Disease Control & Prevention, Evaluation Plan Template:



https://www.cdc.gov/tb/programs/evaluation/guide/pdf/evaluation_plan_template.pdf

Using Science For/In Diplomacy For Addressing Global Challenges, Toolkit for Trainers. See Phase III: Evaluation:



https://www.s4d4c.eu/wpcontent/uploads/2020/12/Teaching_Science_Diplomacy_December-2020.pdf

FUTURE DIRECTIONS

MULTIPLE OPPORTUNITIES FOR COLLABORATION

Brain health diplomacy offers multiple opportunities for collaboration and development of new partnerships across the Latin American and Caribbean Region and beyond.

There are abundant policy-related options to apply brain health diplomacy within scientific, policy, and advocacy settings, in order to promote brain health across the life course. Moreover, there are innumerable opportunities to scale brain health diplomacy to multiple regions of the world as well as globally.

The brain health diplomacy team encourages dialogue, ideation, and cross-sector discussions for planning how to develop new avenues of research, policy, and program development through brain health diplomacy. One way to potentially achieve this is through additional formal talks and conferences involving partners from government, private sector, and research.

Ultimately, the best ideas are yet to come from these new partnerships.



CONCLUSION

THE NECESSITY OF DIPLOMACY

Diplomacy is necessary to transcend disciplinary and geographic boundaries and to mobilize resources to improve brain health. This approach is essential to advance equity in brain health outcomes worldwide.

At a global level, collective actions such as global agreements to include the measurement of cognitive function in national health systems or other brain health metrics should be considered.

Some of the highest needs for brain health-related actions are in the Latin American and Caribbean Region. This Brain Health Diplomat's Toolkit seeks to provide emerging brain health leaders and other professionals whose work intersects with brain health across Latin America and the Caribbean, the tools to practice brain health diplomacy.

To support this goal, the BHD Toolkit is a practical resource to help emerging leaders directly apply the concepts of BHD within their professional work and collaborations such as advocacy for international agreements between nations to support brain health.



CASE STUDY 1



Cognitive Health & Functional Abilities of Illiterate, Older Peruvians in the Andes & Amazonian Regions

Author: Maritza Pintado-Caipa, MD

This project explores the cognitive health and functional abilities of illiterate older Peruvians. Funded by a Global Brain Health Leader Award, this project seeks to characterize the cognitive health and functional abilities of rural and urban illiterate older adults living in two geo-culturally-distinct parts of Peru: the Andean and Amazonian regions.

From the onset, the aims of this project were considered ambitious given the great need to know and understand how these communities are aging in a different kind of setting than what is typically found in the literature.

Obtaining support from the Global Brain Health Institute (GBHI) and the Alzheimer's Association, along with the guidance and expertise from a regional mentor in Peru and a mentor from the GBHI faculty, was crucial.



Photo taken by Alex Kornhuber

A BRAIN HEALTH DIPLOMAT'S TOOLKIT:

Further, it was crucial to connect with one of the only two neurologists from the Amazonian region as well as one of the few neurologists from the Andean region. These connections also provided the opportunity to connect with community leaders from rural and urban communities in these regions.

This supportive network of advisors gave us the opportunity to enter these communities, as well as to develop a better comprehension of their culture, beliefs, customs, language, and unique ways of life.

A challenge working in these underserved areas is the comprehension and discourse surrounding brain health. For many people the topic of brain health, both for themselves and other members of the communities, is not understood. For many, it is unclear why the brain should be a focal point for assessment or care.

This situation is completely understandable, when people are struggling day-to-day to cover other needs that often take priority, like poverty, lack of education, lack of access to health care, and other types of evident disabilities such as hearing, visual, motor, or nutritional impairments, which are all important factors that put brain health at risk.

The situation described here exemplifies why the problem of cognitive health takes a multidisciplinary approach and must follow a multi-focus perspective where we should all have an active and collaborative participation from the position in which we find ourselves.



Photo taken by Alex Kornhuber

CASE STUDY 2



Diagnosing Cognitive Impairment in Older Brazilians with Low Education Attainment

Author: Maira Okada de Oliveira, PhD

In Brazil, the number of people aged 60 years or older increased by 41.6% between 2000 to 2010. With an increase in longevity, more Brazilians are living with dementia. It has been estimated that 77% of those individuals have not been diagnosed (Nakamura et al., 2015).

Low educational attainment is a strong predictor of the incidence and prevalence of Alzheimer's disease (Nitrini et al., 2009; Barnes & Yaffe, 2011; Larson et al., 2013; Beydoun et al., 2014; César-Freitas et al., 2022). Diagnosing dementia among persons with low educational attainment is complex because low education is associated with poorer cognitive test performance (Ostrosky-Solís, 2004; Brucki and Nitrini, 2010.; de Oliveira et al., 2014).

This reinforces the need for tests that are less vulnerable to educational experience and for normative values corrected for education (Yassuda et al., 2009). In partnership between two universities, one located in the United States (University of California, San Francisco) and the other located in Brazil (University of São Paulo), the project was developed to detect cognitive impairment in Brazilians with low education.



The project compares the classification accuracy of paper-based, manual-based, and tablet-based approaches for detecting dementia by education level.

Findings will guide the appropriate selection of brief cognitive assessments.

Findings will also improve dementia detection in Brazil. The long-term goal is to create a network across the low- and middle-income countries to advance cognitive assessment with a focus on the most vulnerable populations. The overall aim of this project is to guide the selection of brief cognitive assessments for use in dementia diagnosis with the low educated Brazilian population.

APPENDICES

LINKS TO KEY PARTNER ORGANIZATIONS

This is a non-exhaustive list of key global community partners who have an interest or commitment to brain-based issues that may be relevant to your work and goals.

Alzheimer's Association

<https://www.alz.org/>

Alzheimer's Disease International (ADI)

<https://www.alzint.org/>

Brain Capital Alliance

<https://braincapital-platform.net/working-groups/>

Davos Alzheimer's Collaborative (DAC)

<https://www.davosalzheimerscollaborative.org/>

Dementia Alliance International (DAI)

<https://www.dementiaallianceinternational.org/>

Global Brain Health Institute (GBHI)

<https://www.gbhi.org/>

Latin American Brain Health Institute (BrainLat)

<https://brainlat.uai.cl/>

Latin American and Caribbean Consortium on Dementia (LAC-CD)

<http://lac-cd.org/en/proyects/>

Organisation for Economic Co-operation and Development (OECD)

Neuroscience-Inspired Policy Initiative (NIPI)

<https://www.oecd.org/naec/brain-capital/#:~:text=Neuroscience%2Dinspired%20Policy%20Initiative&text=NAEC%20is%20working%20with%20the,part%20of%20the%20knowledge%20economy.>

World Dementia Council (WDC)

<https://www.worlddementiacouncil.org/>

World Health Organization - Brain Health Unit

https://www.who.int/health-topics/brain-health#tab=tab_1

Women's Brain Project (WBP)

<https://www.womensbrainproject.com/>

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BRAIN HEALTH DIPLOMACY DEFINITIONS

TERM	DEFINITION
Brain Health	<p>A life-long dynamic state of cognitive, emotional, and motor domains underpinned by physiological processes. It is multidimensional and can be objectively measured and subjectively experienced.</p> <p>Brain health is influenced by ecobiopsychosocial determinants, resulting in a continuum of quality of life and wellness (Chen et al., 2021).</p>
Brain Health Diplomacy	<p>A global call to action with the goal of motivating others to join efforts to overcome the systemic challenges of brain health and urgently address growing unmet needs.</p> <p>The goal is to increase coordination in brain health across countries, disciplines, and sectors that are already working on these issues, with a view to accelerating opportunities to improve brain health outcomes (Dawson et al., 2020).</p>
Diplomat	<p>In the formal sense, an individual who is appointed to represent the interests of a government abroad and practice diplomacy. For example, an emissary or ambassador.</p> <p>However, diplomacy is not limited to these formal processes, and can be practice by individuals within the scope of their professional work.</p>
Evaluation	<p>According to the Cambridge Dictionary, it is the process of judging or calculating the quality, importance, amount, or value of something.</p> <p>In terms of policies or programs, it is used to measure or demonstrate processes, impacts, or outcomes.</p>
Policy	<p>Formal or informal proposals that may include legislation, laws, regulations, or more informal conventions that are intended to address societal challenges and/or enhance quality of life at a community, regional, national, or international level.</p>

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