

# Global Neurosurgery and the Congress of Neurological Surgeons: Collaboration, Innovation, and Opportunity to Improve Care, Education, and Access.

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Global neurosurgery encompasses the neurosurgical care and public health efforts to ensure timely and safe neurosurgical care access for all who need it (1). Over the past several decades, global neurosurgery has been championed by many individuals, which has led to a broader interest in developing larger collaborative, sustainable neurosurgical care efforts. On a national level, neurosurgical educational opportunities have grown through courses, online education, and fellowships. Given the growing global burden of neurosurgical disease, there is a significant opportunity and need for worldwide neurosurgery and neurosurgical education worldwide, especially in low- and middle-income countries (LMICs).

To advance global neurosurgery from an educational standpoint, the Congress of Neurological Surgeons (CNS), American Association of Neurological Surgeons (AANS), World Federation of Neurological Surgeons (WFNS), and other international neurosurgical societies have successfully developed programming. The CNS has led with a robust educational platform and offerings for neurosurgeons through in-person courses, fellowships, webinars, online case databases (2), publications, guidelines, and virtual grand rounds. SANS online education and questions modules offer neurosurgeons the ability to learn and self-test to advance their fund of knowledge, education, and continuing education (3).

Along with visiting professorships, webinars have bridged the divide between neurosurgeons worldwide pre-pandemic. They have had significant utilization with the adoption of virtual platforms replacing traditional in-person educational efforts. To make it accessible for all, the CNS provided complimentary access to the entire CNS online portfolio available for international members through a generous grant from the CNS Foundation.

Also, the CNS has partnered with neurosurgical societies internationally to co-host webinars, sharing advances in surgical techniques, novel research, and collaborations. Neurosurgeons have offered a global neurosurgery Virtual Visiting Professor course to residents centered on personal perspectives, lessons learned, and worldwide opportunities for neurosurgical development (4). Others have taught sessions on global neurosurgery, focusing on publications, sharing best practices, bilateral partnerships, innovations and simulation, worldwide leadership, and involvement in policy (5). In the past year alone, the CNS has partnered with the Brazilian Society of Neurosurgery (SBN) and the Mexican Society (SMNC), and the Japanese Congress of Neurological Surgeons (JCNS) to host a five-part joint webinar series attended by more than 3,000 attendees around the world. A second collaboration with the Neurological Society of India (NSI) drew more than 1,100 attendees to a four-partner sub-specialty educational series.

While educational instruction is paramount, ultimately, providing hands-on training has significant importance. Fellowship and educational grants offer opportunities for international neurosurgeons to gain clinical, scientific, and programmatic expertise. Educational offerings empower individual neurosurgeons intending to improve the care of neurosurgical patients internationally through a combination of specialized surgical techniques and health care systems. Since the late '90s, the CNS has pursued several initiatives to extend educational opportunities to neurosurgeons from developing countries (6). Today, the CNS partners with the CNS Foundation to provide funding opportunities for international neurosurgeons to obtain specialized neurosurgical training within US academic centers. For example, the CNS Foundation International Observer Ship Award was established to give surgeons from around the world a gratifying opportunity to observe and be mentored at an American academic institution for an extended period. As a home institution leader, the awardee is expected to home's return and share their knowledge, thereby strengthening neurosurgical practices in all corners of the world. Within its Annual Meeting, the CNS has cultivated several venues for discussion and collaboration around topics relevant to global neurosurgery. There are pathways for researchers to submit abstracts related to global neurosurgery to consider oral or poster presentations and an opportunity to earn awards through this topical research, which further elevates the importance of global neurosurgery to the entire field. The CNS Annual Meeting Committee has worked to incorporate expert faculty from around the world into sessions and courses throughout the program, ensuring a global perspective on critical topics across the specialty. Over the past three years, the committee has developed and presented a series of International Symposia during the meeting that combines abstract presentations with renowned faculty presentations to address topics relevant to global neurosurgery.

NEUROSURGERY® Publications, which includes Neurosurgery, Clinical Neurosurgery, Operative Neurosurgery, and Neurosurgery Open, has provided outstanding venues to share and discuss topics pertinent to neurosurgeons worldwide. Global neurosurgery is well represented among both the readership and authorship of NEUROSURGERY® Publications' titles. Neurosurgery Speaks audio recordings of selected abstracts in 11 different languages for readerships all over the world. Recent studies highlight global neurosurgery, including international electives offered to residents, the coronavirus pandemic's impact on global neurosurgical training, global health and neurosurgical volunteerism, systematic reviews on mission trips, neurosurgery's role within the overarching global surgery plan, and advocacy pieces on the impact of government policy decisions on global neurosurgery.

The Journal of Global Neurosurgery (JGNS) has a unique opportunity to publish and inspire global neurosurgery efforts worldwide. As global neurosurgery expands from individual to collaborative multi-institutional efforts, there is an excellent opportunity to highlight bi-directional training and partnerships, fueling the current and growing influence and interest in global neurosurgery. We aim to call attention to the outstanding neurosurgical care, collaborative efforts, public health initiatives, and critical health domains of finance, governance, informational management, service delivery, workforce development, and infrastructure. JGNS provides a venue for collaborative research, bi-directional teaching, and opportunities for authors throughout the world, particularly in LMICs, and, most importantly, to continue the discussion and action around equitable access to neurosurgical care who need it the most.

## REFERENCES

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