

InterSurgeon: A dynamic virtual mapping platform to facilitate and support global surgical partnerships

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InterSurgeon (<https://www.InterSurgeon.org>) is an online platform designed to facilitate and support global surgical partnerships. The main aim of the site is to allow all members of the surgical team and surgical care stakeholders find each other, interact, and help coordinate various facets of surgical care collaboration, including clinical care assistance, teaching, training, research, and infrastructure.

Founded in 2018 by William Harkness and Jim Johnston, both paediatric neurosurgeons, InterSurgeon was designed to be an independent, free, and sustainable social network platform for individuals/institutions in global surgery to join and create partnerships. Conceived at the International Symposium of the American Association of Neurological Surgeons (AANS) in Los Angeles in 2017, discussions with leading neurosurgeons from around the world were held to hammer out details of the creation and long-term evolution of an interactive web platform to facilitate collaborative partnerships in global surgery.

InterSurgeon ‘for clinicians’ was founded with support from the International Society of Pediatric Neurosurgeons (ISPN), the University of Alabama at Birmingham (UAB), and private donors. It went live for Pediatric Neurosurgery in March 2018 and the London-based digital design firm Novagram was commissioned to brand and develop the website. Since then, the site has received support from the Joint Pediatric Section of AANS/CNS, Foundation of International Education in Neurological Surgery (FIENS), and the G4 Alliance. With this support, ‘Adult neurosurgery’ and ‘urology’ were added as membership categories to the website. Furthermore, in 2019, a collaborative partnership was created between InterSurgeon and The G4 Alliance to better coordinate activities of NGO and academic department members of the consortium.

In 2019, the platform expanded to include modules for multiple surgical specialties (general surgery, ophthalmic surgery, oral and maxillofacial surgery, cardiothoracic surgery, neurosurgery, orthopaedics, ENT, plastic, reconstructive and burns surgery, obstetrics and gynaecology and urology) and other members of the surgical team (‘nursing’, ‘allied professionals for surgery’, ‘anaesthesia’, ‘interventional radiology’ and ‘equipment’). In addition, a category for ‘students’ was built with input from the International Student Surgical Network (InciSioN). To encourage growth of the network across multiple specialties, a Champion for each subspecialty was named as a point of contact.

In 2019, InterSurgeon also achieved charitable status. In this same year, the World Federation of Neurosurgical Societies (WFNS) created a Global Neurosurgery Committee (GNC) and planned to work with InterSurgeon. Dr Jim Johnston headed the technology and innovation subcommittee of the GNC 2.0, and InterSurgeon was showcased as a tool for communication and collaboration. In 2024, a new Burns Care map and matching algorithm was launched, developed in collaboration with the International Society for Burn Injuries (ISBI), allowing more efficient visualization and communication between clinicians/organization involved in burns care worldwide.

Currently, InterSurgeon has over 1000 individual members and 77 organisations representing more than 100 countries (Figure 1 and 2).

Specialty	Members
General Surgery	127
Neurosurgery	519
Cardiothoracic Surgery	9
ENT	13
Ophthalmic Surgery	5
Oral and maxillofacial Surgery	7
Orthopaedic Surgery	21
Plastic, Reconstructive and Burns	58
Obstetrics and Gynaecology	8
Urology	102
Anaesthesia	11
Nursing	7
Allied Health Professionals for Surgery	9
Interventional Radiology	2
Students	132

Figure 1. InterSurgeon members per specialty.



Figure 2. Countries with InterSurgeon Members

Neurosurgeons constitute 50% of the InterSurgeon membership and 40% of the registered organisations are neurosurgery focused, including FIENS, CURE International, NeuroKids, ISPN, Solidarity Bridge, and ReachAnother, among others (Figure 3).

Specialty	Clinicians	Organisations
Neurosurgery	519	31
-Adult	201	20
-Members that have not selected a subspecialty	139	11
-Neurosurgeon with pediatric interest		14
-Trained pediatric neurosurgeon	230	22

Figure 3: InterSurgeon Neurosurgery members

How does InterSurgeon work:

InterSurgeon works through an open-access, free registration, validation mechanism. The registration forms have detailed information stratified by specialty which facilitates both broad and specific searches for clinicians and organisations working worldwide. After InterSurgeon’s team validates the profile information of clinicians/organisations, members can immediately start using all the features of the platform. InterSurgeon has multiple features that individuals and organisations can access, including free use of augmented reality collaboration software, facilitating immediate connectivity and tools to build long term partnerships. As a dynamic virtual mapping platform, it can also be modified over time to reflect global surgical community needs.

Offer/request feature:

The InterSurgeon matching algorithm requires a member to post offers and requests based on specific expertise (offer) and needs (requests) of potential global surgery partnerships (Table 4). Offers are potential contributions that an individual or organisation can provide. Requests are desired contributions (what you are looking to learn, a service you require). The offers/request feature uses a matching algorithm that runs daily, is based on social network architecture, is optimised for accuracy, and is scalable to handle thousands of members.

Each offer/request form includes type of service, date, location, organisation, and what type of members it is open to. It also allows adding information that doesn’t fit in with any of the established categories. The more detailed the post is, the better chance that the received matches will be relevant for the member’s needs. InterSurgeon members can also search for offers/requests on the site, refining the search by organisation, category, offers, requests, specialty, language, and location.



Figure 4. Types of offers/requests.

Providing information about events and training/education opportunities:

InterSurgeon also facilitates communication among clinicians and organisations and aims to avoid silos and duplicated efforts. All members can freely contact all other members (using the ‘Contact’ buttons on profiles, offers and requests) and can post events like webinars, international conferences, etc. that will be shared with other members. InterSurgeon can also serve as a hub for recruiting diverse members for a surgical team, and showcase training, scholarship, and fellowship opportunities worldwide. The InterSurgeon team also contacts members to learn more about their work in global surgery, publicize events and highlights them in our social media channels and ‘News’ page for all the members to review.

Resource global surgery hub:

The Resource page of the website can be regularly modified according to specialty needs and active participation. Currently, the website has sections for adult neurosurgery, pediatric neurosurgery, general surgery, and burns care. The objective of this section is to be an open-source (free) platform that will provide essential information, links to relevant resources, and technological tools to improve surgical care and collaborations.

Another resource available for members includes free HelpLightning virtual collaboration software for smartphones, tablets, and smart glasses. The software enables experienced surgeons to guide and interact visually with their global partners during surgery and clinic, anywhere in the world. The software has been used for mentoring in neuroendoscopy and craniofacial reconstruction in Vietnam and Ghana with excellent preliminary results.

Under the leadership of Tariq Khan and Kee Park, the WFNS Global Neurosurgery Committee is an initiative to coordinate and accelerate global neurosurgery education, health policy and advocacy initiatives to improve access to timely, safe, and affordable neurosurgical care to all who need it. InterSurgeon is eager to support this WFNS initiative, facilitate connections, and publish updates on successful collaborations in global neurosurgery (<https://intersurgeon.org/news/intersurgeon-in-the-gambia-an-update-from-dr-john-jabang-at-st-edward-francis-small-teaching-hospital-in-banjul/>).

Questions about how to get involved in InterSurgeon? Please email Martina Gonzalez (mgonzalezgomez@uabmc.edu) or James Johnston (james.johnston@childrensal.org).