Brief History of Neurosurgical Spine Societies in the United States: Part 2

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In a previous essay,¹ we examined the intertwined history of United States (US) spine surgery pioneers and achievements, and the emergence of domestic spine societies. In this follow-up article, we look towards the future and highlight the critical role of US spine societies in education, research, and advocacy.

Advancing spine care through education is a priority of larger US spine societies. The American Association of Neurological Surgeons (AANS)/Congress of Neurological Surgeons (CNS) Section on Disorders of the Spine and Peripheral Nerves (DSPN) was the first neurosurgical spine society in the US. The leadership for the annual spine section meeting from 2010–2021 is listed in Fig. 1. The first meeting of the DSPN chaired by Barth Green and George Sypert in 1985 included lectures and hands-on courses in spinal instrumentation to address the educational needs of a growing subspecialty of neurosurgery focused primarily on spine surgery. The DSPN annual meeting has since evolved from a small intimate group to a larger meeting of > 500 domestic and international spine surgeons presenting innovative research, case-based debates, subspecialty symposia, intersociety panel discussions, and surgical technique cadaver labs. Since 2016, the DSPN bestows the Journalistic and Academic Neurosurgical Excellence Award to the senior neurosurgical resident or fellow in an American neurosurgical program that has been academically productive in the previous 12 months and has achieved the top manuscript submitted to the annual DSPN Spine Section meeting (Table 1). Similarly, the Charles Kuntz Scholar awards the top neurosurgical residents or fellows who author outstanding abstracts (Table 2). The rapidly growing number of residents and fellow trainees attending this meeting signifies the critical role of spine societies in not only educating current members, but mentorship and professional development of the next generation of spine surgeons.

Looking to the future, advancing technology may change the way in which education is delivered by societies. Neurosurgery and spine societies in the US have developed robust online educational opportunities. Examples include CNS NEXUS (a repository of neurosurgical operative techniques and approaches), The Neurosurgical Atlas, NASS video library, AO spine webinars, videos, and podcasts. Content is created and/or curated online by experts in their respective fields. The Neurosurgery Podcast by Michael Wang and John Kolecun is an example of a popular weekly audio program with guest neurosurgeons sharing expertise in the field of neurosurgery and spine. The clear benefit of digital media is the ability to provide education that is not limited by conventional constraints of geography and travel costs. Further, online education can often be accessed easily via mobile technology.
and when convenient based on the learner’s schedule.

The ongoing coronavirus disease 2019 pandemic has accelerated recent adoption of teleconferencing by spine societies and members. The absence of in-person meetings in 2020 and the potential for lingering travel restrictions for the foreseeable future may further establish digital media as a viable educational outlet. Despite these advantages of online education, a notable loss is the important camaraderie of shared experiences that occurs with live, in-person meetings and events. This social aspect of in-person meetings was clearly a cherished quality dating back to the first DSPN meeting in 1985 and should be preserved moving forward.

In addition to education, research is an integral mission of spine societies. Societies have established funds through charitable donations, and annual meeting and corporate sponsorship revenue to support researchers with grants and fellowships. A clear priority of spine society supported research is advancing clinical spine care through clinical trials, comparative effectiveness research, and evidence-based guidelines. As healthcare costs in the US continue to rise, comparative effectiveness and patient-centered outcomes research have increasing importance in informing surgeon practice. Six of the 100 national priorities identified by the Institute of Medicine relate directly to spine surgery.

As a result, spine societies have partnered to create surgical registries to objectively measure and demonstrate quality of care. These nation-wide registries collect longitudinal patient reported outcome measures to identify clinical efficacy for various surgical interventions and indications. A pioneering example in neurosurgery was the National Neurosurgical Quality Outcomes Database (originally N2QOD, now QOD). The spine registry component of QOD has accumulated over 25,000 patients across > 50 sites and has accounted for numerous research presentations and publications. More recently, the AANS and the American Academy of Orthopaedic Surgeons have partnered to create the American Spine Registry, which will incorporate QOD into a broader platform involving neurosurgery and orthopedics. Neurosurgeons and orthopedic spine surgeons have a shared interest in advancing spine clinical care, and joint collaborative registries are an opportunity to increase study populations across a spectrum of practice patterns. An important directive in the near future is to increase our knowledge base.
Table 2. Charles Kuntz Award winners 2016–2020

| Year | Charles Kuntz IV Scholars |
|------|--------------------------|
| 2016 | Nitin Agarwal, Andrew Chan, Ekamjeet Dhillon, Doniel Drazin, Benjamin Elder, Gurpreet Gandhoke, Ezequiel Goldschmidt, Randall Graham, Kiyoshi Ito, Ricky Kalsa, Darryl Lau, Rory Mayer, Marcus Mazur, Todd Vogel |
|      | Michael Mcdowell, Catherine Miller, Nelson Moussazadeh, Rory Murphy, Tianyi Niu, Aria Nouri, Alp Ozpinar, Brenton Pennicooke, Kavelin Rumalla, David Salcetti, Hesham Soliman, Zachary Tempel, Alexander Tuchman |
|      | Anand Veeravagu, Michael Mcdowell, Catherine Miller, Nelson Moussazadeh, Rory Murphy, Tianyi Niu, Aria Nouri, Alp Ozpinar, Brenton Pennicooke, Kavelin Rumalla, David Salcetti, Hesham Soliman, Zachary Tempel, Alexander Tuchman |
|      | Anand Veeravagu, Michael Mcdowell, Catherine Miller, Nelson Moussazadeh, Rory Murphy, Tianyi Niu, Aria Nouri, Alp Ozpinar, Brenton Pennicooke, Kavelin Rumalla, David Salcetti, Hesham Soliman, Zachary Tempel, Alexander Tuchman |
| 2017 | Vincent Alentado, Michael Cloney, Doniel Drazin, Benjamin Elder, Rory Goodwin, Peter Grunert, Daipayan Guha, Ibrahim Hussain, Christian Iorio-Morin |
|      | Michael Karsy, Michael Cloney, Doniel Drazin, Benjamin Elder, Rory Goodwin, Peter Grunert, Daipayan Guha, Ibrahim Hussain, Christian Iorio-Morin |
|      | Michael Karsy, Michael Cloney, Doniel Drazin, Benjamin Elder, Rory Goodwin, Peter Grunert, Daipayan Guha, Ibrahim Hussain, Christian Iorio-Morin |
| 2018 | Mark Attiah, Yi-Ren Chen, Lee Chieng, Michael Cloney, Shashank Gandhi, Jakub Godzik, Jian Guan, Allen Ho, Ibrahim Hussain, Katie Krause |
|      | Michael Karsy, Michael Cloney, Doniel Drazin, Benjamin Elder, Rory Goodwin, Peter Grunert, Daipayan Guha, Ibrahim Hussain, Christian Iorio-Morin |
|      | Michael Karsy, Michael Cloney, Doniel Drazin, Benjamin Elder, Rory Goodwin, Peter Grunert, Daipayan Guha, Ibrahim Hussain, Christian Iorio-Morin |
| 2019 | Owoicho Adogwa, Mohammed Alvi, Oliver Ayling, Andrew Chan, Islam Fayad, Shashank Gandhi, Jack Haglin, Allen Ho, Sertac Kirmaz, Mohamed Macki |
|      | Michael Karsy, Mohammed Alvi, Oliver Ayling, Andrew Chan, Islam Fayad, Shashank Gandhi, Jack Haglin, Allen Ho, Sertac Kirmaz, Mohamed Macki |
|      | Michael Karsy, Mohammed Alvi, Oliver Ayling, Andrew Chan, Islam Fayad, Shashank Gandhi, Jack Haglin, Allen Ho, Sertac Kirmaz, Mohamed Macki |
| 2020 | Oliver Ayling, John Burke, Andrew Chan, Ken Chang, Lee Chieng, Samuel Farber, Nida Fatima, Yaroslav Gelend, Jakub Godzik, Jacob Hoffman |
|      | Michael Karsy, Mohammed Alvi, Oliver Ayling, Andrew Chan, Islam Fayad, Shashank Gandhi, Jack Haglin, Allen Ho, Sertac Kirmaz, Mohamed Macki |
|      | Michael Karsy, Mohammed Alvi, Oliver Ayling, Andrew Chan, Islam Fayad, Shashank Gandhi, Jack Haglin, Allen Ho, Sertac Kirmaz, Mohamed Macki |

from information garnered via these registries that ultimately translates to improved patient care.

Last, advocacy has emerged as a critical mission of spine organizations to ensure patient access to spine surgical care. Spine societies advocate for patients and surgeons through guidelines taskforce committees, payor response committees, and the AANS/CNS Washington Committee. The undue pressures of the current healthcare climate often render individual spine surgeons unable to adequately express their concerns. The AANS/CNS Washington Committee serves as an important voice representing neurosurgeons and spine surgeons before the government and policymakers on issues related to accessibility of care, reimbursement, and health policy. Current initiatives include addressing unnecessary prior authorization practices by insurance companies, serving as surgeon representatives on common procedural terminology coding committees, confronting medical liability reform, and the creating of guidelines to standardize practice. With the increasing healthcare economic burden in the US, it is imperative for spine societies to serve as advocates protecting spine surgeons and their ability to continue to deliver quality care.

In his 2010 CNS presidential address, Gerald “Rusty” Rodts emphasized that if we “do not improve the medical evidence for our treatments, and if we do not improve our training process to better standardize the rates and indications for spinal surgery, the federal government and private insurers will certainly redefine how we care for patients.” Led by spine surgeons, spine societies are at the forefront of education, research, and advocacy. With the uncertain healthcare landscape, spine societies will continue to have a central role in supporting US spine surgeons and advancing spine surgical care.

CONFLICT OF INTEREST

The authors have nothing to disclose.

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