

AOSpine North America Community News Winter 2018/19





## Table of Contents

Content	Page
From the Editor	3
AOSpine North America Board and Committees	4
Committee Updates	6
Upcoming AOSpine North America Courses	8
AOSNA Continues Annual Tradition with Reception at NASS	9
AOSpine North America Debuts New Courses for 2018	10
Global Spine Congress in Toronto early bird savings	11
A Busy Year for Global Spine Journal	12
AOSNA Young Investigator Research Grant	13
RISCIS Enrolls 150th Patient	14
New AOSNA Fellows	15
Job Openings	16



## From the Editor

#### Dear Colleagues:

Winter is upon us again! Welcome to the Winter 2018 AO Spine North America (AOSNA) Newsletter. There is a lot happening and this issue contains updates from research, education and community development. Some of the highlights in this issue are as follows:

- AOSNA Debuts new Regional Residents Courses and Hospital Based MIS Simulation Course
- The AOSNA 4th Annual Reception hosted at the NASS Annual Meeting in Los Angeles
- Welcome to new committee members starting in 2019
- Welcome to new 2018-2019 Fellows
- AOSNA YIRGA winner, Dr. Kajana Satkunendrarajah discusses her research on the neuronal impact of respiratory function following spinal cord injury

This newsletter again has the highlights of the educational, research, fellowship and community development endeavors this past quarter.

The AO continues to be the go-to for knowledge and camaraderie in spine care. Global membership has reached record levels. There has never been a better time to join.

Sincerely,

**Lali Sekhon** 

Chairman

AOSNA Community Development Committee



## AOSpine North America Board and Committees

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Dan Gelb

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Committee Chair

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Committee Chair

Fellowship Committee Chair **AOSNA Education Committee** 

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Ahmad Nassr

Justin Smith

Daniel Gelb

Fellowship

**AOSNA Fellowship Committee** 

Committee Chair

Ted Choma

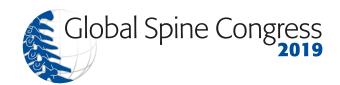
Past Chair

**Brandon Lawrence** 

Dan Sciubba

**Bradley Segebarth** 

Michael Weber



# The Global Spine Congress heads to North America



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## Committee Updates

#### **AOSNA Welcomes New Committee Members in 2019**

Please join us in welcoming the following surgeons appointed to AOSpine North America committee positions beginning January 1, 2019 for a 3-year term.

#### **AOSNA Education Committee**

Dr. Gregory Grabowski (University of South Carolina)
Dr. Tom Mroz (Cleveland Clinic)

#### **AOSNA Research Committee**

Dr. Jefferson Wilson (University of Toronto)

## **AOSNA Education Committee**John DeVine, MD

Greetings from the AOSNA Education Committee. I would like to personally thank Alpesh Patel and Roger Hartl for their time and contributions as members of the Education Committee for the last three years. Both will rotate off of the committee in 2019. Congratulations on a job well done! We are currently in the process of selecting their replacements.

The 2018 AOSpine Webinar Series was a huge success. Enrollment exceeded our expectations. The Curriculum Work Group met in August and developed the 2019 Webinar Series Agenda – which was approved by the Education Committee in September. We look forward to continued growth of this education initiative.

Regarding resident education, the flipped classroom approach continues to be utilized in the Principles Course with positive feedback from the participants and faculty. Additionally, the Regional Resident Courses piloted in 2018 were reviewed and five such courses are planned for 2019, with an agenda designed to be applicable to all orthopedic and neurosurgical residents. The first 2019 Regional Resident Course will take place in Seattle.

## AOSNA Research Committee James Harrop, MD

I would like to review the research committee's several functions and active projects:

#### 1. Young Investigator Research Grant Award winners (YIRGA)

AOSNA is leading the international community in our efforts to drive future education through research. One exemplary program is the YIRGA grants. AOSNA will award four YIRGA grants at \$20,000 each in 2019. The committee has spent considerable effort on reorganizing and reformatting the application process. Some changes include targeting clinicians who are doing research, commitment to awarding both clinical and basic science awards annually and limiting the applicant age to 45. Overall, the committee has been impressed with the continual improvement in the quality of the grant applications. The call for applications for the 2019 YIRGA awards was announced in October with the deadline of December 31, 2018. The committee has spent much time overviewing and redoing the application to make it easier and less time consuming for applicants.

#### **AOSNA Community Development Committee**

Dr. Gurvinder Deol (University of North Carolina)
Dr. Christina Goldstein (University of Missouri)

#### **AOSNA Fellowship Committee**

Dr. Matthew Colman (Rush University)
Dr. Ryan Spiker (University of Utah)

The September Fellows Course supplemented with the Practice Essentials component was a huge success. Members of the Education Committee, Fellows Committee and AONA Board conducted official business then served as the primary faculty for the course – and this model has proved successful in the production of this main event. The fellows' feedback was positive and they are looking forward to their reunion at Banff.

Planning for the 2019 Global Spine Congress in Toronto is in the works. Many of the committee members serve as scientific program directors and abstract reviewers. We are looking forward to the biggest and most successful GSC yet.

The International AOSpine Education Commission met in Amsterdam in September to review and plan for future educational strategies. AOSpine North America remains in alignment with the global educational vision.

#### 2. Focus issues

The Spinal Infections focus issue will be published in the Global Spine Journal and released in December 2018. We thank the AO community and the authors for all their efforts and dedication to this project. The next focus issue will be on Spine Patient Safety and Quality Improvement. The research committee is honored to be able to present a symposium on this topic at the 2019 Global Spine Congress in Toronto.

#### 3. Globalization of Research

Globalization of Research—Our AOSNA Research Committee is working with the AOSpine International Research Commission as we globalize the research agenda to allow all regions to apply for funding in order to execute the best and most relevant studies.

The AOSNA research committee is adapting itself to meet the AOSpine International global mission to improve patient care. There are numerous avenues that are opening to help provide improved care for our patients and we encourage your input.

## Committee Updates

# AOSNA Community Development Committee Lali Sekhon, MD

The AOSpine North America Community Development Committee, comprised of Lali Sekhon, Eric Massicotte, Pat Pritchard, Ripul Panchal and Brandon Lawrence (chair-elect). AOSpine has a revamped website. Membership continues to be strong and growing with over 6500 spine surgeon members worldwide and over 600 North American members. Fellows continue to be the heartbeat of the organization with the three-year program continuing engagement beyond fellowship.

Highlights for the 2nd half of 2018 include:

- 1. The 5th Annual Reception for AOSNA was held in Los Angeles, California on September 26th, 2018 in conjunction with the annual North American Spine Society meeting. This was again a very well attended meeting with an excellent turnout and is becoming the marque social event for AOSNA.
- 2. The 2nd Practice Essentials Meeting was held in Las Vegas, Nevada on September 15, 2018 as part of the Fellows Controversies Course. Over 70 participants attended this meeting creating an interactive meeting that was very well received and should become an annual fixture for fellows and young surgeons.
- 3. Social Media: AOSpine North America is on Facebook, Twitter, and Instagram.
- f facebook.com/aospine-North-America
- e @aospineNA
- in aospine
- aospine\_NA

4. Member Engagement Opportunities still available: Many members want to contribute and there are lots of ways to do it. Members have opportunities to get involved in education, research, marketing and promotion, fellowship outreach and professional growth. For those interested in becoming more involved, email Chi Lam at <a href="mailto:CLam@aospine.org">CLam@aospine.org</a>.

Preparations continue for the Global Spine Congress in May 2019, hosted by AOSNA in Toronto Canada. Prior AO fellows are welcome with current fellows being brought to the meeting for social and academic interactions. It should be a well-attended meeting highlighting camaraderie and evidence-based best practices for spine surgeons. Mark your calendar!

The AO Community continues to grow. With over 6,000 members worldwide, there has never been a better time to join. If you have not done so, join now.

## AOSNA Fellowship Committee Daniel Gelb, MD

The Fellowship Committee continues to make progress in establishing the fellowship as an ongoing educational experience, helping to foster the relationship between the fellows and AOSpine. Recently graduated fellows were awarded their fellowship certificates. Newly matched fellows entering their last year of residency were sent congratulatory letters to welcome them. In addition, the new Fellows participated in a highly successful course in September which included cadaver workshops, case presentations and practice essentials. All Fellows received their AO "swag" as well.

As the fall progresses the next round of fellowship funding is underway. The call for applications has been sent and we will begin to review these applications around the New Year. We successfully completed a revision of the application itself, which is more streamlined and focuses on those aspects of the programs which we used for evaluation and in making the awards. The fellowship award was decreased to \$65,000 per year (still the largest fellowship grant available in North America) in order to free up funds for other initiatives. Good luck to all the programs applying this year!

As Chair of this AOSNA committee, I continued to work on the international task force for learning pathways. There is great interest in standardizing fellowships across regions. At present I can proudly state that the North American fellowship model and the way in which we administer fellowship grants serve as the paradigm for other regions across the world.

There will be two positions on the committee opening as of January 1, 2019. The nomination process has begun. I look forward to welcoming new members to the committee. New initiatives regarding ongoing educational initiatives for former fellows are on the horizon.

I look forward to seeing many of our current and former fellows in Toronto for Global Spine Congress this Spring!

# Upcoming AOSpine North America Courses

AOSNA Webinar—Failed Back Syndrome

Jan. 16, 2019

AOSNA Course: Principles and Treatment of Spinal Disorders for Residents

Feb. 1-2, 2019 Las Vegas, NV AOSNA Webinar—Discitis and Osteomylitis

April 3, 2019

AOSNA Webinar—Thoracolumbar Burst Fractures: Treatment Controversies

May 29, 2019

AOSNA Part II Oral Board Review Course

June 22, 2019

Philadelphia, PA

AOSNA Webinar—Upper Cervical Trauma (Odontoid Yes or No?)

June 26, 2019

For more information about the courses or to register, please go to:

http://www.aona.org

#### **Did You Know**

Simulations for cognitive surgical training are now available on the Touch Surgery App.

Touch Surgery is a mobile interactive surgical simulation app that provides a detailed guide to every step of a surgical procedure. The first of three AOSpine modules have been finalized and are now available for download through the Touch Surgery app.

L4/5 Degenerative spondylolisthesis MIS TLIF using AP/lateral fluoroscopy

L4/5 Degenerative spondylolisthesis Open TLIF

C5/6 Cervical spondylosis treated with an anterior cervical discectomy and fusion

To access the AOSpine modules, start by downloading the Touch Surgery app to your iOS or Android mobile device. In the app, you will need to register first and then search for the AOSpine procedures you are interested in.

https://www.aointeract.org

### The AOSpine Masters Series, Vol. 10: Spinal Infections is now available

The AOSpine Masters Series, Vol. 10: Spinal Infections is a concise, state-of-the-art review covering all aspects of spinal infections, from basic science and epidemiology to fundamental surgical and nonsurgical approaches. Internationally renowned spine surgeons and many experts across the world provide clinical pearls and insights gleaned from years of hands-on expertise on underlying pathologies, imaging and diagnosis and surgical techniques, co-infection with HIV, postoperative problems, geriatric patients, and pseudoarthrosis.

CLICK HERE

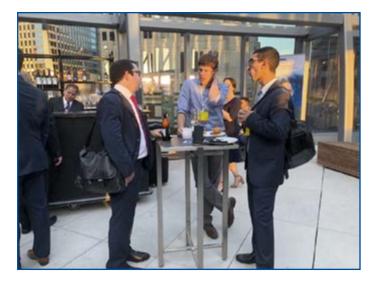


# AOSNA Continues Annual Tradition with Reception at NASS

On a balmy evening, the 5th floor terrace of the Intercontinental Hotel in Los Angeles hosted our annual AOSNA reception for members and non-members alike on the first evening of the North American Spine Society Annual Meeting. The reception, held on Sept. 26, set off on a friendly note as people socialized and caught up with friends and old acquaintances. Overall, the evening was a huge success and we thank you to those of you who were able to stop by.









# AOSpine North America Debuts New Courses for 2018





In line with meeting the objective of focusing upon our strengths in Resident and Fellows education, AOSpine North America developed and executed two new course types in 2018: The Regional Residents Courses and the Hospital-Based MIS Simulation Course.

#### **Regional Residents Courses**

Two Regional Residents Courses were hosted in 2018, the first at UCSF in San Francisco and the second at Northwestern Medical Center in Chicago. In response to numerous requests, the Curriculum Workgroup and Education Committee designed these courses to utilize local faculty to offer more opportunities for residents to attend our courses while limiting both the participant's and the faculty's time away from their programs.

In 2018 the course was a shortened version of our national spine residents course where the local Chairpersons chose topics most relevant to their region. It was open to local Orthopedic and Neurosurgical residents for whom introductory content and spine procedural skills labs would be appropriate. The feedback from

participants was overwhelmingly positive and we were able to provide excellent teaching opportunities to local faculty in those regions.

Through these pilot courses, we were able to identify that most residents attending wanted to learn more about the types of cases they would face while on call. Therefore, in 2019, spine emergency conditions will be the focus and the title will be "Surviving the Night". Special thanks to Eric Klineberg, Dean Chou, Alpesh Patel, and Michael Lee who served as both Chairpersons and Education Advisors for these important pilot programs. Thanks as well to all faculty who participated.

#### **Hospital-Based MIS Simulation Course**

Simulation is a hot topic in the world of continuing medical education. The AO Foundation, AOSpine Education Strategies Task Force, and AOSpine North America Education Committee are searching for new and innovative ways to deliver training to our target audiences.

One such idea was to utilize a simulation model from RealSpine to deliver training within the operating rooms of hospitals. These models offer simulated bone, tissue, blood, and CSF; and, allow participants to conduct practical exercises in several MIS procedures. Recently, Roger Hartl, MD chaired an MIS course at Weill-Cornell Medical Center that brought MIS education to the residents and fellows at several New York City area institutions (Cornell, NYU, Montefiore, St. Barnabas, Sloan Kettering, and the Hospital for Special Surgery). Most of the didactic topics were offered as pre-recorded lectures and reading assignments that participants

accessed prior to the course. During the onsite portion of the course, participants focused upon conducting practical labs utilizing navigation and implant/instrumentation systems to conduct MIS TLIF procedures with navigated pedicle screw fixation.

The initial feedback from both the local faculty and participants was that they felt these were extremely realistic simulations and they said the model had advantages over cadaveric specimens for these procedures. The limiting factor to the current models appears to be in the breadth of procedures that can be done, the number of levels (1) and the way (navigation) that those procedures must be conducted. Overall, the course was an extremely successful event for the senior residents and fellows who attended. Special thanks to Dr. Hartl, and the local faculty of Dr. Virk, Dr. Elowitz, and Dr. Fu who made this course so successful.

# Register now for the Global Spine Congress (GSC) in Toronto to take advantage of early bird savings

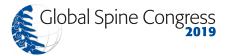
With only six months to go, it's never too early to start making plans to attend the 2019 GSC in Toronto, taking place from May 15-18, 2019. Register by December 20 to take advantage of the Early Bird Discount and save \$80 USD off your registration fee. The GSC explores new approaches in spine treatment and provides the opportunity to meet the world's best spine experts.

In total, 1,501 abstracts were submitted to the GSC in Toronto – a 36% increase in abstracts submitted compared to last year. The increase in number of abstracts received is evidence that the GSC is marked on the agenda of spine surgeons worldwide and the growth trend continues.

We are expecting over 2,000 participants to attend the GSC in Toronto and are excited to see the congress return to North America for its 10-year anniversary. The GSC is a great venue to network with spine professionals from around the world, explore career development opportunities, and gain access to the world's best research and clinical experts.

#### Why wait? Register today!

In addition to our early bird discount, AOSpine members receive a \$150 (USD) discount off the GSC registration fee. Additional discounts also apply for medical or research students, residents, fellows and participants from low-income countries. Not an AOSpine member? Sign up for membership today. For more information on the GSC, visit www.gsc2019.org.





www.gsc2019.org • #GSCToronto



## A Busy Year for Global Spine Journal

The year is drawing to a close and Global Spine Journal has been busier than ever. We have had a record number of submissions, downloads and citations in 2018.

In September, GSJ published our newest special issue on Spinal Trauma led by Frank Kandziora. This issue features eight articles and is sponsored by the German Society for Orthopaedics and Trauma (DGOU). The issue is a unique German approach to the treatment of spine trauma patients. It features comprehensive treatment recommendations for spinal trauma. Even though this issue is from a German perspective is still a valuable tool for spine professionals and reflects the truly international scope of Global Spine Journal.

You can access the entire issue online here:

**CLICK HERE** 

You can also download the entire issue to read offline later.

GSJ has another upcoming special issue, sponsored by AOSpine North America and led by James Harrop. The focus is on Spinal Infection and it is comprised of 9 articles. This will provide a baseline of evidence-based literature to help direct patient care on spinal infections and will cover infection in the cervical, thoracic and lumbar spine. This issue will be published in the next few months, so look out for announcements on social media about the release.

GSJ would like to recognize some of the top GSJ articles of the year.

#### **Top 5 Cited Articles:**

### These are the top 5 articles cited in 2018 that were published in 2016 and 2017

 "Approach-Related Complications of Anterior Lumbar Interbody Fusion: Results of a Combined Spine and Vascular Surgical Team".

**CLICK HERE** 

 "Risk Factors for Venous Thromboembolism following Thoracolumbar Surgery: Analysis of 43,777 Patients from the American College of Surgeons National Surgical Quality Improvement Program 2005 to 2012".

CLICK HERE

3. "The Thoracolumbar AOSpine Injury Score".

CLICK HERE

4. "Impact of Operation Time on 30-Day Complications After Adult Spinal Deformity Surgery".

CLICK HERE

5. "Correlation and Reliability of Cervical Sagittal Alignment Parameters between Lateral Cervical Radiograph and Lateral Whole-Body EOS Stereoradiograph".

**CLICK HERE** 

#### Top 5 Dowloaded Articles:

### Articles that were Published and Downloaded in 2018

 "Degenerative Lumbar Spine Disease: Estimating Global Incidence and Worldwide Volume".

**CLICK HERE** 

2. Worldwide Steroid Prescription for Acute Spinal Cord Injury.

**CLICK HERE** 

"Is There an Optimal Wound Closure Technique for Major Posterior Spine Surgery? A Systematic Review".

**CLICK HERE** 

 "Radiological Fusion Criteria of Postoperative Anterior Cervical Discectomy and Fusion: A Systematic Review".

**CLICK HERE** 

5. "The Science and Clinical Applications of Placental Tissues in Spine Surgery".

**CLICK HERE** 

#### **Now Published!**

Special Issue: Spine Trauma Treatment



As always, don't forget to follow GSJ on social media to get the most up-to-date news and information including posts about new issue releases, top cited articles, special issue releases and editor's choice articles. You can follow us on:

Facebook at www.facebook.com/globalspinejournal and on Twitter @globalspinej

### AOSNA Young Investigator Research Grant Award Winner Dr. Kajana Satkunendrarajah on Cervical Excitatory Neurons Sustain Breathing After Spinal Cord Injury



Traumatic cervical spinal cord injury disrupts the spinal respiratory network that innervates the phrenic motor neurons (PMN) leading to dysfunctional diaphragm activity and impaired breathing. Pulmonary complications such as infection, atelectasis, and ventilator dependence due to hypoventilation are the leading causes of death in these patients. More rostral the injury, the higher the respiratory deficits and likelihood of requiring long-term mechanical ventilator support. Despite the respiratory system's capacity for spontaneous recovery over time, the occurrence of pulmonary morbidity is high due to the limited extent of compensatory modification of the respiratory network. Understandably, individuals with spinal cord injury (SCI) place the top priority on improved breathing and ventilator independence for enhanced quality of life, making the respiratory function of paramount importance in SCI research.

Non-traumatic SCI (ntSCI) as in Cervical Spondylotic Myelopathy (CSM), conversely, does not typically lead to respiratory difficulties. Based on this observation, Kajana Satkunendrarajah and her co-first author Spyridon Karadimas uncovered the mechanism by which respiratory function was maintained under CSM using a mouse model of CSM. In spite of the significant damage to the spinal respiratory circuitry, CSM mice were able to sustain breathing similar to control mice, an observation akin that seen in human CSM patients. The progressive nature of the compression of the cervical spinal cord in CSM allowed for the spinal neural network to undergo compensatory modifications that allowed for the maintenance of adequate respiratory motor output despite the loss of PMN. Satkunendrarajah and Karadimas et al., then went onto demonstrate that the modification and the preservation of respiratory function in CSM mice were through the recruitment of cervical excitatory interneurons (elNs) using immunohistochemistry and trans-synaptic viral tracings.

The authors also used the Designer Receptors Exclusively Activated by Designer Drugs (DREADDs) technology, which utilizes a viral vector to manipulate the activity of subpopulations of cervical elNs selectively. In CSM mice, the expression of a chimeric receptor-chloride channel in cervical elNs significantly impaired the ability of these mice to maintain breathing. Using the same technique to silence the cervical elNs in traumatic SCI mice acutely, the authors demonstrated that the cervical elNs are critical for the spontaneous recovery of respiratory function after traumatic SCI.

Moreover, based on their findings that activation of cervical eINs can enhance breathing in the uninjured state, these neurons emerge as an optimal target to rescue breathing immediately after SCI. In fact, respiratory insufficiency in the acute phase after traumatic SCI can lead to life-threatening complications. Indeed, Kajana and Spyros showed that pharmacogenetic stimulation of cervical eINs immediately after traumatic SCI lead to a substantial recovery respiratory related diaphragm function in mice.

In summary, they have identified a subpopulation of spinal excitatory interneurons that are essential for the recovery of respiratory function but that are not necessary for the maintenance of breathing under normal conditions. Manipulation of this neuronal subpopulation appears to be a viable strategy for the restoration of breathing after spinal cord injury.

Since beginning her graduate work, a significant component of Kajana's thesis was to investigate respiratory plasticity and to discover effective strategies to restore breathing after spinal cord injury. After completing the Ph.D. in Michigan, Kajana completed her postdoctoral training in Dr. Michael Fehlings' laboratory.

Highly complex neural systems control rhythmic motor behaviors such as breathing and locomotion and allow an organism to

sustain life and interact with their surroundings. Specific neural networks within the central nervous system are responsible for the generation and regulation of these behaviors. These networks are often disrupted following an injury to the spinal cord threatening the individual's survival and quality of life. Kajana's research program aims to understand the neural control of locomotion and breathing with the goal of developing new therapeutic strategies for restoring these functions after spinal cord injury. Kajana is very thankful to have received an AOSpine North America Young Investigator Research Grant Award to support her work. This funding has allowed her to successfully support her efforts in uncovering a subpopulation of cervical neurons for the restoring breathing. This work has been published recently in Nature and highlighted in Nature Reviews Neuroscience.



Kajana Satkunendrarajah



Spyros Karadimas

### RISCIS Enrolls 150th Patient

We are pleased to announce that the 150th patient has been enrolled in the ongoing AOSpine North America "Multi-Center, Randomized, Placebo-Controlled, Double-Blinded, Trial of Efficacy and Safety of Riluzole in Acute Spinal Cord Injury" study. The study, also known as RISCIS, is currently recruiting SCI patients within 12 hour of injury at 24 major trauma centers in Australia, Canada and the United States.

RISCIS is the largest active prospective spinal cord injury trial in the world and one of the most extensive randomized controlled spinal cord injury studies ever conducted.

The study is made possible with support from AOSpine International, The Christopher and Dana Reeve Foundation's North American Clinical Trials Network with support from the U.S. Department of Defense, The Ontario Neurotrauma Foundation, and The Rick Hansen Institute.

At present, there are over one million people living with Spinal Cord Injury in North America alone, with annual costs for this acute treatment and chronic care of these patients totaling four billion dollars. The worldwide prevalence of Spinal Cord Injury is unknown. In spite of the immense impact of Spinal Cord Injury at a personal and societal level, a highly effective and safe pharmacologic treatment remains absent.

More information about the study can be found

HFRF

or by emailing RISCIS@nor-consult.com

### Welcome to New AOSNA Fellows

The AOSNA Board and Fellowship Committee is honored to welcome the incoming fellows of the 2018-2019 academic year. These fellows will further their medical careers in spine at AOSNA fellowship sites that are dedicated to core values of caring and compassion in the context of state-of-the-art clinical experiences and facilities.

#### **Cleveland Clinic**

Elyne Kahn, MD, MPH Shaleen Vira, MD Daniel Coughlin, MD Ghaith Habboub, MD

#### **Columbia University Medical Center**

Griffin Baum, MD James Lin, MD Simon Morr, MD, MPH Joseph Osorio, MD

#### **Emory University**

Raj Gala, MD Elliott Kim, MD Tyler Jenkins, MD John Kleimeyer, MD

#### **Hospital for Special Surgery**

Philip York, MD Yoshihiro Katsuura, MD Jeremy Steinberger, MD Sohrab Virk, MD Ravi Verma, MD

#### **Houston Methodist**

Daren McCalla, MD Zackery Witte, MD

#### **Johns Hopkins University**

Matthew Goodwin, MD, PhD

#### **Mayo Clinic**

Navid Khezri, MD Nayef Dajim, MD, MPH, PT

#### **McGill University**

Ahmed Alshammasi, MBBS, FRCSC Abdulaziz Bin Shebreen, MD Oded Rabau, M Med Rodrigo Navarro Ramirez, MD Alisson Teles, MD

#### **Northwestern University**

Joseph Snavely, MD

#### **NYU Hospital for Joint Disease**

Alexander Ricco, MD Anand Segar, MD Deeptee Jain, MD Elizabeth Lord, MD Roosevelt Offoha, MD

#### **OrthoCarolina Spine Center**

Christian Klare, MD Casey Davidson, MD

#### **Rush University**

Chris Witiw, MD, MS

#### **Stanford University**

Thomas Niemeier, MD

#### **Swedish Neurosciences Institute**

Ronen Blecher, MD Andrew Jack, MD Brooks Osburn, MD Wyatt Ramey, MD Zane Tymchak, MD Basem Ishak, M Med Emre Yilaz, MD

#### **Thomas Jefferson University**

Christian Hoelscher, MD

#### **Toronto Western/University of Toronto**

Fan Jiang, BSc, MDCM, FRCSC Anastasios Charalampedis, MD Jamie Wilson, BA, Bch, BmedSci, FRCS Pratipal Kalsi, MBBS, FRCS, BSc, MPhil Wu Pang Hung, MBBS, MMed, FRCS

#### **University of Alabama at Birmingham**

Chong Weng, MD

#### **University of British Columbia**

Dan Banaszek, MDCM, MD, FRCSC, MHSc Tom Inglis, MBChB Nathan Evaniew, MD, PhD, FRCSC

#### **University of Calgary**

Patricia Sirois, FRCS Sultan Aldebeyan, MD, MSc, FRCSC Ahmed Aoude, BA, MSc, MDCM, FRCSC Sasha Rogers, BSc, MBBS, MPhil

#### **University of Cincinnati**

William Jeong, MD, MBA, MS Bryan Krueger, MD

#### **University of California Davis**

Richard Hurley, MD Douglas Nowacki, MD

#### **University of California San Francisco**

Patrick Dermarkarian, MD, MBA Kevin Taliaferro, MD Roman Trimba, MD Leslie Robinson, MD, PharmD, MBA

#### **University of Maryland**

Ryan Gentry, MD Shane McGowan, MD Ahsley Strickland, MD

#### **University of Missouri**

Sameh Abolfotouh, MD

#### **University of Pennsylvania**

Christopher Catapano, DO Sajeel Khan, MD

#### **University of Rochester**

Sherif M. Sherif, MD

#### **University of Southern California**

Milad Alam, MD Ian Buchanan, MD Kevin Wiley, MD

#### **University of Utah**

Daniel Tobert, MD Akshay Yadhati, MD

#### **University of Virginia**

Saikiran Murthy, DO

#### **University of Washington**

Ashraf El Naga, MD Edward Jung, MD Eric Rebich, DO

#### **Washington University**

Owoicho Adogwa, MD, MPH Mostafa El Dafrawy, MBBCh Nicholas Pallotta, MD Adam Wegner, MD, PhD

#### **Weill Cornell Medical College**

Christoph Wipplinger, MD Murat Cosar, MD, PhD Franziska Anna Schmift, MD

#### **West Virginia University**

Samuel Adams, MD

#### **Yale University**

Pedro Coutinho, MD

### Job Openings

The University of Pennsylvania Comprehensive Spine and Deformity Center has an unexpected opening for a Spine fellowship position available from August 2019 to July 2020.

The fellow will work with four different Spine attendings:

Drs. Vincent Arlet, Harvey Smith, Andrew Milby and Comron Saifi.

The fellow will participate in all clinical activities at Penn Presbyterian Hospital and Pennsylvania Hospital.

It is anticipated that the experience will encompass four days a week in the OR and one day a week in clinic.

There are ample research opportunities, both clinical and basic science, and you will be expected to participate in at least one research project.

Interested candidates should contact Drs. Arlet and Smith and provide:

- Personal Statement
- USMLE Scores
- 3 Letters of recommendation

You must be eligible for a Pennsylvania State Medical License.

Note that this is a non-ACGME accredited fellowship position and this fellowship position is not part of the SFMatch.

Vincent Arlet MD vincent.arlet@uphs.upenn.edu

Harvey Smith MD Harvey.smith@uphs.upenn.edu

Do you have a job opening that you would like to share with the AOSNA community? If so, just send us an e-mail to clam@aospine.org and we'll post it in our next newsletter.





#### Editors-in-Chief:

Jeffrey C. Wang, MD, USC Spine Center, USA Jens R. Chapman, MD, Swedish Medical Center, USA Karsten Wiechert, MD, Schön Klinik München Harlaching

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# Special Issue: Spinal Infections: From Prevention to Cure

AOSpine North American (AOSNA) is honored to have the ability to present this focused issue on spinal infections. As we are all aware, spinal infections are a prevalent part of our daily treatment regimen as spine surgeons. Whether these infections are in our elective practice or emergencies.

#### **Featured Articles:**

- Surgical Site Infection in Spine Surgery: Who Is at Risk?
- Postoperative Spine Infection: Diagnosis and Management
- Etiology and Surgical Management of Cervical Spinal Epidural Abscess (SEA): A Systematic Review
- Spinal Tuberculosis: Current Concepts





...a focused evidence based review of spinal infections whether iatrogenic or spontaneous and provides insight on how to improve our practices and provide better care for our patients.

- James S. Harrop, MD, FACS, Thomas Jefferson University





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