

2023 FINAL PROGRAM



North American Skull Base Society

# 32<sup>nd</sup> Annual Meeting

*NASBS: Friends and Family*

**February 17-19, 2023**

JW Marriott Tampa, FL

Pre-Meeting Dissection Course: **February 15-16, 2023**

2023 PRESIDENT: Lee A. Zimmer, MD, PhD

SCIENTIFIC PROGRAM CO-CHAIRS: C. Arturo Solares, MD & Donato Pacione, MD

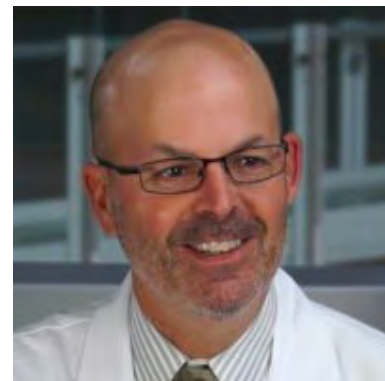
PRE-MEETING COURSE CO-CHAIRS: Brian Thorp, MD and Gabriel Zada, MD

SCIENTIFIC PROGRAM COMMITTEE: Siviero Agazzi, MD, MBA; Norberto Andaluz, MD; Emily Barrow, MD; Carolina Benjamin, MD; Wenya Linda Bi, MD, PhD; Hamid Borghei-Razavi, MD; David Friedmann, MD, MSc; Bharat Guthikonda, MD, MBA; Walter Jean, MD; Claudia Kirsch, MD; Varun Kshetry, MD; Corinna Levine, MD, MPH; Nyal R. London, MD, PhD; Erin McKean, MD, MBA; Kibwei McKinney, MD; Mia Miller, MD; Jennifer Moliterno Gunel, MD; Jacques J. Morcos, MD; Sarah Mowry, MD; Maria Peris Celda, MD, PhD; Christopher Rassekh, MD; Pablo Recinos, MD; Raj Sindwani, MD; Nathan Zwagerman, MD

Dear Friends and Skull Base Family,

Welcome to the 32nd Annual Meeting of the North American Skull Base Society!

This meeting of honored skull base surgeons will be held at the JW Marriott Tampa Water Street in Tampa, Florida from February 17-19, 2023, with the pre-meeting hands-on dissection course February 15-16, 2023. The JW Marriott is wonderfully located close to many of Tampa's best locations, including the Tampa Riverwalk, Florida Aquarium, Tampa Bay History Museum and Sparkman Wharf. Amenities include a rooftop heated pool, 24-hour fitness center and a full-service spa.



Lee A. Zimmer, MD, PhD

The meeting theme is "Friends and Family". The last few years have been challenging for the Society, medicine and personally with the COVID pandemic. As we rise from the pandemic, we have seen tremendous enthusiasm in registration for this year's meeting. I, and I hope all of you, look forward to seeing old friends, making new friends, and continuing to build the NASBS family.

I want to personally thank the Scientific Program Committee for creating a fantastic program. Drs. Arturo Solares and Donato Pacione have worked tirelessly with their committee to form a dynamic and diverse faculty. Our program includes the hands-on dissection course, keynote and honored guest lectures, expert debates, the new Kawase Education Day, live dueling dissections in the Rhoton Room, tumor boards, Women in Skull Base session, 3D anatomic reviews, hot topic round tables and panels, video sessions, video abstracts, proffered paper sessions and the always entertaining Skull Base Jeopardy. The Pre-Meeting Dissection Course presented by Drs. Brian Thorpe and Gabriel Zada will provide expert lectures on skull base anatomy and hands-on dissection. This year we are also offering access to lectures with dissection observation for a discounted price.

The Welcome Reception and Poster Viewing will be Friday night at 6:05pm in the Exhibit Hall. Please greet and thank our corporate sponsors and exhibitors for supporting the society. On Saturday we will have our New Member Reception at 6:30pm at the Marriott (invitation only) and our Main Social Event at 7:30pm at the Tampa Bay History Center. We look forward to your attendance.

My guests of honor include Drs. Sebastian Froehlich, Professor and Chairman, Department of Neurosurgery, Lariboisiere University Hospital; Jonas T. Johnson, Professor, Department of Otolaryngology, University of Pittsburgh Medical Center; Ravi Samy, Director of Otolaryngology, Lehigh University; Philip Theodosopoulos, Professor, Neurological Surgery, UCSF; and, Emeritus Research Professor Jeffrey Keller, PhD, University of Cincinnati and Mayfield Clinic. I have been educated by, worked with, and continue long-lasting friendships with these outstanding educators and I believe they will give fascinating perspectives on skull base surgery, anatomy, and the current state of medicine.

It has been my humble privilege to serve as your president and look forward to seeing everyone in Tampa.

Lee A. Zimmer, MD, PhD  
NASBS President 2022-2023

# Keynote and Honored Guest Speakers

## Keynote Speaker



### **Ravi N. Samy**

Dr. Ravi N. Samy is a Neurotologist and the new Director of the Otolaryngology-Head and Neck Surgery program at the Lehigh Valley Health Network (LVHN) in Allentown, PA.

Dr. Samy was born in what is now known as Chennai, India, and immigrated to the United States at the age of four. He spent most of his formative years living in Texas, but he moved to Duke University in North Carolina for his undergraduate education. After graduating magna cum laude with

a bachelor's degree in zoology, Dr. Samy attended the Duke University School of Medicine until his graduation in 1995. He then completed his residency training at Stanford University School of Medicine, where he developed a love for otology, neurotology, and skull base surgery. Dr. Samy spent two years at the University of Iowa as a Neurotology fellow before moving back to Texas to be an Assistant Professor at the UT-Southwestern Medical Center in Dallas. He then spent 17 years at the University of Cincinnati/Cincinnati Children's, where he created an ACGME accredited, two-year Neurotology fellowship as well as an International Fellowship in Advanced Otology. His research interests include cochlear and auditory brainstem implantation as well as acoustic neuromas, neurofibromatosis type 2, facial nerve tumors, cholesteatomas, and other diseases and disorders of the lateral skull base. He and his colleague, Dr. Brian Earl, were awarded an NASBS research grant for their oncolytic virus work for the treatment of cholesteatomas and epidermoid cysts of the skull base.

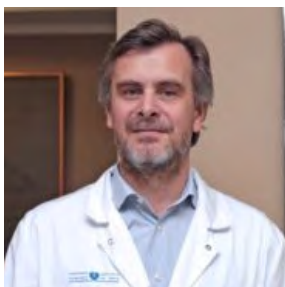
#### Education

Medical School Duke University School of Medicine – Durham, NC Residency Stanford University Medical Center – Palo Alto, CA Fellowship University of Iowa Hospitals and Clinics – Iowa City, IA

#### Board Certifications

American Board of Otolaryngology (ABO Sub-specialty Certification in Neurotology)

## Honored Guest Speakers



### **Prof. Sebastien Froelich**

Sebastien Froelich is currently professor and chairman of the department of Neurosurgery at the University of Paris- Lariboisière Hospital, Assistance Publique-Hôpitaux de Paris.

After completing a neurosurgery residency at the University of Strasbourg, he obtained research and clinical fellowship training in skull base surgery at the University of Cincinnati, under the direction of H. van Loveren, PV Theodosopoulos and J.T. Keller. In 2008, he was appointed Professor of Neurosurgery at Strasbourg University. In 2011, he joined Prof. Bernard George

in the department of Neurosurgery of Lariboisière University Hospital in Paris and became chairman of the department in 2014.

His primary interests are the treatment of skull base lesions, with an expertise in open and endoscopic techniques, and vascular neurosurgery. His research interest is focused on translational chordoma research, the link between progestins and meningiomas, and the development of

# Keynote and Honored Guest Speakers

innovative and novel skull base and endoscopic techniques. He is director since 2009 of international hands-on skull base training program in IRCAD Strasbourg and Taiwan.



## **Jonas T. Johnson, MD, FACS**

Dr. Johnson has committed his life's work to the treatment of patients with diseases of the head and neck in an environment of education and inquiry. His current appointment is as Distinguished Service Professor and Emeritus Chairman of the Department of Otolaryngology at the University of Pittsburgh School of Medicine. Dr. Johnson has limited his clinical practice to the treatment of patients with tumors of the head and neck. Most recently his work has focused on survivorship care for head and neck cancer survivors and the avoidance of low value interventions.

In addition to his clinical practice, he has an established scholarly record of peer-reviewed publications, extensive mentorship experience, and a history of interdisciplinary collaboration.

He served as Editor of *The Laryngoscope* 2003-2011. Dr. Johnson is a Past President of the American Academy of Otolaryngology—Head and Neck Surgery (2003), the American Head and Neck Society (2004) and the Triologic Society (2014).



## **Jeffrey T. Keller, PhD**

Jeffrey T. Keller, PhD, has dedicated his career to the training of surgeons, fellows, residents and students in applied neuroanatomy. His extensive investigations and laboratory dissections are infused with a deep appreciation for the historical traditions of surgical anatomy. As an educator, his collaborations with colleagues are innovative and worldwide.

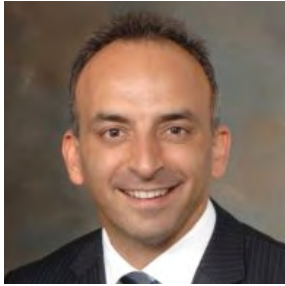
Dr. Keller received his education at the University of Cincinnati (UC) in Anatomy, Cell Biology and Neuroscience. Following completion of his graduate studies in 1975, he joined the Mayfield Clinic and faculty at the UC Department of Neurosurgery. He studied under the tutelage of Malcom B. Carpenter, MD, in 1979-1980 as a NIH Postdoctoral Fellow at the Uniformed Services University of the Health Sciences in Bethesda, MD. Dr. Keller returned to UC and rose through the academic ranks, becoming a Research Professor of Neurosurgery and a Professor of Anatomy in 1991.

The incubator for his mentoring and scholarly productivity occurred in the Goodyear Microsurgery Laboratory, established in 1987. The shared cadaveric training lab with Otolaryngology fostered multidisciplinary exploration of new skull base approaches, development of instruments and teaching of practical courses. Dr. Keller has published more than 110 peer-reviewed articles, 20 book chapters and 61 published abstracts. He co-authored the *Atlas of Operative Microneurosurgery* with John M. Tew, Jr., MD, and Harry R. van Loveren, MD, in 2001. He is perhaps best known for his work on the cavernous sinus and classification system of the internal carotid artery.

Dr. Keller continues to direct his energy to advancing neurosurgery through the Mayfield Education & Research Foundation. The Keller Lectureship in Surgical Neuroanatomy & Research was established in 2012 in Dr. Keller's honor to foster and promote surgical neuroanatomy training of residents.



# Keynote and Honored Guest Speakers



## **Philip Theodosopoulos, MD**

Philip Theodosopoulos was born in Thessaloniki, Greece on September 10, 1970. He received a B.S. degree in Biology and in Political Science from the Massachusetts Institute of Technology in 1991 and 1992, and his M.D. degree from Stanford University in 1996. Under the tutelage of Charles Wilson and Mitchel Berger he completed his neurosurgical residency at the University of California San Francisco and then completed a fellowship in Cerebrovascular and Skull Base Surgery at the Brigham and Women's Hospital, Harvard University under the direction of Arthur Day. He is board certified in

Neurological Surgery.

Following his post-graduate training he joined the faculty of the Department of Neurological Surgery at the University of Cincinnati where he served as Director of Skull Base Surgery and Residency Program Director from 2008-13.

Dr. Theodosopoulos is currently the Khatib Professor, Director of Skull Base Surgery and Vice Chairman of the Department of Neurosurgery at the University of California, San Francisco where he serves as the Residency Program Director.

Dr. Theodosopoulos is interested in brain tumor surgery with a specific focus on skull base lesions and endoscopy. His research interests center on anatomy and its role in the development of minimally invasive surgical approaches, as well as on outcomes research in neurosurgery. He is the author of over 120 peer reviewed publications and has been faculty in over 150 national and international courses. He has three daughters, Petra, Sky and Tea none of them currently interested in Skull Base Surgery.



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## Contact

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**JW Marriott Tampa Water Street**  
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Tampa, Florida 33602 USA  
PHONE: +1 813-221-4950

## NASBS is managed by BSC Management, Inc.

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Los Angeles, CA 90064  
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[www.bscmanage.com](http://www.bscmanage.com)

# General/CME Information

## CME ACCREDITATION:

This activity has been planned and implemented in accordance with the Essential Areas and policies of the Accreditation Council for Continuing Medical Education through the joint providership of American College of Surgeons (ACS) and North American Skull Base Society. ASC is accredited by the ACCME to provide continuing medical education for physicians.

## CONTINUING MEDICAL EDUCATION CREDIT INFORMATION

### Accreditation

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of American College of Surgeons and North American Skull Base Society. The American College of Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

### AMA PRA Category 1 Credits™

The American College of Surgeons designates this live activity for a maximum of **21.75** AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.



AMERICAN COLLEGE OF SURGEONS  
DIVISION OF EDUCATION

*Award of CME credits by ACS is based on compliance of the program with the ACCME accreditation requirements and does not imply endorsement by ACS of the content, the faculty, or the sponsor of the program.*

# General Information

## ANNUAL MEETING OBJECTIVES

Upon completion of this course, participants will be able to:

- Understand and explain most recent recommendations for management of skull base pathology
- Describe recent advances in instrumentation and technology in skull base surgery
- Gain knowledge in challenging skull base pathology from experienced leaders in the field
- Collaborate in multidisciplinary working groups to identify state of the art management for select skull base pathology
- To gain knowledge on optimal technical surgical management of complex skull base pathology through video analysis and expert critique of intra-operative video
- Establish consensus statement on management of complex skull base pathology through review of existing medical literature

## WHO SHOULD ATTEND

The NASBS meeting is open to NASBS members and non-members.

## TARGET AUDIENCE

- Otolaryngologists, head and neck surgeons, neurosurgeons, reconstructive surgeons, radiation oncologists, radiologists, medical oncologists, physical rehabilitation physicians, ophthalmologists, neurologists, maxillofacial surgeons, maxillofacial prosthodontists and endocrinologists
- Targeted allied health professionals include physical therapists, oncology nurses, oral health specialists, occupational therapists, speech and language pathologists, optometrists and psychologists

# Meeting Leadership

## NASBS Board of Directors Officers

PRESIDENT: Lee Zimmer, MD, PhD  
PRESIDENT-ELECT: Siviero Agazzi, MD, MBA  
IMMEDIATE PAST PRESIDENT: John G. Golfinos, MD  
VICE PRESIDENT: Erin L. McKean, MD, MBA  
SECRETARY: L. Madison Michael II, MD  
TREASURER: Zoukaa Sargi, MD, MPH

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Sam Barnett, MD  
Jurij R. Bilyk, MD  
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John de Almeida, MD  
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Juan C. Fernandez-Miranda, MD  
Rick A. Friedman, MD, PhD  
Derrick Lin, MD  
Daniel M. Prevedello, MD  
C. Arturo Solares, MD  
Jeffrey M. Sorenson, MD  
Allan D. Vescan, MD, MSc  
Eugene Yu, MD

## Board of Advisors

Ricardo L. Carrau, MD, MBA  
James Evans, MD  
Jacques J. Morcos, MD  
Carl H. Snyderman, MD, MBA  
Ian J. Witterick, MD, MSc

## Scientific Program Co-Chairs

C. Arturo Solares, MD  
Donato Pacione, MD

## Pre-Meeting Course Co-Chairs

Brian Thorp, MD  
Gabriel Zada, MD

## NASBS Scientific Program Committee

Siviero Agazzi, MD, MBA  
Norberto Andaluz, MD  
Emily Barrow, MD  
Carolina Benjamin, MD  
Wenya Linda Bi, MD, PhD  
Hamid Borghei-Razavi, MD  
David Friedmann, MD, MSc  
Bharat Guthikonda, MD, MBA  
Walter Jean, MD  
Claudia Kirsch, MD  
Varun Kshetry, MD  
Corinna Levine, MD, MPH  
Niyall R. London, MD, PhD  
Erin McKean, MD, MBA  
Kibwei McKinney, MD  
Mia Miller, MD  
Jennifer Moliterno Gunel, MD  
Jacques J. Morcos, MD  
Sarah Mowry, MD  
Maria Peris Celda, MD, PhD  
Christopher Rassekh, MD  
Pablo Recinos, MD  
Raj Sindwani, MD  
Nathan Zwagerman, MD



# General Information

## DISCLOSURE INFORMATION

**Ineligible Company:** The ACCME defines an “ineligible company” as any entity producing, marketing, re-selling, or distributing health care goods or services used on or consumed by patients. Providers of clinical services directly to patients are NOT included in this definition.

**Financial Relationships:** Relationships in which the individual benefits by receiving a salary, royalty, intellectual property rights, consulting fee, honoraria, ownership interest (e.g., stocks, stock options or other ownership interest, excluding diversified mutual funds), or other financial benefit. Financial benefits are usually associated with roles such as employment, management position, independent contractor (including contracted research), consulting, speaking and teaching, membership on advisory committees or review panels, board membership, and other activities from which remuneration is received, or expected. ACCME considers relationships of the person involved in the CME activity to include financial relationships of a spouse or partner.

**Conflict of Interest:** Circumstances create a conflict of interest when an individual has an opportunity to affect CME content about products or services of an ineligible company with which he/she has a financial relationship.

The ACCME also requires that ACS manage any reported conflict and eliminate the potential for bias during the educational activity. Any conflicts noted below have been managed to our satisfaction. The disclosure information is intended to identify any commercial relationships and allow learners to form their own judgments. However, if you perceive a bias during the educational activity, please report it on the evaluation.

In accordance with the ACCME Accreditation Criteria, the American College of Surgeons must ensure that anyone in a position to control the content of the educational activity (planners and speakers/authors/discussants/moderators) has disclosed all financial relationships with any commercial interest (termed by the ACCME as “ineligible companies”, defined on the previous page) held in the last 24 months. Please note that first authors were required to collect and submit disclosure information on behalf of all other authors/contributors, if applicable. Full listing found on [page 117](#).

## MEMBERSHIP BENEFITS

- Active members will receive the official journal of the society, The Journal of Neurological Surgery Part B, a publication that contains peer reviewed original articles, review articles, and position papers. It also presents news and information on an international scope to keep members aware of recent and upcoming events, activities, and evolving developments in skull base surgery. Affiliate, International and Candidate members may subscribe to the journal for \$100 annually.
- Discounted rates to attend the Annual Meeting
- Opportunities to network with colleagues and experts from across North America and globally
- Committees which provide opportunities for camaraderie, involvement and leadership development
- Online access to all members' contact information.

Please visit [www.nasbs.org/membership](http://www.nasbs.org/membership) for more information or email [membership@nasbs.org](mailto:membership@nasbs.org).

For information on membership, visit the Membership table near the Registration Desk at the NASBS 2023 Annual Meeting.



# Meeting Hours

## REGISTRATION HOURS

Thursday, February 16, 2023	1:00 pm – 6:30 pm
Friday, February 17, 2023	6:30 am – 6:30 pm
Saturday, February 18, 2023	6:30 am – 6:30 pm
Sunday, February 19, 2023	6:30 am – 12:00 pm

## EXHIBIT HALL/POSTER HOURS

Thursday, February 16, 2023	12:00 pm to 6:00 pm	Exhibit Hall Set Up
Friday, February 17, 2023	9:00 am to 4:00 pm	Exhibit Hall Open
	9:35 am to 10:05 am	Refreshment Break
	12:20 pm to 1:20 pm	Lunch for Non-Members
	3:30 pm to 4:00 pm	Refreshment Break
	4:00 pm to 6:05 pm	Exhibit Hall Closed
	6:05 pm to 7:35 pm	Welcome Reception & Poster Viewing
Saturday, February 18, 2023	9:00 am to 4:00 pm	Exhibit Hall Open
	9:35 am to 10:05 am	Refreshment Break
	12:20 pm to 1:20 pm	Lunch/Poster Viewing
	3:30 pm to 4:00 pm	Refreshment Break
	4:00 pm to 9:30 pm	Dismantle & Removal of Exhibits

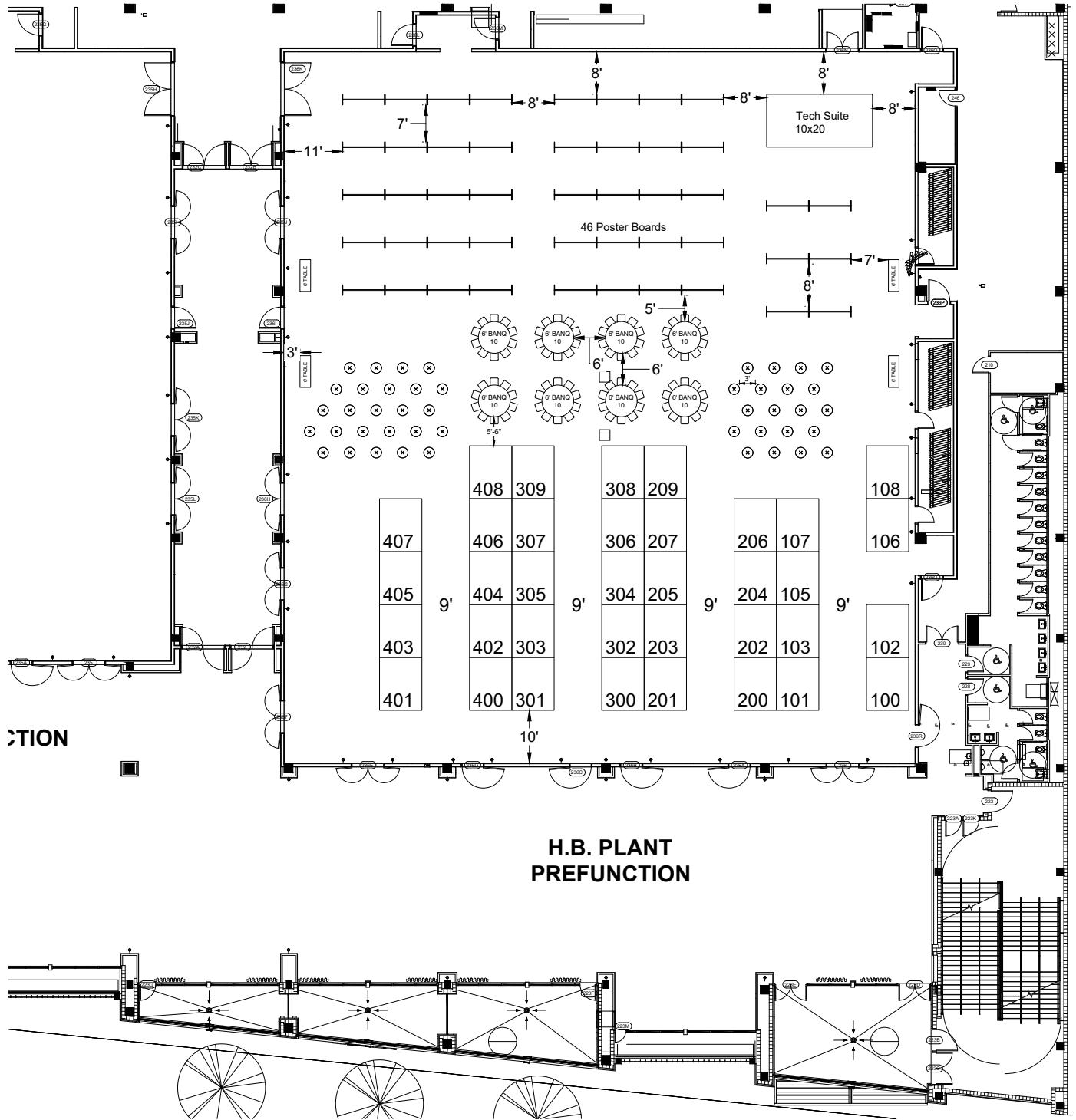
*\*Dismantle & Removal Hours are subject to change*

## Past Presidents

<b>1990</b>	Paul J. Donald, MD	<b>2006</b>	Anil Nanda, MD
<b>1991</b>	Laligam N. Sekhar, MD	<b>2007</b>	Guy J. Petrozzelli, MD
<b>1992</b>	Ivo P. Janecka, MD	<b>2008</b>	Franco DeMonte, MD
<b>1993</b>	Peter G. Smith, MD, PhD	<b>2009</b>	Daniel Nuss, MD
<b>1994</b>	Albert L. Rhoton, Jr., MD	<b>2011</b>	Peter Neligan, MD
<b>1995</b>	Hugh Curtin, MD	<b>2012</b>	Dennis Kraus, MD
<b>1996</b>	Derald E. Brackmann, MD	<b>2013</b>	Carl Heilman, MD
<b>1997</b>	Ossam Al Mefty, MD	<b>2014</b>	Ehab Hanna, MD, FACS
<b>1998</b>	Steven A. Newman, MD	<b>2015</b>	Michael Link, MD
<b>1999</b>	John P. Leonetti, MD	<b>2016</b>	Carl Snyderman, MD, MBA
<b>2000</b>	Robert F. Spetzler, MD	<b>2017</b>	Jacques Morcos, MD, FRCS, FAANS
<b>2001</b>	Ian T. Jackson, MD	<b>2018</b>	Ian Witterick, MD
<b>2002</b>	Vinod K. Anand, MD	<b>2019</b>	James Evans, MD, FACS, FAANS
<b>2003</b>	Jon H. Robertson, MD	<b>2020</b>	Ricardo Carrau, MD, MBA
<b>2004</b>	Jatin Shah, MD	<b>2021-22</b>	John G. Golfinos, MD
<b>2005</b>	Patrick J. Gullane, MD		

# Hotel Exhibit Hall Floor Plan

## HB Plant Ballroom (2nd Floor)



## Friday, February 17, 2023

Time	Session	Location
7:30 am - 8:30 am	<p><b><u>Main Topic 1: State of the Art for Recurrent Clival Chordoma</u></b></p> <p><i>Dr. Daniel Prevedello</i></p> <p>This session will provide a comprehensive review of state-of-the-art strategies for the management of recurrent clival chordoma. It will be of interest to all those involved in the interdisciplinary treatment of recurrent clival chordoma..</p> <p>At the conclusion of this session, attendees will be able to:</p> <ul style="list-style-type: none"> <li>» Integrate different approaches for the management of recurrent clival chordoma.</li> <li>» Identify novel therapeutic targets in the treatment of recurrent clival chordoma.</li> <li>» Recognize the role of interdisciplinary management of recurrent clival chordoma.</li> </ul>	Tampa Bay 1
7:30 am - 8:30 am	<p><b><u>Main Topic 2: Orbital and Transorbital Surgical Approaches for Skull Base Tumors</u></b></p> <p><i>Dr. Dana Crosby</i></p> <p>This session will explore innovative techniques in accessing orbital and skull base tumors through a variety of minimally invasive techniques in and around the orbit. Otolaryngologists/rhinologists, neurosurgeons and ophthalmologists/oculoplastic surgeons are encouraged to attend.</p> <p>At the conclusion of this session, attendees will be able to:</p> <ul style="list-style-type: none"> <li>» Identify appropriate techniques useful in accessing skull base pathology through the orbit.</li> <li>» Recognize potential complications of transorbital surgery.</li> <li>» Appreciate approaches and key surgical landmarks used in resecting orbital tumors.</li> </ul>	Tampa Bay 2
7:30 am - 8:30 am	<p><b><u>Main Topic 3: Management of Giant Acoustic Neuromas – Are There New Strategies?</u></b></p> <p><i>Dr. Norberto Andaluz , Dr. Bharat Guthikonda, Dr. Marcos Tatagiba, Dr. Marc Schwartz, Dr. Ravi Samy, Dr. Christine Dinh</i></p> <p>This session will provide a comprehensive review of strategies for the management of giant acoustic neuromas, with a special emphasis on surgical techniques to overcome the challenges presented by these demanding tumors.</p> <p>At the conclusion of this session, attendees will be able to:</p> <ul style="list-style-type: none"> <li>» Formulate patient-centered decisions for the treatment of giant acoustic neuromas.</li> <li>» Identify the role of staged surgical resection for giant acoustic neuromas.</li> <li>» Apply strategies and techniques aiming to preserve hearing and facial nerve function.</li> </ul>	Tampa Bay 6



**7:30 am - 8:30 am**    **Main Topic 4: Surgical Management of Sinonasal Malignancies with Skull Base Involvement – When to Open?**    *Tampa Bay 7*

*Dr. Eric Wang, Dr. Ashleigh Halderman, Dr. Eugene Yu, Dr. Alfred Marc Illoreta, Dr. Garret Choby, Dr. Mathew Geltzeiler, Dr. Pablo Recinos*

Evaluation and management of sinonasal malignancies involving the skull base is challenging. While some lesions are amenable to endoscopic techniques, others are not. The dilemma of when to open is a key question confronting the entire team of surgeons and oncologists who care for these patients.

At the conclusion of this session, attendees will be able to:

- » Interpret imaging studies used to evaluate malignancies with skull base involvement.
- » Integrate decision making on when to open into clinical practice.
- » Understand what is possible via the endonasal endoscopic approach.

**7:30 am - 8:30 am**    **Main Topic 5: Mentorship in Skull Base Surgery – Fellowship Training and Beyond**    *Tampa Bay 8*

*Dr. James Evans, Dr. Vijay Agarwal, Dr. Harry Van Loveren, Dr. Erin McKean, Dr. Marilene Wang, Dr. Jacques Morcos*

This session will discuss evolving paradigms in mentorship in skull base surgery, providing insights on contemporary challenges for both mentors and mentees, and presenting strategies for enduring mentorship relationships.

At the conclusion of this session, attendees will be able to:

- » Recognize the constraints to effective mentorship in skull base presented by prevailing practice environments.
- » Compare mentorship models at different career stages.
- » Articulate strategies for objective evaluation and improvement of mentorship in skull base.

7:30 am - 8:30 am

**Special Session 1: Implications of Methylation and Genomics in Skull Base Pathology**

Tampa Bay 9

*Dr. Diana Bell, Dr. Stephen Magill, Dr. Lisa Rooper, Dr. Wenya Linda Bi, Dr. Georgios Zenonos, Dr. Tomas Garzon-Muvdi*

Treatment options for skull base pathologies have primarily focused on surgery and radiation. However, with advancing knowledge of methylation and genomics in skull base pathologies, further treatment options and risks stratification of these tumors may aid in how these tumors are managed. This session will focus on providing an update on emerging data regarding methylation and genomics in skull base pathology and how these will be used to further patient care. Any provider who cares for these tumors is encouraged to attend.

At the conclusion of this session, attendees will be able to:

- » Recognize the role methylation and genomics play in skull base pathologies.
- » Distinguish which patients are appropriate for pathology testing and how the results of testing will impact patient care.
- » Identify where to find active clinical trials that utilize methylation and genomics in skull base pathology.

8:35 am - 9:35 am

**Special Session 2: State of the Art in Skull Base Imaging**

Tampa Bay 9

*Melanie B. Fukui, Dr. Christina Henson, Dr. Tanya Rath, Dr. Dukagjin Blakaj, Dr. Patricia Rhyner, Dr. Martin Citardi, Dr. Arjun Parasher*

This session will focus on imaging advances and how these are helping to better understand the relationship with skull base pathologies and surrounding structures as well as helping to better predict pathologic entities as well as their behavior before and after treatment. Any provider who cares for skull base pathologies is encouraged to attend to learn these new technologies.

At the conclusion of this session, attendees will be able to:

- » Assess the ability and limitations of imaging modalities to predict behavior of skull base tumors.
- » Recognize how imaging can help predict skull base pathology and the relationships to neurovascular structures.
- » Evaluate new technologies and the future direction of imaging as it relates to skull base pathology.

- 8:35 am - 9:35 am**     **Expert Debate 1: Management Strategies in Petroclival Meningioma**     Tampa Bay 1
- Dr. Ossama Al-Meffy, Dr. Harry Van Loveren, Dr. Isaac Yang, Dr. Lola Chambless, Dr. Joseph Roche, Dr. Olabisi Sanusi, Dr. Marlan Hansen*
- This session aims to discuss the difficulties in management of petroclival meningiomas. Panelists will discuss illustrative cases and their philosophy around decision making for these challenging tumors.
- At the conclusion of this session, attendees will be able to:
- » Prioritize goals of care for patients with petroclival meningioma.
  - » Select an appropriate surgical approach to address the patient's primary symptom or sign.
  - » Compare different management philosophies in regard to petroclival meningioma.
- 8:35 am - 9:35 am**     **Expert Debate 2: Tumor Management and Hearing Preservation/Rehabilitation in NF2**     Tampa Bay 2
- Dr. John Golfinos, Dr. Michael Link, Dr. J. Thomas Roland Jr. , Dr. Christine Dinh, Dr. Emily Kay-Rivest, Dr. Kaleb Yohay*
- This session aims to discuss the difficulties in management and rehabilitation for patients with NF2. Panelists will discuss illustrative cases and their philosophy around decision making for these challenging patients.
- At the conclusion of this session, attendees will be able to:
- » Prioritize goals of care for patients with NF2.
  - » Select an appropriate surgical approach to address the patient's primary symptom or sign.
  - » Identify options for hearing rehabilitation for patients with NF2
- 8:35 am - 9:35 am**     **Expert Debate 3: Treatment Options and Approach for Adult Craniopharyngioma**     Tampa Bay 6
- Dr. Gustavo Pradilla, Dr. Carolyn Quinsey, Dr. Maurizio Iacoangeli, Dr. Pamela Jones, Dr. Benjamin Cooper, Dr. Michelle Mierzwa, Dr. Michaela Lee*
- Attendees will hear about different approaches and modalities for treatment of adult craniopharyngioma. Panelists will discuss and debate illustrative cases in management of these difficult tumors. Session is geared toward neurosurgery, rhinology and radiation oncology.
- At the conclusion of this session, attendees will be able to:
- » Develop a plan for treatment of adult patients with craniopharyngioma.
  - » Prioritize the treatment modality based on tumor characteristics and patient signs/symptoms.



<b>8:35 am - 9:35 am</b>	<p><b><u>Expert Debate 4: Prolactinoma Treatment Strategy – When to Operate (Newly DX Macroprolactinomas vs Recurrent/Resistant)</u></b></p> <p>Our expert panelists will debate management strategies for newly diagnosed and recurrent prolactinoma tumors. Panelists will review illustrative cases and debate appropriate management. Appropriate for neurosurgery, endocrinologists, rhinology and radiation oncology.</p> <p>At the conclusion of this session, attendees will be able to:</p> <ul style="list-style-type: none"> <li>» Distinguish between operative and non operative indications for prolactinomas.</li> <li>» Recognize when a recurrent tumor may need surgical intervention.</li> <li>» Plan treatment regimens around patients tumor characteristics and patient signs/symptoms</li> </ul>	<i>Tampa Bay 7</i>
<b>8:35 am - 9:35 am</b>	<p><b><u>Expert Debate 5: Skull Base Coding</u></b></p> <p>Panelists will discuss illustrative cases and appropriate coding and billing strategies for multidisciplinary care of the skull base patient. Examples from both academic and private practice will provide attendees with multiple different scenarios to learn from. Session is appropriate for all attendees who are involved in the billing and coding for patient care.</p> <p>At the conclusion of this session, attendees will be able to:</p> <ul style="list-style-type: none"> <li>» Identify appropriate use of modifiers when working as a team.</li> <li>» Recognize when to use the skull base approach codes.</li> </ul>	<i>Tampa Bay 8</i>
<b>9:35 am - 10:05 am</b>	<b><i>Break</i></b>	
<b>10:05 am - 12:20 pm</b>	<b><u>General Session</u></b>	<i>Tampa Bay 5</i>
<b>12:20 pm - 1:20 pm</b>	<b><i>Lunch in Exhibit Hall</i></b>	<i>Exhibit Hall</i>
<b>12:20 pm - 1:20 pm</b>	<b><u>Business Meeting (NASBS Members Only)</u></b>	<i>Tampa Bay 5</i>
<b>1:20 pm - 2:20 pm</b>	<p><b><u>Hot Topic 1: Hearing Rehabilitation in Vestibular Schwannoma</u></b>  <i>Dr. Christine Dinh, Dr. John Yu, Dr. Esther Vivas, Dr. Brad Welling, Dr. Joe Kutz</i></p> <p>This session involves a discussion of postoperative hearing loss after vestibular schwannoma treatment. Specific considerations for NF2 and a discussion of surgical approach for hearing preservation will be included. Attendees should be neurotologists and neurosurgeons who perform lateral skull base surgery.</p> <p>At the conclusion of this session, attendees will be able to:</p> <ul style="list-style-type: none"> <li>» Discuss the timing of hearing rehabilitation with cochlear implants in patients with treated VS.</li> <li>» Discuss options for hearing management when there is only one serviceable ear.</li> <li>» Compare middle cranial fossa and retrosigmoid approaches for hearing preservation in patients with VS.</li> </ul>	<i>Tampa Bay 1</i>

**1:20 pm - 2:20 pm**    **Hot Topic 2: Management of recurrent Functioning Pituitary Adenoma**    Tampa Bay 6

*Angela Richardson, Nikita Chapurin, Angela Richardson, Nelson Oyesiku, Jake Wang, Erica Giraldi*

This session will highlight the options for management for the complex cases of patients with recurrent functioning pituitary adenoma, including salvage surgical options, radiation options and medical management. This session would be of benefit to any level of participant who manages patients with functional pituitary adenomas.

**1:20 pm - 2:20 pm**    **Hot Topic 3: Incorporating Quality Metrics in Everyday Clinical Practice**    Tampa Bay 7

*Dr. Cedric Shorter, Dr. Sarah Mowry, Dr. Cedric Shorter, Dr. Martin Citardi, Dr. Philip Theodosop, Dr. Brian Boyce*

Quality is a measure by which all surgeons and all physicians are increasingly being evaluated. This session will provide attendees important quality metrics in skull base surgery. This will allow all of us to better understand the importance of safety, cost containment and optimal patient outcomes in our patient population with complex skull base disease.

At the conclusion of this session, attendees will be able to:

- » Integrate cost information into everyday practice and assess if this knowledge leads to more judicious resource utilization.
- » Employ safety first surgical technique to optimize patient outcomes.
- » Develop a practice pattern that maximizes patient satisfaction.

**1:20 pm - 2:20 pm**    **Hot Topic 4: Neoadjuvant Chemotherapy in Sinonasal Malignancies**    Tampa Bay 8

*Dr. Jai Thakur, Dr. Mihir Patel, Dr. Nabil Saba, Dr. Ralph Abi Hachem, Dr. Roukoz Chamoun*

This session will discuss the use of neoadjuvant chemotherapy in sinonasal malignancies. Choice of chemotherapy and management after therapy with surgery and/or radiation will be discussed. A specific discussion of subtypes of sinonasal cancer will be included.

At the conclusion of this session, attendees will be able to:

- » Discuss choice of chemotherapy for sinonasal malignancies.
- » Discuss management after neoadjuvant chemotherapy including surgery and radiation.
- » Discuss subtypes of sinonasal cancer, including SNUC and SCC.

1:20 pm - 6:05 pm

## **Skull Base Primer Course**

Tampa Bay 2

*Dr. Vijay Agarwal, Dr. Camilo Reyes, Dr. Sebastian Froelich, Dr. Patricia Rhyner, Dr. Christopher Farrell, Dr. Mindy Rabinowitz, Dr. Judd Fastenberg, Dr. Emily Barrow, Dr. Ezequiel Goldschmidt, Dr. Giovanni Danesi, Dr. Tomas Garzon Muvdi, Dr. Nathan Zwagerman, Dr. Nathalia Velasquez, Dr. Stephen Magill*

The Primer Course will provide a broad overview of skull base pathology as well as surgical and nonsurgical management of tumors affecting this region, emphasizing the multidisciplinary and collaborative nature of these cases. We invite all skull base trainees, newly practicing skull base surgeons, and those interested in learning different approaches or techniques while avoiding and managing complications to attend this session.

At the conclusion of this session, attendees will be able to:

- » Identify operative and non-operative management strategies for skull base lesions through a team-based approach.
- » Compare the nuances of different open and endoscopic approaches to various regions of the skull base.
- » Recognize and manage common complications associated with skull base surgery.

1:20 pm - 6:05 pm

## **Kawase Education Day**

Tampa Bay 9

*Dr. Hamid Borghei-Razavi, Dr. Carolina Benjamin, Dr. Takeshi Kawase, Dr. Ossama Al-Mefy, Dr. James Liu, Dr. Jacques Marcos, Dr. Badih Adada, Dr. J Thomas Roland, Jr, Dr. Diego Mendez Rosito, Dr. Alexander Yu*

Comprehensive understanding of petrous bone anatomy and 360 degree surgical approaches to various complex pathologies involving the petrous bone.

At the conclusion of this session, attendees will be able to:

- » Understand petrous bone anatomy.
- » Understand 360 degree approaches to the petrous bone to address various types of pathologies including intradural, extradural and vascular pathologies.
- » Prevent and manage potential complications in petrosal approaches.
- » Gain confidence with decision-making: surgical indications and approach selection to petrous bone pathologies.
- » Understand petrous bone and surrounding structures pathologies.



2:25 pm - 3:25 pm

**Video Session 1: Trans-Cavernous Approaches to Intracranial Lesions**

Tampa Bay 1

*Dr. Siviero Agazzi, Dr. Walter Jean, Dr. Jorge Maura, Dr. Maria Peris Celda, Dr. Mohammed Labib, Dr. Shaan Raza*

This session will highlight contemporary utilization of transcavernous approaches to juxtacavernous, basal cistern and posterior fossa pathologies. Limitations in anatomic exposure and the types of pathologies that can be potentially treated with these approaches will be explored. Neurosurgeons, fellows, residents and advanced care team providers will benefit from this session.

At the conclusion of this session, attendees will be able to:

- » Identify the anatomic boundaries exposed by transcavernous approach.
- » Distinguish the types of pathologies that require the use of the transcavernous approach.
- » Understand the potential complications of the transcavernous approach.

2:25 pm - 3:25 pm

**Video Session 2: Expanded Endonasal Approaches to the Clivus and CCJ**

Tampa Bay 6

*Dr. Janalee Stokken, Dr. Georgios Zenonos, Dr. Joao Almeida, Dr. Nathan Zwagerman, Dr. Gustavo Pradilla, Dr. Eric Wang*

In this video session, we will review anatomical considerations, technical pearls, standard reconstruction techniques, and reconstructive bailout strategies when approaching the clivus and craniocervical junction via an endoscopic endonasal approach. This session is geared primarily for neurosurgeons, rhinologists, head and neck surgeons, and reconstructive surgeons as well as all trainees.

At the conclusion of this session, attendees will be able to:

- » Distinguish key anatomical landmarks when approaching the clivus and craniocervical junction via an endoscopic endonasal approach.
- » Articulate technical pearls when endoscopically approaching the clivus, jugular foramen, and craniocervical junction.
- » Recognize standard and bailout strategies for reconstruction at the clivus and craniocervical junction.

2:25 pm - 3:25 pm

**Video Session 3: Transorbital Approaches**

Tampa Bay 7

*Dr. Andree Beer-Furlan, Dr. Sean Parsel, Dr. Kris Moe, Dr. Randolph Wojak, Dr. Calvin Mak, Dr. Hun Ho Park, Dr. Davide Locatelli*

This session will explore surgical approaches to orbital pathologies, as well as approaches to intracranial pathologies through the orbit. Novel techniques, the anatomic boundaries of exposure and technical limitations will be discussed. Skull Base Surgeons with backgrounds in Neurosurgery, Otolaryngology, Ophthalmology, Neuroradiology and fellows/residents/advanced care team providers will benefit from this session.

At the conclusion of this session, attendees will be able to:

- » Identify novel/nuanced multi-disciplinary techniques for transorbital approaches.
- » Identify the limitations in anatomic exposure for transorbital approaches.
- » Develop multidisciplinary consideration of approach for complex skull base pathologies using the transorbital approach.

2:25 pm - 3:25 pm

**Video Session 4: Management of Endonasal Vascular Injury**

Tampa Bay 8

*Dr. Danilo Silva, Dr. Christopher Roxbury, Dr. Amir Dehdashti, Dr. Jeremy Ciporen, Dr. Alfred Marc Illoreta, Dr. Satyan Sreenath, Daniel Felbaum*

Vascular injuries are one of the most devastating complications of endoscopic endonasal skull base surgery and are particularly difficult to manage due to the limited working space. This session will cover a comprehensive approach to prevent and also prepare for these complications. It is intended for rhinologists, head and neck surgeons, neurosurgeons, endovascular specialists, and all trainees.

At the conclusion of this session, attendees will be able to:

- » Implement methods to prepare and train for vascular injury in endoscopic skull base surgery.
- » Identify the role of endovascular techniques for vascular injury in endoscopic endonasal surgery.
- » Identify available techniques and tools used to address non carotid vascular bleeding.

3:30 pm - 4:00 pm

***Break in Exhibit Hall***

4:00 pm - 5:00 pm **Proffered Papers Session 1: Lateral Skull Base Surgery/ Meningiomas**

Tampa Bay 1

**S001: INTRA-OPERATIVELY DIAGNOSED FACIAL SCHWANNOMA: A MULTI-CENTRE STUDY OF INCIDENCE, MANAGEMENT AND PROPOSED PRE-OPERATIVE IMAGING PROTOCOL** - Cathal John Hannan, MRCS<sup>1</sup>; Daniel Lewis, PhD<sup>1</sup>; Aaron Plitt, MD<sup>2</sup>; George Richardson, MBBS<sup>3</sup>; Andrew T. King, FRCS<sup>1</sup>; Brian A. Neff, MD<sup>2</sup>; Charlotte Hammerbeck-Ward, PhD<sup>1</sup>; Colin L. Driscoll<sup>2</sup>; Jamie J. Van Gompel, MD<sup>2</sup>; Matthew L. Carlson<sup>2</sup>; Omar Nathan Pathmanaban, PhD<sup>1</sup>; Simon K. Lloyd, MPhil<sup>1</sup>; Simon Richard Mackenzie Freeman, FRCS, ORLHNS<sup>1</sup>; Gillian Potter, MD<sup>1</sup>; Michael J. Link, MD<sup>1</sup>; Scott A. Rutherford<sup>1</sup>; <sup>1</sup>Manchester Centre for Clinical Neurosciences; <sup>2</sup>Mayo Clinic, Rochester, MN; <sup>3</sup>University of Liverpool

**S002: ANATOMICAL STUDY OF THE SUPRATENTORIAL EXTENSION FOR THE RETROLABYRINTHINE PRESIGMOID APPROACHES.** - Samer S Hoz, MD<sup>1</sup>; Paolo Palmisciano, MD<sup>1</sup>; Mustafa Ismail, MD<sup>2</sup>; Jonathan Forbes, MD<sup>1</sup>; Charles Prestigiacomio, MD<sup>1</sup>; Ravi Samy, MD<sup>1</sup>; Myles L Pensak, MD<sup>1</sup>; Mario Zuccarello, MD<sup>1</sup>; Norberto Andaluz, MD<sup>1</sup>; <sup>1</sup>University of Cincinnati; <sup>2</sup>University of Baghdad

**S003: PROGNOSTIC INDICATORS OF PERSISTENT POSTOPERATIVE IMBALANCE AFTER SURGICAL TREATMENT OF VESTIBULAR SCHWANNOMA.** - Mohamed Elkahwagi, PhD<sup>1</sup>; Alejandro Garcia, dr<sup>2</sup>; Carleton Eduardo Corrales, Ass Prof<sup>2</sup>; Matthew Crowson, PhD<sup>3</sup>; James Naples, PhD<sup>3</sup>; Tim Smith<sup>2</sup>; <sup>1</sup>Mansoura University Egypt; <sup>2</sup>Brigham Women's Hospital Harvard Medical School; <sup>3</sup>MEEI Harvard Medical School

**S004: MANAGEMENT OF PETROUS BONE CHOLESTEATOMAS: AN UPDATE ON SURGICAL TREATMENT, CLINICAL OUTCOMES AND FOLLOW UP** - Gianluca Piras, MD; Antonio Caruso, MD; Lorenzo Lauda, MD; Mario Sanna, MD, PhD; Gruppo Otologico, Piacenza-Rome, Italy

**S005: COMPARATIVE ANALYSIS OF THE COMBINED SUBTEMPORAL PERILABYRINTHINE AND SUBTEMPORAL APPROACHES FOR REVASCULARIZATION OF THE POSTERIOR CEREBRAL ARTERY** - Motonobu Nonaka, MD; Alexander I Evins, MD; Collin Liu, MD; Hitoshi Fukuda, MD; Philip E Stieg; Antonio Bernardo, MD; Weill Cornell Medicine, Neurological Surgery

**S006: THE MID-CLIVAL-PRESIGMOID ANGLE: A NEW VARIABLE FOR VESTIBULAR SCHWANNOMA SURGERY.** - J. Manuel Revuelta Barbero, MD, PhD<sup>1</sup>; Edoardo Porto, MD<sup>2</sup>; Esther X. Vivas, MD<sup>2</sup>; Douglas E. Mattox, MD<sup>2</sup>; Tomas Garzon Muvdi, MD, MSc<sup>2</sup>; C. Arturo Solares, MD<sup>2</sup>; Gustavo Pradilla, MD<sup>2</sup>; <sup>1</sup>Medical College of Georgia - Augusta University; <sup>2</sup>Emory University

**S007: FUNCTIONAL CLASSIFICATION OF APOPTOTIC SENSITIVITY IN MENINGIOMA** - Maya Harary, MD; Elizabeth Fernandez; Joshua Casaos, MD; Jeremie Vitte, PhD; David Nathanson, PhD; Robert Prins, PhD; Marco Giovannini, MD, PhD; Richard Everson, MD; UCLA

**S008: INTRA-SUBJECT HETEROGENEITY OF LESION SUV ON [68GA]DOTATATE PET/MRI IN PATIENTS WITH MULTIPLE MENINGIOMAS - IMPLICATIONS FOR TUMOR BIOLOGY AND CLINICAL MANAGEMENT** - [SJ Chang](#)<sup>1</sup>; A Haghdel<sup>1</sup>; S Kim<sup>1</sup>; M Roytman<sup>1,2</sup>; R Ramakrishna<sup>1,2</sup>; S Pannullo<sup>1,2</sup>; T Schwartz<sup>1,2</sup>; J Osborne<sup>1,2</sup>; R Magge<sup>1,2</sup>; E Lin<sup>1,2</sup>; J Knisely<sup>1,2</sup>; J Ivanidze<sup>1,2</sup>; <sup>1</sup>Weill Cornell Medicine; <sup>2</sup>New York-Presbyterian Hospital

4:00 pm - 5:00 pm

**Proffered Papers Session 2: Video Award Finalists**

Tampa Bay 6

**V001: FASCIOCUTANEOUS RADIAL FOREARM FLAP WITH TRANSPTERYGOIG/PARAPHARYNGEAL TUNNELING FOR RECONSTRUCTION OF ANTERIOR SKULL BASE DEFECTS: HOW I DO IT** - [Edoardo Porto, MD](#)<sup>1</sup>; Jackson Vuncannon, MD<sup>1</sup>; J. Manuel Revuelta Barbero, MD, PhD<sup>2</sup>; Tomas Garzon Muvdi, MD, MSc<sup>1</sup>; Emily Barrow, MD<sup>1</sup>; Gustavo Pradilla, MD<sup>1</sup>; C. Arturo Solares, MD<sup>1</sup>; <sup>1</sup>Emory University; <sup>2</sup>Medical College of Georgia - Augusta University

**V002: ENDOSCOPIC ENDONASAL TRANSSPHENOIDAL TRANSCAVERNOUS TRANSOCULOMOTOR TRIANGLE APPROACH FOR RESECTION OF AN INVASIVE PITUITARY ADENOMA EXTENDING INTO THE PARAPEDUNCULAR SPACE THROUGH THE LEFT CAVERNOUS SINUS** - [Prakash Nair, DR](#); Sanjay Murali, DR; Easwer Hv, DR; Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum

**V003: ANTERIOR CLINOID MENINGIOMA WITH INTERNAL CAROTID ARTERY ENCASEMENT** - [Vera Vigo, MD](#); Karam P Asmaro, MD; Micheal Lim, MD; Juan C Fernandez-Miranda, MD; Stanford University

**V004: LEFT KAWASE APPROACH FOR "MACROVASCULAR" DECOMPRESSION OF DOLICHOECTATIC BASILAR ARTERY CAUSING HEMIFACIAL SPASM USING GORE-TEX SLING: 2-DIMENSIONAL OPERATIVE VIDEO** - [Eva M Wu, MD](#); Matthew Sun, MD; Jacques J Morcos, MD; Department of Neurological Surgery, University of Miami

4:00 pm - 5:00 pm

**Proffered Papers Session 3: Endoscopic Transnasal Skull Base Surgery**

Tampa Bay 7

**S009: ANATOMICAL STEP-BY-STEP DISSECTION OF COMPLEX SKULL BASE APPROACHES FOR TRAINEES: SURGICAL ANATOMY OF THE ENDOSCOPIC ENDONASAL CLIVECTOMY, ODONTOIDECTOMY, AND FAR MEDIAL APPROACH** - [Edoardo Agosti, MD](#)<sup>1</sup>; Alex Y Yohan, BA<sup>2</sup>; Luciano Leonel, PhD<sup>3</sup>; Carlos D Pinheiro-Neto, MD, PhD<sup>3</sup>; Maria Peris-Celda, MD, PhD<sup>3</sup>; <sup>1</sup>University of Brescia; <sup>2</sup>University of Minnesota; <sup>3</sup>Mayo Clinic

**S010: MICROSURGICAL ANATOMY OF THE ENDOSCOPIC ENDONASAL LATERAL TRANSCAVERNOUS APPROACH -**

Yuanzhi Xu, MD<sup>1</sup>; Karam Asmaro, MD<sup>2</sup>; Vera Vigo, MD<sup>2</sup>; Ahmed Mohyeldin, MD, PhD<sup>2</sup>; Maximiliano A Nunez, MD<sup>2</sup>; Ying Mao, MD<sup>1</sup>; Aaron A Cohen-Gadol, MD, MSc, MBA<sup>3</sup>; Juan C Fernandez-Miranda, MD<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, Huashan Hospital, Shanghai Medical College, Fudan University, Shanghai, China; <sup>2</sup>Department of Neurosurgery, Stanford Hospital, Stanford, California; <sup>3</sup>Department of Neurological Surgery, Indiana University, Indianapolis, Indiana

**S011: SINONASAL OUTCOMES OF THE COMBINED TRANSSEPTAL/TRANSNASAL APPROACH WITH UNILATERAL NASOSEPTAL RESCUE FLAP IN ENDOSCOPIC ENDONASAL TRANSSPHENOIDAL SURGERY: A PROPENSITY SCORE MATCHING ANALYSIS -**

Jae Yoon Lee; Jae-Sung Park; Do Hyun Kim; Seoul St. Mary's Hospital

**S012: HOW LOW CAN YOU GO? COMPARING THE INFERIOR LIMIT IN ENDOSCOPIC ENDONASAL APPROACHES TO THE CRANIOVERTEBRAL JUNCTION BETWEEN AGE GROUPS -**

Michael J Ye, MD<sup>1</sup>; Fahad Hasnain, BS<sup>2</sup>; Oluwaseyi O Awonusi, BS<sup>2</sup>; Satyan B Sreenath, MD<sup>1</sup>; Elisa A Illing, MD<sup>1</sup>; Jonathan Y Ting, MD, MS, MBA<sup>1</sup>; <sup>1</sup>Indiana University School of Medicine - Department of Otolaryngology/Head & Neck Surgery; <sup>2</sup>Indiana University School of Medicine

**S013: POSTOPERATIVE MANAGEMENT OF OSA FOLLOWING ENDOSCOPIC PITUITARY SURGERY: A SYSTEMATIC REVIEW -**

Adwight Risbud, MD, MPH<sup>1</sup>; Edward C Kuan, MD, MBA<sup>2</sup>; Arthur W Wu, MD<sup>1</sup>; Dennis M Tang, MD<sup>1</sup>; <sup>1</sup>Division of Otolaryngology - Head & Neck Surgery, Cedars-Sinai Medical Center; <sup>2</sup>Department of Otolaryngology - Head & Neck Surgery, University of California, Irvine

**S014: MICROSURGICAL ANATOMY OF THE PTERYGOSPHEOIDAL TRIANGLE: IMPLICATION IN ENDOSCOPIC ENDONASAL SKULL BASE SURGERY -**

Yuanzhi Xu, MD<sup>1</sup>; Karam Asmaro, MD<sup>2</sup>; Ahmed Mohyeldin, MD, PhD<sup>2</sup>; Michael Zhang, MD<sup>2</sup>; Maximiliano A Nunez, MD<sup>2</sup>; Ying Mao, MD<sup>1</sup>; Aaron A Cohen-Gadol, MD, MSc, MBA<sup>3</sup>; Juan C Fernandez-Miranda, MD<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, Huashan Hospital, Shanghai Medical College, Fudan University, Shanghai, China; <sup>2</sup>Department of Neurosurgery, Stanford Hospital, Stanford, California; <sup>3</sup>Department of Neurological Surgery, Indiana University, Indianapolis, Indiana



**S015: SURGICAL ANATOMY OF THE FORAMEN LACERUM AND ITS LIGAMENTS: ANATOMICAL DESCRIPTION AND CLINICAL RELEVANCE FOR EXPANDED ENDONASAL APPROACHES**

- Luciano Leonel, PhD<sup>1</sup>; Edoardo Agosti, MD<sup>1</sup>; Simona Seriola, MD<sup>1</sup>; Michael J Link, MD<sup>2</sup>; Carlos D Pinheiro-Neto, MD, PhD<sup>3</sup>; Maria Peris-Celda<sup>2</sup>; <sup>1</sup>Mayo Clinic Rhoton Neurosurgery and Otolaryngology Surgical Anatomy Program; <sup>2</sup>Department of Neurosurgery, Mayo Clinic, Rochester, Minnesota; <sup>3</sup>Department of Otorhinolaryngology Head and Neck Surgery Mayo Clinic, Rochester, Minnesota

**S016: ANGIOGRAPHIC CROSS FILLING BETWEEN INFERIOR PETROSAL SINUSES AS A FACTOR IMPACTING ACTH SAMPLING IN THE SETTING OF CUSHING'S DISEASE** - R. Chase Ransom, MD, PhD; Michael L Martini, MD, PhD; Lorenzo Rinaldo, MD, PhD; Lucas Carlstrom, MD, PhD; Derek O'Keefe, MB, BCh, MD, PhD; William Young, MD; Jamie Van Gompel, MD; Mayo Clinic

4:00 pm - 5:00 pm

**Proffered Papers Session 4: Cavernous Sinus Tumors / Chordoma**

Tampa Bay 8

**S017: TREATMENT STRATEGY, SURGICAL TECHNIQUE AND CLINICAL OUTCOME FOR CAVERNOUS SINUS MENINGIOMA** - Takashi Sugawara, PhD; Hiroto Yamaoka, Dr; Taketoshi Maehara, PhD; Department of Neurosurgery, Tokyo Medical and Dental University

**S018: ENDOSCOPIC TRANSCAVERNOUS SURGERY FOR PITUITARY TUMORS WITHIN THE LATERAL CAVERNOUS SINUS: ADVANCING TOWARDS THE LATERAL FRONTIER** - Karam Asmaro<sup>1</sup>; Yuanzhi Xu<sup>2</sup>; Vera Vigo<sup>3</sup>; Christine K Lee<sup>3</sup>; Ju Hyung Moon<sup>3</sup>; Juan C Fernandez-Miranda<sup>3</sup>; <sup>1</sup>Henry Ford Health; <sup>2</sup>Huashan Hospital, Fudan University; <sup>3</sup>Stanford University

**S020: FUNCTIONAL AND RADIOGRAPHIC OUTCOMES OF CAVERNOUS MENINGIOMAS BASED ON TREATMENT MODALITY: A SINGLE INSTITUTIONAL STUDY** - Christina Feller, BA, BS<sup>1</sup>; Brandon Laing<sup>1</sup>; Andrew Montoure, MD<sup>2</sup>; Benjamin Best, MD<sup>1</sup>; Nathan Zwagerman, MD<sup>1</sup>; <sup>1</sup>Medical College of Wisconsin; <sup>2</sup>University of Washington

**S021: CORRELATION OF CLINICAL FEATURES TO DNA METHYLATION-BASED PROGNOSTIC SUBTYPES IN CHORDOMA PATIENTS** - Jeffery Zuccato, MD, PhD; Andrew Ajisebutu, MD; Gelareh Zadeh, MD, PhD, FRCSC; University of Toronto

**S022: A COMPREHENSIVE ANALYSIS OF PROGNOSTIC FACTORS FOR SKULL BASE CHORDOMA: A NATIONAL CANCER DATABASE STUDY** - Ruben Ulloa, BA<sup>1</sup>; Justin M Soffer, MD<sup>2</sup>; Sonja Chen<sup>3</sup>; Sean Polster, MD<sup>4</sup>; Vijay A Patel, MD<sup>5</sup>; <sup>1</sup>Keck School of Medicine of USC; <sup>2</sup>Vanderbilt University School of Medicine, Department of Surgery; <sup>3</sup>University of Chicago; <sup>4</sup>The University of Chicago Medicine & Biological Sciences; <sup>5</sup>Division of Otolaryngology – Head & Neck Surgery, Department of Surgery, University of California San Diego

**S023: CHORDOMA OF THE SKULL BASE: A NATIONAL CANCER DATABASE ANALYSIS OF CURRENT PRACTICE PATTERNS AND OUTCOMES** - [Ravi Nunna](#)<sup>1</sup>; Saavan Patel<sup>2</sup>; Sasi Karuparti<sup>1</sup>; Michael Ortiz-Torres<sup>1</sup>; James Ryoo<sup>3</sup>; Darius Ansari<sup>4</sup>; Steven Carr<sup>1</sup>; Ankit Mehta<sup>2</sup>; <sup>1</sup>University of Missouri; <sup>2</sup>University of Illinois-Chicago; <sup>3</sup>New York University; <sup>4</sup>University of Wisconsin-Madison

**S024: EXTENT OF SURGICAL RESECTION AS A PREDICTOR OF DISEASE CONTROL IN SKULL BASE CHORDOMAS: A MULTI-CENTER TUMOR VOLUMETRIC ANALYSIS** - [Carlos Perez-Vega, MD](#); Oluwaseun O Akinduro, MD; Henry J Ruiz-Garcia, MD; Bernard R Bendok, MD; Kaisorn L Chaichana, MD; Alfredo Quinones-Hinojosa, MD; Jamie J Van Gompel, MD; Mayo Clinic

5:05 pm - 6:05 pm

**Proffered Papers Session 5: Meningiomas**

Tampa Bay 1

**S025: PRECISION MEDICINE FOR MENINGIOMAS: MACHINE LEARNING RADIOMIC SIGNATURE SCORES USING KI-67 STRATA IDENTIFY AGGRESSIVE TUMORS AT INCREASED RISK OF RECURRENCE** - [Omaditya Khanna](#); Thomas Jefferson University Hospital

**S026: THE GENOMIC PROFILES AND CLINICAL MANIFESTATIONS OF SPORADIC MENINGIOMAS VARY AMONGST RACIAL AND ETHNIC GROUPS** - [Joanna Tabor](#)<sup>1</sup>; Joseph O'Brien<sup>1</sup>; Haoyi Lei<sup>1</sup>; Shaurey Vetsa<sup>1</sup>; Sagar Vasandani<sup>1</sup>; Muhammad Jalal<sup>1</sup>; Kanat Yalcin, PhD<sup>1</sup>; Saul Morales-Valero, MD<sup>1</sup>; Neelan Marianayagam, MD<sup>1</sup>; Aladine Elsamadicy, MD<sup>1</sup>; Miguel Millares Chavez, MD<sup>1</sup>; Hanya Qureshi<sup>1</sup>; Mani Ratnesh S Sandhu<sup>1</sup>; Stephanie M Aguilera<sup>1</sup>; Ketu Mishra-Gorur, PhD<sup>1</sup>; Declan McGuone, MD<sup>2</sup>; Robert Fulbright, MD<sup>3</sup>; Lan Jin, PhD<sup>1</sup>; E. Zeynep Erson-Omay, PhD<sup>1</sup>; Murat Gunel, MD<sup>1</sup>; Jennifer Moliterno, MD<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, Yale School of Medicine; <sup>2</sup>Department of Pathology, Yale School of Medicine; <sup>3</sup>Department of Radiology and Biomedical Imaging, Yale School of Medicine

**S027: POSTOPERATIVE COMPLICATIONS AND NEUROLOGICAL DEFICITS AFTER PETROCLIVAL AND SPHENOPETROCLIVAL MENINGIOMA RESECTION** - Minh Nguyen, BS<sup>1</sup>; [Ramin Morshed, MD](#)<sup>1</sup>; Steven Cheung, MD<sup>1</sup>; Philip Theodosopoulos, MD<sup>1</sup>; Michael McDermott, MD<sup>2</sup>; <sup>1</sup>University of California San Francisco; <sup>2</sup>Miami Neuroscience Institute

**S028: IS BRAIN INVASION AN INDEPENDENT PROGNOSTIC FACTOR IN OTHERWISE BENIGN MENINGIOMA?** - Abdulrazag Ajlan, MD, FRCSC<sup>1</sup>; Majed AlJohani<sup>1</sup>; [Sarah Basindwah](#)<sup>1</sup>; Saif Al-Meshari<sup>1</sup>; Fahad Aldhowaihy<sup>1</sup>; Yazed Aldeheem<sup>1</sup>; Ashwag Alqurashi<sup>2</sup>; <sup>1</sup>Division of Neurosurgery, College of Medicine, King Saud University, Riyadh, Saudi Arabia.; <sup>2</sup>Division of Neurosurgery, Department of Surgery, King Saud University Medical City, Riyadh, Saudi Arabia.

**S029: IMPACT OF SALVAGE SURGERY AND RE-IRRADIATION FOR RADIATION FAILED RECURRENT SKULL BASE MENINGIOMAS** - [Franco Rubino, MD](#); Solon Schur, MD; Susan L McGovern, MD; Carlos Kamiya-Matsuoka, MD; Franco DeMonte, MD; Shaan M Raza, MD; MD Anderson Cancer Center

**S030: REAPPRAISAL OF TRANSPETROSAL APPROACHES FOR PETROCLIVAL MENINGIOMAS: A CONSECUTIVE SINGLE INSTITUTION SERIES** - Paolo di Russo<sup>1</sup>; Lorenzo Giammattei<sup>1</sup>; Thibault Passeri<sup>1</sup>; Fumihiko Matano<sup>1</sup>; Marc Antoine Labeyrie<sup>2</sup>; Vitorio Civelli<sup>2</sup>; Ariana Fava<sup>1</sup>; Rosaria Abbritti<sup>2</sup>; Anne Laure Bernat<sup>1</sup>; Kentaro Watanabe<sup>1</sup>; Sébastien Froelich<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, Lariboisière Hospital, Paris, France; <sup>2</sup>Department of Neuroradiology, Lariboisière Hospital, Paris, France

**S031: INTRODUCTION AND VALIDATION OF A NEW MENINGIOMA EMBOLIZATION-EFFICACY GRADING SCALE: A RETROSPECTIVE STUDY OF 80 PATIENTS** - Stavros Matsoukas, MD<sup>1</sup>; Denzel E Faulkner<sup>2</sup>; Rui Feng, MD<sup>1</sup>; Ian Odland, BS<sup>3</sup>; Brandon Philbrick, MD<sup>1</sup>; Eveline Gutzweiller, MD<sup>1</sup>; Halima Tabani, MD<sup>1</sup>; Alexis Bruhat, Msc<sup>3</sup>; Fred Kwon, PhD<sup>3</sup>; Turner S Baker, PhD<sup>3</sup>; Leslie Schlachter, PA<sup>1</sup>; Holly Oemke<sup>1</sup>; Christopher Kellner, MD<sup>1</sup>; J Mocco, MD<sup>1</sup>; Johanna Fifi, MD<sup>1</sup>; Tomoyoshi Shigematsu, MD<sup>1</sup>; Hazem Shoirah, MD<sup>1</sup>; Shahram Majidi, MD<sup>1</sup>; Reade De Leacy, MD<sup>1</sup>; Alejandro Berenstein, MD<sup>1</sup>; Stanley Dunn, PhD<sup>2</sup>; Raj Shrivastava, MD<sup>1</sup>; Johsua Bederson, MD<sup>1</sup>; Benjamin I Rapoport, MD, PhD<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, Icahn School of Medicine at Mount, Mount Sinai Hospital, 1 Gustave Levy Place, New York; <sup>2</sup>Department of Biomedical Engineering, Rennselaer Polytechnic Institute, 110 Eighth Street, Troy, NY; <sup>3</sup>Mount Sinai BioDesign, Icahn School of Medicine at Mount Sinai, Mount Sinai Hospital, 1 Gustave levy Place, New York

**S032: A QUANTITATIVE VOLUMETRIC MRI ANALYSIS OF THE IMMEDIATE EFFECTS OF MENINGIOMA EMBOLIZATION ON TUMOR SIZE AND SURROUNDING EDEMA** - Rui Feng, MD, MSc; Stavros Matsoukas, MD; Denzel Faulkner; Halima Tabani, MD; Christopher Kellner, MD; Joshua Bederson, MD; Raj Shrivastava, MD; Ben Rapoport, MD; Department of Neurosurgery, Icahn School of Medicine at Mount Sinai

5:05 pm - 6:05 pm

**Proffered Papers Session 6: Pituitary Tumors**

Tampa Bay 6

**S033: RESECTION OF PITUITARY ADENOMAS IN PATIENTS WITH SICKLE CELL DISEASE: A RETROSPECTIVE ANALYSIS OF 19,653 PATIENTS** - Taylor Reardon<sup>1</sup>; Nolan J Brown<sup>2</sup>; James Rodgers<sup>3</sup>; Saarang Patel<sup>2</sup>; Angie Zhang<sup>2</sup>; Shane Shahrestani<sup>4</sup>; Julian Gendreau<sup>5</sup>; Ahmed Mohyeldin<sup>2</sup>; <sup>1</sup>University of Pikeville - Kentucky College of Osteopathic Medicine; <sup>2</sup>UC Irvine Department of Neurological Surgery; <sup>3</sup>Vanderbilt University School of Medicine; <sup>4</sup>Keck School of Medicine of USC; <sup>5</sup>Johns Hopkins Whiting School of Engineering

**S034: ENDOSCOPIC ENDONASAL SKULL BASE SURGERY FOR GIANT PITUITARY ADENOMAS: 60 PATIENT CASE SERIES.** - Agustin Dorantes-Argandar, MD<sup>1</sup>; Flavio Rodas-Berrezueta, MD<sup>2</sup>; Luis Perez-Garcia, MD<sup>1</sup>; Javier Mancilla-Mejia, MD<sup>2</sup>; Brenda Lopez-Quintana, MD, MSc<sup>2</sup>; Berenice Garcia-Guzman, MD, MSc<sup>2</sup>; <sup>1</sup>Hospital Angeles Pedregal - Facultad Mexicana de Medicina - Universidad La Salle; <sup>2</sup>Hospital Angeles Pedregal

**S035: THE SUPERIORITY OF SURGERY OVER RADIOTHERAPY IN THE TREATMENT OF RECURRENT CUSHING'S DISEASE: A SYSTEMATIC REVIEW AND META-ANALYSIS ON REMISSION AND COMPLICATIONS** - Mohammadmahdi Sabahi<sup>1</sup>; Paniz Ghasemi<sup>1</sup>; Seyed Farzad Maroufi<sup>2</sup>; Taha Shahbazi<sup>1</sup>; Omid Yousefi<sup>3</sup>; Seyed Alireza Shahtaheri<sup>4</sup>; Karla Arce<sup>5</sup>; Rocco Dabecco<sup>6</sup>; Badih Adada<sup>5</sup>; Hamid Borghei-Razavi<sup>5</sup>; <sup>1</sup>Neurosurgery Research Group (NRG), Student Research Committee, Hamadan University of Medical Science; <sup>2</sup>Sina Trauma and Surgery Research Center, Tehran University of Medical Sciences; <sup>3</sup>Trauma Research Center, Shiraz University of Medical Sciences, Shiraz, Iran.; <sup>4</sup>Neurosurgery Research Group (NRG), Student Research Committee, Hamadan University of Medical Sciences; <sup>5</sup>Department of Endocrinology, Diabetes and Metabolism, Cleveland Clinic Florida, Weston, Florida, USA.; <sup>6</sup>Department of Neurological Surgery, Pauline Braathen Neurological Centre, Cleveland Clinic Florida, Weston, Florida, USA.

**S036: UTILITY OF INFERIOR PETROSAL SINUS SAMPLING AND CORTISOL LEVELS IN ENDOSCOPIC ENDONASAL TRANSPHENOIDAL SURGERY FOR PITUITARY ADENOMA RESECTION IN ADULTS WITH CUSHING DISEASE** - Christina Feller, BS, BA; Sherrea Jones, PhD; Heloise Cheruvalath, BA; Akram Eraky, MD; Eduardo Martinez Del Campo, MD; Nathan Zwargerman, MD, FAANS; Medical College of Wisconsin

**S037: TRANSCRIPTION-FACTOR DEPENDENT CYTODIFFERENTIATION DRIVES CAVERNOINVASIVE BEHAVIOR OF PITUITARY TUMORS** - Karam Asmaro<sup>1</sup>; Michael Zhang<sup>2</sup>; Adrian J Rodrigues<sup>2</sup>; Ahmed Mohyeldin<sup>2</sup>; Vera Vigo<sup>2</sup>; Hannes Vogel<sup>2</sup>; Donald E Born<sup>2</sup>; Laurence J Katznelson<sup>2</sup>; Juan C Fernandez-Miranda<sup>2</sup>; <sup>1</sup>Henry Ford Health; <sup>2</sup>Stanford University

**S038: CLINICAL CHARACTERISTICS AND OUTCOMES OF THYROID STIMULATING HORMONE-SECRETING ADENOMAS** - Zain Peeran, BS<sup>1</sup>; Jacob S Young, MD<sup>2</sup>; Harmon Khela, BS<sup>2</sup>; Aarav Badani<sup>2</sup>; Robert C Osorio, BS<sup>1</sup>; Manish K Aghi, MD, PhD<sup>2</sup>; <sup>1</sup>School of Medicine, University of California San Francisco, San Francisco, CA, USA; <sup>2</sup>Department of Neurological Surgery, University of California San Francisco, San Francisco, CA, USA

**S039: PRACTICE PATTERNS OF SURGICAL APPROACHES FOR PITUITARY TUMORS ACROSS OTOLARYNGOLOGISTS AND NEUROSURGEONS BETWEEN 2010 AND 2018** - Lauren Miller; Roy Xiao, MD; Isaac Wasserman; Derrick Lin; Stacey Gray; Massachusetts Eye and Ear

**S040: A COMPREHENSIVE ANALYSIS OF TOBACCO SMOKING HISTORY AS A RISK FOR OUTCOMES AFTER TRANSPHENOIDAL RESECTION OF PITUITARY ADENOMA -**

Susie Min, BA<sup>1</sup>; Grace Zhang, BA<sup>1</sup>; Alex Hu, BA<sup>1</sup>; Gabrielle T Petito, BA<sup>1</sup>; Siddhant H Tripathi, BS<sup>1</sup>; Geet Shukla, BA<sup>1</sup>; Adithya Kumar, BS<sup>1</sup>; Sanjit Shah, MD<sup>2</sup>; Katie M Philips, MD<sup>1</sup>; Jonathan A Forbes<sup>2</sup>; Mario Zuccarello<sup>2</sup>; Norberto O Andaluz<sup>2</sup>; Ahmad R Sedaghat, MD<sup>1</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, University of Cincinnati College of Medicine, Cincinnati, United States of America; <sup>2</sup>Department of Neurosurgery, University of Cincinnati College of Medicine, Cincinnati, United States of America

5:05 pm - 6:05 pm

**Proffered Papers Session 7: Stereotactic Radiosurgery/ Surgical Simulation**

Tampa Bay 7

**S042: OUTCOMES AFTER GAMMA KNIFE RADIOSURGERY FOR INTRAVENTRICULAR MENINGIOMAS -**

Alberto Daza-Ovalle, MD<sup>1,2</sup>; L. Dade Lunsford, MD<sup>1</sup>; Ajay Niranjana, MD<sup>1</sup>; John Flickinger, MD<sup>1</sup>; Othman Bin-Alamer, MBBS<sup>1</sup>; <sup>1</sup>University of Pittsburgh; <sup>2</sup>Rosario University

**S043: COCHLEAR IMPLANTATION WITHIN ONE MONTH OF STEREOTACTIC RADIOSURGERY FOR VESTIBULAR SCHWANNOMAS: A RETROSPECTIVE REVIEW -**

Aaron R Plitt, MD<sup>1</sup>; James R Dornhoffer, MD<sup>2</sup>; Colin L Driscoll, MD<sup>2</sup>; Brian A Neff, MD<sup>2</sup>; Matthew L Carlson, MD<sup>2</sup>; Michael J Link, MD<sup>1</sup>; <sup>1</sup>Mayo Clinic Department of Neurologic Surgery; <sup>2</sup>Mayo Clinic Department of Otolaryngology/Head and Neck Surgery

**S044: INITIAL HEARING IMPROVEMENT AND LONGEVITY OF HEARING RESTORATION IN COCHLEAR IMPLANTS AFTER STEREOTACTIC RADIOSURGERY FOR VESTIBULAR SCHWANNOMAS -**

Kurtis C Young<sup>1</sup>; Maeher R Grewal<sup>2</sup>; Rodney C Diaz<sup>2</sup>; Arthur W Wu<sup>3</sup>; Mia E Miller<sup>3</sup>; <sup>1</sup>Department of Otolaryngology - Head and Neck Surgery, UC Davis Medical Center; <sup>2</sup>Department of Otolaryngology - Head and Neck Surgery, Vagelos College of Physicians and Surgeons, Columbia University Irving Medical Center; <sup>3</sup>Department of Otolaryngology - Head and Neck Surgery, Cedars-Sinai Medical Center

**S045: TUMOR TARGETED GAMMA KNIFE RADIOSURGERY IN PATIENTS WITH TRIGEMINAL NEURALGIA SECONDARY TO MASS LESION -**

Roger Murayi, MD<sup>1</sup>; Jordan C Petitt, MS<sup>2</sup>; Robert D Winkelman, MD<sup>1</sup>; Pablo F Recinos, MD<sup>1</sup>; Varun R Kshetry, MD<sup>1</sup>; <sup>1</sup>Department of Neurological Surgery, Rosa Ella Burkhardt Brain Tumor & Neuro-Oncology Center, Cleveland, OH; <sup>2</sup>Case Western Reserve University School of Medicine, Cleveland, OH

**S046: OUTCOMES OF GAMMA KNIFE RADIOSURGERY FOR GLOMUS JUGULARE TUMORS: A 35-YEAR SINGLE-CENTER EXPERIENCE -**

Alberto Daza-Ovalle, MD<sup>1,2</sup>; L. Dade Lunsford, MD<sup>1</sup>; Ajay Niranjana, MD<sup>1</sup>; Othman Bim Alamer, MBBS<sup>1</sup>; Zhishuo Wei, BS<sup>1</sup>; <sup>1</sup>University of Pittsburgh; <sup>2</sup>Rosario University



**S047: A 3-D PRINTED, MULTICOLOR, DRILLABLE SIMULATION SYSTEM FOR SKULL BASE DRILLING WITH DIRECT, OBJECTIVE REAL-TIME FEEDBACK** - [Bachtri T Nguyen, BS<sup>1</sup>](#); Jonathan M Morris, MD<sup>1</sup>; Visish M Srinivasan, MD<sup>2</sup>; Michael J Holroyd, PhD<sup>3</sup>; Lucas P Carlstrom, MD, PhD<sup>1</sup>; Avital Perry, MD<sup>4</sup>; Maria Peris-Celda, MD, PhD<sup>1</sup>; Michael J Link, MD<sup>1</sup>; Christopher S Graffeo, MD, MS<sup>3</sup>; <sup>1</sup>Mayo Clinic; <sup>2</sup>University of Pennsylvania; <sup>3</sup>University of Oklahoma; <sup>4</sup>Sheba Medical Center

**S048: DEVELOPMENT AND VALIDATION OF A NOVEL HUMAN FIXED CADAVERIC MODEL REPRODUCING CEREBROSPINAL FLUID CIRCULATION FOR TRAINING IN ENDOSCOPIC SKULL BASE SURGERY** - [Laura-Elisabeth Gosselin, MD<sup>1</sup>](#); Nicolas Morin, MD, PhD<sup>2</sup>; Mathieu Chamberland, MD<sup>1</sup>; Charles Gariépy, MD<sup>2</sup>; Olivier Beaulieu<sup>3</sup>; Sylvie Nadeau, MD<sup>1</sup>; Pierre-Olivier Champagne, MD, PhD<sup>2</sup>; <sup>1</sup>Department of Ophthalmology and Otolaryngology - Head and Neck Surgery, Faculty of Medicine, Université Laval, Quebec City, Quebec, Canada; <sup>2</sup>Department of Neurosurgery, CHU de Québec-Université Laval, Pavillon Enfant-Jésus, Quebec City, Quebec Canada; <sup>3</sup>Faculty of Medicine, Université Laval, Quebec City, Quebec, Canada

5:05 pm - 6:05 pm

**Proffered Papers Session 8: Head and Neck Tumors/ Innovative Techniques**

Tampa Bay 8

**S049: THE ROLE OF IMAGING IN PREDICTING RESPONSE TO CHEMOTHERAPY AND RADIOTHERAPY IN SINONASAL MALIGNANCIES** - A CLINIC-PATHOLOGICAL CORRELATIVE STUDY - [Dan Yaniv, MD](#); Phan Jack, MD, PhD; Clifton D Fuller, MD, PhD; Michael T Spiotto, MD, PhD; Diana Roberts, PhD; Jason M Johnson, MD; Melissa Chen, MD; Shaan M Raza, MD; Franco DeMonte, MD; Ehab Y Hanna, MD; Shirley Y Su, MBSS; MD Anderson Cancer Center

**S050: INDUCTION CHEMOTHERAPY FOR SINONASAL TUMORS IN PATIENTS PRESENTING WITH BRAIN INVASION AND/OR NEUROLOGICAL DEFICITS** - [Bledi C Brahimaj](#); Franco Rubino, MD; Romulo Andrade de Almeida, MD; Ehab Hanna, MD; Renata Ferrarotto, MD; Shirley Y Su, MD; Jack Phan, MD, PhD; Franco DeMonte; Shaan M Raza, MD; MD Anderson Cancer Center

**S051: IMMUNOHISTOCHEMICAL PROFILING AND STAGING IN ESTHESIONEUROBLASTOMA: A SINGLE-CENTER COHORT STUDY AND SYSTEMATIC REVIEW** - J Curran Henson<sup>1</sup>; [Chris Cutler, BS<sup>2</sup>](#); Kyril Cole<sup>3</sup>; Brandon Lucke-Wold<sup>4</sup>; Majid Khan<sup>5</sup>; Michael Karsy<sup>6</sup>; <sup>1</sup>University of Arkansas for Medical Sciences; <sup>2</sup>Chicago Medical School at Rosalind Franklin University of Medicine and Science; <sup>3</sup>College of Medicine, University of Utah; <sup>4</sup>University of Florida; <sup>5</sup>School of Medicine, University of Nevada Reno; <sup>6</sup>University of Utah

**S053: THE VECTORIAL TECHNIQUE: A NEW TOOL TO MEASURE ANGLES OF EXPOSURE IN SKULL BASE ANATOMICAL DISSECTION.** - [Edoardo Porto](#)<sup>1</sup>; J. Manuel Revuelta-Barbero, MD, PhD<sup>2</sup>; Jackson Vuncannon, MD<sup>1</sup>; Tomas Garzon Muvdi, MD<sup>1</sup>; C. Arturo Solares, MD<sup>1</sup>; Gustavo Pradilla, MD<sup>1</sup>; <sup>1</sup>Emory University; <sup>2</sup>Medical College of Georgia - Augusta University

**S054: PRESERVATION OF THE OLFACTORY APPARATUS IN ENDOSCOPIC ENDONASAL APPROACHES TO THE ANTERIOR CRANIAL FOSSA THROUGH INFERIOR MOBILIZATION OF THE CRIBRIFORM PLATE, PLANUM SPHENOIDALE, AND OLFACTORY APPARATUS: A TECHNICAL NOTE** - [Edoardo Agosti](#), MD<sup>1</sup>; Alex Y Alexander, BA<sup>2</sup>; Luciano Leonel, PhD<sup>3</sup>; Garret W Choby, MD<sup>3</sup>; Maria Peris-Celda, MD, PhD<sup>3</sup>; Carlos D Pinheiro-Neto, MD, PhD<sup>3</sup>; <sup>1</sup>University of Brescia; <sup>2</sup>University of Minnesota; <sup>3</sup>Mayo Clinic

**S055: DESIGN OF A NOVEL ONLINE EDUCATION RESOURCE AND EVALUATION TOOL FOR A CRANIAL BASE ANATOMICAL DISSECTION PROGRAM FOR NEUROSURGERY RESIDENTS: A PILOT STUDY** - [Luciano Leonel](#), PhD<sup>1</sup>; André de Sá Braga Oliveira, PhD<sup>1</sup>; André Ribeiro, MD<sup>2</sup>; Amanuel Woldesenbet, MD<sup>1</sup>; Christopher S Graffeo, MD<sup>3</sup>; Michael J Link, MD<sup>4</sup>; Carlos D Pinheiro-Neto, MD, PhD<sup>5</sup>; Maria Peris-Celda, MD, PhD<sup>4</sup>; <sup>1</sup>Mayo Clinic Rhoton Neurosurgery and Otolaryngology Surgical Anatomy Program; <sup>2</sup>Department of Morphology, Federal University of Paraíba, João Pessoa, Paraíba, Brazil; <sup>3</sup>Department of Neurosurgery, University of Oklahoma, Oklahoma; <sup>4</sup>Department of Neurosurgery, Mayo Clinic, Rochester, Minnesota; <sup>5</sup>Department of Otorhinolaryngology Head and Neck Surgery Mayo Clinic, Rochester, Minnesota

**S056: THE ENDOSCOPIC SUPRACEREBELLAR INFRATENTORIAL APPROACH IN THE SITTING POSITION: A SAFE AND EFFECTIVE UPDATE TO A TRADITIONAL APPROACH** - [J Franklin Berry](#), MD; Regin Jay Mallari, BS; Daniel F Kelly, MD; Garni Barkhoudarian, MD; Pacific Neuroscience Institute

6:05 pm - 7:35 pm

**[Welcome Reception & Poster Viewing](#)**

*Exhibit Hall*

## Saturday, February 18, 2023

Time	Session	Location
7:30 am - 8:30 am	<p><b><u>Main Topic 6: Multiple Paraganglioma Syndrome - Comprehensive Management</u></b></p> <p><i>Dr. Jamie Van Gompel, Dr. Mihir Patel, Dr. Yash Patil, Dr. Mario Sanna, Dr. John Leonetti, Dr. Neil Patel</i></p> <p>This session will present modern principles for the management of multiple paraganglioma syndrome, highlighting the importance of interdisciplinary approach and combined techniques employed in the treatment of these challenging tumors.</p> <p>At the conclusion of this session, attendees will be able to:</p> <ul style="list-style-type: none"> <li>» Integrate principles for a comprehensive approach to the management of multiple paraganglioma syndrome.</li> <li>» Recognize the value of techniques adjunctive to surgical treatment.</li> <li>» Formulate management plans for the treatment of multiple paraganglioma syndrome.</li> </ul>	Tampa Bay 1
7:30 am - 8:30 am	<p><b><u>Main Topic 7: Perineural Invasion in Skull Base Malignancies - State of the Art</u></b></p> <p><i>Dr. Ivan El-Sayed, Dr. James Bowman, Dr. Benedict Panizza, Dr. Gustavo Pradilla, Dr. William Mendenhall, Dr. Claudia Kirsch, Dr. Fiona Simpson</i></p> <p>Our multidisciplinary panel will discuss the nuances and critical elements of decision making when managing perineural invasion in skull base malignancies. the optimal treatment paradigm in a variety of complex clinical scenarios will be explored.</p> <p>At the conclusion of this session, attendees will be able to:</p> <ul style="list-style-type: none"> <li>» Appreciate the optimal management strategy of perineural invasion in skull base malignancies.</li> <li>» Interpret imaging studies demonstrating perineural invasion.</li> <li>» Understand the role of adjuvant treatment for perineural invasion.</li> </ul>	Tampa Bay 2

**7:30 am - 8:30 am**    **Main Topic 8: Skull Base Reconstruction Following Endonasal Surgery - Local, Regional and Free Flaps**    Tampa Bay 6

*Dr. Raj Sindwani, Dr. Dennis Tang, Dr. Marc Rosen, Dr. Brian Thorp, Dr. Edward Kwan, Dr. Gillian Harrison*

Endonasal approaches to skull base tumors are limited in part to our ability to reconstruct complex defects. Experts from across disciplines will discuss options for skull base reconstruction, ranging from simple to complex clinical scenarios. CLinical decision making and intraoperative surgical techniques will be highlighted..

At the conclusion of this session, attendees will be able to:

- » Employ comprehensive strategy on how to approach the repair of complex skull base defects.
- » Understand the utility and recent advances in the use of the nasoseptal flap.
- » Appreciate options to consider in complex reconstructions when the nasoseptal flap is not available

**7:30 am - 8:30 am**    **Main Topic 9: Orbital Preservation in Sinonasal Malignancies - When is it Appropriate?**    Tampa Bay 7

*Dr. Satyan Sreenath, Dr. Eric Lamarre, Dr. Brian Lobo, Dr. Camilo Reyes, Dr. Jeffrey Janus, Dr. Mark McDonald, Dr. Daniel Nuss*

Advanced sinonasal malignancies frequently involve the orbit requiring exenteration. Multidisciplinary experts from the fields of radiation oncology, head and neck surgery, neuroradiology rhinology and neurosurgery will discuss key aspects of decision making on when to consider orbital preservation using an evidence-based approach.

**7:30 am - 8:30 am**    **Tumor Board Session 1: WHO Grade II Meningioma**    Tampa Bay 9

*Dr. Gelareh Zadeh, Dr. Ann Jay, Dr. Gelareh Zadeh, Dr. Pablo Recinos, Dr. Carolina Benjamin, Dr. Dukagjin Blakaj, Dr. Stewart Neill*

This session will be focused on reviewing current data to achieve a consensus on best practices for the management of WHO Grade II meningiomas, which is currently controversial. It will target students, residents, junior, and senior faculty members who manage patients with meningiomas.

At the conclusion of this session, attendees will be able to:

- » Diagnose and illustrate key radiographic and pathologic features of Grade II meningiomas.
- » Discuss the role of molecular subtyping and methylation profiling in the characterization of Grade II meningiomas.
- » Formulate a surgical approach and treatment plan for Grade II meningiomas.
- » Evaluate the pros and cons of radiation treatment as an alternative to or adjunct to surgery for Grade II meningiomas.

7:30 am - 9:35 am

**RHOTON ROOM Dueling Dissection Session 1: Suprasellar and Paraclinoidal Regions, Cavernous Sinus, Meckel's Cave and Petrous Apex**

Tampa Bay 3 & 4

*Dr. Jacques Morcos, Dr. Paul Gardner, Dr. Maria Peris Celda, Dr. David Friedmann, Dr. Edoardo Agosti, Dr. Ossama Al-Mefty, Dr. Carlos Pinheiro-Neto*

Endonasal and transcranial routes are competing but also complementary approaches to the skull base. In this session we will review the surgical anatomy of the paraclinoidal and suprasellar space, cavernous sinus, Meckel's cave and petrous apex and we will discuss the pros and cons of endonasal and transcranial approaches to these regions. Attendance is recommended for all trainees and skull base specialties with an interest in treating pathology located in the suprasellar and paraclinoidal regions.

At the conclusion of this session, attendees will be able to:

- » Develop a better understanding of the surgical anatomy of the paraclinoidal and suprasellar regions, cavernous sinus, Meckel's cave and petrous apex.
- » Recognize key surgical landmarks and technical nuances for the endonasal and transcranial approaches to the paraclinoidal and suprasellar regions, cavernous sinus, Meckel's cave and petrous apex.
- » Compare the benefits and disadvantages of endonasal and transcranial approaches to the paraclinoidal and suprasellar regions, cavernous sinus, Meckel's cave and petrous apex.

8:35 am - 9:35 am

**Expert Debate 6: Protons vs Photons - When and Where**

Tampa Bay 1

*Dr. Mark McDonald, Dr. Yair Gozal, Dr. Christina Henson, Dr. Brandi Page, Dr. Bree Eaton, Dr. Michael Rutenberg, Dr. Yair Gozal*

Panelists will debate the use of proton vs photon radiation therapy for various lesions of the skull base. Illustrative cases will be discussed to help attendees which modality is more appropriate when radiation therapy is needed. Session will be appropriate for all members of the skull base multidisciplinary team.

At the conclusion of this session, attendees will be able to:

- » Identify the differences between proton and photon therapy.
- » Recognize when proton therapy may be an appropriate modality for treatment.
- » Categorize the risks and benefits of both modalities of radiation treatment.



8:35 am - 9:35 am

**Expert Debate 7: Endonasal vs Transorbital vs Transcranial Approaches for Anterior Skull Base Meningioma**

Tampa Bay 2

*Dr. Gelareh Zadeh, Dr. Shirley Su, Dr. Jose Gurrola II, Dr. S. Tonya Stefko, Dr. Annie Moreau, Dr. Jennifer Moliterno Gunel, Dr. Sang Hong, Dr. Davide Locatelli, Dr. Annie Moreau*

Panelists will be discussing the various surgical approaches to the anterior skull base. Illustrative cases will be presented and the pros and cons of each approach will be debated. Session is appropriate for attendees who care for patients with anterior skull base lesions including neurosurgery, rhinology, oculoplastics and head and neck oncologic surgeons.

At the conclusion of this session, attendees will be able to:

- » Plan a surgical approach based on tumor characteristics and patient anatomy.
- » Distinguish the benefits and difficulties of each different approach.
- » Recognize the benefits of a multidisciplinary team in care of the anterior skull base patient.

8:35 am - 9:35 am

**Expert Debate 8: Skull Base Adenoidcystic Carcinoma**

Tampa Bay 6

*Dr. Franco DeMonte, Dr. Carl Snyderman, Dr. James Byrd, Dr. Kibwei McKinney, Dr. Kyle VanKoevinger, Dr. Benedict Panizza, Dr. James Byrd*

Panelists will discuss the appropriate management of these insidious and rare tumors of the skull base. Demonstrative cases will be analyzed by the panelists and care plans will be formulated. Session is appropriate for head and neck oncology, rhinology, Neurotology, neurosurgery and radiation oncology.

At the conclusion of this session, attendees will be able to:

- » Plan a surgical approach based on tumor characteristics and patient anatomy.
- » Integrate lessons from a multidisciplinary approach to adenoidcystic carcinoma.
- » Recognize the signs and symptoms of adenoidcystic carcinoma of the skull base.

**8:35 am - 9:35 am**    **Expert Debate 9: Nasopharyngectomy vs. Re-Irradiation in Recurrent NPC**    Tampa Bay 7

*Dr. Yash Patil, Dr. Ricardo Carrau, Dr. Meghan Turner, Dr. David Jang, Dr. William Mendenhall, Dr. David Jang*

Panelists will debate the difficult decision making around recurrent nasopharyngeal carcinoma. The benefits and risks of surgical vs non-surgical treatment for illustrative cases will be discussed. Session is appropriate for head and neck surgeons, radiation oncologists, and rhinologists.

At the conclusion of this session, attendees will be able to:

- » Categorize the risks and benefits of reirradiation for recurrent NPC.
- » Integrate lessons from a multidisciplinary approach to recurrent nasopharyngeal carcinoma.
- » Recognize when nasopharyngectomy may be appropriate for a given patient.

**8:35 am - 9:35 am**    **Expert Debate 10: Surgery vs SRS for Small to Midsize Acoustic Neuromas**    Tampa Bay 8

*Dr. Rick Friedman, Dr. Michael Link, Dr. John Lee, Dr. Sarah Mowry, Dr. Mia Miller, Dr. John Yu, Dr. Mallory Raymund*

This session aims to discuss decision making for patients with small to mid-sized vestibular schwannomas. Panelists will discuss illustrative cases and their philosophy around decision making for these patients.

At the conclusion of this session, attendees will be able to:

- » Prioritize goals of care for patients with prioritize goals of care for patients small to mid-sized VS.
- » Select an appropriate surgical approach to address the patient's primary symptom or sign.
- » Compare the pros and cons of open surgical vs radiosurgical management of small to mid-sized VS.

**8:35 am - 9:35 am**    **Tumor Board Session 2: Paraganglioma**    Tampa Bay 9

*Dr. Jason Brandt, Dr. Claudia Kirsch, Dr. Jana Ivanidze, Dr. Giovanni Danesi, Dr. Jimmy Caudeli, Dr. Kelly Magliocca, Dr. Robert Lorenz*

This session given by experts in the field, reviews imaging, pathology, data, treatment options and best practices for treating paragangliomas. The session is targeted for students, residents, junior and senior faculty member who manage patients with paragangliomas.

At the conclusion of this session, attendees will be able to:

- » Diagnose and recognize imaging features of paragangliomas.
- » Recognize and distinguish current molecular subtypes of paragangliomas.
- » Formulate and implement a surgical or radiation treatment plan for paragangliomas.

<b>9:35 am - 10:35 am</b>	<b><i>Break in Exhibit Hall</i></b>	
<b>10:05 am - 12:20 pm</b>	<b><u>General Session</u></b> Keynote Speaker, Honored Guest Speakers, Committee Reports	<i>Tampa Bay 5</i>
<b>12:20 pm - 1:20 pm</b>	<b><i>Lunch in Exhibit Hall</i></b>	
<b>1:20 pm - 2:20 pm</b>	<b><u>Research Committee Session: Basic and Translational Science in Skull Base Research</u></b> <i>Wenya Linda Bi, MD, PhD; Nyall R. London, MD, PhD</i> The session is designed to place a spotlight on the effective researchers in our NASBS cohort, as well as motivate us all to get more involved in funded research. At the conclusion of this session, attendees will be able to: <ul style="list-style-type: none"><li>» Gain an understanding for key steps in successfully incorporating research as a skull base surgeon.</li><li>» Gain a basic understanding of establishment of genomics and translational research including funding approaches.</li><li>» Motivate NASBS membership to work toward more basic research and multi-institutional collaborations in basic and translational science.</li></ul>	<i>Tampa Bay 2</i>
<b>1:20 pm - 2:20 pm</b>	<b><u>Hot Topic 5: Management of Carotid Involvement in Skull Base Malignancies (Sacrifice, Stent, Bypass)</u></b> <i>Dr. James Liu, Dr. Regan Bergmark, Dr. Dennis Tang, Dr. Brian Howard, Dr. Sepideh Amin-Hanjani, Dr. Amir Dehdashti</i> Management of skull base malignancies is always challenging. This difficult pathology becomes even more fraught with risk when the carotid artery is involved by the tumor. This session will address management strategies for these difficult cases and will seek to demonstrate safe techniques that will still allow good oncologic outcomes. At the conclusion of this session, attendees will be able to: <ul style="list-style-type: none"><li>» Plan for best options to manage carotid involvement in skull base malignancies pre-operatively.</li><li>» Integrate endovascular management options for carotid involvement in skull base malignancies.</li><li>» Assess the indication and technique for bypass in skull base malignancy cases with carotid involvement.</li></ul>	<i>Tampa Bay 1</i>

1:20 pm - 2:20 pm

**Hot Topic 6: Immunotherapy for Sinonasal Cancers**

Tampa Bay 6

*Dr. James Byrd, Dr. Nabil Saba, Dr. Fiona Simpson, Dr. Ivan El-Sayed, Dr. Michael Yim*

To discuss immunotherapy for squamous cell carcinoma, malignant melanoma, nasopharyngeal cancer, adenoid cystic and adenocarcinoma. Anterior skull base surgeons with a background in rhinology and neurosurgery are encouraged to attend.

At the conclusion of this session, attendees will be able to:

- » Discuss immunotherapy for SCC and malignant melanoma.
- » Discuss immunotherapy for nasopharyngeal cancer.
- » Discuss immunotherapy for adenoid cystic and adenocarcinoma.

1:20 pm - 2:20 pm

**Special Session 3: New Technology in Skull Base Surgery**

Tampa Bay 7

*Dr. Erin McKean, Dr. Lola Chambless, Dr. Douglas Hardesty, Dr. Peter Tomazic, Dr. Walter Jean, Dr. John Lee*

This session will focus on the technological advances that will help propel surgical treatment of skull base pathologies in the future. Specifically, this session will focus on the pre surgical planning and intraoperative utility that result in safer and improved surgical outcomes. This session is primarily designed for skull base surgeons.

At the conclusion of this session, attendees will be able to:

- » Understand how new technologies are implemented and utilized in the preoperative environment and planning.
- » Appreciate how novel intraoperative technologies are being used to improve visualization of skull base pathologies.
- » Assess the role of technology and advances in surgical technique and equipment to provide for superior patient outcomes.

1:20 pm - 2:20 pm

**Special Session 4: Building a Skull Base Practice**

Tampa Bay 8

*Dr. Carolina Benjamin, Dr. Pierre Olivier Champagne, Dr. Debraj Mukherjee, Dr. Chirag Patel, Dr. Gelareh Zaden, Dr. Hamid Borghei-Razavi*

This session will focus on the beginning of a skull base career and the particular dynamics and tendencies that help young practices thrive. Particular emphasis will be teamwork, program building, and striving for better outcomes while gaining confidence and experience. Medical students, Residents, fellows and early career skull base surgeons will benefit from this session.

At the conclusion of this session, attendees will be able to:

- » Differentiate between different program growth models and how to implement these into your own practice.
- » Understand how to balance gaining experience, pushing the boundaries, educating team members and optimizing patient outcomes.
- » Evaluate which steps and which hurdles are necessary to develop a world class skull base program.

1:20 pm - 2:20 pm

**Tumor Board Session 3: Sinonasal Tumors**

Tampa Bay 9

*Dr. Hugh Curtin, Dr. Christina Jackson, Dr. Elcin Zan, Dr. Zoukka Sargi, Dr. Seth Lieberman, Dr. Kelly Magliocca*

This session reviews current data and consensus best practices for management and treatment of Sinonasal Tumors and targets students, residents, junior, and senior faculty members.

At the conclusion of this session, attendees will be able to:

- » Diagnose and discriminate radiographic features of sinonasal tumors.
- » Discuss and evaluate molecular subtyping of sinonasal tumors.
- » Formulate and implement a surgical or radiotherapeutic treatment plan for sinonasal tumors



**1:20 pm - 2:20 pm**    **Special Session 4: Building a Skull Base Practice**

*Dr. Carolina Benjamin, Dr. Pierre Oliver Champgne, Dr. Debraj Mukherjee, Dr. Chirag Patel, Dr. Delareh Zadeh, Dr. Hamid Borghei-Razavi*

This session will focus on the beginning of a skull base career and the particular dynamics and tendencies that help young practices thrive. Particular emphasis will be teamwork, program building, and striving for better outcomes while gaining confidence and experience. Medical students, Residents, fellows and early career skull base surgeons will benefit from this session.

At the conclusion of this session, attendees will be able to:

- » Differentiate between different program growth models and how to implement these into your own practice.
- » Understand how to balance gaining experience, pushing the boundaries, educating team members and optimizing patient outcomes.
- » Evaluate which steps and which hurdles are necessary to develop a world class skull base program.

**2:25 pm - 3:25 pm**    **Special Session 5: The Role of the Endovascular Surgeon in Skull Base Pathology**

*Tampa Bay 7*

*Dr. Wael Hassaneeh Mostafa, Dr. Brian Howard, Dr. John Nerva, Dr. Avinash Mantravadi, Dr. Mustafa Baskaya, Dr. Aaron Dumont*

Many skull base pathologies are in close proximity to major intracranial blood vessels, both arteries and veins. Furthermore many skull base pathologies receive their blood supply from these structures requiring and intimate knowledge of both the pathology and vessels themselves. In this session, standard work up for skull base pathologies involving major arteries and veins will be discussed. Techniques including preoperative evaluation, pre-operative interventions including embolization and vessels sacrifice, and techniques will be discussed. This session is primary for skull base surgeons of all types, interventional neurointerventionalist/surgeons, fellows, residents, and medical students.

At the conclusion of this session, attendees will be able to:

- » Assess the different ways that skull base pathologies and the skull base vascularity interaction and impact further treatment.
- » Recognize different preoperative evaluations and treatment options for skull base pathology and their potential impact on surgical excision/treatment.
- » Integrate how endovascular surgeons and skull base surgeons may work as a team to provide for improved skull base pathology treatment and improve patient outcomes.

**2:25 pm - 3:25 pm**    **Special Session 6: Rehabilitation Following Skull Base Surgery (PT, OT, Speech and Swallowing)**    Tampa Bay 8

*Dr. James Byrd, Dr. Ashley Nassiri, Dr. Anjum Sayyad, Dr. Esther Vivas, Dr. Joseph Zenga, Dr. Andrew Tkaczuk*

Rehabilitation following Skull Base surgery is as critical to patient outcomes as the treatment itself. In this session, standard techniques will be reviewed as well as cutting-edge advantages that are focused on optimizing neural repair, patient physical recovery, as well as options for further intervention for improved outcomes. This session is primarily for skull base surgeons, fellows, residents, medical students and anyone involved with post operative care.

At the conclusion of this session, attendees will be able to:

- » Articulate different treatment modalities that may be used to enhance rehabilitation for patients undergoing skull base surgery.
- » Evaluate different therapy options to facilitate recovery for patients who undergo skull base surgery.
- » Develop a team based approach to enhance recovery after skull base surgery using novel techniques to facilitate further recovery.

**2:25 pm - 3:25 pm**    **Video Session 5: Exoscopic Surgery**    Tampa Bay 1

*Dr. John Lee, Dr. Kunal Soni, Dr. David Langer, Dr. Alexander Yu, Dr. Christina Rios-Vicil, Dr. John Lee, Dr. C. Arturo Solares*

This session will explore the current utilization of the exoscope in skull base surgery. The limitations of the current technology in illumination and optical visualization will be discussed along with the advantages of the exoscope over conventional visualization modalities. The session will be interesting for trainees and surgeons in the fields of neurosurgery, otolaryngology, ophthalmology, radiology and plastic surgery.

At the conclusion of this session, attendees will be able to:

- » Recognize the advantages of the exoscope over current visualization modalities.
- » Assess the limitations in illumination and visualization of the current exoscope technology.
- » Predict the future direction of exoscope utilization in skull base surgery.

- 2:25 pm - 3:25 pm**    **Video Session 6: Petrous and Petroclival Surgery**    Tampa Bay 6  
*Dr. Peter Nakaji, Dr. Paramita Das, Dr. Ravi Samy, Dr. Walter Jean, Dr. Florian Roser, Dr. Gavriel Kohlberg, Dr. Russell Lonser*  
This session is ideally geared to neurosurgeons, neuro-otologists, and trainees interested in viewing techniques for petrous and petroclival surgery. By focusing on surgical nuances through focused operative videos and discussion, the audience members will be able to have an overview of approaching this complicated region from various perspectives.  
At the conclusion of this session, attendees will be able to:
- » Distinguish scenarios when the petrous apex is approached from the supratentorial, lateral, and infratentorial perspectives.
  - » Recognize emerging technology and employ technical pearls to avoid complications when approaching the petrous and petroclival region.
- 2:25 pm - 3:25 pm**    **Tumor Board Session 4: Clival Chordoma**    Tampa Bay 9  
*Dr. Chandranath Sen, Dr. Bree Eaton, Dr. Mai-Lan Ho, Dr. Nathan Zwagerman, Dr. Rupesh Kotecha, Dr. Stewart Neill*  
This session will be focused on reviewing current data to achieve a consensus on best practices for the management of Clival Chordomas. It will target students, residents, junior, and senior faculty members who manage patients with Clival Chordomas.  
At the conclusion of this session, attendees will be able to:
- » Diagnose and illustrate key radiographic and pathologic features of Clival Chordomas.
  - » Discuss the role of molecular subtyping in the characterization of Clival Chordomas.
  - » Formulate a surgical approach and treatment plan for Clival Chordomas, discussing both open and endoscopic routes.
  - » Evaluate the pros and cons of radiation treatment as an alternative to or adjunct to surgery for Clival Chordomas.
- 2:25 pm - 3:25 pm**    **Research Committee Session: Clinical, Outcomes, and Anatomical in Skull Base Research**    Tampa Bay 9  
*Michael Karsy, MD, PhD, MSc; Jamie Joseph Van Gompel, MD*  
The session is designed to detail research program set-up and how to be successful in clinical, outcomes, or anatomical research.  
At the conclusion of this session, attendees will be able to:
- » Gain an appreciation for the breadth of skull base research performed in our membership.
  - » Gain a basic understanding of how to establish a clinical, outcomes, or anatomical research program.
  - » Describe funding approaches and techniques to support clinical, outcomes, or anatomical research.
- 3:30 pm - 4:00 pm**    ***Break in the Exhibit Hall***

4:00 pm - 5:00 pm **Skull Base Jeopardy**

Tampa Bay 5

4:00 pm - 6:05 pm **Rhoton Room: Dueling Dissections Session 2 : Petroclival Region**

Tampa Bay 3 & 4

*Dr. Chandranath Sen, Dr. Bree Eaton, Dr. Mai-Lan Ho, Dr. Nathan Zwagerman, Dr. Rupesh Kotecha, Dr. Stewart Neill*

Endoscopic endonasal and transcranial approaches are competing but also complementary approaches to the skull base. In this session we will review the 3D surgical anatomy of the petroclival region, and we will discuss the pros and cons of endonasal and transcranial approaches to this complex area. Attendance is recommended for all trainees and faculty with an interest in managing pathology in this location.

At the conclusion of this session, attendees will be able to:

- » Develop a better understanding of the surgical anatomy of the petroclival region.
- » Recognize key surgical landmarks and technical nuances for the endonasal and transcranial approach to the petroclival region.
- » Compare the benefits and disadvantages of endonasal and transcranial approaches to the petroclival region.

4:00 pm - 5:00 pm **Proffered Papers Session 9: Clivus/CPA/Cavernous Sinus**

Tampa Bay 1

**V005: HAKUBA-DOLENC APPROACH FOR RESECTION OF A LARGE CAVERNOUS SINUS DERMOID CYST** - [Matthew Sun, MD](#); [Eva Wu, MD](#); [Jacques Morcos, MD](#); University of Miami

**V006: SPONTANEOUS RHINORRHEA: A POSSIBLE CONCEALING INITIAL SYMPTOM OF ECCHORDOSIS PHYSALIPHORA** - [Maria Jose Castello Ruiz<sup>1</sup>](#); [Mohammad Bilal Alsavaf<sup>2</sup>](#); [Michael Fadel<sup>3</sup>](#); [Eman H. Salem<sup>4</sup>](#); [Kittichai Mongkolkul<sup>5</sup>](#); [Pakjira Naksen<sup>6</sup>](#); [Saniya S. Godil<sup>7</sup>](#); [Bradley A. Otto<sup>2</sup>](#); [Ricardo L. Carrau<sup>2</sup>](#); [Daniel M. Prevedello<sup>7</sup>](#); <sup>1</sup>Department of Neurosurgery, Hospital Universitario Torrecardenas, Almería, Spain; <sup>2</sup>Department of Otolaryngology-Head and Neck Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>3</sup>Department of Otolaryngology, Faculty of medicine, Ain Shams University, Cairo, Egypt; <sup>4</sup>Department of Otolaryngology, Faculty of Medicine, Mansoura University, Mansoura, Egypt; <sup>5</sup>Department of Otolaryngology-Head and Neck Surgery, Rajavithi Hospital, The College of Medicine of Rangsit University, Bangkok, Thailand; <sup>6</sup>Department of Otolaryngology, Phramongkutklao Hospital, Bangkok, Thailand; <sup>7</sup>Department of Neurological Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA

**V007: EXTENSIVE POSTEROLATERAL APPROACH FOR CLIVAL CHORDOMA** - [Je Beom Hong<sup>1</sup>](#); [Chiman Jeon<sup>1</sup>](#); [Seonah Choi<sup>2</sup>](#); [Seung-hoon Lim<sup>3</sup>](#); <sup>1</sup>Kangbuk Samsung Hospital; <sup>2</sup>Severance Hospital; <sup>3</sup>Kyung Hee University Medical Center

**V008: ENDOSCOPIC ENDONASAL TRANSCLIVAL RESECTION OF A RECURRENT NEUROENTERIC CYST** - [Hussam Abou-Al-Shaar, MD](#); Tritan J Plute, BS; Michael M McDowell, MD; Carl H Snyderman, MD, MBA; Paul A Gardner, MD; University of Pittsburgh Medical Center

**V009: ENDOSCOPIC ENDONASAL APPROACH TO RECURRENT CHORDOMA** - Jee-Hong Peter Kim, MD<sup>1</sup>; Olabisi R Sanusi, MD<sup>2</sup>; [Nataly Raviv, MD<sup>2</sup>](#); Mathew Geltzeiler, MD<sup>2</sup>; <sup>1</sup>Univ of Nevada, Las Vegas; <sup>2</sup>Oregon Health & Science University

**V010: STRANGULATION OF THE ABDUCENS NERVE BY A FIBROUS BAND WITHIN AN EPIDERMOID CYST** - [Jacob Kosarchuk, MD](#); Walter Dent; Carl Heilman, MD; Tufts Medical Center

**V011: FAR LATERAL APPROACH TO A CEREBELLOPONTINE ANGLE HEMANGIOBLASTOMA: MICROSURGICAL ANATOMY AND SURGICAL PRINCIPLES** - [Danielle D Dang, MD<sup>1</sup>](#); Edoardo Agosti, MD<sup>1</sup>; Luciano C Leonel, PhD<sup>1</sup>; Christopher Graffeo, MD<sup>1</sup>; Jonathan M Morris, MD<sup>2</sup>; Maria Peris-Celda, MD, PhD<sup>1</sup>; <sup>1</sup>Mayo Clinic Rhoton Neurosurgery and Otolaryngology Surgical Anatomy Program; <sup>2</sup>Unit of Anatomic Modeling, Division of NeuroRadiology, Department of Radiology, Mayo Clinic

**V012: ENDOSCOPIC ENDONASAL RESECTION OF INFUNDIBULAR HEMANGIOBLASTOMA** - [Hanna N Algattas, MD](#); Kent Tadokoro; Eric W Wang; Paul A Gardner; University of Pittsburgh Medical Center

4:00 pm - 5:00 pm

**Proffered Papers Session 10: Meningiomas**

Tampa Bay 2

**S057: ENDOSCOPIC ENDONASAL APPROACH FOR TUBERCULUM SELLAE MENINGIOMAS: SURGICAL RESULTS** - [Erion Junior de Andrade](#); Jakub Jarmula, BA; Troy Woodard; Varun Kshetry, MD; Raj Sindwani; Pablo F Recinos, MD; Cleveland Clinic

**S059: APPLICATION OF RADIOMICS IN MENINGIOMA IMAGING: GLOBAL TRENDS AND NEEDS** - [Ruchit V Patel, BS](#); Shun Yao, MD, PhD; Raymond Y Huang, MD, PhD; Wenya Linda Bi, MD, PhD; Brigham and Women's Hospital, Harvard Medical School

**S060: PREDICTING MENINGIOMA GRADE PRE-OPERATIVELY USING AN IMAGING SCORE** - [Alexander J Ledet](#); Abigail Funari; Seth S Jeong; Anne Lally; Sayak Ghosh; Ali Karandish; Vijay Agarwal, MD; Albert Einstein College of Medicine

**S061: SUPRASELLAR MENINGIOMA: A NOVEL CLASSIFICATION** - Abdulrazag Ajlan, MD, MSc, UCNSD, FRCSC; [Basim M Noor Elahi, MD](#); Saad Alsalih, MBBS, FRCSC; Ahmad Alroqi, MD; Abdulaziz Alreshaid, MBBS, MSc, FRCSC; Saud Alromaih, MD; Ashwag Alqurashi, MD; King Saud University Medical City

**S062: EXTENT OF RESECTION AND PRE-OPERATIVE HEMORRHAGE PREDICT RECURRENCE FOR INTRAVENTRICULAR MENINGIOMAS** - [Julia B Duvall](#); [Saksham Gupta, MD](#); [Melissa M Chua, MD](#); [Siva Emani](#); [Omar Arnaout, MD](#); Department of Neurosurgery, Brigham and Women's Hospital, Harvard Medical School, Boston, MA

**S063: PREOPERATIVE EMBOLIZATION OF SKULL BASE MENINGIOMAS: SAFETY AND EFFICACY** - [Ehsan Dowlati, MD](#)<sup>1</sup>; [Charles Withington](#)<sup>1</sup>; [Jorge Roa, MD](#)<sup>2</sup>; [Samir Sur, MD](#)<sup>2</sup>; [Daniel R Felbaum, MD](#)<sup>1</sup>; [Jeffrey C Mai, MD, PhD](#)<sup>1</sup>; <sup>1</sup>Medstar Georgetown University Hospital; <sup>2</sup>MedStar Franklin Square Hospital

4:00 pm - 5:00 pm

**Proffered Papers Session 11: Head and Neck/Reconstruction**

Tampa Bay 6

**V013: RESECTION OF GIANT JUVENILE NASOPHARYNGEAL ANGIOFIBROMA** - [Lacy Brame, DO](#)<sup>1</sup>; [Anirrhuda Parikh, MD](#)<sup>2</sup>; [Kibwei A McKinney, MD](#)<sup>2</sup>; <sup>1</sup>Oklahoma State University; <sup>2</sup>University of Oklahoma Health Sciences Center

**V014: INFRATEMPORAL FOSSA MUCOCELE MASQUERADING AS RECURRENT CHOLESTEATOMA** - [Benjamin D Lovin, MD](#)<sup>1</sup>; [Paul W Gidley, MD](#)<sup>2</sup>; <sup>1</sup>Bobby R. Alford Department of Otolaryngology-Head and Neck Surgery, Baylor College of Medicine, Houston, Texas; <sup>2</sup>Department of Head and Neck Surgery, The University of Texas MD Anderson Cancer Center, Houston, Texas

**V015: TRANSORAL ENDOSCOPIC RETROPHARYNGEAL LYMPH NODE DISSECTION** - [Andrey Filimonov, MD, PharmD](#); [Paul Gardner, MD](#); [Carl Snyderman, MD](#); University of Pittsburgh

**V016: JUVENILE NASOPHARYNGEAL ANGIOFIBROMA PRESENTING AS A FACIAL MASS: A UNIQUE, COMBINED, OPEN AND ENDOSCOPIC APPROACH.** - [Kareem Haroun, MD](#); [Diana Bigler, MD](#); [Camilo Reyes Gelves, MD](#); [Kenneth Byrd, MD](#); Medical College of Georgia

**V017: EXPANDED ENDONASAL APPROACH (EEA) AND RESECTION OF LARGE LEFT NASAL CAVITY AMELOBLASTOMA** - [Lazaro R Peraza, MD](#); [Nicholas R Randall, MD](#); [Kyle S Ettinger, MD, DDS](#); [Lucas P Carlstrom, MD, PhD](#); [Jamie J Van Gompel, MD](#); [Garret W Choby, MD](#); Mayo Clinic - Rochester

**V018: ENDONASAL RESECTION OF FRACTURED ODONTOID FOR DECOMPRESSION OF THE CERVICOMEDULLARY JUNCTION** - [Michael T Chang, MD](#); [Karam P Asmaro, MD](#); [Jayakar V Nayak, MD, PhD](#); [Juan C Fernandez-Miranda, MD](#); Stanford University School of Medicine

**V019: RECURRENT MIDDLE EAR ADENOMA RESECTION VIA TRANSLABYRINTHINE AND TRANSCOCHLEAR APPROACHES** - [Samuel R Barber, MD](#); [Frank Culicchia, MD](#); [Moises A Arriaga, MD](#); LSU HSC



**V020: SKULL BASE RECONSTRUCTION USING A VASTUS**

**LATERALIS FREE FLAP** - [Basit A Jawad, MD](#); Kyle Wu, MD; Hilary Mccrary, MD; Janice Farlow, MD, PhD; Douglas Hardesty, MD; Cate Haring, MD; Kyle Vankeovering, MD; Ohio State University

**4:00 pm - 5:00 pm** **Proffered Papers Session 12: Endoscopic Transnasal Skull Base Surgery** *Tampa Bay 7*

**S065: SINGLE CELL METABOLIC LANDSCAPE OF PITUITARY NEUROENDOCRINE TUMOR SUBGROUPS AND LINEAGES -**

[Brandon Lucke-Wold](#); University of Florida

**S066: A NOVEL STEERABLE INSTRUMENT FOR RESECTING TUMORS IN ENDOSCOPIC ENDONASAL PROCEDURES -**

[Peter J Morone, MD, MSCI](#); VUMC

**S067: EVOLUTION OF ENDOSCOPIC ENDONASAL POSTERIOR CLINOIDECTOMY TECHNIQUE: FROM EXTRADURAL, TRANSCAVERNOUS TO EXTENDED TRANSCAVERNOUS POSTERIOR CLINOIDECTOMY -**

[Yuanzhi Xu, MD](#)<sup>1</sup>; Karam Asmaro, MD<sup>2</sup>; Maximiliano A Nunez, MD<sup>2</sup>; Aaron A Cohen-Gadol, MD<sup>3</sup>; Ying Mao, MD<sup>2</sup>; Juan C Fernandez-Miranda, MD<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, Huashan Hospital, Shanghai Medical College, Fudan University, Shanghai, China; <sup>2</sup>Department of Neurosurgery, Stanford Hospital, Stanford, California; <sup>3</sup>Department of Neurological Surgery, Indiana University, Indianapolis, Indiana

**S068: DISCREPANCIES BETWEEN PATIENT REPORTED AND OBJECTIVE OLFATORY FUNCTION BEFORE ENDOSCOPIC SKULL BASE SURGERY -**

[Lindsey F Jackson, BM](#); Jennifer K Mulligan, PhD; Jeb M Justice, MD; Steven N Roper, MD; Jason E Blatt, MD, FAANS; Brian C Lobo, MD; University of Florida

**S069: INDICATIONS AND LIMITATIONS OF THE ENDOSCOPIC ENDONASAL APPROACH FOR ANTERIOR SKULL BASE MENINGIOMAS: A COMPARISON WITH CONVENTIONAL MICROSCOPIC TRANSCRANIAL RESECTION -**

[Yuki Shinya, MD](#)<sup>1</sup>; Hirotaka Hasegawa, MD, PhD<sup>1</sup>; Kei Arisawa, MD<sup>1</sup>; Masahiro Shin, MD, PhD<sup>2</sup>; Motoyuki Umekawa, MD<sup>1</sup>; Nobuhito Saito, MD, PhD<sup>1</sup>; <sup>1</sup>The University of Tokyo Hospital; <sup>2</sup>University of Teikyo Hospital

**S070: SIMULTANEOUS ENDOSCOPIC ENDONASAL AND TRANSCRANIAL EXCISION OF GIANT PITUITARY ADENOMAS -**

[Raju Krishnaprabhu](#); Ari G Chacko; Wilson P Desouza; Edmond Jonathan; Rajan Sundaresan; Regi Thomas; Asha HS; Christian Medical College

**S071: ENDOSCOPIC ENDONASAL APPROACH FOR SKULL BASE TUMORS IN PATIENTS PRESENTING WITH MONOCULAR BLINDNESS -**

[David Gomez, BS](#)<sup>1</sup>; Jacob J Ruzevick, MD<sup>2</sup>; Ryan Chung, BS<sup>1</sup>; Stephanie Cheek, MD<sup>2</sup>; Dhiraj J Pangal, BS<sup>1</sup>; Gabriel Zada, MD, MS<sup>2</sup>; <sup>1</sup>Keck School of Medicine, University of Southern California, Los Angeles, CA, USA; <sup>2</sup>Department of Neurological Surgery, Keck School of Medicine, University of Southern California, Los Angeles, CA, USA

**S072: SKULL BASE RECONSTRUCTION AFTER TRANSTUBERCULUM-TRANSPLANUM ENDOSCOPIC ENDONASAL APPROACHES: SURGICAL RESULTS** - [Erion J de Andrade, MD](#); Jakub Jarmula, BA; Connor Sommerfeld, MD; Troy Woodard, MD; Varun Kshetry, MD; Raj Sindwani, MD; Pablo F Recinos; Cleveland Clinic

4:00 pm - 5:00 pm

**Proffered Papers Session 13: Pituitary Tumors**

Tampa Bay 8

**S073: CROOKE CELL ADENOMAS VS CORTICOTROPH ADENOMAS: RADIOGRAPHIC FEATURES AND REMISSION RATES FOLLOWING SURGERY FOR CUSHING'S DISEASE** - [Scott T Brigeman, MD](#); Benjamin K Hendricks, MD; Christina E Sarris, MD; Charuta G Furey, MD; Jennifer M Eschbacher, MD; Kevin C Yuen, MD; Andrew S Little, MD; Barrow Neurological Institute

**S074: TRENDS IN ENDOSCOPIC AND MICROSCOPIC APPROACHES TO TRANSSPHENOIDAL HYPOPHYSECTOMY IN THE UNITED STATES, USING A GLOBAL DATABASE NETWORK** - [Bita R Naimi, BA](#); Alexander Duffy, MD; Emily Garvey, BA; Zachary Urdang, MD, PhD; Marc Rosen, MD; Elina Toskala, MD, MBA, PhD; Christopher J Farrell, MD; Mindy R Rabinowitz, MD; James J Evans, MD; Gurston G Nyquist, MD; Thomas Jefferson University Hospital

**S075: ENHANCED RECOVERY FOLLOWING ENDOSCOPIC ENDONASAL PITUITARY SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS** - [Cai Long, MD](#); Erin D Wright, MD, MEd; Daniel C O'Brien, MD, MAS; University of Alberta

**S076: PITUITARY HYPERPLASIA: A CASE SERIES OF 23 OBSERVED AND 4 SURGICAL PATIENTS** - [Zain Peeran, BS](#)<sup>1</sup>; William Carson<sup>2</sup>; Jacob S Young, MD<sup>2</sup>; Robert C Osorio, BS<sup>1</sup>; Manish K Aghi, MD, PhD<sup>2</sup>; <sup>1</sup>School of Medicine, University of California San Francisco, San Francisco, CA, USA; <sup>2</sup>Department of Neurological Surgery, University of California San Francisco, San Francisco, CA, USA

**S077: EFFECTS OF PREOPERATIVE SERUM PROLACTIN AND TUMOR VOLUME ON POSTOPERATIVE REMISSION IN A COHORT OF 219 PROLACTINOMA RESECTIONS** - [Robert C Osorio, BS](#)<sup>1</sup>; Matheus P Pereira, MD<sup>2</sup>; Taemin Oh, MD<sup>3</sup>; Rushikesh S Joshi, MD<sup>4</sup>; Alexander F Haddad, MD<sup>1</sup>; Eric Chalif, BS<sup>1</sup>; Kaitlyn M Pereira, MD<sup>2</sup>; Kevin C Donohue, BS<sup>1</sup>; Zain Peeran, BS<sup>1</sup>; William Carson<sup>1</sup>; Aarav Badani<sup>1</sup>; Elaina Wang, MD<sup>5</sup>; Sweta Sudhir, BS<sup>1</sup>; Ankush Chandra, MD<sup>6</sup>; Saket Jain, PhD<sup>1</sup>; Angad Beniwal, BS<sup>1</sup>; José Gurrola II, MD<sup>1</sup>; Ivan H El-Sayed, MD<sup>1</sup>; Lewis S Blevins Jr., MD<sup>1</sup>; Philip V Theodosopoulos, MD<sup>1</sup>; Sandeep Kunwar, MD<sup>1</sup>; Manish K Aghi, MD, PhD<sup>1</sup>; <sup>1</sup>University of California, San Francisco; <sup>2</sup>Medical University of South Carolina College of Medicine; <sup>3</sup>University of Utah; <sup>4</sup>University of Michigan; <sup>5</sup>Brown University; <sup>6</sup>University of Texas Health Sciences Center at Houston

**S078: FUNCTIONAL GONADOTROPH ADENOMAS: A SINGLE INSTITUTION CASE SERIES** - [Zain Peeran, BS<sup>1</sup>](#); Jacob S Young, MD<sup>2</sup>; Aarav Badani<sup>2</sup>; Robert C Osorio, BS<sup>1</sup>; Manish K Aghi, MD, PhD<sup>2</sup>; <sup>1</sup>School of Medicine, University of California San Francisco, San Francisco, CA, USA; <sup>2</sup>Department of Neurological Surgery, University of California San Francisco, San Francisco, CA, USA

**S079: PREDICTION OF READMISSIONS IN PITUITARY ADENOMAS USING MACHINE LEARNING ALGORITHM** - [Sandeep Kandregula, MBBS, MCh](#); Deepak Khumbare, PhD; Racheal Peterson, MD; Amey Savardekar, MD; Jamie Toms, MD; Jennifer Kosty, MD; Michael Yim, MD; Bharat Guthikonda, MD; LSU Health Sciences Shreveport

**S080: GENERATING NOVEL PITUITARY DATASETS FROM OPEN-SOURCE IMAGING DATA AND DEEP VOLUMETRIC SEGMENTATION** - [Rachel Gologorsky, BS<sup>1</sup>](#); Samir Harake<sup>2</sup>; William Couldwell<sup>3</sup>; Eric Oermann<sup>4</sup>; Erin McKean<sup>2</sup>; Todd Hollon<sup>2</sup>; <sup>1</sup>Mount Sinai; <sup>2</sup>University of Michigan; <sup>3</sup>University of Utah; <sup>4</sup>New York University

4:00 pm - 5:00 pm

**Proffered Papers Session 14: Sinonasal Neoplasms**

Tampa Bay 9

**S081: OLFACTORY NEUROBLASTOMA: A MULTI-CENTER SURVIVAL ANALYSIS AND APPLICATION OF A STAGING MODIFICATION INCORPORATING HYAMS GRADE** - [Garret Choby, MD<sup>1</sup>](#); Mathew Geltzeiler<sup>2</sup>; Joao Paulo Almeida<sup>3</sup>; Pierre-Olivier Champagne<sup>4</sup>; Justin Cetas<sup>2</sup>; Erik Chan<sup>5</sup>; Jeremy Ciporen<sup>2</sup>; Mark Chaskes<sup>6</sup>; Juan Fernandez-Miranda<sup>5</sup>; Paul Gardner<sup>7</sup>; Fred Gentili<sup>8</sup>; Peter Hwang<sup>5</sup>; Keven Seung Yong Ji<sup>2</sup>; Aristotelis Kalyvas<sup>8</sup>; Keonho Kong<sup>6</sup>; Ryan McMillan<sup>1</sup>; Jamie O'Byrne<sup>1</sup>; Chirag Patel<sup>9</sup>; Zara Patel<sup>5</sup>; Maria Peris-Celda<sup>1</sup>; Carlos Pinheiro-Neto<sup>1</sup>; Olabisi Sanusi<sup>2</sup>; Carl Snyderman<sup>7</sup>; Brian D Thorp<sup>6</sup>; Jamie J Van Gompel<sup>1</sup>; George Zenonos<sup>7</sup>; Nate Zwaggerman<sup>10</sup>; Eric W Wang<sup>7</sup>; <sup>1</sup>Mayo Clinic; <sup>2</sup>Oregon Health Sciences; <sup>3</sup>Mayo Clinic Florida; <sup>4</sup>Univeriste Laval; <sup>5</sup>Stanford University; <sup>6</sup>University of North Carolina; <sup>7</sup>UPMC; <sup>8</sup>University of Toronto; <sup>9</sup>Loyola University; <sup>10</sup>University of Wisconsin

**S082: THE IMPACT OF RURALITY ON TREATMENT AND OUTCOMES AMONG ADULT PATIENTS WITH SINONASAL MALIGNANCIES IN UTAH** - [Emma R Dioso, BS<sup>1</sup>](#); Ashley S Carter<sup>2</sup>; Majid Khan<sup>3</sup>; Michael Karsy, MD, PhD<sup>4</sup>; <sup>1</sup>University of Utah School of Medicine; <sup>2</sup>Eastern Virginia Medical School; <sup>3</sup>University of Nevada Reno; <sup>4</sup>University of Utah, Department of Neurosurgery

**S083: EXAMINING THE NATURAL HISTORY AND PATTERNS OF DISEASE RECURRENCE IN PATIENTS WITH POSITIVE MARGIN ESTHESIONEUROBLASTOMA** - Megan M Bauman, MS; [Jeffrey P Graves, MS](#); Travis J Haller, MD; Ryan A McMillan, MD; Eric J Moore, MD; Michael J Link, MD; Garret W Choby, MD; Jamie J Van Gompel, MD; Mayo Clinic

**S084: T4 SINONASAL ADENOID CYSTIC CARCINOMA: OVERALL SURVIVAL DIFFERENCES BY TREATMENT MODALITY**

- Yuki Kawahara, BA<sup>1</sup>; Neeraja Konunthula, MD<sup>2</sup>; Anthony Del Signore, MD<sup>3</sup>; Satish Govindaraj<sup>3</sup>; Eric Genden, MD<sup>3</sup>; Alfred Illoreta, MD<sup>3</sup>; Arjun Parasher, MD<sup>1</sup>; <sup>1</sup>University of South Florida Morsani College of Medicine; <sup>2</sup>University of Washington School of Medicine; <sup>3</sup>Icahn School of Medicine at Mount Sinai

**S085: MULTISPECTRAL IMMUNOFLOURESCENCE ANALYSIS OF THE ESTHESIONEUROBLASTOMA TUMOR IMMUNE MICROENVIRONMENT REVEALS T CELL STROMA LOCALIZATION AND TUMOR PARENCHYMA EXCLUSION**

- Riley Larkin<sup>1</sup>; Diana Lopez<sup>2</sup>; Yvette Robbins<sup>1</sup>; Gary Gallia, MD, PhD<sup>3</sup>; Clint Allen, MD<sup>1</sup>; Nyall London, MD, PhD<sup>1</sup>; <sup>1</sup>NIH; <sup>2</sup>Cleveland Clinic; <sup>3</sup>Johns Hopkins

**S086: PROTON VERSUS PHOTON BEAM THERAPY IN SINONASAL SQUAMOUS CELL CARCINOMA**

- Arash Abiri, BS; Theodore V Nguyen, BS; Khodayar Goshtasbi, MD; Sina J Torabi, MD; Edward C Kuan, MD, MBA; University of California, Irvine

**S087: ANALYSIS OF UNPLANNED 30-DAY HOSPITAL ADMISSIONS IN PATIENTS WITH SINONASAL MALIGNANCIES**

- Chase I Kahn, MD<sup>1</sup>; Douglas R Farquhar, MD<sup>1</sup>; Mindy R Rabinowitz, MD<sup>1</sup>; Gurston G Nyquist, MD<sup>1</sup>; James J Evans, MD<sup>2</sup>; Marc R Rosen, MD<sup>1</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania, United States; <sup>2</sup>Department of Neurosurgery, Thomas Jefferson University Hospital, Philadelphia, Pennsylvania, United States

**S088: PREDICTORS OF 90-DAY READMISSION FOLLOWING SURGERY FOR SINONASAL MALIGNANCIES USING A MACHINE LEARNING MODEL**

- Sandeep Kandregula, MD; Racheal Peterson, MD; Rema Anisha Kandula, MD; Deepak Kumbhare, PhD; Bharat Guthikonda, MD; Michael Yim, MD; LSU Health Shreveport

5:05 pm - 6:05 pm

**Proffered Papers Session 15: Craniopharyngiomas/ Tuberculum Sella**

Tampa Bay 1

**V021: ENDOSCOPIC ENDOSCOPIC APPROACH FOR RESECTION OF A LARGE CRANIOPHARYNGIOMA WITH THIRD VENTRICULAR EXTENSION**

- Ramin Morshed, MD; Jose Gurola, MD; Ezequiel Goldschmidt, MD, PhD; UCSF

**V022: ENDOSCOPIC ENDONASAL APPROACH FOR CRANIOPHARYNGIOMA RESECTION IN A PEDIATRIC PATIENT**

- David T Fernandes, MD; Prateek Agarwal, MD, MBA; Sharath Anand, MD; Carl H Snyderman, MD; Michael McDowell, MD; Paul Gardner, MD; University of Pittsburgh Medical Center

**V023: GIANT CRANIOPHARYNGIOMA WITH INTRAVENTRICULAR EXTENSION**

- Ahmed Mohyeldin, MD, PhD; Vera Vigo, MD; Christine K Lee, MD, PhD; Jayakar V Nayak, MD; Juan C Fernandez-Miranda, MD; Stanford University

**V024: COMPLEX PEDIATRIC CRANIOPHARYNGIOMA WITH SUPRACHIASMATIC EXTENSION AND VASCULAR INVOLVEMENT** - [Karam P Asmaro, MD](#); Vera Vigo, MD; Christine K Lee, MD, PhD; Michael T Chang, MD; Peter H Hwang, MD; Laura M Prolo, MD, PhD; Juan C Fernandez-Miranda, MD; Stanford University

**V025: EXPANDED ENDOSCOPIC ENDONASAL APPROACH FOR RESECTION OF A RECURRENT CRANIOPHARYNGIOMA** - [Joao Paulo Almeida, MD, PhD](#); Lina Marenco-Hillebrand, MD; Diogo Moniz-Garcia, MD; Anshit Goyal, MD, MS; Osarenoma U Olomu, MD; Alfredo Quinones-Hinojosa, MD; Mayo Clinic Florida

**V026: COMBINED TRANSCRANIAL TRANSSEPTAL AND ENDOSCOPIC ENDONASAL APPROACH FOR A GIANT CRANIOPHARYNGIOMA** - [Vera Vigo, MD](#); Karam P Asmaro, MD; Michael T Chang, MD; Jayakar V Nayak, MD; Juan C Fernandez-Miranda, MD; Stanford University

**V027: EXPANDED ENDOSCOPIC ENDONASAL TRANSTUBERCULUM TRANSDIAPHRAGMATIC SULCUS APPROACH FOR RESECTION OF GERM CELL TUMOUR POST CHEMORADIOTHERAPY: TECHNICAL NUANCES AND PERFORATOR PRESERVATION** - [Patricio Gimenez, MD](#)<sup>1</sup>; Cristina Cernei<sup>1</sup>; Richard Edwards, MD, FRCS, SN<sup>2</sup>; Greg Fellows, FRCS, SN<sup>2</sup>; Warren Bennett, FRCS<sup>1</sup>; Kumar Abhinav, MD, FRCS, SN<sup>1</sup>; <sup>1</sup>Bristol Institute of Clinical Neuroscience; <sup>2</sup>Bristol Royal Hospital for Children

**V028: REVIEW OF ENDOSCOPIC AND OPEN APPROACHES FOR RESECTION OF COMPLEX CRANIOPHARYNGIOMAS** - [Michael Karsy](#)<sup>1</sup>; Gretchen Oakley<sup>2</sup>; Kristine Smith<sup>2</sup>; Sarah Menacho<sup>1</sup>; Amarbir Gill<sup>2</sup>; Jeremiah Alt<sup>2</sup>; William Couldwell<sup>1</sup>; <sup>1</sup>University of Utah, Department of Neurosurgery; <sup>2</sup>University of Utah, Department of Otolaryngology

5:05 pm - 6:05 pm

**Proffered Papers Session 16: Anatomy of the Skull Base**

Tampa Bay 2

**S089: THE THIRD NOSTRIL: COMBINING THE CONTRALATERAL, SUBTARSAL TRANSMAXILLARY RETRO-EUSTACHIAN AND ENDOSCOPIC ENDONASAL APPROACHES TO THE JUGULAR FORAMEN** - [Mohamed Labib, Dr](#)<sup>1</sup>; Irakliy Abramov<sup>2</sup>; Lena Mary Houlihan<sup>2</sup>; Daniel Prevedello<sup>3</sup>; Ricardo Carrau<sup>3</sup>; Mark Preul<sup>2</sup>; Michael Lawton<sup>2</sup>; <sup>1</sup>University of Maryland Medical Center; <sup>2</sup>Barrow Neurological Institute; <sup>3</sup>Ohio State University

**S090: ENDOSCOPIC ENDONASAL POSTERIOR CLINOIDECTOMY - SURGICAL ANATOMY AND OPERATIVE TECHNIQUE** - [Muhammad Salman Ali, MD](#); Georgios Zenonos, MD; Carl Snydermann, MD; Eric Wang, MD; Paul Gardner, MD; University of Pittsburgh Medical Center

**S091: MINIMALLY INVASIVE KEYHOLE APPROACHES TO THE PRE-CAVERNOUS TROCHLEAR NERVE - AN ANATOMIC, CADAVERIC STUDY** - Davendran Kanesen<sup>1</sup>; Byron Hontiveros<sup>2</sup>; Milagros A Lazos<sup>3</sup>; Frank Berry<sup>4</sup>; Regin J Mallari<sup>4</sup>; Daniel F Kelly<sup>4</sup>; [Garni Barkhoudarian](#)<sup>4</sup>; <sup>1</sup>Sarawak General Hospital; <sup>2</sup>Makati Medical Center; <sup>3</sup>University of the East Ramon Magsaysay Memorial Medical Center; <sup>4</sup>Pacific Neuroscience Institute

**S092: THE CRISTA OVALE A 'KEY' MIDDLE CRANIAL FOSSA LANDMARK: A MORPHOMETRIC COMPUTER TOMOGRAPHIC IMAGING EVALUATION** - [Juan C Yanez-Siller, MD, MPH](#)<sup>1</sup>; Edmund Howe, BS<sup>2</sup>; Raywat Noiphithak, MD<sup>3</sup>; Jeffrey Liaw, MD<sup>1</sup>; Michael Ortiz Torres, MD<sup>4</sup>; Arnaldo L Rivera, MD<sup>1</sup>; <sup>1</sup>Dept of Otolaryngology-Head and Neck Surgery, University of Missouri; <sup>2</sup>University of Missouri-Columbia, School of Medicine; <sup>3</sup>Dept of Surgery, Division of Neurosurgery, Pathumthani University; <sup>4</sup>Dept of Neurosurgery, University of Missouri

**S093: COMPARISON OF ENDOSCOPIC AND ENDOSCOPIC ASSISTED MINIMALLY INVASIVE APPROACHES TO THE INFRATEMPORAL FOSSA** - Kittichai Mongkolkul<sup>1</sup>; [Mohammad Bilal Alsavaf](#)<sup>2</sup>; Eman H. Salem<sup>3</sup>; Daniel M. Prevedello<sup>4</sup>; Kyle VanKoeveering<sup>2</sup>; Douglas Hardesty<sup>4</sup>; Kathleen Kelly<sup>2</sup>; Ricardo L. Carrau<sup>2</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, Rajavithi Hospital, The College of Medicine of Rangsit University, Bangkok, Thailand; <sup>2</sup>Department of Otolaryngology-Head and Neck Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>3</sup>Department of Otolaryngology, Faculty of Medicine, Mansoura University, Mansoura, Egypt; <sup>4</sup>Department of Neurological Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA

**S094: SOFT TISSUE DISSECTION IN TRANSCONDYLAR APPROACH TO MAXIMIZE LATERAL ACCESS: A MODIFIED LAYERED APPROACH** - [Xiaochun Zhao, MD](#); Sherwin Tavakol, MD; Kiana Prather; Panayiotis Pelargos, MD; Ian Dunn, MD; University of Oklahoma

**S095: CADAVERIC MORPHOMETRIC STUDY OF SURGICAL ANATOMY OF THE CEREBELLAR TONSILS** - [Tulika Gupta](#); Devender Shekawat; D Sahni; Sunil K Gupta; PGIMER

**S096: PRECISE IDENTIFICATION OF KEY ANATOMICAL STRUCTURES FOR THE EXTENDED ENDOSCOPIC ENDONASAL SKULL BASE SURGICAL APPROACH TO THE MIDLINE MIDDLE CRANIAL FOSSA: ANATOMICAL STUDY.** - [Agustin Dorantes-Argandar, MD](#); Flavio Rodas-Berrezueta, MD; Luis Perez-Garcia, MD; Alejandro Gonzalez-Sanchez, FT; Berenice Garcia-Guzman, MD; Surgical Neuroanatomy Laboratory - Facultad Mexicana de Medicina - Universidad La Salle



**5:05 pm - 6:05 pm** **Proffered Papers Session 17: Schwannoma/Middle Fossa Approach**

Tampa Bay 6

**V029: SURGICAL TREATMENT OF HEMIFACIAL SPASM VIA MICROVASCULAR DECOMPRESSION OF A LARGE, ECTATIC VERTEBRAL ARTERY** - Megan M Bauman, MS; Lucas P Carlstrom, MD, PhD; Michael J Link, MD; Mayo Clinic

**V030: SUBFASCIAL DISSECTION AND EXTENDED TEMPORAL MUSCLE DETACHMENT FOR MIDDLE FOSSA APPROACH** - Guilherme Finger, MD, MSc; Vivian Kaul, MD; Sanyia S Godil, MD, MSCI; Kyle C Wu, MD; Mohammad B Alsavaf, MD; Joshua Vignolles-Jeong; Oliver F Adunka, MD, FACS; Daniel M Prevedello, MD, FACS; The Ohio State University

**V031: ENDOSCOPIC MULTIPORTAL SUBTEMPORAL APPROACH FOR MIDDLE CRANIAL FOSSA SPONTANEOUS DEFECTS: A CLINICAL CASE** - Edoardo Porto, MD<sup>1</sup>; J. Manuel Revuelta Barbero, MD, PhD<sup>2</sup>; Roberto Soriano, MD<sup>1</sup>; Esther X. Vivas, MD<sup>1</sup>; Douglas E. Mattow, MD<sup>1</sup>; Tomas Garzon Muvdi, MD, MSc<sup>1</sup>; C. Arturo Solares, MD<sup>1</sup>; Gustavo Pradilla, MD<sup>1</sup>; <sup>1</sup>Emory University; <sup>2</sup>Medical College of Georgia - Augusta University

**V032: RETROSIGMOID CRANIOTOMY FOR ENDOSCOPE-ASSISTED RESECTION OF A JUGULAR FORAMEN SCHWANNOMA: SURGICAL VIDEO** - Haydn Hoffman; Harish Babu; State University of New York Upstate Medical University

**V033: TRIGEMINAL NERVE (V3) SCHWANNOMA(MODIFIED JEFFERSON'S TYPE D) WITH EXTENSION TO MIDDLE CRANIAL FOSSA; EXCISION VIA ENDOSCOPIC TRANS-PTERYGOID APPROACH** - Kanika Arora<sup>1</sup>; Ravisankar Manogaran<sup>1</sup>; Ramandeep Virk<sup>2</sup>; <sup>1</sup>SGPGI, Lucknow; <sup>2</sup>PGIMER, Chandigarh

**V034: MICROSURGICAL GROSS-TOTAL RESECTION OF AN INTRACANALICULAR-CISTERNAL (KOOS-II) VESTIBULAR SCHWANNOMA VIA A RETROSIGMOID APPROACH** - J. Manuel Revuelta Barbero, MD, PhD<sup>1</sup>; Edoardo Porto, MD<sup>2</sup>; Tomas Garzon Muvdi, MD, MSc<sup>2</sup>; Esther X. Vivas, MD<sup>2</sup>; Douglas E. Mattox, MD<sup>2</sup>; C. Arturo Solares, MD<sup>2</sup>; Gustavo Pradilla, MD<sup>2</sup>; <sup>1</sup>Medical College of Georgia - Augusta University; <sup>2</sup>Emory University

**V035: ENDOSCOPIC TRANSORBITAL SURGERY FOR TRIGEMINAL SCHWANNOMA: NEW INNOVATIVE TECHNIQUE** - Doo-Sik Kong, MD, PhD; Samsung Medical Center, Sungkyunkwan University

**V036: RESECTION OF A JUGULAR FORAMEN SCHWANNOMA: A TWO-DIMENSIONAL OPERATIVE VIDEO AND MANAGEMENT CONSIDERATIONS** - Ramin Morshed, MD; Steven Cheung, MD; Philip Theodosopoulos, MD; UCSF

**5:05 pm - 6:05 pm** **Proffered Papers Session 18: CSF Leaks/Endoscopic Transnasal Skull Base Surgery**

Tampa Bay 7

**S097: ENDOSCOPIC ENDONASAL APPROACH TO THE VENTRAL PETROCLIVAL FISSURE: ANATOMIC FINDINGS AND SURGICAL TECHNIQUES** - [Yuanzhi Xu, MD](#)<sup>1</sup>; Christine K Lee, MD<sup>2</sup>; Maximiliano A Nunez, MD<sup>2</sup>; Ahmed Mohyeldin, MD, PhD<sup>2</sup>; Liang Chen, MD<sup>1</sup>; Aaron A Cohen-Gadol, MD, MSc, MBA<sup>3</sup>; Ying Mao, MD<sup>1</sup>; Juan C Fernandez-Miranda, MD<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, Huashan Hospital, Shanghai Medical College, Fudan University, Shanghai, China; <sup>2</sup>Department of Neurosurgery, Stanford Hospital, Stanford, California; <sup>3</sup>Department of Neurological Surgery, Indiana University, Indianapolis, Indiana

**S098: COMBINED SURGICAL REPAIR AND VENOUS SINUS STENTING FOR PATIENTS WITH SKULL BASE ENCEPHALOCELES AND IDIOPATHIC INTRACRANIAL HYPERTENSION** - [Umberto Tosi](#); Alexander Ramos; Margherita Rampichini; George Alexiades; Srikanth Boddu; Babacar Cisse; Ashutosh Kacker; Athos Patsalides; Abtin Tabaee; Justin Schwarz; Theodore Schwartz; Rohan Ramakrishna; Weill Cornell Medicine

**S099: LONG-TERM AUDIOLOGICAL OUTCOMES FOLLOWING COMBINED TRANSMASTOID AND MIDDLE CRANIAL FOSSA APPROACH TO SPONTANEOUS CEREBROSPINAL FLUID OTORRHEA.** - [Glen D Souza, MD](#); Anna Bixler, AuD; Rahul Alapati, BS; Christopher Farrell, MD; James Evans, MD; Thomas Wilcox; Rebecca Chiffer, MD; Thomas Jefferson University

**S100: LATERAL BASED NASOPHARYNGEAL FLAP: A NOVEL AND VERSATILE FLAP FOR CSF LEAK REPAIR** - [Viraj M Patel](#); David Jang; Ralph Abi Hachem; Duke University Health

**S101: VARIATIONS IN PAYER-NEGOTIATED PRICES FOR ENDOSCOPIC ENDONASAL SKULL BASE SURGERY** - [Roy Xiao, MD](#); Lauren E Miller, MD, MBA; Isaac Wasserman, MD; Stacey T Gray, MD; Derrick T Lin, MD; Massachusetts Eye and Ear

**S102: LONG-TERM OUTCOMES OF ENDOSCOPIC TRANSNASAL SURGERY IN CONJUNCTION WITH STEREOTACTIC RADIOSURGERY FOR SKULL BASE CHORDOMA** - [Hiroataka Hasegawa, MD, PhD](#)<sup>1</sup>; Masahiro Shin, MD, PhD<sup>2</sup>; Yuki Shinya, MD<sup>1</sup>; Shoko Yoshimoto, MD<sup>1</sup>; Hirokazu Takami, MD, PhD<sup>1</sup>; Motoyuki Umekawa, MD<sup>1</sup>; Shu Kikuta, MD, PhD<sup>3</sup>; Kenji Kondo, MD, PhD<sup>3</sup>; Nobuhito Saito, MD, PhD<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, The University of Tokyo; <sup>2</sup>Department of Neurosurgery, Teikyo University; <sup>3</sup>Department of Otorhinolaryngology, The University of Tokyo

**S103: EVALUATION OF THE UTILITY OF EXTENDED TIME POINTS IN INFERIOR PETROSAL SINUS SAMPLING PROCEDURES FOR CUSHING'S DISEASE** - [Michael L Martini, MD, PhD](#); R. Chase Ransom, MD, PhD; Lorenzo Rinaldo, MD, PhD; Lucas Carlstrom, MD, PhD; Derek O'Keefe, MB, BCh, MD, PhD; William Young, MD; Jamie Van Gompel, MD; Mayo Clinic

**S104: THE USE OF AN ENDONASAL PROTECTION DEVICE MITIGATES NASAL MUCOSA TRAUMATIC INJURY DURING ENDONASAL ENDOSCOPIC SKULL BASE SURGERY** - [Nicholas Rowan, MD<sup>1</sup>](#); Sachiv Chakravarti<sup>1</sup>; Foad Kazemi, MD<sup>1</sup>; Jose L Porras, MD<sup>1</sup>; Hayden Dux<sup>2</sup>; Carlos D Pinhiero-Neto, MD, PhD<sup>3</sup>; Maria Peris-Celda, MD, PhD<sup>3</sup>; Garret W Choby, MD<sup>3</sup>; Jamie J Van Gompel, MD<sup>3</sup>; Debraj Mukherjee, MD, MPH<sup>1</sup>; <sup>1</sup>Johns Hopkins Hospital; <sup>2</sup>Virginia Commonwealth University School of Medicine; <sup>3</sup>Mayo Clinic

**5:05 pm - 6:05 pm** **Proffered Papers Session 19: Miscellaneous Skull Base Surgery** *Tampa Bay 8*

**S105: A PROSPECTIVE STUDY OF PATIENT-REPORTED QUALITY OF LIFE OUTCOMES IN STANDARD AND EXPANDED ENDOSCOPIC ENDONASAL SKULL BASE SURGERY AT A TERTIARY CENTER** - [Douglas A Hardesty, MD](#); Kyle Wu, MD; Kathleen M Kelly, MD; Daniel Kreatsoulas, MD; Brad Otto, MD; Kyle VanKoeveering, MD; Ricardo Carrau, MD, MBA; Daniel M Prevedello, MD, MBA; The Ohio State University Wexner Medical Center

**S106: QUALITY OF LIFE OUTCOMES AFTER SURGERY FOR SUPERIOR CANAL DEHISCENCE SYNDROME AT A CANADIAN ACADEMIC INSTITUTION** - [Michael Bartellas](#)<sup>1</sup>; Alexandra Quimby<sup>2</sup>; Lisa Caulley<sup>1</sup>; Camille Lacasse<sup>1</sup>; Fahad Alkherayf<sup>1</sup>; David Schramm<sup>1</sup>; <sup>1</sup>University of Ottawa; <sup>2</sup>University of Pennsylvania

**S107: LONG-TERM PATIENT-REPORTED SINONASAL AND GLOBAL QUALITY OF LIFE IMPROVES FROM BASELINE AFTER ENDOSCOPIC ENDONASAL SKULL BASE SURGERY: A PROSPECTIVE STUDY** - [Kathleen M Kelly, MD](#); Daniel Kreatsoulas, MD; Joshua Vignolles-Jeong; Kyle Wu, MD; Brad Otto, MD; Kyle VanKoeveering, MD; Ricardo Carrau, MD, MBA; Daniel M Prevedello, MD, MBA; Douglas A Hardesty, MD; The Ohio State University Wexner Medical Center

**S108: CONTINUOUS POSITIVE AIRWAY PRESSURE (CPAP) USE AFTER ENDOSCOPIC ENDONASAL APPROACH FOR PITUITARY ADENOMAS: PILOT STUDY** - [Lauren M North, MD](#)<sup>1</sup>; Rebecca Rohde, MD<sup>2</sup>; Sarah Cornell, MS<sup>2</sup>; Christopher Long, MD<sup>2</sup>; Nathan Zwagerman, MD<sup>2</sup>; <sup>1</sup>University of Pittsburgh Medical Center; <sup>2</sup>Medical College of Wisconsin

**S109: SOCIODEMOGRAPHIC FACTORS AND QUALITY OF LIFE IN SKULL BASE SURGERY** - [Michael Xie, MD](#)<sup>1</sup>; Han Zhang, MD, FRCSC<sup>1</sup>; Ian Witterick, MD, MSc, FRCSC<sup>2</sup>; Eric Monteiro, MD, MSc, FRCSC<sup>2</sup>; Gelareh Zadeh, MD, FRCSC<sup>2</sup>; Carl Snyderman, MD<sup>3</sup>; Paul Gardner, MD<sup>3</sup>; Eric Wang, MD<sup>3</sup>; Benita Valappil, MD<sup>3</sup>; Dan M Fliss, MD<sup>4</sup>; Barak Ringel, MD<sup>4</sup>; Ziv Gil, MD, PhD<sup>5</sup>; Shorook Na'ara, MD, PhD<sup>5</sup>; Eng Ooi, MD, FRACS, PhD<sup>6</sup>; David P Goldstein, MD, FRCSC<sup>2</sup>; Fred Gentili, MD, FRCSC<sup>2</sup>; Aristotelis Kalyvas, MD, MSc, PhD, FRCSC<sup>2</sup>; John R de Almeida, MD, MSc, FRCSC<sup>2</sup>; <sup>1</sup>McMaster University; <sup>2</sup>University of Toronto; <sup>3</sup>University of Pittsburgh; <sup>4</sup>Tel-Aviv University; <sup>5</sup>Rambam Medial Center; <sup>6</sup>Flinders University

**S110: THE PRETEMPORAL TRANSCAVERNOUS ANTERIOR PETROSAL APPROACH: A PATHWAY TO THE PETROCLIVAL AREA** - [Jose L Sanmillan, MD, PhD](#); Alberto Torres-Diaz, MD; Andreu Gabarros-Canals, MD, PhD; Hospital Universitari de Bellvitge. Neurosurgery Department

**S111: COMPARATIVE EFFICACY OF THE FIRST AND THE SECOND MIDDLE CRANIAL FOSSA REPAIR OF BILATERAL SUPERIOR SEMICIRCULAR CANAL DEHISCENCE** - [Hong-Ho Yang, BS](#); Isaac Yang, MD; Quinton S Gopen, MD; David Geffen School of Medicine at University of California, Los Angeles

**S112: DORSAL PERSPECTIVE OF PETROCLIVAL FISSURE AND ITS IMPLICATION IN TRANSCRANIAL APPROACHES** - [Yuanzhi Xu, MD](#); Christine K Lee, MD<sup>2</sup>; Maximiliano A Nunez, MD<sup>2</sup>; Ahmed Mohyeldin, MD, PhD<sup>2</sup>; Liang Chen, MD<sup>1</sup>; Aaron A Cohen-Gadol, MD<sup>3</sup>; Ying Mao, MD<sup>1</sup>; Juan C Fernandez-Miranda<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, Huashan Hospital, Shanghai Medical College, Fudan University, Shanghai, China; <sup>2</sup>Department of Neurosurgery, Stanford Hospital, Stanford, California; <sup>3</sup>Department of Neurological Surgery, Indiana University, Indianapolis, Indiana

**S112: DORSAL PERSPECTIVE OF PETROCLIVAL FISSURE AND ITS IMPLICATION IN TRANSCRANIAL APPROACHES** - [Yuanzhi Xu, MD](#); Christine K Lee, MD<sup>2</sup>; Maximiliano A Nunez, MD<sup>2</sup>; Ahmed Mohyeldin, MD, PhD<sup>2</sup>; Liang Chen, MD<sup>1</sup>; Aaron A Cohen-Gadol, MD<sup>3</sup>; Ying Mao, MD<sup>1</sup>; Juan C Fernandez-Miranda<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, Huashan Hospital, Shanghai Medical College, Fudan University, Shanghai, China; <sup>2</sup>Department of Neurosurgery, Stanford Hospital, Stanford, California; <sup>3</sup>Department of Neurological Surgery, Indiana University, Indianapolis, Indiana

5:05 pm - 6:05 pm

**Proffered Papers Session 20: Vestibular Schwannomas**

Tampa Bay 9

**S113: TEN-YEAR RETREATMENT RATES FOR 416 VESTIBULAR SCHWANNOMA PATIENTS PRIMARILY UNDERGOING SURGERY, OBSERVATION OR RADIOSURGERY.** - [Morten Lund-Johansen, MD, PhD](#); Monica Finnkirk, RN; Erling Myrseth, MD, PhD; Frederik Goplen, MD, PhD; Haukeland University Hospital

**S114: FACTORS ASSOCIATED WITH HEARING OUTCOMES AFTER A MIDDLE FOSSA APPROACH IN 131 CONSECUTIVE PATIENTS WITH VESTIBULAR SCHWANNOMAS** - [Karol P Budohoski, MD, PhD](#); Robert C Rennert, MD; Alexander Winkler-Schwartz, MD; Michael Karsy, MD, PhD; Steven A Gordon, MD; Cameron Brandon; Jefferey C Henson; Mohammed A Azab; Neil Patel, MD; Richard Gurgel, MD; William T Couldwell, MD, PhD; University of Utah

**S115: EPITHELIAL MEMBRANE PROTEIN 2 (EMP2) IS UPREGULATED IN VESTIBULAR SCHWANNOMAS AS A NOVEL SURFACE PROTEIN BIOMARKER AND IS ASSOCIATED WITH INCREASED WESTERN BLOT PROTEIN EXPRESSION** - [Khashayar Mozaffari, BS](#); Amith Umesh, BA; Anubhav Chandra; Mahlet Mekonnen, BS; Brian Aguirre; Yelena Malkhasyan, BS; Karam Han; Shivani Baisiwala, MD; Adrian Murillo; Madhuri Wadehra, PhD; Isaac Yang, MD; UCLA

**S116: MICROSURGICAL OUTCOMES IN MEDIUM-SIZED VESTIBULAR SCHWANNOMAS: A MULTI-INSTITUTIONAL STUDY COMPARING RETROSIGMOID AND TRANSLABYRINTHINE APPROACHES.** - [Aaron R Plitt, MD<sup>1</sup>](#); Daniel Killeen, MD<sup>2</sup>; Brandon Isaacson, MD<sup>3</sup>; Walter Kutz, MD<sup>3</sup>; Jacob Hunter, MD<sup>3</sup>; Brian A Neff, MD<sup>4</sup>; Collin Driscoll, MD<sup>4</sup>; Matthew Carlson, MD<sup>4</sup>; Samuel L Barnett, MD<sup>5</sup>; Michael J Link, MD; <sup>1</sup>Mayo Clinic Department of Neurologic Surgery; <sup>2</sup>University of Alabama Birmingham Department of Otolaryngology; <sup>3</sup>UT Southwestern Department of Otolaryngology-Head and Neck Surgery; <sup>4</sup>Mayo Clinic Department of Otolaryngology/Head and Neck Surgery; <sup>5</sup>UT Southwestern Department of Neurological Surgery

**S117: IMPROVED FACIAL NERVE OUTCOMES WITH ADVANCED NEUROPHYSIOLOGICAL MONITORING IN VESTIBULAR SCHWANNOMA SURGERY** - [Terje Sundstrøm, MD, PhD](#); Monica Finnkirk, RN; Morten Lund-Johansen, MD, PhD; Haukeland University Hospital

**S118: PROGNOSTIC FACTORS FOR FACIAL NERVE PRESERVATION IN VESTIBULAR SCHWANNOMA SURGERY** - [Andrés Cervio, PhD](#); Daniel Orfila; Ricardo Marengo; Rubén Mormandi; Liliana Tiberti; Santiago Condomí Alcorta; FLENI

**S119: FUNCTIONAL GAIT ASSESSMENT IN GERIATRIC PATIENTS FOLLOWING VESTIBULAR SCHWANNOMA RESECTION** - [Olivia A La Monte, BS<sup>1</sup>](#); Joshua Lee<sup>2</sup>; Omid Moshtaghi, MD<sup>1</sup>; Peter R Dixon, MD<sup>1</sup>; Marc Schwartz, MD, PhD<sup>1</sup>; Rick Friedman, MD, PhD<sup>1</sup>; <sup>1</sup>UCSD; <sup>2</sup>New York Medical College

**7:30 pm - 10:00 pm Main Social Event: The Tampa Bay History Center**

## Sunday, February 19, 2023

Time	Session	Location
7:00 am - 9:35 am	<p><b><u>Women in Skull Base Surgery</u></b></p> <p><i>Dr. Jennifer Moliterno Gunel, Dr. Judy Huang, Dr. Sarah Mowry, Dr. Deanna Sasaki-Adams, Dr. Frederick Barker II, Dr. Judy Huang</i></p> <p>A career in skull base surgery can undoubtedly be both demanding and rewarding. Being a person of a diverse and minority background, whether of female sex or otherwise, can create even more challenges and potential barriers for success. Participants should include both men and women who are interested in learning strategies for defining and pursuing success for a robust and balanced career in skull base surgery.</p> <p>At the conclusion of this session, attendees will be able to:</p> <ul style="list-style-type: none"> <li>» Define what a successful career in skull base surgery could encompass.</li> <li>» Identify potential challenges for a skull base specialist of a diverse or minority background.</li> <li>» Develop realistic strategies for ways to overcome diversity barriers to success.</li> <li>» Understand that there is a supportive network committed to enhancing diversity in skull base surgery.</li> </ul>	Tampa Bay 1
7:30 am - 8:30 am	<p><b><u>Rhoton Room ; Dueling Dissection Section 3: Lower Clivus and Foramen Magnum</u></b></p> <p><i>Dr. Chandranath Sen , Dr. Pablo Recinos, Dr. Maria Peris Celda, Dr. David Friedmann, Dr. Jeffrey Sorenson, Dr. Laligam Sekhar, Dr. Juan Fernandez-Miranda, Dr. Zara Patel</i></p> <p>Endoscopic endonasal and transcranial approaches are competing but also complementary approaches to the skull base. In this session we will review the 3D surgical anatomy of the Lower Clivus and Foramen Magnum regions, and we will discuss the pros and cons of endonasal and transcranial approaches to these regions. Attendance is recommended for all trainees and faculty with an interest in managing pathology in these locations.</p>	Tampa Bay 3 & 4
7:30 am - 8:30 am	<p><b><u>Proffered Papers Session 21: Aneurysms/Anatomy of the Skull Base</u></b></p> <p><b>S121: CONTROLLING THE INTERNAL CAROTID ARTERY AT THE LEVEL OF THE OROPHARYNX: A CADAVERIC STUDY</b> - <a href="#">Lauren M North, MD</a>; Kelly E Daniels, MD; Eric W Wang, MD; University of Pittsburgh Medical Center</p>	Tampa Bay 2



**S122: VENOUS DRAINAGE PATTERNS OF THE CAVERNOUS SINUS: A RETROSPECTIVE ANGIOGRAPHIC ANALYSIS** - [Paolo Palmisciano, MD<sup>1</sup>](#); [Abhijith V Matur, MD<sup>2</sup>](#); [Ahmed E Hussein, MD<sup>3</sup>](#); [Samer S Hoz, MD<sup>1</sup>](#); [Mark Johnson, MD<sup>1</sup>](#); [Jonathan A Forbes<sup>1</sup>](#); [Norberto Andaluz<sup>1</sup>](#); [Mario Zuccarello<sup>1</sup>](#); [Charles J Prestigiacomo<sup>1</sup>](#); <sup>1</sup>Department of Neurosurgery, University of Cincinnati College of Medicine, Cincinnati, OH, USA; <sup>2</sup>Department of Radiology, University of Kentucky, Lexington, KY, USA; <sup>3</sup>Department of Neurological Surgery, Washington University School of Medicine in St. Louis, St. Louis, MO, USA

**S124: ACCESSING PREMEATAL ANTERIOR INFERIOR CEREBELLAR ARTERY (AICA) ANEURYSMS THROUGH INFRATENTORIAL PRESIGMOID RETROLABYRINTHINE: A CADAVERIC STUDY.** - [Samer Hoz, MD](#); [Paolo Palmisciano, MD](#); [Edward J. Doyle III, MD](#); [Mark Johnson, MD](#); [Jonathan A. Forbes, MD](#); [Charles Prestigiacomo, MD](#); [Ravi Samy, MD](#); [Mario Zuccarello, MD](#); [Norberto Andaluz, MD](#); University of Cincinnati

**S125: PATIENT OUTCOMES FROM 92 CONSECUTIVE SACULAR MIDDLE CEREBRAL ARTERY ANEURYSM CLIPPING** - [Kaiyun Yang<sup>1</sup>](#); [Daniel Lynch<sup>2</sup>](#); [Sabrina Begley<sup>2</sup>](#); [Justin Turpin<sup>2</sup>](#); [Minoo Aminnejad<sup>3</sup>](#); [Forough Farrokhyar<sup>3</sup>](#); [Amir Dehdashti<sup>2</sup>](#); <sup>1</sup>Community Neurosciences Institute; <sup>2</sup>Northwell Neurosurgery; <sup>3</sup>McMaster University

**S126: ROLE OF IL6 INDUCED INFLAMMATION IN CEREBRAL ANEURYSM PATHOGENESIS** - [Muhammad Salman Ali, MD<sup>1</sup>](#); [Leonardo Ramos Ferreira, PhD<sup>2</sup>](#); [Paul Gardner, MD<sup>1</sup>](#); [Qizhi Tang, PhD<sup>3</sup>](#); <sup>1</sup>University of Pittsburgh Medical Center; <sup>2</sup>Medical University of South Carolina; <sup>3</sup>University of California, San Francisco

**S128: BLINK REFLEX FOR FACIAL NERVE MONITORING: A FEASIBILITY STUDY** - [Jihad Abdelgadir, MD, MSc](#); [Hannah Scruggs](#); [Aatif Husain, MD](#); [Howard Francis, MD, MBA](#); [Ali Zomorodi, MD](#); Duke University

7:30 am - 8:30 am

**Proffered Papers Session 22: Pituitary and Petrous Apex**

Tampa Bay 6

**V037: CONTROLATERAL TRANSMAXILLARY APPROACH TO PETROUS APEX GRANULOMA WITH LATERAL MAXILLOTOMY: A 2-DIMENSIONAL OPERATIVE VIDEO** - [Edoardo Porto, MD<sup>1</sup>](#); [Jackson Vuncannon, MD<sup>1</sup>](#); [J. Manuel Revuelta Barbero, MD, PhD<sup>2</sup>](#); [Daniel B. Spielman, MD<sup>1</sup>](#); [Emily Barrow, MD<sup>1</sup>](#); [Tomas Garzon Muvdi, MD<sup>1</sup>](#); [Douglas E. Mattox, MD<sup>1</sup>](#); [Gustavo Pradilla, MD<sup>1</sup>](#); [C. Arturo Solares, MD<sup>1</sup>](#); <sup>1</sup>Emory University; <sup>2</sup>Medical College of Georgia - Augusta University

**V038: ENDOSCOPE-ASSISTED PETROSAL APPROACH FOR CENTRAL SKULL BASE LESION** - [Je Beom Hong, MD<sup>1</sup>](#); [Chiman Jeon, MD<sup>1</sup>](#); [Seonah Choi<sup>2</sup>](#); [Seung-hoon Lim<sup>3</sup>](#); [Han kyu Kim<sup>4</sup>](#); <sup>1</sup>Kangbuk Samsung Hospital; <sup>2</sup>Severance Hospital; <sup>3</sup>Kyung Hee University Medical Center; <sup>4</sup>CHA Bundang Hospital

**V039: ENDONASAL MARSUPIALIZATION OF A PETROUS APEX GRANULOMA USING A SILASTIC STENT AND NASOSEPTAL FLAP.** - [Basit A Jawad, MD](#); Guilherme Finger, MD; Kyle Wu, MD; Daniel Prevadello, MD; Ricardo Carrau, MD; Ohio State University

**V040: RESECTION OF THE MEDIAL WALL OF THE CAVERNOUS SINUS IN A CASE OF AN INVASIVE PITUITARY ADENOMA IN THE SETTING OF ACROMEGALY** - [Ahmed Mohyeldin, MD, PhD](#)<sup>1</sup>; Maximiliano Alberto Nunez<sup>2</sup>; Yuanzhi Xu<sup>2</sup>; Juan C Fernandez-Mirand, MD<sup>2</sup>; <sup>1</sup>University of California-Irvine; <sup>2</sup>Stanford University

**V041: EEA FOR INVASIVE CUSHING'S ADENOMA: RESECTION OF THE MEDIAL CAVERNOUS SINUS WALL** - [Kyle C Wu, MD](#); Guilherme Finger, MD, MSCI; Basit Jawad, MD; Joshua Vignolles-Jeong, BA; Ricardo L Carrau, MD, MBS, FACS; Daniel M Prevedello, MD, MBA, FACS; The Ohio State University College of Medicine

**V042: TWO CASES OF RESIDUAL ACTH ADENOMA INVADING THE MEDIAL WALL OF THE CAVERNOUS SINUS** - [Vera Vigo, MD](#); Ahmed Mohyeldin, MD, PhD; Christine K Lee, MD, PhD; Ashoke Khanwalkar, MD; Matt Lechner, MD; Zara Patel, MD; Jayakar V Nayak, MD; Juan C Fernandez-Miranda, MD; Stanford University

**V043: INTERHEMISPHERIC TRANSCALLOSAL APPROACH FOR RESECTION OF A GIANT PITUITARY ADENOMA** - [Eric T Quach](#); Amir R Dehdashti; North Shore University Hospital

**V044: ENDOSCOPIC ENDONASAL APPROACH: RECURRENT FIBROUS PITUITARY ADENOMA WITH CAVERNOUS SINUS EXTENSION** - [Joao P Almeida, MD, PhD](#); Carlos Perez-Vega, MD; Susan L Samson, MD, PhD; Osarenoma U Olomu, MD; Alfredo Quinones-Hinojosa, MD; Mayo Clinic

7:30 am - 8:30 am

**Proffered Papers Session 23: Endoscopic Transnasal Skull Base Surgery**

Tampa Bay 7

**S129: EPIDURAL INLAY FOR PITUITARY ADENOMA SURGERY: A 4-YEAR INSTITUTIONAL EXPERIENCE** - [Rita Snyder, MD](#)<sup>1</sup>; Sungho Lee, MD, PhD<sup>2</sup>; Prazwal Athukuri, BS<sup>1</sup>; Meha Fox, MD<sup>3</sup>; Samer Fakhri, MD<sup>4</sup>; Masayoshi Takashima, MD<sup>5</sup>; Kelly Gallagher, MD<sup>3</sup>; Daniel Yoshor, MD<sup>6</sup>; Ali Jalali, MD, PhD<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, Baylor College of Medicine; <sup>2</sup>Department of Neurosurgery, LSU Health Shreveport; <sup>3</sup>Department of Otolaryngology, Baylor College of Medicine; <sup>4</sup>Kelsey-Seybold Otolaryngology; <sup>5</sup>Department of Otolaryngology, Houston Methodist; <sup>6</sup>Department of Neurosurgery, University of Pennsylvania

**S130: UNINOSTRIL VERSUS BINOSTRIL ENDOSCOPIC TRANSNASAL APPROACH FOR PTERYGOPALATINE FOSSA: A TECHNICAL NOTE** - [Abdulrazag Ajlan, MD, MSc, UCNSD, FRCSC](#)<sup>1</sup>; Sara Basindwa, MD<sup>1</sup>; [Basim Noor Elahi, MD](#)<sup>1</sup>; Hussain Albaharna, MD<sup>2</sup>; Mohammad Alshareef, MD<sup>3</sup>; Abdulaziz Alrasheed, MBBS, MSc, FRCSC<sup>1</sup>; Ahmad Alroqi, MD<sup>1</sup>; Saad Alsaleh, MBBS, FRCSC<sup>1</sup>; Ashwag Alqurashi, MD<sup>4</sup>; <sup>1</sup>King Saud University; <sup>2</sup>Qatif Central Hospital; <sup>3</sup>Khamis Mushait General Hospital; <sup>4</sup>King Saud University Medical City

**S131: HYPOTHALAMIC HAMARTOMAS TREATED VIA ENDOSCOPIC RESECTION AND DISCONNECTION: CHARACTERIZING CLINICAL PRESENTATION AND SEIZURE OUTCOMES** - Rohin Singh<sup>1</sup>; Nolan J Brown<sup>2</sup>; Meghdeep Sen<sup>2</sup>; Basel Musmar<sup>2</sup>; Angie Zhang<sup>2</sup>; Jhon Bocanegra-Becerra<sup>2</sup>; Megan Bauman<sup>1</sup>; Chenyi Yang<sup>2</sup>; Panagiotis Kerezoudis<sup>1</sup>; Ahmed Mohyeldin<sup>2</sup>; <sup>1</sup>Mayo Clinic Alix School of Medicine; <sup>2</sup>UC Irvine Department of Neurological Surgery

**S132: TRENDS OF PITUITARY SURGERY MEDICARE REIMBURSEMENTS** - Theodore V Nguyen, BS<sup>1</sup>; Sina J Torabi, MD<sup>1</sup>; Arash Abiri, BS<sup>1</sup>; Jonathan C Pang, BS<sup>1</sup>; Benjamin F Bitner, MD<sup>1</sup>; Frank P Hsu, MD, PhD<sup>2</sup>; Edward C Kuan, MD, MBA<sup>1</sup>; <sup>1</sup>Department of Otolaryngology - Head and Neck Surgery, University of California - Irvine, Orange, CA; <sup>2</sup>Department of Neurological Surgery, University of California - Irvine, Orange, CA

**S133: SURGICAL MANAGEMENT OF ESTHESIONEUROBLASTOMA AT A SINGLE TERTIARY CARE CENTER** - Evan J Patel, MD<sup>1</sup>; Michael McDemott, MD<sup>2</sup>; Philip Theodosopolous, MD<sup>2</sup>; Manish Aghi, MD, PhD<sup>2</sup>; Ivan El-Sayed, MD<sup>1</sup>; <sup>1</sup>Department of Otolaryngology-Head & Neck Surgery, University of California San Francisco; <sup>2</sup>Department of Neurological Surgery, University of California San Francisco

**S134: ANATOMICAL STEP-BY-STEP DISSECTION OF COMPLEX SKULL BASE APPROACHES FOR TRAINEES: SURGICAL ANATOMY OF THE ENDOSCOPIC ENDONASAL APPROACH TO THE ANTERIOR CRANIAL FOSSA** - Edoardo Agosti, MD<sup>1</sup>; Alex Y Alexander, BA<sup>2</sup>; Luciano Leonel, PhD<sup>3</sup>; Carlos D Pinheiro-Neto, MD, PhD<sup>3</sup>; Maria Peris-Celda, MD, PhD<sup>3</sup>; <sup>1</sup>University of Brescia; <sup>2</sup>University of Minnesota; <sup>3</sup>Mayo Clinic

**S135: OLFACTORY FUNCTIONAL STATUS FOLLOWING EXTENDED ENDOSCOPIC ENDONASAL APPROACH FOR SUPRASellar MENINGIOMAS** - Abdulrazag Ajlan, MD, MSc, UCNSD, FRCSC<sup>1</sup>; Waseem Yaghmoor, MD<sup>2</sup>; Alanoud Almansour, MD<sup>3</sup>; Basim Noor Elahi, MD<sup>1</sup>; Abdulaziz Alrasheed<sup>4</sup>; Ahmad Alroqi, MD<sup>4</sup>; Saad Alsaleh, MBBS, FRCSC<sup>4</sup>; Ashwag Alqurashi, MD<sup>5</sup>; <sup>1</sup>Division of Neurosurgery, Department of Surgery, College of Medicine, King Saud University, Riyadh, Saudi Arabia; <sup>2</sup>Department of Neurosurgery, Prince Sultan Military Medical City, Riyadh, Saudi Arabia; <sup>3</sup>King Saud University, Riyadh, Saudi Arabia; <sup>4</sup>Department of Otolaryngology – Head & Neck Surgery, College of Medicine, King Saud University, Riyadh, Saudi Arabia; <sup>5</sup>Division of Neurosurgery, Department of Surgery, King Saud University Medical City, Riyadh, Saudi Arabia

**7:30 am - 8:30 am**    **Proffered Papers Session 24: Pituitary Tumors/Pediatric Skull Base Surgery**    *Tampa Bay 8*

**S136: MEDICATION USE IN PEDIATRIC PITUITARY SURGERY**

- [Pallavi Kulkarni, BS](#); Dana Goldenberg, BA; Guodong Liu, PhD; Emily Dennis, MS; Meghan N Wilson, MD; Penn State Milton S Hershey Medical Center

**S137: CAD/CAM-ASSISTED SURGERY & ADJUVANT THERAPY FOR PEDIATRIC HEAD AND NECK SKULL BASE SARCOMAS: A PILOT STUDY**

- [Joseph Lopez, MD](#)<sup>1</sup>; Tejas Subramanian<sup>2</sup>; Robbie Woods, MD<sup>2</sup>; Daniel Scholfield, MD<sup>2</sup>; Marc Cohen, MD<sup>2</sup>; Shah Jatin, MD<sup>2</sup>; Ian Ganly, MD<sup>2</sup>; <sup>1</sup>AdventHealth For Children; <sup>2</sup>Memorial Sloan Kettering

**S138: COMPARISON BETWEEN THE SUPRACEREBELLAR INFRATENTORIAL AND PRECUNEAL INTERHEMISPHERIC, TRANSTENTORIAL APPROACH TO THE CEREBELLOMESENCEPHALIC FISSURE: AN ANATOMO-RADIOLOGICAL STUDY AND ILLUSTRATIVE CASES**

- [A. Yohan Alexander, BA](#)<sup>1</sup>; Edoardo Agosti, MD<sup>2</sup>; Luciano Leonel, PhD<sup>1</sup>; Giuseppe Lanzino, MD<sup>1</sup>; Maria Peris-Celda, MD, PhD<sup>3</sup>; <sup>1</sup>Mayo Clinic, Department of Neurosurgery; <sup>2</sup>University of Brescia, Department of Neurosurgery; <sup>3</sup>Mayo Clinic, Department of Neurosurgery and Otorhinolaryngology

**S139: THE UTILITY OF PET FOR DETECTING CORTICOTROPINOMAS IN CUSHING DISEASE: A SYSTEMATIC REVIEW**

- [Megan M Bauman, MS](#); Jeffrey P Graves, MS; Daniel J Harrison, BS; Derek R Johnson, MD; Jamie J Van Gompel, MD; Mayo Clinic

**S140: CORRELATION OF PITUITARY DESCENT AND DIABETES INSIPIDUS FOLLOWING TRANSPHENOIDAL PITUITARY ADENOMA RESECTION**

- Josh Ma<sup>1</sup>; [Serge Makarenko, MD](#)<sup>2</sup>; Ryojo Akagami<sup>2</sup>; Peter A Gooderham<sup>2</sup>; <sup>1</sup>University of British Columbia; <sup>2</sup>Vancouver General Hospital

**S141: A NOVEL SCORE TO PRE-OPERATIVELY PREDICT SURGICAL BIOCHEMICAL REMISSION IN PATIENTS WITH GROWTH-HORMONE SECRETING PITUITARY ADENOMAS**

- [Salomon Cohen Cohen, MD](#); Rima Rindler, MD; Edgar Botello Hernandez, MD; Diane Donegan, MD; Dana Erickson, MD; Jamie J Van Gompel, MD; Mayo Clinic, Rochester

**S142: CHARACTERIZING RACIAL AND SOCIOECONOMIC DISPARITIES IN ACCESS TO SURGERY FOR PITUITARY ADENOMAS AT HIGH-VOLUME HOSPITALS IN THE UNITED STATES: A RETROSPECTIVE COHORT ANALYSIS FROM THE NATIONAL CANCER DATABASE**

- [Miguel A Jimenez, BS](#)<sup>1</sup>; Julian L Gendreau, MD<sup>2</sup>; Andrew Palmer, BS, BA<sup>1</sup>; Jackson Nagamoto, BS<sup>3</sup>; Bakhtiar Yamini, MD<sup>1</sup>; Nicholas Rowan, MD<sup>2</sup>; Debraj Mukherjee, MD<sup>2</sup>; <sup>1</sup>The University of Chicago Pritzker School of Medicine; <sup>2</sup>Johns Hopkins University School of Medicine; <sup>3</sup>University of Central Florida College of Medicine

**7:30 am - 8:30 am**    **Proffered Papers Session 25: Training and Education**

*Tampa Bay 9*

**S144: GLOBAL FEMALE SKULL BASE RESEARCHERS AT THE NORTH AMERICAN SKULL BASE SOCIETY ANNUAL MEETING: TRENDS OF OVER 3,000 PUBLISHED ABSTRACTS FROM THE LAST DECADE**

- [Rosemary T Behmer Hansen, MA, MPH<sup>1</sup>](#); Samantha D Palma, BS<sup>2</sup>; Ryan A Behmer Hansen, MS<sup>1</sup>; William A Blocher III, BS<sup>2</sup>; Justin L Gold, BS<sup>3</sup>; Stephen J Susman, BS<sup>2</sup>; Sai Batchu, BS<sup>4</sup>; Nicole A Silva, MD<sup>5</sup>; Angela M Richardson, MD, PhD<sup>2</sup>; <sup>1</sup>Rutgers University Department of Neurosurgery; <sup>2</sup>Indiana University School of Medicine Department of Neurological Surgery; <sup>3</sup>Cooper Medical School of Rowan University; <sup>4</sup>Unaffiliated; <sup>5</sup>University of North Carolina Department of Neurosurgery

**S145: THE CHECKLIST MANIFESTO - IMPROVING SAFETY, SATISFACTION, AND COMMUNICATION WITH PREOPERATIVE CHECKLISTS IN RHINOLOGY & ENDOSCOPIC SKULL BASE SURGERY**

- [Alexander N Duffy, MD<sup>1</sup>](#); Maria Armache, MD<sup>1</sup>; Ayan T Kumar, MD<sup>1</sup>; James J Evans, MD<sup>2</sup>; Elina Toskala, MD, PhD, MPH<sup>1</sup>; Marc R Rosen, MD<sup>1</sup>; Gurston G Nyquist, MD<sup>1</sup>; Mindy R Rabinowitz, MD<sup>1</sup>; <sup>1</sup>Department of Otolaryngology, Thomas Jefferson University Hospital; <sup>2</sup>Department of Neursurgery, Thomas Jefferson University Hospital

**S146: OPEN-SOURCE VIRTUAL REALITY AND 3D-PRINTABLE MODELS FOR SKULL BASE TRIANGLE NEUROANATOMY EDUCATION**

- [Bachtri T Nguyen, BS<sup>1</sup>](#); Lucas P Carlstrom, MD, PhD<sup>1</sup>; Avital Perry, MD<sup>2</sup>; Michael J Link, MD<sup>1</sup>; Maria Peris-Celda, MD, PhD<sup>1</sup>; Jonathan M Morris, MD<sup>1</sup>; Christopher S Graffeo, MD, MS<sup>3</sup>; <sup>1</sup>Mayo Clinic; <sup>2</sup>Sheba Medical Center; <sup>3</sup>University of Oklahoma

**S147: UN-WELLNESS: SKULL BASE SURGERY'S GREATEST CHALLENGE AND OPPORTUNITY**

- [Janissardhar Skulsampaopol, MD<sup>1</sup>](#); Yu Ming, MD, PhD<sup>1</sup>; Sylvia Shitsama, MD<sup>2</sup>; Melissa Carpino, HBSc, MSc<sup>1</sup>; Jennifer Anderson, MD, FRCSC, MSc<sup>1</sup>; John Lee, MD, FRCSC, MSc<sup>1</sup>; Michael D Cusimano, MD, MHPE, FRCSC, DABNS, PhD, FACS, FAANS<sup>1</sup>; <sup>1</sup>St Michael's Hospital, University of Toronto; <sup>2</sup>Jomo Kenyatta University of Agriculture and Technology

**S148: A NOVEL LIVE SHEEP MODEL FOR TRAINING ENDOSCOPIC TRANSNASAL SKULLBASE SURGERY FROM EXPOSURE TO CLOSURE**

- [Annika R Mascarenhas, MBBS<sup>1</sup>](#); Alistair K Jukes, MBBS, PhD, FRACS<sup>1</sup>; Stephen Santoreneos, MBBS, FRACS<sup>2</sup>; Nikitas Vrodos, MBBS, FRACS<sup>3</sup>; Rowan Valentine, MBBS, PhD, FRACS<sup>1</sup>; Santosh I Poonnoose, MCh, FRACS<sup>3</sup>; Alkis J Psaltis, MBBS, PhD, FRACS<sup>1</sup>; Peter-John Wormald, MBChB, MD, FRACS<sup>1</sup>; <sup>1</sup>The Queen Elizabeth Hospital, Basil Hetzel Institute; <sup>2</sup>Department of Neurosurgery, Royal Adelaide Hospital; <sup>3</sup>Department of Neurosurgery, Flinders Medical Centre

**S149: 3-D MODELING FOR APPROACH SELECTION PEDAGOGY IN COMPLEX CRANIAL SURGERY: SKULL BASICS OVERVIEW & PROOF-OF-CONCEPT RESULTS** - [Bachtri T Nguyen, BS<sup>1</sup>](#);

Jonathan M Morris, MD<sup>1</sup>; Visish M Srinivasan, MD<sup>2</sup>; Michael J Holroyd, PhD<sup>3</sup>; Lucas P Carlstrom, MD, PhD<sup>1</sup>; Avital Perry, MD<sup>4</sup>; Maria Peris-Celda, MD, PhD<sup>1</sup>; Michael J Link, MD<sup>1</sup>; Christopher S Graffeo, MD, MS<sup>3</sup>; <sup>1</sup>Mayo Clinic; <sup>2</sup>University of Pennsylvania; <sup>3</sup>University of Oklahoma; <sup>4</sup>Sheba Medical Center

**S150: A COST-EFFECTIVE AND REPRODUCIBLE CADAVERIC TRAINING MODEL FOR INTERNAL CAROTID ARTERY INJURY MANAGEMENT DURING ENDOSCOPIC ENDONASAL SURGERY: THE SUBMERSIBLE PERISTALTIC PUMP** - [Edoardo Porto, MD<sup>1</sup>](#);

J. Manuel Revuelta Barbero, MD, PhD<sup>2</sup>; Hanyao Sun, BS<sup>1</sup>; John M. DelGaudio, MD<sup>1</sup>; Oswaldo A. Henriquez, MD<sup>1</sup>; Gabriel Zada, MD<sup>3</sup>; Emily Barrow, MD<sup>1</sup>; C. Arturo Solares, MD<sup>1</sup>; Tomas Garzon Muvdi, MD, MSc<sup>1</sup>; Gustavo Pradilla, MD<sup>1</sup>; <sup>1</sup>Emory University; <sup>2</sup>Medical College of Georgia - Augusta University; <sup>3</sup>University of Southern California

8:35 am - 9:35 am

**Proffered Papers Session 26: Complications of Skull Base Surgery**

Tampa Bay 2

**S151: POST-OPERATIVE SERUM COPEPTIN LEVELS FOR PREDICTING HYPONATREMIA IN PATIENTS UNDERGOING ENDONASAL PITUITARY SURGERY: A PROSPECTIVE STUDY**

- [Prakash Nair, DR](#); Anand Binu, DR; Antony Stanley, DR; Madhusoodanan Uk, DR; Easwer Hv, DR; Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum

**S152: POSTOPERATIVE CEREBRAL VENOUS SINUS THROMBOSIS FOLLOWING RETROSIGMOID CRANIOTOMY FOR A CEREBELLOPONTINE ANGLE TUMOR - A CLINICAL AND RADIOLOGICAL ANALYSIS** - [Lukasz Przepiorka, MD<sup>1</sup>](#); Katarzyna Wojtowicz, MD<sup>1</sup>; Slawomir Kujawski, PhD<sup>2</sup>; Jan Jankowski<sup>1</sup>;

Katarzyna Camlet<sup>1</sup>; Laretta Derlatka-Grabowska, MD, PhD<sup>3</sup>; Andrzej Marchel, MD, PhD<sup>1</sup>; Przemyslaw Kunert<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, Medical University of Warsaw; <sup>2</sup>Department of Exercise Physiology and Functional Anatomy, Ludwik Rydygier Collegium Medicum in Bydgoszcz Nicolaus Copernicus University in Toruń, Bydgoszcz, Poland; <sup>3</sup>Second Department of Radiology, Medical University of Warsaw, Warsaw, Poland

**S153: EPIDEMIOLOGY AND MICROBIOLOGIC CHARACTERISTICS OF POSTOPERATIVE CENTRAL NERVOUS SYSTEM INFECTIONS FOLLOWING ENDOSCOPIC ENDONASAL SURGERY** - Sunish Shah, PharmD; Joseph Durkin, PharmD; Karin E Byers, MD, MS; Carl H Snyderman, MD, MBA; [Paul A Gardner, MD](#);

Ryan K Shields, PharmD, MS; University of Pittsburgh Medical Center



**S154: AVOIDANCE OF MAJOR VASCULAR INJURY IN TRANSCRANIAL BRAIN TUMOR SURGERY USING REAL-TIME DOPPLER NAVIGATION: TECHNICAL NOTE AND CASE SERIES**

- [Richard J Carling](#)<sup>1</sup>; Regin J Mallari<sup>1</sup>; Davendran Kanasesen<sup>2</sup>; Byron Hontiveros<sup>3</sup>; Walavan Sivakumar<sup>1</sup>; Garni Barkhoudarian<sup>1</sup>; Daniel F Kelly<sup>1</sup>; <sup>1</sup>Pacific Neuroscience Institute; <sup>2</sup>Sarawak General Hospital; <sup>3</sup>Makati Medical Center

**S155: ANTERIOR SKULL BASE OUTCOMES AND COMPLICATIONS: A PROPENSITY SCORE MATCHED EVALUATION OF AGE AND FRAILTY AS MEASURED BY MFI-5 FROM THE ACS-NSQIP DATABASE** - [Sawyer Bauer, BS](#)<sup>1</sup>;

Matthew Findlay, BS<sup>2</sup>; Majid Khan, BS<sup>1</sup>; Hepzibha Alexander, MD<sup>3</sup>; Brandon Lucke-Wold, MD, PhD<sup>4</sup>; Forrest Hamrick, MD<sup>5</sup>; Joshua Hunsaker, BS<sup>2</sup>; William T Couldwell, MD, PhD<sup>5</sup>; Michael Karsy, MD, PhD, MSc<sup>5</sup>; <sup>1</sup>Reno School of Medicine, University of Nevada, Reno, Nevada; <sup>2</sup>University of Utah School of Medicine, Salt Lake City, Utah; <sup>3</sup>Division of Neurosurgery, Ascension Providence Hospital, Michigan State University, College of Human Medicine, Southfield, USA; <sup>4</sup>Department of Neurosurgery, University of Florida, Gainesville, USA; <sup>5</sup>Department of Neurosurgery, Clinical Neurosciences Center, University of Utah, Salt Lake City, Utah

**S156: RISK FACTORS FOR DEVELOPMENT OF DIABETES INSIPIDUS AND SYNDROME OF INAPPROPRIATE ANTIDIURETIC HORMONE SECRETION (SIADH) AFTER TRANSPHENOIDAL RESECTION OF PITUITARY ADENOMA**

- [Gabrielle T Petito, BA](#)<sup>1</sup>; Alex Hu, BA<sup>1</sup>; Grace Zhang, BA<sup>1</sup>; Susie Min<sup>1</sup>; Siddhant Tripathi, BS<sup>1</sup>; Adithya Kumar, BS<sup>1</sup>; Geet Shukla, BA<sup>1</sup>; Sanjit Shah, MD<sup>2</sup>; Katie Phillips, MD<sup>1</sup>; Suman Jana, MD<sup>3</sup>; Jonathan A Forbes, MD<sup>2</sup>; Mario Zuccarello, MD<sup>2</sup>; Norberto O Andaluz, MD<sup>2</sup>; Ahmad R Sedaghat, MD, PhD<sup>1</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, University of Cincinnati College of Medicine; <sup>2</sup>Department of Neurosurgery, University of Cincinnati College of Medicine, Cincinnati, United States of America; <sup>3</sup>Division of Endocrinology, Diabetes and Metabolism, University of Cincinnati College of Medicine

**S157: RISK FACTORS FOR SIGNIFICANT POSTOPERATIVE HEMORRHAGE FOLLOWING PITUITARY ADENOMA RESECTION, A CASE-CONTROL STUDY OF 1,066 SURGERIES** -

[Robert C Osorio, BS](#); Alexander Aabedi, MD; William Carson; Aarav Badani; Eric Chalif, BS; Philip V Theodosopoulos, MD; Sandeep Kunwar, MD; Manish K Aghi, MD, PhD; Ezequiel Goldschmidt, MD, PhD; University of California, San Francisco

**S158: ASSESSING PATIENT-REPORTED SYMPTOMS TO PREDICT POST-OPERATIVE COMPLICATIONS FROM PITUITARY SURGERY USING A NOVEL CONSENSUS-DEVELOPED INVENTORY**

- [Amelia K Ramsey, MD<sup>1</sup>](#); [Dhruv S Kothari, BS<sup>1</sup>](#); [Kara A Parikh, MD<sup>2</sup>](#); [Ralph Abi Hachem, MD<sup>3</sup>](#); [Yvonne Chan, MD<sup>4</sup>](#); [Garret Choby, MD<sup>5</sup>](#); [Judd H Fastenberg, MD<sup>6</sup>](#); [Mindy R Rabinowitz, MD<sup>7</sup>](#); [Sanjeet V Rangarajan, MD, MEng<sup>1</sup>](#); <sup>1</sup>Department of Otolaryngology - Head and Neck Surgery, University of Tennessee Health Science Center, Memphis, TN USA; <sup>2</sup>Department of Neurosurgery - Head and Neck Surgery, University of Tennessee Health Science Center, Memphis, TN USA; <sup>3</sup>Department of Head and Neck Surgery & Communication Sciences, Duke University, Durham, North Carolina, USA; <sup>4</sup>Department of Otolaryngology - Head & Neck Surgery, University of Toronto, Toronto, Canada.; <sup>5</sup>Department of Otolaryngology-Head and Neck Surgery, Mayo Clinic, Rochester, Minnesota, USA; <sup>6</sup>Department of Otolaryngology-Head and Neck Surgery, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, Northwell Health System, Hempstead, New York, USA; <sup>7</sup>Department of Otolaryngology, Head and Neck Surgery, Thomas Jefferson University Hospital, Philadelphia, United States.

8:35 am - 9:35 am

**Proffered Papers Session 27: Meningiomas**

Tampa Bay 6

**V045: TUBERCULUM SELLA MENINGIOMA WITH VASCULAR ENCASEMENT** - [Vera Vigo, MD](#); [Karam P Asmaro](#); [Christopher M Low, MD](#); [Peter H Hwang, MD](#); [Juan C Fernandez-Miranda, MD](#); Stanford University

**V046: TUBERCULUM SELLA MENINGIOMA WITH CLINOIDAL AND PLANUM EXTENSION** - [Vera Vigo, md](#); [Karam P Asmaro, MD](#); [Ashoke R Khanwalkar, MD](#); [Zara Patel, MD](#); [Juan C Fernandez-Miranda, MD](#); Stanford University

**V047: COMBINED ENDOSCOPIC ENDONASAL AND TRANSCRANIAL APPROACH FOR A TUBERCULUM SELLAE MENINGIOMA** - [Jose L Sanmillan, MD, PhD](#); [Alberto Torres Diaz, MD](#); [Andreu Gabarros Canals, MD, PhD](#); Neurosurgery Department. Hospital Universitari de Bellvitge

**V048: FAR LATERAL TRANSCONDYLAR APPROACH FOR RESECTION OF A FORAMEN MAGNUM MENINGIOMA** - [Eric T. Quach](#); [Amir R Dehdashti](#); North Shore University Hospital

**V049: COMBINED PETROSAL APPROACH FOR MANAGEMENT OF RECURRENT HEMANGIOPERICYTOMA** - [Abhinav ETTYREDDY, MD](#); [Andrew McCall, MD](#); [Paul Gardner, MD](#); University of Pittsburgh Medical Center

**V050: RESECTION OF A CLINOIDAL MENINGIOMA ENCASING THE INTERNAL CAROTID ARTERY** - [Eric T Quach](#); [Amir R Dehdashti](#); North Shore University Hospital

**V051: MODIFIED CRANIO-ORBITAL APPROACH FOR RESECTION OF A RADIATION INDUCED GIANT PLANUM SPHENOIDALE MENINGIOMA** - [Erion Junior de Andrade](#); Pablo F Recinos; Cleveland Clinic

**V052: MIDDLE FOSSA TRANSCAVERNOUS APPROACH FOR POSTERIOR CLINOID MENINGIOMA** - [Karam P Asmaro, MD](#); Christine K Lee, MD, PhD; Vera Vigo, MD; Juan C Fernandez-Miranda; Stanford University

8:35 am - 9:35 am

**Proffered Papers Session 28: Cranial Nerve Functional Outcomes / Miscellaneous**

Tampa Bay 7

**S159: INCIDENCE OF DIPLOPIA SECONDARY TO CRANIAL NEUROPATHIES AFTER ENDOSCOPIC ENDONASAL PITUITARY AND TRANSCAVERNOUS SURGERY** - [Karam Asmaro](#)<sup>1</sup>; Christine K Lee<sup>2</sup>; Yuanzhi Xu<sup>3</sup>; Vera Vigo<sup>2</sup>; Thomas J Hirschauer<sup>2</sup>; Adrian J Rodrigues<sup>2</sup>; Juan C Fernandez-Miranda<sup>2</sup>; <sup>1</sup>Henry Ford Health; <sup>2</sup>Stanford University; <sup>3</sup>Huashan Hospital, Fudan University

**S160: A MACHINE LEARNING ALGORITHM FOR PREDICTION OF FACIAL NERVE INJURY FOLLOWING MICROSURGICAL RESECTION OF VESTIBULAR SCHWANNOMA** - [Sabrina M Heman-Ackah, MD, DPhil](#)<sup>1</sup>; Rachel Blue, MD<sup>1</sup>; Alexandra E Quimby, MD, MPH<sup>2</sup>; Tiffany Hwa, MD<sup>3</sup>; Jason Brant, MD<sup>2</sup>; Michael J Ruckenstein, MD, MSc, FACS<sup>2</sup>; Douglas C Bigelow, MD<sup>2</sup>; Selena E Briggs, MD, PhD, MBA, FACS<sup>4</sup>; Yale Cohen, PhD<sup>5</sup>; John Y Lee, MD<sup>1</sup>; <sup>1</sup>University of Pennsylvania, Department of Neurosurgery; <sup>2</sup>University of Pennsylvania, Department of Otorhinolaryngology; <sup>3</sup>Temple University, Department of Otolaryngology - Head and Neck Surgery; <sup>4</sup>MedStar Washington Hospital Center, Department of Otolaryngology; <sup>5</sup>University of Pennsylvania, Department of Bioengineering

**S161: OLFATORY FUNCTIONAL OUTCOMES FOLLOWING EXPANDED ENDOSCOPIC ENDONASAL SURGERY FOR NON-PITUITARY ANTERIOR SKULL BASE TUMORS** - Aneek Patel, BS; Akshay Save, MD; [Seth Lieberman, MD](#); Donato Pacione, MD; NYU Langone Health

**S162: A REVIEW OF THE LATERAL ORBITOTOMY APPROACH TO RESECT TUMORS WITHIN THE CAVERNOUS SINUS AND TEMPORAL LOBE** - [Molly Monsour](#); Davide Croci, MD; John Kim; Matthew Udine; Siviero Agazzi, MD; University of South Florida Morsani College of Medicine

**S163: CLINOIDAL MENINGIOMAS: CLINICAL AND FUNCTIONAL BENEFITS OF MINIMALLY INVASIVE APPROACHES** - [Rafael Martinez-Perez, MD, PhD](#)<sup>1</sup>; Jorge M Mura, MD, FACS<sup>2</sup>; <sup>1</sup>Department of Neurosurgery and Neuroscience Institute, Geisinger Health System and Geisinger Commonwealth School of Medicine, Wilkes-Barre, Pennsylvania; <sup>2</sup>Instituto Nacional de Neurocirugía Dr Asenjo, Santiago, Chile

**S164: NEURO-OPHTHALMOLOGIC OUTCOMES OF ORBITAL APEX SYNDROME CAUSED BY INVASIVE FUNGAL SINUSITIS**

- Sang Duk Hong, MD, PhD<sup>1</sup>; Joongbo Shin, MD<sup>1</sup>; Gwanghui Ryu, MD<sup>1</sup>; Hyo Yeol Kim<sup>1</sup>; Yong Gi Jung<sup>1</sup>; Doo-Sik Kong<sup>2</sup>; <sup>1</sup>Department of Otorhinolaryngology- Head and Neck Surgery, Samsung Medical Center,; <sup>2</sup>Department of Neurosurgery, Samsung Medical Center

**S165: EVIDENCE BASED RECOMMENDATIONS ON THE WORKUP AND TREATMENT OPTIONS FOR INFLAMMATORY PATHOLOGIES OF THE SELLA AND ORBIT: A SYSTEMATIC REVIEW**

- Christopher B Cutler, BS<sup>1</sup>; Mohammed A Azab, MD<sup>2</sup>; Brandon Lucke-Wold, MD, PhD, MCTS<sup>3</sup>; Majid Khan, BS<sup>4</sup>; Curran Henson, MS<sup>5</sup>; Amabir Gill, MD<sup>6</sup>; Jeremiah Alt, MD, PhD<sup>6</sup>; Michael Karsy, MD, PhD, MSc<sup>6</sup>; <sup>1</sup>Rosalind Franklin University; <sup>2</sup>Boise State University; <sup>3</sup>University of Florida; <sup>4</sup>University of Nevada, Reno School of Medicine; <sup>5</sup>University of Arkansas for Medical Sciences; <sup>6</sup>University of Utah

**S166: VASCULITIS PRESENTING AS AN INFRATEMPORAL FOSSA MASS**

- Sulgi Kim, BA<sup>1</sup>; Meredith Lamb, BS<sup>2</sup>; Taylor Stack, BS<sup>1</sup>; Abdullah Zeatoun, MD<sup>2</sup>; Omura Kazuhiro, MD<sup>2</sup>; Erin Lopez, MD<sup>2</sup>; Daniel Alicea, MD<sup>2</sup>; Charles S Ebert Jr., MD, MPH<sup>2</sup>; Brent Senior, MD<sup>2</sup>; Brian Thorp, MD<sup>2</sup>; Adam J Kimple, MD, PhD<sup>2</sup>; <sup>1</sup>University of North Carolina School of Medicine; <sup>2</sup>Department of Otolaryngology-Head & Neck Surgery at the University of North Carolina - Chapel Hill

8:35 am - 9:35 am

**Proffered Papers Session 29: Miscellaneous**

Tampa Bay 8

**S167: PROMOTING SURGEON-SCIENTISTS IN OTOLARYNGOLOGY-HEAD AND NECK SURGERY** - [Nikitha Kosaraju, BA](#); Lindsay S Moore, MD; Donald P Keating III, BS; Grace S Kim, MD; Konstantina M Stankovic, MD, PhD; Department of Otolaryngology-Head and Neck Surgery, Stanford University, Stanford, CA

**S168: MULTIDISCIPLINARY NEUROFIBROMATOSIS TYPE 2 CLINIC: THE MAYO CLINIC EXPERIENCE** - [Aaron R Plitt, MD](#); James R Dornhoffer, MD<sup>2</sup>; Maria Peris-Celda, MD<sup>1</sup>; Jamie J Van Gompel, MD<sup>1</sup>; Brian A Neff, MD<sup>2</sup>; Collin L Driscoll, MD<sup>2</sup>; Michael J Link, MD<sup>1</sup>; Matthew L Carlson, MD<sup>2</sup>; <sup>1</sup>Mayo Clinic Department of Neurologic Surgery; <sup>2</sup>Mayo Clinic Department of Otolaryngology/Head and Neck Surgery

**S170: MANAGEMENT STRATEGIES IN CLIVAL AND CRANIOVERTEBRAL JUNCTION CHORDOMAS: A 29-YEAR EXPERIENCE** - [Thibault Passeri, MD, MSc](#); Pierre Olivier Champagne, MD, PhD<sup>1</sup>; Lorenzo Giammattei, MD<sup>1</sup>; Rosaria Abbritti, MD<sup>1</sup>; Jérôme Cartailier, PhD<sup>2</sup>; Valentin Calugaru, MD, PhD<sup>3</sup>; Loic Feuvret, MD<sup>3</sup>; Jean-Pierre Guichard, MD<sup>4</sup>; Marc Polivka, MD<sup>5</sup>; Homa Adle-Biassette, MD, PhD<sup>5</sup>; Hamid Mammar<sup>3</sup>; Damien Bresson, MD, PhD<sup>1</sup>; Philippe Herman, MD, PhD<sup>6</sup>; Emmanuel Mandonnet, MD, PhD<sup>1</sup>; Bernard George, MD<sup>1</sup>; Sébastien Froelich<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, Lariboisière Hospital, Assistance Publique des Hôpitaux de Paris; <sup>2</sup>Department of Anesthesiology, Lariboisière Hospital, Assistance Publique des Hôpitaux de Paris; <sup>3</sup>Institut Curie, Proton Beam Therapy Center; <sup>4</sup>Department of Neuroradiology, Lariboisière Hospital, Assistance Publique des Hôpitaux de Paris; <sup>5</sup>Department of Pathology, Lariboisière Hospital, Assistance Publique des Hôpitaux de Paris; <sup>6</sup>Department of Otorhinolaryngology, Lariboisière Hospital, Assistance Publique des Hôpitaux de Paris

**S171: POSITIVE MARGINS AT THE TRIGEMINAL NERVE: IS IT WORTH RESECTING?** - [Maria Armache, MD](#); Thomas Jefferson University Hospital

**S172: RISK ANALYSIS INDEX AND 30-DAY MORTALITY AFTER INTRACRANIAL TUMOR RESECTION: A MULTI-CENTER FRAILTY ANALYSIS OF 31,776 PATIENTS FROM 2012-2020** - [Kavelin Rumalla, MD](#); Rachel Thommen, BS; Syed Faraz Kazim, MD, PhD; Aaron Segura, MS; Meic H Schmidt, MD, MBA; Rohini B McKee, MD, MPH; Christian A Bowers, MD; University of New Mexico Health Sciences Center

**S173: RECURRENCE MORBIDITY OF OLFACTORY**

**NEUROBLASTOMA** - [Katie Melder, MD<sup>1</sup>](#); Garret Choby, MD<sup>2</sup>; Joao Almeida, MD<sup>3</sup>; Pierre-Olivier Champagne, MD<sup>4</sup>; Justin Cetas, MD, PhD<sup>5</sup>; Erik Chan, MD<sup>6</sup>; Jeremy Ciporen, MD<sup>7</sup>; Mark B Chaskes, MD, MBA<sup>8</sup>; Juan Fernandez-Miranda, MD<sup>9</sup>; Paul Gardner, MD<sup>10</sup>; Fred Gentili, MD<sup>11</sup>; Peter Hwang, MD<sup>6</sup>; Keven SY Ji, MD, MHS<sup>1</sup>; Aristotelis Kalyvas, MD<sup>11</sup>; Keonho A Kong, MD<sup>8</sup>; Ryan McMillan, MD<sup>2</sup>; Jamie O'Byrne, MS<sup>12</sup>; Chirag Patel, MD<sup>13</sup>; Zara Patel, MD<sup>6</sup>; Maria Peris Celda, MD<sup>12</sup>; Carlos Pinheiro-Neto, MD<sup>2</sup>; Carl H Snyderman<sup>14</sup>; Brian D Thorp, MD<sup>8</sup>; Jamie J Van Gompel, MD<sup>15</sup>; Georgios Zenonos, MD<sup>10</sup>; Nathan T Zwagerman, MD<sup>16</sup>; Olabisi Sanusi, MD<sup>7</sup>; Eric W Wang, MD<sup>14</sup>; Mathew Geltzeiler, MD<sup>1</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, Oregon Health & Science University, Portland, OR; <sup>2</sup>Department of Otolaryngology-Head and Neck Surgery, Mayo Clinic, Rochester, MN; <sup>3</sup>Department of Neurological Surgery, Mayo Clinic, Jacksonville, FL; <sup>4</sup>Department of Neurological Surgery, Universite Laval, Quebec, Canada; <sup>5</sup>Department of Neurological Surgery, University of Arizona, Tucson, AZ; <sup>6</sup>Department of Otolaryngology-Head and Neck Surgery, Stanford University, Palo Alto, CA; <sup>7</sup>Department of Neurological Surgery, Oregon Health & Science University, Portland, OR; <sup>8</sup>Department of Otolaryngology-Head and Neck Surgery, University of North Carolina, Chapel Hill, NC; <sup>9</sup>Department of Neurological Surgery, Stanford University, Palo Alto, CA; <sup>10</sup>Department of Neurological Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA; <sup>11</sup>Department of Neurological Surgery, University of Toronto, Ontario, Canada; <sup>12</sup>Department of Quantitative Health Sciences, Mayo Clinic, Rochester, MN; <sup>13</sup>Department of Otolaryngology-Head and Neck Surgery, Loyola University, Maywood, IL; <sup>14</sup>Department of Otolaryngology-Head and Neck Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA; <sup>15</sup>Department of Neurological Surgery, Mayo Clinic, Rochester, MN.; <sup>16</sup>Department of Neurological Surgery, University of Wisconsin, Milwaukee, WI

**S174: A SINGLE-CENTER RETROSPECTIVE ANALYSIS OF INTRACRANIAL AND SPINAL SOLITARY FIBROUS TUMOR/ HEMANGIOPERICYTOMA CLINICAL OUTCOMES: GENDER ASSOCIATION WITH AGGRESSIVENESS** - [Mohamed E El-Abtah<sup>1</sup>](#);

Roger Muray<sup>2</sup>; Tiffany Ejikeme<sup>2</sup>; Peter Ahorukomeye<sup>1</sup>; Jordan C Petitt<sup>1</sup>; Pablo F Recinos<sup>2</sup>; Varun R Kshetry<sup>2</sup>; <sup>1</sup>Case Western Reserve University School of Medicine; <sup>2</sup>Cleveland Clinic

8:35 am - 9:35 am

**Proffered Papers Session 30: Vestibular Schwannomas**

Tampa Bay 9

**S175: VOLUME OF RESIDUAL TUMOR IN VESTIBULAR SCHWANNOMA RESECTION IS ASSOCIATED WITH RECURRENCE RATE EVEN AFTER ADJUVANT RADIOSURGERY**

- Emily J Winterhalter, BA; [Khizar R Nandoliya, BA](#); Rushmin Khazanchi, BA; Mark W Youngblood, MD, PhD; Adam M Sonabend, MD; James P Chandler, MD; Stephen T Magill, MD, PhD; Northwestern University Feinberg School of Medicine



**S176: NEUROTOLOGIST VS. RADIATION ONCOLOGIST - WHO IS QUICKER TO INTERVENE ON VESTIBULAR SCHWANNOMAS?**

- [Zachary A Wykoff, BS](#)<sup>1</sup>; Micah H Harris, BS<sup>1</sup>; Vivian F Kaul, MD<sup>2</sup>; Daniel M Prevedello, MD<sup>2</sup>; Douglas A Hardesty, MD<sup>2</sup>; Oliver F Adunka, MD, FACS<sup>2</sup>; Joshua D Palmer, MD<sup>2</sup>; Yin Ren, MD, PhD<sup>2</sup>; <sup>1</sup>The Ohio State University College of Medicine; <sup>2</sup>The Ohio State University Wexner Medical Center

**S177: THE EFFECT OF METFORMIN ON VESTIBULAR SCHWANNOMA GROWTH: SYSTEMATIC REVIEW AND META-ANALYSIS**

- [Benjamin D Lovin, MD](#)<sup>1</sup>; Alex Wilkinson, BS<sup>2</sup>; Yun Qing, PhD<sup>3</sup>; Mike Hernandez, MS<sup>3</sup>; Marc-Ellie Nader, MD<sup>4</sup>; Shaan Raza, MD<sup>5</sup>; Franco DeMonte, MD<sup>5</sup>; Paul W Gidley, MD<sup>4</sup>; <sup>1</sup>Bobby R. Alford Department of Otolaryngology-Head and Neck Surgery, Baylor College of Medicine, Houston, Texas; <sup>2</sup>McGovern Medical School, University of Texas Health Science Center; <sup>3</sup>Department of Biostatistics, The University of Texas MD Anderson Cancer Center, Houston, Texas; <sup>4</sup>Department of Head and Neck Surgery, The University of Texas MD Anderson Cancer Center, Houston, Texas; <sup>5</sup>Department of Neurosurgery, The University of Texas MD Anderson Cancer Center, Houston, Texas

**S178: ASSESSING THE UTILITY OF VS-5 FRAILTY SCORING RELATIVE TO THE CHARLSON COMORBIDITY INDEX: AN ANALYSIS OF AN INSTITUTIONAL COHORT OF VESTIBULAR SCHWANNOMA RESECTIONS**

- [Rushmin Khazanchi](#); Khizar R Nandoliya; Emily J Winterhalter; Mark W Youngblood; Adam M Sonabend; James P Chandler; Stephen T Magill; Northwestern University

**S179: AUDIOMETRIC OUTCOMES OF AUDITORY BRAINSTEM IMPLANTATION DURING VESTIBULAR SCHWANNOMA RESECTION: A SINGLE INSTITUTION CASE SERIES**

- [V́ctor A de Cos, BS](#); Madeline E Gibson, BA; Olivia A La Monte, BS; Omid Moshtaghi, MD; Peter Dixon, MD, MSc; Usman Khan, MD, PhD; Rick Friedman, MD, PhD; Marc Schwartz, MD, PhD; UC San Diego School of Medicine

**S180: TREATMENT OF VESTIBULAR SCHWANNOMAS REFRACTORY TO PRIMARY THERAPY: CONSIDERATIONS FOR SUBSEQUENT MICROSURGERY AND RADIATION**

- [Justin Cottrell](#); Emily Kay-Rivest; Lauren Rotman; David Friedmann; Daniel Jethanamest; Sean McMenomey; Donato Pacione; Chandra Sen; John Golfinos; Thomas Roland; NYU

**S181: RADIOGRAPHIC FACTORS PREDICTING POST-OPERATIVE FACIAL NERVE DEFICIT IN VESTIBULAR SCHWANNOMAS**

- [John Kim](#); Molly Monsour; Davide Croci, MD; Rachel Eakins; Siviero Agazzi, MD, MBA; University of South Florida Morsani College of Medicine

**S182: ENDOSCOPE ASSISTANCE DURING RETROSIGMOID SURGERY REVEALS RESIDUAL VESTIBULAR SCHWANNOMA**

- [Alexandra E Quimby, MD, MPH](#)<sup>1</sup>; Stephen Miranda, MD<sup>2</sup>; Sabrina M Heman-Ackah, MD, DPhil<sup>2</sup>; Sonia Ajmera, MD<sup>2</sup>; Jason A Brant, MD<sup>1</sup>; Michael J Ruckenstein, MD, MSc<sup>1</sup>; Douglas C Bigelow, MD<sup>1</sup>; John Y Lee, MD, MSCE<sup>2</sup>; <sup>1</sup>University of Pennsylvania, Department of Otorhinolaryngology-Head & Neck Surgery; <sup>2</sup>University of Pennsylvania, Department of Neurosurgery

**9:40 am - 10:40 am** **Proffered Papers Session 31: Innovative Techniques, Technology, and Approaches to the Skull Base**

*Tampa Bay 1*

**S183: THE PTERIONAL KEYHOLE CRANIOTOMY: A HISTORICAL PERSPECTIVE ON ITS DEVELOPMENT AND ROLE WITHIN SKULL BASE NEUROSURGERY**

- Vera Ong<sup>1</sup>; [Nolan J Brown](#)<sup>2</sup>; Shane Shahrestani<sup>3</sup>; Ronald Sahyouni<sup>4</sup>; Mickey Abraham<sup>4</sup>; Joshua Loya<sup>5</sup>; <sup>1</sup>John A. Burns School of Medicine, University of Hawaii at Manoa; <sup>2</sup>UC Irvine Department of Neurological Surgery; <sup>3</sup>Keck School of Medicine of USC; <sup>4</sup>UCSD Department of Neurological Surgery; <sup>5</sup>Department of Neurosurgery, Oregon Health Sciences University

**S184: TRANSFACIAL PORT: AN ENDOSCOPIC CORRIDOR TO THE CONTRALATERAL PETROUS APEX AND PARACLIVAL REGION**

- [Jackson R Vuncannon, MD](#)<sup>1</sup>; Edoardo Porto, MD<sup>1</sup>; J. Manuel Revuelta Barbero, MD, PhD<sup>2</sup>; Gustavo Pradilla, MD<sup>1</sup>; C. Arturo Solares, MD<sup>1</sup>; <sup>1</sup>Emory University School of Medicine; <sup>2</sup>Medical College of Georgia

**S185: ENDOSCOPIC PARAMAXILLARY APPROACH TO THE HYPOGLOSSAL CANAL AND JUGULAR FORAMEN**

- [Ricardo W Pulido, MD](#)<sup>1</sup>; Nathaniel Reeve, MD<sup>2</sup>; Andrew Montoure, MD<sup>1</sup>; Abdullah Feroze, MD<sup>3</sup>; Maggie McGrath, MD<sup>1</sup>; Randall Bly, MD<sup>1</sup>; Waleed Abuzeid, MD<sup>1</sup>; Ian Humphreys, MD<sup>1</sup>; Kris Moe, MD<sup>1</sup>; <sup>1</sup>University of Washington; <sup>2</sup>University of New Mexico; <sup>3</sup>Brigham and Women's Hospital

**S186: UTILIZING A NOVEL PITUITARY RETRACTOR FOR EARLY DESCENT OF THE DIAPHRAGMA SELLAE DURING ENDOSCOPIC TRANSPHENOIDAL PITUITARY SURGERY**

- Jae-Sung Park, MD<sup>1</sup>; [Wan-Soo Yoon, MD, PhD](#)<sup>2</sup>; <sup>1</sup>Seoul St. Mary's Hospital, The Catholic University of Korea; <sup>2</sup>Incheon St. Mary's Hospital, The Catholic University of Korea

**S187: NOVEL APPLICATION OF THE COMANECI DEVICE FOR PULSATILE TINNITUS DUE TO SIGMOID SINUS DIVERTICULUM**

- [Nicholas J Novak, DO](#); Brooke Army Medical Center

## **S188: LUTATHERA THERAPY FOR OLFACTORY**

**NEUROBLASTOMA** - [Daniel E Palmieri](#)<sup>1</sup>; Kent S Tadokoro, MD<sup>2</sup>; Ashok Muthukrishnan, MD<sup>3</sup>; Raja R Seethala, MD<sup>4</sup>; Benita Valappil, MPH<sup>5</sup>; Carl H Snyderman, MD, MBA<sup>2</sup>; <sup>1</sup>University of Pittsburgh School of Medicine; <sup>2</sup>Department of Otolaryngology, University of Pittsburgh School of Medicine; <sup>3</sup>Department of Radiology, University of Pittsburgh School of Medicine; <sup>4</sup>Department of Pathology, University of Pittsburgh School of Medicine; <sup>5</sup>Center for Cranial Base Surgery, University of Pittsburgh Medical Center

## **S189: CHRONIC ANTERIOR SKULL BASE MUCORMYCOSIS AFTER COVID-19 INFECTION: MULTIDISCIPLINARY SURGICAL MANAGEMENT AND RECONSTRUCTION**

- [Eric Nisenbaum](#), MD, MSc<sup>1</sup>; Larissa Sweeny, MD<sup>1</sup>; Seerat Poonia, MD<sup>1</sup>; Carolina Benjamin, MD<sup>2</sup>; Zoukaa Sargi, MD<sup>1</sup>; <sup>1</sup>University of Miami School of Medicine Department of Otolaryngology; <sup>2</sup>University of Miami School of Medicine Department of Neurosurgery

## **S190: ANCHORING THE ANTERIOR MARGIN OF THE DURAL INLAY GRAFT: A TECHNICAL NOTE ON ENDOSCOPIC ANTERIOR SKULL BASE RECONSTRUCTION**

- [A. Yohan Alexander](#), BA<sup>1</sup>; Edoardo Agosti, MD<sup>2</sup>; Luciano Leonel, PhD<sup>1</sup>; Stephen Graepel, MA<sup>1</sup>; Garret Choby, MD<sup>3</sup>; Maria Peris-Celda, MD, PhD<sup>4</sup>; Carlos D Pinheiro-Neto, MD, PhD<sup>3</sup>; <sup>1</sup>Mayo Clinic, Department of Neurosurgery; <sup>2</sup>University of Brescia, Department of Neurosurgery; <sup>3</sup>Mayo Clinic, Department of Otorhinolaryngology and Neurosurgery; <sup>4</sup>Mayo Clinic, Department of Neurosurgery and Otorhinolaryngology

**9:40 am - 10:40 am** **Proffered Papers Session 32: Orbital Tumors/Cost Utility of Skull Base Treatments**

*Tampa Bay 2*

## **S191: DRIVERS OF HOSPITAL FINANCIAL PERFORMANCE AND PATIENT OUTCOMES IN CUSHING DISEASE**

- [Charuta G Furey](#), MD<sup>1</sup>; Izzi Bauer, BS<sup>1</sup>; Frank Cossio, BS<sup>1</sup>; Dara S Farhadi, BS<sup>1</sup>; Elizabeth Smith, BS<sup>1</sup>; Ildiko Torok<sup>1</sup>; Trevor Low<sup>1</sup>; Tomi Crocker<sup>1</sup>; Anthony M Asher, MD<sup>1</sup>; Christina E Sarris, MD<sup>2</sup>; Benjamin K Hendricks, MD<sup>1</sup>; Scott T Brigeman, MD<sup>1</sup>; Andrew S Little, MD<sup>1</sup>; <sup>1</sup>Barrow Neurological Institute; <sup>2</sup>Children's Hospital of Philadelphia

## **S192: FACTORS ASSOCIATED WITH INCREASED LENGTH OF STAY AFTER ENDOSCOPIC PITUITARY RESECTION**

- [Alex Devarajan](#), BS; Jonathan T Dullea, MPH; Vikram Vasan, BA; Noah Nichols, MD; Danielle Chaluts, BS; Muhammad Ali, BS; Daniel Ranti, MSCR; Manasa Rao, BS; Sweta Sudhir, BS; Logan Cho, BS; Lily McCarthy, BS; John W Rutland, MD; Kalmon Post, MD; Joshua Bederson, MD; Raj K Shrivastava, MD; Icahn School of Medicine at Mount Sinai

## **S193: ROUTINE POST-OPERATIVE DAY 1 DISMISSAL FOLLOWING ENDONASAL SURGERY FOR PITUITARY**

**ADENOMA: A SINGLE-INSTITUTION COHORT STUDY** - [Danielle Dang](#), MD<sup>1</sup>; Rima Rindler, MD<sup>2</sup>; Rahul Kumar, MD, PhD<sup>2</sup>; Justine Herndon, PA<sup>2</sup>; Dana Erickson, MD<sup>2</sup>; Caroline Davidge-Pitts, MD<sup>2</sup>; Irina Bancos, MD<sup>2</sup>; Garrett Choby, MD<sup>2</sup>; John Atkinson, MD<sup>2</sup>; Jamie Van Gompel, MD<sup>2</sup>; <sup>1</sup>Inova; <sup>2</sup>Mayo Clinic Rochester

**S195: COMPARISON OF IN-HOSPITAL COSTS FOR EXPANDED ENDONASAL APPROACHES AND CRANIOTOMY FOR ANTERIOR SKULL BASE TUMORS** - Arjun K Parasher, MD<sup>1</sup>; David K Lerner, MD<sup>2</sup>; Stephen P Miranda, MD<sup>3</sup>; Jennifer E Douglas, MD<sup>3</sup>; Jordan T Glicksman<sup>4</sup>; Tyler Alexander, BS<sup>5</sup>; Theodore Lin, BS<sup>6</sup>; Michael Kohanski, MD, PhD<sup>3</sup>; John Lee, MD, MSCE<sup>3</sup>; Phillip B Storm, MD<sup>3</sup>; Daniel Yoshor, MD<sup>3</sup>; James N Palmer, MD<sup>3</sup>; M Sean Grady<sup>3</sup>; Nithin D Adappa, MD<sup>3</sup>; <sup>1</sup>University of South Florida; <sup>2</sup>Icahn School of Medicine at Mount Sinai; <sup>3</sup>University of Pennsylvania; <sup>4</sup>Harvard Medical School; <sup>5</sup>Thomas Jefferson University; <sup>6</sup>Temple University

**S196: 3D MODELING OF LACRIMAL SAC TUMOR GROWTH PATTERNS** - Travis J Clarke, MD<sup>1</sup>; Raphael Banoub, MD<sup>2</sup>; Sana H Siddiqui, MD<sup>2</sup>; Glen D'Souza, MD<sup>2</sup>; Victor Jegede, BS<sup>2</sup>; Meigi Luo, BS<sup>2</sup>; Joseph Curry, MD<sup>2</sup>; <sup>1</sup>University of Tennessee Health Science Center - Memphis; <sup>2</sup>Thomas Jefferson University

**S197: VISUAL OUTCOMES FOR ENDOSCOPIC ENDONASAL ORBITAL AND OPTIC NERVE DECOMPRESSION FOR OPTIC NERVE SHEATH MENINGIOMAS PRIOR TO RADIATION THERAPY** - Lauren M North, MD; Kelly E Daniels, MD; Andrey Filiminov, MD; Muhammad S Ali; Georgios Zenonos, MD; Paul A Gardner, MD; Carl A Snyderman, MD; Eric W Wang; University of Pittsburgh Medical Center

**S198: PEDICLED LATERAL ORBITOTOMY APPROACH FOR THE EXCISION OF INTRAORBITAL TUMORS- OUR EXPERIENCE** - Anand Gupta, MDS, MFDS RCPS, FIBOMS; Rakesh Bansal, MD; Gurvanit Lehl; Government Medical College Hospital, Chandigarh

9:40 am - 10:40 am

**Proffered Papers Session 33: Intraoperative Technology/ Orbital Approaches**

Tampa Bay 6

**V053: SUPRAORBITAL EYEBROW APPROACH FOR TRANS-LAMINA TERMINALIS RESECTION OF THIRD VENTRICLE METASTASIS** - Joshua Vignolles-Jeong, BA<sup>1</sup>; Stephen T Magill, MD, PhD<sup>2</sup>; Ben G McGahan, MD<sup>1</sup>; Saniya S Godil, MD<sup>1</sup>; Daniel M Prevedello, MD<sup>1</sup>; <sup>1</sup>The Ohio State University College of Medicine; <sup>2</sup>Northwestern University Department of Neurosurgery

**V054: RESECTION OF AN ORBITAL SPINDLE CELL TUMOR VIA COMBINED ENDOSCOPIC ENDONASAL AND OPEN TRANSORBITAL APPROACHES** - Neal R Godse, MD<sup>1</sup>; Sara Alsulaimani, MD<sup>2</sup>; Pablo F Recinos, MD<sup>2</sup>; Raj Sindwani, MD<sup>1</sup>; <sup>1</sup>Head and Neck Institute, Cleveland Clinic Foundation; <sup>2</sup>Rose Ella Burkhardt Brain Tumor and Neuro-Oncology Center, Neurological Institute, Cleveland Clinic Foundation

**V055: ORBITAL SOLITARY FIBROUS TUMOR TRANSNASAL RESECTION** - Srihari Daggumati, MD; Zachary A Kons, BS; Dimitrios Sismanis, MD; Theodore A Schuman, MD; Virginia Commonwealth University

**V056: TRANSORBITAL NEUROENDOSCOPIC (TONE) RESECTION OF A MIDDLE FOSSA MENINGIOMA** - [Jose L Sanmillan, MD, PhD](#); Alberto Torres Diaz, MD; Andreu Gabarrós Canals, MD, PhD; Hospital Universitari de Bellvitge. Neurosurgery Department

**V057: THE ESSENTIAL ROLE OF INTRAOPERATIVE ULTRASOUND FOR STAGED RESECTION OF ANTERIOR SKULL BASE MENINGIOMAS** - [Guilherme Finger, MD, MSCI](#); Kyle C Wu, MD; Basit Jawad, MD; Ricardo L Carrau, MD, FACS; Daniel M Prevedello, MD, FACS; The Ohio State University

**V058: ULTRASOUND-GUIDED ENDOSCOPIC ENDONASAL RESECTION OF RETRO-ODONTOID PANNUS MASS** - Kyle C Wu, MD; [Guilherme Finger, MD, MSCI](#); Basit Jawad, MD; [Vikas Munjal, BS](#); Ricardo L Carrau, MD, MBS, FACS; Daniel M Prevedello, MD, MBA, FACS; The Ohio State University College of Medicine

**V059: ULTRASOUND-GUIDED ENDOSCOPIC ENDONASAL RESECTION OF A SUPRASellar CRANIOPHARYNGIOMA** - [Guilherme Finger, MD, MSCI](#); Kyle C Wu, MD; Saniya S Godil, MD, MSCI; [Vikas Munjal, BS](#); Ricardo L Carrau, MD, FACS; Daniel M Prevedello, MD, FACS; The Ohio State University College of Medicine

**V060: ENDOSCOPIC ENDONASAL MARSUPIALIZATION OF RATHKE CLEFT CYST WITH INTRAOPERATIVE ULTRASOUND GUIDANCE** - Kyle C Wu, MD; [Guilherme Finger, MD, MSCI](#); Basit Jawad, MD; Mohammad B Alsavaf, MD; [Joshua Vignolles-Jeong, BA](#); Ricardo L Carrau, MD, MBS, FACS; Daniel M Prevedello, MD, MBA, FACS; The Ohio State University College of Medicine

9:40 am - 10:40 am **Proffered Papers Session 34: Sinonasal Neoplasms**

Tampa Bay 7

**S199: EVALUATION OF THE IMMUNE MICROENVIRONMENT IN SINONASAL UNDIFFERENTIATED CARCINOMA AND ITS ASSOCIATION WITH PATIENTS' SURVIVAL** - [Yoko Takahashi, PhD](#)<sup>1</sup>; Javier Gomez, MS<sup>1</sup>; Jared Burks, PhD<sup>1</sup>; Moran Amit, MD, PhD<sup>1</sup>; Tong-Xin Xie, MD, PhD<sup>1</sup>; Diana Bell, MD<sup>2</sup>; Austin Hoke, MD<sup>3</sup>; Nyall London, MD, PhD<sup>3</sup>; Ehab Y Hanna, MD<sup>1</sup>; <sup>1</sup>The University of Texas MD Anderson Cancer Center; <sup>2</sup>City of Hope; <sup>3</sup>National Institutes of Health Sinonasal and skull base tumor program

**S200: NK CELL-BASED IMMUNOTHERAPY APPROACHES TO SINONASAL UNDIFFERENTIATED CARCINOMA** - [Riley M Larkin, BS<sup>1</sup>](#); [Austin T Hoke, MD<sup>2</sup>](#); [Yoko Takahashi, PhD<sup>3</sup>](#); [Michelle R Padget, BS<sup>4</sup>](#); [Moran Amit, MD, PhD<sup>5</sup>](#); [Jared Burks, PhD<sup>6</sup>](#); [Javier Gomez, MS<sup>6</sup>](#); [Diana Bell, MD<sup>7</sup>](#); [Tongxin Xie, MD, PhD<sup>5</sup>](#); [Patrick Soon-Shiong, MBBCh<sup>8</sup>](#); [James W Hodge, PhD<sup>4</sup>](#); [Ehab Y Hanna, MD<sup>3</sup>](#); [Nyall R London Jr., MD, PhD<sup>9</sup>](#); <sup>1</sup>Miller School of Medicine - University

of Miami; <sup>2</sup>Sinonasal and Skull Base Tumor Program, National Institutes on Deafness and Other Communication Disorders, National Institutes of Health, Department of Otolaryngology-Head and Neck Surgery, Vanderbilt University Medical Center; <sup>3</sup>Departments of Head and Neck Surgery, Experimental Radiation Oncology, Thoracic and Head and Neck Medical Oncology, and Cancer Biology, The University of Texas MD Anderson Cancer Center; <sup>4</sup>Laboratory of Tumor Immunology and Biology, Center for Cancer Research, National Cancer Institute, National Institutes of Health; <sup>5</sup>Department of Head and Neck Surgery, University of Texas MD Anderson Cancer Center; <sup>6</sup>Flow Cytometry & Cellular Imaging Core Facility, University of Texas MD Anderson Cancer Center; <sup>7</sup>Department of Pathology, City of Hope National Medical Center; <sup>8</sup>ImmunityBio; <sup>9</sup>Sinonasal and Skull Base Tumor Program, National Institutes on Deafness and Other Communication Disorders, National Institutes of Health, Department of Otolaryngology-Head and Neck Surgery, Johns Hopkins University School of Medicine

**S201: PREDICTIVE FACTORS FOR DELAYED REGIONAL METASTASIS IN PATIENTS WITH ESTHESIONEUROBLASTOMA** - [Travis J Haller, MD](#); [Thomas J O'Byrne](#); [Jamie Van Gompel, MD](#); [Garret W Choby, MD](#); Mayo Clinic

**S202: ESTHESIONEUROBLASTOMA: THE FATE OF PATIENTS WITH RECURRENCE** - [Garrett Ni, MD, MS<sup>1</sup>](#); [Ehiremen Iyoha, MD<sup>2</sup>](#); [Carlos Pinheiro Neto, MD, PhD<sup>2</sup>](#); [Jamie Van Gompel, MD<sup>3</sup>](#); [Michael Link, MD<sup>3</sup>](#); [Maria Peris-Ceyda, MD, PhD<sup>3</sup>](#); [Eric Moore, MD<sup>2</sup>](#); [Janalee Stokken, MD<sup>2</sup>](#); [Mauricio Gamez, MD<sup>2</sup>](#); [Garret Choby, MD<sup>2</sup>](#); <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, Lewis Katz School of Medicine at Temple University Hospital; <sup>2</sup>Department of Otolaryngology-Head and Neck Surgery, Mayo Clinic School of Medicine, Rochester, Minnesota, USA; <sup>3</sup>Department of Neurologic Surgery, Mayo Clinic, Rochester, Minnesota, USA

**S203: SINONASAL MUCOSAL MELANOMA SURVIVAL OUTCOMES, RECURRENCE PATTERNS, AND PROGNOSTIC FACTORS: A SYSTEMATIC LITERATURE REVIEW AND META-ANALYSIS OF PUBLICATIONS AFTER 2000** - [Anna J Orr, BA<sup>1</sup>](#); [Rachel Fenberg, BSE<sup>2</sup>](#); [Ricardo L Carrau, MD<sup>2</sup>](#); [Kyle VanKoeveering, MD<sup>2</sup>](#); <sup>1</sup>The Ohio State University College of Medicine, Columbus, Ohio, USA; <sup>2</sup>Department of Otolaryngology – Head and Neck Surgery, The Ohio State University Wexner Medical Center, Columbus, Ohio, USA



**S204: ON THE SCENT - TRAINED CANINES CAN DETECT THE UNIQUE ODOR SIGNATURE OF SINONASAL INVERTED PAPILLOMA IN PLASMA AND NASAL SECRETIONS** - [Alexander Duffy, MD<sup>1</sup>](#); Mark B Chaskes, MD, MBA<sup>2</sup>; Amritha Mallikarjun<sup>3</sup>; Amanda Collins<sup>3</sup>; Alec Verta<sup>3</sup>; Amit Hanadari-Levy<sup>3</sup>; Marc R Rosen, MD<sup>1</sup>; Gurston Nyquist, MD<sup>1</sup>; Elina Toskala, MD, PhD, MBA<sup>1</sup>; Cynthia Otto, PhD, DVM<sup>3</sup>; Mindy R Rabinowitz, MD, FARS<sup>1</sup>; <sup>1</sup>Department of Otolaryngology, Thomas Jefferson University Hospital; <sup>2</sup>Department of Otolaryngology, Zucker School of Medicine at Hofstra/Northwell; <sup>3</sup>University of Pennsylvania School of Veterinary Medicine, Penn Vet Working Dog Center

**S205: RADIOGRAPHIC PREDICTORS OF OCCULT INTRACRANIAL INVOLVEMENT IN OLFACTORY NEUROBLASTOMA PATIENTS** - [Mathew Geltzeiler, MD<sup>1</sup>](#); Garret Choby, MD<sup>2</sup>; Keven Seung Yong Ji, MD<sup>1</sup>; Jess Mace, MPH, CCRP<sup>1</sup>; Joao Paulo Almeida, MD<sup>2</sup>; Pierre-Olivier Champagne, MD<sup>3</sup>; Justin Cetas, MD, PhD<sup>4</sup>; Erik Chan, MD<sup>5</sup>; Jeremy Ciporen, MD<sup>1</sup>; Mark B Chaskes<sup>6</sup>; Juan Fernandez-Miranda, MD<sup>5</sup>; Paul Gardner, MD<sup>7</sup>; Fred Gentili, MD<sup>8</sup>; Peter Hwang, MD<sup>5</sup>; Aristotelis Kalyvas<sup>8</sup>; Keonho A Kong<sup>6</sup>; Ryan McMillan, MD<sup>2</sup>; Chirag Patel, MD<sup>9</sup>; Veronica Drozdowski, MD<sup>9</sup>; Zara Patel, MD<sup>5</sup>; Maria Peris Celda, MD<sup>2</sup>; Carlos Pinheiro-Neto, MD<sup>2</sup>; Olabisi Sanusi, MD<sup>1</sup>; Carl Snyderman<sup>7</sup>; Brian D Thorp, MD<sup>6</sup>; Jamie J Van Gompel, MD<sup>2</sup>; Gelareh Zadeh, MD, PhD<sup>8</sup>; Georgios Zenonos, MD<sup>7</sup>; Nathan T Zwagerman, MD<sup>10</sup>; Sarah Cornell, MD<sup>10</sup>; Eric W Wang, MD<sup>7</sup>; <sup>1</sup>Oregon Health & Science University; <sup>2</sup>Mayo Clinic; <sup>3</sup>Universite Laval; <sup>4</sup>University of Arizona; <sup>5</sup>Stanford University; <sup>6</sup>University of North Carolina; <sup>7</sup>University of Pittsburgh Medical Center; <sup>8</sup>University of Toronto; <sup>9</sup>Loyola University; <sup>10</sup>Medical College of Wisconsin

**S206: AIRWAY MANAGEMENT AFTER RADIATION THERAPY FOR NASOPHARYNGEAL CARCINOMA** - [Alice E Huang, MD<sup>1</sup>](#); Peter H Hwang, MD<sup>1</sup>; Vladimir Nekhendzy<sup>2</sup>; <sup>1</sup>Stanford University, Department of Otolaryngology-Head & Neck Surgery; <sup>2</sup>Stanford University, Department of Anesthesia and Perioperative Medicine

**9:40 am - 10:40 am Proffered Papers Session 35: Pituitary Tumors**

*Tampa Bay 8*

**S210: INFERIOR PETROSAL SINUS SAMPLING WITH DDAVP STIMULATION IN ADULTS WITH CUSHING DISEASE - COPING WITH A GLOBAL CRH ANALOGUE SHORTAGE** - [Daniel M Aaronson, MD](#); Christina Feller, BS, BA; Akram Eraky, MD; Nathan T Zwagerman, MD; Medical College of Wisconsin

**S207: CHARACTERISTICS AND OUTCOMES OF RECURRENT PITUITARY ADENOMA PATIENTS UNDERGOING REVISION ENDOSCOPIC ENDONASAL SURGERY**

- Kevin T Grafmiller, MD<sup>1</sup>; Nikitha Kosaraju, BA<sup>2</sup>; Jessa E Miller, MD<sup>1</sup>; Benjamin R Uy, MD, PhD<sup>3</sup>; Hye Rhyn Chung, BS<sup>2</sup>; Ryan M Shih, BS<sup>2</sup>; Myungjun Ko, PhD<sup>2</sup>; Shannon R Esswein, PhD<sup>2</sup>; Arash Abiri, BS<sup>4</sup>; Pooya Khosravi, BS<sup>4</sup>; Nolan Huck, BS<sup>4</sup>; Cecilia H Nguyen, BS<sup>4</sup>; Timothy Hsu, BS<sup>4</sup>; Michael G Kim, MD<sup>5</sup>; Frank P Hsu, MD, PhD<sup>5</sup>; Won Kim, MD<sup>3</sup>; Jivianne K Lee, MD<sup>1</sup>; Jeffery D Suh, MD<sup>1</sup>; Marvin Bergsneider, MD<sup>3</sup>; Edward C Kuan, MD, MBA<sup>6</sup>; Marilene Wang, MD<sup>1</sup>; <sup>1</sup>Department of Otolaryngology Head and Neck Surgery University of California Los Angeles; <sup>2</sup>University of California, Los Angeles, David Geffen School of Medicine; <sup>3</sup>Department of Neurosurgery, University of California, Los Angeles; <sup>4</sup>University of California, Irvine School of Medicine, Irvine; <sup>5</sup>Department of Neurosurgery, University of California, Irvine; <sup>6</sup>Department of Otolaryngology-Head and Neck Surgery, University of California, Irvine

**S208: CHARACTERISTICS ASSOCIATED WITH PITUITARY MACROADENOMAS EXTENSION INTO THE SPHENOID SINUS**

- Benjamin R Uy<sup>1</sup>; Jessa E Miller<sup>1</sup>; Ryan M Shih, BS<sup>1</sup>; Myungjun Ko, PhD<sup>1</sup>; Hye Rhyn Chung, BA<sup>1</sup>; Nikitha Kosaraji, BA<sup>1</sup>; Shannon Esswein, PhD<sup>1</sup>; Matiar Jafari, MD, PhD<sup>1</sup>; Arash Abiri, BS<sup>2</sup>; Pooya Khosravi, BS<sup>2</sup>; Nolan Huck, BS<sup>2</sup>; Cecilia H Nguyen, BS<sup>2</sup>; Timothy Hsu, BS<sup>2</sup>; Michael G Kim, MD<sup>2</sup>; Frank P Hsu, MD, PhD<sup>2</sup>; Jivianne K Lee, MD<sup>2</sup>; Won Kim, MD<sup>1</sup>; Edward C Kuan, MD<sup>2</sup>; Marvin Bergsneider, MD<sup>1</sup>; Marilene B Wang, MD<sup>1</sup>; <sup>1</sup>University of California Los Angeles; <sup>2</sup>University of California Irvine

**S209: RACIAL DISPARITIES IN PITUITARY TUMORS: A SINGLE-INSTITUTION RETROSPECTIVE ANALYSIS**

- Brennen Middleton, BS<sup>1</sup>; Ruby Hall, BS<sup>1</sup>; Austin Robbins, MS<sup>1</sup>; Keonho Kong, MD<sup>2</sup>; Marcus Zachariah, MD, PhD<sup>3</sup>; <sup>1</sup>University of Mississippi Medical Center School of Medicine; <sup>2</sup>University of Mississippi Medical Center Department of Otolaryngology; <sup>3</sup>University of Mississippi Medical Center Department of Neurosurgery

**S211: FIRST EXPERIENCE OF THE SELECTIVE MEDIAL WALL RESECTION OF THE CAVERNOUS SINUS IN PITUITARY ADENOMA PATIENTS.**

- Bakhtiyar Y Pashaev, MD<sup>1</sup>; Gulnar R Vagapova, MD<sup>2</sup>; Alfiya G Gubaeva, MD<sup>1</sup>; Nasima F Gizzatullina, MD<sup>1</sup>; Valryi I Danilov, MD<sup>3</sup>; Andrey G Alekseev, MD<sup>1</sup>; Marina N Biykova, MD<sup>1</sup>; <sup>1</sup>Interregional Clinical Diagnostic Center; <sup>2</sup>Kazan State Medical Academy; <sup>3</sup>Kazan State Medical University

**S212: RADIOGRAPHIC PREDICTORS OF VISUAL, HORMONAL, AND SURGICAL OUTCOMES FOR RATHKE'S CLEFT CYSTS FOLLOWING ENDOSCOPIC ENDONASAL SURGERY -**

Mohammad Bilal Alsavaf<sup>1</sup>; Kyle C. Wu<sup>2</sup>; Guilherme Finger<sup>2</sup>; Brandon Koch<sup>3</sup>; Luciano M. Prevedello<sup>4</sup>; Ricardo L. Carrau<sup>1</sup>; Daniel M. Prevedello<sup>2</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>2</sup>Department of Neurological Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>3</sup>Department of Public Health, The Ohio State University, Columbus, Ohio, USA; <sup>4</sup>Department of Radiology, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA

**S213: COMPARISON OF PATIENT-REPORTED OUTCOMES AND CLINICAL CHARACTERISTICS AMONG PATIENTS WITH PITUITARY MACROADENOMAS AND GIANT ADENOMAS -**

Jessa E Miller, MD<sup>1</sup>; Benjamin R Uy, MD, PhD<sup>1</sup>; Hye Rhyn Chung, BS<sup>1</sup>; Nikitha Kosaraju, BA<sup>1</sup>; Ryan M Shih, BS<sup>1</sup>; Myungjun Ko, PhD<sup>1</sup>; Shannon R Esswein, PhD<sup>1</sup>; Arash Abiri, BS<sup>2</sup>; Pooya Khosravi, BS<sup>2</sup>; Nolan Huck, BS<sup>2</sup>; Cecilia H Nguyen, BS<sup>2</sup>; Timothy Hsu, BS<sup>2</sup>; Michael G Kim, MD<sup>2</sup>; Frank P Hsu, MD, PhD<sup>2</sup>; Won Kim, MD<sup>1</sup>; Jivianne K Lee, MD<sup>1</sup>; Marvin Bergsneider, MD<sup>1</sup>; Edward C Kuan, MD, MBA<sup>2</sup>; Marilene B Wang, MD<sup>1</sup>; <sup>1</sup>University of California, Los Angeles; <sup>2</sup>University of California, Irvine

**S214: ENDOSCOPIC ENDONASAL TRANSCAVERNOUS SURGERY FOR THE TREATMENT OF RECURRENT AND RESIDUAL PITUITARY TUMORS -**

Christine K Lee, MD, PhD<sup>1</sup>; Karam Asmaro, MD<sup>1</sup>; Adrian J Rodrigues, BS<sup>1</sup>; Ahmed Mohyeldin, MD, PhD<sup>1</sup>; Vera Vigo, MD<sup>1</sup>; Laurence J Katznelson, MD<sup>2</sup>; Juan C Fernandez-Miranda, MD<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, Stanford Hospital, Stanford, California; <sup>2</sup>Department of Medicine, Stanford Hospital, Stanford, California

**9:40 am - 10:40 am Proffered Papers Session 36: Skull Base Surgery**

*Tampa Bay 9*

**S215: SURGICAL OUTCOMES FOR UNILATERAL SUPERIOR SEMICIRCULAR CANAL DEHISCENCE WITH LOW-LYING TEGMEN UNDERGOING THE MIDDLE CRANIAL FOSSA REPAIR -**

Hong-Ho Yang, BS; Vishal S Patel, MD; Isaac Yang, MD; Quinton S Gopen, MD; David Geffen School of Medicine at University of California, Los Angeles

**S216: THE UTILITY OF INFLAMMATORY BIOMARKERS IN PREDICTING OVERALL SURVIVAL AND RECURRENCE AMONG PRIMARY SKULL BASE CHORDOMA PATIENTS -**

Nallammai Muthiah; Zachary Gersey; Meagan Hoppe; Hussein Abdallah; Eric Wang; Carl Synderman; Georgios Zenonos; Paul Gardner; University of Pittsburgh Medical Center

**S217: ANATOMIC AND RADIOLOGIC STUDY OF FORAMEN OVALE PUNCTURE: IMPLICATIONS IN PERCUTANEOUS TRIGEMINAL RHIZOTOMY.** - Yuanzhi Xu, MD<sup>1</sup>; Tarek Y Ahmadieh, MD<sup>2</sup>; Maximiliano A Nunez, MD<sup>3</sup>; Qi Zhang, MD<sup>4</sup>; Yaohua Liu, MD<sup>5</sup>; Juan C Fernandez-Miranda, MD<sup>3</sup>; Aaron A Cohen-Gadol, MD, MSc, MBA<sup>6</sup>; Ying Mao, MD<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, Huashan Hospital, Shanghai Medical College, Fudan University, Shanghai, China; <sup>2</sup>Neurosurgical-Oncology, Memorial Sloan Kettering Cancer Center, New York, New York; <sup>3</sup>Department of Neurosurgery, Stanford Hospital, Stanford, California; <sup>4</sup>Department of Cerebrovascular Diseases, Brain Hospital Affiliated to Tongji University, Shanghai, China; <sup>5</sup>Department of Neurosurgery, Shanghai General Hospital, Shanghai Jiaotong University, Shanghai, China; <sup>6</sup>Department of Neurological Surgery, Indiana University, Indianapolis, Indiana

**S218: ENDOSCOPIC-ASSISTED EN-BLOC PTERYGOMAXILLECTOMY: IDENTIFYING AN EFFICIENT AND SAFE LOCATION FOR THE PTERYGOID OSTEOTOMY.** - Ainhoa García-Lliverós, MD, PhD<sup>1</sup>; Daniel I Martin-Jimenez, MD<sup>2</sup>; Ronsard J Mondesir<sup>3</sup>; Edoardo Agosti, MD<sup>4</sup>; A. Yohan Alexander, BA<sup>5</sup>; Garret Choby, MD<sup>6</sup>; Maria Peris-Celda, MD, PhD<sup>7</sup>; Carlos D Pinheiro-Neto, MD, PhD<sup>8</sup>; <sup>1</sup>Department of Otolaryngology, Valencia University General Hospital, Valencia, Spain. Rhoton Neurosurgery and Otolaryngology Anatomy Program, Mayo Clinic, Rochester, MN, USA; <sup>2</sup>Department of Otolaryngology, University Hospital Virgen Macarena, Seville, Spain. Rhoton Neurosurgery and Otolaryngology Anatomy Program, Mayo Clinic, Rochester, MN, USA; <sup>3</sup>Department of Otolaryngology, Mayo Clinic, Rochester, MN, USA. Rhoton Neurosurgery and Otolaryngology Anatomy Program, Mayo Clinic, Rochester, MN, USA; <sup>4</sup>Division of Neurosurgery, Department of Medical and Surgical Specialties, Radiological Sciences and Public Health, University of Brescia, Brescia, Italy. Department of Neurosurgery, Mayo Clinic, Rochester, MN, USA. Rhoton Neurosurgery and Otolaryngology Anatomy Program, Mayo Clinic, Rochester, MN, USA; <sup>5</sup>Rhoton Neurosurgery and Otolaryngology Anatomy Program, Mayo Clinic, Rochester, MN, USA. Department of Neurosurgery, Mayo Clinic, Rochester, MN, USA. Medical School, University of Minnesota, Minneapolis, Minnesota, USA; <sup>6</sup>Department of Otolaryngology, Mayo Clinic, Rochester, MN, USA. Department of Neurosurgery, Mayo Clinic, Rochester, MN, USA; <sup>7</sup>Department of Neurosurgery, Mayo Clinic, Rochester, MN, USA. Department of Otolaryngology, Mayo Clinic, Rochester, MN, USA. Rhoton Neurosurgery and Otolaryngology Anatomy Program, Mayo Clinic, Rochester, MN, USA; <sup>8</sup>Department of Otolaryngology, Mayo Clinic, Rochester, MN, USA. Department of Neurosurgery, Mayo Clinic, Rochester, MN, USA. Rhoton Neurosurgery and Otolaryngology Anatomy Program, Mayo Clinic, Rochester, MN, USA

**S219: DIFFERENCES IN COMPLICATIONS AND PATENCY RATES IN YOUNG AND ELDERLY PATIENTS UNDERGOING EXTRA-INTRACRANIAL BYPASS SURGERY.** - [Davide M Croci, MD](#); Jeffrey Farooq; Molly Monsour; Tsz Lau; Harry van Loveren, Prof, MD; Siviero Agazzi, Prof, MD, MBA; University of South Florida

**S220: QUANTITATIVE COMPARATIVE ANALYSIS OF THE ENDOSCOPE-ASSISTED EXPANDED RETROSIGMOID APPROACH AND THE FAR-LATERAL APPROACH TO THE INFRAMEATAL AREA: AN ANATOMICAL STUDY WITH SURGICAL IMPLICATIONS.** - [J. Manuel Revuelta Barbero, MD, PhD](#)<sup>1</sup>; Edoardo Porto, MD<sup>2</sup>; Daniel M. Prevedello, MD<sup>3</sup>; Raywat Noiphithak, MD<sup>4</sup>; Juan C. Yanez-Siller, MD<sup>5</sup>; Rafael Martinez Perez, MD<sup>3</sup>; Gustavo Pradilla, MD<sup>2</sup>; <sup>1</sup>Medical College of Georgia - Augusta University; <sup>2</sup>Emory University; <sup>3</sup>Department of Neurosurgery, Wexner Medical Center, The Ohio State University, Columbus, Ohio, USA; <sup>4</sup>Division of Neurosurgery, Department of Surgery, Faculty of Medicine, Thammasat University, Pathumthani, Thailand.; <sup>5</sup>Department of Otolaryngology - Head and Neck Surgery, University of Missouri-Columbia, Columbia Missouri, USA

**S221: COMPARISON OF NEUROCOGNITIVE AND QUALITY OF LIFE OUTCOMES IN PEDIATRIC CRANIOPHARYNGIOMA PATIENTS TREATED WITH RADIOTHERAPY VERSUS SURGERY ONLY** - Uma Ramaswamy; Fatih M Okcu; William Whitehead; [Guillermo Aldave, MD](#); Texas Children's Hospital

**S222: A STANDALONE MINIMALLY INVASIVE PRESIGMOID RETROLABYRINTHINE SUPRAMEATAL APPROACH (PRSA): CADAVERIC STUDY.** - [Samer S Hoz, MD](#); Paolo Palmisciano, MD; Edward J Doyle III, MD; Mark Johnson, MD; Jonathan A Forbes, MD; Charles Prestigiacomo, MD; Ravi Samy, MD; Mario Zuccarello, MD; Norberto Andaluz, MD; University of Cincinnati

**10:45 am - 11:45 am** **Proffered Papers Session 37: Imaging of the Skull Base/ Microvascular Decompression**

Tampa Bay 1

**S223: PORTABLE MRI TO ASSESS OPTIC NERVE DECOMPRESSION AFTER ENDOSCOPIC ENDONASAL RESECTION OF SELLAR LESIONS** - [Christopher Hong](#); Layton Lamsam; Anna Crawford; Kevin N Sheth; Ryan Rimmer; Sacit Bulent Omay; Yale University

**S224: INTRAOPERATIVE MRI USE IN TRANSSPHENOIDAL SURGERY FOR PITUITARY TUMORS: TRENDS AND HEALTHCARE UTILIZATION.** - Mayur Sharma; Dengzhi Wang; Beatrice Ugiliweneza; Norberto Andaluz; Akshitkumar M Mistry; [Brian J Williams](#); University of Louisville

**S225: USING SENTINEL LYMPH NODE BIOPSY TO GUIDE TREATMENT ALGORITHMS IN CLINICALLY NO SINONASAL MALIGNANCY.** - [Basit A Jawad, MD](#)<sup>1</sup>; Mohammad B Alsavaf<sup>1</sup>; Rachel Fenberg<sup>2</sup>; Ricardo Carrau, MD<sup>1</sup>; Kyle Vankoeving, MD<sup>1</sup>; <sup>1</sup>Ohio State University; <sup>2</sup>Albert Einstein College of Medicine

**S226: SHORT AND LONG TERM PAIN OUTCOMES FOLLOWING ENDOSCOPIC MICROVASCULAR DECOMPRESSION FOR TRIGEMINAL NEURALGIA BASED ON VASCULAR COMPRESSION TYPE** - [Rachel Blue, MD](#)<sup>1</sup>; [Andrew I Yang, MD](#)<sup>2</sup>; [Sonia Ajmera, MD](#)<sup>1</sup>; [Michael Spadola, MD](#)<sup>1</sup>; [John YK Lee, MD, MSCE](#)<sup>1</sup>; <sup>1</sup>University of Pennsylvania; <sup>2</sup>Emory

**S227: ENDOSCOPIC VERSUS MICROSCOPIC TECHNIQUES FOR THE TREATMENT OF TRIGEMINAL NEURALGIA.** - [Andrés Cervio, PhD](#); [Facundo Villamil](#); [Mauro Ruella](#); [Guido Caffaratti](#); [Lucila Domecq](#); FLENI

**S228: PREOPERATIVE FRAILTY PREDICTS WORSE OUTCOMES AFTER MICROVASCULAR DECOMPRESSION FOR TRIGEMINAL NEURALGIA, HEMIFACIAL SPASM, AND GLOSSOPHARYNGEAL NEURALGIA: A MULTI-CENTER ANALYSIS OF 1473 PATIENTS FROM A PROSPECTIVE SURGICAL REGISTRY** - [Emily M Estes, BA](#)<sup>1</sup>; [Kavelin Rumalla, MD](#)<sup>2</sup>; [Alis J Dicipinigaitis, BA](#)<sup>3</sup>; [Syed Faraz Kazim, MD, PhD](#)<sup>2</sup>; [Aaron Segura, MS](#)<sup>2</sup>; [Alexander J Kassicieh, BS](#)<sup>2</sup>; [Meic H Schmidt, MD, MBA](#)<sup>2</sup>; [Rohini B McKee, MD](#)<sup>4</sup>; [Christian A Bowers, MD](#)<sup>2</sup>; <sup>1</sup>Texas Tech University Health Sciences Center School of Medicine, El Paso, Texas; <sup>2</sup>Department of Neurosurgery, University of New Mexico Hospital, Albuquerque, New Mexico; <sup>3</sup>School of Medicine, New York Medical College, Valhalla, NY 10595; <sup>4</sup>Department of Surgery, University of New Mexico Hospital, Albuquerque, New Mexico

**S229: A NOVEL AND ACCURATE MRI CHARACTERISTIC IMAGE IN PATIENTS WITH HEMIFACIAL SPASM** - [Guilherme Finger, MD, MSCI](#); [Saniya S Godil](#); [Kyle C Wu, MD](#); [Luciano M Prevedello, MD, MPH](#); [Mohammad Shujaat, MD](#); [Daniel M Prevedello, MD, FACS](#); The Ohio State University

**S230: RED PILL OR BLUE PILL?: ASSESSING HEALTH UTILITIES USING THE STANDARD GAMBLE AMONG PATIENTS WITH TRIGEMINAL NEURALGIA** - [Sonia Ajmera, MD](#); [Stephen P Miranda, MD](#); [Rachel Blue, MD](#); [Dominic Romeo](#); [Ashwin Ramayya, MD, PhD](#); [John Lee, MD](#); University of Pennsylvania

10:45 am - 11:45 am **Proffered Papers Session 38: Skull Base Surgery**

Tampa Bay 2

**S231: LOWER CRANIAL NERVE SCHWANNOMAS: INSTITUTIONAL CASE SERIES AND LITERATURE REVIEW** - [Lucas P Carlstrom, MD, PhD](#); [Megan Bauman, BS](#); [Soliman Oushy, MD](#); [Christopher S Graffeo, MD, MS](#); [Maria Peris Celda, MD](#); [Jamie J Van Gompel, MD](#); [Michael J Link, MD](#); Mayo Clinic

**S232: EFFECT OF EXTENT OF RESECTION AND ADJUVANT RADIATION ON RECURRENCE RATE OF BRAF VERSUS BETA-CATENIN-MUTATED CRANIOPHARYNGIOMA** - [Maikerly Reyes, BS](#)<sup>1</sup>; [Anish Sathe, BS](#)<sup>1</sup>; [Allison Kayne, BS](#)<sup>1</sup>; [KiChang Kang, BS](#)<sup>1</sup>; [Justin Williams, BS](#)<sup>1</sup>; [Siyuan Yu, MD](#)<sup>2</sup>; [Patrick Kelly, MD](#)<sup>3</sup>; [Giyarpuram Prashant, MD](#)<sup>3</sup>; [Mark Curtis, MD](#)<sup>3</sup>; [James J Evans, MD](#)<sup>3</sup>; <sup>1</sup>Sidney Kimmel Medical College; <sup>2</sup>UT Houston; <sup>3</sup>Thomas Jefferson University Hospital Department of Neurosurgery



**S233: FUNCTIONAL OUTCOMES OF PEDIATRIC CRANIOPHARYNGIOMAS IN RELATION TO RESECTION APPROACH** - [Elizabeth Duquette, BS<sup>1</sup>](#); Myra A Zaheer, BS<sup>2</sup>; Nishanth B Gowda, BS<sup>2</sup>; Arhum Naeem, BS<sup>2</sup>; Ameet Singh, MD<sup>3</sup>; John Myseros, MD<sup>4</sup>; Daniel A Donoho, MD<sup>4</sup>; <sup>1</sup>Georgetown University School of Medicine; <sup>2</sup>George Washington University School of Medicine and Health Sciences; <sup>3</sup>George Washington University Hospital, Department of Otolaryngology; <sup>4</sup>Children's National Hospital, Department of Neurosurgery

**S234: EFFECT OF STALK PRESERVATION DURING CRANIOPHARYNGIOMA REMOVAL ON PITUITARY FUNCTION, EXTENT OF RESECTION AND RECURRENCE: SYSTEMATIC REVIEW & META-ANALYSIS** - [Ahmad Kamaludin, MB, BCh, BAO, MRCS<sup>1</sup>](#); Michael Amoo, MB, BCh, BAO, MCh, MRCS<sup>1</sup>; Jack Henry, BSc, MB, BCh, BAO<sup>1</sup>; Gerda Reischer, MD<sup>2</sup>; Mohsen Javadpour, FRCS, SN<sup>1</sup>; <sup>1</sup>National Neurosurgical Centre, Beaumont Hospital, Dublin, Ireland; <sup>2</sup>National Hospital for Neurology and Neurosurgery, London, United Kingdom

**S235: RISK FACTORS FOR TUMOR RESIDUAL AND RECURRENCE IN FIRST TIME RESECTION OF CRANIOPHARYNGIOMA THROUGH ENDOSCOPIC ENDONASAL APPROACH** - [David T Fernandes, MD](#); Ali Alattar, MD, MAS; Georgios A Zenonos, MD; Eric Wang, MD; Carl H Snyderman, MD; Paul Gardner, MD; University of Pittsburgh Medical Center

**S236: LUMBAR DRAIN USE IN NON-NEOPLASTIC INDICATIONS FOR MIDDLE FOSSA CRANIOTOMY** - [Robert J Dambrino, MD<sup>1</sup>](#); Gunther W Wong, BS<sup>2</sup>; Alan R Tang, BA<sup>2</sup>; Jacob Jo, BS<sup>2</sup>; Aaron M Yengo-Kahn, MD<sup>1</sup>; Nathan R Lindquist, MD<sup>3</sup>; Michael Freeman, MD<sup>3</sup>; David S Haynes, MD, MMHC<sup>3</sup>; Kareem O Tawfik, MD<sup>3</sup>; Lola B Chambless, MD<sup>1</sup>; Reid C Thompson, MD<sup>1</sup>; Peter J Morone, MD, MSCI<sup>1</sup>; <sup>1</sup>Vanderbilt University Medical Center, Department of Neurological Surgery; <sup>2</sup>Vanderbilt University School of Medicine; <sup>3</sup>Vanderbilt University Medical Center, Department of Otolaryngology

**S237: OPHTHALMIC FEATURES IN PATIENTS WITH SPONTANEOUS CEREBROSPINAL FLUID LEAKAGE** - [Timothy Do<sup>1</sup>](#); Kiarash Shahlaie, MD, PhD<sup>2</sup>; Toby Steele<sup>3</sup>; Edward B Strong, MD<sup>3</sup>; Yin Allison Liu, MD, PhD<sup>4</sup>; <sup>1</sup>University of California Davis, School of Medicine; <sup>2</sup>University of California Davis, Department of Neurological Surgery; <sup>3</sup>University of California Davis, Department of Otolaryngology; <sup>4</sup>University of California Davis, Department of Ophthalmology

**S238: THE IMPACT OF PREOPERATIVE FRAILTY ON ENDOSCOPIC CEREBROSPINAL FLUID LEAK REPAIR OUTCOMES IN THE ANTERIOR SKULL BASE** - [Jacob G Eide, MD<sup>1</sup>](#); Rijul S Kshirsagar, MD<sup>2</sup>; Chris Wen, MD<sup>3</sup>; Anas Qatanani, BS<sup>3</sup>; Jacob Harris, BA<sup>3</sup>; Eric H Abello, MD<sup>4</sup>; Edward C Kuan, MD, MBA<sup>4</sup>; James N Palmer, MD<sup>3</sup>; Nithin D Adappa, MD<sup>3</sup>; <sup>1</sup>Henry Ford Health; <sup>2</sup>Kaiser Permanente Redwood City Medical Center; <sup>3</sup>University of Pennsylvania, Perelman School of Medicine; <sup>4</sup>University of California Irvine

**10:45 am - 11:45 am Proffered Papers Session 39: Aneurysm/Vascular**

Tampa Bay 6

**V061: FAR LATERAL CRANIOTOMY, OA-PICA BYPASS, AND TRAPPING OF A RUPTURED DISSECTING FUSIFORM RIGHT VERTEBRAL ARTERY ANEURYSM INVOLVING THE PICA ORIGIN**

- Vincent Nguyen, MD<sup>1</sup>; [Kara A Parikh, MD<sup>2</sup>](#); Mustafa Motiwala, MD<sup>2</sup>; Kenneth A Moore, MD<sup>2</sup>; Erin Miller, BA<sup>2</sup>; Michael Barats, MS<sup>2</sup>; Jeffrey M Sorenson, MD<sup>2</sup>; L M Michael II, MD<sup>2</sup>; Adam S Arthur, MD, MPH<sup>2</sup>; Nickalus R Khan, MD<sup>2</sup>; <sup>1</sup>University of Southern California; <sup>2</sup>University of Tennessee Health Science Center

**V062: "HALF TRAN-SYLVIAN AND HALF SUBTEMPORAL APPROACH" FOR MICROSURGICAL CLIPPING OF POSTERIOR CEREBRAL ARTERY ANEURYSM**

- Vincent N Nguyen, MD<sup>1</sup>; [Kara Parikh, MD<sup>2</sup>](#); Mustafa Motiwala, MD<sup>2</sup>; Adam S Arthur, MD, MPH<sup>2</sup>; Christopher M Nickele, MD<sup>2</sup>; Nickalus Khan, MD<sup>2</sup>; <sup>1</sup>University of Southern California; <sup>2</sup>University of Tennessee Health Science Center

**V063: PICA-PICA REIMPLANTATION FOR TREATMENT OF A PARTIALLY THROMBOSED PICA ANEURYSM**

- [Eric T Quach](#); Amir R Dehdashti; North Shore University Hospital

**V064: CEREBELLAR AVM WITH PRENIDAL AND REMOTE ANEURYSM**

- [Nicholas Caffes, MD](#); Riccardo Serra, MD; Mohamed Labib, MD; University of Maryland Medical Center

**V065: ORBITOZYGOMATIC APPROACH FOR A RUPTURED BASILAR APEX-P1 PERFORATOR ANEURYSM**

- [Jose M Orenday-Barraza, MD<sup>1</sup>](#); Roland Jabre, MD<sup>2</sup>; Andrew Venteicher, MD, PhD<sup>1</sup>; <sup>1</sup>University of Minnesota; <sup>2</sup>Service de Neurochirurgie, Département de Chirurgie, Centre Hospitalier de l'Université de Montréal, Montréal, Qc, Canada

**V066: TRANSLAMINA ACCESS VIA A BIFRONTAL APPROACH TO A HYPOTHALAMUS CAVERNOUS MALFORMATION**

- Larissa Vilany, MD; [Luciano P C Leonel, PhD](#); Michael J Link, MD; Carlos Pinheiro-Neto, MD, PhD; Maria Peris Celda, MD, PhD; Giuseppe Lanzino, MD; Mayo Clinic Rhoton Neurosurgery and Otolaryngology Surgical Anatomy Program

**V067: TREATMENT OF CAROTID-CAVERNOUS FISTULA WITH PACKED CRUSHED TEMPORALIS MUSCLE**

- [Jacob Kosarchuk, MD](#); Walter Dent; Carl Heilman, MD; Tufts Medical Center

**10:45 am - 11:45 am Proffered Papers Session 40: Skull Base Neoplasms**

Tampa Bay 7

**S239: FEASIBILITY STUDY OF PROTON-BASED STEREOTACTIC BODY RADIATION THERAPY OF SMALL VOLUME SKULL-BASE TUMORS**

- [Fahed Alsanea, PhD](#); He Catherine Wang, PhD; Tyler Williamson; Falk Poenisch, PhD; Thomas Whitaker, PhD; Racher Hunter; Xin Wang, PhD; Gary Gunn; Anna Lee; Steven Frank; Jack Phan; UT MD Anderson Cancer Center

**S240: METABOLOMIC ANALYSIS OF PRIMARY AND XENOGRAFT SCHWANNOMAS REVEALS ALTERED AMINO ACID METABOLISM FOLLOWING RADIATION** - [Mark C Dougherty, MD](#); Hashim Syed, BA; Jeremy Greenlee, MD; Eric B Taylor, PhD; Marlan R Hansen, MD; University of Iowa

**S241: SKULL BASE MENINGIOMAS AS PART OF A NOVEL MENINGIOMA SYNDROME ASSOCIATED WITH CHRONIC DEPOT MEDROXYPROGESTERONE ACETATE USE** - [Hussam Abou-Al-Shaar, MD](#); Rachel Wrigley, PAC; Aneek Patel, BS; Arka N Mallela, MD, MS; Georgios A Zenonos, MD; Paul A Gardner, MD; University of Pittsburgh Medical Center

**S242: A COST-EFFECTIVENESS REVIEW OF GENETIC TESTING OF PARAGANGLIOMAS** - [Aleena A Abbasi](#); Robert A Lustig, MD; Jay F Dorsey, MD, PhD; Sean M Grady, MD; John Y. K. Lee, MD; Goldie A Kurtz, MD; Jacob E Shabason, MD; Douglas C Bigelow, MD; Jason A Brant, MD; Michael J Ruckenstein, MD; Katherine L Nathanson, MD; Anna Raper, MS; Michelle Alonso-Basanta, MD, PhD; University of Pennsylvania

**S243: THE MUTATIONAL LANDSCAPE OF SKULL-BASE AND SPINAL CHORDOMAS IDENTIFIES POTENTIAL PROGNOSTIC AND THERANOSTIC BIOMARKERS** - [Thibault Passeri, MD](#)<sup>1</sup>; Tom Gutman, MSc<sup>2</sup>; Abderaouf Hamza, PharmD<sup>3</sup>; Homa Adle-Biassette, MD, PhD<sup>4</sup>; Elodie Girard, MSc<sup>2</sup>; Romane Beaupere, MSc<sup>3</sup>; Zakia Tariq<sup>3</sup>; Odette Mariani<sup>5</sup>; Ahmed Dahmani<sup>6</sup>; Christine Bourneix<sup>3</sup>; Rosaria Abbritti, MD<sup>1</sup>; Keltouma Driouch<sup>3</sup>; Mylène Bohec<sup>7</sup>; Nicolas Servant, PhD<sup>2</sup>; Sylvain Baulande, PhD<sup>7</sup>; Didier Decaudin, MD, PhD<sup>6</sup>; Marc Polivka, MD<sup>4</sup>; Jean-Pierre Guichard<sup>8</sup>; Valentin Calugaru, MD, PhD<sup>9</sup>; Loic Feuvret, MD<sup>9</sup>; Jean-Marc Guinebretière, MD<sup>5</sup>; Laurence Champion, MD<sup>10</sup>; Ivan Bièche, PharmD, PhD<sup>3</sup>; Sébastien Froelich, MD<sup>1</sup>; Hamid Mammam, MD, PhD<sup>9</sup>; Julien Masliah-Planchon, PharmD, PhD<sup>3</sup>; <sup>1</sup>Department of Neurosurgery, Lariboisière Hospital, Assistance Publique des Hôpitaux de Paris; <sup>2</sup>Inserm U900, Institut Curie, Paris; <sup>3</sup>Department of Genetics, Institut Curie, Paris; <sup>4</sup>Department of Pathology, Lariboisière Hospital, Assistance Publique des Hôpitaux de Paris; <sup>5</sup>Department of Tumor Biology, Institut Curie, Paris; <sup>6</sup>Laboratory of Preclinical Investigation, Translational Research Department, Paris-Saclay University, Institut Curie, Paris; <sup>7</sup>ICGex NGS Platform, Institut Curie, Paris; <sup>8</sup>Department of Neuroradiology, Lariboisière Hospital, Assistance Publique des Hôpitaux de Paris; <sup>9</sup>Proton Beam Therapy, Institut Curie, Paris; <sup>10</sup>Department of Nuclear Medicine, Institut Curie, Paris-Saclay University, Saint-Cloud

**S244: PERCUTANEOUS EMBOLIZATION OF CAROTID BODY TUMORS TO AID RESECTION: TECHNICAL NOTE** - [Ehsan Dowlati, MD](#); Charles Withington; Darian Nejad; Daniel R Felbaum, MD; Rocco A Armonda; Liu Ai-Hsi, MD; Medstar Georgetown University Hospital

**S245: APPLICATION OF INDOCYANINE GREEN VIDEOANGIOGRAPHY IN CEREBELLAR HEMANGIOBLASTOMA SURGERY AS A VALUABLE ADJUNCTIVE SURGICAL TOOL -**

Joonho Byun, Prof<sup>1</sup>; Jin Hoo Seok, Dr<sup>1</sup>; Chang Ki Hong<sup>2</sup>; <sup>1</sup>Korea University Guro Hospital; <sup>2</sup>Asan Medical Center, Seoul, Korea

**S246: SKULL BASE MALIGNANT PERIPHERAL NERVE SHEATH TUMOURS -**

Adrian Zammit, MD, MSc, MSc, FRCS; Catherine Gilkes; The Walton Centre NHS Foundation Trust, Liverpool, United Kingdom

**10:45 am - 11:45 am Proffered Papers Session 41: Miscellaneous**

*Tampa Bay 8*

**S247: TOWARDS MOTION PRESERVATION ACROSS THE CRANIOCERVICAL JUNCTION: MODELING AND DESIGN OF C1-2 PROSTHETIC FOLLOWING ENDONASAL ODONTOIDECTOMY. -**

Yara Alfawares, BS<sup>1</sup>; Abhijith Matur, MD<sup>2</sup>; Manish Aryal, MS<sup>3</sup>; Botao Zhang, MS<sup>3</sup>; Joel Kaye, MD<sup>1</sup>; Norberto Andaluz, MD<sup>1</sup>; Katie Phillips, MD<sup>1</sup>; Ahmad Sedaghat, MD<sup>1</sup>; Sam Anand, PhD<sup>3</sup>; Jonathan Forbes, MD<sup>1</sup>; <sup>1</sup>University of Cincinnati College of Medicine; <sup>2</sup>University of Kentucky College of Medicine; <sup>3</sup>University of Cincinnati

**S248: A NOVEL CLASSIFICATION OF COMPRESSIVE CRANIOCERVICAL JUNCTION DISORDERS -**

Hanna N Algattas; Ali A Alattar; Eric W Wang; Carl H Snyderman; David O Okonkwo; David K Hamilton; Georgios A Zenonos; Paul A Gardner; University of Pittsburgh Medical Center

**S249: ENDOSCOPIC ODONTOIDECTOMY FOR ANTERIOR CERVICOMEDULLARY JUNCTION CROWDING -**

Umberto Tosi; Alexandra Giantini-Larsen; Ashutosh Kacker; Vijay Anand; Ali Baaj; Roger Hartl; Benjamin Rapoport; Theodore Schwartz; Weill Cornell Medicine

**S250: EXTENDED ENDOSCOPIC ENDONASAL APPROACH FOR C1-C2 TRAUMATIC AND INFLAMMATORY LESIONS: LESSON LEARNED AND TECHNICAL NUANCES -**

Maurizio Iacoangeli, MD, PhD<sup>1</sup>; Fabio Greco, MD<sup>2</sup>; Alessandro Di Rienzo, MD<sup>1</sup>; Maurizio Gladi, MD<sup>1</sup>; Lucia Giovanna Maria di Somma, MD<sup>1</sup>; Denis Aiudi, MD<sup>1</sup>; Alessio Iacoangeli, MD<sup>1</sup>; Fabrizio Salvinelli, MD, PhD<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, Marche Polytechnic University and General University Hospital, Ancona, Italy; <sup>2</sup>Department of ENT Surgery, Campus Bio-Medico University and Hospital, Rome, Italy

**S251: MEDIAL TRANSORBITAL APPROACH IN CRANIOENDOSCOPIC SKULL BASE TUMOR RESECTIONS FOR LOCALLY ADVANCED TUMORS: TECHNICAL CONSIDERATIONS AND PATIENT OUTCOMES -**

Daniel W Scholfield, Research Fellow; David Della Rocca, Attending Oculoplastic Orbital Surgeon; Ian Ganly, Attending Head and Neck Surgeon; Viviane Tabar, Attending Neurosurgeon; Marc Cohen, Attending Head and Neck Surgeon; Memorial Sloan Kettering Cancer Center

**S252: THE ROLE OF TISSUE SEALANTS FOR SKULL BASE RECONSTRUCTION FOLLOWING ENDOSCOPIC ENDONASAL SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS -**

Jonathan C Pang, BA<sup>1</sup>; Benjamin F Bitner, MD<sup>1</sup>; Timothy I Hsu, BS<sup>1</sup>; Madeline M Nottoli, BA<sup>1</sup>; Anh-Tram Bui, BS<sup>1</sup>; Cecilia H H Nguyen, BA<sup>1</sup>; Arash Abiri, BS<sup>1</sup>; Theodore V Nguyen, BS<sup>1</sup>; Frank P K Hsu, MD, PhD<sup>2</sup>; Edward C Kuan, MD, MBA<sup>1</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, University of California, Irvine, Orange, CA, USA; <sup>2</sup>Department of Neurological Surgery, University of California, Irvine, Orange, CA, USA

**S253: MICROSURGICAL ANATOMY OF THE SUBCALLOSAL ARTERY: IMPLICATIONS FOR ANTERIOR COMMUNICATING ARTERY ANEURYSM SURGERY THROUGH THE PTERIONAL AND BASAL INTERHEMISPHERIC APPROACHES -**

Edinson Najera, MD; Aubrey Rogers, MD; Alan Boulos, MD; Junichi Yamamoto, MD, PhD; Neurosurgery Department, Albany Medical Center

**10:45 am - 11:45 am Proffered Papers Session 42: Skull Base Reconstruction**

*Tampa Bay 9*

**S254: LEUKOCYTE- AND PLATELET-RICH FIBRIN FOR SKULL BASE RECONSTRUCTION AFTER ENDOSCOPIC ENDONASAL SKULL BASE SURGERY. -**

Felipe Constanzo, MD<sup>1</sup>; Jaime Pinto, MD, MBA<sup>1</sup>; Cristian Ledermann, MD<sup>1</sup>; Thomas Schmidt, MD, PhD<sup>2</sup>; <sup>1</sup>Clinica Bio Bio; <sup>2</sup>Universidad de Concepcion

**S255: DOES TIME TO INITIATION OF ADJUVANT RADIOTHERAPY AFFECT RECONSTRUCTION OUTCOMES AFTER EEA RESECTION OF SKULL BASE MALIGNANCIES?**

- Franco Rubino, MD; Bledi Brahimaj, MD; Ehab Y Hanna, MD; Shirley Y Su; Michael E Kupferman, MD; Franco DeMonte, MD; Shaan M Raza, MD; MD Anderson Cancer Center

**S256: MULTI-LAYERED REPAIR OF HIGH FLOW CSF FISTULAE FOLLOWING ENDOSCOPIC SKULL BASE SURGERY WITHOUT NASAL PACKING OR LUMBAR DRAINS: TECHNICAL REFINEMENTS TO OPTIMISE OUTCOME -**

Cathal Hannan<sup>1</sup>; Bharti Kewlani<sup>2</sup>; Steven Browne<sup>2</sup>; Mohsen Javadpour<sup>2</sup>; <sup>1</sup>The Walton Centre for Neurology and Neurosurgery; <sup>2</sup>National Neurosurgical Centre, Beaumont Hospital

**S257: SKULL BASE FLAP COVERAGE AREA COMPARISON: NASOSEPTAL FLAP VERSUS INFERIOR TURBINATE MUCOSAL GRAFT -**

Diana Bigler, MD; John Cowart, BS; Harry Vildibill, BS; Brittany Gill, MD; Kareem Haroun, MD; Camilo Reyes-Gelves, MD; Medical College of Georgia at Augusta University

**S258: IPSILATERAL NASOSEPTAL FLAPS IN A TRANSPTERYGOID APPROACH: TECHNICAL PEARLS AND RECONSTRUCTION OUTCOMES -**

Michael T Chang, MD; David Grimm, MS; Karam P Asmaro, MD; Jayakar V Nayak, MD, PhD; Peter H Hwang, MD; Juan C Fernandez-Miranda, MD; Zara M Patel, MD; Stanford University School of Medicine

**S259: MICROSURGICAL ANATOMY OF TEMPOROPARIETAL FASCIA FLAP TRANSPOSITION TECHNIQUE: IMPLICATIONS IN VENTRAL SKULL BASE RECONSTRUCTION** - [Yuanzhi Xu, MD](#)<sup>1</sup>;

Karam Asmaro, MD<sup>2</sup>; Ahmed Mohyeldin, MD, PhD<sup>2</sup>; Maximiliano A Nunez, MD<sup>2</sup>; Aaron A Cohen-Gadol, MD, MSc, MBA<sup>3</sup>; Ying Mao, MD<sup>1</sup>; Juan C Fernandez-Miranda, MD<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, Huashan Hospital, Shanghai Medical College, Fudan University, Shanghai, China; <sup>2</sup>Department of Neurosurgery, Stanford Hospital, Stanford, California; <sup>3</sup>Department of Neurological Surgery, Indiana University, Indianapolis, Indiana

**S260: ENDOSCOPIC REPAIR OF CLIVAL DEFECTS USING FREE FLAPS** - Ross Rosen, BSc; [Jenna E Bergman, MD](#); Mathew J Mifsud, MD; Siviero Agazzi, MD, MBA; Harry Van Loveren, MD;

Mark H Tabor, MD; University of South Florida

**S261: LONG-TERM COMPLICATIONS OF EXTRACRANIAL PERICRANIAL FLAPS IN SKULL BASE RECONSTRUCTION** -

[Kelly E Daniels, MD](#); Joseph Mocharnuk, BS; Zainab Balogun, BS; Georgios A Zenonos, MD; Paul A Gardner, MD; Eric W Wang, MD; Carl H Snyderman, MD; University of Pittsburgh



# Poster Listing

**P001: AUTOLOGOUS FAT GRAFT IS NOT NECESSARY FOR SKULL BASE RECONSTRUCTION IN PITUITARY ADENOMA PATIENTS** - [Yoon Hwan Byun](#); Yong Hwy Kim, MD, PhD; Seoul National University Hospital

**P002: PRECISE IDENTIFICATION OF KEY ANATOMICAL STRUCTURES FOR THE EXTENDED ENDOSCOPIC ENDONASAL SKULL BASE SURGICAL APPROACH TO THE MIDLINE POSTERIOR CRANIAL FOSSA: ANATOMICAL STUDY.** - [Agustin Dorantes-Argandar, MD](#); Flavio Rodas-Berrezueta, MD; Luis Perez-Garcia, MD; Alejandro Gonzalez-Sanchez, FT; Berenice Garcia-Guzman, MD, MSc; Surgical Neuroanatomy Laboratory - Facultad Mexicana de Medicina - Universidad La Salle

**P003: PRECISE IDENTIFICATION OF KEY ANATOMICAL STRUCTURES FOR THE EXTENDED ENDOSCOPIC ENDONASAL SKULL BASE SURGICAL APPROACH TO THE MIDLINE ANTERIOR CRANIAL FOSSA: ANATOMICAL STUDY.** - [Agustin Dorantes-Argandar, MD](#); Flavio Rodas-Berrezueta, MD; Luis Perez-Garcia, MD; Alejandro Gonzalez-Sanchez, FT; Berenice Garcia-Guzman, MD, MSc; Surgical Neuroanatomy Laboratory, Facultad Mexicana de Medicina, Universidad La Salle, Ciudad de México

**P004: ANATOMICAL STEP-BY-STEP DISSECTION OF COMPLEX SKULL BASE APPROACHES FOR TRAINEES: SURGICAL ANATOMY OF THE TRANSLABYRINTHINE, TRANSOTIC, AND TRANSCOCHLEAR APPROACHES** - [A. Yohan Alexander, BA](#)<sup>1</sup>; Avital Perry, MD<sup>2</sup>; Edoardo Agosti, MD<sup>3</sup>; Luciano Leonel, PHD<sup>1</sup>; Ashley M Nassiri, MD, MBA<sup>4</sup>; Michael J Link, MD<sup>5</sup>; Colin W Driscoll, MD<sup>6</sup>; Maria Peris-Celda, MD, PHD<sup>5</sup>; <sup>1</sup>Mayo Clinic, Department of Neurosurgery; <sup>2</sup>Sheba Medical Center; <sup>3</sup>University of Brescia; <sup>4</sup>University of Colorado, Department of Otorhinolaryngology; <sup>5</sup>Mayo Clinic, Department of Neurosurgery and Otorhinolaryngology; <sup>6</sup>Mayo Clinic, Department of Otorhinolaryngology and Neurosurgery

**P005: FRONTOTEMPORAL ORBITOZYGOMATIC TRANSCAVERNOUS APPROACH: WHAT IS THE ROLE IN THE MINIMALLY INVASIVE SURGERY ERA?** - Romel C Santos, MD; [Raphael B Santiago, MD](#); Rocco Dabecco, DO; Brandon Kaye, BS; Michal Obrzut, MD; Hamid Borghei-Razavi, MD; Badih Adada, MD; Cleveland Clinic Florida

**P006: A NEWLY DESCRIBED ARTERY SUPPLYING THE FALLOPIAN SEGMENT OF THE FACIAL NERVE AND ITS ROLE IN FUNCTIONAL PRESERVATION IN THE TRANSCOCHLEAR APPROACH** - [Collin Liu, MD](#); Alexander I Evins, MD, PhD<sup>2</sup>; Daniel L Surdell, MD<sup>1</sup>; Philip E Stieg, PhD, MD<sup>2</sup>; Antonio Bernardo, MD<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, University of Nebraska Medical Center; <sup>2</sup>Weill Cornell Medicine, Neurological Surgery

**P007: SUBOCCIPITAL MIDLINE APPROACHES TO THE 4TH VENTRICLE: STEP-BY-STEP CADAVERIC DISSECTION FOR TRAINEES AND ANATOMIC REVIEW OF THE ADJACENT CEREBELLOPONTINE ANGLE** - [Danielle D Dang, MD](#)<sup>1</sup>; Julian S Rechberger, MD<sup>1</sup>; Luciano C Leonel, PhD<sup>1</sup>; Hana Hallak<sup>1</sup>; Michael J Link, MD<sup>2</sup>; David J Daniels, MD, PhD<sup>2</sup>; Maria Peris-Celda, MD, PhD<sup>1</sup>; <sup>1</sup>Mayo Clinic Rhoton Neurosurgery and Otolaryngology Surgical Anatomy Program; <sup>2</sup>Mayo Clinic Department of Neurologic Surgery

**P008: TRANSTEMPORAL TRANSCOROIDAL MICROSCOPIC AND ENDOSCOPIC-ASSISTED APPROACH TO THE PERIMESENCEPHALIC CISTERNS: AN ANATOMICAL REVIEW AND STEP-BY-STEP GUIDE FOR TRAINEES** - [Danielle D Dang, MD](#)<sup>1</sup>; Julian S Rechberger, MD<sup>1</sup>; Luciano C Leonel, PhD<sup>1</sup>; Michael J Link, MD<sup>2</sup>; David J Daniels, MD, PhD<sup>2</sup>; Maria Peris-Celda, MD, PhD<sup>1</sup>; <sup>1</sup>Mayo Clinic Rhoton Neurosurgery and Otolaryngology Surgical Anatomy Program; <sup>2</sup>Department of Neurologic Surgery, Mayo Clinic

**P009: REVIEW OF DUPLICATED HYPOGLOSSAL FORAMINAL MORPHOLOGY: COMBINED CADAVERIC CASE AND DRY SKULL STUDY AND IMPLICATION ON REGIONAL SKULL BASE ANATOMY** - [Danielle D Dang, MD](#)<sup>1</sup>; Julian S Rechberger, MD<sup>1</sup>; Luciano C Leonel, PhD<sup>1</sup>; Hana Hallak<sup>1</sup>; Michael J Link, MD<sup>2</sup>; Maria Peris-Celda, MD, PhD<sup>1</sup>; <sup>1</sup>Mayo Clinic Rhoton Neurosurgery and Otolaryngology Surgical Anatomy Program; <sup>2</sup>Department of Neurologic Surgery, Mayo Clinic

## Poster Listing (cont.)

**P010: ENDOSCOPIC MULTIPOINT APPROACH FOR EXENTERATION OF THE INFRATEMPORAL FOSSA** - Kittichai Mongkolkul<sup>1</sup>; [Mohammad Bilal Alsavaf](#)<sup>2</sup>; Eman H. Salem<sup>3</sup>; Daniel M. Prevedello<sup>4</sup>; Kyle VanKoeveering<sup>2</sup>; Douglas Hardesty<sup>4</sup>; Kathleen Kelly<sup>2</sup>; Ricardo L. Carrau<sup>2</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, Rajavithi Hospital, The College of Medicine of Rangsit University, Bangkok, Thailand; <sup>2</sup>Department of Otolaryngology-Head and Neck Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>3</sup>Department of Otolaryngology, Faculty of Medicine, Mansoura University, Mansoura, Egypt; <sup>4</sup>Department of Neurological Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA

**P011: ORIGIN AND COURSE OF THE BRANCHES OF THE CAVERNOUS INTERNAL CAROTID ARTERY: A CADAVERIC STUDY** - [Edoardo Agosti](#), MD<sup>1</sup>; Alex Y Alexander, BA<sup>2</sup>; Danielle Dang, MD<sup>3</sup>; Luciano Leonel, PhD<sup>4</sup>; Carlos D Pinheiro-Neto, MD, PhD<sup>4</sup>; Maria Peris-Celda, MD, PhD<sup>4</sup>; <sup>1</sup>University of Brescia; <sup>2</sup>University of Minnesota; <sup>3</sup>Department of Neurosurgery, Inova Neurosciences, Inova Fairfax Medical Campus, Falls Church, Virginia; <sup>4</sup>Mayo Clinic

**P012: THE FUNCTIONAL ANATOMY OF THE FORAMINA OF LUSCHKA REVISITED** - [Samer S Hoz](#), MD<sup>1</sup>; Alkawthar M Abdulsada, MD<sup>2</sup>; Mustafa Ismail, MD<sup>3</sup>; Yara Alfawares, BS<sup>1</sup>; Jonathan A Forbes, MD<sup>1</sup>; Charles Prestigiaco, MD<sup>1</sup>; Norberto Andaluz, MD<sup>1</sup>; <sup>1</sup>University of Cincinnati; <sup>2</sup>Azerbaijan Medical University, Baku, Azerbaijan.; <sup>3</sup>University of Baghdad

**P013: THE CRUX OF HELIX CURVATURE: A POTENTIAL SURFACE LANDMARK FOR THE ANTERIOR BORDER OF THE SIGMOID SINUS IN MINIMALLY INVASIVE PRESIGMOID APPROACHES.** - [Samer S Hoz](#), MD<sup>1</sup>; Paolo Palmisciano, MD<sup>1</sup>; Hagar A Algburi<sup>2</sup>; Mayur Sharma, MD<sup>1</sup>; Mustafa Ismail, MD<sup>2</sup>; Norberto Andaluz, MD<sup>1</sup>; <sup>1</sup>University of Cincinnati; <sup>2</sup>University of Baghdad

**P014: ANATOMICAL STEP-BY-STEP DISSECTION OF COMPLEX SKULL BASE APPROACHES FOR TRAINEES - SURGICAL ANATOMY OF THE TRANSBASAL APPROACH.** - Larissa Vilany, MD; Danielle Dang, MD; Edoardo Agosti, MD; [Luciano P C Leonel, PhD](#); Michael J Link, MD; Carlos Pinheiro-Neto, MD, PhD; Maria Peris-Celda, MD, PhD; Mayo Clinic Rhoton Neurosurgery and Otolaryngology Surgical Anatomy Program.

**P015: SURGICAL CLOSURE OF THE EUSTACHIAN TUBE THROUGH MIDDLE FOSSA AND TRANSMASTOID APPROACHES: A PILOT CADAVERIC ANATOMY STUDY** - Brittany Staarmann, MD; [Paolo Palmisciano, MD](#); Samer S Hoz, MD; Edward J Doyle, MD; Jonathan A Forbes, MD; Ravi Samy, MD; Mario Zuccarello, MD; Norberto Andaluz, MD; University of Cincinnati, College of Medicine

**P016: SEIZURE CAUSED BY INTRAPARENCHYMAL HEMORRHAGE FROM MIGRATION OF MANDIBULAR DENTAL WIRE THROUGH FORAMEN OVALE IN A CHILD - A CASE REPORT** - [Ryan D Morgan, BS](#); Anila Chintagunta, MS<sup>2</sup>; Nicholas A Vojtkofsky, BS<sup>1</sup>; Kirie M Psaromatis, MBA<sup>1</sup>; Benedicto Baronia, MD<sup>1</sup>; Muhittin Belirgen, MD<sup>1</sup>; <sup>1</sup>Texas Tech University Health Sciences Center; <sup>2</sup>Texas College of Osteopathic Medicine

**P018: CNS PNS JUNCTION IN TRIGEMINAL, FACIAL AND VESTIBULOCOCHLEAR NERVE: A HISTO-MORPHOMETRIC STUDY** - [Tulika Gupta](#); Mandeep Kaur; Rafika Munawara; Sunil K Gupta; PGIMER

**P020: ELONGATED STYLOID PROCESS WITH CAROTID PSEUDOANEURYSM** - [Akshay Chandora, BS](#); Courtney B Shires, MD<sup>2</sup>; Olamide Alabi, MD<sup>3</sup>; Carrie Flanagan, MD<sup>3</sup>; Merry Sebelik, MD<sup>3</sup>; <sup>1</sup>Morehouse School of Medicine; <sup>2</sup>West Cancer Center; <sup>3</sup>Emory University and Atlanta VA

**P021: INVESTIGATION AND MODULATION OF INTERLEUKIN 6 FOLLOWING SUBARACHNOID HEMORRHAGE: TARGETING INFLAMMATORY ACTIVATION FOR CEREBRAL VASOSPASM** - [Brandon Lucke-Wold](#); University of Florida

**P022: INTERNAL CAROTID BIFURCATION ANEURYSM IN THE PRESENCE OF INFRA-OPTIC ANTERIOR CEREBRAL ARTERY. CASE PRESENTATION AND LITERATURE REVIEW.** - [Georgios Klironomos](#); Linda Liu; Jeffrey Katz; David Chalif; Northwell

## Poster Listing (cont.)

**P023: COMPLETE BILATERAL BLINDNESS ASSOCIATED WITH RUPTURED ANTERIOR COMMUNICATING ARTERY ANEURYSM: A LITERATURE REVIEW AND ILLUSTRATIVE CASE** - [Samer S Hoz, MD<sup>1</sup>](#); Teeba A Al-Ageely, MD<sup>2</sup>; Mustafa Ismail, MD<sup>2</sup>; Noor M Akar, MD<sup>3</sup>; Rokaya H Abdalridha, MD<sup>4</sup>; Mohammed A ALALI, MD<sup>2</sup>; Jaber H Obaid, MD<sup>3</sup>; Muthanna N Abdulqader, MD<sup>5</sup>; Norberto Andaluz, MD<sup>1</sup>; <sup>1</sup>University of Cincinnati; <sup>2</sup>University of Baghdad; <sup>3</sup>Al-Nahrain University; <sup>4</sup>University of Babylon; <sup>5</sup>Neurosurgery Teaching Hospital, Baghdad

**P025: PRE-OPERATIVE EMBOLIZATION TECHNIQUES IN THE TREATMENT OF JUVENILE NASOPHARYNGEAL ANGIOFIBROMA: A SYSTEMATIC REVIEW** - [Dhruv S Kothari<sup>1</sup>](#); Lauren A Linker<sup>1</sup>; Tristan Tham<sup>2</sup>; Andrew J Maroda<sup>1</sup>; Jenessa M McElfresh<sup>3</sup>; Judd H Fastenberg<sup>2</sup>; Ralph Abi-Hachem<sup>4</sup>; Lucas R Elijevich<sup>5</sup>; L Madison Michael<sup>5</sup>; Sanjeet V Rangarajan<sup>1</sup>; <sup>1</sup>Department of Otolaryngology - Head and Neck Surgery, University of Tennessee Health Science Center, Memphis, TN USA; <sup>2</sup>Department of Otolaryngology - Head and Neck Surgery, Zucker School of Medicine at Hofstra/Northwell, New Hyde Park, NY, USA; <sup>3</sup>Department of Research and Learning Services, University of Tennessee Health Science Center, Memphis, TN USA; <sup>4</sup>Department of Head and Neck Surgery & Communication Sciences, Duke University, Durham, North Carolina, USA; <sup>5</sup>Department of Neurosurgery - Head and Neck Surgery, University of Tennessee Health Science Center, Memphis, TN USA

**P026: APPROACH TO CAVERNOUS SINUS LESIONS VIA A MINI-PTERIONAL CRANIOTOMY: TECHNIQUE AND CASE ILLUSTRATION** - [Jorge A Roa, MD](#); Ehsan Dowlati, MD; Samir Sur, MD; Georgetown University

**P027: ENDOSCOPIC ENDONASAL TRANSSPHENOIDAL TRANSCAVERNOUS RESECTION OF PROSTATE ADENOCARCINOMA METASTATIC TO THE CAVERNOUS SINUS PRESENTING WITH ISOLATED OCULOMOTOR NERVE PALSY: AN ILLUSTRATIVE CASE** - Andrew Rock, MD; Shivali Gupta, MHS; Jordon G Grube, DO; [Robert S Heller, MD](#); Albany Medical Center

**P028: CSF-VEIN FISTULA OF THE CLIVAL SKULL BASE: A UNIQUE CASE STUDY AND LITERATURE REVIEW** - Wasiq Nadeem, BS<sup>1</sup>; [Jordan Kai Simmons, MD<sup>2</sup>](#); Arthur Wu, MD<sup>2</sup>; Adam N Mamelak, MD<sup>3</sup>; Wouter Schievink, MD<sup>3</sup>; Dennis Tang, MD<sup>2</sup>; <sup>1</sup>UT Health San Antonio - Department of Otolaryngology, Head and Neck Surgery; <sup>2</sup>Cedars Sinai Medical Center - Department of Otolaryngology, Head and Neck Surgery; <sup>3</sup>Cedars Sinai Medical Center - Department of Neurological Surgery

**P029: THE ROLE OF TACHOSIL IN CEREBROSPINAL FLUID LEAK REPAIR IN SUPERIOR SEMICIRCULAR CANAL DEHISCENCE** - [Kirsten Wong](#); Quinton Gopen, MD; David Geffen School of Medicine at UCLA

**P030: RAPIDLY INJECTING 10 MG OF INTRATHECAL FLUORESCHEIN CAUSED NO NEUROLOGIC COMPLICATIONS** - [H Mackie, BS<sup>1</sup>](#); A Yassin-Kassab, MD<sup>1</sup>; A Ray, DO<sup>2</sup>; JG Eide, MD<sup>2</sup>; AM Robin, MD<sup>3</sup>; K Asmaro, MD<sup>3</sup>; JP Rock, MD<sup>3</sup>; JR Craig, MD<sup>2</sup>; <sup>1</sup>Michigan State University College of Human Medicine; <sup>2</sup>Department of Otolaryngology, Henry Ford Health System; <sup>3</sup>Department of Neurosurgery, Henry Ford Health System

**P032: GIANT OLFACTORY NEUROBLASTOMA TREATED WITH AN ENDOSCOPIC CRANIOFACIAL RESECTION AFTER IMMUNOTHERAPY** - Dahee Park, MD; [Sue Jean Mun, MD, PhD](#); Departments of Otorhinolaryngology-Head and Neck Surgery, Pusan National University Yangsan Hospital, Yangsan

**P033: OUTCOMES OF PATIENTS WITH ADVANCED CUTANEOUS SQUAMOUS CELL CARCINOMA INVOLVING THE SKULL BASE TREATED WITH CEMIPIMAB IMMUNOTHERAPY: A REVIEW AT OUR INSTITUTION** - [Kody G Bolk, MD](#); Stephen Hernandez, MD; Rahul Mehta, MD, FRCS; Daniel W Nuss, MD, FACS; Louisiana State University Health Sciences Center New Orleans

**P034: THE ROLE OF IMMUNOTHERAPY IN SINONASAL MELANOMA: A SYSTEMATIC REVIEW OF TREATMENT OUTCOMES** - [Rachel B Fenberg<sup>1</sup>](#); Anna J Orr<sup>1</sup>; Rachel Schwartz, MLS<sup>2</sup>; Ricardo L Carrau, MD<sup>1</sup>; Kyle K VanKoeveering, MD<sup>1</sup>; <sup>1</sup>Department of Otolaryngology - Head and Neck Surgery, The Ohio State University Wexner Medical Center, Columbus, Ohio, USA; <sup>2</sup>D Samuel Gottesman Library, Albert Einstein College of Medicine, Bronx, NY, USA

## Poster Listing (cont.)

**P035: MORPHOMETRIC AND VOLUMETRIC CHARACTERISTICS ASSOCIATED WITH SURGICAL INTERVENTION IN CHIARI I MALFORMATION** - [Alejandro Carrasquilla, MD](#)<sup>1</sup>; Ya-Chen Chuang, PhD<sup>2</sup>; Gizem Bilgili, MD<sup>2</sup>; Aymeric Pionteck, PhD<sup>2</sup>; Xinyan Liu<sup>1</sup>; Javid Abderezaei<sup>2</sup>; Addison Quinones<sup>1</sup>; William H Shuman, MD<sup>1</sup>; Shan Zhao, MD, PhD<sup>1</sup>; Mehmet Kurt, PhD<sup>2</sup>; Raj K Shrivastava, MD<sup>1</sup>; <sup>1</sup>Icahn School of Medicine at The Mount Sinai Hospital; <sup>2</sup>University of Washington Department of Mechanical Engineering

**P036: MORPHOMETRIC AND VOLUMETRIC CHANGES ASSOCIATED WITH SYRINX FORMATION IN CHIARI I MALFORMATION** - [Alejandro Carrasquilla, MD](#)<sup>1</sup>; Ya-Chen Chuang, PhD<sup>2</sup>; Gizem Bilgili, MD<sup>2</sup>; Aymeric Pionteck<sup>2</sup>; Xinyan Liu<sup>1</sup>; Javid Abderezaei<sup>2</sup>; Addison Quinones<sup>1</sup>; William H Shuman, MD<sup>1</sup>; Shan Zhao, MD, PhD<sup>1</sup>; Mehmet Kurt, PhD<sup>2</sup>; Raj K Shrivastava, MD<sup>1</sup>; <sup>1</sup>Icahn School of Medicine at The Mount Sinai Hospital; <sup>2</sup>University of Washington Department of Mechanical Engineering

**P037: COMBINED CONDYLAR APPROACH FOR SKULL BASE CHONDROSARCOMA CENTERED AT THE JUGULAR FORAMEN WITH EXTENSION INTO THE NECK: TWO ILLUSTRATIVE CASES.** - [Adam M Olszewski, MD](#)<sup>1</sup>; Michael Avillion, MD<sup>2</sup>; Gregory P Lekovic, MD, PhD<sup>1</sup>; Kevin A Peng, MD<sup>2</sup>; <sup>1</sup>House Neurosurgery Clinic; <sup>2</sup>House Ear Clinic

**P038: A RARE CASE OF MULTIFOCAL CHORDOMA INVOLVING THE LOWER CLIVUS AND MULTIPLE SPINE LEVELS** - [Mohammad Bilal Alsavaf](#)<sup>1</sup>; Eman H. Salem<sup>2</sup>; Basit Jawad<sup>1</sup>; Kittichai Mongkolkul<sup>3</sup>; Daniel M. Prevedello<sup>4</sup>; Ricardo L. Carrau<sup>1</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>2</sup>Department of Otolaryngology, Faculty of Medicine, Mansoura University, Mansoura, Egypt; <sup>3</sup>Department of Otolaryngology-Head and Neck Surgery, Rajavithi Hospital, The College of Medicine of Rangsit University, Bangkok, Thailand; <sup>4</sup>Department of Neurological Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA

**P039: PROGNOSTIC MOLECULAR BIOMARKERS IN CHORDOMAS: A SYSTEMATIC REVIEW AND IDENTIFICATION OF CLINICALLY USABLE BIOMARKER PANELS** - [Franco Rubino, MD](#); Christopher Alvarez-Breckenridge, MD, PhD; Kadir Akdemir, PhD; Anthony P Conley, MD; Andrew J Bishop, MD; Wei-Lien Wang, MD, PhD; Alexander J Lazar, MD, PhD; Laurence D Rhines, MD; Franco DeMonte, MD; Shaan M Raza, MD; MD Anderson Cancer Center

**P040: POSTERIOR INTRADURAL PETROUS APICECTOMY AND TOTAL SENSORY TRIGEMINAL RHIZOTOMY FOR RESIDUAL TRIGEMINAL SCHWANNOMA WITH SECONDARY TRIGEMINAL NEURALGIA** - Andres Felipe Pineda-Martinez, MD; Pablo Sanchez-Quinones, MD; [Javier M. Saavedra, MD](#); William-Mauricio Riveros-Castillo, MD; Jorge Torres-Mancera, MD; Camilo Armando Benavides-Burbano, MD; Center for Research and Training in Neurosurgery (CIEN)

**P041: SOFT TISSUE NASAL CHORDOMA IN THE SETTING OF CLIVAL CHORDOMA RESECTION** - Matthew S Krutz, MD; Kiana Y Prather, BS; Lance M Villeneuve, MD; Joelle G Peterson, MD; Mark M Mims, MD; Ian F Dunn, MD; Edward T El Rassi, MD; [Kibwei A McKinney, MD](#); The University of Oklahoma Health Sciences Center

**P042: MULTIFOCAL ECTOPIC RECURRENCE OF A C2 CHORDOMA: A CASE REPORT AND REVIEW OF THE LITERATURE** - [Maikerly Reyes, BS](#)<sup>1</sup>; Allison Kayne, BS<sup>1</sup>; Sarah Collopy, BS<sup>2</sup>; Giyarpuram Prashant, MD<sup>2</sup>; Patrick Kelly, MD<sup>2</sup>; James J Evans, MD<sup>2</sup>; <sup>1</sup>Sidney Kimmel Medical College; <sup>2</sup>Thomas Jefferson University Hospital Department of Neurosurgery

**P043: COMPLICATION MANAGEMENT AND PREVENTION DURING ENDOSCOPIC ENDONASAL SKULL BASE SURGERY FOR GIANT PITUITARY ADENOMAS: 60 PATIENT CASE SERIES.** - [Agustin Dorantes-Argandar, MD](#)<sup>1</sup>; Flavio Rodas-Berrezueta, MD<sup>2</sup>; Luis Perez-Garcia, MD<sup>1</sup>; Brenda Lopez-Quintana, MD, MSc<sup>2</sup>; Javier Mancilla-Mejia, MD<sup>2</sup>; Berenice Garcia-Guzman, MD, MSc<sup>2</sup>; <sup>1</sup>Hospital Angeles Pedregal - Facultad Mexicana de Medicina - Universidad La Salle; <sup>2</sup>Hospital Angeles Pedregal

**P044: POST-OPERATIVE PNEUMOCEPHALUS FOLLOWING LABYRINTHECTOMY FOR MENIERE'S DISEASE: A CASE REPORT** - [Andrew O Hess, MD](#); Jacob W Poynter, MD; Jeb M Justice, MD; Brian C Lobo, MD; Si Chen, MD; Rex S Haberman, MD; University of Florida

## Poster Listing (cont.)

**P045: AREA DEPRIVATION INDEX CORRELATES WITH A LOWER RATE OF HOSPITAL READMISSION FROM THE EMERGENCY ROOM FOLLOWING ENDOSCOPIC SKULL BASE SURGERY** - Neal R Godse, MD<sup>1</sup>; Jakub Jarmula, BS<sup>2</sup>; Alan Gordillo, BS<sup>2</sup>; Mario-Cyriac Tcheukado, BS<sup>2</sup>; Varun R Kshetry, MD<sup>3</sup>; Troy D Woodard, MD<sup>1</sup>; Pablo F Recinos, MD<sup>3</sup>; Raj Sindwani, MD<sup>1</sup>; <sup>1</sup>Head and Neck Institute, Cleveland Clinic Foundation; <sup>2</sup>Cleveland Clinic Foundation, Lerner College of Medicine; <sup>3</sup>Rose Ella Burkhardt Brain Tumor and Neuro-Oncology Center, Neurological Institute, Cleveland Clinic Foundation

**P046: BALANCING THE POSTOPERATIVE RISKS OF VENOUS THROMBOEMBOLISM WITH INTRACRANIAL HEMORRHAGE IN SKULL BASE SURGERY** - [Jessica Rabski](#); Wenya Linda Bi; Ossama Al-Mefty; Brigham and Women's Hospital

**P047: SINONASAL COMPLICATIONS AFTER ENDOSCOPIC TRANSSPHENOID APPROACH: A SINGLE CENTER STUDY** - [Da-Hee Park, MD](#); Pusan National University Yangsan Hospital

**P048: MALIGNANT HYPERTHERMIA DURING SKULL BASE SURGERY: WHAT SKULL BASE SURGEONS NEED TO KNOW TO DETECT AND MANAGE A POTENTIALLY FATAL COMPLICATION** - [Neal M Jackson, MD, FACS](#); Erika Moxley; Andrew Belnap; Tulane University

**P050: RACIAL AND ETHNIC HEALTH DISPARITIES AMONG TUMOR CASES OF THE ANTERIOR CRANIAL FOSSA: A PROPENSITY SCORE MATCHED ACS-NSQIP STUDY** - Matthew C Findlay, BS<sup>1</sup>; [Sawyer Z Bauer, BS<sup>2</sup>](#); Majiid Khan<sup>2</sup>; Robert B Kim, MD, MS<sup>1</sup>; Seojin Park<sup>3</sup>; Alexander Hepzibha, MD<sup>4</sup>; Michael Karsy, MD, PhD<sup>1</sup>; <sup>1</sup>University of Utah; <sup>2</sup>University of Nevada; <sup>3</sup>New York University; <sup>4</sup>Michigan State University

**P051: PSEUDOMENINGOCELE AND CSF LEAK FOLLOWING POSTERIOR FOSSA AND POSTEROLATERAL SKULL BASE SURGERIES: DEVELOPMENT OF A PREDICTIVE MODEL AND RISK SCORE** - [Travis Atchley, MD](#); Evan Gross, BS<sup>2</sup>; Yasaman Alam, MD<sup>1</sup>; Dagoberto Estevez-Ordonez, MD<sup>1</sup>; Benjamin Saccomano, MD<sup>1</sup>; Nicholas Laskay, MD<sup>1</sup>; Jordan George, BS<sup>2</sup>; Philip Schmalz, MD<sup>1</sup>; Kristen Riley, MD<sup>1</sup>; Winfield Fisher, III, MD<sup>1</sup>; <sup>1</sup>University of Alabama at Birmingham Health System; <sup>2</sup>University of Alabama at Birmingham Heersink School of Medicine

**P052: ANALYSIS OF THE COST EFFECTIVENESS OF DURAL SEALANTS IN THE ENDOSCOPIC REPAIR OF CSF LEAKS** - [Jared Johnson](#)<sup>1</sup>; Roy Casiano<sup>1</sup>; Zoukka Sargi<sup>1</sup>; Corinna Levine<sup>1</sup>; Adam Folbe<sup>2</sup>; <sup>1</sup>University of Miami School of Medicine; <sup>2</sup>William Beaumont School of Medicine

**P054: PHYSICAL THERAPY TREATMENT STRATEGIES FOR FACIAL NERVE WEAKNESS AND PARALYSIS DUE TO PERIPHERAL AND CENTRAL PATHOLOGIES: EFFICACY AND OUTCOMES.** - [Amed Natour, MD](#); Edward Doyle, MD; Colton Sayer; Gabrielle Petito; Ryan Collar, MD, MBA; Tsung-yen Hsieh, MD; Adam McCann; Ravi N. Samy, MD, FACS; University of Cincinnati Medical Center

**P055: STRATEGIES FOR CRANIAL NERVE PRESERVATION IN SURGERY FOR SKULL BASE TUMOURS** - [Sunil K Gupta, MD](#); PGIMER

**P056: PREDICTORS OF SURVIVAL AND OUTCOME IN TRAUMA PATIENTS PRESENTED WITH GLASGOW COMA SCALE SCORE OF 3 AND FIXED PUPILS** - [Sami Khairy, MD](#); Ahmed Alkhani, MD; King Abdulaziz Medical City- Riyadh

**P057: OPTICAL COHERENCE TOMOGRAPHY AS A PREDICTOR OF VISUAL PROTECTION AND RECOVERY IN THE SETTING OF PITUITARY APOPLEXY** - [Jesse D Lawrence, MD](#); Jeremy Lewis, MD; West Virginia University

**P058: DEVELOPMENT OF POSTTRAUMATIC FRONTAL BRAIN ABSCESS IN ASSOCIATION WITH AN ORBITAL ROOF FRACTURE AND ODONTOGENIC ABSCESS: A CASE REPORT** - [Hael Abdulrazeq](#); Konrad Walek; Shailen Sampath; Elias Shaaya; Dardan Beqiri; Albert Woo; Prakash Sampath; Alpert Medical School of Brown University



## Poster Listing (cont.)

**P059: ENDOSCOPIC ENDONASAL TRANS-PLANUM SPHENOIDALE, TRANS-TUBERCULUM SELLAE, TRANS-SELLAR WITH PITUITARY TRANSPOSITION, AND TRANS-CLIVAL RESECTION FOR PREVIOUSLY IRRADIATED RETRO-INFUNDIBULAR CRANIOPHARYNGIOMA.** - [Agustin Dorantes-Argandar, MD<sup>1</sup>](#); Luis Perez-Garcia, MD<sup>1</sup>; Flavio Rodas-Berrezueta, MD<sup>1</sup>; Javier Mancilla-Mejia, MD<sup>2</sup>; Brenda Lopez-Quintana, MD<sup>2</sup>; Berenice Garcia-Guzman, MD, MSc<sup>2</sup>; <sup>1</sup>Hospital Angeles Pedregal - Facultad Mexicana de Medicina - Universidad La Salle; <sup>2</sup>Hospital Angeles Pedregal

**P060: CADAVERIC ANATOMIC STUDY FOR CRANIOPHARYNGIOMAS ON THE RETROCHIASMATIC REGION THROUGH A TRANSCAVERNOUS OR SUBFRONTAL APPROACH.** - Romel C Santos, MD; [Raphael B Santiago, MD](#); Rocco Dabecco, DO; Brandon Kaye, BS; Michal Obrzut, MD; Hamid Borghei-Razavi, MD; Badih Adada, MD; Cleveland Clinic Florida

**P061: TRANSVENTRICULAR TRANS-CHOROIDAL APPROACH FOR ISOLATED 3RD VENTRICLE CRANIOPHARYNGIOMA AND OTHER TUMORS** - [Joonho Byun, Prof<sup>1</sup>](#); Chang Ki Hong<sup>2</sup>; Jin Hoo Seok<sup>1</sup>; <sup>1</sup>Korea University Guro Hospital; <sup>2</sup>Asan Medical Center, Seoul, Korea

**P062: EXPANDED ENDOSCOPIC ENDONASAL APPROACH AND SURGICAL ADJUNCTS FOR MAXIMISING EXTENT OF RESECTION IN CRANIOPHARYNGIOMA PATIENTS: TECHNICAL NUANCES AND OUTCOMES FROM A CONTEMPORARY PRELIMINARY SURGICAL SERIES FOLLOWING COMPLETION OF FELLOWSHIP TRAINING** - [Patricio Gimenez, MD<sup>1</sup>](#); Mikhail Harty, MD<sup>1</sup>; Greg Fellows, FRCS, SN<sup>1</sup>; Richard Edwards<sup>2</sup>; Warren Bennett, FRCS<sup>1</sup>; Kumar Abhinav, MD, FRCS, SN<sup>1</sup>; <sup>1</sup>Bristol Institute of Clinical Neuroscience; <sup>2</sup>Bristol Royal Hospital for Children

**P063: ENDOSCOPIC ENDONASAL APPROACH FOR RESIDUAL AND RECURRENT CRANIOPHARYNGIOMA AFTER TRANSCRANIAL APPROACH** - [Ronak H Jani, MD<sup>1</sup>](#); Miri Kim, MD, PhD<sup>1</sup>; Rachyl Shanker, MD<sup>1</sup>; Sudesh Raju, MD<sup>2</sup>; Hanna Algattas, MD<sup>2</sup>; Carl Snyderman, MD<sup>2</sup>; Paul Gardner, MD<sup>2</sup>; Chirag Patel, MD<sup>1</sup>; Anand Germanwala, MD<sup>1</sup>; <sup>1</sup>Loyola University Medical Center; <sup>2</sup>University of Pittsburgh Medical Center

**P064: EVALUATION OF A NOVEL BETA-CHITIN PATCH IN THE TREATMENT OF SMALL AND LARGE VESSEL VASCULAR INJURIES IN A SHEEP MODEL** - [Annika R Mascarenhas, MBBS<sup>1</sup>](#); Alistair K Jukes, MBBS, PhD, FRACS<sup>1</sup>; Santosh I Poonnoose, MCh, FRACS<sup>1</sup>; John Finnie, DVSc, PhD<sup>2</sup>; Sarah Vreugde, PhD<sup>1</sup>; Alkis J Psaltis, MBBS, PhD, FRACS<sup>1</sup>; Peter-John Wormald, MBChB, MD, FRACS<sup>1</sup>; <sup>1</sup>The Queen Elizabeth Hospital, Basil Hetzel Institute; <sup>2</sup>Department of Anatomy and Pathology, Adelaide Medical School, University of Adelaide

**P065: A NEW PARADIGM FOR ULTRA-HIGH DEFINITION PHOTOGRAPHY IN SURGICAL NEUROANATOMY** - [Yuanzhi Xu, MD<sup>1</sup>](#); Vera Vigo, MD<sup>2</sup>; Josh Klein, MSMI<sup>3</sup>; Maximiliano A Nunez<sup>2</sup>; Juan C Fernandez-Miranda, MD<sup>2</sup>; Aaron A Cohen-Gadol, MD, MSc, MBA<sup>4</sup>; Ying Mao, MD<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, Huashan Hospital, Shanghai Medical College, Fudan University, Shanghai, China; <sup>2</sup>Department of Neurosurgery, Stanford Hospital, Stanford, California; <sup>3</sup>The Neurosurgical Atlas, Carmel, Indiana; <sup>4</sup>Department of Neurological Surgery, Indiana University, Indianapolis, Indiana

**P066: RE-EVALUATING THE EVOLUTION OF VERTEBROBASILAR DOLICHOECTASIA (VBD) THROUGH PACAK-ZHUANG SYNDROME** - [Danielle D Dang, MD<sup>1</sup>](#); Halle Ronk<sup>1</sup>; Jared S Rosenblum, MD<sup>2</sup>; Vkram Chandrashekar<sup>2</sup>; Vibhu Chandrashekar<sup>2</sup>; Herui Wang, PhD<sup>1</sup>; Danielle R Donahue<sup>3</sup>; Karel Pacak, MD, PhD<sup>4</sup>; Zhengping Zhuang, MD, PhD<sup>1</sup>; John Heiss, MD, PhD<sup>5</sup>; <sup>1</sup>Neuro-Oncology Branch, National Cancer Institute, National Institutes of Health; <sup>2</sup>NeuroSimplicity, LLC; <sup>3</sup>Mouse Imaging Facility, National Institute of Neurological Disorders and Stroke, National Institutes of Health; <sup>4</sup>Eunice Kennedy Shriver National Institute of Child Health; <sup>5</sup>Surgical Neurology Branch, National Institute of Neurological Disorders, National Institutes of Health

**P068: REAPPRAISAL OF THE PREVIOUSLY DESCRIBED FALSE LOCALIZING SIGN AT C1-C2 IN CASES OF SPONTANEOUS INTRACRANIAL HYPOTENSION** - [Gianna Fote<sup>1</sup>](#); Nolan J Brown<sup>1</sup>; Hania Shahin<sup>1</sup>; Joseph Falcone<sup>1</sup>; Alexander Lopez<sup>1</sup>; Michael Oh<sup>1</sup>; Edward Kuan<sup>2</sup>; Frank Hsu<sup>3</sup>; Ahmed Mohyeldin<sup>4</sup>; <sup>1</sup>UC Irvine Department of Neurological Surgery; <sup>2</sup>UC Irvine Department of Otolaryngology, Skull Base and Pituitary Program; <sup>3</sup>UC Irvine Departments of Neurological Surgery, Physical Medicine and Rehabilitation; <sup>4</sup>UC Irvine Department of Neurological Surgery, Skull Base and Pituitary Center



## Poster Listing (cont.)

**P069: OUTCOMES FOLLOWING ENDOVASCULAR VS. OPEN SURGERY FOR CRANIOCERVICAL JUNCTION DURAL ARTERIOVENOUS FISTULAS** - Rohin Singh<sup>1</sup>; [Nolan J Brown](#)<sup>2</sup>; Jhon Bocanegra-Becerra<sup>1</sup>; Nicholas Bui<sup>3</sup>; Hana Hallak<sup>1</sup>; Stefan Koester<sup>4</sup>; Shane Shahrestani<sup>5</sup>; Henry Stonnington<sup>1</sup>; Julian Gendreau<sup>6</sup>; <sup>1</sup>Mayo Clinic Alix School of Medicine; <sup>2</sup>UC Irvine Department of Neurological Surgery; <sup>3</sup>Loma Linda University School of Medicine; <sup>4</sup>Vanderbilt University School of Medicine; <sup>5</sup>Keck School of Medicine of USC; <sup>6</sup>Johns Hopkins Whiting School of Engineering

**P070: ANATOMICAL DESCRIPTION OF THE ENDOSCOPIC ENDONASAL TRANSLIVAL TRANSODONTOID APPROACH COMBINED WITH THE ENDOSCOPIC TRANSORAL DECOMPRESSION TO THE ANTERIOR CRANIOVERTEBRAL JUNCTION: TWO ARE BETTER THAN ONE.** - [Romel C Santos, MD](#); Raphael B Santiago, MD; Rocco Dabecco, DO; Brandon Kaye, BS; Michal Obrzut, MD; Badih Adada, MD; Hamid Borghei-Razavi, MD; Cleveland Clinic Florida

**P071: SUPRAORBITAL KEYHOLE ENDOSCOPIC ASSISTED APPROACH FOR SUPRASELLAR TUMORS** - [Alberto Torres Diaz, MD](#); University Bellvitge Hospital

**P072: UTILIZATION OF KEYHOLE SKULL BASE APPROACHES IN FIRST 2 YEARS OF PRACTICE; OUTCOMES, COMPLICATIONS, POST-DISCHARGE NARCOTIC USE AND 30-DAY READMISSIONS** - Daniel Cales; Luke Harris; John P Saway; Olivier Darbin; Danielle N Chason; Ursula Hummel; Anthony Martino; [Jai D Thakur](#); University of South Alabama

**P073: SURGICAL EXPOSURE WITH MINIMALLY INVASIVE CRANIAL EXPOSURES** - [Esteban Quiceno, MD](#)<sup>1</sup>; Vin Shen Ban, MBBChir, MRCS, MSc<sup>2</sup>; Peter Nakaji, MD<sup>1</sup>; <sup>1</sup>Banner University Medical Center Phoenix; <sup>2</sup>Banner University Medical Center Phoenix; University of Texas Southwestern

**P075: COMBINED TRANSNASAL, TRANSMAXILLARY ENDOSCOPIC APPROACH TO A LARGE PTERYGOPALATINE FOSSA SCHWANNOMA** - [Jennifer E Douglas, MD](#); Daniel J Lee, MD; Michael A Kohanski, MD, PhD; Nithin D Adappa, MD; James N Palmer, MD; University of Pennsylvania Department of Otorhinolaryngology - Head & Neck Surgery

**P076: FULLY ENDOSCOPIC KEYHOLE SURGERY FOR CRANIAL BASE LESIONS** - [Kenichi Oyama, MD, PhD](#)<sup>1</sup>; Ichiro Nakazato, MD<sup>1</sup>; Hisashi Ishikawa, MD<sup>1</sup>; Yusuke Tabei, MD, PhD<sup>1</sup>; Takeshi Suma, MD, PhD<sup>1</sup>; Akira Teramoto, MD, PhD<sup>2</sup>; Akira Matsuno<sup>3</sup>; <sup>1</sup>Department of Neurosurgery, International University of Health & Welfare Mita Hospital; <sup>2</sup>Shonan University of Health Science; <sup>3</sup>Department of Neurosurgery, International University of Health & Welfare Narita Hospital

**P077: AVERAGE SKULL THICKNESS IN DIFFERENT MINIMALLY INVASIVE CRANIAL APPROACHES AND ITS CORRELATION WITH THE SURGICAL EXPOSURE** - [Vin Shen Ban, MBBChir, MRCS, MSc](#)<sup>1</sup>; Esteban Quiceno, MD<sup>2</sup>; Peter Nakaji, MD<sup>2</sup>; <sup>1</sup>Banner University Medical Center Phoenix; University of Texas Southwestern; <sup>2</sup>Banner University Medical Center Phoenix

**P078: MINIMALLY INVASIVE ENDONASAL ENDOSCOPIC APPROACHES IN THE GRAND ELDERLY** - [Alessio Iacoangeli, MD](#)<sup>1</sup>; Fabio Greco, MD<sup>2</sup>; Maurizio Iacoangeli, MD, PhD<sup>1</sup>; Francesca Bonifacio, MD<sup>2</sup>; Giulio Cavicchioni, MD<sup>2</sup>; Maurizio Gladi, MD<sup>1</sup>; Denis Aiudi, MD<sup>1</sup>; Fabrizio Salvinelli, MD, PhD<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, Marche Polytechnic University and General University Hospital, Ancona, Italy; <sup>2</sup>Department of ENT Surgery, Campus Bio-Medico University and Hospital, Rome, Italy

**P079: AVOIDANCE OF POSTOPERATIVE EPISTAXIS UTILIZING A SPHENOPALATINE PEDICLE PRESERVING TECHNIQUE IN ENDONASAL ENDOSCOPIC SKULL BASE SURGERY: 11 YEAR EXPERIENCE** - [Chester F Griffiths](#)<sup>1</sup>; Daniel F Kelly, MD<sup>1</sup>; Garni Barkhoudarian, MD<sup>2</sup>; Walavan Sivakumar, MD<sup>2</sup>; Frank Berry, MD<sup>2</sup>; <sup>1</sup>Saint John's Cancer Institute; <sup>2</sup>Pacific Neuroscience Institute

**P080: EXTENDED ENDOSCOPIC ENDONASAL SKULL BASE SURGERY IN A NEUROSURGICAL CENTER IN CHILE** - [Matias Gómez, MD](#)<sup>1</sup>; Galia Villarroel, MD<sup>2</sup>; Homero Sariego, MD<sup>1</sup>; Katherine Walker, MD<sup>1</sup>; Cristian Naudy, MD<sup>1</sup>; <sup>1</sup>Instituto de Neurocirugía Dr. Asenjo; <sup>2</sup>Universidad de Chile

## Poster Listing (cont.)

**P081: ANATOMICAL STEP-BY-STEP DISSECTION OF COMPLEX SKULL BASE APPROACHES FOR TRAINEES: SURGICAL ANATOMY OF THE ENDOSCOPIC ENDONASAL AND ENDOSCOPIC-ASSISTED TRANSMAXILLARY TRANSPTERYGOID APPROACH TO INFRATEMPORAL FOSSA, LATERAL RECESS OF THE SPHENOID SINUS, MEC** - [Edoardo Agosti, MD](#)<sup>1</sup>; Natália Cerqueira Rezende, MD<sup>2</sup>; Luciano Leonel, PhD<sup>2</sup>; Alex Y Alexander, BA<sup>3</sup>; Garret W Choby, MD<sup>2</sup>; Carlos D Pinheiro-Neto, MD, PhD<sup>2</sup>; Maria Peris-Celda, MD, PhD<sup>2</sup>; <sup>1</sup>University of Brescia; <sup>2</sup>Mayo Clinic; <sup>3</sup>University of Minnesota

**P082: PREOPERATIVE FRAILTY MEASURED BY CLINICAL RISK ANALYSIS INDEX (RAI-C) AND ADVERSE EVENTS AFTER ENDOSCOPIC ENDONASAL SURGERY FOR PITUITARY ADENOMA: A SINGLE CENTER PROSPECTIVE CASE SERIES** - [Joshua Marquez, MSc](#); Benjamin Q Spangler, BS; Kavelin Rumalla, MD; Syed Faraz Kazim, MD, PhD; Evan Courville, MD; Sagar A Patel, BS; Dominic K Lundquist, BA; Theodore N Muka, BS; Samantha Varela, BS; Garth T Olson, MD; Liat N Shama, MD; Rohini G Mckee, MD, MPH; Meic H Schmidt, MD, MBA; Christian A Bowers, MD; University of New Mexico Health Sciences Center

**P083: MUCOSAL REPOSITIONING DURING THE ENDOSCOPIC ENDONASAL TRANSSPHEOIDAL APPROACH FACILITATES NORMALIZATION OF THE SINUS WALL THICKENING** - [Jae Yoon Lee, MD](#); [Do Hyun Kim, MD, PhD](#); Department of Otolaryngology-Head and Neck Surgery, Seoul St. Mary's Hospital, College of Medicine

**P084: THE CLINICAL POTENTIALS OF 3D PRINTING IN ENDOSCOPIC RECONSTRUCTION OF THE SKULL BASE** - [Luka Baha, BS](#)<sup>1</sup>; Rachel Fenberg, BS<sup>2</sup>; Basit Jawad, MD<sup>3</sup>; Kyle VanKoeveering, MD<sup>3</sup>; <sup>1</sup>Rocky Vista University College of Osteopathic Medicine; <sup>2</sup>Albert Einstein College of Medicine; <sup>3</sup>The Ohio State University Department of Otolaryngology - Head and Neck Surgery

**P086: ENDOSCOPIC ENDONASAL APPROACH WITH NASAL SEPTAL FLAP FOR DRAINAGE OF PETROUS APEX CHOLESTEROL GRANULOMA** - [Sarah Blair](#)<sup>1</sup>; Kathryn Y Noonan, MD<sup>2</sup>; Jonathon S Sillman, MD, FACS<sup>2</sup>; Carl B Heilman, MD<sup>2</sup>; Ramya Bharathi, MD<sup>2</sup>; Emily Gall, MD<sup>2</sup>; <sup>1</sup>Tufts University School of Medicine; <sup>2</sup>Tufts Medical Center

**P087: ENDOSCOPIC ENDONASAL APPROACH TO RESECTION OF ANTERIOR CRANIAL FOSSA MENINGIOMAS WITH SINONASAL EXTENSION BASED ON PRIMARY TUMOR LOCATION** - [Shannon J Jiang](#)<sup>1</sup>; Joshua D Smith, MD<sup>2</sup>; Stephen E Sullivan, MD<sup>3</sup>; Erin L McKean, MD, MBA, FACS<sup>2</sup>; <sup>1</sup>Medical School, University of Michigan, Ann Arbor, Michigan, United States; <sup>2</sup>Department of Otolaryngology-Head and Neck Surgery, University of Michigan, Ann Arbor, Michigan, United States; <sup>3</sup>Department of Neurosurgery, University of Michigan, Ann Arbor, Michigan, United States

**P088: ARTERIAL "ARBORIZATION" OF THE NASOSEPTAL FLAP: A DESCRIPTIVE STUDY IN LIVE-PATIENTS USING INDOCYANINE GREEN FLUORESENCE UNDER ENDOSCOPIC VISUALIZATION** - [Raywat Noiphithak, MD](#)<sup>1</sup>; [Juan C. Yanez-Siller, MD, MPH](#)<sup>2</sup>; Edmund Howe, BS<sup>3</sup>; <sup>1</sup>Dept of Surgery, Division of Neurosurgery, Pathumthani University; <sup>2</sup>Dept of Otolaryngology-Head and Neck Surgery, University of Missouri; <sup>3</sup>University of Missouri-Columbia, School of Medicine

**P089: NASAL CHONDROSARCOMA - A SEPARATE ENTITY?** - [Muhammad Salman Ali, MD](#); Prakash Gupta; Georgios Zenonos, MD; Carl Snydermann, MD; Eric Wang, MD; Paul Gardner, MD; University of Pittsburgh Medical Center

**P090: DELAYS IN ADJUVANT RADIATION FOR SINONASAL MALIGNANCY** - [Emily Garvey, BA](#); Bitu Naimi, BA; Joshua Mease, BS; Douglas Farquhar, MD, MPH; Elina Toskala, MD, PhD, MBA; Marc Rosen, MD; Mindy Rabinowitz, MD; Gurston Nyquist, MD; Thomas Jefferson University Hospital

**P091: TOWARDS AN ACCURATE ASSESSMENT OF HEAD AND NECK PARAGANGLIOMA GROWTH RATES IN AN ERA OF NON-SURGICAL MANAGEMENT** - [London Kozlowski, BS](#); Joshua D Smith, MD; Chirag Dani, MD; Mohamad Bazerbashi, MD; Tobias Else, MD; Remy Lobo, MD; Gregory J Basura, MD, PhD; University of Michigan

## Poster Listing (cont.)

**P092: SOLITARY PLASMACYTOMA OF THE HEAD AND NECK: CASE SERIES AND REVIEW OF THE LITERATURE** - Meredith M Lamb, BS; Abdullah Zeatoun, MD; Taylor Stack-Pyle, BS; [Sulgi Kim](#); Cristine N Klatt-Cromwell, MD; Brent A Senior, MD; Adam J Kimple, MD, PhD; Adam Zanation, MD; Brian D Thorp, MD; Department of Otolaryngology – Head and Neck Surgery, The University of North Carolina, Chapel Hill, NC

**P093: NOT EVERYTHING WITH A DURAL TAIL IS A MENINGIOMA: A CASE-BASED APPROACH TO NAILING THE DIAGNOSIS OF SKULL BASE MENINGIOMA MIMICS.** - [Andrew Soliman, MD](#)<sup>1</sup>; Ann K Jay, MD<sup>2</sup>; Jacqueline C Junn, MD<sup>1</sup>; <sup>1</sup>Mount Sinai Hospital; <sup>2</sup>Georgetown University Hospital

**P094: TRENDS IN POSTOPERATIVE IMAGING FOLLOWING ENDOSCOPIC ENDONASAL SKULL BASE SURGERY FOR PEDIATRIC SELLAR MASSES** - [Benjamin F Bitner, MD](#); Kaveri Curlin, BS<sup>1</sup>; Sina J Torabi, MD<sup>1</sup>; Eric H Abello, MD<sup>1</sup>; Jordan L Davies, MD<sup>2</sup>; Alexander S Himstead, MD<sup>2</sup>; Frank P Hsu, MD, PhD<sup>2</sup>; Edward C Kuan, MD, MBA<sup>1</sup>; Jay M Bhatt, MD, FAAP<sup>3</sup>; <sup>1</sup>UC Irvine Department of Otolaryngology - Head and Neck Surgery; <sup>2</sup>UC Irvine Department of Neurological Surgery; <sup>3</sup>Children's Hospital of Orange County Division of Otolaryngology and Head and Neck Surgery

**P095: RADIOGRAPHIC SKULL BASE ANATOMY IN PATIENTS WITH NASAL DERMOID** - [Mustafa G Bulbul, MD, MPH](#); Norman Orabi, MD; Chadi Makary, MD; Johnathan Castano, MD; Meghan T Turner, MD; Department of Otolaryngology, West Virginia University

**P096: IGG4 RELATED SCLEROSING DISEASE PRESENTING AS AN EROSION SKULL BASE LESION: A CASE REPORT** - [Caitlin M Coviello, MD, MBA](#); Tran B Locke, MD; Meha G Fox, MD; Baylor College of Medicine Department of Otolaryngology

**P097: OBSTRUCTIVE SLEEP APNEA AND CHRONIC RHINOSINUSITIS: UNDERSTANDING THE IMPACT OF OSA ON CRS DISEASE BURDEN ?** - [Emily Garvey, BA](#); Alexander Duffy, MD; Sruti Tekumalla, BA; Bitu Naimi, BA; Zachary Urdang, MD, PhD; Gurston Nyquist, MD; Marc Rosen, MD; Elina Toskala, MD, PhD, MBA; Mindy Rabinowitz, MD; Thomas Jefferson University Hospital

**P098: AGGRESSIVE SPHENOID SINUS ASPERGILLOSIS WITH INVASION OF BILATERAL INTERNAL CAROTID ARTERIES** - Nicole Khezri, MD<sup>1</sup>; [John Servider, MD](#)<sup>2</sup>; Cecilia Mastrogiacomo, BS<sup>2</sup>; Roberta Seidman, MD<sup>3</sup>; Robert Peyster, MD<sup>4</sup>; Reza Dashti, MD, PhD<sup>2</sup>; <sup>1</sup>Department of Neurology at Stony Brook University Hospital; <sup>2</sup>Department of Neurosurgery at Stony Brook University Hospital; <sup>3</sup>Department of Pathology at Stony Brook University Hospital; <sup>4</sup>Department of Radiology at Stony Brook University Hospital

**P099: FROM EAR TO EAR: FUNGAL SKULL BASE OSTEOMYELITIS TRAVERSING FROM ONE TEMPORAL BONE TO ANOTHER VIA CENTRAL SKULL BASE** - [Kody G Bolk, MD](#); Rahul Mehta, MD, FRCS; Louisiana State University Health Sciences Center New Orleans

**P100: LOCALIZED AMYLOIDOSIS AFFECTING THE SPHENOID SINUS: CASE REPORT AND REVIEW OF THE LITERATURE** - [Kelly Wentland, BBA](#); Mohammad K Shukairy, MD; Maria Picken, MD; Monica Patadia, MD; Loyola University Medical Center

**P101: IDIOPATHIC SKULL BASE INFLAMMATORY DISEASE: TRANSORBITAL DIAGNOSTICS** - [Nathan Pirakitikulr](#)<sup>1</sup>; Nabill Munshi<sup>2</sup>; Kelsey A Roelofs<sup>1</sup>; Robert A Goldberg<sup>1</sup>; Daniel B Rootman<sup>1</sup>; <sup>1</sup>Division of Orbital and Ophthalmic Plastic Surgery, Department of Ophthalmology, University of California Los Angeles; <sup>2</sup>David Geffen School of Medicine, University of California Los Angeles

**P102: PRIMARY PITUITARY ABSCESS: A SMALL CASE SERIES AND A LITERATURE REVIEW** - [Sayak R Ghosh, BS](#); Abigail Funari, BS; Alexander J Ledet, BS; Anne Lally, BA; Alireza Karandish, BA; Vijay Agarwal, MD; Albert Einstein College of Medicine

**P103: ENDAURAL SUBTEMPORAL APPROACH FOR MIDDLE FOSSA ENCEPHALOCELE AND CSF LEAK REPAIR** - Kevin A Peng, MD<sup>1</sup>; [Adam Olszewski, MD](#)<sup>2</sup>; Robin Bigelow, MD<sup>1</sup>; Gregory P Lekovic, MD, PhD<sup>2</sup>; <sup>1</sup>The House Institute Ear Clinic; <sup>2</sup>The House Neurosurgery Clinic

**P104: INNOVATION IN NEUROSURGERY: LESSONS LEARNED, OBSTACLES, AND POTENTIAL FUNDING SOURCES** - [Brandon Lucke-Wold](#); University of Florida

## Poster Listing (cont.)

**P106: IMPROVING ENDOSCOPIC ENDONASAL NEUROVASCULAR SPARING TRANSPOSITION OF THE PTERYGOPALATINE FOSSA BY ORBITO-PTERYGO-SPHENOIDAL LIGAMENT RELEASING AND DESCENDING PALATINE CANAL DECOMPRESSION: ANATOMICAL FOUNDATIONS AND SURGICAL TECHNIQUES** - [Edoardo Agosti, MD](#)<sup>1</sup>; Luciano Leonel, PhD<sup>2</sup>; Ronsard Mondesir, BA<sup>2</sup>; Stephen Graepel, MA<sup>2</sup>; Maria Peris-Celda, MD, PhD<sup>2</sup>; Carlos D Pinheiro-Neto, MD, PhD<sup>2</sup>; <sup>1</sup>University of Brescia; <sup>2</sup>Mayo Clinic

**P107: USE OF INTRAOPERATIVE ULTRASOUND TO IMPROVE NEURONAVIGATION FOR RESECTION OF SKULL BASE TUMORS** - Ehsan Dowlati, MD<sup>1</sup>; [Charles Withington](#)<sup>1</sup>; Seif El Masry<sup>1</sup>; Daniel R Felbaum, MD<sup>1</sup>; Samir Sur, MD<sup>1</sup>; Jorge Roa, MD<sup>2</sup>; Edward F Aulisi, MD<sup>3</sup>; Jeffrey C Mai, MD, PhD<sup>1</sup>; <sup>1</sup>Medstar Georgetown University Hospital; <sup>2</sup>MedStar Franklin Square Hospital; <sup>3</sup>MedStar Washington Hospital Center

**P108: A PROPOSED CLASSIFICATION SYSTEM FOR PRESIGMOID APPROACHES.** - [Samer S Hoz, MD](#); Paolo Palmisciano, MD<sup>1</sup>; Sama S Albairmani<sup>2</sup>; Ahmed Muthana<sup>2</sup>; Edward J Doyle III, MD<sup>1</sup>; Charles Prestigiacomo, MD<sup>1</sup>; Ravi Samy, MD<sup>1</sup>; Mario Zuccarello, MD<sup>1</sup>; Norberto Andaluz, MD<sup>1</sup>; <sup>1</sup>University of Cincinnati; <sup>2</sup>University of Baghdad

**P109: DIRECT PUNCTURE ONYX EMBOLIZATION: AN ENHANCED TECHNIQUE FOR JUVENILE NASOPHARYNGEAL ANGIOFIBROMAS?** - [Judd H Fastenberg, MD](#); Collin Hill; Mark B Chaskes, MD; Amir Dehdashti, MD; Kevin Shah, MD; Athos Patsalides, MD; Zucker School of Medicine at Northwell/Hofstra

**P110: EVALUATING FEASIBILITY OF A COOPERATIVE-CONTROL ROBOTIC ASSISTANT FOR ENDOSCOPIC ENDONASAL SKULL BASE SURGERY: A PRE-CLINICAL STUDY** - [Jose L Porras, MD](#); Manish Sahu, PhD; Roger Soberanis-Mukul, PhD; Isabela Hernandez, BS; Jonas Winter, BS; Francis X Creighton, MD; Swaroop Vedula, MBBS, PhD, MPH; Gary L Gallia, MD, PhD; Henry Brem, MD; Mathias Unberath, PhD; Gregory Hager, PhD; Russell Taylor, PhD; Masaru Ishii, MD, PhD; Johns Hopkins University

**P111: GUIDELINES FOR HIGH-QUALITY THREE-DIMENSIONAL MODELS USING PHOTOGRAMMETRY: A TECHNICAL NOTE ON THE FUTURE OF NEUROANATOMY EDUCATION** - André de Sá Braga Oliveira, PhD<sup>1</sup>; [Luciano Leonel, PhD](#)<sup>1</sup>; Edward R LaHood<sup>2</sup>; Hana Hallak, MD<sup>1</sup>; Michael J Link, MD<sup>2</sup>; Jonathan M Morris, MD<sup>3</sup>; Carlos D Pinheiro-Neto, MD, PhD<sup>4</sup>; Maria Peris-Celda, MD, PhD<sup>2</sup>; <sup>1</sup>Mayo Clinic Rhoton Neurosurgery and Otolaryngology Surgical Anatomy Program; <sup>2</sup>Department of Neurosurgery, Mayo Clinic, Rochester, Minnesota; <sup>3</sup>Department of Radiology, Mayo Clinic, Rochester, Minnesota; <sup>4</sup>Department of Otorhinolaryngology Head and Neck Surgery Mayo Clinic, Rochester, Minnesota

**P112: LONG-TERM RESULTS OF ENDOSCOPIC ENDONASAL MARSUPIALIZATION OF RATHKE'S CLEFT 2 CYSTS WITH BIOABSORBABLE STEROID-ELUTING STENTS. TECHNICAL CASE SERIES AND 3 REVIEW OF THE LITERATURE** - Christopher P Carroll, MD<sup>1,2</sup>; [Norberto Andaluz, MD](#)<sup>3</sup>; Jennifer Kosty, MD<sup>4</sup>; Mario Zuccarello<sup>5</sup>; Lee Zimmer, MD, PhD<sup>6</sup>; <sup>1</sup>Department of Brain & Spine Surgery, Naval Medical Center Portsmouth; Portsmouth, VA USA; <sup>2</sup>Department of Surgery, Division of Neurosurgery, Uniformed Services University of Health Sciences; Bethesda, MD USA; <sup>3</sup>Departments of Neurosurgery and Otolaryngology, University of Cincinnati; <sup>4</sup>Louisiana State University Health Sciences Center-Shreveport; Shreveport, LA; <sup>5</sup>Department of Neurosurgery, University of Cincinnati; <sup>6</sup>Mercy Health, Cincinnati, OH

**P113: STAGED RESECTION OF DIFFICULT-TO-TREAT INTRACRANIAL MENINGIOMAS: INDICATIONS, SURGICAL APPROACHES, AND POSTOPERATIVE OUTCOMES** - Nolan J Brown<sup>1</sup>; Julian Gendreau<sup>2</sup>; Angie Zhang<sup>1</sup>; Neal Patel<sup>3</sup>; [Nicholas Bui](#)<sup>4</sup>; Hana Sung<sup>1</sup>; Brian Lien<sup>1</sup>; Daniel Prevedello<sup>5</sup>; Edward Kuan<sup>6</sup>; Frank Hsu<sup>1</sup>; Ahmed Mohyeldin<sup>1</sup>; <sup>1</sup>UC Irvine Department of Neurological Surgery; <sup>2</sup>Johns Hopkins Whiting School of Engineering; <sup>3</sup>Mercer University School of Medicine; <sup>4</sup>Loma Linda University School of Medicine; <sup>5</sup>The Ohio State University Wexner Medical Center Department of Neurological Surgery; <sup>6</sup>UC Irvine Department of Otolaryngology, Head and Neck Surgery

**P114: CADAVERIC MORPHOMETRIC ANALYSIS FOR STANDARDIZATION OF NEURONAVIGATION IN RADIOFREQUENCY LESIONING FOR TRIGEMINAL NEURALGIA: INTRODUCTION OF THE MODIFIED TEW HYPOTHESIS** - [Vishan P Ramanathan](#); Joel M Kaye, MD; John P Sheehy, MD; John M Tew, MD; Charles J Prestigiacomo, MD; Norberto O Andaluz, MD; Jonathan A Forbes, MD; University of Cincinnati

## Poster Listing (cont.)

**P116: APPLICATION OF RADIOMICS TO THE DIFFERENTIAL DIAGNOSIS OF TEMPORAL BONE SKULL BASE LESIONS** - Matthew C Findlay, BS<sup>1</sup>; Samantha W Yost, BS<sup>1</sup>; [Sawyer Z Bauer, BS<sup>2</sup>](#); Kyril L Cole, BS, MPH, MBA<sup>1</sup>; J Curran Henson, MD<sup>3</sup>; Brandon Lucke-Wold, MD, PhD<sup>4</sup>; Yusuf Mekhri, BS<sup>4</sup>; Tritan Plute, BS<sup>5</sup>; Hussam Abou-Al-Shaar, MD<sup>5</sup>; Tyler Richards, MD<sup>6</sup>; Michael Karsy, MD, PhD<sup>7</sup>; <sup>1</sup>University of Utah School of Medicine; <sup>2</sup>Reno School of Medicine, University of Nevada, Reno; <sup>3</sup>Department of Surgery, University of Arkansas for Medical Sciences; <sup>4</sup>Department of Neurosurgery, University of Florida; <sup>5</sup>Department of Neurological Surgery, University of Pittsburgh Medical Center; <sup>6</sup>Department of Neuroradiology, University of Utah; <sup>7</sup>Department of Neurosurgery, University of Utah

**P119: THE ORIGIN AND EVOLUTION OF STAGED CRANIAL SURGERY FOR RESECTION OF SKULL BASE TUMORS** - Nolan Brown<sup>1</sup>; Shane Shahrestani<sup>2</sup>; Julian Gendreau<sup>3</sup>; [Chenyi Yang<sup>1</sup>](#); Frank Hsu<sup>1</sup>; Ahmed Mohyeldin<sup>1</sup>; <sup>1</sup>UC Irvine Department of Neurological Surgery; <sup>2</sup>Keck School of Medicine of USC; <sup>3</sup>Johns Hopkins Whiting School of Engineering

**P121: SYLVIAN ANGLE AND THE PRE-OPERATIVE PLANNING OF THE MINI-PTERIONAL APPROACH** - [Esteban Quiceno, MD](#); Vin Shen Ban, MBBChir, MRCS, MSc; Peter Nakaji, MD; Banner University Medical Center Phoenix

**P122: DESIGNING AND DEVELOPING A NOVEL DEEP COMPUTER VISION PLATFORM FOR INTRAOPERATIVE PREDICTION AND ANALYTICS IN SKULL BASE SURGERY** - [Rachel Blue, MD<sup>1</sup>](#); Nehal Doiphode<sup>1</sup>; Rohit Jena<sup>1</sup>; Peter Madsen, MD<sup>1</sup>; John YK Lee, MD, MSCE<sup>1</sup>; Jianbo Shi, PhD<sup>1</sup>; Vivek Buch, MD<sup>2</sup>; <sup>1</sup>University of Pennsylvania; <sup>2</sup>Stanford University

**P123: INTRAOPERATIVE EX-VIVO PITUITARY ADENOMA SUBTYPE CLASSIFICATION USING NON-CONTACT LASER FLUORESCENCE SPECTROSCOPY** - [Tanner J Zachem<sup>1</sup>](#); Jordan M Komisarow, MD<sup>2</sup>; Ralph A Hachem, MD<sup>3</sup>; David W Jang, MD<sup>3</sup>; Weston Ross, PhD<sup>4</sup>; Patrick J Codd, MD<sup>2</sup>; <sup>1</sup>Duke University, Pratt School of Engineering; <sup>2</sup>Duke University, Department of Neurosurgery; <sup>3</sup>Division of Head and Neck Surgery & Communications Sciences, Department of Surgery, Duke University; <sup>4</sup>Duke University, School of Medicine

**P125: NATURAL HISTORY AND MANAGEMENT OF PEDIATRIC CEREBELLOPONTINE ANGLE LIPOMAS: A CASE SERIES** - [Caitlin M Coviello, MD, MBA](#); Guillermo Aldave Orzaiz, MD, PhD; Akash Patel, MD; Benjamin Lovin, MD; Alex D Sweeney, MD; Baylor College of Medicine

**P126: FAR LATERAL APPROACH TO THE VENTROLATERAL SKULL BASE: CASE SERIES** - [Emma R Dioso<sup>1</sup>](#); Robert C Rennert<sup>2</sup>; Majid Khan<sup>3</sup>; Sawyer Z Bauer<sup>3</sup>; Christopher B Cutler<sup>4</sup>; Michael Karsy<sup>2</sup>; William T Couldwell<sup>2</sup>; <sup>1</sup>University of Utah School of Medicine; <sup>2</sup>University of Utah, Department of Neurosurgery; <sup>3</sup>University of Nevada Reno School of Medicine; <sup>4</sup>Rosalind Franklin University of Medicine and Science

**P127: OUTCOMES IN PEDIATRIC AUDITORY BRAINSTEM IMPLANTATION: REVISITING PERFORMANCE OVER TIME** - [Justin Cottrell](#); Lauren Rotman; David Friedmann; Daniel Jethanamest; Sean McMenomey; Donato Pacione; Chandra Sen; John Golfinos; Thomas Roland; NYU

**P128: TRANSJUGULAR APPROACH FOR RECURRENT INTRACRANIAL GLOMUS VAGALE TUMORS: AN IDEAL APPROACH TO PRESERVE HEARING AND FACIAL NERVE FUNCTION** - [Neal M Jackson](#); Tulane University

**P129: TRANSCANAL TRANSPROMONTORIAL APPROACH IN SKULL BASE SURGERY: A SYSTEMATIC REVIEW OF THE INDICATIONS, OPERATIVE TECHNIQUES, AND TREATMENT OUTCOMES** - [Paolo Palmisciano<sup>1</sup>](#); Edward J Doyle<sup>2</sup>; Samer S Hoz<sup>1</sup>; Daryn Cass<sup>1</sup>; Ravi N Samy<sup>2</sup>; Norberto Andaluz<sup>1</sup>; Mario Zuccarello<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, University of Cincinnati College of Medicine, Cincinnati, OH, USA; <sup>2</sup>Department of Otolaryngology Head and Neck Surgery, University of Cincinnati College of Medicine, Cincinnati, OH, USA

**P130: CURVULARIA AND THE BRAIN: CASE DEMONSTRATION OF OPTIMAL MANAGEMENT** - [Brandon Lucke-Wold](#); University of Florida



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**P131: A SUCCESSFUL MANAGEMENT OF ISOLATED LANGERHANS CELL HISTIOCYTOSIS LESION IN THE TEMPORAL BONE WITH ORAL CORTICOSTEROID** - [Mohammad Bilal Alsavaf](#)<sup>1</sup>; Nezaket Tektas<sup>2</sup>; Serap Dogan<sup>3</sup>; Özlem Canöz<sup>4</sup>; Mehmet İlhan Sahin<sup>5</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>2</sup>Department of Otolaryngology, Erciyes University School of Medicine, Kayseri, Turkey; <sup>3</sup>Department of Radiology, Erciyes University School of Medicine, Kayseri, Turkey; <sup>4</sup>Department of Pathology, Erciyes University School of Medicine, Kayseri, Turkey; <sup>5</sup>Department of Otolaryngology, Yeditepe University School of Medicine, İstanbul, Turkey

**P132: SURGICAL TREATMENT OF TUBERCULUM SELLAE MENINGIOMAS** - [Andrés Cervio](#), PhD; Ricardo Marengo, ENT; Facundo Villamil; Mauro Ruella; Lucila Domecq; Guido Caffaratti; FLENI

**P133: CHRONIC SEROUS OTITIS MEDIA WITH EFFUSION IN PATIENTS WITH "EN PLAQUE" MENINGIOMAS.** - [Andrés Cervio](#); Mauro Ruella; Facundo Villamil; Martín Carnevale; Ricardo Marengo; FLENI

**P134: FACTORS INVOLVED IN SELECTION OF ENDOSCOPIC ENDONASAL APPROACH FOR OLFACTORY GROOVE MENINGIOMAS** - Max Blanch, BS; [Amy J Wang, MD](#); Christine K Lee, MD, PhD; Pratik Talati, MD, PhD; William T Curry, MD; Massachusetts General Hospital

**P135: DIFFERENCES IN INCIDENCE OF MENINGIOMA CLASSES IN GENDER AND ETHNICITY** - [Caroline Hadley](#); Arya Shetty; Tiemo Klisch, Dr. rer. nat.; Akash Patel, MD; Baylor College of Medicine Department of Neurosurgery

**P136: VOLUMETRIC ANALYSIS OF SEIZURE NAÏVE PATIENTS UNDERGOING MENINGIOMA RESECTION: A MULTICENTER RETROSPECTIVE STUDY** - [Chase McKevitt](#)<sup>1</sup>; Lina Marenco Hillebrand, MD<sup>2</sup>; Michael Bamimore, DO<sup>3</sup>; Rosemary Chandler<sup>2</sup>; Andrea Otamendi Lopez, MD<sup>2</sup>; Paola Suarez Meade, MD<sup>2</sup>; Joao Paulo Almeida, MD, PhD<sup>2</sup>; Alfredo Quinones-Hinojosa, MD<sup>2</sup>; Kaisorn L Chaichana, MD<sup>2</sup>; <sup>1</sup>Philadelphia College of Osteopathic Medicine; <sup>2</sup>Mayo Clinic Jacksonville; <sup>3</sup>Cooper University Hospital

**P137: COMBINED ENDOSCOPIC-ENDONASAL SUPRAORBITAL KEYHOLE SURGERY FOR THE MANAGEMENT OF ANTERIOR SKULL BASE MENINGIOMAS: DIFFERENT VIEW OF THE SAME PATHOLOGY** - [Denis Aiudi, MD](#); Maurizio Gladi, MD; Valentina Liverotti, MD; Mara Capece, MD; Maria Rossella Fasinella, MD; Alessio Iacoangeli, MD; Alessio Raggi, MD; Maurizio Iacoangeli, MD, PhD; Department of Neurosurgery, Marche Polytechnic University and General University Hospital, Ancona, Italy

**P138: QUANTIFYING EXTENT OF MENINGIOMA PREOPERATIVE EMBOLIZATION THROUGH VOLUMETRIC ANALYSIS: A RETROSPECTIVE CASE SERIES** - [Denzel E Faulkner, MEng](#)<sup>1</sup>; Rui Feng, MD<sup>2</sup>; Stavros Matsoukas, MD<sup>2</sup>; Ian Odland, BS<sup>3</sup>; Brandon Philbrick, MD<sup>2</sup>; Eveline Gutzweiller, MD<sup>2</sup>; Halima Tabani, MD<sup>2</sup>; Alexis Bruhat, MSc<sup>3</sup>; Fred Kwon, PhD<sup>3</sup>; Turner S Baker, PhD<sup>3</sup>; Christopher Kellner, MD<sup>2</sup>; J Mocco, MD<sup>2</sup>; Johanna Fifi, MD<sup>2</sup>; Tomoyosho Shigematsu, MD<sup>2</sup>; Shahram Majidi, MD<sup>2</sup>; Hazem Shoirah, MD<sup>2</sup>; Reade De Leacy, MD<sup>2</sup>; Alejandro Berenstein, MD<sup>2</sup>; Raj Shrivastava, MD<sup>2</sup>; Leslie Schlachter, PA<sup>2</sup>; Holly Oemke<sup>2</sup>; Stanley Dunn, PhD<sup>1</sup>; Joshua Bederson, MD<sup>2</sup>; Benjamin I Rapoport, MDPhD<sup>2</sup>; <sup>1</sup>Department of Biomedical Engineering, Rensselaer Polytechnic Institute, 110 Eighth Street, Troy, NY; <sup>2</sup>Department of Neurosurgery, Icahn School of Medicine at Mount Sinai, Mount Sinai Hospital, 1 Gustave Levy place, New York,; <sup>3</sup>Mount Sinai BioDesign, Icahn School of Medicine at Mount Sinai, Mount Sinai Hospital, 1 Gustave Levy Place, New York

**P140: OLFACTORY GROOVE MENINGIOMAS - SURGICAL APPROACHES AND RESULTS OF A LARGE COHORT** - [Erion Junior de Andrade](#); Troy Woodard, MD; Raj Sindwani, MD; Varun Kshetty; Pablo F Recinos; Cleveland Clinic

**P143: ASSOCIATIONS OF FRAILITY WITH LONGITUDINAL OUTCOMES IN PATIENTS WITH MENINGIOMAS** - [Hanya M Qureshi, BA](#)<sup>1,2</sup>; Joanna Tabor, BS<sup>1,2</sup>; Joseph O'Brien, BA<sup>1,2</sup>; Haoyi Lei<sup>1,2</sup>; Sagar Vasandani<sup>1,2</sup>; Muhammad Jalal<sup>1,2</sup>; Shaurey Vetsa<sup>1,2</sup>; Aladine Elsamadicy, MD<sup>1,2</sup>; Saul Morales-Valero, MD<sup>1,2</sup>; Neelan Marianayagam, MD<sup>1,2</sup>; Brianna Theriault, MD<sup>1,2</sup>; Stephanie M Aguilera<sup>1,2</sup>; Ketu Mishra-Gorur, MD<sup>1,2</sup>; Declan McGuone, MD<sup>2,3</sup>; Robert Fulbright, MD<sup>2,4</sup>; Lan Jin, PhD<sup>1,2</sup>; Jennifer Moliterno, MD<sup>1,2</sup>; <sup>1</sup>Department of Neurosurgery, Yale School of Medicine, New Haven, CT, USA; <sup>2</sup>The Chenevert Family Brain Tumor Center, Smilow Cancer Hospital, New Haven, CT, USA; <sup>3</sup>Department of Pathology, Yale School of Medicine, New Haven, CT, USA; <sup>4</sup>Department of Radiology and Biomedical Imaging, Neuroradiology Section, Yale School of Medicine, New Haven, CT, USA



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**P144: EXOSCOPIC CHANNEL-BASED VERSUS OPEN MICROSCOPIC RESECTION OF ATRIAL INTRAVENTRICULAR MENINGIOMAS: A COMPARATIVE CASE SERIES** - [Jeffrey J Feng](#); Stephanie K Cheok, Dr; Gabriel Zada, Dr; Keck School of Medicine of USC

**P145: MALE OBESITY IS ASSOCIATED WITH MENINGIOMAS: A U.S. POPULATION-BASED STUDY WITH VALIDATION IN AN INSTITUTIONAL COHORT** - [Khizar R Nandoliya](#)<sup>1</sup>; Rushmin Khazanchi<sup>1</sup>; Maryam N Shahin, MD<sup>2</sup>; Stephen T Magill, MD, PhD<sup>1</sup>; <sup>1</sup>Northwestern University; <sup>2</sup>Oregon Health and Science University

**P146: OPTIMAL TIME WINDOW BETWEEN TUMOR EMBOLIZATION AND SURGERY IN PATIENTS WITH MENINGIOMAS** - [Mahlet Mekonnen](#), BS; Yelena Malkhasyan, BS; Maya Harary, MD; Anubhav Chandla; Khashayar Mozaffari, BS; Isaac Yang, MD; UCLA

**P147: MENINGIOMA GROWTH IN TRANSEXUAL PATIENTS IN THE SETTING OF GENDER-REAFFIRMING ESTROGEN THERAPY** - [Christine Mau](#), MD<sup>1</sup>; Annika Mascarenhas, MBBS<sup>1</sup>; Gavin Lockard, BS<sup>2</sup>; Jonah Gordon, BS<sup>2</sup>; Adam Alayli, BS<sup>2</sup>; Craig Hatchwell, MBBS<sup>1</sup>; Adam Wells, MBBS, PhD<sup>1</sup>; Stephen Santoreneos, MBBS, FRACS<sup>1</sup>; <sup>1</sup>Royal Adelaide Hospital; <sup>2</sup>USF Health Morsani College of Medicine

**P148: REGROWTH FACTORS FOLLOWING INCOMPLETE SURGICAL RESECTION FOR WHO GRADE I SKULL BASE MENINGIOMAS** - [Hun Ho Park](#), MD, PhD<sup>1</sup>; Jihwan Yoo, MD<sup>1</sup>; Hyeong-Cheol Oh, MD<sup>1</sup>; Yoon Jin Cha, MD, PhD<sup>1</sup>; Se Hoon Kim, MD, PhD<sup>2</sup>; Chang-Ki Hong, MD, PhD<sup>1</sup>; Kyu Sung Lee, MD, PhD<sup>1</sup>; <sup>1</sup>Gangnam Severance Hospital, Yonsei University; <sup>2</sup>Severance Hospital, Yonsei University

**P150: ATYPICAL MENINGIOMAS COMPARED TO OTHER WHO GRADE 2 MENINGIOMAS: HISTOLOGICAL FEATURES AND PROGNOSIS** - Abdulrazag Ajlan, MD, FRCSC<sup>1</sup>; Saif Al-Meshari<sup>1</sup>; [Sarah Basindwah](#)<sup>1</sup>; Majed AlJohani<sup>1</sup>; Fahad Aldhowaihy<sup>1</sup>; Yazed Aldeheem<sup>1</sup>; Ashwag Alqurashi<sup>2</sup>; <sup>1</sup>Division of Neurosurgery, College of Medicine, King Saud University, Riyadh, Saudi Arabia.; <sup>2</sup>Division of Neurosurgery, Department of Surgery, King Saud University Medical City, Riyadh, Saudi Arabia.

**P151: A 6-YEAR RETROSPECTIVE STUDY ON THE POSTOPERATIVE ADMISSION OF SKULL-BASE MENINGIOMA RESECTION PATIENTS TO THE NEUROSCIENCE WARD VS. ICU** - Ondrej Choutka, MD, FAANS<sup>1</sup>; [Shravan C Atluri](#), MHA<sup>2</sup>; <sup>1</sup>Saint Alphonsus Regional Medical Center; <sup>2</sup>Idaho College of Osteopathic Medicine

**P153: TRANSCARUNCULAR, TRANSORBITAL APPROACH FOR REPAIR OF CHALLENGING FRONTAL SINUS ENCEPHALOCELE** - [Ahmed Mohyeldin](#)<sup>1</sup>; Esther Son<sup>2</sup>; Zara Patel<sup>2</sup>; Andrea Kossler<sup>2</sup>; Nolan J Brown<sup>1</sup>; Juan Fernandez-Miranda<sup>3</sup>; <sup>1</sup>UC Irvine Department of Neurological Surgery; <sup>2</sup>Stanford University School of Medicine; <sup>3</sup>Stanford University School of Medicine Brain Tumor, Skull Base, and Pituitary Centers

**P154: SIMPLE SURGICAL REPAIR TECHNIQUE OF MIDDLE CRANIAL FOSSA ENCEPHALOCELE USING DURA SUBSTITUTE** - [Rakan Dodin](#), MD; Joseph S Domino, MD, MPH; Roukoz Chamoun, MD; University of Kansas Medical Center Department of Neurosurgery

**P155: ENDOSCOPIC ENDONASAL REPAIR OF ENCEPHALOCELES OF THE LATERAL SPHENOID SINUS: A MULTI-INSTITUTION EXPERIENCE** - [Umberto Tosi](#), MD<sup>1</sup>; Christina Jackson<sup>2</sup>; Glen D'Souza<sup>3</sup>; Sean Parsel<sup>3</sup>; Vijay Anand<sup>1</sup>; Gurston Nyquist<sup>3</sup>; Paul Gardner<sup>2</sup>; Theodore Schwartz<sup>1</sup>; <sup>1</sup>Weill Cornell Medicine; <sup>2</sup>University of Pittsburgh School of Medicine; <sup>3</sup>Thomas Jefferson University

**P156: CHALLENGES OF SUB-SPECIALITY NEUROSURGERY WITHIN THE MILITARY AND A CALL FOR PARTNERSHIP** - [Brian D Sindelar](#), MAJ<sup>1</sup>; Kristopher Hooten, LTC<sup>2</sup>; <sup>1</sup>University of North Carolina Chapel Hill; <sup>2</sup>Walter Reed National Military Medical Center

**P157: ENDOSCOPY-ASSISTED NEUROVASCULAR MICRODECOMPRESSION: COMPARATIVE EVALUATION OF THE CLASSIC RETROSIGMOID VS THE PRESIGMOID RETROLABYRINTHINE APPROACH IN NEUROVASCULAR CONFLICTS OF THE V, VII AND VIII CRANIAL NERVES** - [Fabio Greco](#), MD<sup>1</sup>; Maurizio Iacoangeli, MD, PhD<sup>2</sup>; Francesca Bonifacio, MD<sup>1</sup>; Giulio Cavicchioni, MD<sup>1</sup>; Maurizio Gladi, MD<sup>2</sup>; Denis Aiudi, MD<sup>2</sup>; Alessio Iacoangeli, MD<sup>2</sup>; Fabrizio Salvinelli, MD, PhD<sup>1</sup>; <sup>1</sup>Department of ENT Surgery, Campus Bio-Medico University and Hospital, Rome, Italy; <sup>2</sup>Department of Neurosurgery, Marche Polytechnic University and General University Hospital, Ancona, Italy

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**P158: MICROVASCULAR DECOMPRESSION FOR TRIGEMINAL AND GLOSSOPHARYNGEAL NEURALGIA IN A PATIENT WITH DIAGNOSIS OF CHARCOT-MARIE-TOOTH DISEASE** - [Vikalpa Dammavalam, DO<sup>1</sup>](#); Jason Mathew, DO<sup>1</sup>; Robert Peyster, MD<sup>2</sup>; Reza Dashti, MD, PhD<sup>3</sup>; <sup>1</sup>Department of Neurology, Stony Brook University Hospital; <sup>2</sup>Department of Radiology, Stony Brook University Hospital; <sup>3</sup>Department of Neurosurgery, Stony Brook University Hospital

**P159: ARTERIAL LASSO: CASE SERIES OF CLIP GRAFT SLING FOR MICROVASCULAR DECOMPRESSION IN LARGE VESSEL HEMIFACIAL SPASM** - Kristen M Scheitler, MD; Lucas P Carlstrom, MD, PhD; [Aaron R Plitt, MD](#); Maria Peris-Celda, MD, PhD; Michael J Link, MD; Mayo Clinic

**P160: FULL ENDOSCOPIC MICROVASCULAR DECOMPRESSION; PRELIMINARY RESULTS AND SEQUENCE OF STEP-BY-STEP ACCORDING TO SURGICAL PROFICIENCY.** - [Hyuk-Jin Oh](#); Soonchunhyang University Cheonan Hospital

**P161: A CASE THAT ENCAPSULATES THE CHALLENGES OF PRACTICING VASCULAR NEUROSURGERY IN IRAQ.** - [Yara Alfawares, BS<sup>1</sup>](#); Mustafa Ismail, MD<sup>2</sup>; Vishan P Ramanathan, BS<sup>1</sup>; Teeba A Al-Ageely, MD<sup>2</sup>; Ibrahim A Izzet, MD<sup>2</sup>; Mohammed A Al-Rawi, MD<sup>2</sup>; Norberto Andaluz, MD<sup>1</sup>; Samer S Hoz, MD<sup>1</sup>; <sup>1</sup>University Of Cincinnati; <sup>2</sup>University of Baghdad

**P162: THERAPEUTIC RESPONSE OF A PATIENT WITH AGGRESSIVE PROLACTINOMA USING PAZOPANIB: CASE REPORT AND LITERATURE REVIEW** - [Eduardo J Medina, BS<sup>1</sup>](#); Edoardo Porto, MD<sup>1</sup>; Juan Manuel Revuelta, MD, PhD<sup>1</sup>; David Bray, MD, MSc<sup>1</sup>; Bryan Morales, MD<sup>2</sup>; Stewart Neill, MD<sup>2</sup>; William Read, MD<sup>3</sup>; Gustavo Pradilla, MD<sup>1</sup>; Adriana Ioachimescu, MD<sup>4</sup>; Tomas Garzon-Muvdi, MD, MSc<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, Emory University, Atlanta, Georgia, USA; <sup>2</sup>Department of Pathology, Emory University, Atlanta, Georgia, USA; <sup>3</sup>Department of Oncology, Emory University, Atlanta, Georgia, USA; <sup>4</sup>Department of Endocrinology, Emory University, Atlanta, Georgia, USA

**P163: COCHLEAR FACIAL DEHISCENCE - DETERMINING NATURAL INCIDENCE** - Diba Nayeri; [Quinton Gopen, MD](#); UCLA

**P165: TRANSTEMPORAL MINI-TREPHINATION APPROACH: A NOVEL CORRIDOR TO EXPOSE A SEPTATED LATERAL FRONTAL SINUS** - Michael Fadel<sup>1</sup>; [Mohammad Bilal Alsavaf<sup>2</sup>](#); Eman H. Salem<sup>3</sup>; Ricardo L. Carrau<sup>2</sup>; <sup>1</sup>Department of Otolaryngology, Faculty of medicine, Ain Shams University, Cairo, Egypt; <sup>2</sup>Department of Otolaryngology-Head and Neck Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>3</sup>Department of Neurological Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>4</sup>Department of Otolaryngology, Faculty of Medicine, Mansoura University, Mansoura, Egypt

**P166: PROOF OF CONCEPT: THE USE OF CIRCULATING VIRAL DNA BLOOD TESTING IN THE MANAGEMENT OF HPV DRIVEN SINONASAL MALIGNANCY.** - [Basit A Jawad, MD](#); Janice Farlow, PhD, MD; Hilary McCrary, MD; Kyle Vankoevinger, MD; Ricardo Carrau, MD; Ohio State University

**P167: DIRECT INTRANASAL INTRATUMORAL EMBOLIZATION OF ONYX BEFORE ENDOSCOPIC ENDONASAL RESECTION OF A MASSIVE JUVENILE ANGIOFIBROMA FOR A PATIENT WITH VON WILLEBRAND'S DISEASE - A CASE REPORT AND REVIEW OF LITERATURE** - [Laura-Elisabeth Gosselin, MD<sup>1</sup>](#); Pascale Lavoie, MD<sup>2</sup>; Jean-Luc Gariépy, MD<sup>2</sup>; Vitor Mendes Pereira, MD, MSc<sup>3</sup>; Pierre-Olivier Champagne, MD, PhD<sup>4</sup>; Sylvie Nadeau, MD<sup>1</sup>; <sup>1</sup>Department of Ophtalmology and Otolaryngology - Head and Neck Surgery, Faculty of Medecine, Université Laval, Quebec City, Quebec, Canada; <sup>2</sup>Department of Neuroradiology, Faculty of Medecine, Université Laval, Quebec City, Quebec, Canada; <sup>3</sup>Division of Neuroradiology and Neurosurgery - Department of Surgery, Canada Toronto Western Hospital, Toronto, Canada; <sup>4</sup>Department of Neurosurgery, CHU de Québec, Université Laval, Pavillon Enfant-Jésus, Quebec City, Quebec, Canada

**P168: MODIOLUS-PRESERVING MODIFIED TRANSCANAL TRANSPROMONTORIAL APPROACH FOR TREATING INTERNAL AUDITORY CANAL LESIONS: A MORPHOMETRIC ANATOMICAL STUDY** - [Paolo Palmisciano, MD](#); Edward J Doyle, MD; Samer S Hoz, MD; Daryn Cass, MD; Jonathan A Forbes, MD; Ravi N Samy, MD; Norberto Andaluz, MD; Mario Zuccarello, MD; University of Cincinnati, College of Medicine

# Poster Listing (cont.)

**P169: DO THEY REALLY NEED A SHUNT? TRANSNASAL ENDOSCOPIC OPTIC NERVE SHEATH DECOMPRESSION (EONSD), TECHNIQUE AND NUANCE.** - [Romel C Santos, MD](#); Raphael B Santiago, MD; Rocco Dabecco, DO; Brandon Kaye, BS; Michal Obrzut, MD; Badih Adada, MD; Hamid Borghei-Razavi, MD; Cleveland Clinic Florida

**P170: A HARMONIZED DUAL REGISTRY ANALYSIS IDENTIFIES RACIAL INEQUITY IN SURGEON RECOMMENDATIONS FOR RESECTION OF SKULL BASE TUMORS** - Jack Butterfield; Sina Golzarian; Reid Johnson; Emily Fellows; Sanjay Dhawan; Erin Marcotte; [Andrew S Venteicher](#); University of Minnesota

**P171: FUNCTIONAL AND NEUROPSYCHOLOGICAL OUTCOMES POST GIANT OLFACTORY GROOVE MENINGIOMA RESECTION** - [Sami Khairy, MD](#); Ali Alkhaibary, MD; Ahmed Aloraidi, MD; Ahmed Alkhani, MD; King Abdulaziz Medical City- Riyadh

**P172: PATTERNS AND MANAGEMENT OF INTRACRANIAL RECURRENCE OF ESTHESIONEUROBLASTOMA** - Ali A Alattar, MD, MAS<sup>1</sup>; Hussam Abou-Al-Shaar, MD<sup>1</sup>; David T Fernandes-Cabral, MD<sup>1</sup>; Georgios A Zenonos, MD<sup>1</sup>; Eric W Wang, MD<sup>2</sup>; Carl H Snyderman, MD, MBA<sup>2</sup>; [Paul A Gardner, MD](#)<sup>1</sup>; <sup>1</sup>Department of Neurological Surgery, University of Pittsburgh School of Medicine; <sup>2</sup>Department of Otolaryngology, University of Pittsburgh School of Medicine

**P173: COMBINED ENDOSCOPIC TRANSNASAL TRANSORBITAL APPROACH FOR THE MANAGEMENT OF COMPLEX SKULL BASE AND ORBITAL TUMORS: EARLY EXPERIENCE OF A TERTIARY REFERRAL CENTER IN COLOMBIA.** - Linda Vanesa Robles Robles<sup>1</sup>; Daniel Peñaranda, MD<sup>2</sup>; [Nicolas Gil Cuevara, MD, Neurosurgeon](#)<sup>3,4</sup>; Jennifer Camargo González, MD, Oculoplastic Ophthalmologist<sup>3,5</sup>; Javier Ospina, MD, Otorhinolaryngologist<sup>3,6</sup>; <sup>1</sup>Universidad de La Sabana; <sup>2</sup>Fundación Universitaria Ciencias de la Salud; <sup>3</sup>Instituto Nacional de Cancerología; <sup>4</sup>Clínica del Country - Clinica La Colina; <sup>5</sup>San Ignacio Hospital Universitario; <sup>6</sup>Fundación Santa Fe de Bogotá

**P174: INTRAOPERATIVE USE OF INDOCYANINE GREEN IN THE EVALUATION OF ORBITAL TUMORS** - [Stephanie Thermoziar, MD](#); Daniel Kwan Lee, MD; Royce Park, MD; Kevin Heinze, MD; Victoria Lee, MD; Van Ann Tran, MD; Illinois Eye and Ear Infirmary

**P175: MODERN SURGICAL OUTCOMES FOR NON-VESTIBULAR SCHWANNOMAS: A SINGLE-CENTER SERIES** - Alexander F Haddad, MD<sup>1</sup>; Jun Y Oh, BS<sup>1</sup>; [Ramin A Morshed, MD](#)<sup>1</sup>; Michael McDermott<sup>2</sup>; Philip V Theodosopoulos, MD<sup>1</sup>; <sup>1</sup>University of California San Francisco; <sup>2</sup>Miami Neuroscience Institute

**P176: STAGED RESECTION OF GIANT MULTI-COMPARTMENTAL SKULL BASE TUMORS: A CASE SERIES** - [Stephanie K Cheok, MD](#); Jeffrey J Feng, MS; Steven Giannotta, MD; Gabriel Zada, MD; University of Southern California

**P178: MANAGEMENT OF LANGERHANS CELL HISTIOCYTOSIS OF THE LATERAL SKULL BASE** - [Neal M Jackson, MD, FACS](#); Molly Bloomenthal; Tulane University

**P179: SURGICAL MANAGEMENT OF PETROUS APEX CHOLESTEATOMAS IN THE PEDIATRIC POPULATION** - Taylor Reardon<sup>1</sup>; Morgan Turnow<sup>1</sup>; Sidney Elston<sup>1</sup>; [Nolan J Brown](#)<sup>2</sup>; Shelly Sharma<sup>3</sup>; Rohin Singh<sup>4</sup>; Michael Kortz<sup>5</sup>; Ahmed Mohyeldin<sup>2</sup>; Justin Fraser<sup>6</sup>; <sup>1</sup>University of Pikeville - Kentucky College of Osteopathic Medicine; <sup>2</sup>UC Irvine Department of Neurological Surgery; <sup>3</sup>Rowan University School of Osteopathic Medicine; <sup>4</sup>Mayo Clinic Alix School of Medicine; <sup>5</sup>University of Colorado School of Medicine; <sup>6</sup>University of Kentucky Department of Neurosurgery

**P180: PEDIATRIC NEUROENDOSCOPY FOR ANTERIOR SKULL BASE LESIONS - A SINGLE-INSTITUTION 30-DAY OUTCOMES REPORT** - Jeffrey Cheng, MD; [Raluca Gosman, BS](#); David Jang, MD; Ralph Abi Hachem, MD; Matthew Vestal, MD, MBA, MHS; Eric Thompson, MD; Duke University

**P181: SILENT CORTICOTROPH ADENOMAS DEMONSTRATE PREDILECTION FOR INVASION OF THE SPHENOID SINUS AND CLIVUS COMPARED TO OTHER SUBTYPES** - [Alexander S Himstead, MD](#); Jordan L Davies, MD; Gianna M Fote, PhD; Benjamin F Bitner, MD; Maheen Q Khan, MD; Ahmed Mohyeldin, MD, PhD; Frank P. K. Hsu, MD, PhD; Edward C Kuan, MD, MBA; University of California, Irvine

## Poster Listing (cont.)

**P182: TREATMENT MODALITIES AND OUTCOMES OF SURGERY FOR SELLAR GRANULAR CELL TUMORS AND SPINDLE CELL ONCOCYTOMAS: AN ANALYSIS OF TWO NATIONAL CANCER DATABASES** - [A. Yohan Alexander, BA](#)<sup>1</sup>; Giorgos D Michalopoulos, MD<sup>1</sup>; Panagiotis Kerezoudis, MD, MS<sup>1</sup>; Jamie J Van Gompel, MD<sup>2</sup>; Michael J Link, MD<sup>2</sup>; Maria Peris-Celda, MD, PhD<sup>2</sup>; <sup>1</sup>Mayo Clinic, Department of Neurosurgery; <sup>2</sup>Mayo Clinic, Department of Neurosurgery and Otorhinolaryngology

**P183: REPORTING OF PARTICIPANTS' RACE, ETHNICITY, SOCIOECONOMIC STATUS AND SEX IN PITUITARY SURGERY LITERATURE: A SYSTEMATIC REVIEW** - [Anahita Nourmahnad](#)<sup>1</sup>; Julian A Purrinos<sup>1</sup>; Renata Grozovsky<sup>1</sup>; Angela M Richardson<sup>2</sup>; Corinna G Levine<sup>1</sup>; <sup>1</sup>University of Miami; <sup>2</sup>Indiana University

**P184: A CASE OF PITUITARY APOPLEXY MIMICKING VIRAL MENINGITIS** - [Anne Lally, BA](#); Abigail Funari, BS; Sayak R Ghosh, BS; Alexander J Ledet, BS; Alireza Karandish, BA; Vijay Agarwal, MD; Albert Einstein College of Medicine

**P186: VARIABLES OF PITUITARY ADENOMA RECURRENCE/REGROWTH** - [Brian Hilton](#); Olufisayo Adeyina; Kanat Yalcin; Christopher Hong; Zeynep Erson-Omay; S. Bulent Omay; Yale School of Medicine

**P187: THE OUTCOMES OF SURGICAL TREATMENT VIA TRANSPHENOIDAL APPROACH FOR PATIENTS WITH NONFUNCTIONING PITUITARY ADENOMA: A SINGLE INSTITUTION'S EXPERIENCE** - [Yoon-Hee Choo](#)<sup>1</sup>; Youngbeom Seo<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, Seoul St.Mary's Hospital, The catholic University of Korea; <sup>2</sup>Yeungnam University Hospital

**P188: A PARS INTERMEDIA MACROADENOMA SUPPORTING THE ORIGIN OF SILENT CORTICOTROPH ADENOMAS** - [Mohammad Bilal Alsavaf](#)<sup>1</sup>; Guilherme Finger<sup>2</sup>; Kyle C. Wu<sup>2</sup>; Eman H. Salem<sup>3</sup>; Maria Jose Castello Ruiz<sup>4</sup>; Saniya S. Godil<sup>2</sup>; Luma Ghalib<sup>5</sup>; Ricardo L. Carrau<sup>1</sup>; Daniel M. Prevedello<sup>2</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>2</sup>Department of Neurological Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>3</sup>Department of Otolaryngology, Faculty of Medicine, Mansoura University, Mansoura, Egypt; <sup>4</sup>Department of Neurosurgery, Hospital Universitario Torrecardenas, Almería, Spain; <sup>5</sup>Department of Endocrinology, Diabetes, and Metabolism, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA.

**P189: PITUITARY ADENOMA: A CASE REPORT AND REVIEW OF THE LITERATURE** - [Emma C Celano, MD](#); Amjad N Anaizi, MD; Medstar Georgetown University Hospital

**P190: RACIAL DISPARITIES IN ENDOSCOPIC TRANSPHENOIDAL PITUITARY SURGERY: DIFFERENCES IN PRESENTATION AND OUTCOMES** - [Eric Nisenbaum, MD, MSc](#)<sup>1</sup>; Michael Ghiam, MD<sup>1</sup>; Ricardo Komotar, MD<sup>2</sup>; Michael Ivan, MD<sup>1</sup>; Roy Casiano, MD<sup>1</sup>; Jacques Morcos, MD<sup>2</sup>; Corinna Levine, MD<sup>1</sup>; Carolina Benjamin, MD<sup>2</sup>; Zoukaa Sargi, MD<sup>1</sup>; <sup>1</sup>University of Miami School of Medicine Department of Otolaryngology; <sup>2</sup>University of Miami School of Medicine Department of Neurosurgery

**P191: 200 PITUITARY ADENOMAS OPERATED BY ENDOSCOPIC ENDONASAL APPROACH. REVIEW OF OUR EXPERIENCE** - [Fernando Munoz-Hernandez, PhD](#)<sup>1</sup>; Marta Rico-Pereira<sup>2</sup>; <sup>1</sup>Hospital del Mar; <sup>2</sup>Hospital Sant Pau

**P192: CLINICAL OUTCOMES OF MICROSCOPIC VERSUS ENDOSCOPIC SURGICAL APPROACHES FOLLOWING TRANSPHENOIDAL PITUITARY TUMOR RESECTION** - [Ashwin Ghadiyaram, BS](#)<sup>1</sup>; Asha Krishnakumar, BA<sup>1</sup>; Akshay Murthy, BS<sup>1</sup>; Charles F Opalak, MD, MPH<sup>2</sup>; Theodore A Schuman, MD<sup>3</sup>; William C Broaddus, MD, PhD<sup>4</sup>; <sup>1</sup>Virginia Commonwealth University School of Medicine; <sup>2</sup>Prisma Health Neurosurgery; <sup>3</sup>Virginia Commonwealth University Department of Otolaryngology; <sup>4</sup>Virginia Commonwealth University Department of Neurosurgery

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**P193: OUTCOMES OF REDO ENDOSCOPIC ENDONASAL SKULL BASE SURGERY FOR RECURRENT OR RESIDUAL NONFUNCTIONING PITUITARY ADENOMAS: AN ANALYSIS OF 93 CONSECUTIVE PATIENTS AT THE UNIVERSITY OF PITTSBURGH MEDICAL CENTER** - [Hussein M Abdallah, BS, MEng<sup>1</sup>](#); Zachary C Gersey, MD, MS<sup>2</sup>; Zane N Gray<sup>1</sup>; David N Fogg<sup>1</sup>; James E Duehr<sup>1</sup>; Hussam Abou-Al-Shaar, MD<sup>2</sup>; Keerthi Arani, MD<sup>3</sup>; Tonya Stefko, MD<sup>4</sup>; Gabrielle R Bonhomme, MD<sup>4</sup>; Pouneh Fazeli<sup>5</sup>; Hussain Mahmud, MD<sup>5</sup>; Eric W Wang<sup>6</sup>; Carl H Snyderman, MD, MBA<sup>6</sup>; Paul A Gardner, MD<sup>2</sup>; Georgios A Zenonos, MD<sup>2</sup>; <sup>1</sup>University of Pittsburgh School of Medicine; <sup>2</sup>University of Pittsburgh Medical Center, Department of Neurological Surgery; <sup>3</sup>University of Pittsburgh Medical Center, Department of Radiology; <sup>4</sup>University of Pittsburgh Medical Center, Department of Ophthalmology; <sup>5</sup>University of Pittsburgh Medical Center, Department of Endocrinology; <sup>6</sup>University of Pittsburgh Medical Center, Department of Otolaryngology

**P194 - The pituitary apoplexy: our experiences and review from literature last century, surgery timing controversies, histology problem, outcomes** - [Jan Hemza, MD, PhD et PhD, MPA](#); Faculty Hospital at saint Ann, Dpt. of Neurosurgery

**P195: LONG-TERM ENDOCRINE OUTCOMES OF APOPLECTIC PITUITARY ADENOMAS AFTER MICROSURGICAL RESECTION: CASE SERIES AND REVIEW OF THE LITERATURE** - [John Souter, MD<sup>1</sup>](#); James Nie, BS<sup>1</sup>; Sepideh Amin-Hanjani, MD<sup>2</sup>; <sup>1</sup>University of Illinois - Chicago; <sup>2</sup>University Hospitals - Case Western Reserve University & University of Illinois - Chicago

**P196: THE IMPACT OF GENOMIC CHARACTERIZATION FOR PITUITARY ADENOMA CLASSIFICATION** - [Kanat Yalcin](#); Brian Hilton; Olufisayo Adeyina; Christopher Hong; S. Bulent Omay; Zeynep Erson-Omay; Yale School of Medicine

**P197: NATURAL HISTORY OF LONG-TERM OBSERVED NON-FUNCTIONING PITUITARY ADENOMAS: 434 CONSECUTIVE CASES OF A SINGLE INSTITUTE** - [Ho Kang, MD](#); Seung Shin Park, MD; Jung Hee Kim, MD, PhD; Yong Hwy Kim, MD, PhD; Seoul National University Hospital

**P198: SKULL BASE REGISTRIES: BUILDING CONSENSUS** - [Kara A Parikh, MD<sup>1</sup>](#); Motiwala Mustafa, MD<sup>1</sup>; Sanjeet V Rangarajan, MD<sup>2</sup>; Donato R Pacione, MD<sup>3</sup>; Erin McKean, MD<sup>4</sup>; Varun Kshetry, MD<sup>5</sup>; Andre Beer-Furlan, MD<sup>6</sup>; Claudia Kirsch, MD<sup>7</sup>; L. Madison Michael, MD<sup>1</sup>; Jeffrey Sorenson, MD<sup>1</sup>; <sup>1</sup>University of Tennessee Health Science Center - Memphis, Department of Neurosurgery; <sup>2</sup>University of Tennessee Health Science Center - Memphis, Department of Otolaryngology; <sup>3</sup>New York University Langone Health; <sup>4</sup>University of Michigan; <sup>5</sup>Cleveland Clinic; <sup>6</sup>Moffitt Cancer Center - Tampa; <sup>7</sup>Yale Department of Radiology and Biomedical Imaging

**P199: PITUITARY APOPLEXY IN THE SETTING OF ACTH-SECRETING ADENOMA: SYSTEMATIC REVIEW AND ILLUSTRATIVE CASE** - [Kara A Parikh, MD<sup>1</sup>](#); Jordan T Roach<sup>1</sup>; Eugene Sansoni, MD<sup>2</sup>; Boucher B Andrew, MD<sup>1</sup>; <sup>1</sup>University of Tennessee Health Science Center - Memphis, Department of Neurosurgery; <sup>2</sup>University of Tennessee Health Science Center - Memphis, Department of Otolaryngology

**P200: PITUITARY APOPLEXY AFTER CARDIAC SURGERY: CASE REPORT** - Linda Vanesa Robles Robles, MD<sup>1</sup>; Carlos Alberto Lindado Pacheco, MD, Neurosurgeon<sup>2</sup>; Laura Catalina Diaz Salas, Neurosurgeon<sup>2</sup>; Juan Carlos Perez Rodriguez, Neurosurgeon<sup>2</sup>; Jaime Eduardo Becerra Ospina, Neurosurgeon<sup>2</sup>; Andres Urrego Nieto, MD<sup>3</sup>; Aranza Helena Tafur Borrero, MD<sup>3</sup>; Melissa Mayo, MD, Otolaryngologist<sup>3</sup>; [Raul Ramirez Grueso, MD, Neurosurgeon<sup>3</sup>](#); <sup>1</sup>Universidad de La Sabana; <sup>2</sup>Pontificia Universidad Javeriana; <sup>3</sup>Universidad Nacional de Colombia

**P201: SELLAR METASTATIC NEUROENDOCRINE CARCINOMA OF UNKNOWN ORIGIN: A CASE REPORT AND REVIEW OF THE LITERATURE** - [Miner N Ross, MD<sup>1</sup>](#); Cierra N Harper, BS<sup>2</sup>; Matthew D Wood, MD<sup>1</sup>; Mathew Geltzeiler, MD<sup>1</sup>; Maria Fleseriu, MD<sup>1</sup>; Olabisi Sanusi, MD<sup>1</sup>; <sup>1</sup>Oregon Health & Science University; <sup>2</sup>Howard University College of Medicine

**P202: EVALUATION OF TRENDS IN TRANSSPHENOIDAL SURGERY FOR PITUITARY ADENOMAS USING A NATIONWIDE PRIVATE INSURANCE DATABASE** - [Sara Saleh, MD](#); Cormac O Maher, MD; Erin L McKean, MD, MBA; University of Michigan



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**P204: THE READABILITY OF THE ANTERIOR SKULL BASE SURGERY DISEASE-SPECIFIC QUALITY OF LIFE SURVEYS AND ALTERNATIVE TEXT** - [Abdullah Zeatoun, MD](#); Meredith Lamb, BS; Taylor Stack-Pyle, BS; Sulgi Kim, BS; Omura Kazuhiro, MD, PhD; Erin Lopez, MD; Daniel Alicea, MD; Charles Ebert Jr., MD, MPH; Brent Senior, MD; Cristine Klatt-Cromwell, MD; Adam Kimple, MD, PhD; Brian Thorp, MD; University of North Carolina at Chapel Hill

**P205: SINONASAL OUTCOMES FOLLOWING ENDOSCOPIC ENDONASAL SKULL BASE SURGERY** - [Nasser Lubega, BSc](#)<sup>1</sup>; Aviv Spillinger, MD<sup>2</sup>; Nainika Nanda, MD<sup>2</sup>; Timothy M McCulloch, MD, FACS<sup>2</sup>; Azam S Ahmed, MD, FAANS, FACS<sup>3</sup>; Ian J Koszewski, MD, FACS, FARS<sup>2</sup>; <sup>1</sup>University of Wisconsin School of Medicine and Public Health; <sup>2</sup>Division of Otolaryngology-Head and Neck Surgery, Department of Surgery, University of Wisconsin; <sup>3</sup>Department of Neurological Surgery, University of Wisconsin

**P206: IMPACT OF MARITAL STATUS ON POST-OPERATIVE OUTCOMES AFTER ENDOSCOPIC ENDONASAL SKULL BASE SURGERY** - Rebecca L Rohde, MD, MPH; Lauren M North, MD; Sarah Cornell, MS, CCRP; [Anna Berezovsky, MD](#); Christopher M Long, MD; Nathan Zwagerman, MD; Medical College of Wisconsin

**P207: SUBFASCIAL SOFT TISSUE DISSECTION IN PTERIONAL CRANIOTOMIES: A TECHNICAL NOTE.** - Abdulrazag Ajlan, MD, FRCSC<sup>1</sup>; [Sarah Basindwah](#)<sup>1</sup>; Ashwag Alqurashi<sup>2</sup>; Sherif Elwatidy, FRCNS, PhD<sup>1</sup>; <sup>1</sup>Division of Neurosurgery, College of Medicine, King Saud University, Riyadh, Saudi Arabia.; <sup>2</sup>Division of Neurosurgery, Department of Surgery, King Saud University Medical City, Riyadh, Saudi Arabia.

**P208: RADIATION-INDUCED VESTIBULAR SCHWANNOMAS: INSTITUTIONAL CASE SERIES** - [Lucas P Carlstrom, MD, PhD](#); Colin L Driscoll, MD; Matthew L Carlson, MD; Brian A Neff, MD; Michael J Link, MD; Jamie J Van Gompel, MD; Mayo Clinic

**P209: GAMMA KNIFE RADIOSURGERY FOR MENINGIOMAS OF THE CONFLUENCE OF THE FALX AND TENTORIUM** - [Arka N Mallela, MD, MS](#); Hussein Abdallah, BA; Zhishuo Wei, BA; Hussam Abou-Al-Shaar, MD; Ajay Niranjani, MD, MBA; L Dade Lunsford, MD; University of Pittsburgh, School of Medicine

**P210: A SINGLE INSTITUTION CASE SERIES OF GLOMANGIOPERICYTOMA** - [Abdullah Zeatoun, MD](#); Sulgi Kim, BS; Taylor Stack-Pyle, BS; Meredith Lamb, BS; Omura Kazuhiro, MD, PhD; Erin Lopez; Daniel Alicea, MD; Adam Kimple, MD, PhD; Brian Thorp, MD; Charles Ebert Jr., MD, MPH; Cristine Klatt-Cromwell; Brent Senior, MD; University of North Carolina at Chapel Hill

**P211: METASTATIC RENAL CELL CARCINOMA OF THE SINONASAL CAVITIES AND SKULL BASE: EXPERIENCE AT A SINGLE INSTITUTION** - [Davis P Argersinger, BS](#)<sup>1</sup>; Joshua D Smith, MD<sup>2</sup>; Stephen E Sullivan, MD<sup>3</sup>; Erin L McKean, MD<sup>2</sup>; <sup>1</sup>University of Michigan Medical School; <sup>2</sup>University of Michigan Department of Otolaryngology-Head and Neck Surgery; <sup>3</sup>University of Michigan Department of Neurosurgery

**P212: OLFACTORY CARCINOMA SIMILARITIES AND DISTINCTIONS TO OLFACTORY NEUROBLASTOMA: A CASE REPORT AND LITERATURE REVIEW** - [Mohammad Bilal Alsavaf](#)<sup>1</sup>; Eman H. Salem<sup>2</sup>; Basit Jawad<sup>1</sup>; Kittichai Mongkolkul<sup>3</sup>; Daniel M. Prevedello<sup>4</sup>; Bruce W. Wenig<sup>5</sup>; Ricardo L. Carrau<sup>2</sup>; <sup>1</sup>Department of Otolaryngology-Head and Neck Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>2</sup>Department of Otolaryngology, Faculty of Medicine, Mansoura University, Mansoura, Egypt; <sup>3</sup>Department of Otolaryngology-Head and Neck Surgery, Rajavithi Hospital, The College of Medicine of Rangsit University, Bangkok, Thailand; <sup>4</sup>Department of Neurological Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>5</sup>Department of Pathology, Moffitt Cancer Center, Tampa, FL

**P213: SINONASAL NEUROENDOCRINE CARCINOMA: IS INDUCTION CHEMOTHERAPY AND DEFINITIVE CHEMORADIATION ASSOCIATED WITH WORSE OUTCOMES? - A CASE SERIES** - [Andrey Filimonov, MD, PharmD](#); Lauren North, MD; Kelly Daniels, MD; Muhammad S Ali, MD; Georgios Zenonos, MD; Paul Gardner, MD; Carl H Snyderman, MD; Eric W Wang, MD; University of Pittsburgh

**P214: RECURRENCE PATTERN AND OVERALL TREATMENT OUTCOME OF OLFACTORY NEUROBLASTOMA FROM A SINGLE MEDICAL CENTER** - [Sung-Woo Cho](#); Chae-Seo Rhee, MD, PhD; Tae-Bin Won, MD, PhD; Seoul National University Bundang Hospital



# Poster Listing (cont.)

**P215: LONG-TERM OUTCOME OF PATIENTS WITH SINONASAL ADENOID CYSTIC CARCINOMA AND ADENOCARCINOMA** - [Isaac Wasserman, MD](#)<sup>1</sup>; Lauren E Miller, MD, MBA<sup>1</sup>; Roy Xiao, MD, MS<sup>1</sup>; Anjay P Shah<sup>2</sup>; Stacey T Gray, MD<sup>1</sup>; Derrick T Lin, MD<sup>1</sup>; <sup>1</sup>Massachusetts Eye and Ear; <sup>2</sup>University of Florida

**P216: PRECISION DELIVERY OF ADJUVANT PROTON BEAM RADIOTHERAPY FOR OLFACTORY NEUROBLASTOMA - THE IMPORTANCE OF PERI-OPERATIVE MANAGEMENT AND SINUS CARE** - [Jyotsna Bhudia](#); Anna Thompson; Ruheena Mendes; Callum Gillies; Dawn Carnell; UCLH

**P217: SIMULTANEOUS PRIMARY SINONASAL ADENOCARCINOMA AND BREAST ADENOCARCINOMA: A CASE REPORT** - [Mannat Sandhu, BS](#)<sup>1</sup>; Patrick Malafrente, MD<sup>2</sup>; Lindsey Ryan, MD<sup>3</sup>; Mark Tabor, MD<sup>3</sup>; Siviero Agazzi, MD<sup>4</sup>; Kunal Vakharia, MD<sup>4</sup>; Harry Van Lovren, MD<sup>4</sup>; Arjun Parasher, MD<sup>3</sup>; <sup>1</sup>University of South Florida Morsani College of Medicine; <sup>2</sup>Ruffolo, Hooper, and Associates Pathology; <sup>3</sup>University of South Florida Department of Otolaryngology; <sup>4</sup>University of South Florida Department of Neurosurgery

**P218: MANAGEMENT OF NUT CARCINOMA OF THE SINONASAL TRACT: A CASE REPORT AND REVIEW OF THE LITERATURE** - [Taylor Stack-Pyle, BS](#); Abdullah Zeatoun, MD; Sulgi Kim, BS; Meredith Lamb, BS; Charles S Ebert Jr, MD, MPH; Cristine N Klatt-Cromwell, MD; Jeffrey M Blumberg, MD; Brent A Senior, MD; Adam J Kimpl, MD, PhD; Brian Thorp, MD; University of North Carolina at Chapel Hill

**P219: MIXED OLFACTORY NEUROBLASTOMA-CARCINOMA TUMOR: A CASE REPORT AND REVIEW OF THE LITERATURE OF A RARE ANTERIOR SKULL BASE TUMOR.** - Edmund Howe, BS<sup>1</sup>; [Juan C Yanez-Siller, MD, MPH](#)<sup>2</sup>; Michael Ortiz, MD<sup>2</sup>; Douglas Miller, MD, PhD<sup>2</sup>; Steven Carr, MD<sup>2</sup>; Laura Dooley, MD<sup>2</sup>; <sup>1</sup>University of Missouri - School of Medicine; <sup>2</sup>University of Missouri - Columbia

**P220: MODIFIED DICLE FLAP; A NOVEL TECHNIQUE FOR SKULL BASE RECONSTRUCTION** - Michael Fadel<sup>1</sup>; [Mohammad Bilal Alsavaf](#)<sup>2</sup>; Eman H. Salem<sup>3</sup>; Ramazan Gun<sup>2</sup>; Daniel M. Prevedello<sup>4</sup>; Kyle VanKoeveering<sup>2</sup>; Douglas Hardesty<sup>4</sup>; Kathleen Kelly<sup>2</sup>; Ricardo L. Carrau<sup>2</sup>; <sup>1</sup>Department of Otolaryngology, Faculty of medicine, Ain Shams University, Cairo, Egypt; <sup>2</sup>Department of Otolaryngology-Head and Neck Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA; <sup>3</sup>Department of Otolaryngology, Faculty of Medicine, Mansoura University, Mansoura, Egypt; <sup>4</sup>Department of Neurological Surgery, Wexner Medical Center at The Ohio State University, Columbus, Ohio, USA

**P221: TAILORED RECONSTRUCTION STRATEGY FOR THE PREVENTION OF CEREBROSPINAL FLUID (CSF) LEAKAGE AFTER ENDOSCOPIC ENDONASAL TRANSCLIVAL APPROACH** - [Young-Hoon Kim, MD, PhD](#); Chang-Ki Hong, MD, PhD; Asan Medical Center

**P222: NASOSEPTAL FLAP RE-USE FOR RECONSTRUCTION IN REVISION ENDOSCOPIC SKULL BASE SURGERY** - [Kevin Grafmiller, MD](#); Marvin Bergsneider, MD; Marilene B Wang, MD; UCLA

**P223: EFFICACY OF HYDROXYAPATITE USING SKULL BASE RECONSTRUCTION PERFORMED BY NEUROSURGEONS IN THE LEARNING CURVE** - [Kyung Hwan Kim, MD, PhD](#)<sup>1</sup>; Youngbeom Seo, MD, PhD<sup>2</sup>; Seon-Hwan Kim, MD, PhD<sup>1</sup>; <sup>1</sup>Chungnam National University Hospital, Chungnam National University School of Medicine; <sup>2</sup>Yeungnam University Hospital, Yeungnam University College of Medicine

**P224: CLINICAL IMPACT OF HYDROXYAPATITE ON THE OUTCOME OF SKULL BASE RECONSTRUCTION FOR INTRAOPERATIVE HIGH-FLOW CSF LEAK: A PROPENSITY SCORE MATCHING ANALYSIS** - [Shin Heon Lee](#)<sup>1</sup>; Chang-Min Ha<sup>2</sup>; Sang Duk Hong<sup>3</sup>; Jung Won Choi<sup>2</sup>; Ho Jun Seol<sup>2</sup>; Do-Hyun Nam<sup>2</sup>; Jung-Il Lee<sup>2</sup>; Doo-Sik Kong<sup>2</sup>; <sup>1</sup>Department of Neurosurgery, Chung-Ang University Hospital, Seoul, South Korea; <sup>2</sup>Department of Neurosurgery, Samsung Medical Center, Seoul, South Korea; <sup>3</sup>Department of Otorhinolaryngology-Head and Neck Surgery, Samsung Medical Center, Seoul, South Korea

**P225: A CASE REPORT OF CHONDROMYXOID FIBROMA OF THE SKULL BASE** - [Abdullah Zeatoun, MD](#); Taylor Stack-Pyle, BS; Meredith Lamb, BS; Sulgi Kim, BS; Omura Kazuhiro, MD, PhD; Erin Lopez, MD; Daniel Alicea, MD; Cristine Klatt-Cromwell, MD; Charles Ebert Jr., MD, MPH; Brent Senior, MD; Adam Kimple, MD, PhD; Brian Thorp; University of North Carolina at Chapel Hill

**P226: SURGICAL TREATMENT OF POSTERIOR FOSSA HEMANGIOBLASTOMAS** - [Andrés Cervio, PhD](#); Facundo Villamil; Mauro Ruella; Rubén Mormandi; FLENI

# Poster Listing (cont.)

**P227: TECHNIQUE FOR ACCESS OF PETROUS TIP FOR EXPANDED ANTERIOR PETROSECTOMY** - [Collin Liu, MD](#)<sup>1</sup>; Alexander Evins, MD<sup>2</sup>; Daniel Surdell<sup>1</sup>; William Thorell, MD<sup>1</sup>; Philip Stieg, MD<sup>2</sup>; Antonio Bernardo, MD<sup>2</sup>; <sup>1</sup>University of Nebraska Medical Center; <sup>2</sup>Weill Cornell Medical Center

**P228: THE USE OF APREPITANT TO REDUCE POSTOPERATIVE NAUSEA AND VOMITING IN ENDOSCOPIC TRANSSPHEOIDAL PITUITARY SURGERY** - [Daniel J Lee, MD, FRCSC](#); Jennifer E Douglas, MD; Jeremy Chang; Michael A Kohanski, MD, PhD; James N Palmer, MD; Nithin D Adappa, MD; University of Pennsylvania

**P229: ENDOSCOPIC RESECTION OF JUVENILE NASOPHARYNGEAL ANGIOFIBROMA: A SINGLE INSTITUTION EXPERIENCE** - [Devon M Durham, MSII](#); Arjun Parasher, MD; Mark H Tabor, MD; University of South Florida, Department of Otolaryngology- Head and Neck Surgery, Sinus and Endoscopic Skull Base Surgery Division

**P230: ONE-STAGE SURGERY FOR MULTIPLE INTRACRANIAL [SKULL BASE] TUMORS** - Víctor Alcocer Barradas, MD; [Gabriela García Nieto, MD](#); National Institute of Neurology and Neurosurgery

**P231: SPONTANEOUS FACIAL CANAL CEREBROSPINAL FLUID LEAK IN A CHILD** - Emily K Gall, MD<sup>1</sup>; [Gabriella A Ojeda-Badillo](#)<sup>2</sup>; Andrew R Scott<sup>1</sup>; <sup>1</sup>Tufts Medical Center; <sup>2</sup>Tufts University School of Medicine

**P232: MIDDLE CRANIAL FOSSA APPROACH FOR ENCEPHALOCELE REPAIR AFTER CANAL WALL DOWN MASTOIDECTOMY** - [Emily K Gall](#); Kathryn Y Noonan; Mark Vecchiotti; Tufts Medical Center

**P233: CLASSIFICATION SYSTEM FOR SELLAR SUPRASellar EPIDERMOID TUMORS** - [Eduardo J Medina, BS](#); Edoardo Porto, MD; Juan Manuel Revuelta, MD, PhD; Ali Alawieh, MD, PhD; Gustavo Pradilla, MD; Tomas Garzon-Muvdi, MD, MSc; Department of Neurosurgery, Emory University, Atlanta, Georgia, USA

**P234: THE SITTING POSITION IN SKULL BASE SURGERY: ANALYSIS OF THE RISKS AND SURGICAL OUTCOMES IN A CONTEMPORARY SERIES** - [Eric T Quach](#); Amir R Dehdashti; North Shore University Hospital

**P235: DELAYED PRESENTATION OF MASSIVE SKULL BASE CHOLESTEATOMA FOLLOWING EAR OVERCLOSURE: THE IMPORTANCE OF RADIOGRAPHIC SURVEILLANCE** - [Ilana Fischer](#); Sarah Dermody, MD; Yena Kang; Emily Stucken, MD; University of Michigan

**P236: PATIENT SOCIOECONOMIC STATUS MEASURED BY AREA DEPRIVATION INDEX (ADI) WAS NOT PREDICTIVE OF CANCELLATION LIKELIHOOD IN ENDOSCOPIC ENDONASAL SKULL BASE SURGERY** - [Jakub Jarmula, BA](#)<sup>1</sup>; Tianqi Xiao, BS<sup>1</sup>; Roger Murayi, MD<sup>1</sup>; Sara Alsulaimani, MD<sup>1</sup>; Neal Godse, MD<sup>2</sup>; Erion Junior de Andrade, MD, MSc<sup>1</sup>; Varun R Kshetry, MD<sup>1</sup>; Troy D Woodard, MD<sup>2</sup>; Raj Sindwani, MD<sup>2</sup>; Pablo F Recinos, MD<sup>1</sup>; <sup>1</sup>Section of Skull Base Surgery, Rose Ella Burkhardt Brain Tumor and Neuro-Oncology Center, Neurological Institute, Cleveland Clinic, Cleveland, OH; <sup>2</sup>Section of Rhinology, Sinus & Skull Base Surgery, Head & Neck Institute, Cleveland Clinic, Cleveland, OH

**P237: NOVEL REPAIR OF EXTENSIVE SKULL BASE HYPERPNEUMATIZATION WITH ASSOCIATED PNEUMOCELE AND PNEUMATOCELE** - Tejesh Guddanti; Jan Bian; [Kadie M Nausha, MD](#); Avigeet Gupta, MD; Ian F Dunn, MD; Alexander G Bien, MD; The University of Oklahoma Health Sciences Center

**P238: TRANSORBITAL SKULL BASE SURGERY: EXPERIENCE OF AN ORBITAL SURGEON & MULTIDISCIPLINARY TEAM AT A TERTIARY EYE CENTER** - Andrea Kossler<sup>1</sup>; Filippos Vingopoulos<sup>2</sup>; [Karam Asmaro](#)<sup>1</sup>; Fernandez-Miranda Juan<sup>1</sup>; Clara Men<sup>1</sup>; <sup>1</sup>Stanford School of Medicine; <sup>2</sup>Harvard School of Medicine

**P239: FACIAL NERVE DECOMPRESSION IN THE TREATMENT OF PERIPHERAL FACIAL NERVE PALSY** - [Ki-Hong Chang, MD](#)<sup>1</sup>; Subin Kim, MD<sup>1</sup>; Kyung-Ho Park, MD<sup>2</sup>; Jeong-Hoon Oh, MD<sup>3</sup>; <sup>1</sup>Eunpyeong St. Mary's Hospital, The Catholic University of Korea, Seoul, Korea; <sup>2</sup>Seoul St. Mary's Hospital, The Catholic University of Korea, Seoul, Korea; <sup>3</sup>Pucheon St. Mary's Hospital, The Catholic University of Korea, Seoul, Korea

# Poster Listing (cont.)

**P240: SKULL BASE GIANT CELL TUMOR: A CASE REPORT AND LITERATURE REVIEW** - [Maíra Couto, MD<sup>1</sup>](#); Carlos Lobão, Dr<sup>1</sup>; Daniele Costa, MD<sup>2</sup>; <sup>1</sup>Ophir Loyola Hospital; <sup>2</sup>Porto Dias Hospital

**P241: SKULL BASE AND CRANIO-FACIAL APPROACHES TO MINIMIZE APPROACH-RELATED MORBIDITY FOR INTRACEREBRAL COMPLEX NEOPLASTIC AND VASCULAR LESIONS.** - [Maurizio Gladi, MD<sup>1</sup>](#); Fabio Greco, MD<sup>2</sup>; Alessandro Di Rienzo, MD<sup>1</sup>; Maria Rossella Fasinella, MD<sup>1</sup>; Mara Capece, MD<sup>1</sup>; Omar Porrini Prandini, MD<sup>1</sup>; Roberto Ricca, MD<sup>1</sup>; Alessio Iacoangeli, MD<sup>1</sup>; Fabrizio Salvinelli, MD, PhD<sup>2</sup>; Maurizio Iacoangeli, MD, PhD<sup>1</sup>; <sup>1</sup>Department of Neurosurgery, Marche Polytechnic University and General University Hospital, Ancona, Italy; <sup>2</sup>Department of ENT Surgery, Campus Bio-Medico University and Hospital, Rome, Italy

**P242: EARLY EXPERIENCE WITH THE ENDOSCOPIC TRANSORBITAL APPROACH IN A PROVINCIAL TERTIARY HOSPITAL** - [Youngbeom Seo](#); Department of Neurosurgery, Yeungnam University Hospital

**P244: LINAC-BASED STEREOTACTIC BODY RADIATION THERAPY FOR BENIGN TUMORS OF THE SKULL BASE** - [Anna Lee](#); He C Wang; Xin A Wang; Amy C Moreno; Jay P Reddy; Michael T Spiotto; David I Rosenthal; Shaan M Raza; Franco DeMonte; Paul W Gidley; Marc-Elie Nader; Shirley Y Su; Ehab Y Hanna; Adam S Garden; Jack Phan; University of Texas MD Anderson Cancer Center

**P245: LINAC RADIOSURGERY OF GLOMUS JUGULARE WITH DOSIMETRIC COMPARISON TO GAMMA KNIFE** - [Alessandro Valderrama, BS<sup>1</sup>](#); Long Di, MD<sup>2</sup>; Elizabeth Bossart, PhD<sup>1</sup>; Adrien A Eshraghi, MD<sup>3</sup>; Eric A Mellon, MD, PhD<sup>1</sup>; <sup>1</sup>University of Miami, Department of Radiation Oncology; <sup>2</sup>University of Miami, Department of Neurosurgery; <sup>3</sup>University of Miami, Department of Otolaryngology

**P247: COMPARISON OF LONG-TERM TUMOR CONTROL AND SYMPTOM OUTCOMES FOLLOWING MICROSURGICAL RESECTION OR GAMMA KNIFE RADIOSURGERY FOR INTRACRANIAL TRIGEMINAL SCHWANNOMA: THE MAYO CLINIC EXPERIENCE** - [Rima Rindler, MD<sup>1</sup>](#); Rahul Kumar, MD, PhD<sup>2</sup>; Hana Hallak<sup>2</sup>; Ryan Naylor, MD, PhD<sup>2</sup>; Pierce Peters, MD<sup>2</sup>; Ashley Nassiri, MD, MBA<sup>3</sup>; Colin Driscoll, MD<sup>2</sup>; Michael Link, MD<sup>2</sup>; <sup>1</sup>Sierra Neurosurgery Group; <sup>2</sup>Mayo Clinic; <sup>3</sup>University of Colorado

**P248: NASOSEPTAL FLAP SKILLS TRAINING USING 3D SIMULATION AND A CADAVERIC MODEL** - [Pakjira Naksen, MD<sup>1</sup>](#); Anupong Sirirungreung, MD<sup>2</sup>; Anupong Kantiwong, MD<sup>3</sup>; Eman H. Salem, MD<sup>1</sup>; Mohammad Bilal Alsavaf, MD<sup>1</sup>; Michael Fadel, MD<sup>1</sup>; Bradley A. Otto, MD<sup>1</sup>; Kyle k. VanKoevinger, MD<sup>1</sup>; Kajohnkiat Prasittivatechakool, MD<sup>4</sup>; Ricardo L. Carrau, MD<sup>1</sup>; <sup>1</sup>Department of Otolaryngology—Head and Neck Surgery, The James Cancer Hospital at the Wexner Medical Center of The Ohio State University, Columbus, Ohio, USA; <sup>2</sup>Department of Military and Community Medicine, Phramongkutklao College of Medicine, Bangkok, Thailand; <sup>3</sup>Medical Education Unit, Phramongkutklao College of Medicine, Bangkok, Thailand; <sup>4</sup>Department of Otolaryngology, Phramongkutklao Hospital, Bangkok, Thailand

**P249: A NOVEL METHOD FOR ESTIMATION OF THE INTRA-AXIAL EXPOSURE USING QUANTITATIVE NEUROANATOMY AND 3D MODELLING** - [Irakliy Abramov](#); Yuan Xu; Lena Mary Houlihan; Grant Koskay; Dakota Graham; Giancarlo Mignucci-Jimenez; Nicolas Gonzalez-Romo; Michael T Lawton; Mark C Preul; Barrow Neurological Institute

**P250: ENDOLYMPHATIC SAC TUMOR (ELST) ASSOCIATED WITH VON HIPPEL-LINDAU (VHL) DISEASE. CASE PRESENTATION.** - Juan S Ramirez-Moreno, MD<sup>1</sup>; Franklin O Perez-Quijano, MD<sup>2</sup>; [Nathalia Velasquez, MD<sup>3</sup>](#); Oscar H Ramirez-Moreno, MD<sup>2</sup>; <sup>1</sup>Sanitas University Foundation; <sup>2</sup>Comfamiliar Clinic. Pereira, Colombia; <sup>3</sup>Cleveland Clinic Florida

**P251: ONCE BENIGN... NOW MALIGNANT: MODERN MANAGEMENT RECOMMENDATIONS FOR MIXED NEUROENDOCRINE TUMORS OF THE MIDDLE EAR (MEMENET)** - [Neal M Jackson, MD, FACS](#); Erika Moxley; Tulane University

**P252: USE OF A WEB-BASED DATABASE TOOL TO CREATE ACCESSIBLE PREOPERATIVE CHECKLISTS AND TRACK OPERATIVE METRICS** - [Alexander N Duffy, MD<sup>1</sup>](#); Maria Armache, MD<sup>1</sup>; Ramez Phillips, MD<sup>1</sup>; James J Evans, MD<sup>2</sup>; Elina Toskala, MD, PhD, MBA<sup>1</sup>; Marc R Rosen, MD<sup>1</sup>; Gurston G Nyquist, MD<sup>1</sup>; Mindy R Rabinowitz, MD<sup>1</sup>; <sup>1</sup>Department of Otolaryngology, Thomas Jefferson University Hospital; <sup>2</sup>Department of Neurosurgery, Thomas Jefferson University Hospital

## Poster Listing (cont.)

**P253: LITIGATION RATES FOR ENDOSCOPIC SINUS SURGERY OF DIFFERENT OTOLARYNGOLOGY FELLOWSHIPS** - [Cassidy Anderson, BS](#); Abigail Funari, BS; Isabella Flaquer, BS; Isabella Pecorari, BS; Nadeem Akbar, MD; Patrick Colley, MD; Vijay Agarwal, MD; Albert Einstein College of Medicine

**P254: BRINGING CADAVERS INTO THE METAVERSE: VIRTUAL REALITY IN LEARNING HEAD AND NECK ANATOMY: RESIDENT AND FACULTY PERCEPTIONS** - Elizabeth N Liao<sup>1</sup>; Kendyl Naugle<sup>1</sup>; Nina Zhao<sup>2</sup>; Katrin Jaradeh<sup>1</sup>; Roberto Rodriguez Rubio<sup>1</sup>; [Ivan El-Sayed<sup>1</sup>](#); <sup>1</sup>University of California, San Francisco; <sup>2</sup>University of California, Davis

**P255: TRAINING IN ENDOSCOPIC ENDONASAL NEUROSURGICAL PROCEDURES: A SYSTEMATIC REVIEW OF THE AVAILABLE SETTINGS** - [Hanyao Sun, BS<sup>1</sup>](#); Edoardo Porto, MD<sup>1</sup>; David P. Bray, MD<sup>1</sup>; J. Manuel Revuelta Barbero, MD, PhD<sup>2</sup>; John M DelGaudio, MD<sup>1</sup>; Emily Barrow, MD<sup>1</sup>; Oswaldo A. Henriquez, MD<sup>1</sup>; Tomas Garzon Muvdi, MD<sup>1</sup>; C. Arturo Solares, MD<sup>1</sup>; Gustavo Pradilla, MD<sup>1</sup>; <sup>1</sup>Emory University; <sup>2</sup>Medical College of Georgia - Augusta University

**P257: THE IMPACT OF DUTY HOUR RESTRICTIONS ON NEUROSURGICAL TRAINING: AFTERMATH OF THE 2003 ACGME RULING** - Joshua Kurtz<sup>2</sup>; Alexander Himstead<sup>1</sup>; [Nolan J Brown<sup>1</sup>](#); Bayard Wilson<sup>2</sup>; Shane Shahrestani<sup>3</sup>; Julian Gendreau<sup>4</sup>; Ien Li<sup>2</sup>; Brian Lien<sup>1</sup>; Seth Ransom<sup>1</sup>; Ahmed Mohyeldin<sup>1</sup>; Frank Hsu<sup>1</sup>; Isaac Yang<sup>2</sup>; <sup>1</sup>UC Irvine Department of Neurological Surgery; <sup>2</sup>UCLA Department of Neurological Surgery; <sup>3</sup>Keck School of Medicine of USC; <sup>4</sup>Johns Hopkins Whiting School of Engineering

**P258: A HIERARCHICAL TASK ANALYSIS FOR ENDOSCOPIC RESECTION OF PITUITARY ADENOMAS.** - [Shireen Samargandy, MBBS, FRCSC](#); Christopher Le, MD; Michael B Avery, MD, MSc; Eugene Chang, MD; University of Arizona

**P259: STATUS OF SKULL BASE TRAINING: A CROSS-SECTIONAL SURVEY OF U.S. NEUROSURGERY PROGRAMS** - [Kiana Y Prather, BS](#); Helen H Shi, MD; Dorothy He, BS; Christopher S Graffeo, MD; University of Oklahoma Health Science Center

**P260: DEVELOPMENT OF 3-DIMENSIONAL PRINTED SIMULATION SURGICAL TRAINING MODELS FOR ENDOSCOPIC ENDONASAL AND TRANSORBITAL SURGERY** - [Won-Jae Lee, MD<sup>1</sup>](#); Young Hoon Kim, MD, PhD<sup>2</sup>; Yong-Hwy Kim, MD, PhD<sup>3</sup>; Chang-Ki Hong, MD, PhD<sup>2</sup>; Tae-Hoon Roh, MD, PhD<sup>4</sup>; Doo-Sik Kong<sup>1</sup>; <sup>1</sup>Samsung Medical Center, Sungkyunkwan University; <sup>2</sup>Asan Medical Center, Ulsan University; <sup>3</sup>Seoul National University Hospital, Seoul National University; <sup>4</sup>Ajou University Hospital, Ajou University

**P261: TRANSPALPEBRAL LATERAL ORBITAL APPROACH TO ANTERIOR AND MIDDLE CRANIAL FOSSA: AN ANATOMICAL STUDY WITH CLINICAL APPLICATIONS** - [Edinson Najera, MD<sup>1</sup>](#); Edward Wladis, MD<sup>2</sup>; Robert Heller, MD<sup>1</sup>; <sup>1</sup>Neurosurgery Department, Albany Medical Center; <sup>2</sup>Department of Ophthalmology, Albany Medical Center

**P262: TRANSORBITAL NEUROENDOSCOPY SURGERY FOR THE MANAGEMENT OF FRONTAL SINUS LESIONS. CASE SERIES.** - [Marcos E Yasuda, MD](#); Alexander Mastrolonardo; Thomas Nguyen, MD; Jessy Moore; Doron Sommer, MD, FRSC; Kesava Reddy, MBBS, FRCSC, FACS, FAANS, DABNS; McMaster University

**P263: NON-TRADITIONAL TRANS-ORBITAL ACCESS TO SURROUNDING STRUCTURES** - Kelsey A Roelofs, MD, FRCSC; [Nathan Pirakitiklor, MD, PhD](#); Daniel Beswick, MD; Kendall Goodyear, MD; Ethan Osias; Robert A Goldberg, MD, FACS; Daniel B Rootman, MD, MS; University of California, Los Angeles

**P264: ENDOSCOPIC-TRANSORBITAL APPROACH FOR TOTAL REMOVAL OF THE TRIGEMINAL SCHWANNOMA - A CASE REPORT** - [Sorracha Sombatwantana, MD](#); Thanakorn Thiensri, Col, MD, FRCNST; Phramongkutklao Hospital

**P265: SURGICAL RE-EXPLORATION OF A CEREBRAL ARTERIOVENOUS MALFORMATION REMNANT: LITERATURE REVIEW AND ILLUSTRATIVE CASE.** - [Samer S Hoz, MD<sup>1</sup>](#); Vishan P Ramanathan, MD<sup>1</sup>; Mustafa Ismail, MD<sup>2</sup>; Yara Alfawares, MD<sup>1</sup>; Ahmed M Jawad, MD<sup>3</sup>; Aktham O Al-Khafaji, MD<sup>2</sup>; Zaid Aljuboori, MD<sup>4</sup>; Norberto Andaluz, MD<sup>1</sup>; <sup>1</sup>University of Cincinnati; <sup>2</sup>University of Baghdad; <sup>3</sup>Royal College of Surgeons, Ireland; <sup>4</sup>University of Wisconsin-Madison

## Poster Listing (cont.)

**P266: OCCIPITAL- ARTERY- PROXIMAL ANTERIOR INFERIOR CEREBELLAR ARTERY BYPASS: EVALUATION OF EXPOSURE AND SURGICAL FEASIBILITY THROUGH TRANSTENTORIAL RETRO-LABYRINTHINE APPROACH IN A CADAVERIC MODEL.** - [Samer S Hoz, MD<sup>1</sup>](#); Paolo Palmisciano, MD<sup>1</sup>; Justin Gibson, MD<sup>1</sup>; Sanjit Shah, MD<sup>1</sup>; Mustafa Ismail, MD<sup>2</sup>; Teeba A Al-Ageely, MD<sup>2</sup>; Jonathan A Forbes, MD<sup>1</sup>; Charles Prestigiaco, MD<sup>1</sup>; Mario Zuccarello, MD<sup>1</sup>; Norberto Andaluz, MD<sup>1</sup>; <sup>1</sup>University of Cincinnati; <sup>2</sup>University of Baghdad

**P267: PERI TRIGEMINAL ACCESS FOR PONTINE CAVERNOMA THROUGH A MINIMALLY INVASIVE STANDALONE PRESIGMOID RETROLABYRINTHINE APPROACH: A CADAVERIC STUDY.** - [Samer S Hoz, MD<sup>1</sup>](#); Paolo Palmisciano, MD<sup>1</sup>; Daryn Cass, MD<sup>1</sup>; Mustafa Ismail, MD<sup>2</sup>; Mayur Sharma, MD<sup>3</sup>; Ahmed Muthana, MD<sup>2</sup>; Jonathan A Forbes, MD<sup>1</sup>; Charles Prestigiaco, MD<sup>1</sup>; Mario Zuccarello, MD<sup>1</sup>; Norberto Andaluz, MD<sup>1</sup>; <sup>1</sup>University of Cincinnati; <sup>2</sup>University of Baghdad; <sup>3</sup>University of Louisville

**P268: POSTERIOR PETROSECTOMY FOR RESECTION OF BRAINSTEM CAVERNOUS MALFORMATION: A CASE SERIES OF OPERATIVE AND SYMPTOMATIC OUTCOMES** - [Rima S Rindler, MD<sup>1</sup>](#); Kristen Scheitler, MD<sup>2</sup>; Stephen Graepel, MA<sup>2</sup>; Ashley Nassiri, MD<sup>3</sup>; Maria Peris Celda, MD, PhD<sup>2</sup>; Colin L Driscoll, MD<sup>2</sup>; Giuseppe Lanzino, MD<sup>2</sup>; Michael Link, MD<sup>2</sup>; <sup>1</sup>Sierra Neurosurgery Group; <sup>2</sup>Mayo Clinic; <sup>3</sup>University of Colorado

**P270: ACOUSTIC NEUOMAS WITH INTRATUMORAL HEMORRHAGE: INCIDENCE AND MANAGEMENT OF A RARE ENTITY** - [Hussam Abou-Al-Shaar, MD](#); Othman Bin-Alamer, MBBS; Arka N Mallela, MD, MS; L. Dade Lunsford, MD; Paul A Gardner, MD; University of Pittsburgh Medical Center

**P271: SOCIOECONOMIC DETERMINANTS IMPACT QUALITY OF LIFE AT VESTIBULAR SCHWANNOMA DIAGNOSIS** - [Alexandra E Quimby, MD, MPH<sup>1</sup>](#); Mandy Salmon<sup>1</sup>; Christopher H Zhao<sup>2</sup>; John Y Lee, MD, MSCE<sup>1</sup>; Douglas C Bigelow, MD<sup>1</sup>; Michael J Ruckenstein, MD, MSc<sup>1</sup>; Jason A Brant, MD<sup>1</sup>; <sup>1</sup>University of Pennsylvania; <sup>2</sup>Rowan School of Osteopathic Medicine

**P273: COCHLEAR IMPLANTATION AFTER VESTIBULAR SCHWANNOMA: OUTCOMES AT A SINGLE INSTITUTION** - [Erin A Harvey, MD](#); Adam Thompson-Harvey, MD; Michael S Harris, MD; Medical College of Wisconsin

**P274: REVISION SURGERY FOR VESTIBULAR SCHWANNOMAS: AN INSTITUTIONAL CASE SERIES** - Khizar R Nandoliya; [Emily J Winterhalter](#); Rushmin Khazanchi; Mark W Youngblood, MD, PhD; James P Chandler, MD; Stephen T Magill, MD, PhD; Northwestern University

**P275: INCIDENCE AND RISK FACTORS OF VESTIBULAR SCHWANNOMA IN KOREA: A POPULATION-BASED STUDY** - [Subin Kim, MD](#); Eunpyeong St. Mary's Hospital



## 2023 Pre-Meeting Dissection Course Lecture

WEDNESDAY, FEBRUARY 15 & THURSDAY, FEBRUARY 16, 2023

### CONTINUING MEDICAL EDUCATION CREDIT INFORMATION

#### Accreditation

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of American College of Surgeons and North American Skull Base Society. The American College of Surgeons is accredited by the ACCME to provide continuing medical education for physicians.

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### February 15, 2023

7:30 AM	Registration
7:45 AM	Introduction
8:15 AM	Step by Step Sellar
8:30 AM	Step by Step Cribriform
8:45 AM	Step by Step Cribriform with Middle Turbinate Preservation
9:00 AM	Step by Step Tubercular/Planar
9:15 AM	Step by Step Transclival/Transodontoid
9:30 AM	Dissection in Lab
12:00 PM	Lunch
1:00 PM	PPF/ITF Anatomy
1:15 PM	Step by Step PPF/ITF with Middle Fossa Meckels/Cavernous
1:30 PM	Managing Endonasal Skull Base Complications
1:45 PM	Break
2:00 PM	Dissection in Lab
5:30 PM	Shuttle return to hotel



# Pre-Meeting Course (cont.)

## 2023 Pre-Meeting Dissection Course Lecture

**WEDNESDAY, FEBRUARY 15 & THURSDAY, FEBRUARY 16, 2023**

### February 16, 2023

7:30 AM	Introduction
7:45 AM	Open Skull Base Anatomy
8:00 AM	Eyebrow Craniotomy
8:15 AM	Step by Step Pterional, OZ, Pretemporal Transcavernous
8:30 AM	Step by Step Middle Fossa with Kawase
8:45 AM	Step by Step Retrosigmoid/Far Lateral
9:00 AM	Break
9:15 AM	Dissection in Lab
12:00 PM	Lunch
1:00 PM	Step by Step Translabyrinthine
1:15 PM	Step by Step Transcochlear
1:30 PM	Break
1:45 PM	Dissection in Lab
5:00 PM	Shuttle return to hotel

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He Wang	x			
Marilene Wang	x			
Xin Wang	x			
Charlotte Ward	x			
Isaac Wasserman	x			
Zhishuo Wei	x			
Chris Wen	x			
Thomas Whitaker	x			
William Whitehead	x			
Thomas Wilcox	x			

## Disclosures (cont.)

Alex Wilkinson	x			
Brian William	x			
Justin Williams	x			
Meghan Wilson	x			
Robert Winkelman	x			
Emily Winterhalter	x			
Charles Withington	x			
Ian Witterick	x			
Katarzyna Wojtowicz	x			
Brandon Wold	x			
Amanuel Woldesenbet	x			
Gunther Wong	x			
Taemin Woodard	x			
Troy Woodard	x			
Robbie Woods	x			
Peter Wormald	x			
Erin Wright	x			
Rachel Wrigley	x			
Arthur Wu	x			
Eva Wu	x			
Kyle Wu	x			
Zachary Wykoff	x			
Roy Xiao	x			
Michael Xie	x			
Tongxin Xie	x			
Yuanzhi Xu	x			
Waseem Yaghmoor	x			
Kanat Yalcin	x			
Junichi Yamamoto	x			
Hiroto Yamaoka	x			
Bakhtiar Yamini	x			
Andrew Yang	x			
Hong Yang	x			
Isaac Yang		UCLA Visionary Ball Fund	Grant Recipient	Grant
Isaac Yang		Eli and Edythe Broad UCLA Center	Grant Recipient	Grant
Isaac Yang		Jason Dessel Memorial Seed Grant	Grant Recipient	Grant
Isaac Yang		UCLA Honberger Endowment Grant	Grant Recipient	Grant
Isaac Yang		Stop Cancer (US) Research Award	Grant Recipient	Grant
Isaac Yang		Baxter	Consultant	Honoraria
Isaac Yang		Brainlab	Consultant	Grant
Isaac Yang		Stryker	Consultant	Grant
Kaiyun Yang	x			
Dan Yaniv	x			
Shun Yao	x			
Yazed Yazed	x			

## Disclosures (cont.)

Michael Ye	x			
Aaron Yengo-Kahn	x			
Hyo Yeol	x			
Michael Yim		Chitogel	Consultant	Consulting Fee
Michael Yim		Acclarent/J&J	Consultant	Consulting Fee
Alex Yohan	x			
Kaleb Yohay		AstraZeneca	Consultant	Consulting Fee
Keven Yong	x			
Jae Yoon	x			
Wan Yoon	x			
Shoko Yoshimoto	x			
Daniel Yoshor	x			
Jacob Young	x			
Kurtis Young	x			
William Young	x			
Mark Youngblood	x			
Omid Yousefi	x			
John Yu		Kairos Pharma, Ltd.	Founder	Payment for IP Rights
John Yu		Coherus Biosciences	Consultant	Consulting Fee
Shirley Yu	x			
Yuanzhi Yuanzhi	x			
Kevin Yuen	x			
Yvette Yvette	x			
Marcus Zachariah	x			
Zachary Robbins	x			
Gabriel Zada		Integra	Consultant	Consulting Fee
Gabriel Zada		Stryker	Consultant	Consulting Fee
Gelareh Zadeh	x			
Myra Zaheer	x			
Zakia Tariq	x			
Adrian Zammit	x			
Elcin Zan		SOFIE	Advisory Panel/ Board	Consulting Fee
Elcin Zan		Siemens	Speaking/Teaching	Honoraria
Elcin Zan		NIH UG3	Grant Recipient	Research Grant
Elcin Zan		Novartis/AAA	Advisory Panel/ Board	Consulting Fee
Abdullah Zeatoun	x			
Georgios Zenonos	x			
Angie Zhang	x			
Botao Zhang	x			
Grace Zhang	x			
Han Zhang	x			
Michael Zhang	x			
Qi Zhang	x			
Xiaochun Zhao	x			

# Disclosures (cont.)

Lee Zimmer	x			
Ali Zomorodi	x			
Mario Zuccarello	x			
Nathan Zwagerman	x			

## NASBS Skull Base Surgery SUMMER WORKSHOP



August 17-20, 2023 • LSU Health Sciences Center, New Orleans, LA

### SAVE THE DATE

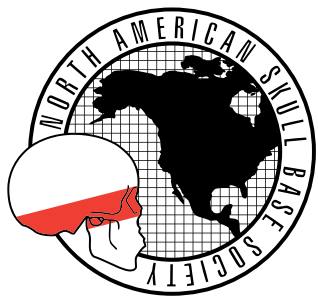
**Do you have a Senior Neurosurgery Resident or Otolaryngology/Head & Neck Fellow in need of Skull Base Surgery hands-on training?** Then send them to the NASBS Skull Base Surgery Summer Course at LSU.

**This course is not to be missed!** Registration will be first-come, first served and opens February 2023. For more information, visit <https://www.nasbs.org/summer-course/> or contact NASBS Course Coordinator, Jillian Kelly [jillian@nasbs.org](mailto:jillian@nasbs.org).





2024 Save the Date!



North American Skull Base Society

# 33<sup>rd</sup> Annual Meeting

*The Skull Base is Flat*

**February 16-18, 2024**

Atlanta Marriott Marquis, Atlanta, GA

**February 14-15, 2024** | Pre-Meeting Dissection Course

PRESIDENT: Siviero Agaazi, MD, MBA

PROGRAM CHAIRS: Donato Pacione, MD & Shirley Su, MBBS



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**Save the Date!**

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