

**JUAN CARLOS FERNANDEZ-MIRANDA, MD, FACS**  
 Professor of Neurosurgery (UML)  
 Professor of Otolaryngology/Head and Neck Surgery, by Courtesy  
 Chief, Skull Base and Pituitary Surgery Division  
 Director, Neurosurgical Training and Innovation Center “NeuroTraIn”  
 Stanford University School of Medicine

### BIOGRAPHICAL

**Name:** Juan Carlos Fernandez-Miranda, MD, FACS

**Business Address:** Department of Neurosurgery  
 Stanford University Medical Center  
 875 Blake Wilbur Drive  
 Cancer Center-2222  
 Palo Alto, CA 94304

**Email:** drjfm@stanford.edu

**Business Phone:** (650) 723-2013

**Business Fax:** (650) 498-4686

**Websites:** <https://profiles.stanford.edu/juan-fernandez-miranda>  
<https://drjfm.com>

**Twitter:** @drjfm\_stanford

### EDUCATION AND TRAINING

#### GRADUATE

09/1994 – 08/2000	Complutense University of Madrid, Medical School Madrid, Spain	M.D.
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#### POST-GRADUATE

09/2000-06/2001	Department of Neurosurgery, University Hospital La Paz. Autonomous University of Madrid Madrid, Spain	Microsurgery Training National Exam Preparation
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07/2001 – 07/2006	Department of Neurosurgery, University Hospital La Paz Autonomous University of Madrid Madrid, Spain	Residency Neurosurgery
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06/2005 – 06/2007	Department of Neurological Surgery University of Florida School of Medicine Gainesville, FL	Research Fellowship Surgical Neuroanatomy, <i>Program Director:</i> <i>Albert L. Rhoton Jr., MD</i>
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07/2007 – 06/2008	Department of Neurological Surgery University of Virginia School of Medicine Charlottesville, VA	Clinical Fellowship Cerebrovascular Surgery <i>Program Director:</i> <i>Neal F. Kassell, MD</i>
07/2008 – 06/2010	Department of Neurological Surgery University of Pittsburgh School of Medicine Pittsburgh, PA	Clinical Fellowship Endoscopic Endonasal and Open Skull Base Surgery <i>Program Directors:</i> <i>Paul A. Gardner, MD</i> <i>Amin B. Kassam, MD</i>

### APPOINTMENTS AND POSITIONS

07/2006 – 06/2007	<b>Post-Doctoral Associate</b> Department of Neurological Surgery University of Florida School of Medicine Gainesville, FL
07/2007 – 06/2008	<b>Clinical Fellow</b> Department of Neurological Surgery University of Virginia School of Medicine Charlottesville, VA
07/2008 – 06/2010	<b>Clinical Instructor</b> Department of Neurological Surgery University of Pittsburgh School of Medicine Pittsburgh, PA
07/2010 – 06/2014	<b>Assistant Professor</b> Department of Neurological Surgery University of Pittsburgh School of Medicine Pittsburgh, PA
07/2014-06/2018	<b>Associate Professor</b> Department of Neurological Surgery University of Pittsburgh School of Medicine Pittsburgh, PA
07/2010 – 06/2018	<b>Director</b> Surgical Neuroanatomy Lab Department of Neurological Surgery University of Pittsburgh School of Medicine Pittsburgh, PA

07/2010-06/2018      **Director**  
 Research Fellowship Program in Skull Base and Surgical Neuroanatomy  
 Department of Neurological Surgery  
 University of Pittsburgh School of Medicine  
 Pittsburgh, PA

07/2012-06/2018      **Director**  
 Fiber Tractography Lab  
 Department of Neurological Surgery  
 University of Pittsburgh School of Medicine  
 Pittsburgh, PA

07/2014-06/2018      **Associate Director**  
 Center for Cranial Base Surgery  
 Department of Neurological Surgery  
 University of Pittsburgh School of Medicine  
 Pittsburgh, PA

07/2015-06/2018      **Associate Professor**  
 Department of Otolaryngology  
 University of Pittsburgh School of Medicine  
 Pittsburgh, PA

07/2014-06/2018      **Director**  
 Complex Brain Surgery Program  
 Department of Neurological Surgery  
 University of Pittsburgh School of Medicine  
 Pittsburgh, PA

07/2018- present      **Professor**  
 Departments of Neurosurgery  
 Department of Otolaryngology/Head and Neck Surgery, by Courtesy  
 Stanford University School of Medicine  
 Stanford, CA

07/2018- present      **Chief, Skull Base and Pituitary Division**  
 Stanford University School of Medicine  
 Stanford, CA

07/2018-present      **Director, NeuroTraIn Center**  
 Stanford University School of Medicine  
 Stanford, CA

### **CERTIFICATION, LICENSURE, AND EXAMINATIONS**

#### **Medical Licensure and Certification:**

Medical Physician and Surgeon License, Spanish Medical Council (Spain)	2000
ECFMG (Educational Commission for Foreign Medical Graduates) Certification	2006

Board Certified in Neurosurgery, Spanish Ministry of Education & Science (Spain)	2007
Training Medical License, Virginia Board of Medicine	2007-2008
Institutional Medical License, State Board of Medicine, Commonwealth of Pennsylvania	2008-2010
Medical Physician and Surgeon Unrestricted License, State Board of Medicine, Commonwealth of Pennsylvania	2010 – 2018
Fellow, American College of Surgeons	2017 – present
California Medical Board – Physician and Surgeon - A175501	2018 - present
Stanford Skull Base Surgery Fellowship (Director) – CAST accreditation	2021 - present

**Examinations:**

USMLE Step1	2006
USMLE Step 2 CK	2006
USMLE Step 2 CS	2006
European Neurosurgical Board Certification Written Examination (EANS)	2008
USMLE Step 3	2009

**MEMBERSHIPS IN PROFESSIONAL AND SCIENTIFIC SOCIETIES**

SENEC (Spanish Society of Neurological Surgeons)	2004 – present
AANS (American Association of Neurological Surgeons)	2006 – present
EANS (European Association of Neurosurgical Societies)	2008 – present
Tumor Section (AANS-CNS)	2008 – present
German Skull Base Society	2010 – present
The Cajal Club	2010 – present
CNS (Congress of Neurological Surgeons)	2012 – present
NASBS (North American Skull Base Society)	2012 – present
Pituitary Network Association	2013 - present
Pituitary Society	2015 - present
Pennsylvania Neurosurgical Society	2016 - present
Acoustic Neuroma Association	2017 - present
American College of Surgeons	2017 – present
International Rhoton Society	2018 - present

**HONORS AND AWARDS**

Top 1%, Spanish Medical License Examination	2001
Synthes Anatomical Fellowship	2006
Pedro Mata Award of the Neurosurgical Society of Madrid – Best Neurosurgical Research	2006
Sanitas Award 2006 – Best Medical Post-Graduate Trainee in Spain	2006
Aesculap European (EANS) Research Award	2008
National Investigation Award (Barclays Foundation)	2009
Best Doctors in America	2013-2022
Annual Faculty Teaching Award, University of Pittsburgh School of Medicine	2017
Honorary Visiting Professor, Tianjin Huanhu Hospital (Tianjin, China)	2018
Best Clinical Paper Award, NASBS	2018
World Expert (top 0.05%) in Skull Base Surgery, <i>Expertscape</i>	2021
“Fred Gentili” Clinical Excellence Award, NASBS	2022

“Rhoton” Award, NASBS

2023

### SERVICE

Chair Management Meetings, University of Pittsburgh	2012-2018
AANS International Outreach Committee	2013-2016
NASBS Awards Committee	2013-2016
NASBS Education and Training Committee	2013-2016
Neurocirugia- Editorial Board	2013- 2017
MRRC (Magnetic Resonance Research Center) University of Pittsburgh Committee	2014-2018
WFNS (World Federation of Neurological Surgeons), Neuroanatomy Committee	2015-2017
Pituitary Society, Patient Engagement Committee	2017-2019
Operative Neurosurgery- Editorial Board – Associate Editor (Skull Base)	2015-present
Journal of Neurological Surgery: Skull Base - Editorial Board	2016-present
Ad Hoc reviewer (selected):	
1. Neurosurgery	
2. Journal of Neurosurgery	
3. Cerebral Cortex	
4. Laryngoscope	
5. Neuroscience	
President, 1 <sup>st</sup> International Rhoton Society Meeting, Tianjin (China)	2018
Vice-President, International Rhoton Society	2018-present
The Neurosurgical Atlas, Board of Directors	2020-present
NASBS, Board of Directors	2022-present
The Journal of Neurosurgery, Editorial Board	2022-present

### PUBLICATIONS

#### Original Research Peer-Reviewed Articles:

1. Gomez-Sierra A, Perez-Lopez C, Budke M, **Fernandez-Miranda JC**, Prieto R, Alvarez F. Brain aneurysms: An infrequent cause of transient ischemic attacks. *Revista De Neurologia* 7(11):1044-1046, 2003.
2. Choi C, Rubino P, **Fernandez-Miranda JC**, Rhoton AL Jr: Meyer's Loop and the Optic Radiations in the Transsylvian Approach to the Mediobasal Temporal Lobe. *Neurosurgery* 59:228-36, 2006.
3. De la Riva AG, Isla A, Perez-Lopez C, Ortega R, **Fernandez-Miranda JC**, Heredero J. Causes of reoperations in patients with lumbar spinal stenosis treated with instrumentations. *Neurocirugia* 17(3): 232-239, 2006.
4. Campero A, Trocoli G, Martins C, **Fernandez-Miranda JC**, Yasuda A, Rhoton AL Jr: Surgical Approaches to the Medial Temporal Region: an anatomical study. *Neurosurgery* 59:279-308, 2006.
5. **Fernandez-Miranda JC**, Rhoton AL Jr, Kakizawa Y, Choi C, Alvarez-Linera J: The claustrum and its projection system in the human brain: a microsurgical and tractographic anatomic study. *Journal of Neurosurgery* 108:764-774, 2008.

6. El Khoully H, **Fernandez-Miranda JC**, Rhoton AL Jr: The petrosal artery in the middle fossa approach. *Neurosurgery* 62 (5 Suppl 2):ONS297-303, 2008.
7. **Fernandez-Miranda JC**, Rhoton AL Jr, Alvarez-Linera J, Kakizawa Y, Choi C, de Oliveira E: Three-dimensional microsurgical and tractographic anatomy of the white matter of the human brain. *Neurosurgery* 62(6 Suppl 3):989-1028, 2008.
8. **Fernandez-Miranda JC**, Prevedello DM, Madhok R, Barges-Coll J, Morera VA, Gardner PA, Snyderman CH, Carrau R, Kassam AB. Sphenoid Septations and the Internal Carotid Artery. *Laryngoscope* 119:1893-6, 2009.
9. Prevedello DM, Barges-Coll J, **Fernandez-Miranda JC**, Morera VA, Gardner PA, Snyderman CH, Kassam AB, Carrau R. Middle turbinate pedicled flap for anterior skull base reconstruction: a cadaveric feasibility study. *Laryngoscope*, 119:2094-8, 2009.
10. **Fernandez-Miranda JC**, Engh JA, Pathak S, Madhok R, Boada F, Schneider F, Kassam AB. High-definition fiber tracking guidance for fully endoscopic intra-axial tumor resection. Technical note. *Journal of Neurosurgery* 2010; 113:990-9.
11. Prevedello DM, **Fernandez-Miranda JC**, Gardner PA, Madhok R, Sigounas D, Snyderman CH, Carrau RL, Kassam AB. The transclival endoscopic endonasal approach for prepontine neuroenteric cysts: report of 2 cases. *Acta Neurochirur (Wien)* 2010;152:1223-9.
12. Engh JA, Lunsford LD, Amin DV, Ochalski PG, **Fernandez-Miranda JC**, Prevedello DM, Kassam AB. Stereotactically guided endoscopic port surgery for intraventricular tumor and colloid cyst resection. *Neurosurgery*, 2010;67(3 Suppl Operative):198-204.
13. Morera VA, **Fernandez-Miranda JC**, Prevedello DM, Madhok R, Barges-Coll J, Gardner P, Carrau R, Snyderman CH, Rhoton AL Jr, Kassam AB. "Far-medial" expanded endonasal approach to the inferior third of the clivus: the transcondylar and transjugular tubercle approaches. *Neurosurgery*. 2010 Jun;66(6 Suppl Operative):211-9, discussion 219-20.
14. Barges-Coll J, **Fernandez-Miranda JC**, Prevedello DM, Gardner P, Morera V, Madhok R, Carrau RL, Snyderman CH, Rhoton AL Jr, Kassam AB. Avoiding injury to the abducens nerve during expanded endonasal endoscopic surgery: anatomic and clinical case studies. *Neurosurgery*. 2010 Jul; 67(1):144-54, discussion 154.
15. **Fernandez-Miranda JC**, de Oliveira E, Rubino P, Wen HT, Rhoton AL Jr: Microvascular anatomy of the medial temporal lobe: Part 1: its application to arteriovenous malformation surgery. *Neurosurgery*, 2010 67(3 Suppl Operative):237-76.
16. Caicedo-Granados E, Carrau R, Snyderman CH, Prevedello D, **Fernandez-Miranda JC**, Gardner P, Kassam A. Reverse rotation flap for reconstruction of donor site after vascular pedicled nasoseptal flap in skull base surgery. *Laryngoscope*. 2010 Aug; 120(8):1550-2.
17. Pinheiro-Neto CD, Carrau RL, Prevedello DM, **Fernandez-Miranda JC**, Snyderman C, Gardner PA, Kassam AB. Use of acoustic Doppler sonography to ascertain the feasibility of the pedicled nasoseptal flap after prior bilateral sphenoidotomy. *Laryngoscope*. 2010 Sep;120(9):1798-801.

18. **Fernandez-Miranda JC**, Barges-Coll J, Prevedello DM, Engh J, Snyderman C, Carrau R, Gardner PA, Kassam AB. Animal model for endoscopic neurosurgical training: technical note. *Minim Invasive Neurosurg.* 2010 Oct;53(5):286-9.
19. Prevedello DM, Pinheiro-Neto CD, **Fernandez-Miranda JC**, Carrau RL, Snyderman CH, Gardner PA, Kassam AB. Vidian nerve transposition for endoscopic endonasal middle fossa approaches. *Neurosurgery.* 2010 Dec;67(2 Suppl Operative): 478-84.
20. Rivera-Serrano CM, Terre-Falcon R, **Fernandez-Miranda JC**, Prevedello D, Snyderman CH, Gardner P, Kassam A, Carrau RL. Endonasal Dissection of the Pterygopalatine fossa, Infratemporal fossa, and Post-styloid compartment. Anatomical Relationships and Importance of Eustachian Tube in the Endoscopic Skull Base Surgery. *Laryngoscope.* 120(S4):S244, 2010.
21. Falcon RT, Rivera-Serrano CM, **Fernandez-Miranda JC**, Prevedello DM, Snyderman CH, Kassam AB, Carrau RL. Endoscopic endonasal dissection of the infratemporal fossa: Anatomic relationships and importance of eustachian tube in the endoscopic skull base surgery. *Laryngoscope.* 121(1):31-41, 2011.
22. Durmaz A, **Fernandez-Miranda JC**, Snyderman CH. Prevertebral corridor: posterior pathway for reconstruction of the ventral skull base. *J Craniofac Surg.* 2011 May; 22(3):848-53.
23. Ochalski PG, **Fernandez-Miranda JC**, Prevedello DM, Pollack IF, Engh JA. Endoscopic port surgery for resection of lesions of the cerebellar peduncles: Technical note. *Neurosurgery* 2011 May; 68(5): 1450-1.
24. Paluzzi A, **Fernandez-Miranda JC**, Pinheiro-Neto C, Barradas V, Alvarez-Lopez B, Gardner P, Snyderman CH. Endoscopic endonasal infrasellar approach to the sellar and suprasellar regions: technical note. *Skull Base.* 2011 October; 21(5): 335-342.
25. Shin SS, Gardner PA, Stefko ST, Madhok R, **Fernandez-Miranda JC**, Snyderman CH. Expanded endoscopic endonasal approach for non-vestibular schwannomas. *Neurosurgery.* 2011 Nov. 69(5): 1046-57; discussion 1057.
26. Pinheiro-Neto CD, Ramos HF, Peris-Celda M, **Fernandez-Miranda JC**, Gardner PA, Snyderman CH, Sennes LU. Study of the nasoseptal flap for endoscopic anterior cranial base reconstruction. *Laryngoscope.* 2011 Dec; 121(12):2514-20.
27. Pinheiro-Neto CD, **Fernandez-Miranda JC**, Wang EW, Gardner PA, Snyderman CH. Anatomical correlates of endonasal surgery for sinonasal malignancies. *Clin Anat.* 2012 Jan; 25:129-34.
28. Pinheiro-Neto CD, **Fernandez-Miranda JC**, Rivera Serrano CM, Paluzzi A, Snyderman CH, Gardner PA, Sennes LU. Endoscopic anatomy of the palatovaginal canal (palatosphenoidal canal): a landmark for dissection of the vidian nerve during endonasal transpterygoid approaches. *Laryngoscope.* 2012 Jan; 122(1):6-12.
29. Sadr Hosseini SM, Razfar A, Carrau RL, Prevedello DM, **Fernandez-Miranda JC**, Zanation A, Kassam AB. Endonasal transpterygoid approach to the infratemporal fossa: correlation of endoscopic and multiplanar CT anatomy. *Head Neck.* 2012;34(3):313-20.

30. Scopel TF, **Fernandez-Miranda JC**, Pinheiro-Neto CD, Peris-Celda M, Paluzzi A, Gardner PA, Hirsch BE, Snyderman CH. Petrous apex cholesterol granulomas: endonasal vs. infracochlear approach. *Laryngoscope*. 2012 Apr;122(4):751-61.
31. Paluzzi A, Gardner P, **Fernandez-Miranda JC**, Pinheiro-Neto CD, Scopel TF, Koutouriousou M, Snyderman CH. Endoscopic endonasal approach to cholesterol granulomas of the petrous apex: a series of 17 patients. *J Neurosurg*. 2012 Apr; 116(4):792-8.
32. **Fernandez-Miranda JC**, Pathak S, Engh J, Jarbo K, Verstynen T, Yeh F, Mintz A, Boada F, Schneider W, Friedlander R. High-Definition Fiber Tractography of the Human Brain: Neuroanatomical Validation and Neurosurgical Applications. *Neurosurgery*. 2012 Aug; 71(2): 430-53.
33. **Fernandez-Miranda JC**, Morera VA, Snyderman CH, Gardner P. Endoscopic endonasal transclival approach to the jugular tubercle. *Neurosurgery*. 2012 Sep; 71(1 Suppl Operative):ONS146-59.
34. Koutourousiou M, Gardner PA, Tormenti MJ, Henry SL, Stefko ST, Kassam AB, **Fernandez-Miranda JC**, Snyderman CH. Endoscopic endonasal approach for resection of skull base chordomas: outcomes and learning curve. *Neurosurgery*. 2012 Sep; 71(3):614-25.
35. Paluzzi A, Gardner P, **Fernandez-Miranda JC**, Snyderman C. The expanding role of endoscopic skull base surgery. *Br J Neurosurg*. 2012 Oct; 26(5):649-61.
36. Paluzzi A, **Fernandez-Miranda JC**, Gardner P. Retracing the Etymology of Terms in Neuroanatomy. *Clinical Anatomy*. *Clin Anat*. 2012 Nov; 25(8): 1005-14.
37. Ozturk K, Snyderman CH, Gardner PA, **Fernandez-Miranda JC**. The anatomical relationship between the Eustachian tube and petrous internal carotid artery. *Laryngoscope*. 2012 Dec; 122 (12):2658-2662.
38. Dedhia RC, Lord CA, Pinheiro-Neto CD, **Fernandez-Miranda JC**, Wang EW, Gardner PA, Snyderman CH. Endoscopic endonasal pituitary surgery: impact of surgical education on operation length and patient morbidity. *J Neurol Surg B*. 2012 Dec; 73(6):405-9.
39. **Fernandez-Miranda JC**, Tormenti M, Latorre F, Gardner P, Snyderman C. Endoscopic endonasal middle clinoidectomy: anatomical, radiological, and technical note. *Neurosurgery*. 2012 Dec; 71[ONS Suppl 2]:ons233-ons239.
40. Koutourousiou M, Gardner PA, Kofler JK, **Fernandez-Miranda JC**, Snyderman CH, Lunsford LD. Rare infundibular lesions: clinical presentation, imaging findings and the role of endoscopic endonasal surgery in their management. *J Neurol Surg B*. 2013 Feb; 74:1-11.
41. Gande A, Tormenti MJ, Koutourousiou M, Paluzzi A, **Fernandez-Miranda JC**, Snyderman CH, Gardner PA. Intraoperative computed tomography guidance to confirm decompression following endoscopic endonasal approach for cervicomedullary compression. *J Neurol Surg B*. 2013 Feb; 74(B1):44-9.
42. Labib MA, Prevedello DM, **Fernandez-Miranda JC**, Sivakanthan S, Benet A, Morera V, Carrau R, Kassam A. The medial opticocarotid recess: an anatomic study of an endoscopic "key landmark" for the ventral cranial base. *Neurosurgery*. 2013 Mar;72(1 Suppl Operative):66-76.



43. Koutourousiou M, Gardner PA, **Fernandez-Miranda JC**, Paluzzi A, Wang EW, Snyderman CH. Endoscopic endonasal surgery for giant pituitary adenomas: advantages and limitations. *Journal of Neurosurgery*. 2013 Mar; 118(3):621-31.
44. Chivukula S, Koutourousiou M, Snyderman CH, **Fernandez-Miranda JC**, Gardner PA, Tyler-Kabara EC. Endoscopic endonasal skull base surgery in the pediatric population. *J Neurosurg Pediatr*. 2013 Mar; 11(3):227-41.
45. Pinheiro-Neto CD, **Fernandez-Miranda JC**, Prevedello DM, Carrau RL, Gardner PA, Snyderman CH. Transposition of the pterygopalatine fossa during endoscopic endonasal transpterygoid approaches. *J Neurol Surg B*. 2013 Oct; 74:266-70.
46. Wang Y, **Fernandez-Miranda JC**, Verstynen T, Pathak S, Schneider W, Yeh FC. Rethinking the Role of the middle longitudinal Fascicle in language and auditory pathways. *Cereb Cortex*. 2013 Oct 23(10):2347-56.
47. Jusue-Torres I, Sivakanthan S, **Fernandez-Miranda JC**, Pinheiro-Neto CD, Gardner PA, Snyderman CH. Chicken wing training model for endoscopic microsurgery. *J Neurol Surg B*. 2013 Oct; 74:286-91.
48. Yeh FC, Verstynen TD, Wang Y, **Fernández-Miranda JC**, Tseng WY. Deterministic diffusion fiber tracking improved by quantitative anisotropy. *PLoS One*. 2013 Nov 15; 8(11):e80713.
49. Koutourousiou M, Gardner PA, **Fernandez-Miranda JC**, Tyler-Kabara EC, Wang EW, Snyderman CH. Endoscopic endonasal surgery for craniopharyngiomas: surgical outcome in 64 patients. *Journal of Neurosurgery*. 2013 Nov; 119(5): 1194-207.
50. Liu JF, Qu QY, Yang DZ, Han J, Zhang QH, Snyderman CH, **Fernandez-Miranda JC**. Transnasal endoscopic anatomy and approaches to the cavernous sinus (*article in Chinese*). *Zhonghua Er Bi Yan Hou Tou Jin Wai Ke Za Zhi*. 2013 Nov; 48(11):901-7.
51. Gardner PA, Tormenti MJ, Pant H, **Fernandez-Miranda JC**, Snyderman CH, Horowitz MB. Carotid artery injury during endoscopic endonasal skull base surgery: incidence and outcomes. *Neurosurgery*. 2013 Dec; 73[ONS Suppl 2]:ons261-ons270.
52. Peris-Celda M, Pinheiro-Neto CD, Funaki T, **Fernandez-Miranda JC**, Gardner P, Snyderman C, Rhoton AL. The extended nasoseptal flap for skull base reconstruction of the clival region: an anatomical and radiological study. *J Neurol Surg B*. 2013 Dec; 74(B6):369-85.
53. Peris-Celda M, Pinheiro-Neto CD, Scopel TF, **Fernandez-Miranda JC**, Gardner PA, Snyderman CH. Endoscopic endonasal approach to the infraorbital nerve with nasolacrimal duct preservation. *J Neurol Surg B*. 2013 Dec; 74(B6):393-8.
54. Vaz-Guimaraes Filho F, **Fernandez-Miranda JC**, Wang EW, Snyderman CH, Gardner PA. Endoscopic endonasal "far-medial" transclival approach: surgical anatomy and technique. *Operative Techniques in Otolaryngology-Head and Neck Surgery*, 2013 Dec; 24(4): 222-228.
55. Shin SS, Tormenti MJ, Paluzzi A, Rothfus WE, Chang YF, Zainah H, **Fernandez-Miranda JC**, Snyderman CH, Challinor SM, Gardner PA. Endoscopic endonasal approach for growth hormone

secreting pituitary adenomas: outcomes in 53 patients using 2010 consensus criteria for remission. *Pituitary*. 2013 Dec; 16(4):435-44.

56. Vivas EX, McCall A, Raz Y, **Fernandez-Miranda JC\***, Gardner P, Hirsch BE. ICP, BMI, surgical repair and CSF diversion in patients presenting with spontaneous CSF otorrhea. *Otol Neurotol*. 2014 Feb; 35(2):344-7. *\*Contributed patients to the study, helped analyze data, and critically revised the manuscript.*

57. Benet A, Prevedello DM, Carrau RL, Rincon-Torroella J, **Fernandez-Miranda JC\***, Prats-Galino A, Kassam AB. Comparative Analysis of the Transcranial "Far Lateral" and Endoscopic Endonasal "Far Medial" Approaches: Surgical Anatomy and Clinical Illustration. *World Neurosurg*. 2014 Feb; 81(2):385-96. *\*Contributed with study design and data analysis, and critically revised the manuscript.*

58. Pinheiro-Neto CD, Paluzzi A, **Fernandez-Miranda JC\***, Scopel TF, Wang EW, Gardner PA, Snyderman CH. Extended dissection of the septal flap pedicle for ipsilateral endoscopic transpterygoid approaches. *Laryngoscope*. 2014 Feb; 124(2):391-6. *\*Contributed with study ideas and design, and critically revised the manuscript.*

59. Rastelli Jr MM, Pinheiro-Neto CD, **Fernandez-Miranda JC\***, Wang EW, Snyderman CH, Gardner PA. Application of ultrasonic bone curette in endoscopic endonasal skull base surgery: technical note. *J Neurol Surg B*. 2014 Apr; 75:90-5. *\*Contributed patients to the study, and critically revised the manuscript.*

60. Abhinav K, Yeh FC, El-Dokla A, Ferrando LM, Chang YF, Lacomis D, Friedlander RM, **Fernandez-Miranda JC**. Use of diffusion spectrum imaging in preliminary longitudinal evaluation of amyotrophic lateral sclerosis: development of an imaging biomarker. *Front Hum Neurosci*. 2014 Apr 29; 8:270.

61. Koutourosiou M, **Fernandez-Miranda JC\***, Stefkó ST, Wang EW, Snyderman CH, Gardner PA. Endoscopic endonasal surgery for suprasellar meningiomas: experience with 75 patients. *Journal of Neurosurgery*. 2014 Jun; 120(6):1326-39. *\*Contributed with study design, data collection, provided patients to the study, helped analyze data, and critically revised the manuscript.*

62. Abhinav K, Pathak S, Richardson RM, Engh J, Gardner P, Yeh FC, Friedlander RM, **Fernandez-Miranda JC**. Application of high definition fiber tractography in the management of supratentorial cavernous malformations: a combined qualitative and quantitative approach. *Neurosurgery*. 2014 Jun; 74(6):668-80.

63. **Fernandez-Miranda JC**, Gardner PA, Rastelli MM Jr, Peris-Celda M, Koutourosiou M, Peace D, Snyderman CH, Rhoton AL Jr. Endoscopic endonasal transcavernous posterior clinoidectomy with interdural pituitary transposition. *J Neurosurg*. 2014 Jul; 121(1):91-9.

64. Snyderman CH, Gardner PA, Wang EW, **Fernandez-Miranda JC**. Transcervical endoscopic approach for removal of parapharyngeal space masses. *Operative Techniques in Otolaryngology-Head and Neck Surgery*. 2014; 25:265-73.

65. Shin SS, Pathak S, Presson N, Bird W, Wagener L, Schneider W, Okonkwo DO, **Fernandez-Miranda JC**. Detection of white matter injury in concussion using high-definition fiber tractography. *Prog Neurol Surg*. 2014; 28:86-93.

66. Paluzzi A, **Fernandez-Miranda JC\***, Stefko ST, Challinor S, Snyderman CH, Gardner PA. Endoscopic endonasal approach for pituitary adenomas: a series of 555 patients. *Pituitary*. 2014 Aug; 17(4):307-19. *\*Contributed with study design, data collection, provided patients to the study, helped analyze data, and critically revised the manuscript.*
67. Choby GW, Pinheiro-Neto CD, de Almeida JR, Cardenas Ruiz-Valdepenas EC, Wang EW, **Fernandez-Miranda JC\***, Gardner PA, Snyderman CH. Extended inferior turbinate flap for endoscopic reconstruction of skull base defects. *J Neurol Surg B*. 2014 Aug; 75(B4): 225-30. *\*Contributed with study idea and design, and critically revised the manuscript.*
68. Koutourousiou M, Vaz Guimaraes Filho F, Costacou T, **Fernandez-Miranda JC\***, Wang EW, Snyderman CH, Rothfus WE, Gardner PA. Pontine encephalocele and abnormalities of the posterior fossa following transclival endoscopic endonasal surgery. *Journal of Neurosurgery*. 2014 Aug; 121(2):359-66. *\*Contributed patients to the study, and critically revised the manuscript.*
69. Wang C, Kundaria S, **Fernandez-Miranda JC\***, Duvvuri U. A description of arterial variants in the transoral approach to the parapharyngeal space. *Clinical Anat*. 2014 Oct; 27(7):1016-22. *\*Contributed with study design, provided specimens to the study, helped analyzing data, and critically revised the manuscript*
70. Koutourousiou M, **Fernandez-Miranda JC**, Wang EW, Snyderman CH, Gardner PA. Endoscopic endonasal surgery for olfactory groove meningiomas: outcomes and limitations in 50 patients. *Neurosurg Focus*. 2014 Oct; 37(4):E8. *\*Contributed with study design, data collection, provided patients to the study, helped analyze data, and critically revised the manuscript.*
71. Liu J, Yang D, **Fernandez-Miranda JC\***, Gardner PA, Snyderman CH. Transnasal endoscopic anatomy of the clivus and approaches consideration (*article in Chinese*). *Lin Chung Er Bi Yan Hou Tou Jing Wai Ke Za Zhi*. 2014 Oct; 28(20):1550-4. *\*Contributed with study design, provided specimens to the study, helped analyze data, and critically revised the manuscript.*
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**Invited Peer-Reviewed Articles**

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17. Wang EW, Zanation AM, Gardner PA, Schwartz TH, Eloy JA, Adappa ND, Bettag M, Bleier BS, Cappabianca P, Carrau RL, Casiano, RR, Cavallo LM, Ebert CS, El-Sayed IH, Evans JJ, **Fernandez-Miranda JC**, Folbe AJ, Froelich S, Gentili F, Harvey, RJ, Hwang PH, Jane JA, Kelly DF, Kennedy D, Knosp E, Lal D, Lee JY, Liu JK, Lund VJ, Palmer JN, Prevedello DM, Schlosser RJ, Sindwani R, Solares CA, Tabae A, Teo C, Thirumala PD, Thorp BD, de Arnaldo Silva Vellutini E, Witterick I, Woodworth BA, Wormald P, Snyderman C. ICAR: endoscopic skull-base surgery. *International forum of allergy & rhinology*. July 2019; 9 (S3): S145–S365
18. Mooney MA, Sarris CE, Zhou JJ, Barkhoudarian G, Chicoine MR, Fernandez-Miranda JC, Gardner PA, Hardesty DA, Jahnke H, Kelly DF, Liebelt BD, Mayberg MR, Prevedello DM, Sfondouris J, Sheehy JP, Chandler JP, Yuen KCJ, White WL, Little AS; TRANSSPHER Study Group. Proposal and Validation of a Simple Grading Scale (TRANSSPHER Grade) for Predicting Gross Total Resection of Nonfunctioning Pituitary Macroadenomas After Transsphenoidal Surgery. *Oper Neurosurg (Hagerstown)*2019 Nov 1;17(5):460-469.

#### **Operative Videos in Peer-Reviewed Journals**

1. **Fernandez-Miranda JC**, Pinheiro-Nieto C, Gardner PA, Snyderman CH. Endoscopic endonasal approach for tuberculum sellae meningioma. *Journal of Neurosurgery*. 2012 Jan;32 Suppl:E8.
2. Tormenti MJ, Paluzzi A, Pinheiro-Neto C, **Fernandez-Miranda JC**, Snyderman CH, Gardner PA. Endoscopic endonasal repair of spontaneous CSF fistulae. *Journal of Neurosurgery*. 2012 Jan; 32 Suppl: E6.
3. Chabot JD, Gardner P, **Fernandez-Miranda JC**. Anterior transpetrosal approach for resection of recurrent skull base chordoma: 3-dimensional operative video. *Neurosurgery*. 2015 Sep;11 Suppl 3:464-5.
4. Chabot JD, Stefkó ST, **Fernandez-Miranda JC**. Lateral orbitotomy approach for resection of intraosseous sphenoid wing meningiomas: 3-dimensional operative video. *Operative Neurosurgery (Hagerstown)*. 2017 Jun;13(3):399.

5. Chabot JD, Stefko ST, Snyderman C, **Fernandez-Miranda JC**. Multicorridor endoscopic endonasal and supraorbital approach for orbital roof meningioma: 3-dimensional operative video. *Operative Neurosurgery* (Hagerstown). 2017 Jun 1;13(3):401.
6. **Fernandez-Miranda JC**. Extended middle fossa approach with anterior petrosectomy and anterior clinoidectomy for resection of sphenocavernous-tentorial meningioma: The Hakuba-Kawase-Dolenc approach: 3-dimensional operative video. *Operative Neurosurgery* (Hagerstown). 2017 Apr;13(2):281.
7. Najera E, Snyderman C, **Fernandez-Miranda JC**. Endoscopic endonasal approach for complex macroadenoma with suprasellar and retroinfundibular extension. *J Neurol Surg B Skull Base*. 2018 Apr;79(Suppl 3):S284
8. Zenonos G, **Fernandez-Miranda JC**. Endoscopic Endonasal Trans-oculomotor Triangle Approach for Resection of a Pituitary Adenoma with Ambient Cistern Extension. *J Neurol Surg B Skull Base*. 2018 Apr;79(Suppl 3):S283.
9. Zenonos G, **Fernandez-Miranda JC**. Intrasellar Endoscopic Endonasal Approach for a Pituitary Adenoma Extending into the 3rd Ventricle, with Anterior Displacement of the Pituitary Gland. *J Neurol Surg B Skull Base* 2018 Feb;79(Suppl 2):S233-S234
10. Zwagerman NT, Geltzeiler MN, Wang EW, **Fernandez-Miranda JC**, Snyderman CH, Gardner PA. Endonasal Suturing of Nasoseptal Flap to Nasopharyngeal Fascia Using the V-Loc™ Wound Closure Device: 2-Dimensional Operative Video. *Oper Neurosurg* (Hagerstown). 2019 Feb 1;16(2):40-41
11. **Fernandez-Miranda JC**. Left Pan-Hippocampal Low-Grade Glioma-2-Stage Transsylvian Transventricular and Paramedian Supracerebellar Transtentorial Approaches: 2-Dimensional Operative Video. *Operative neurosurgery* (Hagerstown, Md.), 2019 Mar 1;16(3):E82
12. **Fernandez-Miranda JC**. Paramedian Supracerebellar Approach in Semi-Sitting Position for Endoscopic Resection of Pineal Cyst: 2-Dimensional Operative Video. *Oper Neurosurg* (Hagerstown) 2019 Mar 1;16(3):E79.
13. **Fernandez-Miranda, JC**. Left Transsylvian Transcisternal and Transinferior Insular Sulcus Approach for Resection of Uncohippocampal Tumor: 3-Dimensional Operative Video. *Operative Neurosurgery* (Hagerstown, Md.). Fernandez-Miranda, JC. 2018 Dec 1;15(6):E79-E80.
13. Lavigne P, Wang EW, **Fernandez-Miranda JC**. Supratotal Resection of Residual Clival Chordoma with Combined Endoscopic Endonasal and Contralateral Transmaxillary Approaches: 2-Dimensional Operative Video. *Oper Neurosurg* (Hagerstown). 2019 Mar 1;16(3):E88-E89.
14. **Fernandez-Miranda JC**, Hwang P, Grant G. Endoscopic Endonasal Surgery for Resection of Giant Craniopharyngioma in a Toddler-Multimodal Presurgical Planning, Surgical Technique, and Management of Complications: 2-Dimensional Operative Video. *Oper Neurosurg* (Hagerstown) 2020 Jul 1;19(1):E68-E69
15. Moyheldin A, Hwang P, Grant G, **Fernandez-Miranda JC**. Endoscopic Endonasal Surgery for Giant Pediatric Craniopharyngioma. *Neurosurgical Focus*, April 2020.

16. Moyheldin A, Nayak J, **Fernandez-Miranda JC**. Endoscopic Endonasal Resection of a Large Tuberculum Sella Meningioma. *Neurosurgical Focus*, April 2020.
17. Abhinav K, Gimenez P, Tyler M, Patel ZM, **Fernandez-Miranda JC**. Endoscopic Endonasal Approach for Resection of Suprasellar Hemangioblastoma: Selective Pituitary Sacrifice and Use of Indocyanine Dye: 2-Dimensional Operative Video. *Oper Neurosurg (Hagerstown)*. 2020 Dec 15;20(1).
18. Vigo V, Prolo LM, Nunez MA, Nayak JV, **Fernandez-Miranda JC**. Endoscopic Endonasal Approach for Suprasellar Mature Teratoma in Growing Teratoma Syndrome: 2-Dimensional Operative Video. *Oper Neurosurg (Hagerstown)*. 2022 Apr 5

### **Letters to the Editor**

1. **Fernandez-Miranda JC**, Gardner PA, Prevedello DM, Kassam AB. The expanded endonasal approach for olfactory groove meningiomas. Letter to the Editor. *Acta Neurochir (Wien)* 151:287-8, 2009.
2. **Fernandez-Miranda JC**, Prevedello DM, Gardner P, Carrau R, Snyderman CH, Kassam AB. Endonasal endoscopic pituitary surgery: is it a matter of fashion? *Acta Neurochir (Wien)*. 2010 Aug;152(8): author reply 1282.
3. **Fernandez-Miranda JC**, Pathak S, Schneider F. High-definition fiber tractography of the language pathways. Letter to the Editor. *Journal of Neurosurgery*, 2010;113:156-7, 2010.
4. **Fernandez-Miranda JC**, Gardner PA, Snyderman CH. Endoscopic endonasal approach for tuberculum sellae meningiomas. *Neurosurgery*. 2011 Jul;69(1):E260-1.
5. Snyderman CH, Wang EW, **Fernandez-Miranda JC**, Gardner PA. Response to Letter to the Editor on “Extended inferior turbinate flap for endoscopic reconstruction of skull base defects”. *J Neurol Surg B* 2014;75(B4):225-30. *J Neurolog Surg B Skull Base*. 2015 Jun;76(3):248.
6. Gardner PA, **Fernandez-Miranda JC**, Snyderman CH, Wang EW. Letter to the Editor: Screw fixation technique. *J Neurosurg Spine*. 2015 Oct;23(4):536-7.
7. Snyderman CH, Gardner PA, **Fernandez-Miranda JC**. Letter to Editor: Endoscopy or microscopy? *J Neurosurg Pediatr*. 2012 Mar; 9(3):336-7.
8. Gardner PA, Snyderman CH, **Fernandez-Miranda JC**, Wang EW. Letter to the editor: Supraorbital versus endoscopic endonasal approaches for olfactory groove meningiomas: a cost-minimization study. *World Neurosurg*, *World Neurosurg*. 2017 Oct;106:984-985.
9. Snyderman CH, Gardner PA, **Fernandez-Miranda JC**. Letter to the editor: Shah RN, Leight WD, Patel MR, et al. A controlled laboratory and clinical evaluation of a three-dimensional endoscope for endonasal sinus and skull base surgery. *Am J Rhinol Allergy*. 2011 May-Jun;25(3): 141-4.
10. Truong HQ, **Fernandez-Miranda JC**, Gardner PA. Endoscopic endonasal surgery and the superior hypophyseal artery: further studies remain mandatory. *Response Journal of Neurosurgery*. 2018 Nov 1:1-3.
11. Panesar SS, **Fernandez-Miranda JC**, Kliot M, Ashkan K. In Reply: Neurosurgery and Manned Spaceflight. *Neurosurgery*. 2019 Jul 1;85(1):E159-E160.

12. Setty P, **Fernandez-Miranda JC\***, Wang EW, Snyderman CH, Gardner PA. In Reply: Residual and Recurrent Disease Following Endoscopic Endonasal Approach as a Reflection of Anatomic Limitation for the Resection of Midline Anterior Skull Base Meningiomas. *Oper Neurosurg (Hagerstown)*. 2021 Nov 15;21(6):E585.

### **Case Reports in Peer-Reviewed Journals**

1. Koutourousiou M, Gardner PA, Stefko ST, Paluzzi A, **Fernandez-Miranda JC**, Snyderman CH, Maroon JC. Endoscopic endonasal transorbital approach for excisional biopsy of the optic nerve - technical note. *J Neurol Surg Rep*. 2012 Oct;73(1):52-6.
2. Mon Sann Yu, Mahmud Hussain, Abbasi Munira, Murdoch Goeff, **Fernandez-Miranda JC**, Gardner PA, Challinor SM. A 23-Year-Old Female with a Mixed Germ Cell Tumor of the Pituitary Infundibulum: The Challenge of Differentiating Neoplasm from Lymphocytic Infundibuloneurohypophysitis. *Case Reports in Endocrinology*. 2014 Jun; 129471:1-8.
3. Vaz-Guimaraes F, Gardner PA, **Fernandez-Miranda JC**. Fully endoscopic retrosigmoid approach for posterior petrous meningioma and trigeminal microvascular decompression. *Acta Neurochir (Wien)*. 2015 Apr;157(4):611-5.
4. Meola M, **Fernandez-Miranda JC**. Peduncles without cerebellum: The cerebellar agenesis. *Eur Neurol*. 2015; 74:162.
5. Fernandes-Cabral DT, Zenonos GA, Hamilton RL, Panesar SS, **Fernandez-Miranda JC**. High-definition fiber tractography in the evaluation and surgical planning of Lhermitte-Duclos disease: a case report. *World Neurosurg*. 2016 Aug;92:587.
6. Nakassa AC, Chabot JD, Snyderman CH, Wang EW, Gardner PA, **Fernandez-Miranda JC**. Complete endoscopic resection of a pituitary stalk epidermoid cyst using a combined infrasellar interpituitary and suprasellar endonasal approach: case report. *Journal of Neurosurgery*. 2017 Apr 14:1-7 [Epub ahead of print].
7. Fernandes-Cabral DT, Kooshkabadi A, Panesar SS, Celtikci E, Borghei-Razavi H, Celtikci P, **Fernandez-Miranda JC** Surgical management of vertex epidural hematoma: technical case report and literature review. *World Neurosurg*. 2017 Jul;103:475-483.
8. Fernandes Cabral DT, Zenonos GA, Nuñez M, Celtikci P, Snyderman C, Wang E, Gardner PA, **Fernandez-Miranda JC**. Endoscopic Endonasal Transclival Approach for Resection of a Pontine Glioma: Surgical Planning, Surgical Anatomy, and Technique. *Oper Neurosurg (Hagerstown)*. 2018 Nov 1.

### **Invited Peer-Reviewed Editorials (Favorite 3 of 30)**

1. **Fernandez-Miranda JC**, Rhoton AL Jr: Microneurosurgical sulcal key-points. *Neurosurgery* 59:210, 2006
2. **Fernandez-Miranda JC**, Kassell NF: Microsurgical Anatomy of the Temporal Lobe. Part II: Sylvian Fissure Region and Its Clinical Application. *Neurosurgery*, 2009

3. **Fernandez-Miranda JC.** Editorial: Beyond diffusion tensor imaging. *Journal of Neurosurgery*. 2013 Jun; 118(6):1363-5; discussion 1365-6.

#### **Book Chapters (Favorite 5 of 40)**

1. Zenonos GA, Lieber S, **Fernandez-Miranda JC.** Surgical anatomy of the skull base. In Harsh IV GR, Vaz Guimaraes F (eds): *Chordomas and Chondrosarcomas of the Skull Base and Spine: Diagnosis and Management, 2<sup>nd</sup> Edition*. Academic Press, San Diego, 2018.
2. Zwagerman NT, Lieber S, **Fernandez-Miranda JC.** Surgical anatomy of the sellar region. In Cohen-Gadol A, Sheehan J, Laws E, Schwartz T (eds): *Transsphenoidal Surgery: Techniques Including Complication Avoidance and Management*. Springer, New York, 2017.
3. Zenonos GA, Lieber S, **Fernandez-Miranda JC.** Cavernous sinus and Meckel's cave. In Evans JJ, Kenning TJ, Farrell CJ, Kshetry V (eds): *Endoscopic and Keyhole Cranial Surgery*. Springer, Cham, Switzerland, 2017.
4. Zenonos GA, Goldschmidt E, **Fernandez-Miranda JC.** Surgical anatomy of the cranial base: transcranial and endonasal approaches. In Hanna E, DeMonte F (eds): *Comprehensive Management of Skull Base Tumors, 2<sup>nd</sup> Edition*. Thieme, New York, 2018.
5. Zwagerman NT, **Fernandez-Miranda JC,** Wang EW, Snyderman CH, Gardner PA. The anterior (endoscopic endonasal) approach and outcomes for foramen magnum tumors. Pp. 395-402. In Tessitore E, Dehdashti AR, Schonauer C, Thome C (eds): *Surgery of the Cranio-Vertebral Junction*. Springer, Cham, 2020.

#### **Published Abstracts (Most recent 5 of 123):**

1. Ferrareze Nunes C, Lieber S, Zenonos G, Wang EW, Snyderman CH, Gardner PA, **Fernandez-Miranda JC.** Endoscopic endonasal transoculomotor triangle approach to the parapeduncular space: surgical anatomy, technical nuances and case series. *J Neurol Surg B*. 2017 Mar;78(S1):S103-S-104.
2. Borghei-Razavi H, Truong HQ, Fernandes-Cabral D, Celtikci E, Xun XC, Wang EW, Snyderman C, Gardner P, **Fernandez-Miranda JC.** Endoscopic endonasal maximal petrosectomy: anatomical investigation and surgical relevance. *J Neurol Surg B*. 2017 Mar;78(S1):S106.
3. Fernandes Cabral DT, Zenonos GA, Nunez M, Borghei-Razavi H, Celtikci E, Celtikci PN, Panesar SS, Wang EW, Snyderman CH, Gardner PA, **Fernandez-Miranda JC.** Endoscopic endonasal approach to intrinsic brainstem lesions: anatomical, radiological, and clinical study. *J Neurol Surg B*. 2017 Mar;78(S1):S119.
4. Lieber S, Zenonos G, Zwagerman NT, Chabot JD, Stefko S, **Fernandez-Miranda JC,** Gardner PA. Pushing the boundaries of the lateral orbitotomy through a lateral canthotomy approach: successful resection of two middle cranial fossa pathologies with extension into the posterior cranial fossa – an anatomical and technical note. *J Neurol Surg B*. 2017 Mar;78(S1):S131.
5. Duncan KE, Wang EW, **Fernandez-Miranda JC,** Yu JY. The utility of image guidance in developing minimally invasive periorbital approaches to the skull base. *J Neurol Surg B*. 2017 Mar;78(S1):S153-S154.

## TEACHING

### **Invited Lectures: Local**

1. The Importance of Surgical Neuroanatomy. Grand Rounds, Department of Neurosurgery. Stanford University School of Medicine. Palo Alto, CA, September 21, 2018.
2. Endoscopic Endonasal Skull Base Surgery: Suprasellar Region. 3<sup>rd</sup> Stanford-Asia Rhinology Forum. Stanford, CA, November 10, 2018.
3. Extended Middle Fossa Approach: The Hakuba-Dolenc-Kawase combined approach. Stanford Neurosurgery Residents Hands-on Course. Milpitas, CA, November 17, 2018.
4. Pituitary Tumors. Dominican Hospital, Santa Cruz, CA, March 1, 2019.
5. Golden State Warriors Speaking Engagement Oakland, CA, April 4, 2019.
6. Innovations in Endoscopic Endonasal Surgery for Pituitary Tumors, Stanford Patient Education Pituitary Day, Sheraton, Palo Alto, CA, May 18, 2019.
7. Visual Deficits Secondary to Mass Lesions: Collaboration Between Ophthalmology and Neurosurgery, Fall Ocular Symposium, H. Marcus Radin Conference Center on the Clovis Community Medical Center Campus, Clovis, CA, October 5, 2019.
8. Bay Area Resident Endoscopic Course: Exploration of the Paranasal Sinuses & Anterior Skull Base. Stanford Anatomy Lab, Stanford, CA, December 7, 2019.
9. Skull Base Lab, San Carlos, CA, November 12, 2020.
10. Neuroscience Club, Los Altos High School, December 10, 2021.
11. Stanford Alumni Day 2022, April 9, 2022.
12. Innovations in Endoscopic Endonasal Surgery for Pituitary Tumors, Stanford Patient Education Pituitary Day, Sheraton, Palo Alto, CA, May 18, 2019.
13. Neuroradiology Fellowship Conference, Stanford, CA, November 15, 2021
14. 2022 Acromegaly Community Hybrid Patient Conference Embassy Suites by Hilton, Milpitas, CA, May 20-22, 2022.
14. Stanford Annual Skull Base Resident Course, October 14, 2022.
15. Stanford Reunion Homecoming, Classes without Quizzes (CWOQs), October 20-23, 2022.

### **Invited Lectures: National**



1. Posterior Fossa and Cranial Nerve 3D Anatomy. USF Masters in Skull Base Surgery, Tampa, FL, February 5, 2015.
2. Endoscopic anatomy for expanded endoscopic approaches. USF Masters in Skull Base Surgery, Tampa, FL, February 6, 2015.
3. Endoscopic endonasal skull base surgery: from the lab to the OR. Pre-Meeting Course, 25<sup>th</sup> Annual Meeting of the North American Skull Base Society, Tampa, FL, February 18, 2015.
4. Endoscopic endonasal approach for petroclival meningiomas. 25th Annual Meeting of the North American Skull Base Society, Tampa, FL, February 22, 2015.
5. 3D Microsurgical anatomy of the white matter fiber tracts and the use of high-definition fiber tractography for intrinsic lesions. 2015 American Association of Neurological Surgeons Annual Meeting, May 2, 2015.
6. 3D Endoscopic endonasal approach to the sellar and suprasellar regions, cavernous sinus and middle fossa. 2015 American Association of Neurological Surgeons Annual Meeting, May 2, 2015.
7. 3D Microsurgical anatomy and approaches to the cerebellum, CP angle, and IV ventricle. 2015 American Association of Neurological Surgeons Annual Meeting, May 3, 2015.
8. 3D Endoscopic endonasal transclival and transpterygoid approaches to the posterior skull base. 2015 American Association of Neurological Surgeons Annual Meeting, May 3, 2015.
9. General Scientific Session. 3D Cranial Cases: Surgical Nuances. American Association of Neurological Surgeons, Washington, DC, May 4, 2015.
10. Anatomy of the Anterior Cranial Fossa, Sinonasal Cavity and Pituitary Fossa. NASBS Summer Course, New Orleans, LA, July 10, 2015.
11. Anatomy of the Middle Fossa and Cavernous Sinus. NASBS Summer Course, New Orleans, LA, July 10, 2015.
12. Anatomy of Cavernous Sinus, Sella, Clivus. 3-D Surgical Anatomy Course for Senior Residents, Houston, TX, August 20, 2015.
13. Ventricular Anatomy. 3-D Surgical Anatomy Course for Senior Residents, Houston, TX, August 21, 2015.
14. 3-D Video Presentation. 3-D Session: Techniques to Advance Safety and Efficacy in Microneurosurgery. 2015 CNS Annual Meeting. New Orleans, LA, September 28, 2015.
15. 3D Video Techniques. NASBS. Scottsdale, AZ, February 12, 2016.
16. Master Surgeon 1: Approaches to the Cavernous Sinus. NASBS. Scottsdale, AZ, February 12, 2016.
17. Innovation in Education. NASBS. Scottsdale, AZ, February 12, 2016.

18. Cavernous sinus invasion. Endoscopic Series Webinar: Pituitary Tumors and CSF Leaks, Congress of Neurological Surgeons, November 29, 2016.
19. Expert Debate: Chordomas: Optimal Approach and Multidisciplinary Management. NASBS Annual Meeting, New Orleans, LA, March 3, 2017.
20. From the Anatomy Lab to the OR: The Value of Time Spent with Dr. Rhoton. NASBS Annual Meeting, New Orleans, LA, March 3, 2017.
21. "EEA" Petroclival Meningioma. NASBS Annual Meeting, New Orleans, LA, March 3, 2017.
22. Transclival approach for meningiomas. Endoscopic Series Webinar: Transclival/Transodontoid Approaches, Congress of Neurological Surgeons, April 4, 2017.
23. 3D Microsurgical anatomy of the white matter fiber tracts and surgery for intrinsic lesions. American Association of Neurological Surgeons Annual Meeting, Los Angeles, CA, April 22, 2017.
24. 3D Multi-Corridor Skull Base Surgery: Selection of Transcranial and/or Endoscopic Endonasal Approaches. American Association of Neurological Surgeons Annual Meeting, Los Angeles, CA, April 22, 2017.
25. 3D Microsurgical anatomy and approaches to the cerebellum, CP angle, IV ventricle and pineal region. American Association of Neurological Surgeons Annual Meeting, Los Angeles, CA, April 23, 2017.
26. 3D Endoscopic endonasal transclival approaches to the posterior skull base. American Association of Neurological Surgeons Annual Meeting, Los Angeles, CA, April 23, 2017.
27. Anatomy of the anterior skull base/cribriform. Endoscopic Series Webinar: Endoscopic Endonasal Transcribriform Approaches, Congress of Neurological Surgeons, May 3, 2017.
28. Craniopharyngioma – What’s new? Brigham and Women's Hospital Cerebrovascular and Skull Base Symposium. Brigham Women’s Hospital, October 6, 2017.
29. Anatomy of the Anterior Cranial Fossa, Sinonasal Cavity, and Pituitary Fossa. AANS/NREF Skull Base Techniques for Senior Residents. Memphis, TN, October 26, 2017.
30. Designing an Endonasal Midline Anterior Skull Base Approach. AANS/NREF Skull Base Techniques for Senior Residents. Memphis, TN, October 26, 2017.
31. Anatomy of the Middle Fossa and Cavernous Sinus. AANS/NREF Skull Base Techniques for Senior Residents. Memphis, TN, October 27, 2017.
32. Complex Adenoma with Subarachnoid Invasion. Brigham and Women’s Skull Base and Cerebrovascular Symposium, Boston, MA, September 22, 2018.
33. Innovations in Endoscopic Minimally Invasive Brain Surgery Hands-On Course, Orlando, FL, January 15, 2019.

34. Annual North American Skull Base Society (NASBS) Meeting, Orlando, FL, February 12, 2019.
35. Winter Clinics, Snowmass Village, CO, February 26, 2019.
36. Microsurgical Approaches to Aneurysms and Skull Base Diseases, Mayo Clinic Simulation Center in Jacksonville, FL, June 8-16, 2019.
37. Evandro de Oliveira Cavernous Sinus Course, Arkansas Neuroscience Institute. Sherwood, AR, August 24-27, 2019.
38. Innovations in Endoscopic Endonasal Surgery. Visiting Professor, Neurosurgery Department, UCLA, Los Angeles, CA, October 1-2, 2019.
39. Multi-Corridor Skull Base Surgery. Distinguished Visiting Professor Lecture Series - Grand Rounds Cedars-Sinai Medical Center, Los Angeles, CA, October 10-11, 2019.
40. Department of Neurological Surgery. Visiting Professor-Grand Rounds, Barrow Neurological Institute, Phoenix, AZ, January 24, 2020.
41. Annual North American Skull Base Society (NASBS) Meeting, Phoenix, AZ, February 18-20, 2022. Recipient of the Fred Gentili Clinical Excellence Award.
42. 3D Plenary Session: Operative Nuances and Techniques. American Association of Neurological Surgeons Annual Meeting, Philadelphia, PA, April 29-May 2, 2022
43. Pituitary Adenomas: Surgical Advancements in the Treatment of Pituitary Adenomas: Pushing the Boundaries of Resectability. American Association of Neurological Surgeons Annual Meeting, Philadelphia, PA, April 29-May 2, 2022.
44. Giant Adenoma Management Session: Session II: What's on the Horizon. American Association of Neurological Surgeons Annual Meeting, Philadelphia, PA, April 29-May 2, 2022.
45. Panel Discussion with Questions from Audience Session: Session II: What's on the Horizon - American Association of Neurological Surgeons Annual Meeting, Philadelphia, PA, April 29-May 2, 2022.
46. Endoscopic Endonasal Surgery for Adenomas Invading the Cavernous Sinus. The Western Neurosurgical Society Annual Meeting, Hawaii, HI, September 9-12, 2022.
46. Challenges in Skull Base Surgery, XL CLAN Miami 2022 (Congreso Latinoamericano de Neurocirugia), Latin American Society of Neurosurgeons of USA & Canada (SLANC) Annual Meeting, Miami, FL, November 19-24, 2022.
47. "Endoscopic Endonasal Skull Base Surgery: Maturation of a Generational Paradigm Shift" Visiting Professor to University of South Florida, February 19, 2023.
48. "Endoscopic endonasal approach to the petroclival region". North American Skull Base Society (NASBS) Meeting, Tampa, FL, February 17-19, 2023.

**Invited Lectures: International**

1. A decade of training and innovation in neurosurgery in the US: 2005-2015. Madrid, Spain, June 28, 2016.
2. Live Surgery. Suprasellar meningioma. Madrid, Spain, June 28, 2016.
3. Endonasal endoscopic surgery of the sellar region, parasellar, suprasellar, and retroinfundibular. Endoscopy Endonasal skull base surgery course. Madrid, Spain, June 28, 2016.
4. Endoscopic endonasal surgery clival region, petroclival, and foramen magnum. Endoscopy Endonasal skull base surgery course. Madrid, Spain, June 28, 2016.
5. Anatomical basis for the selection and combination surgical to the skull base approaches. Endoscopy Endonasal skull base surgery course. Madrid, Spain, June 28, 2016.
6. Endoscopic endonasal approach to the sellar region and cavernous sinus. 31<sup>st</sup> Brazilian Congress of Neurosurgery (CBN2016), September 6, 2016.
7. Endoscopic endonasal approach to the suprasellar region and anterior skull base. 31<sup>st</sup> Brazilian Congress of Neurosurgery (CBN2016), September 6, 2016.
8. Endoscopic endonasal approach to the clival and petroclival region. 31<sup>st</sup> Brazilian Congress of Neurosurgery (CBN2016), September 6, 2016.
9. Olfactory groove meningiomas: critical analysis of the surgical approaches. 31<sup>st</sup> Brazilian Congress of Neurosurgery (CBN2016), September 7, 2016.
10. Multi-Corridor Skull Base Surgery. 31<sup>st</sup> Brazilian Congress of Neurosurgery (CBN2016), September 7, 2016.
11. “Rhoton Memorial Lecture” – Prof. Rhoton: Master and Mentor. 31<sup>st</sup> Brazilian Congress of Neurosurgery (CBN2016), September 7, 2016.
12. Anatomy of the sella turcica and parasellar region, skull base surgery and endoscopic surgery. Dr. Rhoton’s Memorial Session in the Annual Meeting, Fukuoka, Japan, September 29, 2016.
13. Cirugia Endoscopica de los Craneofaringiomas. Neuropinamar, Buenos Aires, Argentina, December 2, 2016.
14. Cirugia de base de craneo, seleccion y combinacion de abordajes transcranial y endonasal. Neuropinamar, Buenos Aires, Argentina, December 2, 2016.
15. Casos Complejos de base de craneo videos 3D. Neuropinamar, Buenos Aires, Argentina, December 3, 2016.
16. Cirugia Endoscopica Endonasal de los meningiomas petroclivals. Neuropinamar, Buenos Aires, Argentina, December 3, 2016.

17. Endoscopic Endonasal pituitary and cavernous sinus surgery, Annual Scientific Meeting of the Royal College of Neurological Surgeons of Thailand, Bangkok, Thailand, February 14, 2017.
18. Endoscopic endonasal surgery for suprasellar meningiomas and craniopharyngiomas. Annual Scientific Meeting of the Royal College of Neurological Surgeons of Thailand, Bangkok, Thailand, February 14, 2017.
19. Endoscopic endonasal surgery for chordomas, chondrosarcomas, and petroclival meningiomas. Annual Scientific Meeting of the Royal College of Neurological Surgeons of Thailand, Bangkok, Thailand, February 14, 2017.
20. 3D Surgical Anatomy Lecture: Sinonasal, Sellar and Parasellar Regions. National Skull Base Endoscope Conference, Xi'an, China, April 7, 2017.
21. Live Surgery. Complex pituitary adenoma. National Skull Base Endoscope Conference, Xi'an, China, April 8, 2017.
22. 3D Surgical Anatomy Lecture: Sinonasal, Sellar, and Parasellar Regions, 3D Surgical Anatomy Lecture: Sinonasal, Sellar and Parasellar Regions, National Skull Base Endoscope Conference, Xi'an, China, April 9, 2017.
23. 3 D Surgical Anatomy Lecture: Middle and Infratemporal Fossa. National Skull Base Endoscope Conference, Xi'an, China, April 9, 2017.
24. Anatomia endoscopica 3D de la base craneal anterior. Cirugia Endoscopica Endonasal De Base De Craneo, Madrid, Spain, June 22, 2017.
25. Anatomia endoscopica 3D de la base craneal posterior. Cirugia Endoscopica Endonasal De Base De Craneo, Madrid, Spain, June 22, 2017.
26. Training and learning curve in endoscopic endonasal surgery. Cirugia Endoscopica Endonasal De Base De Craneo, Madrid, Spain, June 22, 2017.
27. Cirugia endoscopica endonasal: principios, equipamiento y tecnica quirurgica. Cirugia Endoscopica Endonasal De Base De Craneo, Madrid, Spain, June 22, 2017.
28. Endoscopic endonasal surgery from Neurosurgery perspective surgical anatomy and technique. Cirugia Endoscopica Endonasal De Base De Craneo, Madrid, Spain, June 23, 2017.
29. Cirugia endoscopica endonasal para cordomas, condrosarcomas y meningiomas petroclivales. Cirugia Endoscopica Endonasal De Base De Craneo, Madrid, Spain, June 23, 2017.
30. Live Surgery. Suprasellar Dermoid Tumor. Cirugia Endoscopica Endonasal De Base De Craneo, Madrid, Spain, June 23, 2017.
31. 3D Endoscopic Endonasal Surgical Anatomy: Sinonasal, Sellar and Parasellar Regions. 2017 Advanced Endoscopic Skull Base Surgery Course, Shanghai, China, September 9, 2017.

32. 3D Endoscopic Endonasal Surgical Anatomy: Suprasellar Region and Anterior Skull Base. 2017 Advanced Endoscopic Skull Base Surgery Course, Shanghai, China, September 9, 2017.
33. 3D Endoscopic Endonasal Surgical Anatomy: Posterior Skull Base and Transpterygoid approach. 2017 Advanced Endoscopic Skull Base Surgery Course, Shanghai, China, September 9, 2017.
34. 3D Endoscopic Endonasal Surgical Anatomy: Selection of Transcranial and Endonasal Approaches. 2017 Advanced Endoscopic Skull Base Surgery Course, Shanghai, China, September 9, 2017.
35. From the Lab to the OR: Endoscopic Endonasal Skull Base Surgery. 1<sup>st</sup> Rhoton Society Meeting, Tianjin, China, June 30, 2018.
36. Fiber Tracts: Facts, Myths, and Surgical Innovation. First Rhoton Society Meeting, Tianjin, China, July 1, 2018.
37. Innovations in Endoscopic Endonasal Skull Base Surgery. First Rhoton Society Meeting, Tiantan Neurosurgery Hospital, Beijing, China, July 4, 2018.
38. Endoscopic Endonasal Cavernous Sinus Surgery. Skull Base Symposium. Samsung Medical Center, Seoul, South Korea, November 2, 2018.
39. Endoscopic endonasal approaches to the hypothalamus and brainstem. Skull Base Symposium. Samsung Medical Center, Seoul, South Korea, November 2, 2018.
40. Pituitary adenoma invading cavernous sinus: Surgical Anatomy and Technique. INTENSE Korea-Japan Workshop, Seoul, South Korea, November 3, 2018.
41. Endoscopic Endonasal Extreme Medial Approach. INTENSE Korea-Japan Workshop, Seoul, South Korea, November 3, 2018.
42. Endoscopic Endonasal Interdural Pituitary Transposition and Posterior Clinoidectomy. INTENSE Korea-Japan Workshop, Seoul, South Korea, November 3, 2018.
43. Endoscopic Endonasal Approach to Foramen Magnum Meningiomas. INTENSE Korea-Japan Workshop, Seoul, South Korea, November 4, 2018.
44. Beijing International Congress of Neuroendoscopy and Beijing International Congress of Pituitary Adenoma. Beijing, China, April 26, 2019.
45. Distinguished Visiting Professor of Endoscopic Skull Base Neurosurgery. Tianjin Huanhu Hospital, Tianjin, China, September 19-22, 2019.
46. The 30th Annual Meeting of the Japanese Society for Hypothalamic and Pituitary Tumors. Tokyo, Japan, February 21-22, 2020.
47. Keynote Lecture: Innovations in Cavernous Sinus Surgery. 4<sup>th</sup> Congress of the European Skull Base Society, Riva del Garda, Italy, April 20-23, 2022.

48. Plenary Session on Surgical Anatomy. 4<sup>th</sup> Congress of the European Skull Base Society, Riva del Garda, Italy, April 20-23, 2022.
49. Cavernous Sinus Surgery: Open vs. Endoscopy. 4<sup>th</sup> Congress of the European Skull Base Society, Riva del Garda, Italy, April 20-23, 2022.
50. Chordoma surgery: Technique and Outcomes. Controversies in Cranial and Cervical Surgery, Clinical La Luz, Madrid, Spain, November 25-26, 2022.
51. Petroclival Meningiomas. Controversies in Cranial and Cervical Surgery, Clinical La Luz, Madrid, Spain, November 25-26, 2022.

### **Webinar Presentations**

1. Minimally Invasive Endoscopic Surgery for Prolactinomas: When to Operate and What to Expect, Pituitary Network Association, December 10, 2014.
2. Cavernous Sinus Invasion. Endoscopic Series Webinar: Pituitary Tumors and CSF Leaks, Congress of Neurological Surgeons, November 29, 2016.
3. Endoscopic Endonasal Anterior Skull Base Surgery: Anatomy and Surgical Correlates, Grand Rounds, Congress of Neurological Surgeons, December 28, 2016.
4. Endoscopic Endonasal Surgery for Tuberculum Sella Meningiomas, Grand Rounds, Congress of Neurological Surgeons, February 12, 2017.
5. Transclival Approach for Meningiomas. Endoscopic Series Webinar: Transclival/Transodontoid Approaches, Congress of Neurological Surgeons, April 4, 2017.
6. Anatomy of the Anterior Skull Base/Cribriform. Endoscopic Series Webinar: Endoscopic Endonasal Transcribriform Approaches, Congress of Neurological Surgeons, May 3, 2017.
7. Endoscopic Resection of Craniopharyngiomas. Grand Rounds, The Neurosurgical Atlas, June 11, 2017.
8. Approach to the Pituitary Tumor Patient, Pituitary Network Association, September 26, 2018.
9. Patient Approach and Resection of the Medial Wall of the Cavernous Sinus: Game-changing Technique for Patients with Acromegaly, Pituitary Network Association Webinar, March 6, 2020.
10. Step-Wise Anatomically-Based Resection of the Medial Wall of the Cavernous Sinus: A Game-changing Technique in Pituitary Surgery, International Web-Based Neurosurgery Congress (IWBNC), Bogotá, Colombia. May 22, 2020.
11. Panel Discussion: Multi-Disciplinary Approach Needed for Point-of-Care 3D Printing, AMA Medical Virtual Summit, The American Society of Mechanical Engineers, May 27, 2020.

12. Pontificia Universidad Javeriana Neurosurgery Department presentation on “Extended Endonasal Approach, Transpterigoid Approach”. Invited Faculty Speaker. Bogotá, Colombia, June 2, 2020.
13. Access to the Skull Base Using Transsphenoidal Endoscopic Approaches, Sociedad Española de Neurocirugía (SENEC) and PRIM Neuro-Trauma, June 5, 2020.
14. Virtual OR and Craniopharyngiomas, The Neurosurgical Atlas, June 29, 2020.
15. “Endoscopic Endonasal Surgery for Chordomas and Chondrosarcomas: Surgical Anatomy and Technical Nuances”, Miami Global Brain Tumor Symposium, July 15, 2020.
16. “Is Endoscopic Approach Now a Standard of Care for Surgical Treatment”, Nigerian Neurosurgeons-Craniopharyngiomas, August 8, 2020.
17. Cavernous Sinus “Endoscopic vs. Open”, Ignite the Journal, Nepal, August 23, 2020.
18. Virtual OR and Craniopharyngiomas, The Neurosurgical Atlas, September 21, 2020.
19. “Coding Challenges and Strategies for Endoscopic Endonasal Skull Base Surgery”, Stanford Healthcare Retreat, October 8, 2020.
20. “Challenges & Innovations in Endoscopic Endonasal Skull Base Surgery” 15th AOICSBS Virtual Congress, Japan, October 25-26, 2020.
21. “Use of DuraGen in Endoscopic Endonasal and Transcranial Skull Base Surgery” The 32nd Annual Meeting of Japanese Society for Skull Base Surgery, October 25-26, 2020.
22. "Application of 3D Printing and Virtual Reality Simulation for Presurgical Planning of Endoscopic Endonasal Surgery of a 2 Year-Old Patient" AM Medical Summit, October 28, 2020.
23. “Endoscopic Endonasal Surgery for Craniopharyngiomas: A Formidable Challenge”, Skull Base and Aneurysms Rhoton Course: Microsurgical and Endoscopic Approaches 2020 – LIVESTREAM, Mayo Clinic, November 6, 2020.
24. Innovations and Advances in Pituitary Tumor Surgery, The Neurosurgical Atlas, November 9, 2020.
25. NASBS Skull Base Virtual Course: Parasellar, Meckel’s Cave, and Clivus, North American Skull Base Society, November 19, 2020.
26. Masters in Skull Base Surgery: State of the Art in Skull Base Surgery- 2<sup>nd</sup> Session, Instituto Nacional de Neurología Y Neurocirugía Webinar Series, Mexico, November 24, 2020.
27. Panelist for SLANC Symposium, Sociedad Latinoamericana de Neurocirujanos en EEUU Y Canada, December 4, 2020.
28. TNTS Endoscopic Technique: Innovative Approaches. CNS Hot Topics & Expert Perspectives. Treatment of Challenging Pituitary Adenomas, International Stereotactic Radiosurgery Society (ISRS) Educational Webinars, Latin America Series, December 19, 2020.



29. Extended Endoscopic Approaches, Surgical Neuroanatomy Conference, Neurosurgery, Medical Sciences Campus, University of Puerto Rico, January 22, 2021.
30. Skull Base Chordomas and Chondrosarcomas: Surgical Anatomy and Technical Nuances. The Neurosurgical Atlas, February 8, 2021.
31. Complex Craniopharyngiomas: A Formidable Challenge, Cerebrovascular and Skull Base International Symposium, University of Miami, March 18, 2021.
32. Surgical and Anatomical Simulation & Virtual Reality Models, IamBrain.org 2021 Annual Meeting, A Worldwide Video Symposium, March 20, 2021.
33. Endonasal approaches to paramedian skull base, 2021 IFNE-JSNE-GLEN-NESI-CSNE Virtual Workshop on Neuroendoscopy, The International Federation of Neuroendoscopy, April 8, 2021.
34. Navigating the Cavernous Sinus: Walls, Ligaments and Compartments, 6th Skull Base Surgery Forum, China, April 10, 2021.
35. "Anatomical Reference Points", Mexican Society of Neurological Surgery and the FLANC Latin American Federation of Neurosurgery Societies, April 22, 2021.
36. At the Technical Limit: Endoscopic Endonasal Approaches for Complex Paediatric and Adult Craniopharyngiomas, International Craniopharyngioma Webinar, Institute of Clinical Neurosciences, North Bristol NHS Trust, England, April 23, 2021.
37. Cutting Edge Anatomical Concepts in Pituitary Surgery, "Ask the Expert" Series, American Association of Neurological Surgeons, April 26, 2021.
38. Craniopharyngiomas Conference, Cruce Hospital El Cruce - Nestor Kirchner, Buenos Aires, Argentina, May 11, 2021.
39. ISFGS Round Table: Neurosurgery and Fluorescence Guided Imaging, International Society for Fluorescence Guided Surgery, May 18, 2021.
40. Modern Skull Base Surgery: 6+1 Skull Base Approaches, 2021 International Web-Based Neurosurgery Congress (2021-IWBNC), May 28, 2021.
41. 1) Endoscopic Endonasal Surgery for Pituitary Tumors with Cavernous Sinus Invasion 2) Endoscopic Endonasal Approach to the Clival and Petroclival Region, Skull Base and Aneurysms Rhoton Course: Microsurgical and Endoscopic Approaches 2021, Microsurgical and Endoscopic Approaches to Skull Base, June 18, 2021.
42. Transcavernous, AANS/CNS Section on Tumors I: Skull Base Surgery, American Association of Neurological Surgeons August 24, 2021.
43. UC Irvine Neurological Surgery Grand Rounds, September 3, 2021.

44. Innovations in the Surgical Treatment of Craniopharyngiomas and Hypothalamic Tumors, SENECA 2021 - Sociedad Española de Neurocirugía, September 17, 2021.
45. Endoscopic Approach for Clival Chordomas, Turkish Neurosurgical Society 34th Scientific Congress, October 1, 2021.
46. 3D Surgical Neuroanatomy, Congress of Neurological Surgeons Annual Meeting, October 17, 2021.
47. Conundrums in Neurosurgery “Endoscopic approaches to Craniopharyngioma”, National Institute of Mental Health and Neuro Sciences (NIMHANS), Bangalore, India, October 19, 2021.
48. Advanced Endoscopic and Exoscopic Neurosurgery Seminar, Congress of Neurological Surgeons Annual Meeting, October 20, 2021.
49. Understanding Subcortical Anatomy for Glioma Surgery, Fourth Annual European 3D Advanced Fiber Dissection Course: Acquiring the Mental Imagery Necessary to Operate the Brain, Santander (Spain), October 21, 2021.
50. Sponsored Seminar supported by Integra LifeSciences: The 80th Annual Meeting of the Japan Neurosurgical Society, Yokohama, Japan, Oct 27, 2021.
51. Subspecialty Symposium 18: How Do You Treat Skull Base Tumors? The 80th Annual Meeting of the Japan Neurosurgical Society, Yokohama, Japan, Oct 28, 2021.
52. Webinar #54: Oncology/Skull Base Surgery Symposium, The World Federation of Neurosurgical Societies (WFNS), November 26, 2021.
53. “Endoscopic Endonasal Approach to the Clival and Petroclival Region,” Microsurgical and Endoscopic Approaches to Skull Base, Mayo Clinic, November 13, 2021.
54. .
55. “3D Anatomy of Anterior Cranial Base and Sellar Region” Skull Base Surgery Virtual Workshop Advance Program, North American Skull Base Society, December 4, 2021.
56. Latest Innovations in Endoscopic Endonasal Skull Base Surgery, Taiwan Neurosurgical Society, December 5, 2021.
57. Pituitary Approaches, Egyptian & World Neurosurgeons Community (EWNC Academy), January 29, 2022.
58. “Endoscopic Endonasal Approaches to the Paramedian (or lateral ) Skull Base; Surgical Techniques and Nuances” International Basic Neurosurgery Course (IBNC), February 12, 2022.
59. “Skull Base Meningioma, Current Concepts” World Federation of Neurosurgical Societies (WFNS) Foundation ACNS Pure Endoscopic Neurosurgery Summit 2022, February 26-27, 2022.
60. “Endoscopic Endonasal Surgery for Chordomas and Chondrosarcomas: Surgical Anatomy” Associazione Naso San: International Live Grand Rounds, March 18, 2022.

61. “Endoscopic Endonasal Approaches for Chordomas and Chondrosarcomas with Implications for Resection of Petroclival Meningiomas: Technical Pearls and Nuances.” Stryker, April 29, 2022.
62. “Endoscopic Endonasal Surgery- Surgical Technique and Management of Complications.” 81st Annual Meeting of the Japan Neurological Society (JNS2022) held in Yokohama, Japan on September 28 - October 1, 2022.
63. Webinar Series 7: Pituitary Adenoma “Pituitary Adenomas Overview/Management”, the Medical Student Neurosurgery Training Center. October 25, 2022.
64. “Endoscopic Endonasal Approaches for Craniopharyngioma.” Taiwan Pediatric Brain Tumor Consortium, December 16, 2022.
65. “Avoiding cranial nerve deficits in skull base surgery - what strategies can we employ?”. British Skull Base Society Meeting, January 26, 2023.

### **Course Director**

1. Snyderman CH, Gardner PA, **Fernandez-Miranda JC**, Wang EW. Endoscopic Endonasal Surgery of the Cranial Base and Pituitary Fossa. University of Pittsburgh School of Medicine, Pittsburgh, PA, April 15-18, 2015.
2. de Oliveira E, **Fernandez-Miranda JC**. 3D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base. American Association of Neurological Surgeons, Washington, DC, May 2, 2015.
3. de Oliveira E, **Fernandez-Miranda JC**. 3D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base. American Association of Neurological Surgeons, Washington, DC, May 3, 2015.
4. Cohen-Gadol A, **Fernandez-Miranda JC**. 3D Tackling Challenging Cranial Cases. American Association of Neurological Surgeons, Washington, DC, May 3, 2015.
5. Gardner PA, **Fernandez JC**, Engh JA. Innovations in Endoscopic Intracranial Surgery: A Hands-On Course. University of Pittsburgh School of Medicine, Pittsburgh, PA, July 15-17, 2015.
6. Snyderman CH, Gardner PA, **Fernandez-Miranda JC**, Wang EW. Endoscopic Endonasal Surgery of the Cranial Base and Pituitary Fossa. University of Pittsburgh School of Medicine, Pittsburgh, PA, August 16-19, 2015.
7. **Fernandez-Miranda JC**. 3-D Surgical Neuroanatomy (Supratentorial) Course. 2015 Annual CNS Meeting, New Orleans Louisiana, September 26, 2015.
8. **Fernandez-Miranda JC**. 3-D Surgical Neuroanatomy (Infratentorial) Course. 2015 Annual CNS Meeting, New Orleans, Louisiana, September 26, 2015.
9. Snyderman CH, Gardner PA, **Fernandez-Miranda JC**, Wang EW. Endoscopic Endonasal Surgery of the Cranial Base and Pituitary Fossa. University of Pittsburgh School of Medicine, Pittsburgh, PA, November 18-21, 2015.

10. Snyderman CH, Gardner PA, **Fernandez-Miranda JC**, Wang EW. Comprehensive Endoscopic Endonasal Surgery of the Skull Base. University of Pittsburgh School of Medicine, Pittsburgh, PA, April 13-16, 2016.
11. Gardner PA, **Fernandez JC**, Engh JA. Innovations in Endoscopic Intracranial Surgery: A Hands-On Course. University of Pittsburgh School of Medicine, Pittsburgh, PA, June 22-24, 2016.
12. Snyderman CH, Gardner PA, **Fernandez-Miranda JC**, Wang EW. Advanced Endoscopic Endonasal Surgery of the Skull Base. University of Pittsburgh School of Medicine, Pittsburgh, PA, August 18-20, 2016.
13. **Fernandez-Miranda JC**. Complex Skull Base and Brain Tumor Surgery: 3D Surgical Anatomy and Technical Nuances. Congress of Neurological Surgeons, San Diego, CA, September 24, 2016.
14. **Fernandez-Miranda JC**. Surgical Neuroanatomy I (Supratentorial). Congress of Neurological Surgeons, San Diego, CA, September 25, 2016.
15. Snyderman CH, Gardner PA, **Fernandez-Miranda JC**, Wang EW. Comprehensive Endoscopic Endonasal Surgery of the Skull Base. University of Pittsburgh School of Medicine, Pittsburgh, PA, December 7-10, 2016.
16. **Fernandez-Miranda JC**. Rhoton Lecture Series: 3-D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base. American Association of Neurological Surgeons Annual Meeting, Los Angeles, CA, April 22, 2017.
17. **Fernandez-Miranda JC**. Rhoton Lecture Series: 3-D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base. American Association of Neurological Surgeons Annual Meeting, Los Angeles, CA, April 22, 2017.
18. Snyderman CH, Gardner PA, **Fernandez-Miranda JC**, Wang EW. Comprehensive Endoscopic Endonasal Surgery of the Skull Base. University of Pittsburgh School of Medicine, Pittsburgh, PA, May 10-13, 2017.
19. **Fernandez-Miranda JC**, Wang EW. II Curso Científico Cirugía Endoscópica Endonasal de Base de Cráneo, Hospital Universitario La Paz, Madrid, Spain, July 22-23, 2017.
20. Snyderman CH, Gardner PA, **Fernandez-Miranda JC**, Wang EW. Complex Endoscopic Endonasal Surgery of the Skull Base. University of Pittsburgh School of Medicine, Pittsburgh, PA, August 17-19, 2017.
21. **Fernandez-Miranda JC**. 3D Surgical Neuroanatomy (Supratentorial). Congress of Neurological Surgeons meeting, Boston, MA, October 8, 2017.
22. **Fernandez-Miranda JC**. 3D Surgical Neuroanatomy (Infratentorial). Congress of Neurological Surgeons meeting, Boston, MA, October 8, 2017.
23. Snyderman CH, Gardner PA, **Fernandez-Miranda JC**, Wang EW. Comprehensive Endoscopic Endonasal Surgery of the Skull Base. University of Pittsburgh School of Medicine, Pittsburgh, PA, November 8-11, 2017.

24. **Fernandez-Miranda JC.** Rhoton Lecture Series: 3-D Anatomy and Approaches to the Supratentorial Area and Anterior Skull Base. American Association of Neurological Surgeons Annual Meeting, New Orleans, LA, April 22, 2018.
25. **Fernandez-Miranda JC.** Rhoton Lecture Series: 3-D Anatomy and Approaches to the Posterior Fossa and Posterior Skull Base. American Association of Neurological Surgeons Annual Meeting, New Orleans, LA, April 22, 2018.
26. **Fernandez-Miranda JC.** 3D Surgical Neuroanatomy (Supratentorial). Congress of Neurological Surgeons meeting, Houston, TX, October 6, 2018.
27. **Fernandez-Miranda JC.** 3D Surgical Neuroanatomy (Infratentorial). Congress of Neurological Surgeons meeting, Boston, MA, October 6, 2018.
28. **Fernandez-Miranda JC.** Stanford CME Endoscopic Endonasal Skull Base Surgery: Hands-On Course, Stanford, CA August 15-17, 2019.
29. **Fernandez-Miranda JC.** 2nd Rhoton Society Virtual Meeting and 8th International Zoomposium on Microneurosurgical Anatomy, Stanford, CA. September 11-13 through September 18-20, 2020.
30. **Fernandez-Miranda JC.** Stanford CME Endoscopic Endonasal Skull Base Surgery: Hands-On Course, Stanford, CA August 10-13, 2022.
31. **Fernandez-Miranda JC.** SYM 14B: 3D Surgical Neuroanatomy, Congress of Neurological Surgeons Annual Meeting, October 8-12, 2022.

**Course Faculty (Favorite 6 of 39):**

1. CNS 3-D Surgical Anatomy Course for Senior Residents. Houston, TX August 22-25, 2013.
2. USF Masters in Skull Base Surgery Course, Tampa, FL February 5-7, 2015.
3. AANS/NREF Skull Base Course. Memphis, TN March 7, 2014
4. Nuts and Bolts of Posterior Fossa Surgery: How I Do It. American Association of Neurological Surgeons, San Francisco, CA, April 6, 2014.
5. Pituitary Surgery: Indications, Techniques and Outcomes. Congress of Neurological Surgeons, San Diego, CA. September 25, 2016.
6. Operative Nuances I: Handling Difficult Intraoperative Moments. American Association of Neurological Surgeons, Los Angeles, CA. April 24, 2017.

**MENTORING**

List of **Clinical Fellows** that have undergone formal clinical training in Skull Base Surgery under direct supervision:

1. Alessandro Paluzzi, MD (UK) 2010-2012
2. Mathew Tormenti, MD (US) 2010-2012
3. Mary Koutourousiou, MD (Greece) 2011-2013
4. Francisco Vaz Guimaraes, MD (Brazil) 2012-2014
5. Ali Kooskabadi, MD (US) 2013-2015
6. Robert Miller, MD (US) 2013-2015
7. Joseph Chabot, DO (US) 2014-2016
8. Nathan Zwagerman, MD (US) 2014-2016
9. Georgios A. Zenonos MD (US) 2015-2017
10. Pradeep Setty, DO (US) 2016-2017
11. Debraj Mukherjee, MD (US) 2017-2018
12. Ezequiel Goldschmidt, MD (US) 2017-2018
13. Kumar Abhinav, MD (US) 2018-2019
14. Ahmed Mohyeldin, MD PhD (US) 2019-2021
15. Karam Asmaro, MD (US) 2021-2022
16. Christine Lee, MD PhD (US) 2022-2023

List of **Research Fellows** that have undergone formal training at the Surgical Neuroanatomy Lab and Fiber Tractography Lab (2008-Present):

1. Kumar Abhinav, MD (UK)
2. Yancy Acosta, MD (Dominican Rep.)
3. Victor Barradas Alcocer, MD (Mexico)
4. Abdelhay Ali, MD (Egypt)
5. Beatriz Lopez Alvarez, MD (Spain)
6. Tiago Alves, MD (Brazil)
7. Pablo Barcelo, MD (Argentina)
8. Juan Barges Coll, MD (Mexico)
9. Cristobal Blanco, MD (Spain)
10. Luis R. Bonilla, MD (Dominican Rep.)
11. Hamid Borghei-Razavi, MD(Germany)
12. Rodrigo Cavalcante, MD (Brasil)
13. Eugenio Cardenas, MD (Spain)
14. Emrah Celtikci, MD (Turkey)
15. Salomon Cohen, MD (Mexico)
16. Ayhan Cömert, MD (Turkey)
17. Leo Ditzel, MD (Brasil)
18. Abdullah Durmaz, MD (Turkey)
19. Tomasz Dziejczak, MD (Poland)
20. Cristian Ferrareze Nunes, MD (Brazil)
21. Eduardo Flores, MD (Mexico)
22. Sergio Gomez, MD (Columbia)
23. Fabio Guerra, MD (Spain)
24. Quang Huy Truong, MD (Vietnam)
25. Sukdeep Jawar, MD(India)
26. Weihong Jiang, MD (China)

27. Mohamed Labib, MD (Canada)
28. Fernando Latorre, MD (Argentina)
29. Stefan Lieber, MD (Switzerland)
30. Jianfeng Liu, MD (China)
31. Chiyuan Ma, MD (China)
32. Joao Mangussi, MD (Brazil)
33. Roger Mathias, MD (Brazil)
34. David Mato, MD (Spain)
35. Antonio Meola, MD (Italy)
36. Victor Morera, MD (Colombia)
37. Edinson Najera, MD (Spain)
38. Maximiliano Nunez, MD (Argentina)
39. Yujiro Obikane, MD (Japan)
40. Paolo Pacca, MD (Italy)
41. Sandip Panesar, MD (UK)
42. Igor Paredes, MD (Spain)
43. Zhou Peizhi, MD (China)
44. Carlos Pinheiro, MD (Brasil)
45. Felix Quezada, MD (Dominican Republic)
46. Omar Ramirez, MD (Colombia)
47. Milton Rastelli, MD (Brazil)
48. Seyed Samini, MD (Iran)
49. Kamran Sattarov, MD (Ukraine)
50. Daniel Seclen, MD (Argentine)
51. Tiago Scopel, MD (Brasil)
52. Zhao Hui Shi, MD (China)
53. Ramon Terre, MD (Spain)
54. Ronaldo Toledo, MD (Brazil)
55. Denildo Verissimo, MD (Brazil)
56. Xu Hui Wang, MD (China)
57. Ming Dong Wang, MD (China)
58. Wei-Hsin Wang, MD (Taiwan)
59. Yibao Wang, MD (China)
60. Zhong-Wren Wang, MD (China)
61. Hongquan Wei, MD (China)
62. Dali Wu, MD (Taiwan)
63. Zhiqun Wu, MD (China)
64. Zhang Xian, MD, PhD (China)
65. Wu Xiaojun, MD (China)
66. Sun Xicay, MD (China)
67. Wenping Xiong, MD (China)
68. Bo Yan, MD (China)
69. Robert Zanabria, MD (Spain)
70. Timothée Jacquesson (France)
71. Pedro Augusto Sousa Rodrigues (Brazil)
72. Ayoze Doniz Gonzalez (Spain)
73. Qingguo Meng (China)
74. Vera Vigo (Italy)
75. Yuanzhi Xu (China)

76. Pinghua Wu (China)
77. Agustin Diaz (Argentina)
78. Hiroki Morisako (Japan)
79. Kerem Nernekli (Turkey)
80. Carlos Vior (Spain)
81. Ju Hyung Moon (Korea)
82. Sergio Garcia Garcia (Spain)
83. Alvaro Campero (Argentina)
84. José Ernesto Chang (El Salvador)
85. Johan Valenzuela (Dominican Republic)
86. Nobutaka Yoshioka (Japan)

#### **MEDIA APPEARANCES:**

1. NBC Nightly News. “How doctors used virtual reality and 3D printing to save a 2-year-old with a brain tumor”. 11/14/2019
2. NBC Today. “Virtual reality helps surgeons remove tumor from 2-year-old’s brain”. 11/15/2019
3. Telemundo. “Técnica de realidad virtual salva la vida de niño con raro tumor”. 11/15/2019
4. PITT. “Brain Terrain”, Winter 2013.
5. PITTMED. “Missing Links”, Fall 2012
6. Science Illustrated. “What Is Consciousness” May/June 2009, pages 52-57.
7. Illustreret Videnskab (Science illustrated, Danish edition). “What Is Consciousness”. 11/2008-12/2008.
8. Diario Medico. “Tractography and fiber dissection ‘open’ the brain” 3/3/2008
9. UF Health Science News. “Distinctions: Juan C. Fernandez-Miranda, MD” 02/2007
10. ABC Semanal. “A GPS to ‘circulate’ inside the head”. 02/25/2007
11. Gaceta de los Negocios. “The diet has an unknown effect on the brain”. 12/12/2006
12. Que! “The best medical resident (in Spain) is from Madrid and misses its traditions”. 12/1/2006
13. Diario Medico. “The tractography of the white matter ‘shows’ its anatomy”. 11/09/2006
14. Diario Medico. “A neurosurgeon from Madrid, Sanitas Prize to the best medical resident”. 11/30/2006

#### **RESEARCH SUPPORT**

##### **Active**

Indiana University/ The Neurosurgical Atlas                      Fernandez-Miranda (PI)                      11/13/19- 6/30/24

##### *Stanford NeuroTraIn Lab*

The main theme of Stanford NeuroTraIn Lab is “From the Lab to the OR” as a reflection of a true translational effort to introduce novel anatomical concepts and innovative surgical technique into real surgical practice. We are teaching the next generation of neurosurgeons the art of microsurgical dissection to spread this knowledge and to influence Neurosurgery worldwide.

##### **Completed**

The Walter L. Copeland Fund of the Pittsburgh Foundation      Fernandez-Miranda (PI)                      7/1/09-7/1/10



*Advanced Magnetic Resonance Imaging Techniques in Minimally Invasive Brain Surgery*

The goal of this study was to investigate the application of high-definition fiber tracking techniques for the presurgical planning of minimally invasive brain surgery procedures.

The Walter L. Copeland Fund of the Pittsburgh Foundation                      Fernandez-Miranda (PI)    7/1/10-7/1/11  
*High-Definition Fiber Tractography in Neurosurgery*

The goal of this study was to investigate the application of high-definition fiber tracking techniques for the presurgical planning, preoperative estimation of structural impact caused by brain lesions, and postoperative study of structural changes caused by a surgical procedure.

The Walter L. Copeland Fund of the Pittsburgh Foundation    Fernandez-Miranda (PI)                      8/1/12-7/31/13  
*Animal Model for Anatomic Validation of High-Definition Fiber Tracking White Matter Structural Damage Assessment*

The goal of this project was to reproduce fiber disruption (sharp transection) and fiber displacement (balloon dilatation) through a neurosurgical procedure in live pigs and study the effects of these interventions using in-vivo HDFT and post-mortem histological analysis.

The Fine Foundation    Fernandez-Miranda (PI)    6/1/13-5/31/15  
*White Matter Mapping to Study Neurodegenerative Conditions*

The goal of this project was to apply High-Definition Fiber Tracking for the study of neurodegenerative diseases such as Huntington disease and ALS, looking for longitudinal changes in fiber tracts and their correlation with clinical progression.

The Hellmund Fund    Fernandez-Miranda (PI)    1/1/14-12/31/15  
*High Definition Fiber Tracking in Skull Base Tumors*

The aim of this project was to investigate the application of HDFT for prediction of visual pathway outcome after surgery and presurgical localization of displaced cranial nerves.

University of Pittsburgh Brain Institute    Fernandez-Miranda (PI)    4/1/14-3/31/18

*High-Definition Fiber Tractography (HDFT)*

This grant is funded by the University of Pittsburgh Brain Institute (UPBI) to support High-Definition Fiber Tractography (HDFT) research in the Department of Neurological Surgery, including projects in the Fiber Tractography Laboratory, the neuroanatomy of fiber tracts, presurgical assessment of fiber tracts and surgical planning, fiber tract integrity and damage progression in neurodegenerative disorders.

**NIH-NIDCD      R01 DC013803-01A1    Fernandez-Miranda (PI)    4/1/15-3/31/20**

*Language Connectivity Pathways and Neuroplasticity in Aphasic Stroke Patients*

In this proposal our strategy is to combine innovative diffusion imaging techniques, behavioral assessment, and intensive speech therapy in patients with chronic stroke-related aphasia in order to establish the role of fiber tracts in language function, identify the consequences of their disruption, investigate the potential neuroplastic changes after treatment, and characterize the white matter structural factors that may influence recovery.

Department of Defense    W81XWH-16-1-075    Washington K (PI)    9/30/16-9/29/22 (NCX)  
Joint Warfighter Medical Research Program    Fernandez-Miranda (Co-I)

*A Comprehensive Approach to Whole Eye Transplantation: Building a Scientific Foundation for New Therapies in Vision Restoration*

Our overarching goal is to restore vision following ischemic, traumatic, or degenerative damage to the eye or optic nerve with whole eye transplantation (WET). The next phase of the work will involve a comprehensive approach to further addressing the challenges of whole eye transplantation including 1) defining and controlling immune rejection and inflammation, 2) improving retinal ganglion cell survival 3) implementing immunomodulatory and local drug delivery strategies for graft and retinal ganglion cell survival 4) integrating the donor eye with the host brain by stimulating optic nerve regeneration 5) optimization of a non-human primate pre-clinical model.