

# WILLIAM R. BOYDSTON, M.D., Ph.D., FAAP

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## EDUCATION & TRAINING

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| <b>The University of Georgia</b> , Athens, GA                         | 1971-1975 |
| <i>Bachelor of Science in Zoology</i>                                 |           |
| <i>Graduated with Honors</i>  |           |
| <b>Medical College of Georgia</b> , Augusta, GA                       | 1976-1980 |
| <i>Doctorate of Philosophy in Anatomy, Developmental Neurobiology</i> |           |
| <b>Medical College of Georgia</b> , Augusta, GA                       | 1981-1985 |
| <i>Doctor of Medicine (M.D.)</i>                                      |           |
| <b>The University of Tennessee</b> , Memphis, TN                      | 1985-1986 |
| <i>Intern, General Surgery</i>  |           |
| <b>The University of Tennessee</b> , Memphis, TN                      | 1986-1991 |
| <i>Resident, Neurological Surgery</i>                                 |           |
| <b>Scottish Rite Children's Hospital</b> , Atlanta, GA                | 1991-1992 |
| <i>Fellow, Pediatric Neurosurgery</i>                                 |           |

## APPOINTMENTS & POSITIONS

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| <b>Attending Neurosurgeon</b>  | 1991-Present |
| <ul style="list-style-type: none"><li>• Scottish Rite Children's Medical Center, Atlanta, GA</li><li>• Northside Hospital, Atlanta, GA</li></ul> |              |
| <b>Attending Neurosurgeon</b>  | 1992-Present |
| <ul style="list-style-type: none"><li>• Egleston's Children's Hospital, Atlanta, GA</li></ul>  |              |
| <b>Director, Pediatric Neurosurgery Associates</b>   | 2008-Present |
| <ul style="list-style-type: none"><li>• Children's Healthcare of Atlanta/Emory University</li></ul>  |              |
| <b>Board of Directors</b>  | 2012- 2015   |
| <ul style="list-style-type: none"><li>• Georgia Neurosurgery Society</li></ul>   |              |
| <b>Assistant Professor</b>   | 2007-Present |
| <ul style="list-style-type: none"><li>• Department of Neurosurgery, Emory University</li></ul>   |              |
| <b>Clinical Assistant Professor</b>  | 2008-Present |
| <ul style="list-style-type: none"><li>• Department of Pediatrics, Emory University</li></ul>   |              |
| <b>Clinical Assistant Professor</b>  | 2007-Present |
| <ul style="list-style-type: none"><li>• Morehouse School of Medicine, Atlanta, GA</li></ul>  |              |
| <b>Secretary, Pediatric Neurosurgery Associates</b>  | 1994-2009    |
| <ul style="list-style-type: none"><li>• Children's Healthcare of Atlanta, Atlanta, GA</li></ul>  |              |
| <b>Vice Director, Pediatric Neurosurgery</b>   | 1992-2008    |
| <ul style="list-style-type: none"><li>• Scottish Rite Children's Medical Center, Atlanta, GA</li></ul>   |              |
| <b>Director, Spasticity Clinic</b>   | 1992-2008    |
| <ul style="list-style-type: none"><li>• Children's Healthcare of Atlanta, Atlanta, GA</li></ul>  |              |
| <b>Director, Spina Bifida Clinic</b>   | 1992-2008    |
| <ul style="list-style-type: none"><li>• Children's Healthcare of Atlanta, Atlanta, GA</li></ul>  |              |
| <b>Board of Directors</b>  | 1998-1999    |
| <ul style="list-style-type: none"><li>• Children's Healthcare of Atlanta, Atlanta, GA</li></ul>  |              |
| <b>President, Medical Staff</b>  | 1998-1999    |
| <ul style="list-style-type: none"><li>• Children's Healthcare of Atlanta, Atlanta, GA</li></ul>  |              |
| <b>President, Medical Staff</b>  | 1997-1998    |
| <ul style="list-style-type: none"><li>• Scottish Rite Children's Medical Center, Atlanta, GA</li></ul>   |              |
| <b>Board of Directors</b>  | 1997         |

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|---|-----------|
| <ul style="list-style-type: none"> <li>• Scottish Rite Children’s Medical Center, Atlanta, GA</li> </ul>  |           |
| <b>Chairman, Department of Surgery</b>  | 1996-1997 |
| <ul style="list-style-type: none"> <li>• Scottish Rite Children’s Medical Center, Atlanta, GA</li> </ul>  |           |
| <b>Vice-Chairman, Department of Surgery</b>   | 1995      |
| <ul style="list-style-type: none"> <li>• Scottish Rite Children’s Medical Center, Atlanta, GA</li> </ul>  |           |
| <b>Scientific Review Panel</b>  | 1992-1995 |
| <ul style="list-style-type: none"> <li>• Hydrocephalus Research Foundation</li> </ul>   |           |
| <b>Tutor, School of Medicine Tutorial Program</b>   | 1988-1989 |
| <ul style="list-style-type: none"> <li>• Medical Gross Anatomy, Embryology, and Neuroscience</li> <li>• The University of Tennessee, Memphis, TN</li> </ul> |           |
| <b>Instructor, National Board of Medical Examiners Special Review Program</b>   | 1983      |
| <ul style="list-style-type: none"> <li>• Medical College of Georgia, Augusta, GA</li> </ul>   |           |
| <b>Moderator, Student Educational Enrichment Program</b>  | 1982      |
| <ul style="list-style-type: none"> <li>• Medical College of Georgia, Augusta, GA</li> </ul>   |           |
| <b>Assistant Research Scientist, Department of Anatomy</b>  | 1980-1982 |
| <ul style="list-style-type: none"> <li>• Medical College of Georgia, Augusta, GA</li> </ul>   |           |
| <b>Tutor, School of Medicine</b>  | 1977-1985 |
| <ul style="list-style-type: none"> <li>• Medical College of Georgia, Augusta, GA</li> </ul>   |           |
| <b>Graduate Teaching Assistant, Department of Anatomy</b>   | 1977-1980 |
| <ul style="list-style-type: none"> <li>• Medical College of Georgia, Augusta, GA</li> </ul>   |           |

## HONORS

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| Michael Scott MD lecture, Department of Neurosurgery-<br>Temple University, <i>Graduation Speaker</i> | June 2013                                |
| American Board of Neurological Surgery, <i>Invited Examiner</i>                                       | May 2011                                 |
| Top Doctors, <i>Atlanta Magazine</i>  | 2013, 2012, 2011, 2010, 2009, 2007, 2005 |
| Fellow, American Association of Pediatrics  | 2007-Present                             |
| New Mexico Travel Scholarship, <i>The University of Tennessee</i>                                     | 1989                                     |
| Clinical Neuroscience Award, <i>Medical College of Georgia</i>  | 1985                                     |
| Lange Medical Book Award  | 1981-1982                                |
| Who’s Who among Students in America Universities and Colleges   | 1977-1978                                |
| Senior Superlative, <i>The University of Georgia</i>  | 1975                                     |

## LICENSURE

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| American Board of Pediatric Neurosurgery                           | 1999, Recertified 2010 |
| American Board of Neurological Surgery, <i>Oral Examination</i>    | 1994                   |
| State of Georgia   | 1991                   |
| American Board of Neurological Surgery, <i>Primary Examination</i> | 1988                   |
| National Boards, <i>Diplomat</i>                                   | 1986                   |

## MEDICAL SOCIETIES

American Association of Neurological Surgeons (AANS)  
 American Association of Pediatrics, Fellow  
 American Society of Pediatric Neurosurgeons  
 Congress of Neurological Surgeons  
 Critical Care, Trauma Section (AANS)  
 Georgia Neurosurgical Society  
 Medical Association of Atlanta  
 Medical Association of Georgia  
 Pediatric Section [AANS/CNS]

## DOCTORAL THESIS

The Influence of Target Muscle on the Development of Motor Neurons  
Dr. G.S. Sohal, *Advisor*

## CLINICAL STUDIES

**Reeves-Park Clinical Trial, Chiari I Malformation and Syringomyelia** 2011  
*Principal Investigator, Children's Healthcare of Atlanta*

**Clinical Trial- Synchronomed Model 8616-10, Intrathecal Pump Principal** 1998-2000  
*Investigation, Children's Healthcare of Atlanta-Scottish Rite Children's Medical Center*

**Clinical Trial of the Codman-Medos programmable shunt Valve system** 1993-1998  
*Principle Investigator, Scottish Rite Children's Medical Center*

## COMMUNITY SERVICE

Board Member, *Parent To Parent* 2005-2011

Board Member, *Lionheart School* 2006-Present

Volunteer Physician, *Camp Merrie-Woode, Sapphire, NC* 2011, 2012

Chairman of the Board, *The Preschool (PRUMC)* 1995-1996

Administrative Board, *Peachtree Road United Methodist Church (PRUMC)* 1994-1995

## ABSTRACTS

1. Boydston, WR, Holt RK and Sohal GS: Identification of the Trochlear Neurons by Retrograde Transport of Horseradish Peroxidase. *J. South Carolina Medical Associates* 1978; 74:46
2. Boydston WR: Transplantation of Additional Periphery Reduces the Magnitude of Embryonic Cell Death. *Anat. Rec.* 1979; 193:489
3. Boydston WR and Sohal GS: Development of the Trochlear Nerve Following Complete Removal of the Periphery. *Neurosci. Abst.* 1979; 5:154
4. Boydston WR: Effects of Tenotomy on Muscle Differentiation and Neuron Survival During Development. *Anat. Rec.* 1980; 196:23 A
5. Sohal GS, Creazzo TL and Boydston WR: Role of Muscle Activity in Embryonic Loss of Motor Neurons. Presented at the International Society of Developmental Neuroscience Meeting. Strasburg, France. July 1-4, 1980.
6. Bockman DE, Boydston WR and Anderson MC: Origin of Tubular Complexes in Human Chronic Pancreatitis. *Anat. Rec.* 1982; 204:142
7. Bockman DE and Boydston WR: Participation of Follicle Association Epithelium (FAE), Macrophage and Plasma Cells in the Function of the Appendix and Peyer's Patches, *Scanning Electron Microscopy*. 1982
8. Bockman DE, Boydston WR and Parsa I: Architecture of Human Pancreas: Implications for Early Changes in Pancreatic Disease. National Pancreatic Cancer Project, 982
9. Paige K, Cohen SR, Simms C, Burstein F, Hudgins R, Boydston WR: Risk Stratification for Reoperation in Metopic Synostosis: A Quantitative CAT Scan Analysis. American Cleft Palate Craniofacial Associates, 1997

## BOOK CHAPTERS

1. Mariwalla, N, Chern,j, Boydston,W: Chiari 0 and 1.5. in Chiari Malformations and Syringomyelia, Tubbs, Oakes[ed], Springer- Verlag, 2013.
2. Williams, J, Cohen, S, Burstein, F, Hudgins, R, Boydston, W; Nonsyndromic Craniosynostosis in Plastic Surgery; Indications, Operations, and Outcomes; Achauer (ed), Mosby, 2000.

## ARTICLES

1. Boydston,W, and Sohal,G: Grafting if Additional Periphery Reduces Embryonic Loss of Neurons. Brain Res. 1979; 403- 410.
2. Boydston,W an,d Sohal,G. Intact Peripheral Target Essential for Branching of Developing Nerve Fibers. Expt Neurology 1980: 70; 173-178.
3. Bockman, D, Boydston,W, and Anderson,M: Origin of Tubular Complexes in Human Chronic Pancreatitis. Am.J.Surgery; 144; 243-249.
4. Bockman,D and Boydston,W: Participation of Follicle Associated Epithelium[FAE], Macrophages and Plasma Cells in the Function of Appendix and Peyer's Patches. Am.J. Surgery: 1982[111]; 1341-1350.
5. Bockman,D, Boydston,W, Beezhold,D: the Role of Epithelial Cells in Gut- Associated Immune Reactivity. Ann. N.Y. Acad. Sci\.:1983: 409:129-144.
6. Boydston, W, Sohal, G:Decrease in Acetylcholine Receptor Number Correlated With Increased Naturally Occuring Trochlear Motor Neuron Death During Development. Expt. Neurology 1983:79;801-897.
7. Bockman, D, Boydston,W, Parsa,I: Architecture of Human Pancreas: Implications for Early Changes in Pancreatic Disease. Gastroenterology 1983: 85; 55-61.
8. Leventhal,M , Boydston,W, Watridge,C,: The Diagnosis and Treatment of Occipital Condyle Fractures. Orthopedics 15[8]; 944-947, 1992.
9. Sohal,G, Boydston,W, Influence of Neostigmine Treatment on the Emryonic Development of Acetylcholine Receptors and Neuromuscular Junctions. J Cell Biol. 1982;94:540-548.
10. Boydston,W, Sanford,A,Muhlbauer,M,Kuhn,L,Dohan,F,Schweitzer,j:Gliomas of the Tectum and Periaqueductal Region of the Mesencephalon. Ped Neurosurgery 17; 234-238, 1992.
11. Hudgins,R, Burstein,F, Boydston,W: Total Cavarial Reconstruction for Severe Sagittal Synostosis. J Neurosurgery 78; 199-204, 1993.
12. Hudgins,R, Boydston,W,Hudgins,P,Adler,S:Treatment of Intraventricular Hemorrhage in pre-Term Infants with Urokinase. Ped. Neurosurgery 20; 190-197, 1994.
13. Burstein,F,Hudgins,R,Cohen,S,Boydston,W:Surgical Correction of Severe Scaphalocephalic Deformities. J Craniofacial Surg 94; 228-236,1994.
14. Hudgins,R,Boydston,W: Bone Regrowth and Recurrence of Symptoms Following decompression in the Infant with Chiari II Malformation. Ped Neurosurgery 23;323-327,1995.
15. Cohen,S,de Chalain,T,Burstein,F,Hudgins,R,Boydston,W:Turribrachicephaly; A Technical Note. Annals of Plastic Surgery 35:627-632, 1995.
16. Burstein,F.,Cohen,S,Hudgins,R,Boydston,W:The Use of Granular Hydroxyapatite in Secondary Orbitocranial Reconstruction. Craniofacial Surgery 6;325-327,1996.
17. Cohen,S,Burstein,F,Williams,J,Hudgins,R,Boydston,W,Sims,C:Outcome Analysis in Craniosynostosis; A Prospective, Statistical Analysis of Reoperative Rates. Craniofacial Surgery 6:281-287, 1997.
18. Hudgins,R,Boydston,W,Hudgins,P,Morris,R,Adler,S; Intrathecal Urokinase as a Treatment for Intraventricular Hemorrhage in the Preterm Infant. Ped Neurosurgery 26:281-287, 1997.
19. Chung,C,Muklherji,S,Fordham,L,Boydston,W,Hudgins,R:Geniculate Meningioma. Ped Radiology 27:847-849, 1997.
20. Burstein,F,Cohen,S,Hudgins,R,Boydston,W:Frontal Basilar Trauma; Classification and Treatment. Plastic and Reconstructive Surg 99; 1314-1321, 1997.
21. Murphy,Y,Boydston,W:Lateral Sinus Thrombophebitis. Otolaryngology- Head and Neck Surgery 117[8]; 5134-5137, 1997.
22. Chung,C,Castillo,M,Fordham,L,Mukherji,S,Boydston,W,Hudgins,R:Spinal Intradural Cerebellar Heteropia. American J of Neuroradiology 19; 897-899, 1998.
23. Hudgins,R,Boydston,W,Burstein,F,Cohen,S:Multiple Suture Synostosis and Increased Intracranial Pressure Following Repair of Single suture Nonsyndromic Craniosynostosis. Cleft Palate Craniofacial Journal 35[25];167-172, 1998.

24. Cohen,S,Boydston,W,Burstein,F,Hudgins,R:Monobloc Distraction Osteogenesis During Infancy; Report of a Case and Presentation of a New Device. Plastic and Reconstructive Surgery 101[7]: 1919-1924, 1998.
25. Hudgins,R,Boydston,W:Shunt Revision by Coagulation With Retention of Ventricular Catheter 29;57-59,1999.
26. Hall,D,Boydston,W:Pediatric Neck Injuries. Pediatrics in Review 20[1]:13-20,1999.
27. Hudgins,R,Boydston,W,Gilreath,L:Treatment of Posthemorrhagic Hydrocephalus in the Pretrem Infant with a Ventricular Access Device. Ped Neurosurgery 29; 303-313, 1999.
28. Albright,L,Boydston,W, et al:Performance and Complications Associated with Synchroned 10ml Pump for Intrathecal Baclofen Administration in Children, Neurosurgery, 2004
29. Carmel,P, Boydston,W,et al. Incidence and Management of Subdural Hematoma/Hygroma With Variable and Fixed Pressure Differential Valves. Neurosurgical Focus, 1999.
30. Burstein,F, Cohen,S,Hudgins,R, Boydston,W:The Use of Hydroxyapatite in Secondary Craniofacial Reconstruction. Plastic and Reconstruction Surgery 104[5]:1270-1275,1999.
31. Aguilera,D,Mazewski,C,Boydston,W,McDonald,T: Neurofibromatosis 2 and Spinal Cord Ependymomas: Report of 2 Cases and Review of the Literature, Child's Nervous System DOI 10. 1007/S00381-010-1351-3, Dec, 2010.
32. Aguilera,D,Flamini,R,Boydston,W,et al:Response of Subependymal Giant Cell Astrocytomas with Spinal Cord Metastasis to Everlimus, J Ped Hematology/ Oncology, 2013, in press.
33. Wrubel,D, Riemenschneider,B,Braender,C, Miller,B, Hirsh,D, Reisner,A, Boydston,W, Brahma,B, Chern,J:Return to System Within 30 Days of Pediatric Neurosurgery. J of Neurosurgery- Pediatrics, 2014 [in press].
34. Chern,J, Boydston,W, et al: Utility of Surveillance Imaging after Minor Blunt Head Trauma. J of Neurosurgery- Peds, 2014 [ in press].

## PRESENTATIONS

1. Boydston,W,Sanford,R,Muhlbauer,M: Postoperative Posterior Fossa Monitoring. Platform Presentation- Pediatric Section AANS/CNS. Phoenix,Az,Dec,1988.
2. Boydston,W,Sanford,R: Vertebral Body Resection and Myofascial Flaps for the Treatment of Kyphosis in Neonates with Myelomeningoceles. Platform Presentation- Joint Spine Meeting- AANS/CNS, Cancun, Mexico, 1989.
3. Boydston,W,Sanford,R: Boydston,W, Wyler,A,Dohan,F,Sc hweitzer,J: Tyrosine Hydroxylase Immunoreactive Neurons in Human Hippocampus and Latreal temporal Neocortex, Poster Presentation, CNS, 1989.
4. Stidham,G,Beck,R,Boydston,W,Dohan,F: Global Ischemia in a Rabbit Model: Pretreatment with Allopurinol, Poster Presentation- Pediatric Critical Care, San Francisco, Ca, May, 1990.
5. Boydston,W,Watridge,C,Lowery,R: Diagnosis and Treatment of Occipital Condyle Fractures. Platform Presentation-Spine/Peripheral Nerve,AANS/CNS, Captiva, Fla, Feb, 1990
6. Boydston,W,Sanford,R, Muhlbauer,M, Kirl,E, Kuhn,L: Gliomas of the Tectum and Periaqueductal Region of the Mesencephalon, Platform Presentation- Pediatric Section- AANS/CNS, San Diego, Ca,Dec,1990.
7. Boydston,W: Open Spinal Deformities. Platform Presentation- Southern Medical Society, Atlanta, Ga, Nov, 1991.
8. Boydston,W: Care of the Infant with Skull Fracture and Subdural Hematoma. Women's Services Clinical Studies, Dept of OB/GYN, Northside Hospital, Atlanta, Ga, Feb,1993.
9. Boydston,W: Neuroendoscopy, Atlanta Chapter, Association of Operating Room Nurses, Oct, 1993.
10. Hudgins,R,Boydston,W; Treatment of Intraventricular Hemorrhage in the Premature Infant with Urokinase, CNS. Vancouver,BC, Oct,1993.

11. Boydston, W, Hudgins,R: Selective Dorsal Rhizotomy- the Scottish Rite Experience, Georgia Neurosurgery Society, May, 1994.
12. Murphy,T, Boydston,W; Evaluation of Vertigo in the Pediatric Patient. Instructional Course, American Academy of Otolaryngology, Head and Neck Surgery. San Diego, Ca, Sept, 1994.
13. Murphy,T, Boydston,W; Lateral Sinus Thrombophlebitis. American Society of Pediatric Otolaryngology, Durango,Co, May,1995.
14. Boydston,W,Hudgins,R: Codman-Medos Programmable Shunt, Early Results for Treatment of Hydrocephalus in Infants and Children. Georgia Neurosurgical Society, May, 1995.
15. Burstein,F, Cohen,S ,Hudgins,R, Boydston,W;The Use of Granular Hydroxyapatite as Secondary Orbitocranial Reconstruction. Sixth International Congress of the International Society of Craniofacial Surgery, Paris, Fr, Oct,1995.
16. Williams,J, Cohen,S ,Burstein,F, Hudgins,R, Boydston,W: A Longitudinal Statistical Study of Reoperation Rates in Craniosynostosis. International Symposium of Craniofacial Surgeons, Nov, 1995.
17. Boydston,W, Murphy,T: Intracranial Complications of Pediatric Sinusitis. Georgical Neurosurgery Society, Nov, 1996.
18. Boydston,W,Hudgins,R: Bone Regrowth and Recurrence of Symptoms Following Decompression in the Infant with Chiari II Malformation. International Symposium on Spina Bifida Ages 0-5 Years, Chicago, Il, Sept, 1996.
19. Hudgins,R, Boydston,W: Urokinase in the Treatment of Shunt Malfunctions Caused by Thrombus. ASPN, 1997.
20. Ramji,F , Boydston,W,Kitomосу,S, Shields,E: Radioisotope Evaluation of Cerebrospinal Fluid Dynamics in Pediatrics. Society of Pediatric Radiology, May, 1997.
21. Boydston,W: Craniosynostosis, Grand Rounds, Dept of Neurosurgery, University of Tennessee, Memphis, Feb,1999.
22. Boydston,W: Central Nervous System Hemorrhage in Children with Hemophilia. Hemophilia Society, Atlanta, Ga, March, 1999.
23. Boydston,W: Posterior Cervical Fusion in Children, Pediatric Section AANS/CNS, Dec,1999.
24. Stevenson,K,Hudgins,R, Boydston,W, Reisner,A: Pediatric Disc Disease: Patient Characteristics and Surgical Outcomes. Georgia Neurosurgery Society, May, 2004.
25. Poplawski,E, Zagustin,T,Vova,J,Sholas,M,Boydston,W;Intrathecal Baclofen Therapy: Simple Continuous vs Flex Mode Dosing in the Pediatric Population. Poster Presentation- American Society of Pediatric Physiatry, 2012.
26. Poplawski,E,Zagustin,T,Vova,J,Sholas,M,Boydston,W: Intrathecal Catheter Trials for Dystonia nad Spasticity Management in the Pediatric Population. Poster Presentation- American Society of Pediatric Physiatry, 2012.
27. Kebriaei,M, Chern,J, Boydston,W,et al:Shunt Infections in First Year of Life. Poster Presentation- Ped Section, AANC/CNS, 2012.
28. Boydston,W,Vining,C: Chiari and Syringomyelia in Children. Grand Rounds, Mercer School of Medicine, MCGG, Nov, 2012.
29. Huguenard,A,Miller,B,Chern,J,Boydston,W:Intraventricular Hemorrhage in Preterm Infants: Analysing Clinical Indicators for Surgical intervention. Platform Presentation-Georgia Neurosurgical Society, May, 2013.
30. Boydston,W:History of Pediatric Neurosurgery in the United States. Michael Scott MD Symposium, Temple University Dept. Of Neurosurgery, June, 2013.
31. Boydston,W: Advances in the Treatment of Pediatric Brain Tumors, Children's Brain Tumor Foundation, Dahlonga, Ga, June, 2013.
32. Boydston,W, Vining,C: Cervical/Thoracic Hemilaminectomy fort Intrathecal Catheter Placement in Treatment of Childhood Dystonia, Georgia Neurosurgical Society, Dec, 2013.
33. Boydston,W,Vining,C: Treatment of Childhood Spasticity, Grand Rounds- Phoebe Putney Hospital, Oct, 2012.

34. Boydston, W, Vining, C: Advances in Pediatric Neurosurgery, Ground Rounds- Phoebe Putney Hospital, Nov, 2010.

