

## **CURRICULUM VITAE**

**Stephen Paul Beals, M.D., F.A.C.S., F.A.A.P.**

500 W. Thomas, Ste. 960, Phoenix, AZ 85013 - (602) 266-9066

[spb@bealsmd.com](mailto:spb@bealsmd.com)

### **1. PERSONAL INFORMATION:**

Date of Birth: 7-28-51

Place of Birth: Dallas, Texas

Citizenship: United States Citizen

### **2. PROFESSIONAL POSITIONS:**

1. Associate Professor of Plastic Surgery, Mayo Clinic Arizona, 2001-present
2. Director, Barrow Children's Cleft and Craniofacial Center, St. Joseph's Hospital, Phoenix, Arizona, 2005-present
3. Education Director of Plastic Surgery Residency Program, Mayo Clinic Arizona, 2008-present

### **3. PREVIOUS PROFESSIONAL POSITIONS AND MAJOR APPOINTMENTS**

1. Affiliated Faculty, Maricopa Medical Center, Plastic Surgery Dept., 1986-1994
2. Assistant Professor of Plastic Surgery, Mayo Medical School, Rochester, MN, 1995-2001
3. Affiliated with the University of Arizona, Tucson, AZ, 1987-2004
4. Director, Southwest Craniofacial Center, Phoenix, AZ, 1986-2005
5. Craniofacial Consultant, Barrow Neurological Institute, St. Joseph's Hospital, Phoenix, Arizona 1986-2005
6. Adjunct Professor, Department of Speech and Hearing, Arizona State University, 1987-2006

### **4. EDUCATION AND TRAINING:**

Craniofacial Fellowship at Hospital for Sick Children, under Ian R. Munro, M.A., M.B., B. Chir., F.R.C.S.(C). University of Toronto, Toronto, Canada; July-December, 1985

Plastic Surgery Residency, Phoenix Plastic Surgery Residency, Phoenix, Arizona; July 1983-June 1985

General Surgery Residency, William Beaumont Hospital, Royal Oak, Michigan; July 1978-June 1983

M.D., Wayne State University School of Medicine, Detroit, Michigan; September 1974-June 1978

B.S., Calvin College, Grand Rapids, Michigan; September 1969-June 1973; Major-Pre-medicine

### **5. BOARD CERTIFICATION(S):**

Diplomate, American Board of Surgery, June, 1984

Diplomate, American Board of Plastic Surgery, November, 1986

## **6. MEDICAL LICENSURE:**

Arizona License – 1985-present  
Michigan License – 1978-present

## **7. HONORS AND AWARDS:**

Kent County Medical Foundation Grant, 1969-1972

Medical Assistance Program-Reader's Digest International Fellowship for medical study in Bangladesh;  
January-May, 1978

Chief Surgical Resident-July 1982-June 1983

Mercy Physician Honoree, Sisters of Mercy at St. Joseph's Hospital and Medical Center, Phoenix, AZ, 1992

Distinguished Alumni Award, Calvin College Alumni Association, Grand Rapids, MI 1995

“The Best Doctors in America”, Pacific Region, 1996-1997, Arizona Physicians Nomination

“Top Docs”, 1996, 1998, 1999, 2000, 2002, 2003, 2004, 2006, 2007, 2008, 2009 – Voted by Physician Peers,  
Phoenix Magazine, Phoenix, Arizona

*Winner of The International Television Association Award and the Telly Awards.* Beals SP, The Craniofacial Foundation of Arizona, Increasing awareness of people with facial differences. Produced by Chili Pepper Productions, 2000.

## **8. PROFESSIONAL MEMBERSHIPS AND SOCIETIES**

### **Professional Memberships:**

1. International Society of Craniofacial Surgery, Active member
2. North American Skull Base Society
3. American Cleft Palate-Craniofacial Association
4. American Academy of Pediatrics, Fellow
5. American College of Surgeons, Fellow
6. American Society of Maxillofacial Surgeons
7. American Society of Plastic Surgeons
8. American Society of Craniofacial Surgery, Founding member
9. American Society for Aesthetic Plastic Surgeons
10. American Association for Plastic Surgeons
11. Arizona Medical Association
12. Arizona Society of Plastic and Reconstructive Surgeons
13. Arizona Chapter, American College of Surgeons
14. Maricopa County Medical Society
15. Maricopa County Plastic Surgery Society
16. Phoenix Pediatric Society
17. Association of Academic Chairmen of Plastic Surgery

**9. DEPARTMENTAL ADMINISTRATIVE RESPONSIBILITIES, COMMITTEE MEMBERSHIPS AND OTHER ACTIVITIES**

**Current Held Positions**

1. President, American Society of Craniofacial Surgeons, 2010-2011
2. Chair, American Society of Maxillofacial Surgeons, Ethics Committee, 2010-2011
3. General Council Member, International Society of Craniofacial Surgeons, 2008-2011
4. Committee Member, American Cleft Palate-Craniofacial Association, Program Committee 2011
5. Committee Member, American Cleft Palate-Craniofacial Association, Team Standards Committee, 2011
6. Committee Member, American Cleft Palate-Craniofacial Association, Organizational Alliances Committee, 2011
7. Board of Directors, Cleft Palate Foundation

**Hospital Appointments**

Section Chief of Plastic Surgery, Phoenix Children's Hospital, Phoenix, Arizona, 1993-1999

Section Chief of Plastic Surgery, St. Joseph's Hospital, Phoenix, Arizona, 1998-1999

Section Co-Chief of Plastic Surgery, Phoenix Children's Hospital, Phoenix, Arizona, 2003-2006

**Committee Memberships**

1. Surgery Committee, Phoenix Children's Hospital, Phoenix, Arizona 1993-1999
2. Credentials Committee, Phoenix Children's Hospital, Phoenix, Arizona, 1990-1993
3. By-Laws Committee, Phoenix Children's Hospital, Phoenix, Arizona current
4. Medical Advisory Committee of Strategic Planning Committee of the Board, Phoenix Children's Hospital, Phoenix, Arizona
5. PHO/IPA Steering Committee, Phoenix Children's Hospital, Phoenix, Arizona
6. Reviewer for Annual Scientific Meeting for American Cleft Palate and Craniofacial Association, 1997
7. Surgery Committee, St. Joseph's Hospital, Phoenix, Arizona 1994-1999
8. Outcome Study Committee, American Society of Maxillofacial Surgery
9. Chairman, Local Arrangements Committee, American Cleft Palate and Craniofacial Association, Scottsdale, Arizona 1999
10. Local Arrangements Committee, Skull Base 2000 meeting, Scottsdale, North American Skull Base Society
11. Program and Local Arrangements Chair, Annual Craniofacial Study Club Meeting, Cabo San Lucas, Mexico, February 2003
11. General Council member, American Society of Craniofacial Surgeons 2005 – present
12. Chair, Task Force for Study of Craniofacial Fellowships, American Society of Craniofacial Surgeons, 2005
13. Ad Hoc Committee member, Membership Advisory, American Society of Maxillofacial Surgeons, 2005
14. Faculty member, 11<sup>th</sup> Annual Barrow Pediatric Neurosciences Symposium, Barrow Neurological Institute, Phoenix, AZ October 2006
15. Nominating Committee, American Society of Maxillofacial Surgeons, 2008
16. Secretary/Treasurer, American Society of Craniofacial Surgery, 2008-2009
17. Team Standards Committee, American Cleft Palate and Craniofacial Association, 2009
18. Fellowship Oversight Committee, International Society of Craniofacial Surgery, 2009-2010

19. Local Arrangements Committee, American Cleft Palate and Craniofacial Association, Scottsdale, Arizona, April 2009
20. President, American Society of Craniofacial Surgery, 2010-2011
21. Organizational Alliance Committee, American Cleft Palate and Craniofacial Association, 2010-2011.
22. 2011 Program Committee, American Cleft Palate and Craniofacial Association, 2010-2011
23. 2011 Program Sub-Committee, American Cleft Palate and Craniofacial Association, 2010-2011
24. Team Standards Committee, American Cleft Palate and Craniofacial Association, 2010-2011
25. Chair, American Society of Maxillofacial Surgeons, Ethics Committee, 2010-2011
26. Committee Member, American Cleft Palate-Craniofacial Association, Organizational Alliances Committee, 2011
27. Board of Directors, Cleft Palate Foundation

## **10. PRESENTATIONS (Regional, National, International)**

### **Regional**

Beals SP: Management of High Bile Duct Obstruction, Detroit Surgical Association, February, 1982

Beals SP: Panel Discussant, Trauma Symposium, Wayne State University School of Medicine, November, 1982

Beals SP: Management of High Bile Duct Carcinoma, William Beaumont Hospital Clinic Day, June, 1983

Beals SP: The use of Mini-plates in Craniomaxillofacial Surgery, lecturer at Mini-plate Training Seminars, Phoenix, AZ, 1986

Beals SP: A Challenge for Nurses, Phoenix Memorial Hospital, Phoenix, Arizona, January 1988

Beals SP: Principles of Plastic Surgery, Advancements in Ophthalmic Plastic Surgery, Sponsored by Maricopa Medical Center, Phoenix, AZ, January, 1989

Beals SP, Manwaring KH: Abnormal Head Shape, Grand Rounds, Phoenix Children's Hospital, Phoenix, Arizona, August, 1989

Beals SP: Abnormal Head Shape, Grand Rounds, Scottsdale Memorial Hospital-North, Scottsdale, Arizona, September, 1989

Beals SP: A Day in the Life of a Plastic Surgeon, Grand Canyon University Pre-medical Student Class, Phoenix, Arizona, September 1989

Beals SP: Plastic & Reconstructive Surgery--A Pot Pourri, Valley of the Sun Hospital, Phoenix, Arizona, September 1989

Beals SP: Craniofacial Surgery, Second Annual Northern Arizona Perinatal Conference, Flagstaff, Arizona, September 1990

Beals SP: In-service lecture for Barrow Neurological Institute Nursing Staff, St. Joseph's Hospital, Phoenix, Arizona, November 1990

Beals SP: Craniofacial Approach to Orbital Trauma, Second Annual Advancements in Ophthalmic Plastic Surgery, Sponsored by Maricopa Medical Center, Phoenix, Arizona, March 1990

Beals SP: Plastic Surgery of the Head, Career Options & Learning Opportunities in Science, Grand Canyon University, Phoenix, Arizona, November 1990

Beals SP: Craniofacial Surgery, Third Annual Northern Arizona Perinatal Conference, Flagstaff, Arizona, September 1991

Beals SP: Care of the Craniofacial Surgical Patient, St. Joseph's Hospital and Medical Center-In-service to Intensivist Staff, Phoenix, Arizona, January 1992

Beals SP: Craniofacial Surgery and Speech Pathology (lecture to Speech Pathology students), Arizona State University Department of Speech and Hearing, Tempe, Arizona, November, 1992

Herman JM, Hamilton MG, Beals SP, Joganic EF, Spetzler RF: Preserve Olfaction and to Prevent CSF Leakage. Presented by James F. Herman, Rocky Mountain Neurosurgical Society, Bigfork, Montana, June, 1993

Moss SD, Manwaring KH, Joganic EF, Beals SP: Transplanted demineralized bone graft in cranial reconstructive surgery, Presented by SD Moss at Rocky Mountain Neurosurgical Society, Big Fork, MT, June, 1993

Beals SP: The team approach. Presented at Cleft Palate and other Craniofacial Anomalies: Assessment and Treatment, sponsored by the Department of Speech and Hearing Science, Arizona State University, Tempe, AZ, October, 1993

Beals SP: Abnormal Head Shape. Presented at Pediatric Grand Rounds, St. Joseph's Hospital Pediatric Residency, Phoenix, AZ, October, 1994

Beals SP: The role of surgery in velopharyngeal insufficiency. Presented at the Annual Meeting of the Arizona Speech and Hearing Association, Phoenix, AZ April, 1995

Beals SP: Neonatal abnormal head shape. Presented at the Valley Chapter, Association of Operating Room Nurses, Phoenix, AZ, Phoenix, AZ, May, 1995

Beals SP: Craniosynostosis. Good Samaritan Hospital Neuroscience Symposium, Phoenix, AZ, June, 1995

Beals SP: Principles of Craniofacial Surgery. Lecture for Speech Graduate Course, Arizona State University, Tempe, AZ, June, 1995-1999

Beals SP: Deformational Plagiocephaly: Guidelines for prevention, diagnosis and management of the infant with positional head molding. Presented at the 7<sup>th</sup> Annual BNI/St. Joseph's Children's Health Center Pediatric Neuroscience Conference, September, 2002

Beals SP: Transfacial Approaches to the Skull Base. The Arizona Society of Otolaryngology Head & Neck Surgery, Spring Meeting 2003, St. Joseph's Hospital, April, 2003

Beals SP: Craniofacial Abnormalities in the Newborn Period. Annual Barrow Pediatric Neurosciences Symposium, Barrow Neurological Institute, Phoenix, AZ October 2006

Beals SP: Managing Craniofacial Abnormalities in the Perinatal Period. Perinatology Academic Conference, Banner Desert Samaritan Medical Center. Mesa, Arizona. June 2007

Beals SP: The Clinical Pathway for Treatment of a Child with Craniosynostosis from Birth to Adulthood-Interdisciplinary Evaluation and Treatment Planning. Comprehensive Care of the Cleft and Craniofacial Patient: 25 Years of Experience. Barrow Children's Cleft and Craniofacial Center, Phoenix, AZ. February 2009.

## **National**

Beals SP: The Use of Mini-Plates in Craniomaxillofacial Surgery, American Society of Plastic and Reconstructive Surgeons Annual Scientific Meeting, Kansas City, October, 1985

Beals SP: The use of Mini-plates in Craniomaxillofacial Surgery, lecturer at Mini-plate Training Seminars, Rutherford, NJ, 1986

Munro I, Beals SP: The Ultimate Orthognathic Operation, David & Geck Award Film 1985 for the American College of Surgeons, assistant to Dr. Ian R. Munro, presented at the American Society of Plastic and Reconstructive Surgeons Annual Scientific Meeting, Kansas City, October, 1985

Beals SP, Farnworth TK: Use of Microdissection Electrode (Microneedle) for Monopolar Tissue Dissection: A New Technique, Scientific Exhibit at the American Society of Plastic and Reconstructive Surgeons Annual Scientific Meeting, Toronto, Ontario, Canada, October 1988

Beals SP: Principles of Craniofacial Surgery, American Society of Neuroanesthesia and Critical Care, Phoenix, Arizona, 1989

Manwaring KH, Beals SP: Bloodless Dissection in Pediatric Craniotomies and Craniofacial Surgeries. Presented by Kim H. Manwaring at the American Association of Neurological Surgeons, section on Pediatric Neurological Surgery, Washington, D.C., November 1989

Beals SP: Bone Grafts and Rigid Fixation, Rigid Fixation of the Craniofacial Skeleton, Maryland Institute for Emergency Medical Services Systems, Baltimore, Maryland, December 1989

Francis PW, Beals SP, ReKate HL, Reiff J, Pittman HW, Manwaring KH: Hydrocephalus and the Chiari I Malformation in Patients with Crouzon's and Apert's Syndrome. Presented by Paul Francis at the Pediatric Section of the American Association of Neurological Surgeons, San Diego, California, December 1990

Beals SP, Francis PW, ReKate HL, Manwaring KH, Pittman HW, Reiff J: Hydrocephalus and the Chiari I Malformation in Patients with Crouzon's Syndrome, American Society of Plastic and Reconstructive Surgeons Annual Scientific Meeting, Seattle, Washington, 1991

Beals SP: Care of the Craniofacial Surgical Patient, St. Joseph's Hospital and Medical Center-Barrow Neurological Institute Seminar and Workshop, Phoenix, Arizona, January 1992

Herman JM, Hamilton MG, Beals SP, Joganic EF, Spetzler RF: Modification of the Transbasilar Approach to Preserve Olfaction and to Prevent CSF Leakage. Presented by James Herman at the American Association of Neurological Surgeons 1993 Annual Meeting, Boston, MA, April, 1993

Curriculum Vitae

Stephen Paul Beals, M.D., F.A.C.S., F.A.A.P.

Page 7

Ripley CE, Pomatto J, Beals SP, Manwaring SP, Manwaring KH, Joganic EF, Moss SD: Treatment of Non-synostotic Plagiocephaly Utilizing Cranial Remodeling Orthosis. Poster session presented by J Pomatto, Section on Pediatric Neurological Surgery Annual Meeting, Vancouver, British Columbia, Canada, December, 1992.

Moss SD, Manwaring KH, Joganic EF, Beals SP: Transplanted demineralized bone graft in cranial reconstructive surgery, Presented by SD Moss, Congress of Neurological Surgeons Annual Meeting, Section on Pediatric Neurological Surgery, Vancouver, B.C., Canada, December, 1992

Hamilton MG, Herman JM, Beals SP, Joganic EF, Spetzler RF: The Role for Transfacial Exposure in Treatment of Tumors of the Anterior Skull Base and Clivus. Presented by MG Hamilton, Fourth Annual Meeting of the North American Skull Base Society, Scottsdale, AZ February, 1993

Beals SP, Joganic EF, Spetzler RF: Transfacial Exposure of Anterior Cranial Fossa and Clival Tumors: A Classification of Approaches by Anatomic Site of Tumor. Fourth Annual Meeting of the North American Skull Base Society, Scottsdale, AZ, February, 1993

Ripley CE, Pomatto J, Beals SP, Manwaring KH, Joganic EF, Moss SD: Treatment of Positional Plagiocephaly Utilizing Cranial Remodeling Orthosis, presented by CE Ripley, American Cleft Palate-Craniofacial Association 50th Anniversary Meeting, Pittsburgh, PA, April, 1993

Beals SP, Joganic EF, Spetzler RF, Hamilton MG, Herman JM: Classification of Transfacial Approaches in Treatment of Tumors of the Anterior Skull Base and Clivus, American Society of Plastic and Reconstructive Surgeons Annual Scientific Meeting, New Orleans, LA, September, 1993

Herman JH, Kraus GE, Spetzler RF, Beals, S, Joganic, E: Preservation of olfaction and prevention of CSF leak in anterior craniofacial approaches. (Poster presentation) Congress of Neurological Surgeons Annual Meeting, Vancouver, B.C., Canada, October, 1993

Pearson MA, Aleck KA, Beals SP, Hudgins LH: Agnathia malformation complex may be compatible with long-term survival. Presented by MA Pearson, American Society of Human Genetics, New Orleans, LA, October, 1993

Beals SP: Practicum on Transfacial Surgical Techniques, Annual Meeting of North American Skull Base Society, Orlando, FL, February, 1994

Beals SP: Transfacial approaches to the midline skull base. Presented at the Symposium on Skull Base Malignancy, Radiotherapy and Chemotherapy, Annual Meeting of North American Skull Base Society, Orlando, FL, February, 1994

Eckhardt RB, Shiang TY, Sommer HJ, Ripley CE, Beals SP, Joganic EF: On growth and form: Superquadric modeling of change in cranial contours following dynamic orthotic cranioplasty in the treatment of positional plagiocephaly. Presented by CE Ripley, American Association of Physical Anthropologists, Denver, CO April, 1994

Ripley CE, Beals SP, Joganic EF, Manwaring KM, Moss SD, Pomatto J, Sommer HJ, Eckhardt RB, Eckhardt JT: Mathematical modeling of cranial molding: Superquadric images document rapid change of cranial form in response to environment. Poster presented by CE Ripley, American Association of Physical Anthropologists, Oakland, CA, April, 1994

Ripley CE, Pomatto J, Beals SP, Joganic SP, Eckhardt RB, Shiang TY, Sommer HJ, Manwaring KM, Moss SD: Superquadric modeling of cranial shape changes following dynamic orthotic cranioplastic

Curriculum Vitae

Stephen Paul Beals, M.D., F.A.C.S., F.A.A.P.

Page 8

treatment of positional plagiocephaly. Presented by CE Ripley at the Annual Meeting of American Cleft Palate Craniofacial Foundation, Toronto, Ontario, Canada, May, 1994

Hamilton MG, Ripley CE, Pomatto J, Beals SP, Joganic EF, Manwaring KH, Moss SD: Treatment of positional plagiocephaly with dynamic orthotic cranioplasty (D.O.C.), Presented by MG Hamilton at the Canadian Congress of Neurological Sciences, St. Johns, Newfoundland, Canada, June, 1994

Hamilton MG, Herman JM, Beals SP, Joganic EF, Spetzler RF. The Role for Transfacial Exposure in Treatment of Tumors of the Anterior Skull Base and Clivus. Presented by MG Hamilton at the Canadian Congress of Neurological Sciences, St. Johns, Newfoundland, Canada, June, 1994

Ripley CE, Pomatto J, Manwaring KM, Moss SD, ReKate HL, Beals SP, Joganic EF: Dynamic orthotic cranioplasty (D.O.C.): An anthropometric study of its effectiveness in the treatment of positional plagiocephaly. Submitted for presentation at the Section of Pediatric Neurological Surgery, The American Association of Neurological Surgeons, Pasadena, CA, December, 1995

Porter RW, Lawton MT, Beals S, Joganic E, Spetzler RF: Transfacial Approaches to Angiofibromas. To be presented to the North American Skull Base Society, San Diego, CA, 1996.

Golden KA, Pomatto JK, Joganic EF, Beals SP, Manwaring KM, Moss SD, ReKate HL. Congenital muscular torticollis and the role it plays in persistent frontal and facial asymmetry in infants with positional plagiocephaly. Craniosynostosis and Skull Molding Symposium, Scottsdale, AZ, February 20-23, 1997.

Pomatto JK, Littlefield TR, Beals SP, Joganic EF, Manwaring KM, Moss SD. Application and limitations of dynamic orthotic cranioplasty. Craniosynostosis and Skull Molding Symposium, Scottsdale, AZ, February 20-23, 1997.

Beals SP, Joganic EF, Manwaring KM, Moss SD, Pomatto JK, Littlefield TR. Posterior plagiocephaly resulting from skull molding: Indications for helmet therapy and outcome assessment. Craniosynostosis and Skull Molding Symposium, Scottsdale, AZ, February 20-23, 1997.

Littlefield TR, Pomatto JK, Ripley CE, Beals SP, Joganic EF, Manwaring KH. Efficacy and stability of dynamic orthotic cranioplasty: An eight year investigation. International Society of Craniofacial Surgery, Santa Fe, NM 1997.

Littlefield TR, Kelly KM, Pomatto JK, Beals SP, Joganic EF. Significance of entrance age on effectiveness of orthotic treatment of positional plagiocephaly. American Cleft Palate Association, Baltimore, MD, April 1998.

Golden KA, Beals SP, Littlefield TR, Pomatto JK. SCM Imbalance: Its existence and role in deformational plagiocephaly. American Cleft Palate-Craniofacial Association, 56<sup>th</sup> Annual Meeting, Scottsdale, AZ, April 1999

Littlefield TR, Kelly KM, Pomatto JK, Beals SP. The plural birth and deformational plagiocephaly. American Cleft Palate-Craniofacial Association, 56<sup>th</sup> Annual Meeting, Scottsdale, AZ, April 1999

Kelly KM, Littlefield TR, Pomatto JK, Manwaring KH, Beals SP. Ordinary cranial growth occurs during reduction of craniofacial asymmetry with the DOC Band. American Cleft Palate-Craniofacial Association, 56<sup>th</sup> Annual Meeting, Scottsdale, AZ, April 1999



Curriculum Vitae

Stephen Paul Beals, M.D., F.A.C.S., F.A.A.P.

Page 9

Beals, Stephen. Objective Assessment of Orthotic Management of Deformational Plagiocephaly. American Cleft Palate-Craniofacial Association, Craniosynostosis: Genome, Treatment, Outcome. 56<sup>th</sup> Annual Meeting, Scottsdale, AZ, April 1999

Littlefield TR, Kelly KM, Pomatto JK, Manwaring KH, Beals SP. Cranial growth unrestricted during treatment of deformational plagiocephaly with the DOC Band. *American Assoc. of Neurological Surgeons*. New Orleans, Louisiana. April 24-29, 1999.

Detwiler PW, Alleyne CH Jr., Porter RW, Vishteh AG, Han PP, Spetzler RF, ReKate HL, Daspit CP, Zabramski JM, Beals SP, Joganic EF, McDougall CG: Long term survival of two patients with skull base mucomycosis after aggressive resection by a multidisciplinary team. Congress of Neurological Surgeons, Boston MA, October 30- November 4, 1999

Han PP, Feiz-Erfan I, Spetzler RF, Porter RW, Detwiler PW, Theodore N, Joganic EF, Beals SP, Reiff J: Results of extracranial transfacial approaches to anterior skull base lesions. Congress of Neurological Surgeons, Boston, MA, October 30-November 4, 1999.

Han PP, Feiz-Erfan I, Spetzler RF, Porter RW, Detwiler PW, Theodore N, Joganic EF, Beals SP, Reiff J: Results of extracranial transfacial approaches to anterior skull base lesions. North American Skull Base Society Meeting, Scottsdale, AZ, March 17, 2000.

Beals SP, Joganic, EF, Spetzler RF: Transpalatal Approach to the Midline Skull Base. North American Skull Base Society Meeting, San Diego, CA, February, 2002

Beals SP: Craniofacial Surgery with Rigid Fixation. Craniofacial Workshop in conjunction with the Pediatric Section of the American Association of Neurosurgeons Meeting, Phoenix, AZ. December 2002

Feiz-Erfan I, Han PP, Spetzler RF, Porter RW, Ferreira MAT, Klopfenstein JS, Beals SP, Joganic EF. Experience with the Radical Transbasal Approach in Resection of Extensive Benign Anterior Skull Base Tumors. 14<sup>th</sup> Annual Meeting of the North American Skull Base Society. Memphis TN, February 2003

Littlefield TR, Kelly KM, Pomatto JK, Beals SP, Cherney JC. Risk factors that predispose multiple-birth infants to the development of deformational plagiocephaly. Presented at the 2003 Annual Meeting of the Association of Children's Prosthetic-Orthotic Clinics. St. Pete Beach, FL, May 14-17. 2003.

Beals SP, Joganic EF, Manwaring KM, ReKate HL, Pomatto JK, Cherney JC, Littlefield TR. New guidelines for the diagnosis and treatment of plagiocephaly. Poster presentation at the American Academy of Pediatrics – Perinatal Section, New Orleans, LA, November 1-5, 2003.

Littlefield TR, Pomatto JK, Kelly KM, Cherney JC, Beals SP. A new 3D imaging system for diagnosis and treatment of plagiocephaly. Presented at the American Academy of Pediatrics – Plastic Surgery Section, New Orleans, LA, November 1-5, 2003.

Littlefield TR, Pomatto JK, Kelly KM, Cherney JC, Beals SP. Comparison of plaster casting versus 3D cranial imaging. Presented at the American Academy of Pediatrics – Plastic Surgery Section, New Orleans, LA, November 1-5, 2003.

Cherney JC, Beals SP, Joganic EF, Manwaring KH, ReKate HL, Pomatto JK, Littlefield TR. New guidelines for the diagnosis and treatment of deformational plagiocephaly. Presented at the American Academy of Orthotists and Prosthetists annual meeting. New Orleans, LA, February 25-28, 2004.

Pomatto JK, Littlefield TR, Cherney JC, Beals SP. A study of family head shape: Environment vs

Genetics. Presented 61<sup>st</sup> Annual Meeting of the American Cleft Palate-Craniofacial Association. Chicago, IL, March 15-20, 2004.

Manwaring J, Packard A, Hopkins R, Manwaring KH, Beals SP, Littlefield TR. Does positional plagiocephaly have a neurological basis? Presented 61<sup>st</sup> Annual Meeting of the American Cleft Palate-Craniofacial Association. Chicago, IL, March 15-20, 2004.

Cherney JC, Beals SP, Cohen SR, Holmes RE, Joganic EF, Kelly KM, Manwaring KH, Pomatto JK, ReKate HL, Littlefield TR. Evaluation of a new severity assessment scale for deformational plagiocephaly. Presented 61<sup>st</sup> Annual Meeting of the American Cleft Palate-Craniofacial Association. Chicago, IL, March 15-20, 2004.

Beals, SP, Singh DJ: Instructional Course: Non-syndromic Craniosynostosis. American Society of Plastic Surgeons. Baltimore, Maryland, October 2007

Singh, DJ, Beals, SP, Joganic, EF, Manwaring, K: Endoscopic Calvarial Synostectomy for Early Correction of Sagittal Synostosis: Protocol for Treatment and Outcomes. Presented 65<sup>th</sup> Annual Meeting of the American Cleft Palate-Craniofacial Association. Philadelphia, PA, April 16-18, 2008

Beals, SP, Singh DJ: Instructional Course: Non-syndromic Craniosynostosis. American Society of Plastic Surgeons. Chicago, IL, October 2008

Biskup N, Singh DJ, Beals SP, Joganic EF, Manwaring K: Early Experience with Vitoss Bone Graft Substitute. Presented 66<sup>th</sup> Annual Meeting of the American Cleft Palate-Craniofacial Association. Scottsdale, AZ, April 20-25, 2009

Beals, SP, Singh DJ: Instructional Course: Non-syndromic Craniosynostosis. American Society of Plastic Surgeons. Seattle, WA, October 2009

Beals, SP, Singh DJ: Instructional Course: Non-syndromic Craniosynostosis. American Society of Plastic Surgeons. Toronto, Ontario, Canada, October 2010

Beals, SP, Singh DJ: Instructional Course: Non-syndromic Craniosynostosis. American Society of Plastic Surgeons. San Juan, Puerto Rico, September 2011

## **International**

Beals SP: ReKate HL: Spontaneous Formation of a Second Layer of Frontal Bone Following Forehead Advancement: A Case Report. Presented at the International Society of Craniomaxillofacial Surgery Biannual Scientific Meeting, Florence, Italy, June 1989

Beals SP: Craniofacial Trauma: Acute Management and Reconstruction, Mexican Chapter of the American College of Surgeons, Guadalajara, Jalisco, Mexico, March 1990

Beals SP: Craniofacial Surgery, Third World Conference--International College for Craniofacial and Vertebral Therapeutics (ICCVT), Phoenix, Arizona, April 1991

Beals SP, Francis PW, ReKate HL, Reiff J, Pittman HW, Manwaring KH: Hydrocephalus and the Chiari I Malformation in Patients with Crouzon's Syndrome. IV Congress of the International Society of Craniomaxillofacial Surgery, Biannual Scientific Meeting, Santiago de Compostela, Spain, June, 1991

Ripley CE, Pomatto J, Beals SP, Manwaring SP, Manwaring KH, Joganic EF, Moss SD: Treatment of Positional Plagiocephaly Utilizing Cranial Remodeling Orthosis. Presented by CE Ripley, International Symposium of Craniofacial Surgery, Chicago, IL October, 1992

Ripley CE, Beals SP: Positional plagiocephaly: An archeological case informs clinical practice. Presented at the Annual Meeting of the Paleopathology Association, Toronto, Ontario, Canada, April, 1993

Moss SD, Joganic EF, Manwaring KH, Beals SP: Transplanted demineralized bone graft in cranial reconstructive surgery, Presented at the International Society of Pediatric Neurosurgeons, Phoenix, AZ, October, 1993

Ripley CE, Pomatto J, Beals SP, Manwaring KH, Joganic EF, Moss SD: Treatment of positional plagiocephaly utilizing the cranial remodeling orthosis. Presented by J Pomatto, at the V Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, Oaxaca, Mexico, October, 1993

Beals SP, Joganic EF, Spetzler RF, Hamilton MG, Herman JM: Classification of transfacial approaches in treatment of tumors of the anterior skull base and clivus. V Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, Oaxaca, Mexico, October, 1993

Manwaring KM, Moss SD, Beals SP, Joganic EF, Ripley CE, Pomatto J: Cranial anthropometry to optimize surgical outcome of sagittal synostosis. Presented by KM Manwaring, International Society for Pediatric Skull Base, Rome, Italy, May, 1995

Joganic EF, Beals SP, Ripley CE, Manwaring KM, Moss SD, Pomatto J: Enhancement of craniofacial reconstruction by post-surgical dynamic orthotic cranioplasty. Presented, VI Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, St. Tropez, French Riviera, October, 1995

Beals SP, Joganic EF, Ripley CE, Manwaring KM, Moss SD: The transverse elliptical technique for reconstruction of scaphocephaly. Presented, VI Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, St. Tropez, French Riviera, October, 1995

Beals SP, Joganic EF, Spetzler RF, Han P: Radical resection of anterior skull base tumors using a six level classification scheme of transfacial approaches. VII Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, Taipei, Taiwan, November, 1999.

Littlefield TR, Kelly KM, Pomatto JK, Beals SP, Joganic EF, Manwaring KH. Craniofacial growth unrestricted during DOC treatment of plagiocephaly. International Society of Craniofacial Surgery VIII. Taipei, Taiwan, November 1999.

Han PP, Spetzler RF, Feiz-Erfan I, Porter RW, Detwiler PW, Beals SP, Joganic EF. Midline transfacial approaches to the anterior skull base: The Barrow Neurological Institute experience. The 58<sup>th</sup> Annual meeting of the Japan Neurosurgical Society. Tokyo, Japan, Oct. 1999.

Beals SP. Lateral Nasal Proboscis. International Society of Craniofacial Surgery IX, Visby, Gotland, Sweden, June, 2001

Pomatto JK, Beals SP, Joganic EF, Kelly KM, Littlefield TR. Preliminary results and new treatment protocol for cranial banding following endoscopic-assisted craniectomy for sagittal synostosis. Presented at the International Society of Craniofacial Surgery IX, Visby, Gotland, Sweden; June 17-20, 2001.

Littlefield TR, Pomatto JK, Kelly KM, Cherney JC, Beals SP. Comparison of plaster casting vs. 3D cranial imaging. Poster presentation at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003

Littlefield TR, Pomatto JK, Cherney JC, Beals SP. A new 3D imaging system for the diagnosis and management of plagiocephaly. Poster presentation at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003.

Beals SP, Joganic EF, Manwaring KM, ReKate HL, Pomatto JK, Cherney JC, Littlefield TR. New guidelines for the diagnosis and treatment of plagiocephaly. Presented at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003.

Pomatto JK, Littlefield TR, Cherney JC, Beals SP. Environment Vs. Genetics: A study of family head shape. Presented at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003.

Cherney JC, Pomatto JK, Beals SP, Littlefield TR. A study of family head shape: Environment Vs. Genetics. Presented at the Association of Children's Prosthetic-Orthotic Clinics. Banff, Alberta, Canada. March 24-27, 2004.

Cherney JC, Littlefield TR, Beals SP, Cohen S, Holmes R, Joganic EF, Kelly KM, Manwaring KH, Pomatto JK, ReKate HL. Evaluation of a new severity assessment scale for deformational plagiocephaly. Presented at the Association of Children's Prosthetic-Orthotic Clinics. Banff, Alberta, Canada. March 24-27, 2004.

Littlefield TR, Pomatto JK, Beals SP, Kelly KM, Hess RM. A New Three-Dimensional Imaging System for Capturing Shape of the Infant Cranium. Advanced Digital Technology in Head and Neck Reconstruction. Banff, Canada, March 10-13, 2005.

Littlefield TR, Pomatto JK, Christensen AM, Swift DM, Salyer KE, Hess RM. Design of Cranial Helmets for Craniopagus Twins: Pre and Postoperative Use. Advanced Digital Technology in Head and Neck Reconstruction. Banff, Canada, March 10-13, 2005 Poster.

Beals, SP. Transfacial Exposure of the Midline Skull Base. Pre-Symposium International Society of Craniofacial Surgeons 11th Biennial International Conference, Queensland, Australia, September 11-14, 2005.

Lettieri, SC, Beals, SP. The Role of Free Tissue Transfer in the Severely Hypoplastic Mandible. Scientific Sessions International Society of Craniofacial Surgeons 12th Biennial International Conference, Salvador, Bahia, Brazil August 23-25, 2007.

Singh DJ, Biskup N, Beals SP, Joganic EF, Manwaring K: Early Experience with Vitoss Bone Graft Substitute. Scientific Sessions International Society of Craniofacial Surgeons 13th Biennial International Conference, Oxford, UK September 26-30, 2009.

## 11. BIBLIOGRAPHY

**PUBLICATIONS IN PEER-REVIEWED JOURNALS**

\*Indicates co-authors are resident or mentee

Beals SP, Lucas RJ: Management of high bile duct carcinoma, *American Surgery* 50:6, 305, 1984

Munro IR, Kay F, Beals SP: Cranio-maxillo-facial surgery and miniplates, elimination of intermaxillary fixation. *Plastic Surgery Forum* XIII:64, 1985

Munro IR, Beals SP, Griffin GJ: The self-retained LeFort I osteotomy. *Plastic and Reconstructive Surgery*, December, 843-847, 1987

Beals SP, Munro IR: The use of miniplates in craniomaxillofacial surgery. *Plastic and Reconstructive Surgery* 79:1, 1987

Beals SP, Rekate HL: Spontaneous formation of a second layer of frontal bone following forehead advancement: A case report. *In* *Craniofacial Surgery, Proceedings of the III International Congress of the International Society of Craniomaxillofacial Surgery, Biannual Scientific Meeting*, Edited by Adolfo G. Montoya. Published by Monduzzi Editore, Bologna, Italy. Florence, Italy, June 1989, p. 331

\*Beals SP, Francis PM, Rekate HL, Manwaring KH, Pittman H, Reiff J: Crouzon Syndrome and Chiari I Malformation. *Plastic Surgery Forum*, XIV: 202-205, 1991

\*Beals SP, Francis PW, Rekate HL, Reiff J, Pittman HW, Manwaring KH: Hydrocephalus and the Chiari I Malformation in Patients with Crouzon's Syndrome. *In* *Craniofacial Surgery, Proceedings of the IV International Congress of the International Society of Craniomaxillofacial Surgery, Biannual Scientific Meeting*, Edited by Adolfo G. Montoya. Published by Monduzzi Editore, Bologna, Italy. Santiago de Compostelo, Spain, June, 1991, p. 181

Wilkinson E, Reiff J, Rekate HL, Beals S: Fluid, blood and blood product management in the craniofacial patient. *Pediatric Neurosurgery* 18:48, 1992

\*Francis PM, Beals S, Rekate HL, Pittman HW, Manwaring K, Reiff J: Chronic tonsillar herniation and Crouzon's Syndrome. *Pediatric Neurosurgery* 18:202, 1992

\*Beals SP, Joganic EF, Spetzler RF, Hamilton MG, Herman JM: Classification of transfacial approaches in treatment of tumors of the anterior skull base and clivus. *Plastic Surgery Forum* XVI:211-213, 1993

\*Spetzler RF, Herman JM, Beals S, Joganic E, Milligan J: Preservation of olfaction in anterior craniofacial approaches. *Journal of Neurosurgery* 79:48, 1993

\*Farnworth TK, Beals SP, Manwaring KH, Trepeta RW: Comparison of skin necrosis in rats using a new microneedle electrocautery, standard needle electrocautery and the Shaw hemostatic scalpel. *Annals of Plastic Surgery* 31:164-167, 1993

\*Ripley CE, Pomatto J, Beals SP, Joganic, EF, Manwaring KH, Moss SD: Treatment of positional plagiocephaly utilizing the cranial remodeling orthosis [dynamic orthotic cranioplasty (D.O.C.)], *In* *Craniofacial Surgery, Proceedings of the V International Congress of the International Society of Craniofacial Surgery*. Edited by Fernando Ortiz Monasterio, Published by Monduzzi Editore, Bologna, Italy. Oaxaca, Mexico, October, 1993, p. 111

- \*Beals SP, Joganic EF, Spetzler RF, Hamilton MG, Herman JM: Classification of transfacial approaches in treatment of tumors of the anterior skull base and clivus. *In* Craniofacial Surgery, Proceedings of the V International Congress of the International Society of Craniofacial Surgery. Edited by Fernando Ortiz Monasterio, Published by Monduzzi Editore, Bologna, Italy. Oaxaca, Mexico, October, 1993, p. 215
- \*Beals SP, Hamilton MG, Joganic EF, Spetzler RF: Classification of transfacial approaches in the treatment of tumors of the anterior skull base and clivus. *Plast Surg Forum* 16:211-213, 1993
- \*Beals SP, Joganic EF, Hamilton MG et al: Classification of transfacial approaches in the treatment of tumors of the anterior skull base and clivus, in Monasterio FM (eds): *Craniofacial Surgery* 5, Bologna, Italy: Monduzzi Editors, 1994, pp 215-218.
- Beals SP: Transfacial Anomalies to the Midline Skull Base. *In* Proceedings of the Symposium on Skull Base Malignancy, Radiotherapy and Chemotherapy, North American Skull Base Society Meeting, Orlando, Florida, February, 1994
- Beals SP, Joganic EF, Spetzler RF, Milligan JM: Total facial disassembly for skull base tumor resection. *Plastic Surgery Forum* XVII:24-28, 1994
- \*Ripley CE, Pomatto J, Beals SP, Joganic, EF, Eckhardt RB, Shiang TY, Sommer HJ, Manwaring KH, Moss SD: Superquadric Modeling of Cranial Shape Changes Following Dynamic Orthotic Cranioplastic Treatment of Positional Plagiocephaly. *In* Proceedings of the Annual Meeting, American Cleft Palate-Craniofacial Association, Toronto, Ontario, Canada, May, 1994
- \*Ripley CE, Pomatto J, Beals SP, Joganic, EF, Eckhardt RB, Shiang TY, Sommer HJ, Manwaring KH, Moss SD: Superquadric Modeling of Cranial Shape Changes Following Dynamic Orthotic Cranioplastic Treatment of Positional Plagiocephaly. *American Journal of Physical Anthropology* (abstract) Supplement 18: 1994
- \*Ripley CE, Pomatto J, Beals SP, Joganic EF, Manwaring KH, Moss SD: Treatment of positional plagiocephaly with dynamic orthotic cranioplasty (D.O.C.). *Journal of Craniofacial Surgery* 5:150-159, July, 1994
- Moss SD, Joganic EF, Manwaring KM, Beals SP: Transplanted demineralized bone graft in cranial reconstruction. *Pediatric Neurosurgery* 23.4.95:199-205, 1995
- \*Lawton MT, Hamilton MG, Beals SP, Joganic, EF, Spetzler RF: Radical resection of anterior skull base tumors. *Clin Neurosurg* 42:43-70, 1995
- \*Eckhardt RB, Shiang TY, Sommer HJ, Ripley CE, Beals SP, Joganic EF: On growth and form: Superquadric modeling of change in cranial contours following dynamic orthotic cranioplasty in the treatment of positional plagiocephaly. *American Journal of Physical Anthropology* (abstract) Supplement 19: 1995
- \*Joganic EF, Beals SP, Ripley CE, Manwaring KM, Moss SD, Pomatto J: Enhancement of craniofacial reconstruction by post-surgical dynamic orthotic cranioplasty. Proceedings of the VI Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting., St. Tropez, French Riviera, October, 1995 Edited by Adolfo G. Montoya. Published by Monduzzi Editore, Bologna, Italy.
- \*Beals SP, Joganic EF, Hamilton MG, Spetzler RF: Posterior Skull Base Transfacial Approaches. *Clin Plast Surg* 22(3): 491-511, 1995

\*Beals SP, Joganic EF, Ripley CE, Manwaring KM, Moss SD: The transverse elliptical technique for reconstruction of scaphocephaly. Proceedings of the VI Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, St. Tropez, French Riviera, October, 1995  
Edited by Adolfo G. Montoya. Published by Monduzzi Editore, Bologna, Italy.

Black CM, Fram E, Dungan D, Beals SP: Potential Pitfalls in the Work-up and Diagnosis of Choanal Atresia. American Journal of Neuroradiology 1996

Beals SP, Joganic EF, Holcombe TC, Spetzler RF: Secondary Craniofacial Problems Following Skull Base Surgery. Clin Plast Surg 24(3): 565-581, 1997.

\*Pomatto JK, Littlefield TR, Manwaring KM, Beals SP. Etiology of positional plagiocephaly in triplets and treatment using a dynamic orthotic cranioplasty device: report of three cases. Neurosurg Focus 2(2): Article 2, 1997.

\*Littlefield TR, Pomatto JK, Beals SP, Joganic EF, Manwaring KM, Ripley CE; Efficacy and stability of dynamic orthotic cranioplasty: An eight year investigation. In Marchac D, ed Craniofacial Surgery: Proceedings of the Seventh International Congress of the International Society of Craniofacial Surgery. 1998

\*Littlefield TR, Beals SP, Manwaring KH, Pomatto JK, Joganic EF, Golden KA, Ripley CE. Treatment of craniofacial asymmetry with dynamic orthotic cranioplasty. Journal of Craniofacial Surgery 9(1):11-17; discussion 18-19, 1998

Black CM, Dungan D, Fram E, Bird CR, ReKate HL, Beals SP, Raines JM. Potential Pitfalls in the work up and diagnosis of choanal atresia. Am. J or Neurorad 19(2):326-9, 1998

\*Vishteh AG, Beals SP, Joganic EF, Reiff JL, Dickman CA, Sonntag VKH, Spetzler RF: Bilateral sagittal split mandibular osteotomies as an adjunct to the transoral approach to the anterior craniovertebral junction. Technical note. Journal of Neurosurgery. 90(4 Suppl) :267-70, 1999 Apr.

\*Kelly KM, Littlefield TR, Beals SP, Joganic EF, Ripley CE, Pomatto JK; Importance of early recognition and treatment of deformational plagiocephaly with orthotic cranioplasty. Cleft Palate Craniofacial Journal, 1999 Mar;36(2):127-30

\*Golden KA, Beals SP, Littlefield TR, Pomatto JK. Sternocleidomastoid imbalance versus congenital muscular torticollis: Their relationship to positional plagiocephaly. Cleft Palate Craniofacial J., 36 (3); 256-61, May 1999

\*Littlefield TR, Kelly KM, Pomatto JK, Beals SP. Multiple-birth infants at higher risk for development of deformational plagiocephaly. Pediatrics. 103(3): 565-9, March 1999.

\*Kelly KM, Littlefield TR, Pomatto JK, Ripley CE, Beals SP, Joganic EF: Importance of early recognition and treatment of deformational plagiocephaly with orthotic cranioplasty. Cleft Palate Craniofacial J., 36(2):127-130, April 1999

\*Kelly KM, Littlefield TR, Pomatto JK, Manwaring KM, Beals SP. Cranial growth unrestricted during treatment of deformational plagiocephaly. Pediatric Neurosurg 1999; 30:193-199.

\*Littlefield TR, Kelly KM, Pomatto JK, Manwaring KM, Beals SP, Joganic EF. Cranial Growth Unrestricted During DOC Treatment of Plagiocephaly. In: Chen, ed Craniofacial Surgery VIII: Proceedings of the Eight International Congress of the International Society of Craniofacial Surgery 1999; 21-23.

Zraick RI, Liss JM, Dorman MF, Case JL, LaPointe LL, Beals SP. Multidimensional scaling of nasal voice quality. *J Speech Lang Hear Res.* 2000 Aug; 44(4):989-96

\*Pomatto JK, Beals SP, Joganic EF, Littlefield TR. Preliminary results and new treatment protocol for cranial banding following endoscopic-assisted craniectomy for sagittal synostosis. In: Lauritzen, ed *Craniofacial Surgery IX: Proceedings of the Ninth International Congress of the International Society of Craniofacial Surgery* 2001; 47-49.

\*Littlefield TR, Kelly KM, Pomatto JK, Beals SP. Multiple-birth Infants at Higher Risk for Development of Deformational Plagiocephaly II: Is One Twin at Greater Risk? *Pediatrics* 2002; 109(1): 19-25.

\*Beals SP. Rigid Fixation of the Calvaria in Craniosynostosis without Using "Rigid" Fixation. Discussion, *Plastic and reconstructive Surgery* January 2003; 39

\*Beals SP, Golden KA, Basten M, Kelly KM. Strength Performance of the Pectoralis Major Muscle After Subpectoral Breast Augmentation Surgery. *Aesthetic Surgery Journal* March-April 2003; 92-97

Wallace RC, Dean BL, Beals SP, Spetzler RF: Posttreatment Imaging of the Skull Base. *Seminars in Ultrasound CT MR.* 2003 Jun;24(3):164-81

\*Littlefield TR, Pomatto JK, Kelly KM, Cherney JC, Beals SP. Comparison of plaster casting vs. 3D cranial imaging. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA 2003; In Press

\*Littlefield TR, Pomatto JK, Kelly KM, Cherney JC, Beals SP. A new 3D imaging system for diagnosis and treatment of plagiocephaly. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA 2003; In Press

\*Beals SP, Joganic EF, Manwaring KM, ReKate HL, Pomatto JK, Cherney JC, Littlefield TR. New guidelines for the diagnosis and treatment of plagiocephaly. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA 2003; In Press

\*Pomatto JK, Littlefield TR, Cherney JC, Beals SP. Environment Vs. Genetics: A study of family head shape. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA 2003; In Press

Wallace RC, Dean BL, Beals SP, Spetzler RF: Posttreatment Imaging of the Skull Base. *Semin Ultrasound CT MR.* 2004 Jun;24(1):175-81

\*Littlefield TR, Kevin KM, Cherney JC, Beals SP, Pomatto JK. Development of a new three-dimensional cranial imaging system. *J Craniofac Surg* 2004; 15(1):175-181.

Beals SP, Joganic EF. Form and Function in Craniofacial Deformities. *Seminars in Pediatric Neurology.* WB Saunders. 2004 Dec; 11 (4), Pg. 238-242.

\*Feiz-Erfan I, Han PP, Spetzler RF, Porter RW, Ferreira MAT, Beals SP, Joganic EF: Exposure of Midline Skull Base Without a Facial Incision Through a Combined Craniofacial-Transfacial Procedure. *Neurosurgery.* 2005 Jan; 56(1 Suppl):28-35; discussion 28-35

\*Littlefield TR, Cherney JC, Luisi JL, Beals SP, Kelly KM, Pomatto JK. Comparison of plaster casting versus 3D imaging for treatment of plagiocephaly. *Cleft Palate Craniofac J* 2005 Mar;42(2):157-64



- \*Beals SP, Joganic EF, Manwaring KM, ReKate HL, Pomatto JK, Littlefield TR. New Guidelines For the Diagnosis and Treatment of Plagiocephaly. *Pediatrics*. Submitted for publication June 2005.
- \*Manwaring P, Packard A, Manwaring J, Manwaring K, Beals SP, Littlefield, Manwaring M. An Apparatus and Method to Characterize Causes of Positional Plagiocephaly. *Conf Proc IEEE Eng Med Biol Soc*. 2005;6:6049-51 In Press
- \*Calcaterra J, Beals SP, Cohen SR, Holmes RE, Joganic EF, Kelly KM, Manwaring KH, Pomatto JK, ReKate HL, Salyer KE, Hess RM, Littlefield TR. New Severity Assessment Scale for Deformational Plagiocephaly. To be *Submitted Plast Reconstr Surg*
- \*Feiz-Erfan I, Han PP, Spetzler RF, Horn EM, Klopfenstein JD, Kim LJ, Porter RW, Beals SP, Lettieri SC, Joganic, EF. Preserving the Sense of Smell in Anterior Craniofacial Surgery Through Cribriform Plate Osteotomy Applied in Selected Patients. *Neurosurgery* 2005 July;57(1 Suppl):86-93; discussion 86-93
- \*Feiz-Erfan I, Han PP, Spetzler RF, Horn EM, Klopfenstein JD, Kim LJ, Porter RW, Ferreira MAT, Beals SP, Lettieri SC, Joganic, EF. The Radical Transbasal Approach for Resection of Anterior and Midline Skull Base Lesions. *J Neurosurgery*. 2005 Sep;103(3):485-90
- \*Pomatto JK, Calcaterra J, Kelly KM, Beals SP, Manwaring KH, Littlefield TR. A Study of Family Head Shape: Environment Alters Cranial Shape. *Clinical of Pediatrics (Philadelphia)*. 2006 Jan-Feb;45(1):55-63
- Fearon JA, Singh DJ, Beals SP, Yu JC. The Diagnosis and Treatment of Single Sutural Synostoses: Are CT Scans Necessary? *Plastic and Reconstructive Surgery* 118(4):58, Sept. 2006.
- Fearon JA, Singh DJ, Beals SP, Yu JC. The Diagnosis and Treatment of Single Sutural Synostoses: Are Computed Tomographic Scans Necessary? *Plastic and Reconstructive Surgery* 120(5):1327-1331, Oct. 2007.
- Samson TD, Beals SP, ReKate HL. Massive Wormian Bone at the Cranial Apex: Identification, Correction and Outcome. *The Journal of Craniofacial Surgery* Vol 19, (1):96-100, January 2008.
- \*Feiz-Erfan I, Spetzler RF, Horn EM, Porter RW, Beals SP, Lettieri SC, Joganic, EF, DeMonte F. Proposed Classification for the Transbasal Approach and Its Modifications. *Skull Base*. 2008 Jan; 18(1):29-47
- Biskup NI, Singh DJ, Beals S, Joganic EF, Manwaring K. Pediatric Cranial Vault defects: Early Experience with Beta-tricalcium Phosphate Bone Graft Substitute. *Journal of Craniofacial Surgery*. 2010 Mar;21(2):358-62

## **BOOK CHAPTERS**

- Beals SP, Joganic EF, Spetzler RF, Hamilton MG: Posterior Skull Base: Transfacial Approaches. *Clinics in Plastic Surgery, Surgery of the Skull Base*, Edited by Persing JA, WB Saunders Co., July, 1995 p 491-512.
- Beals SP, Joganic EF: Transfacial approaches to the craniovertebral junction. Dickman CA, Sonntag VKH, Spetzler RF: *Surgery of the Craniovertebral Junction*, New York: Thieme Medical Publishing, 1998, pp 395-418.

Beals, Stephen P: Transfacial Approaches to Skull Base. *In* An Atlas of Orbitocranial Surgery, edited by Bryant A. Toth and William B. Stewart, Martin Dunitz Publishers, London, England 1999.

Beals SP, Joganic EF, Holcombe TC, Spetzler RF: Secondary Craniofacial Problems following Skull Base Surgery, *In* Clinics of Plastic Surgery, Edited by Cohen S and Hardesty R, WB Saunders Co., 1999.

Beals SP, Robles RA, Golden KA: Skull Base Surgery, *In* Plastic Surgery Secrets, Edited by Jeffrey Weinzweig, MD, Hanley & Belfus, Inc. 1999.

Beals SP: Skull Base: Orbit, Anterior, Lateral . *In* Plastic Surgery: Indications, Operations, and Outcomes. Edited by Achauer Band Coleman J, CV Mosby & Co., New York, 2000.

Beals SP, Rekate HL: Craniofacial and Cranial Base Tumors, *In* Craniofacial Surgery: A Multidisciplinary Approach to Craniofacial Anomalies, Edited by Lin, Ogle and Jane, W.B. Sanders Company, 2002

Beals SP. Craniosynostosis. Encyclopedia of the Neurological Sciences, (eds Aminoff, M., and Daroff, R.) Vol. 1, Academic Press, San Diego, 2003; 792-794.

Beals SP, Hammond RJB: Skull Base Surgery, *In* Plastic Surgery Secrets Plus 2<sup>nd</sup> Edition, Edited by Jeffrey Weinzweig, MD, Mosby, Inc. 2010.

Beals SP, Joganic EF: Transfacial approaches to the craniovertebral junction. Dickman CA, Sonntag VKH, Spetzler RF: Surgery of the Craniovertebral Junction, 2<sup>nd</sup> Edition New York: Thieme Medical Publishing, at publisher.

Beals SP, Kim HY: Skull Base Surgery, *In* Current Reconstructive Plastic Surgery Surgery, Edited by Drs. Joseph Serletti, Jaimie Shores, Peter Taub and Liza Wu, McGraw Hill, at publisher

#### **PUBLICATIONS IN NON PEER-REVIEWED JOURNALS**

Beals SP: Development of growth of the normal face, BNI Quarterly 2:9-16, 1986

Beals SP: Principles of craniofacial surgery, BNI Quarterly 2:17-21, 1986

Beals SP, Tarby TJ: Craniofacial syndromes and surgical strategies, BNI Quarterly 2:41-51, 1986

Johnson ML, Acharya G, So BK, Beals SP: Reconstruction of the craniofacial skeleton: A microsurgical approach. BNI Quarterly 2:63-68, 1986

Beals SP, Joganic, EF: Transfacial exposure of anterior cranial fossa and clival tumors. BNI Quarterly 8:2, 1992

Rekate HL, Francis PM, Beals SP, Pittman HW, Reiff J: Hydrocephalus and chronic tonsillar herniation. BNI Quarterly 8:29, 1992

Moss SD, Manwaring KH, Beals SP, Joganic EF, Ripley CE, Pomatto J: Diagnosis and management: The misshapen head in the neonate. Pediatric Review 4:4-8, 1993

Manwaring KH, Moss SD, Beals SP, Joganic, EF, Ripley CE: Diagnosis and treatment of craniosynostosis in the neonate. Pediatric Review, 4:16-21, 1993

Chen JW, Spetzler RF, Reiff J, Beals SP: Hemangiomas and vascular malformations. BNI Quarterly 10(3): 19-25, 1994.

Lawton, Beals SP, Joganic EF, Han PP, Spetzler RF: The transfacial approach to midline skull base lesions: A classification scheme. Operative Techniques in Neurosurgery 2(4) 201-217 1999

Beals, SP, Glick, P: Principles of craniofacial Surgery, BNI Quarterly 23(2):11-16, 2007

## **VIDEO PRODUCTIONS/PRESENTATIONS**

Munro I, Beals SP: The Ultimate Orthognathic Operation, David & Geck Award Film 1985 for the American College of Surgeons, assistant to Dr. Ian R. Munro, presented at the American Society of Plastic and Reconstructive Surgeons Annual Scientific Meeting, Kansas City, October, 1985

Beals SP, Joganic EF: Total facial disassembly for skull base tumor resection. Presented by SP Beals, American Society of Maxillofacial Surgery, San Diego, CA, September, 1994

Beals SP, Golden KA: Heads Up Baby, A prevention video for deformational plagiocephaly,

## **12. RESEARCH INTERESTS**

1. Development of Rigid Fixation Osteodistraction and Instrumentation, KLS Martin, Consultant for development of KLS Martin Craniofacial Skeletal Hardware, bone anchoring screw (no patent).
2. Continued development and research of Transfacial Approaches to the skull base.
3. Prevention of Deformational Plagiocephaly, video and web site.

## **13. RESEARCH GRANTS AWARDED**

Pectoralis Major Function Following Subpectoral Breast Augmentation Surgery. Supported by Grant awarded by the Aesthetic Surgery Education and Research Foundation in April 1999

Consultant for the Optical 3D Digitization of the Infant Head. National Institutes of Health / National Institute of Child Health and Human Development. Grant R43 HD 35802-01A1, \$99, 015 [T Littlefield, Principal Investigator; Stephen P. Beals, MD and Kim H. Manwaring, MD, Consultants] 1998.

## **14. PATENTS**

Consultant for development of Colorado Biomedical Microneedle (Ultrasharp Tungsten Needle for electrosurgical knife), patented by J Newkirk and KM Manwaring. (U.S. patent #4927420)

Co-inventor of Dynamic Orthotic Cranioplasty (D.O.C.), a dynamic cranial remodeling band patented by Jeanne Pomatto at Cranial. Technologies, Inc., Phoenix, Arizona (U.S. patent #5,094,229, and 5,308,312) released 2002

## **15. EDUCATIONAL ACTIVITIES**

**A. CURRICULUM/COURSE DEVELOPMENT:**

1. Program Committee Member for the North American Skull Base Society Annual Meeting, April, 2000.
2. Web Site and Public Education material development for the prevention of Deformational Plagiocephaly, 2000- current.
3. Co-chair of Craniofacial Workshop in conjunction with the Pediatric Section of the American Association of Neurosurgeons meeting in Phoenix, Arizona, December, 2000
4. Faculty – Craniofacial Workshop in conjunction with the Pediatric Section the American Association of Neurosurgeons meeting in Phoenix, Arizona, December 2002
5. Faculty – Craniofacial Workshop in conjunction with the BNI Neurosurgery meeting in Phoenix, Arizona, March 2004
6. Co-chair – Basic Techniques in Craniofacial Surgery course. Sponsored by the American Society of Craniofacial Surgery and KLS Martin. Phoenix, Arizona, August 2010
7. Co-chair – Basic Techniques in Craniofacial Surgery course. Sponsored by the American Society of Craniofacial Surgery and KLS Martin. Phoenix, Arizona, July 2011
8. Co-chair – Basic Techniques in Craniofacial Surgery course. Sponsored by the American Society of Craniofacial Surgery and KLS Martin. Phoenix, Arizona, August 2012

**B. TEACHING ACTIVITIES:**

**Arizona State University-**

Beals, SP: Principles of Craniofacial Surgery and Cleft Lip and Palate Surgery. Lecture for Arizona State University, Department of Speech and Hearing, Tempe, Arizona. Fall and Spring semesters, 1992-1998, 2002.

**Grand Rounds-**

Beals SP: Craniofacial Surgery. Neurosurgery Grand Rounds, Barrow Neurological Institute, Phoenix, Arizona, 1988

Beals SP, Manwaring KH: Abnormal Head Shape. Grand Rounds, Phoenix Children's Hospital, Phoenix, Arizona, August, 1989

Beals SP: Abnormal Head Shape, Grand Rounds, Scottsdale Memorial Hospital-North, Scottsdale, Arizona, September, 1989

Beals SP: Abnormal Head Shape. Pediatric Grand Rounds, St. Joseph's Hospital Pediatric Residency, Phoenix, AZ, October, 1994

Beals SP, Littlefield TR, ReKate HL, Pomatto JK, Manwaring KH, Joganic EF. Deformational Plagiocephaly: Guidelines for prevention, diagnosis and management of the infant with positional head molding. St. Joseph's Hospital Pediatric Residency, Phoenix AZ. August 13, 2002.

Beals SP: The Team Approach to Craniofacial Deformities, St. Joseph's Hospital Pediatric Residency, Phoenix, AZ, October 2002

**Teaching Conferences-**

Beals SP: The use of Mini-plates in Craniomaxillofacial Surgery, lecturer at Mini-plate Training Seminars, Phoenix, AZ, 1986

Beals SP: A Challenge for Nurses, Phoenix Memorial Hospital, Phoenix, Arizona, January 1988

Beals SP: Principles of Plastic Surgery, Advancements in Ophthalmic Plastic Surgery, Sponsored by Maricopa Medical Center, Phoenix, AZ, January, 1989

Beals SP: A Day in the Life of a Plastic Surgeon, Grand Canyon University Pre-medical Student Class, Phoenix, Arizona, September 1989

Beals SP: Plastic & Reconstructive Surgery--A Pot Pourri, Valley of the Sun Hospital, Phoenix, Arizona, September 1989

Beals SP: Craniofacial Surgery, Second Annual Northern Arizona Perinatal Conference, Flagstaff, Arizona, September 1990

Beals SP: In-service lecture for Barrow Neurological Institute Nursing Staff, St. Joseph's Hospital, Phoenix, Arizona, November 1990

Beals SP: Craniofacial Approach to Orbital Trauma, Second Annual Advancements in Ophthalmic Plastic Surgery, Sponsored by Maricopa Medical Center, Phoenix, Arizona, March 1990

Beals SP: Plastic Surgery of the Head, Career Options & Learning Opportunities in Science, Grand Canyon University, Phoenix, Arizona, November 1990

Beals SP: Craniofacial Surgery, Third Annual Northern Arizona Perinatal Conference, Flagstaff, Arizona, September 1991

Beals SP: Care of the Craniofacial Surgical Patient, St. Joseph's Hospital and Medical Center-In-service to Intensivist Staff, Phoenix, Arizona, January 1992

Beals SP: The team approach. Presented at Cleft Palate and other Craniofacial Anomalies: Assessment and Treatment, sponsored by the Department of Speech and Hearing Science, Arizona State University, Tempe, AZ, October, 1993

Beals SP: The role of surgery in velopharyngeal insufficiency. Presented at the Annual Meeting of the Arizona Speech and Hearing Association, Phoenix, AZ, April, 1995

Beals SP: Neonatal abnormal head shape. Presented at the Valley Chapter, Association of Operating Room Nurses, Phoenix, AZ, Phoenix, AZ, May, 1995

Beals SP: Craniosynostosis. Good Samaritan Hospital Neuroscience Symposium, Phoenix, AZ, June, 1995

Beals SP: Principles of Craniofacial and Cleft Lip and Palate Surgery. Lecture for Speech Graduate Course, Arizona State University, Tempe, AZ, June, 1992-1998

Beals SP: Craniofacial Trauma: Acute Management and Reconstruction, Mexican Chapter of the American College of Surgeons, Guadalajara, Jalisco, Mexico, March 1990

Beals SP: Craniofacial Surgery, Third World Conference--International College for Craniofacial and Vertebral Therapeutics (ICCVT), Phoenix, Arizona, April 1991

Beals SP: The use of Mini-plates in Craniomaxillofacial Surgery, lecturer at Mini-plate Training Seminars, Rutherford, NJ, 1986

Beals SP: Principles of Craniofacial Surgery, American Society of Neuroanesthesia and Critical Care, Phoenix, Arizona, 1989

Beals SP: Bone Grafts and Rigid Fixation, Rigid Fixation of the Craniofacial Skeleton, Maryland Institute for Emergency Medical Services Systems, Baltimore, Maryland, December 1989

Beals SP: Craniofacial Trauma: Acute Management and Reconstruction, Mexican Chapter of the American College of Surgeons, Guadalajara, Jalisco, Mexico, March 1990

Beals SP: Craniofacial Surgery, Third World Conference--International College for Craniofacial and Vertebral Therapeutics (ICCVT), Phoenix, Arizona, April 1991

Beals SP: Care of the Craniofacial Surgical Patient, St. Joseph's Hospital and Medical Center-Barrow Neurological Institute Seminar and Workshop, Phoenix, Arizona, January 1992

Beals SP: *Practicum* on Transfacial Surgical Techniques, Annual Meeting of North American Skull Base Society, Orlando, FL, February, 1994

Beals SP: Transfacial Approach to the skull base-The team approach. Visiting Professor for the University of Indiana, June 1995

Beals, Stephen. Objective Assessment of Orthotic Management of Deformational Plagiocephaly. Post Conference Symposium, Craniostylosis: Genome, Treatment, Outcome. Sponsored by the American Society of Craniofacial Surgery, Scottsdale, AZ, April 1999

Beals SP, Joganic EF: Skull Base Anatomy Course, *Live dissection*; Pre-symposium, North American Skull Base Society Meeting, Scottsdale, AZ, March 17, 2000.

Beals SP: Endoscopic Approach to Skull Base Surgery, *Lecture and Lab*; Craniofacial Workshop in conjunction with the Pediatric Section of the American Association of Neurosurgeons Meeting, Phoenix, AZ, December 2002

Beals SP: Session Chair, ASCFS Panel – Interdisciplinary Management of Apert's Syndrome from Birth to Adulthood, American Cleft Palate-Craniofacial Association 66<sup>th</sup> Annual Meeting, Phoenix, AZ, April 2009

Beals SP: Session Chair, ASCFS Panel – Interdisciplinary Management of Hemifacial Microsomia from Birth to Adulthood, American Cleft Palate-Craniofacial Association 67<sup>th</sup> Annual Meeting, Fort Worth, TX, March 2010

Beals SP: Transfacial Approaches to Skull Base, Lecture and Cadaver Dissection; Basic Techniques of Craniofacial Surgery in conjunction with the American Society of Craniofacial Surgery and KLS Martin, Phoenix, AZ, August 2010

Beals SP: Session Chair, ASCFS Panel – Interdisciplinary Management of Treacher Collins from Birth to Adulthood, American Cleft Palate-Craniofacial Association 68<sup>th</sup> Annual Meeting, San Juan, PR, April 2011

**Video Presentation:**

Munro I, Beals SP: The Ultimate Orthognathic Operation, Davis & Geck Award Film 1985 for the American College of Surgeons, assistant to Dr. Ian R. Munro, presented at the American Society of Plastic and Reconstructive Surgeons Annual Scientific Meeting, Kansas City, October, 1985

Beals SP, Joganic EF: Total facial disassembly for skull base tumor resection. Presented by SP Beals, American Society of Maxillofacial Surgery, San Diego, CA, September, 1994

**\*Public Education Videos**

Beals SP, The Craniofacial Foundation of Arizona, Increasing awareness of people with facial differences. Produced by Chili Pepper Productions, 2000. *Winner of The International Television Association Award and the Telly Awards.*

Beals SP, Golden KA. Heads Up Baby. An educational video on the prevention of Deformational Plagiocephaly for parents and physicians.

**16. INVITED PRESENTATIONS AND VISITING PROFESSORSHIPS**

**Regional**

Beals SP: The use of Mini-plates in Craniomaxillofacial Surgery, lecturer at Mini-plate Training Seminars, Phoenix, AZ, 1986

Beals SP: A Challenge for Nurses, Phoenix Memorial Hospital, Phoenix, Arizona, January 1988

Beals SP: Principles of Plastic Surgery, Advancements in Ophthalmic Plastic Surgery, Sponsored by Maricopa Medical Center, Phoenix, AZ, January, 1989

Beals SP, Manwaring KH: Abnormal Head Shape, Grand Rounds, Phoenix Children's Hospital, Phoenix, Arizona, August, 1989

Beals SP: Abnormal Head Shape, Grand Rounds, Scottsdale Memorial Hospital-North, Scottsdale, Arizona, September, 1989

Beals SP: A Day in the Life of a Plastic Surgeon, Grand Canyon University Pre-medical Student Class, Phoenix, Arizona, September 1989

Beals SP: Plastic & Reconstructive Surgery--A Pot Pourri, Valley of the Sun Hospital, Phoenix, Arizona, September 1989

Beals SP: Craniofacial Surgery, Second Annual Northern Arizona Perinatal Conference, Flagstaff, Arizona, September 1990

Beals SP: In-service lecture for Barrow Neurological Institute Nursing Staff, St. Joseph's Hospital, Phoenix, Arizona, November 1990

Beals SP: Craniofacial Approach to Orbital Trauma, Second Annual Advancements in Ophthalmic Plastic Surgery, Sponsored by Maricopa Medical Center, Phoenix, Arizona, March 1990

Beals SP: Plastic Surgery of the Head, Career Options & Learning Opportunities in Science, Grand Canyon University, Phoenix, Arizona, November 1990

Beals SP: Craniofacial Surgery, Third Annual Northern Arizona Perinatal Conference, Flagstaff, Arizona, September 1991

Beals SP: Care of the Craniofacial Surgical Patient, St. Joseph's Hospital and Medical Center-In-service to Intensivist Staff, Phoenix, Arizona, January 1992

Beals SP: The team approach. Presented at Cleft Palate and other Craniofacial Anomalies: Assessment and Treatment, sponsored by the Department of Speech and Hearing Science, Arizona State University, Tempe, AZ, October, 1993

Beals SP: Abnormal Head Shape. Presented at Pediatric Grand Rounds, St. Joseph's Hospital Pediatric Residency, Phoenix, AZ, October, 1994

Beals SP: The role of surgery in velopharyngeal insufficiency. Presented at the Annual Meeting of the Arizona Speech and Hearing Association, Phoenix, AZ, April, 1995

Beals SP: Neonatal abnormal head shape. Presented at the Valley Chapter, Association of Operating Room Nurses, Phoenix, AZ, Phoenix, AZ, May, 1995

Beals SP: Craniosynostosis. Good Samaritan Hospital Neuroscience Symposium, Phoenix, AZ, June, 1995

Beals SP: Principles of Craniofacial Surgery. Lecture for Speech Graduate Course, Arizona State University, Tempe, AZ, June, 1995-1999

### **National**

Beals SP: The use of Mini-plates in Craniomaxillofacial Surgery, lecturer at Mini-plate Training Seminars, Rutherford, NJ, 1986

Beals SP: Principles of Craniofacial Surgery, American Society of Neuroanesthesia and Critical Care, Phoenix, Arizona, 1989

Beals SP: Bone Grafts and Rigid Fixation, Rigid Fixation of the Craniofacial Skeleton, Maryland Institute for Emergency Medical Services Systems, Baltimore, Maryland, December 1989

Beals SP: Care of the Craniofacial Surgical Patient, St. Joseph's Hospital and Medical Center-Barrow Neurological Institute Seminar and Workshop, Phoenix, Arizona, January 1992

Beals SP: Practicum on Transfacial Surgical Techniques, Annual Meeting of North American Skull Base Society, Orlando, FL, February, 1994

Beals SP: Transfacial Approaches to the Skull Base- The Team Approach. Visiting Professor for the University of Indiana, June 1995

### **International**



Beals SP: Craniofacial Trauma: Acute Management and Reconstruction, Mexican Chapter of the American College of Surgeons, Guadalajara, Jalisco, Mexico, March 1990

Beals SP: Craniofacial Surgery, Third World Conference--International College for Craniofacial and Vertebral Therapeutics (ICCVT), Phoenix, Arizona, April 1991

Beals, SP. Transfacial Exposure of the Midline Skull Base. Pre-Symposium International Society of Craniofacial Surgeons 11th Biennial International Conference, Queensland, Australia, September 11-14, 2005

## 17. MENTOR:

### **BNI Neurosurgical Residents and Fellows:**

PM Francis, MD- (1991) Currently private practice, Scottsdale, AZ.

PP Han, MD- (1999) Currently a resident at St. Joseph's Hospital

MG Hamilton, MD- (1992) Currently in Alberta Children's Hospital, Calgary, Alberta, Canada

JM Herman, MD- (1992) Currently in private practice, Ventura County Neurosurgical Associates,  
Ventura, CA

TK Farnworth, MD- (1988) Currently in private practice in Phoenix, AZ

AG Vishteh, MD- (1997) Currently private practice, Mesa, AZ

MA Pearson, MD- (1992) Currently in private practice in Phoenix, AZ

RW Porter, MD- (1996-1999) Currently in private practice in Glendale, AZ with Barrow Neurological  
Institute

MT Lawton, MD- (1994) Currently a Professor in Academic Neurosurgery at UCSF

RW Detwiler, MD- (1998) Currently in private practice at Tyler Neurosurgical Group, Tyler, Texas

I Feiz-Erfan, MD- (1998) Medical student observer from Germany, Currently is a 4<sup>th</sup> year Neurosurgery  
Resident at Barrow Neurological Institute

### **Mayo Medical School:**

Beginning in 1990, the Mayo Clinic Plastic Surgery Residency Program was rotated in Phoenix, Arizona. I have been involved in training residents in Cleft and Craniofacial Surgery since its inception. Sixty (60) have been rotated through my supervision.

### **Other Mentees:**

1. Plastic Surgery Resident- Miguel-Angel Gonzalez, Guadalajara, Jalisco, Mexico, Feb-March 1989- Currently is in private practice in Nogales, Mexico and Cabo San Lucas, Mexico.
2. Medical student Beatrice Ferrey, Medical School of St. Louis Hospital, Paris, France, June-July 1990- Current location unknown.
3. Medical student Tim Ryan, June-July, 1992- Currently is an emergency room physician in Phoenix, Arizona.
4. External advisor for Catherine E. Ripley, Ph.D. candidate at Arizona State University Department of Anthropology, Tempe, Arizona, 1991-1996- Currently is an Administrator at the University of Phoenix.
5. Lisa Stansfield, summer allied health professional extern from University of Arizona, Tucson, Arizona, 1989-Currently is a licensed Occupational Therapist in Phoenix, Arizona.

6. External advisor for Richard Zraick, PhD- candidate at Arizona State University Department of Speech and Hearing, 1999- Currently a professor at University of Arkansas, Little Rock
7. Brenda Swander, summer pre-med extern from Grand Canyon University, Phoenix, Arizona, 1992- Currently is an Internist in Phoenix, Arizona.
8. Professor Genady A. Kotov, Doctor of Medical Science, Chairman Department of Pediatric Stomatology (Department of Plastic and Reconstructive Surgery of Face and Jaws), Medical Academy of Postgraduate Studies, St. Petersburg, Russia, 1994-Current status unknown.
9. Plastic Surgery Fellows:
  - 1989- Steve Lex, MD- Currently in private Practice in Flagstaff, AZ.
  - 1990- Todd Farnworth, MD- collaborated on research with Colorado Biomedical- Currently in private practice in Phoenix, Arizona.
  - 1991- John Corey, MD- Currently in private practice in Phoenix, Arizona.
  - 1992- Deborah White- Currently in private practice in Phoenix, Arizona.
10. Littlefield, Timothy, Vice President, Cranial Technologies, Phoenix, AZ, mentee 1996-present for DOC research.

### Publications with Mentees :

#### (Mentee indicated in bold)

Beals SP, **Francis PM**, Rekate HL, Manwaring KH, Pittman H, Reiff J: Crouzon Syndrome and Chiari I Malformation. *Plastic Surgery Forum*, XIV: 202-205, 1991

Beals SP, **Francis PW**, Rekate HL, Reiff J, Pittman HW, Manwaring KH: Hydrocephalus and the Chiari I Malformation in Patients with Crouzon's Syndrome. *In Craniofacial Surgery, Proceedings of the IV International Congress of the International Society of Craniomaxillofacial Surgery, Biannual Scientific Meeting*, Edited by Adolfo G. Montoya. Published by Monduzzi Editore, Bologna, Italy. Santiago de Compostelo, Spain, June, 1991, p. 181

**Francis PM**, Beals S, Rekate HL, Pittman HW, Manwaring K, Reiff J: Chronic tonsillar herniation and Crouzon's Syndrome. *Pediatric Neurosurgery* 18:202, 1992

Beals SP, Joganic EF, Spetzler RF, **Hamilton MG**, **Herman JM**: Classification of transfacial approaches in treatment of tumors of the anterior skull base and clivus. *Plastic Surgery Forum* XVI:211-213, 1993

Spetzler RF, **Herman JM**, Beals S, Joganic E, Milligan J: Preservation of olfaction in anterior craniofacial approaches. *Journal of Neurosurgery* 79:48, 1993

**Farnworth TK**, Beals SP, Manwaring KH, Trepeta RW: Comparison of skin necrosis in rats using a new microneedle electrocautery, standard needle electrocautery and the Shaw hemostatic scalpel. *Annals of Plastic Surgery* 31:164-167, 1993

**Ripley CE**, Pomatto J, Beals SP, Joganic, EF, Manwaring KH, Moss SD: Treatment of positional plagiocephaly utilizing the cranial remodeling orthosis [dynamic orthotic cranioplasty (D.O.C.)], *In Craniofacial Surgery, Proceedings of the V International Congress of the International Society of Craniofacial Surgery*. Edited by Fernando Ortiz Monasterio, Published by Monduzzi Editore, Bologna, Italy. Oaxaca, Mexico, October, 1993, p. 111

Beals SP, Joganic EF, Spetzler RF, **Hamilton MG**, **Herman JM**: Classification of transfacial approaches in treatment of tumors of the anterior skull base and clivus. *In Craniofacial Surgery, Proceedings of the V International Congress of the International Society of Craniofacial Surgery*. Edited

by Fernando Ortiz Monasterio, Published by Monduzzi Editore, Bologna, Italy. Oaxaca, Mexico, October, 1993, p. 215

Beals SP, **Hamilton MG**, Joganic EF, Spetzler RF: Classification of transfacial approaches in the treatment of tumors of the anterior skull base and clivus. *Plast Surg Forum* 16:211-213, 1993

Beals SP, Joganic EF, **Hamilton MG** et al: Classification of transfacial approaches in the treatment of tumors of the anterior skull base and clivus, in Monasterio FM (eds): *Craniofacial Surgery* 5, Bologna, Italy: Monduzzi Editors, 1994, pp 215-218.

**Ripley CE**, Pomatto J, Beals SP, Joganic, EF, Eckhardt RB, Shiang TY, Sommer HJ, Manwaring KH, Moss SD: Superquadric Modeling of Cranial Shape Changes Following Dynamic Orthotic Cranioplastic Treatment of Positional Plagiocephaly. *In Proceedings of the Annual Meeting, American Cleft Palate-Craniofacial Association, Toronto, Ontario, Canada, May, 1994*

**Ripley CE**, Pomatto J, Beals SP, Joganic, EF, Eckhardt RB, Shiang TY, Sommer HJ, Manwaring KH, Moss SD: Superquadric Modeling of Cranial Shape Changes Following Dynamic Orthotic Cranioplastic Treatment of Positional Plagiocephaly. *American Journal of Physical Anthropology* (abstract) Supplement 18: 1994

**Ripley CE**, Pomatto J, Beals SP, Joganic EF, Manwaring KH, Moss SD: Treatment of positional plagiocephaly with dynamic orthotic cranioplasty (D.O.C.). *Journal of Craniofacial Surgery* 5:150-159, July, 1994

**Lawton MT, Hamilton MG**, Beals SP, Joganic, EF, Spetzler RF: Radical resection of anterior skull base tumors. *Clin Neurosurg* 42:43-70, 1995

Joganic EF, Beals SP, **Ripley CE**, Manwaring KM, Moss SD, Pomatto J: Enhancement of craniofacial reconstruction by post-surgical dynamic orthotic cranioplasty. *Proceedings of the VI Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, St. Tropez, French Riviera, October, 1995* Edited by Adolfo G. Montoya. Published by Monduzzi Editore, Bologna, Italy.

Beals SP, Joganic EF, **Hamilton MG**, Spetzler RF: Posterior skull base transfacial approaches. *Clin Plast Surg* 22(3): 491-511, 1995

Beals SP, Joganic EF, **Ripley CE**, Manwaring KM, Moss SD: The transverse elliptical technique for reconstruction of scaphocephaly. *Proceedings of the VI Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, St. Tropez, French Riviera, October, 1995* Edited by Adolfo G. Montoya. Published by Monduzzi Editore, Bologna, Italy.

Pomatto JK, **Littlefield TR**, Manwaring KM, Beals SP. Etiology of positional plagiocephaly in triplets and treatment using a dynamic orthotic cranioplasty device: report of three cases. *Neurosurg Focus* 2(2): Article 2, 1997.

**Littlefield TR**, Pomatto JK, Beals SP, Joganic EF, Manwaring KM, **Ripley CE**; Efficacy and stability of dynamic orthotic cranioplasty: An eight year investigation. In Whitaker, ed *Craniofacial Surgery VII: Proceedings of the Seventh International Congress of the International Society of Craniofacial Surgery*. 1997; 109-111

**Littlefield TR**, Beals SP, Manwaring KH, Pomatto JK, Joganic EF, Golden KA, **Ripley CE**. Treatment of craniofacial asymmetry with dynamic orthotic cranioplasty. *Journal of Craniofacial Surgery* 9(1):11-17; discussion 18-19, 1998

**Littlefield TR**, Beals SP, Manwaring KH, Pomatto JK, Joganic EF, Golden KA, **Ripley CE**. Treatment of craniofacial asymmetry with dynamic orthotic cranioplasty. *Journal of Craniofacial Surgery* 9(1):11-17; discussion 18-19, 1998

Kelly KM, **Littlefield TR**, Beals SP, Joganic EF, **Ripley CE**, Pomatto JK; Significance of entrance age on effectiveness of orthotic treatment of positional plagiocephaly. *Cleft Palate Craniofacial Journal*, April 1998

**Vishteh AG**, Beals SP, Joganic EF, Reiff JL, Dickman CA, Sonntag VKH, Spetzler RF: Bilateral sagittal split mandibular osteotomies as an adjunct to the transoral approach to the anterior craniovertebral junction. Technical note. *Journal of Neurosurgery*. 90(4 Suppl) :267-70, 1999 Apr.

Kelly KM, **Littlefield TR**, Pomatto JK, **Ripley CE**, Beals SP, Joganic EF: Importance of early recognition and treatment of deformational plagiocephaly with orthotic cranioplasty. *Cleft Palate Craniofacial J.*, 36(2):127-130, April 1999.

Golden KA, Beals SP, **Littlefield TR**, Pomatto JK. Sternocleidomastoid imbalance versus congenital muscular torticollis: Their relationship to positional plagiocephaly. *Cleft Palate Craniofacial J.*, 36 (3); 256-61, May 1999

**Littlefield TR**, Kelly KM, Pomatto JK, Beals SP. Multiple-birth infants at higher risk for development of deformational plagiocephaly. *Pediatrics*. 103(3): 565-9, March 1999.

Kelly KM, **Littlefield TR**, Pomatto JK, Manwaring KM, Beals SP. Cranial growth unrestricted during treatment of deformational plagiocephaly. *Pediatric Neurosurg* 1999; 30:193-199.

**Littlefield TR**, Kelly KM, Pomatto JK, Manwaring KM, Beals SP, Joganic EF. Cranial Growth Unrestricted During DOC Treatment of Plagiocephaly. In: Chen, ed *Craniofacial Surgery VIII: Proceedings of the Eight International Congress of the International Society of Craniofacial Surgery* 1999; 21-23.

**Littlefield TR**, Kelly KM, Pomatto JK, Beals SP. Multiple-birth Infants at Higher Risk for Development of Deformational Plagiocephaly II: Is One Twin at Greater Risk? *Pediatrics* 2002; 109(1): 19-25.

Pomatto JK, Beals SP, Joganic EF, **Littlefield TR**. Preliminary results and new treatment protocol for Cranial banding following endoscopic-assisted craniectomy for sagittal synostosis. In: Lauritzen, ed *Craniofacial Surgery IX: Proceedings of the Ninth International Congress of the International Society of Craniofacial Surgery* 2001; 47-49.

Beals SP, Golden KA, Basten M, Kelly KM. Strength Performance of the Pectoralis Major Muscle After Subpectoral Breast Augmentation Surgery. *Aesthetic Surgery Journal* March-April 2003; 92-97

**Littlefield TR**, Pomatto JK, Kelly KM, Cherney JC, Beals SP. Comparison of plaster casting vs. 3D cranial imaging. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA 2003; In Press

**Littlefield TR**, Pomatto JK, Kelly KM, Cherney JC, Beals SP. A new 3D imaging system for diagnosis and treatment of plagiocephaly. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA 2003; In Press

Beals SP, Joganic EF, Manwaring KM, ReKate HL, Pomatto JK, Cherney JC, **Littlefield TR**. New guidelines for the diagnosis and treatment of plagiocephaly. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA 2003; In Press

Pomatto JK, **Littlefield TR**, Cherney JC, Beals SP. Environment Vs. Genetics: A study of family head shape. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA 2003; In Press

**Feiz-Erfan I**, Han PP, Spetzler RF, Horn EM, Klopfenstein JD, Kim LJ, Porter RW, Ferreira MAT, Beals SP, Lettieri SC, Joganic, EF. The Radical Transbasal Approach for Resection of Anterior and Midline Skull Base Lesions. *J Neurosurg.* 2005 Sep;103(3):485-90.

**Littlefield TR**, Cherney JC, Luisi JN, Beals SP, Kelly KM. Comparison of Plaster Casting with Three-dimensional Cranial Imaging. *Cleft Palate Craniofac J.* 2005 Mar;42(2):157-64

**Feiz-Erfan I**, Han PP, Spetzler RF, Porter RW, Ferreira MAT, Beals SP, Joganic EF: Exposure of Midline Cranial Base Without a Facial Incision Through a Combined Craniofacial-Transfacial Procedure. *Neurosurgery.* 2005 Jan; 56(1 Suppl):28-35; discussion 28-35

Beals SP, Joganic EF, Manwaring KM, ReKate HL, Pomatto JK, **Littlefield TR**. New Guidelines For the Diagnosis and Treatment of Plagiocephaly. Submitted for publication June 2005.

Calcaterra J, Beals SP, Cohen SR, Holmes RE, Joganic EF, Kelly KM, Manwaring KH, Pomatto JK, ReKate HL, Salyer KE, Hess RM, **Littlefield TR**. New Severity Assessment Scale for Deformational Plagiocephaly. To be *Submitted Plast Reconstr Surg*

**Feiz-Erfan I**, Han PP, Spetzler RF, Horn EM, Klopfenstein JD, Kim LJ, Porter RW, Beals SP, Lettieri SC, Joganic, EF. Preserving the Sense of Smell in Anterior Craniofacial Surgery Through Cribriform Plate Osteotomy Applied in Selected Patients. *Neurosurgery* 2005 July;57(1 Suppl):86-93; discussion 86-93

Pomatto JK, Calcaterra J, Kelly KM, Beals SP, Manwaring KH, **Littlefield TR**. A Study of Family Head Shape: Environment Alters Cranial Shape. *Clinical of Pediatrics (Philadelphia).* 2006 Jan-Feb;45(1):55-63

Manwaring P, Packard A, Manwaring J, Manwaring K, Beals SP, **Littlefield TR**, Manwaring M. An Apparatus and Method to Characterize Causes of Positional Plagiocephaly. *Conf Proc IEEE Eng Med Biol Soc.* 2005;6:6049-51 In Press

**Feiz-Erfan I**, Spetzler RF, Horn EM, Porter RW, Beals SP, Lettieri SC, Joganic, EF, DeMonte F. Proposed Classification for the Transbasal Approach and Its Modifications. *Skull Base.* 2008 Jan; 18(1):29-47

#### **Presentations- Mentee/Mentor Activities:**

**(Mentee indicated in bold)**

**Francis PW**, Beals SP, Rekate HL, Reiff J, Pittman HW, Manwaring KH: Hydrocephalus and the Chiari I Malformation in Patients with Crouzon's and Apert's Syndrome. Presented by Paul Francis at the Pediatric Section of the American Association of Neurological Surgeons, San Diego, California, December 1990

Beals SP, **Francis PW**, Rekate HL, Manwaring KH, Pittman HW, Reiff J: Hydrocephalus and the Chiari I Malformation in Patients with Crouzon's Syndrome, American Society of Plastic and Reconstructive Surgeons Annual Scientific Meeting, Seattle, Washington, 1991

**Herman JM, Hamilton MG**, Beals SP, Joganic EF, Spetzler RF: Modification of the Transbasilar Approach to Preserve Olfaction and to Prevent CSF Leakage. Presented by James Herman at the American Association of Neurological Surgeons 1993 Annual Meeting, Boston, MA, April, 1993

**Ripley CE**, Pomatto J, Beals SP, Manwaring SP, Manwaring KH, Joganic EF, Moss SD: Treatment of Non-synostotic Plagiocephaly Utilizing Cranial Remodeling Orthosis. Poster session presented by J Pomatto, Section on Pediatric Neurological Surgery Annual Meeting, Vancouver, British Columbia, Canada, December, 1992.

**Hamilton MG, Herman JM**, Beals SP, Joganic EF, Spetzler RF: The Role for Transfacial Exposure in Treatment of Tumors of the Anterior Skull Base and Clivus. Presented by MG Hamilton, Fourth Annual Meeting of the North American Skull Base Society, Scottsdale, AZ February, 1993

**Ripley CE**, Pomatto J, Beals SP, Manwaring KH, Joganic EF, Moss SD: Treatment of Positional Plagiocephaly Utilizing Cranial Remodeling Orthosis, presented by CE Ripley, American Cleft Palate-Craniofacial Association 50th Anniversary Meeting, Pittsburgh, PA, April, 1993

Beals SP, Joganic EF, Spetzler RF, **Hamilton MG, Herman JM**: Classification of Transfacial Approaches in Treatment of Tumors of the Anterior Skull Base and Clivus, American Society of Plastic and Reconstructive Surgeons Annual Scientific Meeting, New Orleans, LA, September, 1993

**Herman JH**, Kraus GE, Spetzler RF, Beals, S, Joganic, E: Preservation of olfaction and prevention of CSF leak in anterior craniofacial approaches. (Poster presentation) Congress of Neurological Surgeons Annual Meeting, Vancouver, B.C., Canada, October, 1993

**Pearson MA**, Aleck KA, Beals SP, Hudgins LH: Agnathia malformation complex may be compatible with long-term survival. Presented by MA Pearson, American Society of Human Genetics, New Orleans, LA, October, 1993

Eckhardt RB, Shiang TY, Sommer HJ, **Ripley CE**, Beals SP, Joganic EF: On growth and form: Superquadric modeling of change in cranial contours following dynamic orthotic cranioplasty in the treatment of positional plagiocephaly. Presented by CE Ripley, American Association of Physical Anthropologists, Denver, CO April, 1994

**Ripley CE**, Beals SP, Joganic EF, Manwaring KM, Moss SD, Pomatto J, Sommer HJ, Eckhardt RB, Eckhardt JT: Mathematical modeling of cranial molding: Superquadric images document rapid change of cranial form in response to environment. Poster presented by CE Ripley, American Association of Physical Anthropologists, Oakland, CA, April, 1994

**Ripley CE**, Pomatto J, Beals SP, Joganic SP, Eckhardt RB, Shiang TY, Sommer HJ, Manwaring KM, Moss SD: Superquadric modeling of cranial shape changes following dynamic orthotic cranioplastic treatment of positional plagiocephaly. Presented by CE Ripley at the Annual Meeting of American Cleft Palate Craniofacial Foundation, Toronto, Ontario, Canada, May, 1994

**Hamilton MG, Ripley CE, Pomatto J, Beals SP, Joganic, EF, Manwaring KH, Moss SD:** Treatment of positional plagiocephaly with dynamic orthotic cranioplasty (D.O.C.), Presented by MG Hamilton at the Canadian Congress of Neurological Sciences, St. Johns, Newfoundland, Canada, June, 1994

**Hamilton MG, Herman JM, Beals SP, Joganic EF, Spetzler RF.** The Role for Transfacial Exposure in Treatment of Tumors of the Anterior Skull Base and Clivus. Presented by MG Hamilton at the Canadian Congress of Neurological Sciences, St. Johns, Newfoundland, Canada, June, 1994

**Ripley CE, Pomatto J, Manwaring KM, Moss SD, ReKate HL, Beals SP, Joganic EF:** Dynamic orthotic cranioplasty (D.O.C.): An anthropometric study of its effectiveness in the treatment of positional plagiocephaly. Section of Pediatric Neurological Surgery, The American Association of Neurological Surgeons, Pasadena, CA, December, 1995

**Porter RW, Lawton MT, Beals S, Joganic E, Spetzler RF:** Transfacial Approaches to Angiofibromas. North American Skull Base Society, San Diego, CA, 1996.

Beals SP, Joganic EF, Manwaring KM, Moss SD, Pomatto JK, **Littlefield TR.** Posterior Plagiocephaly Resulting from Skull Molding: Indications for Helmet Therapy and Outcome Assessment. Craniosynostosis and Skull Molding Symposium, Scottsdale, AZ, February 20-23, 1997.

Pomatto JK, **Littlefield TR, Beals SP, Joganic EF, Manwaring KM, Moss SD.** Application and limitations of dynamic orthotic cranioplasty. Craniosynostosis and Skull Molding Symposium, Scottsdale, AZ, February 20-23, 1997.

Littlefield TR, Pomatto JK, **Ripley CE, Beals SP, Joganic EF, Manwaring KH.** Efficacy and stability of dynamic orthotic cranioplasty: An eight year investigation. International Society of Craniofacial Surgery, Santa Fe, NM September 14-17, 1997.

**Littlefield TR, Pomatto JK, Ripley CE, Beals SP, Joganic EF, Manwaring KH.** Efficacy and Stability of Dynamic Orthotic Cranioplasty: An Eight Year Investigation. International Society of Craniofacial Surgery VII, Santa Fe, NM September 14-17, 1997.

**Littlefield TR, Kelly KM, Pomatto JK, Beals SP, Joganic EF.** Significance of entrance age on effectiveness of orthotic treatment of positional plagiocephaly. American Cleft Palate Association, Baltimore, MD, April 1998.

Golden KA, Beals SP, **Littlefield TR, Pomatto JK.** SCM Imbalance: Its existence and role in deformational plagiocephaly. American Cleft Palate-Craniofacial Association, 56<sup>th</sup> Annual Meeting, Scottsdale, AZ, April 1999

**Littlefield TR, Kelly KM, Pomatto JK, Beals SP.** The plural birth and deformational plagiocephaly. American Cleft Palate-Craniofacial Association, 56<sup>th</sup> Annual Meeting, Scottsdale, AZ, April 1999

Kelly KM, **Littlefield TR, Pomatto JK, Manwaring KH, Beals SP.** Ordinary cranial growth occurs during reduction of craniofacial asymmetry with the DOC Band. American Cleft Palate-Craniofacial Association, 56<sup>th</sup> Annual Meeting, Scottsdale, AZ, April 1999

**Littlefield TR, Kelly KM, Pomatto JK, Manwaring KH, Beals SP.** Cranial growth unrestricted during treatment of deformational plagiocephaly with the DOC Band. *American Assoc. of Neurological Surgeons.* New Orleans, Louisiana. April 24-29, 1999.

**Detwiler PW**, Alleyne CH Jr., **Porter RW**, **Vishteh AG**, **Han PP**, Spetzler RF, Rekate HL, Dasplit CP, Zabramski JM, Beals SP, Joganic EF, McDougall CG: Long term survival of two patients with skull base mucomycosis after aggressive resection by a multidisciplinary team. Congress of Neurological Surgeons, Boston MA, October 30- November 4, 1999

**Han PP**, **Feiz-Erfan I**, Spetzler RF, **Porter RW**, Detwiler PW, Theodore N, Joganic EF, Beals SP, Reiff J: Results of extracranial transfacial approaches to anterior skull base lesions. Congress of Neurological Surgeons, Boston, MA, October 30-November 4, 1999.

**Han PP**, **Feiz-Erfan I**, Spetzler RF, **Porter RW**, Detwiler PW, Theodore N, Joganic EF, Beals SP, Reiff J: Results of extracranial transfacial approaches to anterior skull base lesions. North American Skull Base Society Meeting, Scottsdale, AZ, March 17, 2000.

Pomatto JK, Beals SP, Kelly KM, **Littlefield TR**, Joganic EF, Moss SD. Cranial banding following endoscopic-assisted craniectomy for sagittal synostosis: Preliminary results and new treatment protocol. Presented May 3, 59<sup>th</sup> Annual Meeting of the American Cleft Palate-Craniofacial Association. Seattle, WA. 2002.

**Littlefield TR**, Pomatto JK, Cherney JC, Beals SP, Joganic EF, Manwaring KH, Moss SD. Endoscopic-Assisted Craniectomy with Cranial Banding for Treatment of Sagittal Synostosis. Poster Presentation. 12<sup>th</sup> Congress for Endosurgery in Children. Los Angeles CA, March 10-13, 2003.

**Feiz-Erfan I**, **Han PP**, Spetzler RF, **Porter RW**, Ferreira MAT, Klopfenstein JS, Beals SP, Joganic EF. Experience with the Radical Transbasal Approach in Resection of Extensive Benign Anterior Skull Base Tumors. 14<sup>th</sup> Annual Meeting of the North American Skull Base Society. Memphis TN, February 2003

**Littlefield TR**, Beals SP, Joganic EF, Manwaring KH, Rekate HL, Cherney JC, Pomatto JK. New guidelines for the diagnosis and treatment of deformational plagiocephaly. Presented 60<sup>th</sup> Annual Meeting of the American Cleft Palate-Craniofacial Association. Asheville, NC, April 8-13, 2003.

**Littlefield TR**, Kelly KM, Pomatto JK, Beals SP, Cherney JC. Risk factors that predispose multiple-birth infants to the development of deformational plagiocephaly. Presented at the 2003 Annual Meeting of the Association of Children's Prosthetic-Orthotic Clinics. St. Pete Beach, FL, May 14-17, 2003

Beals SP, Joganic EF, Manwaring KM, Rekate HL, Pomatto JK, Cherney JC, **Littlefield TR**. New guidelines for the diagnosis and treatment of plagiocephaly. Poster presentation at the American Academy of Pediatrics – Perinatal Section, New Orleans, LA, November 1-5, 2003.

**Littlefield TR**, Pomatto JK, Kelly KM, Cherney JC, Beals SP. A new 3D imaging system for diagnosis and treatment of plagiocephaly. Presented at the American Academy of Pediatrics – Plastic Surgery Section, New Orleans, LA, November 1-5, 2003.

**Littlefield TR**, Pomatto JK, Kelly KM, Cherney JC, Beals SP. Comparison of plaster casting versus 3D cranial imaging. Presented at the American Academy of Pediatrics – Plastic Surgery Section, New Orleans, LA, November 1-5, 2003.

Cherney JC, Beals SP, Joganic EF, Manwaring KH, Rekate HL, Pomatto JK, **Littlefield TR**. New guidelines for the diagnosis and treatment of deformational plagiocephaly. Presented at the American Academy of Orthotists and Prosthetists annual meeting. New Orleans, LA, February 25-28, 2004.

Manwaring J, Packard A, Hopkins R, Manwaring KH, Beals SP, **Littlefield TR**. Does positional plagiocephaly have a neurological basis? Presented 61<sup>st</sup> Annual Meeting of the American Cleft Palate-



Craniofacial Association. Chicago, IL, March 15-20, 2004.

Cherney JC, Beals SP, Cohen SR, Holmes RE, Joganic EF, Kelly KM, Manwaring KH, Pomatto JK, ReKate HL, **Littlefield TR**. Evaluation of a new severity assessment scale for deformational plagiocephaly. Presented 61<sup>st</sup> Annual Meeting of the American Cleft Palate-Craniofacial Association. Chicago, IL, March 15-20, 2004.

Pomatto JK, **Littlefield TR**, Cherney JC, Beals SP. A study of family head shape: Environment vs Genetics. Presented 61<sup>st</sup> Annual Meeting of the American Cleft Palate-Craniofacial Association. Chicago, IL, March 15-20, 2004.

### **International**

Beals SP, **Francis PW**, ReKate HL, Reiff J, Pittman HW, Manwaring KH: Hydrocephalus and the Chiari I Malformation in Patients with Crouzon's Syndrome. IV Congress of the International Society of Craniomaxillofacial Surgery, Biannual Scientific Meeting, Santiago de Compostela, Spain, June, 1991

**Ripley CE**, Pomatto J, Beals SP, Manwaring SP, Manwaring KH, Joganic EF, Moss SD: Treatment of Positional Plagiocephaly Utilizing Cranial Remodeling Orthosis. Presented by CE Ripley, International Symposium of Craniofacial Surgery, Chicago, IL October, 1992

**Ripley CE**, Beals SP: Positional plagiocephaly: An archeological case informs clinical practice. Presented at the Annual Meeting of the Paleopathology Association, Toronto, Ontario, Canada, April, 1993

**Ripley CE**, Pomatto J, Beals SP, Manwaring KH, Joganic EF, Moss SD: Treatment of positional plagiocephaly utilizing the cranial remodeling orthosis. Presented by J Pomatto, at the V Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, Oaxaca, Mexico, October, 1993

Beals SP, Joganic EF, Spetzler RF, **Hamilton MG**, **Herman JM**: Classification of transfacial approaches in treatment of tumors of the anterior skull base and clivus. V Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, Oaxaca, Mexico, October, 1993

Manwaring KM, Moss SD, Beals SP, Joganic EF, **Ripley CE**, Pomatto J: Cranial anthropometry to optimize surgical outcome of sagittal synostosis. Presented by KM Manwaring, International Society for Pediatric Skull Base, Rome, Italy, May, 1995

Joganic EF, Beals SP, **Ripley CE**, Manwaring KM, Moss SD, Pomatto J: Enhancement of craniofacial reconstruction by post-surgical dynamic orthotic cranioplasty. Presented, VI Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, St. Tropez, French Riviera, October, 1995

Beals SP, Joganic EF, **Ripley CE**, Manwaring KM, Moss SD: The transverse elliptical technique for reconstruction of scaphocephaly. Presented, VI Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, St. Tropez, French Riviera, October, 1995

**Littlefield TR**, Pomatto JK, Ripley CE, Beals SP, Joganic EF, Manwaring KH. Efficacy and stability of dynamic orthotic cranioplasty: An eight year investigation. International Society of Craniofacial Surgery, Santa Fe, NM 1997.

**Han PP**, Spetzler RF, Feiz-Erfan I, **Porter RW**, Detwiler PW, Beals SP, Joganic EF. Midline transfacial

approaches to the anterior skull base: The Barrow Neurological Institute experience. The 58<sup>th</sup> Annual meeting of the Japan Neurosurgical Society. Tokyo, Japan, Oct. 1999.

Beals SP, Joganic EF, Spetzler RF, **Han P**: Radical resection of anterior skull base tumors using a six level classification scheme of transfacial approaches. VII Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, Taipei, Taiwan, November, 1999.

**Littlefield TR**, Kelly KM, Pomatto JK, Beals SP, Joganic EF, Manwaring KH. Craniofacial growth unrestricted during DOC treatment of plagiocephaly. VII Congress of the International Society of Craniofacial Surgery VIII, Taipei, Taiwan; October 31- November 3, 1999.

**Littlefield TR**, Pomatto JK, Kelly KM, Cherney JC, Beals SP. Comparison of plaster casting vs. 3D cranial imaging. Poster presentation at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003

**Littlefield TR**, Pomatto JK, Cherney JC, Beals SP. A new 3D imaging system for the diagnosis and management of plagiocephaly. Poster presentation at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003.

Beals SP, Joganic EF, Manwaring KM, ReKate HL, Pomatto JK, Cherney JC, **Littlefield TR**. New guidelines for the diagnosis and treatment of plagiocephaly. Presented at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003.

Pomatto JK, **Littlefield TR**, Cherney JC, Beals SP. Environment Vs. Genetics: A study of family head shape. Presented at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003.

Cherney JC, Pomatto JK, Beals SP, **Littlefield TR**. A study of family head shape: Environment Vs. Genetics. Presented at the Association of Children's Prosthetic-Orthotic Clinics. Banff, Alberta, Canada. March 24-27, 2004.

Cherney JC, **Littlefield TR**, Beals SP, Cohen S, Holmes R, Joganic EF, Kelly KM, Manwaring KH, Pomatto JK, ReKate HL. Evaluation of a new severity assessment scale for deformational plagiocephaly. Presented at the Association of Children's Prosthetic-Orthotic Clinics. Banff, Alberta, Canada. March 24-27, 2004.

**Littlefield TR**, Pomatto JK, Beals SP, Kelly KM, Hess RM. A New Three-Dimensional Imaging System for Capturing Shape of the Infant Cranium. Advanced Digital Technology in Head and Neck Reconstruction. Banff, Canada, March 10-13, 2005

**Littlefield TR**, Pomatto JK, Christensen AM, Swift DM, Salyer KE, Hess RM. Design of Cranial Helmets for Craniopagus Twins: Pre and Postoperative Use. Advanced Digital Technology in Head and Neck Reconstruction. Banff, Canada, March 10-13, 2005 Poster.

## 18. HONORS AND AWARDS FOR EDUCATION:

### Awards for Educational Videos:

Beals SP, The Craniofacial Foundation of Arizona, Increasing awareness of people with facial differences. Produced by Chili Pepper Productions, 2000. *Winner of The International Television Association Award and the Telly Awards.*

Munro I, Beals SP: The Ultimate Orthognathic Operation, *David & Geck Award Film 1985 for the American College of Surgeons*, assistant to Dr. Ian R. Munro, presented at the American Society of Plastic and Reconstructive Surgeons Annual Scientific Meeting, Kansas City, October, 1985

## 19. CLINICAL PRACTICE, INTERESTS AND ACCOMPLISHMENTS

### CLINICAL PRACTICE:

- ◆ In private practice since 1986
- ◆ Founder of Southwest Craniofacial Center, a multidisciplinary craniofacial team, accredited by the American Cleft Palate-Craniofacial Association
- ◆ Co-Founder of Barrow Neurological Institute Skull Base Team

## 20. INTERESTS:

### I. Skull Base:

With the advent of cranial facial osteotomies, established in the late 1950's by Paul Tessier, MD, it became possible to develop transfacial approaches for complex midline skull base lesions. Throughout the years, these craniofacial principles were built upon to develop techniques that have made lesions, once considered insurmountable, approachable with the confidence of curative resection. In 1990, we established a skull base team at Barrow Neurological Institute, as we recognized the value that it offered the skull base patient. It became apparent to me that many of our craniofacial principles combined with new osteotomies and degloving techniques utilizing could be combined and organized into a logical classification scheme to approach to the skull base. In 1992 I described these new techniques (Levels II, III and IV – see enclosed articles) and their application which was based on selecting the most appropriate angle of approach to the anatomic site of the tumor. I felt that a direct anterior approach was optimal as it offers advantages such as: 1) an anterior access through a relatively avascular midline plane; 2) a reduced surgical distance to the lesion; 3) avoidance of critical neurovascular structures, the temporomandibular joint and muscles of mastication; and 4) seldom requires facial incisions. Between 1990 and 1998, 63 patients (39 males and 24 females) underwent a transfacial approach for resection of midline skull base lesions utilizing the six level classification scheme that I have described. As a result I have had the opportunity to collect data and examine long term outcomes, in several journal articles, seven book chapters and almost 20 presentations at national and international meetings.

### Publications in Peer-Reviewed Journals- (Skull Base)

#### 2008

Feiz-Erfan I, Spetzler RF, Horn EM, Porter RW, **Beals SP**, Lettieri SC, Joganic, EF, DeMonte F. Proposed Classification for the Transbasal Approach and Its Modifications. *Skull Base*. 2008 Jan; 18(1):29-47

**2005**

Feiz-Erfan I, Han PP, Spetzler RF, Horn EM, Klopfenstein JD, Kim LJ, Porter RW, **Beals SP**, Lettieri SC, Joganic, EF. Preserving the Sense of Smell in Anterior Craniofacial Surgery Through Cribriform Plate Osteotomy Applied in Selected Patients. *Neurosurgery* 2005 July;57(1 Suppl):86-93; discussion 86-93

Feiz-Erfan I, Han PP, Spetzler RF, Porter RW, Ferreira MAT, **Beals SP**, Joganic EF: Exposure of Midline Cranial Base Without a Facial Incision Through a Combined Craniofacial-Transfacial Procedure. *Neurosurgery* 2005 Jan; 56(1 Suppl):28-35; discussion 28-35

**2004**

Feiz-Erfan I, Han PP, Spetzler RF, Horn EM, Klopfenstein JD, Kim LJ, Porter RW, Ferreira MAT, **Beals SP**, Lettieri SC, Joganic, EF. The Radical Transbasal Approach for Resection of Anterior and Midline Skull Base Lesions. Submitted for publication.

**2003**

**Beals SP**. Rigid Fixation of the Calvaria in Craniosynostosis without Using “Rigid” Fixation. Discussion, *Plastic and reconstructive Surgery* January 2003; 39

Wallace RC, Dean BL, **Beals SP**, Spetzler RF: Posttreatment Imaging of the Skull Base. *Semin Ultrasound CT MR*. 2003 Jun;24(3):164-81

**1999**

Vishteh AG, **Beals SP**, Joganic EF, Reiff JL, Dickman CA, Sonntag VKH, Spetzler RF: Bilateral sagittal split mandibular osteotomies as an adjunct to the transoral approach to the anterior craniovertebral junction. Technical note. *Journal of Neurosurgery*. 90(4 Suppl) :267-70, 1999 Apr.

**1994**

**Beals SP**: Transfacial Anomalies to the Midline Skull Base. *In Proceedings of the Symposium on Skull Base Malignancy, Radiotherapy and Chemotherapy, North American Skull Base Society Meeting*, Orlando, Florida, February, 1994

**Beals SP**, Joganic EF, Spetzler RF, Milligan JM: Total facial disassembly for skull base tumor resection. *Plastic Surgery Forum* XVII:24-28, 1994

**1993**

**Beals SP**, Joganic EF, Spetzler RF, Hamilton MG, Herman JM: Classification of transfacial approaches in treatment of tumors of the anterior skull base and clivus. *Plastic Surgery Forum* XVI:211-213, 1993

Spetzler RF, Herman JM, **Beals SP**, Joganic EF, Milligan J: Preservation of olfaction in anterior craniofacial approaches. *Journal of Neurosurgery* 79:48, 1993

**Beals SP**, Joganic EF, Spetzler RF, Hamilton MG, Herman JM: Classification of transfacial

approaches in treatment of tumors of the anterior skull base and clivus. *In Craniofacial Surgery, Proceedings of the V International Congress of the International Society of Craniofacial Surgery.* Edited by Fernando Ortiz Monasterio, Published by Monduzzi Editore, Bologna, Italy. Oaxaca, Mexico, October, 1993, p. 215

**Beals SP, Hamilton MG, Joganic EF, Spetzler RF:** Classification of transfacial approaches in the treatment of tumors of the anterior skull base and clivus. *Plast Surg Forum* 16:211-213, 1993

#### **Publications in Non-peer Reviewed Journals- (Skull Base)**

**Beals SP, Joganic, EF:** Transfacial exposure of anterior cranial fossa and clival tumors. *BNI Quarterly* 8:2, 1992

Lawton, **Beals SP, Joganic EF, Han PP, Spetzler RF:** The transfacial approach to midline skull base lesions: A classification scheme. *Operative Techniques in Neurosurgery* 2(4) 201-217 1999

#### **Book Chapters- (Skull Base)**

**Beals SP:** Skull Base: Orbit, Anterior, Lateral. *In Plastic Surgery: Indications, Operations, and Outcomes.* Edited by Achauer Band Coleman J, CV Mosby & Co., New York, 2000

**Beals SP, ReKate HL:** Cranial Base Tumors, *In Craniofacial Surgery: A Multidisciplinary Approach to Craniofacial Anomalies,* Edited by Lin, Ogle and Jane, W.B. Sanders Company, (in progress) 2000

**Beals, Stephen P:** Transfacial Approaches to Skull Base. *In An Atlas of Orbitocranial Surgery,* edited by Bryant A. Toth and William B. Stewart, Martin Dunitz Publishers, London, England 1999

**Beals SP, Joganic EF, Holcombe TC, Spetzler RF:** Secondary Craniofacial Problems following Skull Base Surgery, *In Clinics of Plastic Surgery,* Edited by Cohen S and Hardesty R, WB Saunders Co., 1999

**Beals SP, Robles RA, Golden KA:** Skull Base Surgery, *In Plastic Surgery Secrets,* Edited by Jeffrey Weinzeig, MD, Hanley & Belfus, Inc. 1999

**Beals SP, Joganic EF:** Transfacial Approaches to the Craniovertebral Junction. *In Surgery of the Craniovertebral Junction.* New York, Thieme Publishers, 1998

**Beals SP, Joganic EF, Spetzler RF, Hamilton MG:** Posterior Skull Base: Transfacial Approaches. *Clinics in Plastic Surgery, Surgery of the Skull Base,* Edited by Persing JA, WB Saunders Co., July, 1995 p 491-512

#### **Presentations- (Skull Base)**

#### **2005**

Beals, SP. Transfacial Exposure of the Midline Skull Base. Pre-Symposium International Society of Craniofacial Surgeons 11th Biennial International Conference, Queensland, Australia, September 11-14, 2005

**2003**

Feiz-Erfan I, Han PP, Spetzler RF, Porter RW, Ferreira MAT, Klopfenstein JS, Beals SP, Joganic EF. Experience with the Radical Transbasal Approach in Resection of Extensive Benign Anterior Skull Base Tumors. 14<sup>th</sup> Annual Meeting of the North American Skull Base Society. Memphis TN, February 2003

Beals SP, Joganic EF, Spetzler RF: Transfacial Approaches to the Skull Base. The Arizona Society of Otolaryngology Head & Neck Surgery, Spring Meeting 2003, St. Joseph's Hospital, April, 2003

**2002**

Beals SP: Transpalatal Approach to the Midline Skull Base. North American Skull Base Society Meeting, San Diego, CA, February, 2002

Beals SP: Craniofacial Surgery with Rigid Fixation. Craniofacial Workshop in conjunction with the Pediatric Section of the American Association of Neurosurgeons Meeting, Phoenix, AZ. December 2002

**2001**

Beals SP. Lateral Nasal Proboscis. International Society of Craniofacial Surgery IX, Visby, Gotland, Sweden, June, 2001

**2000**

**Beals SP**, Joganic EF. Pre-Symposium Skull Base Anatomy Practicum/ Live Dissection. North American Skull Base Society Meeting, Scottsdale, AZ, March 17, 2000.

Han PP, Feiz-Erfan I, Spetzler RF, Porter RW, Detwiler PW, Theodore N, Joganic EF, **Beals SP**, Reiff J: Results of extracranial transfacial approaches to anterior skull base lesions. North American Skull Base Society Meeting, Scottsdale, AZ, March 17, 2000.

**1999**

Han PP, Spetzler RF, Feiz-Erfan I, Porter RW, Detwiler PW, **Beals SP**, Joganic EF. Midline transfacial approaches to the anterior skull base: The Barrow Neurological Institute experience. The 58<sup>th</sup> Annual meeting of the Japan Neurosurgical Society. Tokyo, Japan, Oct. 1999.

**Beals SP**, Joganic EF, Spetzler RF, Han P: Radical resection of anterior skull base tumors using a six level classification scheme of transfacial approaches. VII Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, Taipei, Taiwan, October, 1999.

Detwiler PW, Alleyne CH Jr., Porter RW, Vishteh AG, Han PP, Spetzler RF, Rekate HL, Daspit CP, Zabramski JM, **Beals SP**, Joganic EF, McDougall CG: Long term survival of two patients with skull base mucormycosis after aggressive resection by a multidisciplinary team. Congress of Neurological Surgeons, Boston MA, October 30- November 4, 1999

Han PP, Feiz-Erfan I, Spetzler RF, Porter RW, Detwiler PW, Theodore N, Joganic EF, **Beals SP**, Reiff J: Results of extracranial transfacial approaches to anterior skull base lesions. Congress of Neurological Surgeons, Boston, MA, October 30-November 4, 1999.

**1996**

Porter RW, Lawton MT, **Beals SP**, Joganic E, Spetzler RF: Transfacial Approaches to Angiofibromas. Presented to the North American Skull Base Society, San Diego, CA, 1996.

**1994**

**Beals SP**: Practicum on Transfacial Surgical Techniques, Annual Meeting of North American Skull Base Society, Orlando, FL, February, 1994

**Beals SP**: Transfacial approaches to the midline skull base. Presented at the Symposium on Skull Base Malignancy, Radiotherapy and Chemotherapy, Annual Meeting of North American Skull Base Society, Orlando, FL, February, 1994

Hamilton MG, Herman JM, **Beals SP**, Joganic EF, Spetzler RF. The Role for Transfacial Exposure in Treatment of Tumors of the Anterior Skull Base and Clivus. Presented by MG Hamilton at the Canadian Congress of Neurological Sciences, St. Johns, Newfoundland, Canada, June, 1994

**1993**

Herman JH, Kraus GE, Spetzler RF, **Beals SP**, Joganic, E: Preservation of olfaction and prevention of CSF leak in anterior craniofacial approaches. (Poster presentation) Congress of Neurological Surgeons Annual Meeting, Vancouver, B.C., Canada, October, 1993

**Beals SP**, Joganic EF, Spetzler RF, Hamilton MG, Herman JM: Classification of transfacial approaches in treatment of tumors of the anterior skull base and clivus. V Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting, Oaxaca, Mexico, October, 1993

**Beals SP**, Joganic EF, Spetzler RF, Hamilton MG, Herman JM: Classification of Transfacial Approaches in Treatment of Tumors of the Anterior Skull Base and Clivus, American Society of Plastic and Reconstructive Surgeons Annual Scientific Meeting, New Orleans, LA, September, 1993

Hamilton MG, Herman JM, **Beals SP**, Joganic EF, Spetzler RF: The Role for Transfacial Exposure in Treatment of Tumors of the Anterior Skull Base and Clivus. Presented by MG Hamilton, Fourth Annual Meeting of the North American Skull Base Society, Scottsdale, AZ February, 1993

**Beals SP**, Joganic EF, Spetzler RF: Transfacial Exposure of Anterior Cranial Fossa and Clival Tumors: A Classification of Approaches by Anatomic Site of Tumor. Fourth Annual Meeting of the North American Skull Base Society, Scottsdale, AZ February, 1993

**II. Dynamic Orthotic Cranioplasty (DOC Band)/ Cranial Remodeling:**

In the late 1980's, I joined forces with Kim Manwaring, MD, and an orthotist, Jeanne Pomatto, to address the need for a non-surgical approach to the non-synostotic, misshapen head of the neonate. As a result, Dynamic Orthotic Cranioplasty (D.O.C.) was developed. By

1988, Cranial Technologies, owned and operated by Jeanne Pomatto, began using the DOC Band™ on infants that did not have craniosynostosis but a more benign problem due to their sleep position, known as “positional plagiocephaly” or “deformational plagiocephaly”. In 1992, the National Institute of Health, launched a public awareness program entitled, the “Back to Sleep” campaign. Their goal was to reduce the incidence of deaths related to SIDS. By 1994, the American Academy of Pediatrics endorsed this movement and formally recommended that all newborns be slept on their backs. Subsequently, many specialists saw a dramatic increase in the number of referrals with deformational plagiocephaly. It was apparent that this was not a sudden increase in the incidence of craniosynostosis but it was deformational plagiocephaly, now in greater numbers due to the increased trend of infants sleeping on their backs. As a result, the DOC Band was used much more frequently and offered us an opportunity to do some excellent research on this interesting condition.

### **DOC Band Publications in Peer Reviewed Journals-**

#### **2006**

Pomatto JK, Calcaterra J, Kelly KM, **Beals SP**, Manwaring KH, Littlefield TR. A Study of Family Head Shape: Environment Alters Cranial Shape. *Clinical of Pediatrics (Philadelphia)*. 2006 Jan-Feb;45(1):55-63

#### **2005**

**Beals SP**, Joganic EF, Manwaring KM, ReKate HL, Pomatto JK, Littlefield TR. New Guidelines For the Diagnosis and Treatment of Plagiocephaly. *Submitted Pediatrics*.

Calcaterra J, **Beals SP**, Cohen SR, Holmes RE, Joganic EF, Kelly KM, Manwaring KH, Pomatto JK, ReKate HL, Salyer KE, Hess RM, Littlefield TR. New Severity Assessment Scale for Deformational Plagiocephaly. To be *Submitted Plast Reconstr Surg*

Littlefield TR, Cherney JC, Luisi JL, **Beals SP**, Kelly KM, Pomatto JK. Comparison of plaster casting versus 3D imaging for treatment of plagiocephaly. *Cleft Palate Craniofac Surg*. 2005 Mar;42(2):157-64

Manwaring P, Packard A, Manwaring J, Manwaring K, **Beals SP**, Littlefield, Manwaring M. An Apparatus and Method to Characterize Causes of Positional Plagiocephaly. *Conf Proc IEEE Eng Med Biol Soc*. 2005;6:6049-51 In Press

#### **2004**

Littlefield TR, Kevin KM, Cherney JC, **Beals SP**, Pomatto JK. Development of a new three-dimensional cranial imaging system. *J Craniofac Surg* 2004; 15(1):175-181.

#### **2003**

Littlefield TR, Pomatto JK, Kelly KM, Cherney JC, **Beals SP**. Comparison of plaster casting vs. 3D cranial imaging. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA



2003; In Press

Littlefield TR, Pomatto JK, Kelly KM, Cherney JC, **Beals SP**. A new 3D imaging system for diagnosis and treatment of plagiocephaly. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA 2003; In Press

**Beals SP**, Joganic EF, Manwaring KM, ReKate HL, Pomatto JK, Cherney JC, Littlefield TR. New guidelines for the diagnosis and treatment of plagiocephaly. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA 2003; In Press

Pomatto JK, Littlefield TR, Cherney JC, **Beals SP**. Environment Vs. Genetics: A study of family head shape. In: Salyer, ed *Craniofacial Surgery X: Proceedings of the Tenth International Congress of the International Society of Craniofacial Surgery* Monterey, USA 2003; In Press

Littlefield TR, Pomatto JK, **Beals SP**, Kelly KM, Cherney JC. A new three-dimensional imaging system for evaluation and treatment of plagiocephaly. Submitted: *J Craniofac Surg*.

## 2002

Pomatto JK, **Beals SP**, Joganic EF, Littlefield TR. Preliminary results and new treatment protocol for cranial banding following endoscopic-assisted craniectomy for sagittal synostosis. In: *Lauritzen, ed Craniofacial Surgery IX: Proceedings of the Ninth International Congress of the International Society of Craniofacial Surgery* 2001; 47-49.

## 2000

Littlefield TR, Kelly KM, Pomatto JK, **Beals SP**. Multiple-birth Infants at Higher Risk for Development of Deformational Plagiocephaly II: Is One Twin at Greater Risk? *Pediatrics* 2002; 109(1): 19-25.

## 1999

Littlefield TR, Kelly KM, Pomatto JK, Manwaring KM, **Beals SP**, Joganic EF. Cranial Growth Unrestricted During DOC Treatment of Plagiocephaly. In: *Chen, ed Craniofacial Surgery VIII: Proceedings of the Eight International Congress of the International Society of Craniofacial Surgery* 1999; 21-23.

Golden KA, **Beals SP**, Littlefield TR, Pomatto JK. Sternocleidomastoid imbalance versus congenital muscular torticollis: Their relationship to positional plagiocephaly. *Cleft Palate Craniofacial J.*, 36 (3); 256-61, May 1999.

Littlefield TR, Kelly KM, Pomatto JK, **Beals SP**. Multiple-birth infants at higher risk for development of deformational plagiocephaly. *Pediatrics*. 103(3): 565-9, Mar.1999.

Kelly KM, Littlefield TR, Pomatto JK, Manwaring KM, **Beals SP**. Cranial growth unrestricted during treatment of deformational plagiocephaly. *Pediatric Neurosurg*; 30:193-199, 1999.

Kelly KM, Littlefield TR, Pomatto JK, Ripley CE, **Beals SP**, Joganic EF; Importance of early recognition and treatment of deformational plagiocephaly with orthotic cranioplasty. *Cleft*

*Palate Craniofacial J.*, 36(2):127-130,1999.

### 1998

Littlefield TR, **Beals SP**, Manwaring KH, Pomatto JK, Joganic EF, Golden KA, Ripley CE. Treatment of craniofacial asymmetry with dynamic orthotic cranioplasty. *Journal of Craniofacial Surg* 9(1):11-17; discussion 18-19, 1998.

Kelly KM, Littlefield TR, **Beals SP**, Joganic EF, Ripley CE, Pomatto JK; Significance of entrance age on effectiveness of orthotic treatment of positional plagiocephaly. *Cleft Palate Craniofacial Journal*, April 1998.

### 1997

Pomatto JK, Littlefield TR, Manwaring KM, **Beals SP**. Etiology of positional plagiocephaly in triplets and treatment using a dynamic orthotic cranioplasty device: report of three cases. *Neurosurg Focus* 2(2): Article 2, 1997.

Littlefield TR, Pomatto JK, **Beals SP**, Joganic EF, Manwaring KM, Ripley CE; Efficacy and stability of dynamic orthotic cranioplasty: An eight year investigation. In Whitaker, ed *Craniofacial Surgery: Proceedings of the Seventh International Congress of the International Society of Craniofacial Surgery*. 1997; 109-111.

### 1995

Eckhardt RB, Shiang TY, Sommer HJ, Ripley CE, **Beals SP**, Joganic EF: On growth and form: Superquadric modeling of change in cranial contours following dynamic orthotic cranioplasty in the treatment of positional plagiocephaly. *American Journal of Physical Anthropology* (abstract) Supplement 19: 1995

Joganic EF, **Beals SP**, Ripley CE, Manwaring KM, Moss SD, Pomatto J: Enhancement of craniofacial reconstruction by post-surgical dynamic orthotic cranioplasty. *Proceedings of the VI Congress of the International Society of Craniofacial Surgery, Biannual Scientific Meeting*, St. Tropez, French Riviera, October, 1995 Edited by Adolfo G. Montoya. Published by Monduzzi Editore, Bologna, Italy.

### 1994

Ripley CE, Pomatto J, **Beals SP**, Joganic, EF, Eckhardt RB, Shiang TY, Sommer HJ, Manwaring KH, Moss SD: Superquadric Modeling of Cranial Shape Changes Following Dynamic Orthotic Cranioplastic Treatment of Positional Plagiocephaly. In *Proceedings of the Annual Meeting, American Cleft Palate-Craniofacial Association*, Toronto, Ontario, Canada, May, 1994

Ripley CE, Pomatto J, **Beals SP**, Joganic, EF, Eckhardt RB, Shiang TY, Sommer HJ, Manwaring KH, Moss SD: Superquadric Modeling of Cranial Shape Changes Following Dynamic Orthotic Cranioplastic Treatment of Positional Plagiocephaly. In *American Journal of Physical Anthropology* (abstract) Supplement 18: 1994

Ripley CE, Pomatto J, **Beals SP**, Joganic EF, Manwaring KH, Moss SD: Treatment of positional plagiocephaly with dynamic orthotic cranioplasty (D.O.C.). *Journal of Craniofacial Surg* 5:150-159, July, 1994

**1993**

Ripley CE, Pomatto J, **Beals SP**, Joganic, EF, Manwaring KH, Moss SD: Treatment of positional plagiocephaly utilizing the cranial remodeling orthosis [dynamic orthotic cranioplasty (D.O.C.)], In *Craniofacial Surgery, Proceedings of the V International Congress of the International Society of Craniofacial Surgery*. Edited by Fernando Ortiz Monasterio, Published by Monduzzi Editore, Bologna, Italy. Oaxaca, Mexico, October, 1993, p. 111

**Presentations (DOC Band)**

**2004**

Pomatto JK, Littlefield TR, Cherney JC, Beals SP. A Study of Family Head Shape: Environment vs. Genetics. Presented at the American Cleft Palate and Craniofacial Association Annual Meeting, March 16-20, 2004

Manwaring J, Packard A, Hopkins R, Manwaring KM, Beals SP, Littlefield TR  
Does Positional Plagiocephaly have a Neurologic Basis? Presented at the American Cleft Palate and Craniofacial Association Annual Meeting, March 16-20, 2004

**2003**

**Beals SP**, Joganic EF, Manwaring KM, Rekate HL, Pomatto JK, Cherney JC, Littlefield TR. New guidelines for the diagnosis and treatment of plagiocephaly. Poster presentation at the American Academy of Pediatrics – Perinatal Section, New Orleans, LA, November 1-5.

Littlefield TR, Pomatto JK, Kelly KM, Cherney JC, **Beals SP**. A new 3D imaging system for diagnosis and treatment of plagiocephaly. Presented at the American Academy of Pediatrics – Plastic Surgery Section, New Orleans, LA, November 1-5.

Littlefield TR, Pomatto JK, Kelly KM, Cherney JC, **Beals SP**. Comparison of plaster casting versus 3D cranial imaging. Presented at the American Academy of Pediatrics – Plastic Surgery Section, New Orleans, LA, November 1-5.

Littlefield TR, Pomatto JK, Kelly KM, Cherney JC, **Beals SP**. Comparison of plaster casting vs. 3D cranial imaging. Poster presentation at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003

Littlefield TR, Pomatto JK, Cherney JC, **Beals SP**. A new 3D imaging system for the diagnosis and management of plagiocephaly. Poster presentation at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003.

**Beals SP**, Joganic EF, Manwaring KM, Rekate HL, Pomatto JK, Cherney JC, Littlefield TR. New guidelines for the diagnosis and treatment of plagiocephaly. Presented at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003.

Pomatto JK, Littlefield TR, Cherney JC, **Beals SP**. Environment Vs. Genetics: A study of family head shape. Presented at the *International Society of Craniofacial Surgery X*, Monterey, CA; September 21-22, 2003.

Littlefield TR, Kelly KM, Pomatto JK, **Beals SP**, Cherney JC. Risk factors that predispose multiple-birth infants to the development of deformational plagiocephaly. Presented at the *2003 Annual Meeting of the Association of Children's Prosthetic-Orthotic Clinics*. St. Pete Beach, FL, May 14-17.

Littlefield TR, **Beals SP**, Joganic EF, Manwaring KH, Rekate HL, Cherney JC, Pomatto JK. New guidelines for the diagnosis and treatment of deformational plagiocephaly. Presented *60<sup>th</sup> Annual Meeting of the American Cleft Palate-Craniofacial Association*. Asheville, NC, April 8-13.

Littlefield TR, Pomatto JK, Cherney JC, **Beals SP**, Joganic EF, Manwaring KH, Moss SD. Endoscopic-Assisted Craniectomy with Cranial Banding for Treatment of Sagittal Synostosis. *Poster Presentation. 12<sup>th</sup> Congress for Endosurgery in Children*. Los Angeles CA, March 10-13, 2003.

## 2002

Littlefield TR, **Beals SP**, Rekate HL, Pomatto JK, Manwaring KH, Joganic EF. Deformational Plagiocephaly: Guidelines for prevention, diagnosis and management of the infant with positional head molding. *Pediatric Grand Rounds*, St. Joseph's Hospital, Phoenix AZ. August 13, 2002.

Pomatto JK, **Beals SP**, Kelly KM, Littlefield TR, Joganic EF, Moss SD. Cranial banding following endoscopic-assisted craniectomy for sagittal synostosis: Preliminary results and new treatment protocol. Presented May 3, *59<sup>th</sup> Annual Meeting of the American Cleft Palate-Craniofacial Association*. Seattle, WA. 2002.

## 2001

Pomatto JK, **Beals SP**, Joganic EF, Kelly KM, Littlefield TR. Preliminary results and new treatment protocol for cranial banding following endoscopic-assisted craniectomy for sagittal synostosis. Presented at the *International Society of Craniofacial Surgery IX*, Visby, Gotland, Sweden; June 17-20, 2001

## 1999

Littlefield TR, Kelly KM, Pomatto JK, **Beals SP**, Joganic EF, Manwaring KH. Craniofacial growth unrestricted during DOC treatment of plagiocephaly. *International Society of Craniofacial Surgery VIII*. Taipei, Taiwan, November 1999.

Littlefield TR, Kelly KM, Pomatto JK, Manwaring KH, **Beals SP**. Cranial growth unrestricted during treatment of deformational plagiocephaly with the DOC Band. *American Assoc. of Neurological Surgeons*. New Orleans, Louisiana. April 24-29, 1999.

**Beals, SP**. Objective Assessment of Orthotic Management of Deformational Plagiocephaly. *American Cleft Palate-Craniofacial Association Post-conference Symposium*, Craniosynostosis: Genome, Treatment, Outcome. *56<sup>th</sup> Annual Meeting*, Scottsdale, AZ, April 1999

Kelly KM, Littlefield TR, Pomatto JK, Manwaring KH, **Beals SP**. Ordinary cranial growth occurs during reduction of craniofacial asymmetry with the DOC Band. *American Cleft Palate-Craniofacial Association*, *56<sup>th</sup> Annual Meeting*, Scottsdale, AZ, April 1999

Golden KA, **Beals SP**, Littlefield TR, Pomatto JK. SCM Imbalance: Its existence and role in deformational plagiocephaly. *American Cleft Palate-Craniofacial Association*, 56<sup>th</sup> Annual Meeting, Scottsdale, AZ, April 1999

Littlefield TR, Kelly KM, Pomatto JK, **Beals SP**. The plural birth and deformational plagiocephaly. *American Cleft Palate-Craniofacial Association*, 56<sup>th</sup> Annual Meeting, Scottsdale, AZ, April 1999

### 1998

Littlefield TR, Kelly KM, Pomatto JK, **Beals SP**, Joganic EF. Significance of entrance age on effectiveness of orthotic treatment of positional plagiocephaly. *American Cleft Palate Association*, Baltimore, MD, April 1998.

### 1997

Littlefield TR, Pomatto JK, Ripley CE, **Beals SP**, Joganic EF, Manwaring KH. Efficacy and stability of dynamic orthotic cranioplasty: An eight year investigation. *International Society of Craniofacial Surgery*, Santa Fe, NM September 1997.

Golden KA, Pomatto JK, Joganic EF, **Beals SP**, Manwaring KM, Moss SD, ReKate HL. Congenital muscular torticollis and the role it plays in persistent frontal and facial asymmetry in infants with positional plagiocephaly. *Craniosynostosis and Skull Molding Symposium*, Scottsdale, AZ, February 20-23, 1997.

Pomatto JK, Littlefield TR, **Beals SP**, Joganic EF, Manwaring KM, Moss SD. Application and limitations of dynamic orthotic cranioplasty. *Craniosynostosis and Skull Molding Symposium*, Scottsdale, AZ, February 20-23, 1997.

**Beals SP**, Joganic EF, Manwaring KM, Moss SD, Pomatto JK, Littlefield TR. Posterior plagiocephaly resulting from skull molding: Indications for helmet therapy and outcome assessment. *Craniosynostosis and Skull Molding Symposium*, Scottsdale, AZ, February 20-23, 1997.

### 1995

Ripley CE, Pomatto J, Manwaring KM, Moss SD, ReKate HL, **Beals SP**, Joganic EF: Dynamic orthotic cranioplasty (D.O.C.): An anthropometric study of its effectiveness in the treatment of positional plagiocephaly. Submitted for presentation at the Section of Pediatric Neurological Surgery, *The American Association of Neurological Surgeons*, Pasadena, CA, December, 1995

Joganic EF, **Beals SP**, Ripley CE, Manwaring KM, Moss SD, Pomatto J: Enhancement of craniofacial reconstruction by post-surgical dynamic orthotic cranioplasty. Presented, *VI Congress of the International Society of Craniofacial Surgery*, Biannual Scientific Meeting, St. Tropez, French Riviera, October, 1995

### 1994

Ripley CE, Pomatto J, **Beals SP**, Joganic SP, Eckhardt RB, Shiang TY, Sommer HJ, Manwaring KM, Moss SD: Superquadric modeling of cranial shape changes following dynamic orthotic cranioplastic treatment of positional plagiocephaly. Presented by CE Ripley

at the Annual *Meeting of American Cleft Palate Craniofacial Foundation*, Toronto, Ontario, Canada, May, 1994

Hamilton MG, Ripley CE, Pomatto J, **Beals SP**, Joganic, EF, Manwaring KH, Moss SD: Treatment of positional plagiocephaly with dynamic orthotic cranioplasty (D.O.C.), Presented by MG Hamilton at the *Canadian Congress of Neurological Sciences*, St. Johns, Newfoundland, Canada, June, 1994

### **1993**

Ripley CE, Pomatto J, **Beals SP**, Manwaring KH, Joganic EF, Moss SD: Treatment of positional plagiocephaly utilizing the cranial remodeling orthosis. Presented by J Pomatto, at the *V Congress of the International Society of Craniofacial Surgery*, Biannual Scientific Meeting, Oaxaca, Mexico, October, 1993

Ripley CE, Pomatto J, **Beals SP**, Manwaring KH, Joganic EF, Moss SD: Treatment of Positional Plagiocephaly Utilizing Cranial Remodeling Orthosis, presented by CE Ripley, *American Cleft Palate-Craniofacial Association 50th Anniversary Meeting*, Pittsburgh, PA, April, 1993

Ripley CE, **Beals SP**: Positional plagiocephaly: An archeological case informs clinical practice. Presented at the *Annual Meeting of the Paleopathology Association*, Toronto, Ontario, Canada, April, 1993

### **1992**

Ripley CE, Pomatto J, **Beals SP**, Manwaring SP, Manwaring KH, Joganic EF, Moss SD: Treatment of Non-synostotic Plagiocephaly Utilizing Cranial Remodeling Orthosis. Poster session presented by J Pomatto, *Section on Pediatric Neurological Surgery Annual Meeting*, Vancouver, British Columbia, Canada, December, 1992.

Ripley CE, Pomatto J, **Beals SP**, Manwaring SP, Manwaring KH, Joganic EF, Moss SD: Treatment of Positional Plagiocephaly Utilizing Cranial Remodeling Orthosis. Presented by CE Ripley, *International Symposium of Craniofacial Surgery*, Chicago, IL October, 1992

### **Grants (DOC Band)**

Consultant for the Optical 3D Digitization of the Infant Head. National Institutes of Health / National Institute of Child Health and Human Development. Grant R43 HD 35802-01A1, \$99, 015 [T Littlefield, Principal Investigator; Stephen P. Beals, MD and Kim H. Manwaring, MD, Consultants] 1998.

### **Video (DOC Band)**

Development of video entitled "Heads Up Baby" to prevent deformational plagiocephaly. This is geared toward pediatricians, hospital staff and parents of newborns. Our goal is to obtain corporate sponsorship and distribute it in newborn packets at hospitals. Endorsement from the American Academy of Pediatrics. A concurrent *web site* is available to offer more information on prevention, including Q&A and written materials (in both English and Spanish).

## **III. Other**

### **Community Outreach**

- Craniofacial Foundation of Arizona, Founder, Chairman of Medical Advisory Council (November 1989), a non-profit 501(c)(3) charity raising over 1 million dollars in funds for patient assistance, education and research
- "Happy Faces Support Group", Founder, a family support group for craniofacial patients, 1987-present
- Dave Dravecky's Outreach of Hope, Board of Trustees, Colorado Springs, CO, 1995-present
- Phoenix Seminary, Board of Trustees, Phoenix, AZ, 2003-present
- Sponsor of Arizona Craniofacial Awareness Week (January 1990, April 1992)
- Underwriter for "Child Skull Surgery" (Linton Whitaker), a video presentation on the local public broadcasting station
- Participant in educational documentary "Mary Ann" aired January and May, 1990, on CBS Channel 10. A story about an adult woman with Apert's syndrome who underwent craniofacial reconstruction by the Southwest Craniofacial Center Team.
- Surgical Mission trips to Mexico, Bangladesh, Vietnam
- Participant in school and multimedia craniofacial awareness programs

### **Global Outreach:**

- Medical Assistance Program-Reader's Digest International Fellowship, Bangladesh; January-May, 1978.
- Mexican Medical Evangelical trips to San Quetin, Cabo San Lucas, Tiajuana, 1986-1990.
- Medical Mission trip to Cabo San Lucas, in conjunction with CBS affiliate, KTAR, Channel 3, to repaired a cleft lip and palate 1992.
- Austria, Surgery on Siamese Twins, 1993.
- Russian girl from St. Petersburg with Crouzon's Syndrome, was brought to Arizona by the Craniofacial Foundation of Arizona and community funding for facial surgery, March 1994.
- Guatemalan girl brought to Phoenix for surgery of a rare facial cleft. Funded by the Arizona Chapter of Healing the Children Foundation and Community Donations, 1995.
- Armenian boy brought to Phoenix through the Craniofacial Foundation of Arizona and the Maggie Friedman Endowment Fund. Surgery performed to correct a life threatening injury to his face and jaw, October 1996.
- Privately funded outreach program with Global Education and Medical Services, to lecture, train and provide cleft care to plastic surgeons in Hanoi and DaNang, Vietnam. Multiple surgeries done in two week period June 1997.
- Reconstruction of a cleft lip and palate on Baby Lee from Vietnam. Infant brought to Phoenix by the Hensley Family Foundation, Cindy McCain. Surgery performed at Phoenix Children's Hospital, Summer 1998.
- Mexican citizen, young female brought to Phoenix for surgery of a cleft palate. Funded by the Arizona Chapter of Healing the Children Foundation and Community Donations, 2000.
- Peruvian citizen, young female brought to Phoenix for surgery of a cleft lip and palate, and craniofacial reconstruction. Funded by the Arizona Chapter of Healing the Children Foundation and Community Donations, 2003.
- Cambodian citizen, young female brought to Phoenix for surgery of a nasal frontal encephalocele. Funded by Operation Smile and Community Donations, 2004.
- Ecuadorian citizen, young female brought to Phoenix for surgery of a cleft lip and palate. Funded by the Arizona Chapter of Healing the Children Foundation and Community Donations, 2006.

- Vietnamese citizen, young female brought to Phoenix for surgery of a cleft lip and palate. Arizona Chapter of Healing the Children Foundation and Community Donations, 2007.

## SIGNIFICANT CONTRIBUTIONS

Dr. Stephen Beals' bibliography lists many peer-reviewed papers and articles, several (26) which include mentees/residents as co-authors. In addition, he has written several book chapters. Three examples of his significant written contributions include:

1. **The use of miniplates in craniomaxillofacial surgery (Plastic and Reconstructive Surgery 79:1, 1987)** This publication was the first major study on the use of rigid fixation for craniofacial surgery in the American literature. It helped pioneer the use of miniplates in craniofacial surgery in the United States, and became a mainstay in craniofacial surgery today. As a result, we have enjoyed improved primary bone healing and stability of segments and can offer patients better results with less anticipation for secondary surgery.
2. **Treatment of positional plagiocephaly with dynamic orthotic cranioplasty (D.O.C.) (Journal of Craniofacial Surgery 5:150-159, July, 1994)** Prior to the publication of this paper, there was no objective data available that proved the effectiveness of cranial orthotics in the treatment of positional plagiocephaly. This research led to further confirmation that the use of dynamic cranioplasty was not only effective but also a safe alternative in treating these cases where surgery was eventually deemed unwarranted. It became the core data which was later expanded into a larger sample of our patients, which led the FDA to clear the D.O.C. Band as the first cranial orthosis approved for the treatment of deformational plagiocephaly in the United States. (see page 24 of CV for bibliography of DOC)
3. **Posterior skull base transfacial approaches. (Clinics of Plastic Surgery 22(3): 491-511, 1995.** This article detailed new exposures to the midline skull base and offered a hierarchy of classification to help the surgeon and his team, logically choose the best approach. It revolutionized surgical access to the midline skull base, offering more single staged resection, shorter operating times and successful reconstruction of the facial units with restored function and aesthetics. These techniques made an area that once seemed insurmountable, approachable through deductive reasoning, lending to greater curative confidence for the surgeon and their patient. (see page 20 of CV for bibliography on Skull Base)