

Curriculum Vitae

WINSTON C. VAUGHAN, M.D.

Atherton, Walnut Creek and Sacramento

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www.calsinus.com

PLACE OF BIRTH

Kingston Jamaica, USA Citizen

CURRENT POSITIONS

Co-founder, California Sinus Centers
Member, Sacramento ENT Group
Clinical Faculty, Stanford Medical Center
Member, Sinus Care Foundation (Non-profit)

Director

*Cal Sinus Advanced Sinus Surgery &
Rhinology Fellowships, Mini-fellowships
and courses.*

Deputy Chief of Community ENT / OHNS

Stanford University Medical Center
2006 - present

PAST POSITIONS:

March 2005 - March 2009
Founder and Director
California Sinus Institute
Palo Alto, Santa Rosa, San Ramon, Fresno

Faculty, Dept. of Oto / HNS 1998 - 2005
Director, Stanford Sinus Center 1998-2005
Director, Stanford Rhinology & Sinus
Surgery Fellowship 1998 - 2005

EDUCATION

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|---|---|--------------------|
| <i>Doctor of Medicine</i> | <i>Stanford School of Medicine</i> | <i>1987 - 1992</i> |
| <i>Bachelor of Arts in Biology</i> | <i>Johns Hopkins University</i> | <i>1983 - 1987</i> |
| <i>High School</i> | <i>Jamaica College, Kingston, Jamaica</i> | <i>1978 - 1983</i> |

POST DOCTORAL AND RESIDENCY TRAINING

| | |
|--|-------------|
| Rhinology and Advanced Sinus Surgery Fellowship Georgia Rhinology and Sinus Center, Savannah, Georgia (Mentor/ Teacher: Frederick Kuhn M.D) | 1997 - 1998 |
| Otolaryngology – Head and Neck Surgery Residency Stanford University Medical Center (Mentors: Drs. Goode, Fee, Terris, Shinn, Perkins, Lalakea et al) | 1993 - 1997 |
| General Surgery Internship (Stanford University Medical Center and Affiliates) | 1992 - 1993 |

HONORS AND AWARDS

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| <i>Deputy Chief, Community Physicians, Dept. of OTO/ HNS, Stanford</i> | <i>2006 – present</i> |
| <i>Halda Shaw Award, National Medical Association</i> | <i>2008</i> |
| <i>University of the West Indies, Jamaica. Award for Sinus Surgery Courses</i> | <i>2004 - 2008</i> |
| <i>Academy of OTO/HNS Foundation Inc, Recognition Award for Courses</i> | <i>2005</i> |
| <i>Board of Directors, American Rhinologic Society</i> | <i>2003 - 2005</i> |
| <i>Consultant, American Rhinologic Society</i> | <i>2001 - 2003</i> |
| <i>Chief Resident, Division of Otolaryngology, Stanford Medical Center</i> | <i>1997</i> |
| <i>Graduation with Honors, BA in Biology, Johns Hopkins University</i> | <i>1987</i> |
| <i>University Board of Trustees Member, Johns Hopkins University</i> | <i>1987 – 1991</i> |

MEDICAL LISENSURE and CERTIFICATION

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| California Medical Board | 1993 - present |
| Georgia Composite State Board of Medical Examiners | 1997 - 1999 |
| American Board of Otolaryngology | 1997 - present |
| Fellow, American Rhinologic Society | 2000 - present |
| Fellow, American Board of Otolaryngology HNS | 1998 - present |

EMPLOYMENT HISTORY

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|-------------------|---|
| 2005 – March 2009 | Founder and Director, California Sinus Institute E. Palo Alto, Santa Rosa, Fresno and San Ramon, California |
| 1998 – 2005: | Department of Otolaryngology – Head and Neck Surgery Director and Faculty, Stanford Sinus Center Stanford University School of Medicine, Stanford, California |
| 1997 – 1998: | Fellow and Staff Surgeon Memorial Medical Center- Georgia |
| 1998 – 2005: | Otolaryngology Surgeon at: Stanford Hospital, Palo Alto Veterans Hospital, Lucille Packard Children’s Hospital, Santa Clara Valley Medical Center - - California |

PUBLIC AND PROFESSIONAL SERVICE

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|---|-------------|
| Chair, Education Comm., American Rhinologic Society | 2002 - 2004 |
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| Consultant to Board, American Rhinologic Society | 1999 - 2002 |
| Director, Caribbean Endoscopic Sinus Surgery Course | 2000 - Present |
| Otolaryngology Resident Education Committee, Stanford | 1998 - 2002 |
| Reviewer, American Journal of Rhinology | 2001 - Present |
| Reviewer, Otolaryngology Head and Neck Surgery | 2002 - Present |
| Volunteer Doctor, California AIDS Ride, SF to LA | 2000, 2004 |
| Coordinator, Resident Cadaver Dissections, Stanford | 1999 - 2005 |
| Coordinator, Annual Otolaryngology Symposium, Stanford | 1999 - 2004 |
| Coordinator, Stanford Endoscopic Sinus Surgery Courses | 1999 - 2005 |
| Volunteer Physician, Free Clinic, Memorial Medical Center | 1997 - 1998 |

PROFESSIONAL ORGANIZATIONS

American Medical Association
California Medical Association
National Medical Association
Caribbean Association of Otolaryngologists
American Academy of Otolaryngology – Head and Neck Surgery
American Laryngological, Rhinological and Otological Society (aka: Trilogical Society)
American Rhinologic Association

CLINICAL INTERESTS

Director of California Sinus Centers:

The Sinus Center was founded at Stanford in 1999 by Dr. Vaughan. This was the first center on the West Coast to offer comprehensive medical and surgical care for Chronic Sinusitis by a fellowship-trained Otolaryngologist. Dr. Vaughan was also the first to train fellows in this field on the West Coast. California Sinus Centers and Sinus Care Foundation were formed to further our clinical, research and educational goals.

Clinical interests include:

Disease of the sinuses and nose:

Sinusitis, Epistaxis, Headaches, Nasal obstruction, Allergic Fungal Sinusitis

Functional Endoscopic Sinus Surgery:

Imaged Guided Surgical Navigation, Revision Cases, Complication Management

Frontal Sinusitis Management:

Advanced endoscopic techniques to avoid external approaches and improve outcomes

Culture directed medical management:

Prevention of increased antibiotic drug resistance by use of cultures to select treatment

Orbital and Optic Nerve Decompression:

Joint management with Ophthalmology in trauma, tumor and Grave's Disease patients.

RESEARCH INTERESTS

Frontal Sinus Surgery

Frontal Sinus Surgery can be the most challenging aspect of endoscopic procedures. We have served as a referral center for cases involving difficult sinus surgery, especially cases with frontal problems for the last 10 years.

Orbital Decompression, TED and Grave's Orbital Disease

Thyroid eye disease (TED) is an autoimmune condition that often occurs in people who develop an overactive thyroid gland. TED causes the fat and muscles behind the eye to enlarge. Symptoms include redness, irritation and pressure behind the eyes. This can push the eye forward and restrict its movement, resulting in the inability to fully close the eyelids. In some cases, protruding or misaligned eyes and double vision can occur. Doctors at Calsinus work closely with Dr. Kim Cockerham in the surgical management in patients who have failed other means of alleviating their symptoms. More information is available at: <http://www.envisagebayarea.com/thyroid-eye-disease-graves-san-jose-los-altos-ca.htm>

Balloon Sinuplasty™ - catheter based sinus ostial dilation

Dr. Vaughan performed the first live balloon sinuplasty in the USA in 2005. Dr. Vaughan has been involved with the approaches / devices used for sinus dilation. He has been involved in many of the USA-based studies of Sinuplasty. He also served as a consultant for Acclarent Inc. which developed this technology.

Emerging trends in Sinus Surgery

California Sinus is based in the heart of Silicon Valley, next to Stanford University and the San Francisco Bay Area.

This region is the leading areas for Biotechnology in the World ! - and several companies are actively involved in the development of treatment options for sinus patients. We are often asked to review, help develop and research devices/ tools with companies based in this region.

Nebulized medications in the treatment of sinus diseases:

Dr. Vaughan worked on the development, use and research into nebulized medications for the management of difficult chronic sinus cases since 2000. See publication below. This work has led to new treatment options being available nationwide for these patients. Dr. Vaughan served as the Director of the scientific advisory board of Sinus Pharmacy. He also consulted for a separate research company, Sinus Pharma Inc. This company performed a multicenter study on the use of neulized Tobi for sinus patients.

Effect of Carbon Dioxide levels on blood loss during Endoscopic Sinus Surgery

The level of Carbon Dioxide (CO₂) in blood can be regulated during anesthesia. Regulation of this level may decrease blood loss. Joint studies with the Stanford

Anesthesia Dept. have been done. Sinus surgical patients were offered enrollment in this study. Co-investigator: Vladimir Nekandzy, MD, Dept. of Aesthesia.

Use of Alternative Therapies in sinus management

There are publications which suggest that a significant number of chronic sinus patients use alternative therapies to treat their sinuses. These include herbs, acupuncture, biofeedback etc. Studies have been completed. This revealed that standard therapies (both medical and surgical) continue to 'out-perform' against alternative therapies, but patients have a very high acceptance rate for alternative treatments.

Emergence of increasing Drug Resistance in chronic sinusitis

Chronic sinusitis patients have frequent infections. There are several studies which demonstrate increased antibiotic resistance and the emergence of gram negative and fungal species. We are studying whether there are approaches which can decrease the use of empiric antibiotics in chronic sinus patients.

Several studies continue at Cal Sinus in this area. These include:

1. Use of culture-directed therapy for acute infections in chronic sinus patients.
2. Limited use of post-operative antibiotics after sinus surgery.
3. Serial Microbiology data of infections in chronic sinus patients.

Use of anti-fungals in the management of allergic fungal sinusitis

Allergic Fungal Sinusitis can lead to extensive and recurrent sinus disease. Use of nebulized antifungals, antifungal nasal rinses and oral antifungals are recommended. Side effects, failure rates and outcome data of these different approaches are monitored.

Psychological impact of chronic sinusitis on patients

All chronic diseases can lead to significant impact on the quality of life and psychological functioning of patients. Quality of life outcome surveys are conducted on all sinus patients at Cal Sinus. Retrospective studies (via outcome surveys) on the impact of several therapies include:

1. Impact of endoscopic and culture-directed therapy,
2. Impact of revision endoscopic sinus surgery with surgical navigation and
3. Impact of recurrent disease and surgery on psychological outcome measures.

Instrumentation and Computer Navigation for Endoscopic Sinus Surgery

Dr. Vaughan has consulted with several companies to develop better software and hardware for the treatment of sinus disease. This has included several software changes

used nationwide for surgical navigation. He has also designed the first set of advanced endoscopic instruments for sphenoidotomy and surrounding procedures.

Research continues in this area, with outcome studies looking at the avoidance of external, revision and destructive surgical approaches. Our published papers have demonstrated excellent frontal sinus outcomes and avoidance of external surgeries.

CONSULTATIONS

| | | |
|------------------------|--|----------------|
| Consultant | ArthroCare Medical | 2008 – present |
| Consultant | Naryx Medical | 2005-2007 |
| Consultant | Allux | 2005 - 2008 |
| Consultant | Sinus Pharmacy, Santa Barbara California | 2000 - 2005 |
| Consultant | Sinus Pharma, Carpinteria California | 2002 - 2005 |
| Consultant | BrainLab Surgical Navigation | 2002 – 2004 |
| Consultant | Acclarent and Exploramed | 2004 - 2006 |
| Consultant | GE Navigation (formerly VTI, Boston MA) | 2000 - present |
| Invited Speaker | Bayer, Ortho-McNeil, Meda and others | 1998 - present |

Mentoring Relationships (including past fellows trained)

| | | |
|-----------------------|----------------|--|
| Ravi Samy MD | 1995-1997 | University of Cincinnati, OH |
| Lance Jackson MD | 1994-1996 | Texas Ear Institute, San Antonio, TX |
| Michelle Inserra MD | 1999-2003 | Private Practice, Santa Clara CA |
| Christopher Church MD | 2001-2002 | Loma Linda Sinus Center, Loma Linda, CA |
| Alexander Chiu MD | 2002-2003 | Univ. of Penn, Med Ctr, Philadelphia, PA |
| Ankit Patel MD | 2003-2004 | Private Practice, Joliet, IL |
| Edward Hepworth MD | 2004 – 2005 | Private Practice, Denver, CO |
| Rhoda Wynn MD | 2005 – 2006 | Private Practice, Redwood City, CA |
| Ryan Rehl | 2006 – 2007 | Private Practice, Phoenix, AZ |
| Manny Khanna | 2007 – 2008 | Private Practice, Alexandria, VA |
| Roy Thomas | 2008 – present | California Sinus Institute, E. Palo Alto, CA |

PUBLICATIONS

Weiss RL, Church CA, Kuhn FA, Levine HL, Sillers MJ, **Vaughan WC.**

Long-term outcome analysis of balloon catheter sinusotomy: two-year follow-up.

Otolaryngol Head Neck Surg. 2008 Sep;139

Kuhn FA, Church CA, Goldberg AN, Levine HL, Sillers MJ, **Vaughan WC**, Weiss RL.
Balloon catheter sinusotomy: one-year follow-up--outcomes and role in functional endoscopic sinus surgery. *Otolaryngol Head Neck Surg.* 2008 Sep;139

Church CA, Kuhn FA, Mikhail J, **Vaughan WC**, Weiss RL.
Patient and surgeon radiation exposure in balloon catheter sinus ostial dilation.
Otolaryngol Head Neck Surg. 2008 Feb;138(2):187-91.

Vaughan, WC

Review of balloon sinuplasty.
Curr Opin Otolaryngol Head Neck Surg. 2008 Feb;16(1):2-9.

Nekhendzy V, Lemmens HJ, **Vaughan WC**, Hepworth E, Chiu AG, Church CA, Brock-Utne JG.
The effect of deliberate hypercapnia and hypocapnia on intraoperative blood loss and quality of surgical field during functional endoscopic sinus surgery.
Anesth Analg. 2007 Nov;105(5):1404-9.

Bolger WE, Brown CL, Church CA, Goldberg AN, Karanfilov B, Kuhn FA, Levine HL, Sillers MJ, **Vaughan WC**, Weiss RL.

Safety and outcomes of balloon catheter sinusotomy: a multicenter 24-week analysis in 115 patients.
Otolaryngol Head Neck Surg. 2007 Jul;137(1):10-20.

Hepworth EJ, Bucknor M, Patel A, **Vaughan WC**.
Nationwide survey on the use of image-guided functional endoscopic sinus surgery.
Otolaryngol Head Neck Surg. 2006 Jul;135(1):68-73

Bolger WE, **Vaughan WC**.
Catheter-based dilation of the sinus ostia: initial safety and feasibility analysis in a cadaver model.
Am J Rhinol. 2006 May-Jun;20(3):290-4

Vaughan WC.

Nebulization of Antibiotics in Management of Sinusitis
Curr Infect Dis Rep. 2004 Jun;6(3):187-190.

Bowden MT, Church CA, Chiu AG, **Vaughan WC**.
Informed consent in functional endoscopic sinus surgery: the patient's perspective.
Otolaryngol Head Neck Surg. 2004 Jul;131(1):126-32.

Chiu AG, **Vaughan WC**.
Using the frontal intersinus septal cell to widen the narrow frontal recess.
Laryngoscope. 2004 Jul;114(7):1315-7.

Vaughan WC

Nebulization of Antibiotics in Management of Sinusitis.

Curr Infect Dis Rep. 2004 Jun;6(3):187-190.

Chiu AG, Vaughan WC.

Management of the lateral frontal sinus lesion and the supraorbital cell mucocele.
Am J Rhinol. 2004 Mar-Apr;18(2):83-6.

Chiu AG, Vaughan WC.

Revision endoscopic frontal sinus surgery with surgical navigation.
Otolaryngol Head Neck Surg. 2004 Mar;130(3):312-8.

Church CA, Chiu AG, Vaughan WC.

Endoscopic repair of large skull base defects after powered sinus surgery.
Otolaryngol Head Neck Surg. 2003 Sep; 129(3):204-9.

Nguyen DD, Vaughan WC et al.

Plasmablastic Lymphoma Presenting in a Human Immunodeficiency Virus-Negative Patient: A Case Report.
Ann Hematol. 2003 Aug;82(8): 521-5.

Vaughan WC, Carvalho G.

Use of nebulized antibiotics for acute infections in chronic sinusitis.
Otolaryngol Head Neck Surg. 2002 Dec; 127(6):558-68.

Holden JP, Vaughan WC, Brock-Utne JG.

Airway complication following functional endoscopic sinus surgery.
J Clin Anesth. 2002 Mar; 14(2):154-7.

Vaughan WC, Koch RJ.

Airway obstruction caused by bee sting macroglossia.
Otolaryngol Head Neck Surg. 2000 May; 122(5):778.

Vaughan WC.

Medical and Surgical Management of Polypoid Rhinosinusitis.
Current Opinion in Otolaryngology. 2000, 8:11-17.

Vaughan WC.

Sinus Computer Tomograph Interpretation.
International Online Journal of Otorhinolaryngology-Head and Neck Surgery, 1999; Volume 1, Issue 6.

Vaughan WC, Citardi MJ, Kuhn FA.

Surgical Navigation in Pituitary Surgery. ERS & ISIAN Reprint for 1998. Eds. Stammberger H and Wolf G., July 1998.

Dannemann BR, Vaughan WC, Thulliez P, Remington JS.

Differential agglutination test for diagnosis of recently acquired infection with *Toxoplasma gondii*.
J Clin Microbiol. 1990 Sep; 28(9):1928-33.

BOOK CHAPTERS:

Vaughan WC. Ed. Jaffe RA, Samuels SI.
Book Chapter: *Endoscopic Sinus Surgery: surgical considerations.*
In: Anesthesiologist's Manual of Surgical Procedures. 2004.

Vaughan WC, Kuhn FA. Ed. Stamm Aldo.
Book Chapter: *Surgical Navigation in Endoscopic Sinus Surgery.*
In: Microscopic and Endoscopic Sinus Surgery. 1999.

Vaughan WC. Ed. Citardi C
Book Chapter: *Computer-Aided Transsphenoidal Hypophysectomy.*
In: Computer-Aided Otorhinolaryngology Head and Neck Surgery. 2002.

PRESENTATIONS

2005 – 2008 to be added:

Vaughan WC. *South West Idaho ENT Group. Integrating Advanced Sinus Care and Revision Frontal Sinus Surgery. Boise, Idaho. January 28, 2005.*

Vaughan WC. *San Diego Otolaryngology/Head & Neck Surgery Society Annual Meeting. Revision FESS with IGS, Coding & Billing in FESS, San Diego, CA, November 12, 2004.*

Vaughan WC. *Annual Western Residents Course: Revision Frontal FESS with IGS, CSF Leak Repair, CT scan interpretation for FESS. Loma Linda Dept. of Otolaryngology/Head & Neck Surgery, Loma Linda, CA, November 7, 2004.*

Vaughan WC. *Stanford Advanced FESS Course. Lectures: CT scan interpretation for FESS with IGS, Ethmoidectomy and powered instrumentation, Difficult Frontal FESS with IGS, Complications/CSF Leak Repair, Stanford University, October 29, 2004.*

Vaughan WC. *Arizona Society of Otolaryngology/Head & Neck Surgery. Lectures: Revision FESS with IGS, Coding and Billing for FESS, FESS Complications: Anatomy, IGS, Repair: Scottsdale, AZ, October 16, 2004.*

Vaughan WC. *Masters of Otolaryngology Annual Symposium: Advances in Rhinology-Sinus Surgery. Lectures: Anatomy for FESS with Messerklinger Technique, What to do when everything else fails?, Coding in FESS, Revision Endoscopic Frontal Surgery with IGS: Dept. of Otolaryngology/Head & Neck Surgery, Medical College of Georgia, Augusta, GA, October 8, 2004.*

Vaughan WC. *ENT Perspective: treatment options in chronic sinus patients. Presented at Bay Area Respiratory Diseases Symposium, Stanford, CA, July 23, 2004.*

Vaughan WC. *University of British Columbia Sinus Course. Lectures: Revision Frontal FESS with IGS, What to do when everything else fails?, Complication management. Vancouver, Canada, July, 16-19,2004*

Vaughan WC. *Advanced Medical Management in Sinusitis. Presented at the Bayer Regional Meeting, Denver, CO, June 25-26, 2004.*

Vaughan WC. *Stanford Revision FESS outcomes: 5 year review, Presented at Stanford Annual Symposium, Stanford, CA, June 18, 2004.*

Vaughan WC. *Advanced Frontal Sinus Surgery, Billing and Coding in FESS, Learning to Fly like Pilots – what surgeons can learn? Oklahoma and Texas Societies of Otolaryngology/Head & Neck Surgery, Austin TX, April 2-4,2004.*

Vaughan WC. *What to do when everything fails in sinus management? Presented at Aventis Regional Allergy Meeting, San Francisco, CA, March 11,2004.*

Vaughan WC. *Complications in Surgery: Learning to fly like pilots. Presented at Dept. of General Surgery, Grand Rounds, Stanford University, December 16, 2003.*

Vaughan WC. *West Coast Resident Sinus Course. Lecturer at 1- day resident sinus course: Difficult frontal sinus surgery, Coding & Billing in FESS, Skull- Base Complication management, Optic nerve and Sphenoid Surgery, Advancements in Medical Management, November 8,2003, Loma Linda, CA.*

Vaughan WC. *Difficult Case review and treatment pathways. Presented at the Bayer Sacramento Meeting, November 6, 2003, Sacramento, CA.*

Vaughan WC. *Coding and Billing in FESS: and you thought sinus surgery was painful? Presented at the Golden Gate Coding Conference, October 9, 2003, Stanford, CA.*

Vaughan WC. *Chronic Sinusitis Management. Presented at Stanford Primary Care Conference, October 9, 2003, Stanford, CA.*

Chiu AC, **Vaughan WC.** *Revision Frontal Sinus Surgery with Image-guidance. Presented at the American Academy of OTO/HNS Annual Meeting, September 24, 2003, Orlando, FL.*

Chiu AC, Bowden MT, **Vaughan WC.** *Informed Consent for FESS: the patient's perspective. Presented at the American Academy of OTO/HNS Annual Meeting, September 23, 2003, Orlando, FL.*

Vaughan WC. *Annual Jamaica Sinus Course.* Course director and presented several lectures, cadaver lab and performed live surgery. August 22-25, 2003, Kingston, Jamaica.

Vaughan WC. *Nebulized Tobramycin for Chronic Sinusitis.* Presented at Sinus Pharma Inc.
Pre-IND meeting at the FDA, August 7th, 2003, Washington, D.C.

Vaughan WC. *Fixing your sinuses: new treatment options.* Presented at the Stanford Community Library, July 24, 2003, Stanford, CA.

Vaughan WC. *Difficult Case review and treatment pathways.* Presented at the Bayer East Bay Meeting, July 23, 2003, Walnut Creek, CA.

Vaughan WC. *Difficult Case review and treatment pathways.* Presented at the Bayer South Bay Meeting, July 16, 2003, San Jose, CA.

Vaughan WC. *Billing and Coding.* Presented at the Dept. of Surgery Meeting, July 7, 2003, Stanford, CA

Vaughan WC. *Sinus Masters in Las Vegas.* Lecturer at 1- day sinus national course: *Revision frontal sinus surgery, Coding & Billing in FESS, Complication management, Sphenoid Surgery, Aggressive Medical Management,* June 28,2003, Las Vegas, NV.

Vaughan WC. *Surgical Techniques for the Frontal Sinuses: Is Obliteration Obsolete?* Presented at the Annual Stanford ENT Conference, June 20, 2003, Stanford, CA.

Vaughan WC. *Nebulized therapy for recurrent sinus infections.* Presented at the Sacramento ENT/ Allergy Group Meeting, June 12, 2003, Sacramento, CA

Chiu A, **Vaughan W.** *Intersinus Frontal Cell Approach for Revision Frontal Surgery.* Presented at the ARS/COSM Meetings, May 3, 2003, Nashville, TN.

Vaughan WC. *Advances in the Medical and Surgical Care of Sinus Patients.* Visiting professor and Grand Rounds at Loma Linda Dept. of Surgery, April 17, 2003, Loma Linda, CA

Vaughan WC. *Sinus Masters in Charleston.* Lecturer at 1- day sinus national course: *Revision frontal sinus surgery, Coding & Billing in FESS, Complication management, Sphenoid Surgery, Aggressive Medical Management,* March 8,2003, Charleston, SC.

Vaughan WC. *Treatment options to help the failed FESS patient.* Presented at Fresno Wallace Joint Allergy-ENT Conference. February 22, 2003, Fresno, CA.

Vaughan WC. *Advancing medical management for difficult sinusitis.* Presented Packard Children's Hospital, January 23, 2003, Stanford, CA.

Vaughan WC. *Annual Jamaica Sinus Course.* Course director and presented several lectures, cadaver lab and performed live surgery. January 2-5, 2003, Kingston, Jamaica.

Vaughan WC. *Sinus Masters at Stanford.* Organized and gave most lectures, cadaver dissection and live surgery at a 1- day sinus national course, December 14, 2002, Stanford, CA

Vaughan WC. *Use of Nebulized therapy in sinus infections.* Presented at the Dallas ENT Group Mtg. November 21, 2002, Dallas, TX.

Vaughan WC. *Management options in Difficult Sinus Patients.* Presented at Wallace Pharm. Mtg., September 12, 2002, San Mateo, CA

Vaughan WC. *1. Coding and Billing in FESS. 2: Surgical Navigation for difficult frontal approaches. 3: Sphenoid and Optic Nerve Approaches. 4: "Above and Below" frontal sinus surgery. 5. What to do when FESS fails?* Presented at the Marrigan Sinus Course, August 2-3, 2002, Tacoma, WA

Vaughan WC. *1: Surgical Navigation for difficult frontal approaches. 2: Sphenoid Approaches. 3: "Above and Below" frontal sinus surgery. 4: Orbital decompression.* Presented at University of British Columbia Annual Sinus Course, July 25-27, 2002, Vancouver, Canada.

Vaughan WC. *Avoiding frontal sinus destructive procedures.* Presented at Stanford ENT Annual Conference, June 22, 2002, Stanford, CA.

Vaughan WC. *New treatment options for the complex sinus disease.* Presented at Scripps Clinic, May 31, 2002, La Jolla, CA.

Vaughan WC, Chiu AG, Church CA. *Patient Use of Alternative Therapies for Sinusitis.* Presented at the American Rhinologic Society Annual Meeting, September 21, 2002, San Diego, CA.

Church CA, Chiu AG, **Vaughan WC.** *Endoscopic repair of large skull base defects after powered sinus surgery.* Presented at American Academy of OTO/HNS, September 22, 2002; San Diego, CA.

Vaughan WC. *Advanced Sinus Surgical Techniques with Image Guidance.* Presented at 1-day sinus course for VTI Technologies, May 20, 2002, Rancho Mirage, CA.

Vaughan WC, Church CA, Chiao A, Poutanen SM, Baron EJ. *Symptomatic and Endoscopic Outcomes of Culture-Directed Therapy in Chronic Sinusitis.* Presented at American Rhinologic Society Meeting, May 11, 2002, Boca Raton, FL.

Church CA, Poutanen SM, Baron EJ, **Vaughan WC**. *Is Empiric Therapy Sufficient for Acute Exacerbations of Chronic Sinusitis?* Presented at American Rhinologic Meeting, May 10, 2002, Boca Raton, FL.

Vaughan WC. *Annual Jamaica Sinus Course*. Course director and presented several lectures, cadaver lab and performed live surgery. January 2-5, 2002, Kingston, Jamaica.

Vaughan WC. *Advanced medical and surgical treatment options in sinusitis*. Presented at the University of Rochester, Dept. of Otolaryngology Meeting. December 6, 2001. Rochester, NY.

Vaughan WC. *ENT for Internal Medicine Docs*. Presented at Dept. of Internal Medicine Resident Teaching Conference, September 20, 2001. Stanford, CA.

Vaughan WC. *Management of Difficult Sinus Infections*. Presented at Sequoia Hospital Grand Rounds, September 14, 2001. Redwood City, CA.

Vaughan WC. *Use of Nebulized therapy in Chronic Sinusitis*. Presented at the American Otolaryngology Head and Neck Surgery Academy, Annual Meeting. September 11, 2001. Denver, CO.

Vaughan WC. *1. Difficult frontal sinus revisions. 2. What to do when all fails?* Invited Speaker. Presented at the Society of Osteopathic Otolaryngologists. April 27-28, 2001. Tampa, FL.

Vaughan WC. *Management options for FESS failures*. Invited Speaker. Presented at OrthoMcNeil Allergy-ENT conference. April 25, 2001. Walnut Creek, CA.

Vaughan WC. *1: Computer Guided Surgical Navigation for difficult frontal approaches. 2: Maximum Medical Management.. 3: "Above and Below" frontal approaches*. Presented at the Annual Meeting of the Caribbean Otolaryngology Society, March 23-24, 2001, Trinidad, West Indies.

Vaughan WC. *Aggressive Sinusitis Treatment Options*. Invited Speaker. Presented at the Annual Bayer Tahoe Retreat. March 17, 2001. Lake Tahoe, CA

Vaughan WC. *Annual Jamaica Sinus Course*. Course director and presented several lectures, cadaver lab and performed live surgery. January 2-5, 2001, Kingston, Jamaica.

Vaughan WC. *Endoscopic and radiological evaluation of potential causes of Functional Endoscopic Sinus Surgery Failure: Review of 60 consecutive revision cases*. Presented at the COSM Meeting, May 2000, Orlando, FL.

Khan M, **Vaughan WC** *Outcomes of Computer Assisted Endoscopic Sinus Surgery for Chronic Frontal Sinusitis*. Presented at the Western Section Meeting, Triologic Society, January 9, 2000; San Francisco, CA.

Vaughan WC *Anatomy in FESS; CT scan interpretation; Diagnostic Nasal Endoscopy; Endoscopic Surgical techniques; Complications & CSF Leak Repair; Endoscopic Frontal, maxillary, sphenoid and ethmoid Sinusitis Management.* Presented at the 1 st Annual Caribbean Otolaryngology Association Endoscopic Sinus Course, January 5 – 7, 2000; Univ. of the West Indies, Kingston, Jamaica.

Vaughan WC *Endoscopic trans-sphenoidal pituitary tumor removal: ENT instrument development.* Presented at Xomed Study Group, October 15, 1999; Kentucky Lake; TN

Vaughan WC *Anatomy in FESS; CT scan interpretation; Diagnostic Nasal Endoscopy; Endoscopic Surgical techniques; Complications & CSF Leak Repair; Endoscopic Frontal Sinusitis Management.* Presented at the Stanford Endoscopic Sinus Course, June 19, 1999; Stanford, CA

Vaughan WC *Use of Electromagnetic Navigational System in Pituitary Surgery.* Presented at American Skull Base Society Annual Meeting, May 29, 1999; Chicago, IL

Vaughan WC *Pituitary Surgery using Image Guided Surgical Navigation: Advantages for ENT.* Presented at American Rhinologic Society Spring Meeting, COSM. April, 25, 1999; Palm Dessert CA

Vaughan WC *Nasal Polyposis and Powered Instrumentation.* Presented at 22nd Advanced Functional Endoscopic Sinus Course at Georgia Ear Institute. April 10, 1999; Savannah, GA

Vaughan WC *Management of the Chronic Sinusitis Patient: How to manage failures?* Presented at the Caribbean Association of Otolaryngologists Annual Meeting. March 17, 1999; St. Vincent, W.I.

Vaughan WC, Cosenza MJ, Kuhn FA *Emergence of Multi-Drug Resistant and Gram Negative Sinusitis.* Presented at the American Academy of Otolaryngology, Annual Meeting. September, 15, 1998; San Antonio, TX

Vaughan WC *Surgical Navigation Applications in Sinus Surgery.* Presented at the National Medical Association, Annual Meeting. August 4, 1998; New Orleans, LA

Vaughan WC, Citardi MC, Kuhn FA *Surgical Navigation in Pituitary Surgery.* Presented at the European Rhinologic Society Meeting. July, 28, 1998; Vienna; Austria

Vaughan WC *Complications in Endoscopic Sinus Surgery.* Presented at the Central Mexico Otolaryngology Annual Course. April 16, 1998; Mexico City; Mexico

Vaughan WC, Moran ML *Outcomes in CF Patients with Endoscopic Antibiotic Lavage.* Presented at the Cottle International Rhinology Centennial, June 6, 1997

Vaughan WC, Fee WE *Hot, humidified nasal Inhalation in the Management of Rhinitis.*
Presented at the American Rhinologic Society, Spring Meeting, West Palm Beach, April
1997.