

KARLA G. CHRISTIAN, M.D.
CURRICULUM VITAE

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Monroe Carell Jr. Children's Hospital at Vanderbilt
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EDUCATION

Tonasket Schools, Valedictorian, summa cum laude	9/1977
University of Washington, B.S. Mathematics, cum laude	6/1981
University of Washington, Doctor of Medicine, with honors	9/1981-6/1985

POSTDOCTORAL TRAINING

Intern, General Surgery	University of Washington Department of Surgery Seattle, Washington	6/1985-6/1986
Resident, General Surgery	University of Washington Department of Surgery Seattle, Washington	7/1986-6/1987
Resident, General Surgery	Vanderbilt University Medical Center Department of Surgery Nashville, Tennessee	7/1988-6/1990
Chief Resident, General Surgery	Vanderbilt University Medical Center Department of Surgery Nashville, Tennessee	7/1990-6/1991
Resident, Cardiac and Thoracic Surgery	Vanderbilt University Medical Center Department of Cardiac and Thoracic Surgery Nashville, Tennessee	7/1991-6/1993
Chief Resident, Cardiac and Thoracic Surgery	Vanderbilt University Medical Center Department of Cardiac and Thoracic Surgery Nashville, Tennessee	7/1993-6/1994

RESEARCH FELLOWSHIP

Senior Research Fellow	University of Washington Division of Plastic Surgery Seattle, Washington	7/1987-6/1988
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BOARD CERTIFICATION

National Board of Medical Examiners	1986
Diplomate, American Board of Surgery (#38357)	1993
Recertification	2001
Diplomate, American Board of Thoracic Surgery (#5724)	1995
Recertification	2003

LICENSURE

Washington	1986
Tennessee	1994
Michigan	2005
DEA	1994

ACADEMIC APPOINTMENTS

Assistant Professor, Department of Cardiac and Thoracic Surgery Vanderbilt University Medical Center Nashville, Tennessee	7/1994-2002
Associate Professor, Department of Cardiac and Thoracic Surgery Vanderbilt University Medical Center Nashville, Tennessee	2002-present
Associate Chief of Pediatric Cardiac Surgery	2004-present

HOSPITAL APPOINTMENTS

Vanderbilt University Medical Center Nashville, Tennessee	7/1994-present
Veterans Administration Hospital Nashville, Tennessee	7/1994-2009

PROFESSIONAL ORGANIZATIONS

Alpha Omega Alpha, University of Washington	1984
H. William Scott, Jr. Society, Vanderbilt University	1991
American Heart Association	1995
Nashville Surgical Society	1996
Fellow, American College of Surgeons	1997
Southern Thoracic Surgical Association	1997
Society of Thoracic Surgeons	1998
Southeastern Surgical Congress	2001
Congenital Heart Surgeons Society	2003
Canby Robinson Society, Board of Directors	2005-08
Women in Thoracic Surgery	2008

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HONOR SOCIETIES & AWARDS

Phi Beta Kappa, University of Washington	1980
Mortar Board, University of Washington	1980
Alpha Omega Alpha, University of Washington	1984
Janet M. Glasgow Memorial Citation, AMWA	1985
America's Top Doctors	2005, 2006, 2008
Nashville Lifestyles Top Doctors	2006, 2008
Presidential Personal Thanks and Recognition	2008
America's Top Surgeons	2009

EDUCATIONAL ACTIVITIES

Preceptor, Fisk-Vanderbilt Premed Summer Institute	1996-present
Preceptorship in Clinical Medicine	1998-present
High School Career Day Preceptor	1998-present
AMWA Mentoring Program	1999-present
Medical Student Applicant Interviews	1999-2005
Medical Student Education Committee, Council of Subspecialists	2002-2005
Medical Student Faculty Advisor	2002-2005
General Surgical Clerkship – Congenital Heart Disease Lecture	2002-2005
Associate Residency Director, Thoracic Surgery	2003-2004
Director of Congenital Cardiac Surgery Education	2004-present
Young Scholars Medical Program	2007, 2008
Lecturer, Medical School 101	2009
CT Residents Lecturer	2007-present
PICU Nurses Lecturer	2007-present
Adult Congenital Heart Disease Conference Lecturer	2010

HOSPITAL COMMITTEES

Pediatric Surgery Committee	1995-2002
Computerized Order Entry, Surgical Steering Committee	1996-1997
Blood Utilization Review Committee	1996-2002
Pediatric Cardiac Surgery DRG108 Committee, co-chair	1999-2002
Cardiac Surgery DRG109, Efficiency & Effectiveness workgroup, co-chair	2000-2002
Medical Student Education Committee, Council of Subspecialties	2002-2004
Thoracic Surgery Department Chair Search Committee	2003
Pediatric Credentialing Sub-Committee, Children's Hospital	2003-2006
Pediatric OR Value Analysis Committee, Chair	2004-2007
Pediatric Pulmonary Medicine Director Search Committee	2006- 2007

ACTIVITIES FOR NATIONAL ORGANIZATIONS

Society of Thoracic Surgeons – Abstract Reviewer	2003, 2008, 2009
Society of Thoracic Surgeons – Moderator, Cardiac Research, parallel sessions	2004

INTERNATIONAL ACTIVITIES

Visiting Cardiac Surgeon, American Heart Institute, Cyprus	1999
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BIBLIOGRAPHY

MANUSCRIPTS

1. **Richey KJ**, Engrav LH, Pavlin EG, Murray MJ, Gottlieb JR, Walkinshaw MD: Topical Growth Factors and Wound Contraction in the Rat. Part I: Literature Review and Definition of the Rat Model. **Annals of Plastic Surgery** 23:159, 1989.
2. Engrav LH, **Richey KJ**, Kao CC, Murray MJ: Topical Growth Factors and Wound Contraction in the Rat. Part II: Platelet Derived Growth Factor (rPDGF-BB) and Wound Contraction in Normal and Steroid Impaired Rats. **Annals of Plastic Surgery** 23:245, 1989.
3. Engrav LH, **Richey KJ**, Walkinshaw MD, Gottlieb JR: Chondritis of the Burned Ear: A Preventable Complication If...**Annals of Plastic Surgery** 23:1, 1989.
4. Roberts JR, Blum MG, Arildsen R, Drinkwater DC, **Christian KG**, Powers TA, Merrill WH: Prospective Comparison of Radiologic, Thorascopic, and Pathologic Staging in Patients with Early Non-small Cell Lung Cancer. **Annals of Thoracic Surgery** 68:1154-8, 1999.
5. Watson S, **Christian KG**, Churchwell KB: Side Effects of Milrinone in the Cardiac PICU. **Clinical Intensive Care** 10:149, 1999.
6. Roberts JR, Shyr Y, **Christian KG**, Drinkwater DC, Merrill WH: Preemptive Gastrointestinal Tract Management Reduces Aspiration and Respiratory Failure After Thoracic Operations. **Journal of Thoracic and Cardiovascular Surgery** 119:449-52, 2000.
7. Merrill WH, Friesinger GC, Graham TP, Byrd BF, Drinkwater DC, **Christian KG**, Bender HW: Long Lasting Improvement After Septal Myectomy for Hypertrophic Obstructive Cardiomyopathy. **Annals of Thoracic Surgery** 69:1732-6, 2000.
8. Taylor MB, **Christian KG**, Patel N, Churchwell KB: Methemoglobinemia: Toxicity of Inhaled Nitric Oxide Therapy. **Pediatric Critical Care Medicine** 2(1): 99-101, 2001.
9. Aharon AS, Drinkwater DC Jr, Churchwell KB, Quisling SV, Reddy VS, Taylor M, Hix S, **Christian KG**, Pietsch JB, Deshpande JK, Kambam J, Graham TP, Chang PA: Extracorporeal Membrane Oxygenation in Children after Repair of Congenital Cardiac Lesions. **Annals of Thoracic Surgery** 72(6): 2095-101, 2002.
10. Reddy VS, Chen AC, Johnson HK, Pierson RN, **Christian KG**, Drinkwater DC, Merrill WH: Cardiac Surgery after Renal Transplantation. **American Surgeon** 68(2): 154-158, 2002.
11. Gibbs ER, **Christian KG**, Drinkwater DC, Pierson RN, Bender HW, Merrill WH: Cardiac Surgery in Patients with Moderate Renal Impairment. **Southern Medical Journal** 95(3): 321-323. 2002.

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12. Pierson RN, Howser, R, Donaldson T, Merrill WH, Dignan RJ, Drinkwater DC, **Christian KG**, Butler J, Chomsky D, Wilson JR, Clark R, Davis SF: Left Ventricular Assist Device Implantation via Left Thoracotomy: Alternate to Repeat Sternotomy. **Annals of Thoracic Surgery** 79:997-999, 2002.
13. Barr FE, Beverly H, Van Hook K, Cermak E, **Christian KG**, Drinkwater, DC, Dyer K, Raggio NT, Scott N, Moore J, Christman B, Summar M: The Effect of Cardiopulmonary Bypass on Urea Cycle Intermediates and Nitric Oxide Levels after Congenital Heart Surgery. **American Journal of Human Genetics** 71(4):173, 2002 and **Journal of Pediatrics** 142(1):26-30, 2003.
14. Atkinson E, Mikysa B, Conway JA, Parker M, **Christian KG**, Deshpande J, Knilans TK, Smith J, Walker C, Stickney RE, Hampton DR, Hazinski MF: Specificity and Sensitivity of Automated External Defibrillator Rhythm Analysis in Infants and Children. **Annals of Emergency Medicine** 42(2):185-196, 2003.
15. Schröder C, Scholl F, Daon E, Goodwin A, Frist WH, Roberts JR, **Christian KG**, Ninan M, Milstone AP, Loyd JE, Merrill WH, Pierson RN: A Modified Bronchial Anastomosis Technique for Lung Transplantation. **Annals of Thoracic Surgery** 75(6): 1697-1704, 2003.
16. Shah S, Shankar V, Churchwell K, Taylor M, Scott BP, Bartilson R, **Christian KG**, Drinkwater, DC: Clinical Outcomes of 84 Children with Congenital Heart Disease (CHD) Managed with Extra Corporeal Membrane Oxygenation (ECMO) After Cardiac Surgery. **ASAIO Journal** 51(5): 504-507, 2005.
17. Agarwal HS, Churchwell KB, Doyle T, **Christian KG**, Drinkwater D, Byrne D, Taylor MB: Inhaled Nitric Oxide Use in BiDirectional Glenn Anastomosis for Elevated Glenn Pressures. **Annals of Thoracic Surgery** 8: 1429-34, 2006.
18. Shah S, Drinkwater D, **Christian KG** : Plastic Bronchitis: Is Thoracic Duct Ligation a Real Surgical Option? **Annals of Thoracic Surgery** 81:2281-2283, 2006.
19. Scholl F, Webb D, **Christian K**, Drinkwater D: Rapid Diagnosis of Cannula Migration by Cerebral Oximetry in Neonatal Arch Repair. **Annals of Thoracic Surgery** 82(1): 325-7, 2006.
20. Smith HA, Canter JA, **Christian KG**, Drinkwater DC, Scholl FG, Christman BW, Rice GD, Barr FE, Summar ML: Nitric Oxide Precursors and Congenital Heart Surgery: A Randomized Controlled Trial of Oral Citrulline. **Journal Thoracic and Cardiovascular Surgery** 132(1): 58-65, 2006.
21. Canter J, Summar M, Smith H, Rice G, Hall L, Ritchie M, Motsinger A, **Christian KG**, Drinkwater D, Scholl F, Dyer K, Kavanaugh-McHugh A, Barr F: Genetic Variation in the Mitochondrial Enzyme Carbamoy-Phosphate Synthetase I Predisposes Children to Increased Pulmonary Artery Pressure Following Surgical Repair of Congenital Heart Defects: A Validated Genetic Association Study. **Mitochondria Research Society** 7(3): 204-210, 2007.

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22. Barr FE, Tirona RG, Taylor MB, Rice G, Rice G, Arnold J, Cunningham G, Smith HAB, Campbell A, Canter JA, **Christian KG**, Drinkwater DC, Scholl F, Kavanaugh-McHugh A, Summar ML: Pharmacokinetics and Safety of Intravenous Citrulline in Children Undergoing Congenital Heart Surgery: A Potential Therapy for Postoperative Pulmonary Hypertension. **Journal of Thoracic and Cardiovascular Surgery** 134: 319-326, 2007.
23. Agarwal H, Churchwell K, Doyle T, **Christian K**, Drinkwater D, Byrne D, Taylor M : Recombinant Factor Seven Therapy for Severe Bleeding in Postoperative Neonatal and Pediatric Cardiac Surgery . **The Annals of Thoracic Surgery** 84:161-168, 2007.
24. Hill, K, **Christian K**, Kavanaugh-McHugh A, Doyle T: Right-sided Pulmonary Venous Obstruction between a Right Aortic Arch and an Amplatzer Septal Occlusion Device Following Closure of a Secundum Atrial Septal Defect. **Pediatric Cardiology** 30(6), 855-857, 2009.
25. Antevil JL, Doyle TP, Bichell DP, **Christian KG**: Congenitally Corrected Transposition of the Great Arteries: A Unique Case from Iraq. **Pediatric Cardiology**, 31(1), 120, 2010.
26. Kasabeh ES, Damp JB, Kurtz EG, Deegan RJ, **Christian KG**, Mazer MJ, Zhao DX: Anomalous Origin of the Left Circumflex Artery from the Pulmonary Artery. **JACC Cardiovascular Imaging**, Submitted.
27. Heerman WJ, Doyle TP, Kattih O, Ananthakrishnan M, **Christian KG**, Bichell DP, Barr FE, Taylor MB: Continuous Wave Doppler Ultrasound (USCOM) Accurately Measures Cardiac Output. **Pediatric Critical Care Medicine**, Submitted.
28. Fleming GA, Billings FT, Bichell DP, **Christian KG**, Pretorius, Mias: Continued ACE Inhibition Alters the Inflammatory and Fibrinolytic Response to Cardiopulmonary Bypass in Children. **Pediatric Critical Care Medicine**, Submitted.

ABSTRACTS

1. **Richey KJ**, Engrav LH, Murray MJ, Kao CC, Pavlin EG, Gottlieb JR, Walkinshaw MD: Platelet Derived Growth Factor and Wound Contraction in the Rat. **Plastic Surgery Research Council**. Atlanta, Georgia 1989.
2. **Richey KJ**, Graham TP, Bender HW: Tetralogy of Fallot with Absent Pulmonary Valve: The Monocusp Repair. **Southeastern Pediatric Cardiology Society**. Nashville, Tennessee 1994.
3. Bender HW, Hoff SJ, **Richey KJ**, Graham, TP: Early Success with a Modification of the Norwood Procedure for Hypoplastic Left Heart Syndrome. **Southeastern Pediatric Cardiology Society**. Nashville, Tennessee 1994.
4. Roberts JR, Blum M, Arildsen R, Drinkwater DC, **Christian KG**, Powers T, Merrill WH: Prospective Comparison of Radiologic, Thorascopic, and Pathologic Staging in Patients with Early NSCLC. **Southern Thoracic Surgery Association**. Orlando, Florida 1998.

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5. Roberts JR, **Christian KG**, Pierson RN, Drinkwater DC, Merrill WH: Respiratory Failure After Thoracic Surgery: The Incidence of Aspiration Can Be Limited by GI Tract Management. **American Association for Thoracic Surgery**. New Orleans, Louisiana 1999.
6. Taylor MB, **Christian KG**, Churchwell KB: Methemoglobinemia: Toxicity of Inhaled Nitric Oxide Therapy. **American Academy of Pediatrics**. Washington, DC 1999.
7. Watson S, **Christian KG**, Churchwell KB: Side Effects of Milrinone in the Cardiac PICU. Poster presentation. **12th Annual Pediatric Critical Care Colloquium**. Portland, Oregon, 1999. Also presented at **American Academy of Pediatrics**. Washington, DC 1999.
8. Merrill WH, Freisinger GC, Graham TP, Drinkwater DC, **Christian KG**, Bender HW: Long-lasting Improvement Following Septal Myectomy for Hypertrophic Obstructive Cardiomyopathy. **Southern Thoracic Surgical Association**. Puerto Rico 1999.
9. Aharon AS, Drinkwater DC, Reddy VS, Christian DL, Torres T, Chang PA, Hix S, **Christian KG**, Extracorporeal Membrane Oxygenation in Children Following Repair of Complex Congenital Cardiac Lesions and Heart Transplantation. **Southern Thoracic Surgical Association**. Marco Island, Florida 2000.
10. Reddy VS, Pierson RB III, Frist WR, **Christian KG**, Drinkwater DC Jr, Merrill WM: Traumatic Aortic Tear After Blunt Trauma. **American College of Surgeons - TN Chapter**. Fall Creek Falls, Tennessee 2002; **Assoc of VA Surgeons**. Seattle, Washington 2000.
11. Schröder C, Scholl F, Daon E, Goodwin A, Frist WH, Roberts JR, **Christian KG**, Ninan M, Milstone AP, Loyd JE, Merrill WH, Pierson RN: A Modified Bronchial Anastomosis Technique for Lung Transplantation. **The American Transplantation Congress**. Washington, DC 2001.
12. Agarwal HS, **Christian KG**, Drinkwater DC, Taylor MB, Churchwell KB: Use of Nitric Oxide Therapy for Bidirectional Glenn Shunt. **American Academy of Pediatrics**. Boston, Massachusetts 2002.
13. Shah S, Shankar V, Churchwell K, Taylor M, Scott BP, Bartilson R, **Christian KG**, Scholl F, Drinkwater, DC: Clinical Outcomes of 84 Children with Congenital Heart Disease (CHD) Managed with Extra Corporeal Membrane Oxygenation (ECMO) After Cardiac Surgery. **First International Conference on Pediatric Mechanical Circulatory Support Systems and Pediatric Cardiopulmonary Perfusion**. Hershey, PA 2005.
14. Kattih O, Patel N, Rice G, Drinkwater DC, Scholl F, **Christian K**, Canter J, Barr FE: Pro-Plasma B-Type Natriuretic Peptide (Pro-BNP) and Pulmonary Hypertension after AVSD and VSD Repair. **Pediatric Academic Societies' Meeting, San Francisco, CA 2006**.
15. Fleming GA, Billings FT, Bichell DP, **Christian KG**, Pretorius, Mias: Continued ACE Inhibition Alters the Inflammatory and Fibrinolytic Response to Cardiopulmonary Bypass in Children. **American Heart Association Scientific Sessions**. Submitted.

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BOOK CHAPTERS

1. Bichell DP, **Christian KG. Atrial Septal Defect and Cor triatriatum.** Chapter 114, In: Sabiston & Spencer: Surgery of the Chest, 8th ed., Selke FW, del Nido PJ, Swanson SJ, eds. Philadelphia, 2010, Elsevier Science.

RESEARCH PROJECTS

1. **Christian KG** principal investigator, Bichell D sub investigator, Drinkwater DC sub investigator: **Contegra Pulmonary Valved Conduit.** IRB approved. Study in progress.
2. Barr FE principal investigator, **Christian KG** co-investigator: **The Effect of Urea Cycle and Glutathione Synthesis Polymorphisms on Postoperative Pulmonary Outcomes in Infants and Children with Congenital Heart Disease.** IRB approved. Completed.
3. Grzeszczak M, Taylor MB, **Christian KG**, Churchwell KB, Barr FE, Patel NR, Shankar V: **Carnitine Supplementation in Children Undergoing Surgical Correction of Congenital Heart Disease.** IRB approved. Completed.
4. Barr FE, Summar ML, Smith HAB, **Christian KG**, Drinkwater DC Jr, Dyer KL, Taylor MB, Grzeszczak M: **Nitric Oxide Precursors and Congenital Heart Surgery: Citrulline Trial.** IRB approved. Completed.
5. Taylor MB principal investigator, **Christian KG** co-investigator: **A Randomized, Multi-Center, Double-Blind, Placebo-Controlled, Dose-Ranging Study of IV Sildenafil in the Treatment of Children, Aged 0-17, with Pulmonary Hypertension after Corrective Cardiac Surgery.** IRB approved. Completed.
6. Taylor MB principal investigator, **Christian KG**, Shalaby TM, Liske M, Arnold JM: **CLARINET Clinical Study: International Randomized Study Evaluating the Efficacy and Safety of Clopidogrel 0.2mg/kg Once Daily vs Placebo in Neonates and Infants/toddlers with Cyanotic Congenital Heart Disease Palliated with a Systemic-to-Pulmonary Artery Shunt**". IRB approved. Sponsor: Bristol Meyers Squibb. Completed.

MEDIA CREDITS

1. **NBC Nightly News** w/Brian Williams. Martin Savage reporting. "Heart to Heart with Iraqi Girl" January 28, 2008
2. **The Tennessean** "Iraqi Girl's Tiny Heart 'much happier' after Surgery" February 11, 2008
3. **NBC Nightly News** w/Brian Williams. Martin Savage reporting. "Two year old Amenah, Iraqi heart patient, has successful surgery" February 14, 2008
4. **ABC Good Morning America** featured medical story-line. "Marines Help Heal Girl's Broken Heart".

February 17, 2008

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5. **XM Radio** – “Reach MD” Featured Surgeon, 4 segments. March, 2008
6. **The Tennessean**. “Tiny Tot will Return to Iraq with Fixed Heart, Family’s Love” March 4, 2008
7. **NBC Nightly News** w/Brian Williams. Martin Savage reporting. “Amenah Returns Home” March 10, 2008
8. **The New York Times** “Toddler returns to Iraq After Life-Saving Surgery” March 10, 2008
9. **WSMV-TV**, Nashville TN. News telecast of personal “Presidential Recognition” from President George Bush regarding Iraq toddler life-saving surgery. March 11, 2008