

Jesse Aaron Davidson

Curriculum Vitae

1. Personal History

Current Position: Associate Professor, Pediatrics
Work Address: Children's Hospital, Colorado, Box 100 13123 East 16th
Ave., Aurora, CO 80045

2. Education and Training

1991-1995 Yale University, B.S. Molecular Biophysics and Biochemistry
1996-2000 Duke University School of Medicine, M.D.
1998-2000 University of North Carolina, Chapel Hill School of Public Health, M.P.H.
Epidemiology
2000-2001 Internal Medicine Internship, Mount Sinai Hospital, New York, NY
2004-2007 Pediatrics Residency, Children's Hospital, Colorado
2008-2013 Pediatric Cardiology Fellowship, Children's Hospital, Colorado
2008-2013 Pediatric Critical Care Fellowship, Children's Hospital, Colorado
2011-2013 Advanced Pediatric Echocardiography Fellowship, Children's Hospital,
Colorado
2013-2018 University of Colorado Graduate School, Clinical Sciences, M.Sc.

3. Academic Appointments

2007-2008 Senior Instructor, Department of Pediatrics, Section of Neonatology,
University of Colorado/Children's Hospital Colorado
2013-2019 Assistant Professor, Department of Pediatrics, Section of Pediatric
Cardiology, University of Colorado/Children's Hospital Colorado
2019-current Associate Professor, Department of Pediatrics, Section of Pediatric
Cardiology, University of Colorado/Children's Hospital Colorado

4. Work Assignments

Hospital

2015-current Associate Medical Director, Research Institute, Children's Hospital
Colorado

Primary Military

2001-2002 Assistant Regimental Surgeon, 1st Marine Regiment, 1st Marine Division,
Camp Pendleton, CA
2002-2003 Battalion Surgeon, 3rd Battalion, 1st Marines, Camp Pendleton, CA
Deployed to Southwest Asia with 11th Marine Expeditionary Unit, June

2002-December 2002 Deployed to Iraq with 1st Marine Expeditionary Force as part of Operation Iraqi Freedom, January 2003-May 2003
 2003-2004 Staff Physician, Branch Medical Clinic, Marine Corps Air Station, Miramar, CA
 2004-2008 Individual Ready Reserve

Secondary Military

2001 Senior Medical Officer, Combined Arms Exercise, 29 Palms, CA
 2002 Senior Medical Officer, Operation Eager Mace, Kuwait
 2002 Senior Medical Officer, Operation Infinite Moonlight, Jordan
 2003 Assistant Disaster Planning Officer, Marine Corps Air Station, Miramar

5. Honors and Recognition

Civilian

1995 Cum Laude, Yale University
 1995 Honors in the Major of Molecular Biophysics and Biochemistry
 1997 Health Professions Scholarship
 2001 Nominee, Mount Sinai Excellence in Teaching Award
 2005 Resident Teaching Award, Children’s Hospital Colorado
 2007 Resident Teaching Award, Children’s Hospital Colorado
 2012 Fellow Teaching Award, Pediatric Cardiology, Children’s Hospital Colorado
 2014 Special Recognition Award, Pediatric Residency Recruitment, University of Colorado School of Medicine
 2017 Clinical Research Site Award, INC Research; site Principal Investigator
 2017, 2018 Research Leaders Academy, American Heart Association. Twice selected as one of 300 national research leaders in adult and pediatric cardiology to participate in a three-day academy to explore and debate research issues, develop a network for senior and future CVD and Stroke research thought leaders, and advance AHA Mission and encourage AHA engagement through Academy research network.

Military by Precedence

2002 Navy and Marine Corps Commendation Medal, 11th Marine Expeditionary Unit
 2004 Navy and Marine Corps Achievement Medal, Naval Medical Clinic, Marine Corps Air Station, Miramar
 2003 Navy and Marine Corps Achievement Medal, Operation Iraqi Freedom
 2003 Combat Action Ribbon, Operation Iraqi Freedom
 2002 Fleet Marine Force Ribbon
 2002 National Defense Medal

2002, 2003 Sea Service Deployment Ribbon, Awarded Twice

6. Professional Memberships and Leadership

2008-current American Heart Association
2010-current Pediatric Cardiac Intensive Care Society
2014-current Society of Critical Care Medicine
2015-current PCICS Research: Scientific Innovation Committee
2017-current PCICS Research: Scientific Innovation Committee Co-Leader

7. Major Committee and Service Responsibilities

2012-2017 Anticoagulation Safety Committee, Children's Hospital Colorado
2013-current Pediatric Cardiology Fellowship Selection Committee
2015-current Associate Medical Director, Research Institute, Children's Hospital Colorado
2017-current Children's Hospital Colorado Representative to the Trial Innovation Network
2017-current Children's Hospital Colorado Representative to TriNetX
2018-current Children's Hospital Colorado Representative to i-ACT

8. Licensing and Certifications

2004-present Pediatric Advanced Life Support Provider
2007-present General Pediatrics
2007-present Physician, Medical Board of Colorado
2014-present Pediatric Critical Care
2014-present Pediatric Cardiology

9. Inventions, Intellectual Property, and Patents Held or Pending

2016 U.S. Provisional Patent Application No. 62/359,075, filed July 6, 2016
Title: "Compounds, Compositions And Methods For Preventing And/Or Treating Inflammation And/Or Organ Dysfunction After Pediatric Cardiovascular Surgery" By: Jesse Davidson CU Ref: CH0006H-PPA1

2017 New PCT International Patent Application No. PCT/US2017/040737, filed July 5, 2017 Title: "Compounds, Compositions And Methods For Preventing And/Or Treating Inflammation And/Or Organ Dysfunction After Pediatric Cardiovascular Surgery" By: Jesse Davidson CU Ref: CH0006H-PCT1.

10. Review and Referee Work

Grant Study Sections

- 2013-2017 Study Section Member: American Heart Association Research Grants-Clinical Outcomes Section
- 2017-current Study Section Member: American Heart Association Research Career Development Awards-Clinical Outcomes Section
- 2018 Study Section Member: Department of Defense Clinical Trial Award
- 2019 Study Section Chair: Department of Defense Peer Review Medical Research Program

Manuscript Review

- 2012-current Manuscript reviewer for Pediatrics
- 2012-current Manuscript reviewer for OMICS Publishing Group-Clinical
- 2014-current Manuscript reviewer for Physiological Research
- 2015-current Manuscript reviewer for Critical Care Nursing
- 2016-current Manuscript reviewer for Journal of the American Society for Echocardiography
- 2018-current Manuscript reviewer for Translational Research
- 2018-current Manuscript reviewer for American Journal of Respiratory and Critical Care Medicine
- 2018-current Manuscript Reviewer for PLOS One
- 2019-current Manuscript Reviewer for Archives of Disease in Childhood

Abstract Review

- 2018 Pediatric Cardiac Intensive Care Society International Meeting
- 2019 Joint Paediatric Critical Care International Meeting

11. Invited Presentations

- 2009 European Association for Cardiothoracic Surgery; Vienna Austria, *Simulation Training for Care of Pediatric Heart Disease*
- 2011 Second European Conference on Pediatric and Neonatal Cardiac Intensive Care, *Simulation Training for Care of Pediatric Heart Disease*
- 2012 Eliza Fernie Pediatric Critical Care Nursing Symposium; Denver, Colorado, *Procalcitonin in the Intensive Care Unit*
- 2013 3rd European Conference on Pediatric and Neonatal Cardiac Intensive Care, *Alkaline Phosphatase in Postoperative Cardiac Surgery*
- 2013 3rd European Conference on Pediatric and Neonatal Cardiac Intensive Care, *Value of Procalcitonin after Pediatric Cardiac Surgery*
- 2015 CHCO Research Symposium, Moderator, *What Does a Physician Scientist Clinical Research Career Look Like in 2015?*
- 2017 CHCO Research Symposium, Moderator, *Patient Experience in Clinical Research*
- 2018 Second Annual Pediatric Echocardiography Review, *Double Outlet Right Ventricle-Double Trouble*
- 2018 Second Annual Pediatric Echocardiography Review, *How the Elephant Got Its Truncus*

12. Teaching Record

Clinical Teaching

- 2013-current CICU-Supervision and bedside teaching of cardiology, intensive care, and neonatology fellows (35 hours per week 6-10 times per year)
- 2013-current Echocardiography-Supervision and lab/OR teaching of transesophageal and transthoracic echocardiography to categorical and senior imaging fellows (1-2 hours per week)

Presentations to Trainees

- 2013-current Cardiology and intensive care trainees: Average 4 formal lectures per year (recent topics included cardiac function, cardiac pharmacology, arrhythmias, neurologic injury, intestinal injury)
Echo fellows: Average one lecture and one journal club per year
Sonographers: Average one lecture per year (cardiac function)

Research Education

- 2014-2016 Didactic: Ran the monthly cardiology fellow Research Advisory Committee lecture series in conjunction with Dr. Sonali Patel and Dr. Amy Taylor
- 2015-current Informal: Daily education responsibilities to research personnel in the RI and CTSC.

Specific Accomplishments

- 2015 Co-director for the inaugural CHCO Research Symposium (9/2015)

Mentees

I have served as the primary research mentor for 11 residents and fellows. These mentoring relationships have consistently resulted in original publications, presentations at national meetings, trainee research awards (three first place at CHCO research competitions), and multiple internal and extramural grants with trainees as either PI or Co-I. Currently I serve this role for 6 UCD residents and fellows. I serve on three Scholarly Oversight Committees and a Ph.D. committee. I also have an extensive informal mentoring role as the Associate Medical Director for the Research Institute at CHCO.

13. Grant Support and Multi-Institutional Clinical Research

Ongoing Research Support

- 2014-2019 NIH/NHLBI 1K23HL123634 **Alkaline Phosphatase in Infant Cardiopulmonary Bypass: Kinetics and Relationship to Inflammation, Organ Injury, and Outcome.** Prospective study of the clinical risks of low alkaline phosphatase activity following infant cardiopulmonary bypass, the kinetics of alkaline phosphatase post-bypass,

and capacity of alkaline phosphatase conversion of extracellular adenine nucleotides to adenosine.

Role: Principal Investigator (75% effort)

Total Direct Funds: \$820,883

- 2015-2018 NIH/NCRR Colorado CTSI Grant Number UL1 RR025780. **Cardiac Remodeling and Circulating Biomarkers in Pediatric Left Ventricular Pressure Loading Lesions.** Prospective cohort study assessing biomarkers of mid-term LV hypertrophy/remodeling after surgery for LV obstructive lesions.
Role: Primary Mentor (PI Frank) (2% effort)
Total Direct Funds: \$20,000
- 2017-2019 AHA17IRG33410724. **Alkaline phosphatase for the prevention of acute lung injury in a piglet model of cardiopulmonary bypass with deep hypothermic circulatory arrest.** Initial evaluation of the effects of systemically or enterally administered alkaline phosphatase to reduce injury to the lungs in a piglet model of cardiopulmonary bypass with deep hypothermic circulatory arrest.
Role: Principal Investigator (10% effort under K23 career development aims)
Total Direct Funds: \$150,000
- 2017-2019 NIH/NCRR Colorado CTSI Grant Number UL1 RR025780. **Pulmonary Vascular Growth in Infants with Single Ventricle Heart Disease: Deep Phenotyping and Biomarker Development.** This study will utilize both hypothesis-driven and unbiased approaches to the evaluation of pulmonary vascular development and post-operative complications/hypoxemia in single ventricle patients undergoing stage 2 palliation. Endothelin-1 levels will be the primary targeted biomarker, while unbiased approaches will include metabolomic and proteomic evaluation and pathway analysis.
Role: Primary Mentor (PI Frank) (1% effort)
Total Direct Funds: \$20,000
- 2017-2020 Gerber Foundation. **Hungry for more: applying the growth chart concept to the care we provide following congenital heart surgery.** Multicenter study utilizing automated data extraction to create care curves for post-operative management of children with congenital heart disease.
Role: Site Principal Investigator (1% effort)
Total Direct Funds: \$15,000 per site (\$300,000 total grant)
- 2018-2020 AHA18IPA34170070. **Pulmonary Vascular Growth in Infants with Single Ventricle Heart Disease: Deep Phenotyping and Biomarker Development.** This study will utilize both hypothesis-driven and unbiased approaches to the evaluation of pulmonary vascular development and post-operative complications/hypoxemia in single ventricle patients

undergoing stage 2 palliation. Endothelin-1 levels will be the primary targeted biomarker, while unbiased approaches will include metabolomic and proteomic evaluation and pathway analysis.

Role: Principal Investigator (first year under K23 career development aim; second year 10% effort)

Total Direct Funds: \$200,000

Prior Research Support

2009-2011 *NIH/NCRR Colorado CTSI Grant Number UL1 RR025780. **The Kinetics of Procalcitonin in Young Infants Undergoing Cardiovascular Surgery.*** Awarded 7/2009-completed 6/2011. Prospective observational study in infants undergoing cardiothoracic surgery to evaluate the post-operation kinetics of procalcitonin and CRP and their relationship to post-operative infection and outcomes.

Role: Principal Investigator (10% effort)

Total Direct Funds: \$12,000

2013 Thrasher Research Fund Early Career Award. **Alkaline Phosphatase in Infant Cardiopulmonary Bypass: Kinetics and Relationship to Inflammation, Organ Injury, and Outcome.** Awarded 1/2013-returned 6/2013

Role: Principal Investigator (10% effort)

Total Direct Funds: \$25,000

2013 American Heart Association Clinical Research Program-Southwest Affiliate. **Alkaline Phosphatase in Infant Cardiopulmonary Bypass: Kinetics and Relationship to Inflammation, Organ Injury, and Outcome.** Awarded 5/2013-returned 6/2013

Role: Principal Investigator

Total Direct Funds: \$140,000

2013-2014 American Heart Association Clinical Research Program-National 13CRP17300016. **Alkaline Phosphatase in Infant Cardiopulmonary Bypass: Kinetics and Relationship to Inflammation, Organ Injury, and Outcome.** Awarded 7/2013-returned 8/2014

Role: Principal Investigator (20% effort)

Total Direct Funds: \$140,000

2013-2015 NIH/NCRR Colorado CTSI Grant Number UL1 RR025780. **Alkaline Phosphatase in Infant Cardiopulmonary Bypass: Kinetics and Relationship to Inflammation, Organ Injury, and Outcome.** Prospective study of the clinical risks of low alkaline phosphatase activity following infant cardiopulmonary bypass, the kinetics of alkaline

phosphatase post-bypass, and capacity of alkaline phosphatase conversion of extracellular adenine nucleotides to adenosine. Funding dedicated to initiating the analysis of serum alkaline phosphatase capacity to convert extracellular adenine nucleotides to adenosine before and after cardiopulmonary bypass.

Role: Principal Investigator (1% effort)

Total Direct Funds: \$15,000

2016-2018 DOD PR152240. **Alkaline phosphatase for the prevention of intestinal and renal injury in a piglet model of cardiopulmonary bypass with deep hypothermic circulatory arrest.** Initial evaluation of the effects of systemically or enterally administered alkaline phosphatase to reduce injury to the intestines and kidneys in a porcine model of cardiopulmonary bypass.

Role: Principal Investigator (20% effort-effort included in the K23)

Total Direct Funds: \$200,000

Multi-institution Clinical Research

- 1) Phase 3b, Multicenter, Open-label, Randomized Withdrawal Trial of the Effects of Titrated Oral SAMSCA (Tolvaptan) on Serum Sodium, Pharmacokinetics, and Safety in Children and Adolescent Subjects Hospitalized with Euvolemic or Hypervolemic Hyponatremia; Otsuka Pharmaceuticals; **Site Principal Investigator**
- 2) Multicenter, open-label, dose escalation study to evaluate safety, tolerability and pharmacokinetics of RLX030 in addition to standard of care in pediatric patients from birth to <18 years of age, hospitalized with acute heart failure; Novartis; **Site Principal Investigator**
- 3) CPCCRN 059 PEACE; **Sub-Investigator (PI Mourani)**
- 4) CPCCRN 041 PICqCPR; **Sub-Investigator (PI Mourani)**

14. Bibliography

Peer Reviewed Publications

- 1) Boshart H, Humphrey J, Deignan E, **Davidson J**, Drazba J, Yuan L, Oorshot V, Peters PJ, Bonafacino JS. The cytoplasmic domain mediates the localization of furin to the trans-Golgi network en route to the endosomal/lysosomal system. J Cell Biol. 1994 Sep; 126(5):1157-72.

- 2) **Davidson J**, Tong S, Hancock H, Hauck A, Da Cruz E, Kaufman J. Prospective validation of the vasoactive-inotropic score and correlation to short-term outcomes in neonates and infants after cardiothoracic surgery. *Intensive Care Med.* 2012 Jul; 38(7): 1184-90.
- 3) **Davidson J**, Tong S, Hauck A, Lawson DS, Jagers J, Kaufman J, Da Cruz E. Alkaline phosphatase activity after cardiothoracic surgery in infants and correlation with post-operative support and inflammation: a prospective cohort study. *Critical Care.* 2012 Aug 20; 16(4): R160.
- 4) Llamado R, Czaja A, Stence N, **Davidson J**. Continuous Octreotide Infusion for Sulfonylurea-Induced Hypoglycemia in a Toddler. *J Emerg Med.* 2013 May.
- 5) **Davidson J**, Tong S, Hauck A, Lawson DS, Da Cruz E, Kaufman J. The kinetics of procalcitonin and C-reactive protein and the relationship to post-operative infection in young infants undergoing cardiovascular surgery. *Ped Res.* 2013 Sep; doi:10.1038/pr.2013.124
- 6) Pei-Ni Jone, Daniel Tapia, **Jesse Davidson**, Thomas E Fagan, Lorna Browne, Richard John Ing, Joseph Kay Successful Treatment of Myocardial Infarction in an Infant with Kawasaki Disease. *Seminars in Cardiothoracic and Vascular Anesthesia* 2015 Dec; DOI:10.1177/1089253215573328
- 7) S. R. Dominguez, B. Martin, H. Heizer, P.-N. Jone, S. Tong, **J. Davidson**, M. S. Anderson, M. P. Glode Procalcitonin (PCT) and Kawasaki Disease: Does PCT Correlate with IVIG-Resistant Disease, Admission to the Intensive Care Unit, or Development of Coronary Artery Lesions? 2014 Dec; DOI: 10. 1093/jpids/piv019
- 8) [Ben Frank*, **Jesse Davidson***] ***Co-first authors.**, Suhong Tong, Blake Martin, Marsha S. Anderson, Mary P. Glode, Samuel Dominguez, Pei-Ni Jone. Myocardial strain and strain rate in Kawasaki Disease: range, recovery, and relationship to systemic inflammation/coronary artery dilation. *J Clin Exp Cardiology* 2016; 7:4.
- 9) **Jesse A. Davidson**, Tracy Urban, Suhong Tong, Mark Twite, Alan Woodruff, Paul E. Wischmeyer, Jelena Klawitter. Alkaline phosphatase, soluble extracellular adenosine nucleotides, and adenosine production after infant cardiopulmonary bypass. *PLOS One* 2016; 1-15.
- 10) Amanda M. McIntosh, Suhong Tong, Sara J. Deakyne, [***Jesse A. Davidson**, ***Halden F. Scott**] ***Co-senior authors.** Validation of the Vasoactive Inotropic Score in Pediatric Sepsis. *Ped Crit Care Med.* 2017 Oct;18(10):1003-1005. PubMed PMID: 28976472.
- 11) **Jesse Davidson**, Tracy Urban, Suhong Tong, Christine Baird, Alan Woodruff, Mark Twite, James Jagers, Eric Simoes, Paul Wischmeyer. Alkaline

- phosphatase in infant cardiopulmonary bypass: kinetics and relationship to organ injury and major cardiovascular events. *Journal of Pediatrics* 2017 Nov; 109:49-55.
- 12) Benjamin Steven Frank, Tracy T Urban, Suhong Tong, Courtney Cassidy, Max B Mitchell, Christopher S Nichols and **Jesse A. Davidson**. Endothelin-1 activation in pediatric patients undergoing surgical coarctation of the aorta repair. *World Journal of Cardiology*. 2017 Dec; 9(12):822-829.
 - 13) Jessica N. Persson, Christine H. Baird, Suhong Tong, Tracy T Urban, Jelena Klawitter, Paul E. Wischmeyer, and **Jesse A. Davidson**. Infant cardiopulmonary bypass: CD73 kinetics, association with clinical outcomes, and influence on serum adenosine production capacity. *Ped. Res.* 2017; doi:10.1038/pr.2017.325
 - 14) **Jesse A. Davidson**, Tracy T. Urban, Suhong Tong, Aline Maddux, Gerald Hill, Benjamin S. Frank, John D. Watson, James Jagers, Eric A. F. Simões, Paul Wischmeyer. Alkaline Phosphatase Activity and Endotoxemia after Infant Cardiothoracic Surgery. *Shock* 2019; 51(3), 328-336.
 - 15) **Jesse A. Davidson, MD, MPH**; Zachary Pfeifer, BS; Benjamin Frank, MD; Suhong Tong, MS; Tracy T. Urban, BS; Paul A. Wischmeyer, MD; Peter Mourani, MD; Bruce Landeck, MD; Uwe Christians, MD, PhD; Jelena Klawitter, PhD. Metabolomic fingerprinting of infants undergoing cardiopulmonary bypass: changes in metabolic pathways and association with mortality and cardiac intensive care unit length of stay. *J Am Heart Assoc.* 2018;7:e010711. DOI: 10.1161/JAHA.118.010711
 - 16) Frank BS, Urban TT, Lewis K, Tong S, Cassidy C, Mitchell MB, Nichols CS, **Davidson JA**. Circulating biomarkers of left ventricular hypertrophy in pediatric coarctation of the aorta. *Congenit Heart Dis.* 2019 Jan 16.
 - 17) **Jesse A. Davidson**, Ludmila Khailova, Amy Treece, Justin Robison, Danielle E. Soranno, James Jagers, Richard J. Ing, Scott Lawson, Suzanne Osorio Lujan. Alkaline Phosphatase Treatment of Acute Kidney Injury in an Infant Piglet Model of Cardiopulmonary Bypass with Deep Hypothermic Circulatory Arrest. *Scientific Reports* 2019; (9): 14175.

Other Publications

- 1) Aschner Y, **Davidson JA**. Early Plasma Matrix Metalloproteinase Profiles Offer New Insight into the Biology and Prognosis of Pediatric Acute Respiratory Distress Syndrome. *AJRCCM*. Aug 2018.
- 2) McIntosh AM, **Davidson JA**, Scott HF. The authors reply. *Pediatr Crit Care Med.* 2017 Oct;18(10):1003-1005. PubMed PMID: 28976472

Scientific Abstracts

- 1) **Jesse Davidson MD MPH**, Amanda Hauck MD, Suhong Tong MS, Eduardo da Cruz MD, Jon Kaufman MD. Prospective validation of the vasoactive-inotropic score in neonates and infants after cardiothoracic surgery. Presented at the 15th Annual Update on Pediatric and Congenital Cardiovascular Disease. February, 2011.
- 2) **Jesse Davidson, MD MPH**, Amanda Hauck, MD, Suhong Tong, MS, Eduardo DaCruz, MD, Jonathan Kaufman, MD. Alkaline Phosphatase Levels and Correlation to Outcomes after Cardiothoracic Surgery in Infants. Presentation at the Pediatric Academic Society Annual Meeting May, 2011.
- 3) **Jesse Davidson MD MPH**, Amanda Hauck MD, Suhong Tong MS, Jon Kaufman MD, Eduardo da Cruz MD. The kinetics of procalcitonin in young infants undergoing cardiovascular surgery. Presented at Pediatric Cardiac Intensive Care Society December, 2010 and 15th Annual Update on Pediatric and Congenital Cardiovascular Disease February, 2011.
- 4) Blake Martin MD, Samuel R. Dominguez, MD, PhD, Heather Heizer, PA-C, Pei-Ni Jone, MD, **Jesse Davidson, MD**, Marsha S. Anderson, MD, and Mary P. Glodé, MD. Procalcitonin (PCT) and Kawasaki Disease: Does PCT Correlate with Coronary Artery Lesions and/or IVIG Resistant Disease? Presented at Infectious Diseases Society of America Annual ID Week Conference October, 2013.
- 5) **Davidson J**, Frank B, Tong S, Martin B, Anderson M, Glode M, Dominguez S, Jone P. Myocardial Mechanics in Kawasaki Disease: Relationship to Degree of Systemic Inflammation and Coronary Artery Dilation. Presented at American Heart Association Scientific Sessions November, 2013.
- 6) **Davidson JA**, Urban TT, Tong S, Twite M, Woodruff A, Da Cruz E, Wischmeyer P, Klawitter J. Alkaline Phosphatase, Extracellular Adenine Nucleotides, and Adenosine Production after Infant Cardiopulmonary Bypass. Presented at Pediatric Cardiac Intensive Care Society, December 2014.
- 7) Marsha S. Anderson, Samuel R. Dominguez, Heather R. Heizer, Pei-Ni Jone, **Jesse Davidson**, Mary P. Glodé. Rashless Kawasaki Disease (KD): Colorado's Experience. Presented at Eleventh International Kawasaki Disease Symposium, February 2015
- 8) **Davidson JA**, Urban TT, Tong S, Twite M, Baird C, Khailova L, Jagggers J, Wischmeyer P. Alkaline Phosphatase Activity after Infant Cardiac Surgery:

- Kinetics and Association with Post-operative Cardiovascular Support. Poster Presentation at AHA Scientific Sessions, November 2015.
- 9) **Jesse Davidson**, Tracy Urban, Suhong Tong, Christine Baird, Ludmila Khailova, James Jagers, Paul Wischmeyer. Alkaline Phosphatase Activity Predicts Organ Injury and Dysfunction after Infant Cardiac Surgery. SCCM Critical Care Congress, February 2016. **Oral Presentation**
 - 10) Amanda McIntosh, Suhong Tong, Sara Deakayne, Halden Scott*, **Jesse Davidson*** (*=equal contribution to senior mentorship of this abstract). Validation of the Vasoactive Inotropic Score in Pediatric Sepsis. SCCM Critical Care Congress, February 2016. **Oral Presentation**
 - 11) Persson J, Baird C, Tong S, Urban TT, Klawitter J, Wischmeyer P, and **Davidson JA**. CD73 after infant cardiopulmonary bypass: kinetics, association with clinical outcomes, and influence of serum adenosine production capacity. Presented at Pediatric Cardiac Intensive Care Society, December 2016.
 - 12) Benjamin S. Frank, Tracy Urban, Courtney Cassidy, Suhong Tong, Max Mitchell, Christopher Nichols, **Jesse Davidson**. Serum Endothelin-1 Level as a Biomarker of Concentric Left Ventricular Remodeling in Pediatric Coarctation of the Aorta. Pediatric Cardiac Intensive Care Society, Miami, Fl, December 2016.
 - 13) Urban TT, Mosley BS, Tong S, **Davidson JA**. Relationship between fluid overload, diuretic use and low electrolyte levels. Presented at Pediatric Cardiac Intensive Care Society, December 2016.
 - 14) **Davidson JA**, Urban TT, Tong S, Baird C, Maddux A, Hill G, Jagers J, Simões EAF, Wischmeyer P. Alkaline phosphatase and endotoxin activity after infant cardiopulmonary bypass. Presented at Pediatric Cardiac Intensive Care Society, December 2016.
 - 15) Jenna Flemming, Carine Renner, Christine Baird, Jon Henderson, Paul Wischmeyer, **Jesse Davidson**. Alkaline phosphatase alters clot initiation, amplification, and propagation in healthy human adult donors. Shock Conference, June 2017
 - 16) Anjali Sinha, Sarah van den Bosch, Boston Children's Hosp, Boston, MA; **Jesse Davidson**, Children's Hospital Colorado, Aurora, CO; Melissa N Smith-Parrish, Ann & Robert H. Lurie Children's Hosp of Chicago, Chicago, IL; Justin Elhoff, Texas Children's Hosp, Houston, TX; Joshua J Blinder, Children's Hosp of Philadelphia, Philadelphia, PA; John Nagi Kheir, Boston Children's Hosp, Boston, MA Hungry for more: applying the growth chart concept to the care we provide following congenital heart surgery. Presented at American Heart Association Annual Scientific Sessions, November 2017.

- 17) Tracy Urban*, **Jesse A Davidson***, Marisa Payan, Suhong Tong, and Daniel E Ehrmann. *co-first authors. The Relationship Between Loop Diuretic Resistant Fluid Overload and Electrolyte Abnormalities after Congenital Heart Surgery. Presented at Pediatric Cardiac Intensive Care Society, December 2017. The design of this study was similar to the version presented in 2016 but incorporated automated data extraction and a substantially larger sample size.
- 18) **Davidson JA**, Pfeifer Z, Urban TT, Frank B, Christians U, Wischmeyer PA, Klawitter J. Changes in metabolic pathways after infant cardiopulmonary bypass and association with mortality. Presented at Pediatric Academic Society May 2018. **Oral Presentation**
- 19) Watson JD, Urban TT, Tong S, Zenge J, Khailova L, **Davidson JA**. Intestinal fatty acid binding protein, early feeding outcomes, and signs of necrotizing enterocolitis in infants undergoing cardiopulmonary bypass. Presented at Pediatric Academic Society May 2018.
- 20) Robison JW, Khailova L, Trejo Bittar H, Tong SS, Vohwinkel C, Osorio Lujan SM, **Davidson JA**. Characterization of cardiopulmonary bypass associated acute lung injury in an infant piglet model. Presented at Pediatric Academic Society May 2018. **Oral Presentation**
- 21) Benjamin S Frank, Tracy T Urban, Karlise Lewis, Suhong Tong, Courtney Cassidy, Max B. Mitchell, Christopher S. Nichols, **Jesse A. Davidson**. Circulating Biomarkers of Left Ventricular Hypertrophy in Pediatric Coarctation of the Aorta. Presented at the American Heart Association 2018 Scientific Sessions November 2018.
- 22) Evan Pagano, Benjamin Frank, Jelena Klawitter, **Jesse Davidson**. Metabolite Alterations Associated with Hypoxemia in Infants with Cyanotic Heart Disease. Presented at Pediatric Cardiac Intensive Care Society International Meeting December 2018.
- 23) **Jesse Davidson**, Ludmila Khailova, Amy Treece, Justin Robinson, Danielle Soranno, James Jagers, Richard Ing, Scott Lawson, Suzanne Osorio Lujan. Alkaline Phosphatase Infusion in Infant Piglet Model of Cardiopulmonary Bypass with Deep Hypothermic Circulatory Arrest: Kinetics and Effect on Kidney Injury. Presented at the Pediatric Cardiac Intensive Care Society International Meeting December 2018. **Oral Presentation**
- 24) Czaja, Angela S.; Anderson, Heather; **Davidson, Jesse**; Valuck, Robert. Risk of ventricular arrhythmia & cardiac arrest among children with mental health diagnoses. Pediatric Academic Society February 2019.
- 25) Benjamin S. Frank, Karlise Lewis, Ludmila Khailova, Lori Silveira, Max B. Mitchell, Gareth J. Morgan, Mark Twite, D. Dunbar Ivy, Michael V. Di Maria,

Jelena Klawitter, **Jesse A. Davidson**. Endothelin-1 activation is associated with post-operative hypoxemia in infants with single ventricle heart disease undergoing superior cavo-pulmonary anastomosis. 4th European Conference on Neonatal and Paediatric Pulmonary Vascular Disease October 2019 **Oral Presentation**

- 26) Benjamin S. Frank, Karlise Lewis, Ludmila Khailova, Lori Silveira, Max B. Mitchell, Gareth J. Morgan, Mark Twite, Michael Di Maria, Jelena Klawitter, **Jesse A. Davidson**. Metabolomic Fingerprinting Identifies Significant Metabolic Pathway Alterations in Infants with Single Ventricle Heart Disease Prior to Superior Cavo-Pulmonary Anastomosis. AHA Scientific Sessions November 2019.
- 27) Benjamin S. Frank, Karlise Lewis, Ludmila Khailova, Lori Silveira, Max B. Mitchell, Gareth J. Morgan, Mark Twite, Michael Di Maria, Jelena Klawitter, **Jesse A. Davidson**. Global Shifts in the Matabolome of Infants with Single Ventricle Heart Disease Before and After Superior Cavo-Pulmonary Anastomosis. AHA Scientific Sessions November 2019.
- 28) **Jesse Davidson**, Benjamin Frank, Tracy Urban, Ludmila Khailova, Jelena Klawitter, Serum metabolic fingerprint of acute kidney injury following infant cardiac surgery with cardiopulmonary bypass. AHA Scientific Sessions November 2019.

Book Chapters

- 1) **Davidson J**, Schaffer M. Cyanotic Heart Disease. In: Berman's Pediatric Decision Making, Fifth Edition. Philadelphia: Elsevier, Inc; 2011, p. 538-541.
- 2) Francois Lacour-Gayet, Leo Lopez, **Jesse Davidson**, Eduardo da Cruz. Pulmonary Venous Stenosis. In book: Textbook of Pediatric and Congenital Cardiology, Cardiac Surgery and Cardiac Intensive Care, Edition: 1st, Publisher: Springer-Verlag London Ltd. 2014

Other Products of Scholarship

- 1) CHCO Anticoagulation Dosing and Monitoring Guidelines (2013):
<https://policyportal.childrenscolorado.org/policy/Documents/Anticoagulation%20Dosing%20and%20Monitoring%20Protocols.pdf#search=anticoagulation>
- 2) Heart Institute Research Intake Form (2014)
- 3) CHCO Dobutamine Stress Echocardiogram Procedure (2015, 2018):
<https://policyportal.childrenscolorado.org/policy/Documents/Dobutamine%20Stress%20Echocardiogram%20Procedure.pdf#search=dobutamine>
- 4) CHCO Blood Draw Volumes, Recommendations for Maximum (2018)

https://policyportal.childrenscolorado.org/policy/Documents/Blood%20Draw%20Volumes_Maximum.pdf#search=blood%20draw%20volumes