

CURRICULUM VITAE
12/15/2016
Daniel Eric Forsha MD, MHS, FASE

EDUCATION

1996-2000 University of Colorado at Boulder, Bachelor of Arts - Molecular, Cellular, & Developmental Biology
2003-2007 University of Colorado Health Sciences Center, Doctor of Medicine

POSTDOCTORAL TRAINING

2007-2010 Duke University Medical Center, Pediatric Residency
2010-2014 Duke University Medical Center, Pediatric Cardiology Fellowship
2011-2013 Duke University Medical Center, Clinical Research Training Program, Masters of Health Sciences in Clinical Research (MHS)

EMPLOYMENT

1997-2001 University of Colorado at Boulder, Molecular Biology Research Assistant
2001-2003 Pridemark Paramedics: Ambulance emergency medical technician, Boulder, CO
2014-current Children's Mercy Hospital, Assistance Professor, Cardiology, Kansas City, MO

ACADEMIC FACULTY APPOINTMENTS

2014-current University of Missouri at Kansas City School of Medicine. Assistant Professor

HOSPITAL PRIVILEGES

2014-current Children's Mercy Hospital, Kansas City, MO
Truman Medical Center, Kansas City, MO

HOSPITAL COMMITTEES

2015-current PL-1 Residency Competency Committee. Children's Mercy Hospital.

RESEARCH POSITIONS

2014-current Duke Visiting Research Scholar (volunteer position), Durham, NC

MENTOR/TEACHING ROLES

2016-present Faculty advisor for pediatric resident Catherine Koertje
2016-present Pediatric cardiology fellowship Scholastic Oversight Committee (SOC)
2016 Faculty mentor to resident David Skoglund-Professor Rounds Presentation (Myocarditis)
2016-current Clinic preceptor for cardiology fellows in outpatient clinic
2015-current Research mentor to pediatric cardiology imaging subspecialty fellow Sandhya Ramlogan
2014-current Research mentor to pediatric resident Simmi Arora

CERTIFICATION AND LICENSURE

2007-2010 State of North Carolina Medical Graduate Medical Education Temporary License
2010 American Board of Pediatrics Certification Exam - Pass
2010-2014 State of North Carolina Medical License, Number 2010-00976
2014 American Board of Pediatric Cardiology Certification Exam - Pass
2014-current State of Kansas, Certificate Number 04-37307
2014-current State of Missouri, Number 2014-020567

HONORS AND AWARDS

2000 Graduated *summa cum laude*, University of Colorado at Boulder, Undergraduate.
2003-2005 Dean's List for Academic Excellence, University of Colorado Health Sciences Center, Medical Student.
2007 Franklin Gengenbach Award (top pediatrics student), University of Colorado Health Sciences Center, Medical Student.
2007 Alpha Omega Alpha, University of Colorado Health Sciences Center, Medical Student.
2008 Teaching Award for Intern Year Resident, Duke Pediatrics.

2008-2009	Elected to Pediatrics Residency Council, Duke University Medical Center.
2009	Teaching Award for Second Year Resident, Duke Pediatrics.
2010	Best Senior Talk (presented at Departmental Grand Rounds): "Pediatric Obesity: The Exercise Effect and the Active TEENS Program."
2010	Deborah W. Kredich Award: Most Influential Resident, Duke Pediatrics Residency
2012	Highest Scoring Abstract: Euro Echo 2012 (Top 1% of all accepted abstracts): "A novel, approach to RV regional mechanics: methodology and normal ranges."
2013	High Scoring Pediatric Abstract: Duke Clinical Sciences Day 2013 (Top 4 abstracts) "Classic Pattern Dyssynchrony in Pediatric Dilated Cardiomyopathy."
2016	Top 20 selected poster presentation: CHOP Cardiology 2016. "Patterns of mechanical inefficiency in pediatric DCM and their related to LV function and clinical outcomes."

PROFESSIONAL SOCIETY MEMBERSHIPS & FELLOWSHIPS

2007-current	American Academy of Pediatrics
2007-current	Alpha Omega Alpha Honor Medical Society
2011-current	American Society of Echocardiography, Member
2012-current	Society of Pediatric Echocardiography, Member
2012-current	American Heart Association, Member
2013-2014	Heart Rhythm Society, Member
2013-current	American College of Cardiology
2015-current	Fellow of the American Society of Echocardiography (F.A.S.E.)

GRANTS

2011-2013	Ruth L. Kirschstein T-32 Research Training Grant Award.
2013	American Society of Echocardiography Pediatric Council Travel Grant Award.
2013-current	Medtronic Fellow Research Grant. "Activation delay induced heart failure in congenital heart disease." Extramural investigator initiated: \$75,000. Awardee: Daniel Forsha. Institution: Duke University Medical Center.

CLINICAL ACTIVITIES & EFFORT

2010-2014	Fellow, Pediatric Cardiology (Duke) Congenital Heart Disease Clinic (1 day/week) Pediatric Cardiology Inpatient Service, 3 months Pediatric Cardiology Consultation Service, 3 months Pediatric Cardiac Intensive Care Unit, 2.5 months Pediatric Cardiac Catheterization Lab, 3 months Pediatric Electrophysiology Lab, 2.5 months Research & Adult Echocardiography Lab, 8 months Pediatric Echocardiography Lab (basic), 4 months Pediatric Echocardiography Lab (TEE & Fetal), 5 months Cardiac MRI lab – level II certification (pediatric and adult MRI), 6 months
2014-current	Assistant Professor, Cardiology (Children's Mercy Hospital) Echocardiography (transthoracic and transesophageal), 2 day/week Cardiac MRI, 0.5 day/week Outpatient clinic, 0.5 day/week Cardiac mechanics research 2 day/week

TEACHING ACTIVITIES

Regional Presentations

2010	Departmental Grand Rounds: Pediatric Obesity: The Exercise Effect & the Active TEENS Program
2010	Pediatric Cardiology Lecture: Anomalous pulmonary venous connections
2010	Pediatric Cardiology Lecture: Embryogenesis of the conduction system
2010	Pediatric Cardiology Lecture: Approach to narrow complex tachycardia
2011	Pediatric Cardiology Lecture: Ventricular fibrillation: physiology and defibrillation
2011	Journal Club: CHD & Developmental and other Psychiatric Disorders. Circ 2011.

2011	Pediatric Cardiology Lecture: Heart rate variability: physiology, clinical applications
2011	Pediatric Cardiology Lecture: Anatomy of the normal & abnormal conduction system
2011	Pediatric Echo Training: Echo markers of RV function & pulmonary artery pressure
2012	Pediatric Cardiology Lecture: Pacemakers: timing diagrams, safety, and trouble-shooting
2012	Pediatric Cardiology Lecture: Long QT syndrome
2012	Pediatric Cardiology Lecture: Echo analysis of biventricular quantitative function
2012	Page Anderson Memorial Lecture: Regional cardiac mechanics in the RV
2012	Pediatric Cardiology Training: RV strain: summarizing what is known and unknown
2012	Visiting Professor Lecture (Bruce Keene): A sad case of inappropriate timing
2012	Journal Club: Dyssynchrony: Literature review and current clinical practices
2012	Combined Fetal/Cardiology Lecture: Fetal dysrhythmias
2013	Combined Pediatric and Adult Cardiology Lecture: How to Optimize Tomtec Analysis
2013	Page Anderson Memorial Lecture: Myocardial mechanics in single ventricles
2013	Pediatric Cardiology Lecture: Abnormal conduction anatomy in congenital heart disease
2014	Page Anderson Memorial Lecture: Echo parameters predict poor outcome in PPHN
2014	Pediatric Cardiology Lecture: Pulmonary atresia with intact ventricular septum review
2014	Pediatric Cardiology Lecture: Electro-mechanical coupling in congenital heart disease
2014	Journal Club: Predicting significant coarctation by echocardiography post-PDA closure
2014	Echo Lecture Series: The utility of strain imaging in pediatric & congenital heart disease
2015	Cardiology Core Lecture Series: Ventricular mechanics in normal & abnormal anatomy
2015	Echo Quality Improvement Quarterly Presentation
2015	Fellow Echo Boot Camp Series: Ventricular echo function
2015	Fellow Echo Boot Camp Series: Valvar echo function
2015	Echo Lecture Series: Common Errors in Echocardiography
2016	Echo Lecture Series: HLHS Physiology (Norwood & Glenn) with Hints for Imaging
2016	Echo Lecture Series: HLHS Physiology (Fontan & Beyond) with Hints for Imaging
2016	Pediatric Resident Lecture Series: Identifying & Treating Critical Cardiac Disease
2016	Echo Quality Improvement Quarterly Presentation
2016	Fellow lecture series: Ventricular function and mechanics

Regional Courses

2012	Applications and techniques of speckle tracking strain analysis in the right ventricle: Pediatric & adult combined echo training. Assistant course director. Duke University Medical Center, June 2012. Primary presenter: <ol style="list-style-type: none"> 1) Right ventricular structure and novel multi-planar RV apical imaging 2) Small group RV dyssynchrony practicum
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International Presentations

2013	Dyssynchrony & dysfunction in the systemic right ventricle and single ventricle populations. Toronto Sick Children's Hospital. Guest lecture. April, 2013.
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Invited Faculty Presentations

2015	American Society of Echocardiography Scientific Sessions. Presenter: Starting Off With Strain: The Single Ventricle. 6/13/2015. Boston, MA.
2016	American Society of Echocardiography Scientific Sessions. Presenter: Cardiac Resynchronization Therapy in Congenital Heart Disease. 6/12/2016. Seattle, WA.
2016	Kansas University Medical Center Obesity Conference (15 th annual). Presenter: Early Obesity-Related Cardiac and Peripheral Vascular Abnormalities in Children and Adolescents. 9/10/2016. Kansas City, MO.
2016	4 th Annual Children's Mercy Hospital Cardiac Forum Pre-Conference. Presenter: Activation delay induced mechanical dyssynchrony in congenital heart disease. Kansas City, MO.
2016	American Heart Association Scientific Sessions. Moderator: Rapid Fire Oral Abstract Session, Congenital Heart Surgery. 11/13/16. New Orleans, LA.

- 2017 CHOP Pediatric and Congenital Cardiovascular Disease Conference (20th annual).
Presenter: Role of imaging and effectiveness of CRT in patients with CHD. 2/22/17.
Orlando, FL.

Strain Echocardiography & Ventricular Mechanics National Consultant

- 2014 Lurie Children's Hospital. Gregory Webster. Potential CRT patient consult.
2016 Kosair Children's Hospital. Brian Holland. Building strain infrastructure/CRT patient.
2014-current Duke University Medical Center. Piers Barker. Potential CRT patient consults.
2016 Long Island Jewish Medical Center. Elizabeth Mitchell. Building strain infrastructure.
2016 Nicklaus Miami Children's Hospital. Ronald Kanter. Potential CRT patient consult.

JOURNAL REVIEWER

- 2012-current American Heart Journal
2014-current European Heart Journal Cardiovascular Imaging
2015-current Journal of the American Society of Echocardiography
2016-current Journal of Echocardiography
2016-current Europace journal
2016-current Cardiology in the Young

OTHER PROFESSIONAL ACTIVITIES

- 2015-current Echo lab core director, co-investigator. A 180 day GLP preclinical safety and performance evaluation of a cryopreserved, decellularized, and extracellular matrix conditioned pulmonary allograft heart valve (MatrACELL-Plus) in the Ovine Model. PI: Richard Hopkins. Sponsor LifeNet Health. Manuscripts pending.
- 2016-current Co-investigator. Pilot randomized controlled trial of necrotizing enterocolitis screening using abdominal radiograph vs bowel ultrasound plus radiograph in congenital heart disease. PI: Sherwin Chan. Submitting primary trial for NIH award.

PUBLICATIONS – JOURNALS (13) & BOOK CHAPTERS (1)

- Forsha D**, Risum N, Smith PB, Kanter RJ, Samad Z, Barker P, Kisslo J. Frequent activation delay induced mechanical dyssynchrony and dysfunction in the systemic right ventricle. *J Am Soc Echocardiogr.* 2016; 29: 1074-83. PMID 27624591.
- Forsha D**, Slorach C, Chen CK, Sherman A, Mertens L, Barker P, Kisslo J, Friedberg MK. Patterns of mechanical inefficiency in pediatric dilated cardiomyopathy and their relation to left ventricular function and clinical outcomes. *J Am Soc Echocardiogr.* 2016; 29(3): 226-36. PMID 26711366.
- Forsha D**, Risum N, Rajagopal S, Dolgner S, Hornik C, Barnhart H, Kisslo J, Barker P. The influence of angle of insonation and target depth on speckle tracking strain. *J Am Soc Echocardiogr.* 2015; 28(5): 580-6. PMID 25655402.
- Malowitz J, **Forsha DE**, Hornik C, Smith PB, Cotton M, Barker P, Tatum G. Right ventricular Echocardiographic indices predict poor outcomes in infants with persistent pulmonary hypertension of the newborn. *Eur J Cardovasc Imaging.* 2015; 16(11):1224-31. PMID 25851325.
- Thattaliyath BD, **Forsha DE**, Stewart C, Barker PCA, Campbell MJ. Evaluation of RV myocardial mechanics using VVI of cardiac MRI Cine images in transposition of the great arteries following atrial and arterial switch operations. *Cong Heart Dis.* 2015; 10(4):371-9. PMID 25655213.
- Forsha D**, Slorach C, Chen CK, Stephenson E, Risum N, Hornik C, Wagner G, Mertens L, Barker P, Kisslo J, Friedberg MK. Classic pattern dyssynchrony and electrical activation delays in pediatric dilated cardiomyopathy. *J Am Soc Echocardiogr.* 2014; 27(9):956-64. PMID 25063467.
- Forsha D**, Risum N, Smith PB, Kropf A, Rajagopal S, Samad Z, Kanter RJ, Barker P, Kisslo J. A novel, comprehensive RV strain analysis: Echocardiographic approach to define a normal adult population. *J Am Soc Echocardiogr.* 2014; 27(4): 413-22. PMID 24508364.
- Rajagopal S, **Forsha DE**, Risum N, Hornik CP, Poms AD, Fortin TA, Tapson VF, Velazquez EJ, Kisslo J, Samad Z. Comprehensive assessment of right ventricular function in patients with pulmonary hypertension with global longitudinal peak systolic strain. *J Am Soc Echocardiogr.* 2014; 27(6): 657-65. PMID 24656881.
- Campbell MJ, **Forsha D**, Barker P, Parra D, Soslow J. (2013) Applications and Test Characteristics of

- Velocity Vector Imaging Analysis in Congenital and Acquired Heart Disease Chapter. *Comprehensive textbook of echocardiography*. Nanda NC. Jaypee Brothers Medical Pub.
- Hill KD, Lodge AJ, **Forsha D**, Fleming GA, Green AS, Rhodes JF. A strategy for atrial septal defect closure in small children that eliminates long term wall erosion risk. *Catheter Cardiovasc Interv*. 2013; 81(4):654-9. PMID 22639441.
- Forsha D**, Rhodes J, Williams D, Lodge A, Li J. A rare coronary collateral in pulmonary atresia and intact ventricular septum with coronary sinusoids. *World J Ped & Cong Heart Surg*. 2012; 3(2): 255-59. PMID 23804785.
- Forsha D**, Li JS, Smith PB, van der Ploeg AT, Kishnani P, Pasquali SK; for the Late-Onset Treatment Study Investigators. Cardiovascular abnormalities in late-onset Pompe disease and response to enzyme replacement therapy. *Genet Med*. 2011; 13(7):625-31. PMID 21543987.
- Church C, Goehring B, **Forsha D**, Wazny P, Poyton RO. A role for Pet100p in the Assembly of Yeast Cytochrome *c* Oxidase: Interaction with a subassembly that Accumulates in a Pet100 mutant. *J Biol Chem*. 2005; 280(3): 1854-63. PMID 15507444.
- Forsha D**, Church C, Wazny P, Poyton RO. Structure and function of Pet100p, A Molecular Chaperon Required for the Assembly of Cytochrome *c* Oxidase in *Saccharomyces Cerevisiae*. *Biochem Soc Trans*. 2001; 29(Pt 4):436-41. PMID 11498004.

ABSTRACTS (15)

- Forsha D**, Li L, Joseph N, Kutty S, Freidberg MK. Association of left ventricular size and septal mechanics with right ventricular function and transplant-free survival in infants with hypoplastic left heart syndrome. *EuroEcho-Imaging 2016*. Primary Presenter. Poster.
- Forsha D**, Slorach C, Chen CK, Sherman A, Mertens L, Barker P, Kisslo J, Friedberg MK. Patterns of mechanical inefficiency in pediatric DCM and their related to LV function and clinical outcomes. *CHOP Cardiology 2016*, Orlando FL. Primary presenter. Top 20 selected poster presentation
- Forsha D**, Li L, Joseph N, Kutty S, Freidberg MK. Association of LV size and septal mechanics RV function and transplant-free survival in infants with HLHS. *AHA Scientific Sessions 2016*. Primary Presenter. Poster.
- Ramlogan S, France R, Schmidt S, Hinzman J, Sherman A, Goudar S, Shirali G, Risum N, Kisslo J, **Forsha D**. Intervendor reproducibility of left and right ventricular 2D speckle tracking strain in the structurally normal heart in infants and children. *ASE Scientific Sessions 2016*, Seattle WA. Final author & mentor. Poster.
- McCrary A, Kropf A, Britt M, Barker P, Kisslo J, **Forsha D**. Early mechanical dyssynchrony due to RBBB following surgical correction of TOF in infants. *ASE Scientific Sessions 2016*, Seattle WA. Final author & mentor. Poster.
- Forsha D**, Slorach C, Chen CK, Sherwin A, Mertens L, Barker P, Kisslo J, Friedberg MK. Patterns of mechanical inefficiency in pediatric DCM and their related to LV function and clinical outcomes. *ASE Scientific Session 2015*, Boston, MA. Primary presenter. Moderated poster.
- Forsha D**, Malowitz J, Smith PB, Cotton M, Barker P, Tatum G. RV echo indices predict poor outcomes in persistent pulmonary hypertension of the newborn. *ASE Scientific Session 2014*, Portland, OR. Primary presenter. Poster.
- Risum N, Tayal B, Hansen TF, Bruun NE, **Forsha D**, Saba S, Kisslo J, Gorcsan J, Sogaard P. The presence of a LBBB contraction pattern by strain imaging predicts long-term survival after CRT. *EuroECHO & other imaging modalities 2014*. Vienna, Austria. Moderated Poster.
- Forsha D**, Slorach C, Chen CK, Risum N, Hornik C, Sogaard P, Mertens L, Barker P, Kisslo J, Friedberg MK. Classic pattern dyssynchrony is associated with LBBB in pediatric DCM. *AHA Scientific Sessions 2013*, Dallas, TX. Primary presenter. Oral podium session.
- Forsha D**, Risum N, Rajagopal S, Hornik C, Kisslo J, Barker P. The influence of angle of insonation and target position on speckle tracked strain. *American Society of Echocardiography Scientific Sessions 2013*, Minneapolis, MN. Primary presenter. Poster.
- Forsha D**, Gamboa D, Risum N, Kropf A, Hornik CH, Kisslo J, Kanter RJ. Frequent dysfunction & dyssynchrony in V-paced, complete AV block in young asymptomatic patients having normal cardiac anatomy. *HRS Scientific Sessions 2013*, Denver, CO. Co-presenter. Poster.
- Forsha D**, Risum N, Smith PB, Samad Z, Kanter RJ, Barker P, Kisslo J. A novel, comprehensive RV strain analysis: Part 2 Frequently encountered ventricular activation abnormalities in the systemic

right ventricle. American Heart Association Scientific Sessions 2012, Los Angeles, CA. Primary presenter. Oral podium Session.

Forsha D, Risum N, Smith PB, Kropf A, Rajagopal S, Samad Z, Barker P, Kisslo J. A novel, comprehensive RV strain analysis: Part 1 Echo approach to define a normal adult population. American Heart Association Scientific Sessions 2012, Los Angeles, CA. Primary presenter. Poster.

Forsha D, Risum N, Samad Z, Smith PB, Rajagopal S, Kropf A, Barker P, Kisslo J. A novel, approach to RV regional mechanics: methodology and normal ranges. EUROECHO & other Imaging Modalities 2012, Athens, Greece. Poster. Top Abstract Awardee.

Forsha D, Hill KD, Lodge AJ, Fleming GA, Green AS, Rhodes JF. A strategy for atrial septal defect closure in small children that eliminates long term wall erosion risk. Duke pediatrics research conference 2012, Durham, NC. Primary presenter. Poster.

CIVIC AND VOLUNTEER ACTIVITIES

2000-2007 MESA rape crisis hotline counselor/supervisor: Provided phone counseling to survivors of rape dealing with acute and chronic issues. Oversaw training & supervision of phone counselors

2008-2014 Founder, Resident Director, Consultant: Active TEENS Exercise Program: Developed and directed a free exercise program for obese teens and their families in Durham, NC. Since its inception, it has provided free access to work-out facilities, fitness education, and a fun and active environment for over 300 underserved families.