

4th Annual Stanford University

Pediatric Cardiology

Boot Camp

Preliminary Agenda

Sunday, April 22 - Tuesday, April 24, 2018



Pediatric Cardiology Bootcamp

Intended Audience: Forty future first-year cardiology fellows from throughout North America starting their ACGME approved pediatric cardiology fellowship in July 2018 will be invited to attend Boot Camp. The pilot program in 2015 included Stanford cardiology fellows and expanded in 2016 to include fellows from throughout the Western United States and Canada. The 3rd annual boot camp in 2017 included 40 fellows from 23 different training programs all over North America.

Organizing Faculty/Course Directors:

1. **Scott R. Ceresnak, MD**
Associate Professor of Pediatrics, Cardiology
Associate Program Director, Pediatric Cardiology Fellowship
2. **Catherine D. Krawczeski, MD**
Professor of Pediatrics, Cardiology
Program Director, Pediatric Cardiology Fellowship
3. **David M. Axelrod, MD**
Clinical Associate Professor of Pediatrics, Cardiology
4. **Kara S. Motonaga, MD**
Clinical Assistant Professor of Pediatrics, Cardiology
5. **Loren Sacks, MD**
Clinical Assistant Professor of Pediatrics, Cardiology

Summary: 2 ½ day intensive course prior to the start of pediatric cardiology fellowship (April 2018) designed to provide future fellows an introduction to clinical cardiology, technical aspects of cardiology that are not taught as part of the residency curriculum, and cardiac emergencies that may be encountered as a cardiology fellow. The boot camp is designed to help give incoming fellows a hands-on introduction to clinical cardiology and enhance their preparation for fellowship. Additionally, incoming fellows have an opportunity to network with future colleagues.

Areas of Instruction: Clinical cardiology, electrophysiology, echocardiography, cardiovascular intensive care, cardiac catheterization, cardiac anatomy, pediatric heart failure and transplantation, pulmonary hypertension, cardiac surgery for congenital heart disease.

Course framework: A combination of didactic instruction, hands-on workshops, group learning, and simulation experiences taught by leaders in the field of pediatric cardiology. We also include a Pediatric Cardiology Preparatory Course, a series of basic online teaching modules in varied core pediatric cardiology topics to complete prior to the start of Boot Camp. The 2018 Boot Camp will feature guest faculty from additional institutions.

Course Outline

Technical workshops with group instruction with experts in the field held at the Li Ka Shing Center for Immersive and Simulation Based Learning at Stanford. Course topics include:

- Anatomy – hands-on sessions with heart specimens, dissection of animal hearts; virtual reality station
- Auscultation – basics of auscultation with “Harvey” simulation model
- Echocardiography – basics of the echo machine and probes, practicing basic echo techniques, identifying/interpreting the 5 basic ECHO views, checking for function and effusion.
- Electrophysiology – using a temporary pacing box commonly used after cardiac surgery, interrogating a pacer/ICD, navigating the telemetry system, performing surface and atrial ECG, basic ECG interpretation
- Cardiac catheterization – vascular access stations, basics of sheaths/wires/catheters, implantable devices
- Pulmonary hypertension – pathophysiology of PH, pharmacotherapy of PH (including Nitric Oxide), treatment of pulmonary hypertensive crisis
- VAD/MCS experience – hands-on training with Berlin Heart, HeartWare device, controllers and hand pumps; basics of ECMO; emergency management
- Cardiac surgery – basics of cardiopulmonary bypass
- Cardiovascular Intensive care – basics of cardiac monitoring, CPR training, resuscitation scenarios, mechanical circulatory support, pericardiocentesis, team training
- Simulation – simulation lab with clinical scenarios

Day #1 – Sunday April 22, 2018

7:15 – 7:30 am: Registration / Breakfast 7:30 – 7:45 am: Introduction to the Course

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7:45 – 8:45 am: Cardiac Surgery / CPB Review

8:45 – 9:00 am: Seldinger Technique Review (hands on)

9:15 – 11:45 am: Workshop 1a

Groups 1-4 = **Anatomy Stations**

Station 1 – Ventricular and Coronary Anatomy

Station 2 – Atrial Anatomy, Situs

Station 3 - Great Vessels, Systemic and Pulmonary Venous Anatomy

Station 4 – Surgical Considerations

Groups 5-8 = **Access Workshops**

Station 1 – Femoral Access

Station 2 – Internal Jugular Access with Techniques of Ultrasound Guidance

Station 3 - Pericardiocentesis

Station 4 – Movat Access Workshop

11:45 – 12:45pm: Lunch - Cardiology Jeopardy

12:45 – 3:15 pm: Workshop 1b

Groups 5-8 = **Anatomy Stations**

Station 1 – Ventricular and Coronary Anatomy

Station 2 – Atrial Anatomy, Situs

Station 3 - Great Vessels, Systemic and Pulmonary Venous Anatomy Station 4 – Surgical Considerations

Groups 1-4 = **Access Workshops**

Station 1 – Femoral Access

Station 2 – Internal Jugular Access with Techniques of Ultrasound Guidance

Station 3 - Pericardiocentesis

Station 4 – Movat Access Workshop

3:15 – 3:30 pm: **BREAK**

3:30 – 6:00 pm: Workshop 2a

Groups 1-4 = ECHO, Auscultation, Virtual Reality

Station 1 – Virtual Reality Anatomy

Station 2 – Basics of Echo Imaging

Station 3 – Basic Echo Interpretation

Station 4 – Auscultation - Harvey Simulator

Groups 5-8 = ECG Basics and Cath/Fluro Simulation

Station 1 – Performing Surface and Atrial ECGs, Telemetry Review

Station 2 - Zoll Defibrillator, LifeVest

Station 3 - 3D mapping and Pacemaker Placement Simulation

Station 4 - Cath Fluoroscopy Simulator

6:00 – 6:10pm – **Wrap-up for the Day**

6:15pm – Group **DINNER**

VR set up during dinner to allow participants to “play” at their leisure



Day #2 – Monday April 23, 2018

7:15 – 7:30 am: **Introduction** to the Day and Breakfast

7:30 – 8:30 am: **Catheterization / Hemodynamics Workshop**

8:30 – 10:30 am: Workshop 3a

Groups 1-4 = **Cardiac Pacing/ EP stations**

Station 1 – Basics of Pediatric ECG Interpretation

Station 2 - Pacemaker/ICD interrogation and Programming

Station 3 – Temporary Pacemaker Programming

Station 4 - Performing Surface and Atrial ECGs, Telemetry Review

10:30 – 12:30 pm: Workshop 3b

Groups 1-4 = **VAD /ECMO/Pediatric Heart Failure**

Station 1- Berlin Heart

Station 2 - HeartWare/Mate

Station 3 – ECMO

Station 4 – Case Based Management in Pediatric Heart Failure

****8:30 – 12:30 pm: SIM Session 1**

Groups 5 – 8 = 20 people, 4 scenarios, 5 people per “team”

12:30 – 1:30 pm: **Lunch/Networking - RAFFLE**

1:30 – 2:15 pm: **Pulmonary Hypertension**

2:15 – 3:00 pm: **Rapid Fire Images in Cardiology**

3:15 – 3:30 pm: **BREAK**

3:30 – 6:00 pm: Workshop 2b

Groups 5-8 = **ECHO, Auscultation, Virtual Reality**

Station 1 – Virtual Reality Anatomy

Station 2 –Basics of Echo Imaging

Station 3 – Basic Echo Interpretation

Station 4 – Auscultation - Harvey Simulator

Groups 1-4 = **ECG Basics and Cath/Fluro Simulation**

Station 1 - 3D mapping and Pacemaker Placement Simulation

Station 2 - Zoll Defibrillator, LifeVest

Station 3 - Arrhythmia Lab [Interactive, mini-sim]

Station 4 - Catheterization Fluoroscopy Simulation

6:00 pm: **DINNER** (LKSC Lawn) – VR set up during dinner to allow participants to “play”

Day #3 – Tuesday April 24, 2018

7:30 – 8:00 am: **Introduction to the Day**, Breakfast

8:00 – 10:00 am: Workshop 3b

Groups 5-8 = **Cardiac Pacing/ EP stations**

Station 1 – Basics of Pediatric ECG Interpretation

Station 2 - Pacemaker/ICD interrogation and Programming

Station 3 – Temporary Pacemaker Programming

Station 4 - Arrhythmia Lab [Interactive arrhythmia Lab, mini-sim]

10:00 – 12:00 pm: Workshop 3a

Groups 5-8 = **VAD /ECMO/Pediatric Heart Failure**

Station 1- Berlin Heart

Station 2 - HeartWare/Mate

Station 3 – ECMO

Station 4 – Case Based Management in Pediatric Heart Failure

****8:00 – 12:00 pm: SIM Session 2**

Groups 1 – 4 = 20 people, 4 scenarios, 5 people per “team”

12:00 – 1:00 pm: **Lunch, Post-Test, Survey and Wrap Up**

2018 Pediatric Cardiology Boot Camp



2017 Boot Camp Faculty

Christopher Almond, MD, MPH – Associate Professor of Pediatrics (Pediatric Cardiology) – Heart Failure
Alisa Arunamata, MD – Clinical Assistant Professor Pediatric (Pediatric Cardiology) – Echocardiography
Ritu Asija, MD – Clinical Associate Professor of Pediatrics (Pediatric Cardiology) – Cardiovascular Intensive Care
David Axelrod, MD – Clinical Associate Professor of Pediatrics (Pediatric Cardiology) – Cardiovascular Intensive Care
Daniel Bernstein, MD – Professor of Pediatrics (Pediatric Cardiology) – Heart Failure
Scott Ceresnak, MD – Associate Professor of Pediatrics (Pediatric Cardiology) - Electrophysiology
Sharon Chen, MD, MPH – Clinical Assistant Professor of Pediatrics (Pediatric Cardiology) – Heart Failure
R. Thomas Collins, MD – Clinical Associate Professor of Pediatrics (Pediatric Cardiology) – Echocardiography
Anne Dubin, MD – Professor of Pediatrics (Pediatric Cardiology) - Electrophysiology
Jeffrey Feinstein, MD, MPH – Professor of Pediatrics (Pediatric Cardiology) – Pulmonary Hypertension
Frank Hanley, MD – Professor of Surgery – Pediatric Cardiothoracic Surgery
Seth Hollander MD – Clinical Assistant Professor of Pediatrics (Pediatric Cardiology) – Heart Failure
Alaina Kipps, MD – Clinical Assistant Professor of Pediatrics (Pediatric Cardiology) - Echocardiography
Catherine Krawczeski, MD – Professor of Pediatrics (Pediatric Cardiology) – Cardiovascular Intensive Care
David Kwiatkowski, MD – Clinical Assistant Professor of Pediatrics (Pediatric Cardiology) – Cardiovascular Intensive Care
Shiraz Maskatia, MD – Clinical Assistant Professor of Pediatrics (Pediatric Cardiology) – Echocardiography /MRI
Katsuhide Maeda, MD – Assistant Professor of Surgery – Pediatric Cardiothoracic Surgery
Doff McElhinney, MD – Professor of Surgery – Pediatric Cardiothoracic Surgery
Kara Motonaga, MD – Clinical Assistant Professor of Pediatrics (Pediatric Cardiology) - Electrophysiology
Daniel Murphy, MD – Professor of Pediatrics (Pediatric Cardiology) – Echocardiography
Inger Olsen, MD – Clinical Associate Professor of Pediatrics (Pediatric Cardiology) - Echocardiography
Lynn Peng, MD – Clinical Associate Professor of Pediatrics (Pediatric Cardiology) – Interventional Cardiac Catheterization
Sushma Reddy, MD – Assistant Professor of Pediatrics (Pediatric Cardiology) – Cardiovascular Intensive Care
Olaf Reinhartz, MD – Associate Professor of Surgery – Pediatric Cardiothoracic Surgery
Anitra Romfh, MD – Clinical Assistant Professor (Pediatric Cardiology) – Adult Congenital
Loren Sacks, MD – Clinical Assistant Professor of Pediatrics (Pediatric Cardiology) – Cardiovascular Intensive Care
Norman Silverman, MD – Emeritus Professor (Pediatric Cardiology) - Echocardiography
Lillian Su, MD – Clinical Assistant Professor of Pediatrics (Pediatric Cardiology) – Cardiovascular Intensive Care
Theresa Tacy, MD – Associate Professor of Pediatrics (Pediatric Cardiology) - Echocardiography
Vamsi Yarlagadda, MD – Clinical Associate Professor of Pediatrics (Pediatric Cardiology) – Cardiovascular Intensive Care

Staff

Krista Jett, RN – CVICU
Christina Litzner, RN – CVICU
Mithras Maurille – Director of Non-Invasive Pediatric Cardiology Laboratory
Jenna Murray, PNP – Heart Failure
Michele Ogawa, NP – Pulmonary Hypertension
Lupe Romero-Villanueva – Pediatric Cardiology Fellowship Coordinator