SPCTPD/ACC/AAP/AHA Pediatric Training Statement

2015 SPCTPD/ACC/AAP/AHA Training Guidelines for Pediatric Cardiology Fellowship Programs
(Revision of the 2005 Training Guidelines for Pediatric Cardiology Fellowship Programs): Introduction

Robert D. Ross, MD, FAAP, FACC, Chair; Michael Brook, MD, Co-Chair;
Peter Koenig, MD, FACC, FASE; Jeffrey A. Feinstein, MD; Peter Lang, MD, FAAP, FACC;
Robert L. Spicer, MD, FAAP, FACC; Julie A. Vincent, MD, FAAP, FACC, FSCAI

Since the 2005 publication of the first “Training Guidelines for Pediatric Cardiology Fellowship Programs,” the field of pediatric cardiology has undergone significant growth and change, and thus, the Society of Pediatric Cardiology Training Program Directors (SPCTPD) in conjunction with the Joint Council of Congenital Heart Disease recommended the guidelines be revised accordingly. The SPCTPD board assembled a Steering Committee that nominated 2 chairs for each of the 8 Task Forces (7 as in the original document plus 1 for “advanced medical therapies,” i.e., heart failure, pulmonary hypertension, and cardiac transplantation). Six to 8 members were selected from a list of potential committee members representing a wide range of program sizes, geographic regions, and subspecialty focuses. Representatives from the American College of Cardiology, American Academy of Pediatrics, and American Heart Association participated. These participants, along with 1 Steering Committee member, comprised each Task Force. A Steering Committee member was added to provide perspective to each Task Force as a “nonexpert” in that field.

The authors developed the Task Force reports under guidance from the Task Force chairs, approved them for review by individuals selected by the participating organizations, and addressed the 258 comments submitted. The peer reviewers for each report are listed in an appendix in each Task Force report along with their employment information and affiliation in the review process. The final, complete document was approved by the Society of Pediatric Cardiology Training Program Directors, American Academy of Pediatrics, and the American Heart Association in February 2015 and by the American College of Cardiology in March 2015, and individual Task Force reports were endorsed by the organizations noted in each report.

During the process of updating the guidelines, a paradigm shift in medical education occurred. The change to competency-based training now requires trainees to achieve an expected level of competency in defined tasks (clinical and academic) rather than simply spending a predefined amount of time on a subspecialty service or performing a certain number of procedures to be considered fully "trained." The Task Forces were instead asked to outline the minimum amount of time or number of procedures required so that evaluators can make informed decisions on whether the fellow is competent, and if not, recommend further work in that area. The responsibility will be on the training programs to observe fellows in all aspects of their training and have the newly developed clinical competency committees review their performance and evaluations, and provide feedback on their degree of competency.

The American Board of Pediatrics, the certifying agency of graduating fellows, has directed that the concept of entrustable professional activities (EPAs) be utilized as a framework to identify and evaluate a trainee’s ability to independently...

The cover page and task force reports for these Training Guidelines for Pediatric Cardiology Fellowship Programs are available online at http://circ.ahajournals.org (Circulation. 2015;132:e41–e42; e48–e56; e57–e67; e68–e74; e75–e80; e81–e90; e91–e98; e99–e106; and e107–e113).


This article is copublished in Journal of the American College of Cardiology.

The online-only Comprehensive RWI Data Supplement table is available with this article at http://circ.ahajournals.org/lookup/suppl/doi:10.1161/CIR.0000000000000191/-/DC1.

Copies: This document is available on the World Wide Web sites of the Society of Pediatric Cardiology Training Program Directors (http://spctpd.com), the American College of Cardiology (www.acc.org), the American Academy of Pediatrics, (www.aap.org), and the American Heart Association (my.americanheart.org); A copy of the document is available at http://my.americanheart.org/statements by selecting either the “By Topic” link or the “By Publication Date” link. To purchase additional reprints, call 843-216-2533 or e-mail kelle.ramsay@wolterskluwer.com.

Permissions: Multiple copies, modification, alteration, enhancement, and/or distribution of this document are not permitted without the express permission of the American Heart Association. Instructions for obtaining permission are located at http://www.heart.org/HEARTORG/General/Copyright-Permission-Guidelines_UCM_300404_Article.jsp. A link to the “Copyright Permissions Request Form” appears on the right side of the page.

(Circulation. 2015;132:e43–e47. DOI: 10.1161/CIR.0000000000000191.)

© 2015 by the Society of Pediatric Cardiology Training Program Directors, American College of Cardiology Foundation, American Academy of Pediatrics, and the American Heart Association, Inc.
practicing the fundamental professional work that defines our discipline. EPAs are observable and measurable and can be mapped to competencies and milestones across the entire landscape of physician activities from medical school throughout a career of practice. Being entrusted to move on through the fellowship program and to graduate will be determined by fellowship clinical competency committees, the scholastic oversight committees, and the program directors and will serve as the basis for determining board eligibility in the subspecialty.

For each EPA, there are 5 levels of entrustment, which for this document have been modified as follows:

- **Level 1**: The fellow has baseline knowledge and skills but is not allowed to perform the EPA independently.
- **Level 2**: The fellow may act under proactive, ongoing, full supervision.
- **Level 3**: The fellow may act under reactive supervision (i.e., the supervisor observes and only participates on request or when the supervisor feels he or she is needed).
- **Level 4**: The fellow may act independently upon graduation.
- **Level 5**: The graduate may act as a supervisor and instructor.

The Accreditation Council of Graduate Medical Education (ACGME) and American Board of Pediatrics (ABP) have worked closely in an effort to identify EPAs that pertain to all pediatric subspecialties, including cardiology. At this time, they have suggested that the following common activities should be achieved by all graduating fellows:

1. Provide for and obtain consultation from other health-care providers caring for children (see Task Force 1: General Cardiology).
2. Apply public health principles and improvement methodology to improve care for populations, communities, and systems.
3. Lead and work within interprofessional healthcare teams.
4. Facilitate handovers to another healthcare provider including the transition from pediatric to adult healthcare (see Task Force 6: Adult Congenital Heart Disease).
5. Contribute to the fiscally sound and ethical management of a practice (through billing, scheduling, coding, and record-keeping practices).
6. Engage in scholarly activities through the discovery, application, and dissemination of new knowledge (see Task Force 8: Research).
7. Lead within the subspecialty profession.

Additional EPAs specific for pediatric cardiology delineated by this training statement are:

8. Diagnose and manage congenital or acquired cardiac problems (see Task Force 1: General Cardiology and Task Force 6: Adult Congenital Heart Disease).
9. Diagnose and manage patients with acute congenital or acquired cardiac problems requiring critical care (see Task Force 5: Critical Care Cardiology).
10. Care for patients who require catheter-based intervention (see Task Force 3: Cardiac Catheterization).
11. Diagnose and manage patients with arrhythmias and conduction abnormalities (see Task Force 4: Electrophysiology).
12. Acquire the imaging skills required for all aspects of pediatric cardiology care (see Task Force 2: Noninvasive Cardiac Imaging).
13. Diagnose, initially manage, and refer children with advanced or end-stage heart failure and/or pulmonary hypertension to experts for medical therapy, extracorporeal membrane oxygenation, ventricular assist device, and/or cardiac transplantation (see Task Force 7: Pulmonary Hypertension, Advanced Heart Failure, and Transplantation).

The curricula for these EPAs are delineated for general pediatric cardiology training as well as for all of the subspecialties in the field. Within each Task Force report, the fellow teaching and evaluation process should be designed to foster progression from having basic knowledge and skills (Level 1) to being able to capably perform the particular set of activities independently (Level 4). This will be achieved by using the suggested evaluation tools to grade the specific milestones that describe the levels of ability, and range from novice to expert. All trainees must acquire Level 4 expertise, the ability to act independently, in the core curriculum by the conclusion of the standard pediatric cardiology fellowship program.

Lifelong learning skills must then be fostered so that growth continues after successful completion of formal training. Fellows are not expected to reach Level 5 expertise, the competency to act as a supervisor or instructor, for EPAs upon graduation, but they will continue to strive toward Level 5 expertise throughout their career, particularly in their areas of interest. Training programs will be responsible for attesting to the certifying boards and the public that trainees have these capabilities and skills.

The format of these revisions conforms to the original version, in which core training concentrates on what is expected of fellows going through the standard 3 years of fellowship training in an ACGME-accredited institution. This is followed by an outline of advanced training that delineates what is entailed for a fellow who continues training beyond the 3 years to obtain subspecialty expertise. Some subspecialties have documented advanced training elsewhere, and some have developed examinations for graduates. There are no such examinations provided by the ABP for advanced certification in pediatric cardiology training, although the ABP does sanction the American Board of Internal Medicine examination in adult congenital heart disease for qualified pediatric cardiology graduates who complete the requisite adult cardiology training.

As in residency training, fellows are required to be proficient in the 6 core competency domains delineated by the ACGME in each of the pediatric cardiology subspecialties. The differences between residency and fellowship are most evident in the medical knowledge and the patient care and procedural skills components that are the main foci of each Task Force report. The additional 4 ACGME competency domains—systems-based practice, practice-based learning and improvement, professionalism, and interpersonal and communication skills—are also important to pediatric...
cardiology training and are highlighted in all areas of Table 1. All competencies are accompanied by a list of evaluation tools suitable for assessment of competence. Many Task Forces discuss participation in the quality improvement process as trainees rotate on the particular subspecialty service. The expectation is that the fellows participate by attending quality assurance meetings and mortality and morbidity conferences, but they need only initiate 1 quality improvement project during their core training that they see to completion in any area of pediatric or adult/congenital cardiology.

The curriculum outlined by each Task Force and the milestones listed delineate the knowledge and skills that each fellow should achieve by completion of the 3 years of core fellowship training. Careful monitoring and mentoring of each fellow along the way should ensure that these goals are achieved. This process should culminate in a senior fellow demonstrating confidence in the ability to care for all varieties of patients encountered in the field of pediatric cardiology and strong progress in the particular subspecialty area of interest. This frequently is tested by having an “Acting Attending” month toward the end of the fellowship, where fellows lead the inpatient service and the teaching of residents and junior fellows under the watchful eye of the faculty, who are there for support and consultation.

Acknowledgment
The Steering Committee would like to acknowledge the diligent work and guidance in the preparation of this manuscript of Dawn R. Phoubandith, MSW, Director, Competency Management, American College of Cardiology.

References
2. ten Cate O, Snell L, Carraccio C. Medical competence: the interplay between individual ability and the health care environment. Med Teach. 2010;32:669–75.

Key Words: AHA Scientific Statements ■ clinical competence ■ fellowship training ■ pediatric cardiology ■ quality improvement
### Appendix 1. Author Relationships With Industry and Other Entities (Relevant)—2015 SPCTPD/ACC/AAP/AHA Training Guidelines for Pediatric Cardiology Fellowship Programs: Introduction

<table>
<thead>
<tr>
<th>Committee Member</th>
<th>Employment</th>
<th>Consultant</th>
<th>Speakers Bureau</th>
<th>Ownership/Partnership Principal</th>
<th>Personal Research</th>
<th>Institutional/Organizational or Other Financial Benefit</th>
<th>Expert Witness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert D. Ross (Chair)</td>
<td>Children’s Hospital of Michigan, Wayne State University School of Medicine—Director of Fellowship Programs and The Pulmonary Hypertension Program</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Michael Brook (Co-Chair)</td>
<td>University of California-San Francisco—Professor of Pediatrics; Director of Pediatric Echocardiography; Director of Pediatric Cardiology Fellowship Training</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Jeffrey A. Feinstein</td>
<td>Stanford University—Professor, Pediatrics and by courtesy BioEngineering; Lucile Packard Children’s Hospital, Stanford—Director, Pediatric Pulmonary Hypertension Service, Dunlevie Family Chair in Pulmonary Vascular Disease</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Peter Koenig</td>
<td>Ann &amp; Robert H. Lurie Children’s Hospital of Chicago—Pediatric Cardiology Fellowship Director; Northwestern University Feinberg School of Medicine—Associate Professor of Pediatrics</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Peter Lang</td>
<td>Boston Children’s Hospital—Senior Associate in Cardiology; Director Emeritus, Fellowship Training Program in Pediatric Cardiology and Cardiovascular Research; Harvard Medical School—Associate Professor of Pediatrics</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Robert L. Spicer</td>
<td>University of Nebraska and Creighton University Schools of Medicine—Professor of Pediatrics; Children’s Hospital &amp; Medical Center—Chief of Cardiology</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Julie A. Vincent</td>
<td>Columbia University, College of Physicians and Surgeons—Division Chief, Pediatric Cardiology; Welton M Gersony Associate Professor of Pediatric Cardiology; Associate Professor of Pediatrics at CUMC; New York-Presbyterian Hospital—Director, Pediatric Interventional Cardiology</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

For the purpose of developing a general cardiology training statement, the American College of Cardiology (ACC) determined that no relationships with industry (RWI) or other entities were relevant. This table reflects authors’ employment and reporting categories. To ensure complete transparency, authors’ comprehensive healthcare-related disclosure information—including RWI not pertinent to this document—is available in an online data supplement. Please refer to http://www.acc.org/guidelines/about-guidelines-and-clinical-documents/relationships-with-industry-policy for definitions of disclosure categories, relevance, or additional information about the ACC Disclosure Policy for Writing Committees.
### Appendix 2. Peer Reviewer Relationships With Industry and Other Entities (Relevant)-2015 SPCTPD/ACC/AAP/AHA Training Guidelines for Pediatric Cardiology Fellowship Programs: Introduction

<table>
<thead>
<tr>
<th>Name</th>
<th>Employment</th>
<th>Representation</th>
<th>Consultant</th>
<th>Speakers Bureau</th>
<th>Ownership/Partnership/Principal</th>
<th>Personal Research</th>
<th>Institutional/Organizational or Other Financial Benefit</th>
<th>Expert Witness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dianne Atkins</td>
<td>University of Iowa—Division of Pediatric Cardiology</td>
<td>AHA</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Antonio Cabrera</td>
<td>Texas Children’s Hospital—Pediatric Cardiology</td>
<td>AAP</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Bruce Gelb</td>
<td>Mount Sinai Medical Center—Professor, Pediatrics</td>
<td>AHA</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Seema Mital</td>
<td>Hospital for Sick Children—Pediatric Cardiology</td>
<td>AHA</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Sara Pasquali</td>
<td>University of Michigan Health System—Associate Professor of Pediatrics</td>
<td>AAP</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Swee Chye Quek</td>
<td>National University of Singapore, Department of Pediatrics</td>
<td>ACC ACPC Council</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Jonathan Rome</td>
<td>Children’s Hospital of Philadelphia</td>
<td>AHA</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Craig Sable</td>
<td>Children’s National Medical Center—Training Director</td>
<td>AHA</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Timothy Slesnick</td>
<td>Emory University—Assistant Professor, Pediatric Cardiology</td>
<td>AHA</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Eric S. Williams</td>
<td>Indiana University School of Medicine—Professor (Cardiology) and Associate Dean; Indiana University Health, Cardiology Service Line Leader</td>
<td>ACC CMC Lead Reviewer</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

For the purpose of developing a general cardiology training statement, the ACC determined that no relationships with industry or other entities were relevant. This table reflects peer reviewers’ employment, representation in the review process, as well as reporting categories. Names are listed in alphabetical order within each category of review. Please refer to [http://www.acc.org/guidelines/about-guidelines-and-clinical-documents/relationships-with-industry-policy](http://www.acc.org/guidelines/about-guidelines-and-clinical-documents/relationships-with-industry-policy) for definitions of disclosure categories, relevance, or additional information about the ACC Disclosure Policy for Writing Committees.

AAP indicates American Academy of Pediatrics; ACC, American College of Cardiology; ACPC, Adult Congenital and Pediatric Cardiology; AHA, American Heart Association; and CMC, Competency Management Committee.
2015 SPCTPD/ACC/AAP/AHA Training Guidelines for Pediatric Cardiology Fellowship Programs (Revision of the 2005 Training Guidelines for Pediatric Cardiology Fellowship Programs): Introduction
Robert D. Ross, Michael Brook, Peter Koenig, Jeffrey A. Feinstein, Peter Lang, Robert L. Spicer and Julie A. Vincent

Circulation. 2015;132:e43-e47; originally published online March 13, 2015; doi: 10.1161/CIRC.0000000000000191

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2015 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circ.ahajournals.org/content/132/6/e43

An erratum has been published regarding this article. Please see the attached page for:
/content/133/13/e465.full.pdf

Data Supplement (unedited) at:
http://circ.ahajournals.org/content/suppl/2015/03/12/CIR.0000000000000191.DC1

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation is online at:
http://circ.ahajournals.org/subscriptions/
In the article by Ross et al, “2015 SPCTPD/ACC/AAP/AHA Training Guidelines for Pediatric Cardiology Fellowship Programs (Revision of the 2005 Training Guidelines for Pediatric Cardiology Fellowship Programs): Introduction,” which published online March 13, 2015, and appeared in the August 11, 2015, issue of the journal (Circulation. 2015;132:e43-e47, doi: 10.1161/CIR.0000000000000191), several corrections were needed.

1. On page e43, the author block read,
   Robert D. Ross, MD, FAAP, FACC, Chair; Michael Brook, MD, Co-Chair; Jeffrey A. Feinstein, MD; Peter Koenig, MD, FACC, FASE; Peter Lang, MD, FAAP, FACC; Robert L. Spicer, MD, FAAP, FACC; Julie A. Vincent, MD, FAAP, FACC, FSCAI
   The author block now reads,
   Robert D. Ross, MD, FAAP, FACC, Chair; Michael Brook, MD, Co-Chair; Peter Koenig, MD, FACC, FASE; Jeffrey A. Feinstein, MD; Peter Lang, MD, FAAP, FACC; Robert L. Spicer, MD, FAAP, FACC; Julie A. Vincent, MD, FAAP, FACC, FSCAI

2. On page e43, in the footnotes, the order of the authors’ names in the citation information paragraph was amended. The citation information paragraph read,
   It now reads:

3. On page e47, in Appendix 2, employment information for Dr. Eric Williams was amended to render it consistent with other reports. The employment information read, “Indiana University School of Medicine, Krannert Institute of Cardiology—Professor of Medicine.” It now reads, “Indiana University School of Medicine—Professor (Cardiology) and Associate Dean; Indiana University Health, Cardiology Service Line Leader.”

These corrections have been made to the current online version of the article, which is available at http://circ.ahajournals.org/content/132/6/e43.full.
<table>
<thead>
<tr>
<th>Committee Member</th>
<th>Employment</th>
<th>Consultant</th>
<th>Speaker’s Bureau</th>
<th>Ownership/Partnership/Principal</th>
<th>Personal Research</th>
<th>Institutional/Organizational or Other Financial Benefit</th>
<th>Expert Witness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robert D. Ross (Chair)</td>
<td>Children’s Hospital of Michigan, Wayne State University School of Medicine—Director, Fellowship Programs and Director, The Pulmonary Hypertension Program</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Michael Brook (Co-Chair)</td>
<td>University of California-San Francisco—Professor of Pediatrics, Director, Pediatric Echocardiography, and Director, Pediatric Cardiology Fellowship Training</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>• Defendant, 2014</td>
</tr>
<tr>
<td>Peter Koenig</td>
<td>Ann &amp; Robert H. Lurie Children’s Hospital of Chicago—Director, Pediatric Cardiology Fellowship; Northwestern University Feinberg School of Medicine—Associate Professor of Pediatrics</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Jeffrey A. Feinstein</td>
<td>Stanford University—Professor of Pediatrics and, by courtesy, BioEngineering; Lucile Packard Children’s Hospital, Stanford—Director, Pediatric Pulmonary Hypertension Service and Dunlevie Family Chair in Pulmonary Vascular Disease</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>• United Therapeutics*</td>
<td>None</td>
</tr>
<tr>
<td>Peter Lang</td>
<td>Boston Children’s Hospital—Senior Associate in Cardiology and Director Emeritus, Fellowship Training Program in Pediatric Cardiology and Cardiovascular Research; Harvard Medical School—Associate Professor of Pediatrics</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Robert Spicer</td>
<td>Children’s Hospital &amp; Medical Center, Division of Pediatric Cardiology—Clinical Service Chief, Cardiology</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Julie A. Vincent</td>
<td>Columbia University, College of Physicians and Surgeons—Division Chief, Pediatric Cardiology, Welton M Gersony Associate Professor of Pediatric Cardiology, and</td>
<td>• Medtronic</td>
<td>None</td>
<td>None</td>
<td>• Edwards Lifesciences†</td>
<td>• St. Jude Medical</td>
<td>None</td>
</tr>
</tbody>
</table>
Associate Professor of Pediatrics at CUMC; New York-Presbyterian Hospital—Director, Pediatric Interventional Cardiology

This table represents all healthcare relationships of committee members with industry and other entities by authors, including those not deemed to be relevant, at the time this document was under development. The table does not necessarily reflect relationships with industry at the time of publication. A person is deemed to have a significant interest in a business if the interest represents ownership of \( \geq 5\% \) of the voting stock or share of the business entity, or ownership of \( \geq \$10,000 \) of the fair market value of the business entity; or if funds received by the person from the business entity exceed \( 5\% \) of the person’s gross income for the previous year. Relationships that exist with no financial benefit are also included for the purpose of transparency. Relationships in this table are modest unless otherwise noted. Please refer to [http://www.acc.org/guidelines/about-guidelines-and-clinical-documents/relationships-with-industry-policy](http://www.acc.org/guidelines/about-guidelines-and-clinical-documents/relationships-with-industry-policy) for definitions of disclosure categories or additional information about the ACCF Disclosure Policy for Writing Committees.

*Significant relationship.
†No financial benefit.