

Curriculum Vitae

Part I: General Information

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Name: Andrew James Powell

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Place of birth: New York, NY

Education:

1988 B.A. Harvard College, Cambridge, MA
1992 M.D. Harvard Medical School, Boston, MA

Postdoctoral Training:

1992-93	Intern	Pediatric Medicine	Children's Hospital Boston
1993-95	Resident	Pediatric Medicine	Children's Hospital Boston
1995-98	Fellow	Pediatric Cardiology	Children's Hospital Boston
1997-98	Chief Fellow	Pediatric Cardiology	Children's Hospital Boston

Licensure and Certification:

1993 Diplomate of the National Board of Medical Examiners
1995-present Board of Registration in Medicine, Commonwealth of Massachusetts
1995-present Diplomate in Pediatrics, American Board of Pediatrics
1998-present Diplomate in Pediatric Cardiology, American Board of Pediatrics

Academic Appointments:

1992-98	Clinical Fellow in Pediatrics	Harvard Medical School
1998-2001	Instructor in Pediatrics	Harvard Medical School
2001-present	Assistant Professor of Pediatrics	Harvard Medical School

Hospital or Affiliated Institution Appointments:

1992-95 House Officer, Children's Hospital Boston
1995-98 Fellow in Cardiology, Children's Hospital Boston
1997-present Associate Staff in the Division of Pediatrics, Boston Medical Center

1998-2001	Assistant in Cardiology, Department of Cardiology, Children's Hospital
2001-present	Associate in Cardiology, Department of Cardiology, Children's Hospital
2002-present	Affiliate Staff, Department of Newborn Medicine, Brigham and Women's Hospital
2003-present	Courtesy Staff, Department of Radiology, Children's Hospital Boston

Hospital and Health Care Organization Service Responsibilities:

1998-present	Attending, Echocardiography Laboratory, Children's Hospital Boston
1998-present	Attending, Cardiology Outpatient Clinic, Children's Hospital Boston
1998-present	Attending, Cardiac MRI Service, Children's Hospital Boston
1998-present	Attending, Cardiology Inpatient Service, Children's Hospital Boston
2001-02, 2007-	Attending, Cardiology Consult Service, Children's Hospital Boston

Major Administrative Responsibilities:

2002-03	Board of Directors, Boston Children's Heart Foundation, Boston, MA
2003-05	Course Director, 3 rd and 4 th Year Medical Student Pediatric Cardiology Clerkship, Harvard Medical School and Boston University School of Medicine
2003-present	Medical Director, Cardiovascular Program Information Technology
2006-present	Director, Cardiovascular Magnetic Resonance Program, Children's Hospital Boston, Boston, MA

Committee Assignments:

Institutional

1994	Residency Committee, Children's Hospital Boston
1995	Cystic Fibrosis Clinical Practice Guideline Group, Children's Hospital Boston
1995	Resident-Fellow Steering Committee, Children's Hospital Boston
1997	Intern Selection Interviewer, Dept. of Medicine, Children's Hospital Boston
1996-99	Curriculum Committee, Department of Cardiology, Children's Hospital Boston
2003	Cause for Wonder Capital Campaign, Children's Hospital Boston
2004	Cardiovascular Program Website Steering Committee, Children's Hospital Boston
2005-present	MRI Safety Committee, Children's Hospital Boston
2005-present	MRI Research Committee, Children's Hospital Boston
2006	Graduate Medical Education Review Committee, Children's Hospital Boston
2007-present	Arterial Switch Operation Clinical Practice Guideline Committee, Department of Cardiology, Chairman
2007-present	Anomalous Coronary Artery Origin from the Opposite Sinus Clinical Practice Guideline Committee, Department of Cardiology, Member

2007-present Department of Cardiology Fellow Selection Committee, Children's Hospital Boston

National

2001 General Electrical Magnetic Resonance Imaging Pediatric Medical Advisory Board
 2006-present American Society of Echocardiography Information Technology Committee
 2007-present Invivo Medical Advisory Board

International

2006-2008 Society for Cardiovascular Magnetic Resonance, Education Committee
 2006-present Society for Cardiovascular Magnetic Resonance, Program Committee

Professional Society Involvement:

1992-present	Massachusetts Medical Society	Member
1994-95	American Academy of Pediatrics	Member
1996-present	American Heart Association	Member
1997-present	American College of Cardiology	Fellow
1997-present	American Society of Echocardiography	Fellow
2001-present	Society for Cardiovascular Magnetic Resonance	Member
2003-present	Society of Pediatric Echocardiography	Member
2004-present	Society for Pediatric Research	Member
2006-present	International Society of Magnetic Resonance in Medicine	Member

Editorial Boards:

1998	Ad hoc reviewer, <i>Pediatric Cardiology</i>
2001	Ad hoc reviewer, <i>American Journal of Cardiology</i>
2003, 2006	Ad hoc reviewer, <i>Journal of the American College of Cardiology</i>
2002, 2004-06	Ad hoc reviewer, <i>Circulation</i>
2004, 2005	Abstract grader (Pediatric Imaging), American Heart Association
2004-06	Abstract grader (Adult and Congenital Heart Disease), American College of Cardiology
2005	Ad hoc reviewer, <i>New England Journal of Medicine</i>
2006-08	Ad hoc reviewer, <i>Journal of Cardiovascular Magnetic Resonance</i>
2008	Ad hoc reviewer, <i>Cardiology</i>
2008	Ad hoc reviewer, <i>Circulation</i>
2008	Advisory Editorial Board, <i>Pediatric Cardiology</i>

Awards and Honors:

1984-85	Detur Prize for Outstanding Academic Achievement, Harvard College
1985-88	John Harvard Scholar, Harvard College
1988	Summa cum laude, Harvard College
1988	Phi Beta Kappa, Harvard College
1988	Hoopers Prize and grade of Summa for undergraduate honors thesis

1998	Chief Fellow in Cardiology, Children's Hospital, Boston
2001	Fellow of the American College of Cardiology
2004	Fellow of the American Society of Echocardiography
2004	Society of Pediatric Research, Elected Member
2006	Selected for the American College of Cardiology Foundation Emerging Faculty Program
2006	Honorary member of the Italian Society for Pediatric Cardiology
2007	Children's Hospital Cardiology Fellows' Faculty Teaching Award

Part III: Bibliography

Original Articles

1. Kram R, **Powell AJ**. A treadmill-mounted force platform. *Journal of Applied Physiology* 1989;67(4):1692-1698.
2. **Powell AJ**, Lock JE, Keane JF, Perry SB. Prolongation of RV-PA conduit life span by percutaneous stent implantation: Intermediate-term results. *Circulation* 1995;92:3282-3288.
3. Geva T, **Powell AJ**, Crawford EC, Chang T, Colan SD. Evaluation of regional differences in right ventricular systolic function by acoustic quantification echocardiography and cine magnetic resonance imaging. *Circulation* 1998;98:339-345.
4. **Powell AJ**, Chung T, Maier SE, Geva T. Phase velocity cine MRI measurement of pulsatile blood flow: In vitro and in vivo validation. *Pediatric Cardiology* 2000;21:104-110.
5. Okuda S, Kikinis R, Geva T, Chung T, Dumanli H, **Powell AJ**. 3D shaded surface rendering of gadolinium-enhanced MR angiography in congenital heart disease. *Pediatric Radiology* 2000;30:540-545.
6. Need LR, **Powell AJ**, del Nido P, Geva T. Coronary echocardiography in tetralogy of Fallot: diagnostic accuracy, resource utilization, and surgical implications over 13 years. *Journal of the American College of Cardiology* 2000;36:1371-7.
7. **Powell AJ**, Lang P, Mayer JE, Lock JE. Outcome in infants with pulmonary atresia, intact ventricular septum, and right ventricle dependent coronary circulation. *American Journal of Cardiology* 2000;86:1272-1274.
8. **Powell AJ**, Chung T, Landzberg MJ, Geva T. Accuracy of MRI evaluation of pulmonary blood supply in patients with complex pulmonary stenosis or atresia. *The International Journal of Cardiac Imaging* 2000;16:169-174.

9. **Powell AJ**, Gauvreau, Jenkins KJ, Blume ED, Mayer JE, Lock JE. Perioperative risk factors for development of protein losing enteropathy following a Fontan procedure. *American Journal of Cardiology* 2001;88:1206-1209.
10. Greil GF, Geva T, Maier SE, **Powell AJ**. Effect of acquisition parameters on the accuracy of phase velocity cine MRI blood flow measurements. *Journal of Magnetic Resonance Imaging* 2002;15:47-54.
11. Greil GF, **Powell AJ**, Gildein HP, Geva T. Gadolinium-enhanced 3-dimensional MR angiography of pulmonary and systemic venous anomalies. *Journal of the American College of Cardiology* 2002;39:335-341.
12. Greil GF, Stuber M, Botnar RM, Kissinger KV, Geva T, Newburger JW, Manning WJ, **Powell AJ**. Coronary magnetic resonance angiography in adolescents and young adults with Kawasaki disease. *Circulation* 2002;105:908-911.
13. Kiaffas MG, **Powell AJ**, Geva T. Magnetic resonance evaluation of cardiac tumor characteristics in infants and children. *American Journal of Cardiology* 2002;89:1229-1233.
14. Geva T, Greil GF, Marshall AC, Landzberg M, **Powell AJ**. Gadolinium-enhanced 3-dimensional magnetic resonance angiography of pulmonary blood supply in patients with complex pulmonary stenosis or atresia: comparison with x-ray angiography. *Circulation* 2002;106:473-478.
15. O'Donnell CP, Lock JE, **Powell AJ**, Perry SB. Compression of pulmonary veins between the left atrium and the descending aorta. *American Journal of Cardiology* 2003;91:248-251.
16. **Powell AJ**, Tsai-Goodman B, Prakash A, Greil GF, Geva T. Comparison between phase-velocity cine magnetic resonance imaging and invasive oximetry for quantification of atrial shunts. *American Journal of Cardiology* 2003;91:1523-1525.
17. Prakash A, **Powell AJ**, Krishnamurthy R, Geva T. Magnetic resonance imaging evaluation of myocardial perfusion and viability in congenital and acquired pediatric heart disease. *American Journal of Cardiology* 2004;93:657-661.
18. Odegard KC, DiNardo JA, Tsai-Goodman B, **Powell AJ**, Geva T, Laussen P. Anesthetic considerations for cardiac MRI in infants and small children. *Pediatric Anesthesia* 2004;14:471-476.
19. Geva T, Sandweiss BM, Gauvreau K, Lock JE, **Powell AJ**. Factors associated with impaired clinical status in long-term survivors of tetralogy of Fallot repair evaluated by magnetic resonance imaging. *Journal of the American College of Cardiology* 2004;43:1068-74.

20. Tsai-Goodman B, Geva T, Odegard KC, Sena LM, **Powell AJ**. Clinical role, accuracy, and technical aspects of cardiovascular magnetic resonance imaging in infants. *American Journal of Cardiology* 2004;94:69-74.
21. Nielson JC, **Powell AJ**, Gauvreau K, Marcus EN, Prakash A, Geva T. Magnetic resonance imaging predictors of coarctation severity. *Circulation* 2005;111:622-628.
22. Garg R, **Powell AJ**, Sena, L, Marshall AC, Geva T. Effects of metallic implant on magnetic resonance evaluation of Fontan palliation. *American Journal of Cardiology* 2005;95:688-691.
23. Moniotte S, Geva T, Perez-Atayde A, Fulton DR, Pigula FA, and **Powell AJ**. Cardiac hemangioma. *Circulation* 2005;112:e103-e104.
24. Tworetzky W, Del Nido PJ, **Powell AJ**, Marshall AC, Lock JE, Geva T. Usefulness of magnetic resonance imaging of left ventricular endocardial fibroelastosis in infants after fetal intervention for aortic valve stenosis. *American Journal of Cardiology* 2005;96:1568-1570.
25. Sanghavi D, Flanagan M, **Powell AJ**, Curran T, Picard S, Rhodes J. Determinants of exercise function following univentricular versus biventricular repair for pulmonary atresia-intact ventricular septum. *American Journal of Cardiology* 2006;97:1638-1643.
26. Peng LF, McElhinney DB, Nugent AW, **Powell AJ**, Marshall AC, Bacha EA, Lock JE. Endovascular stenting of obstructed right ventricle-to-pulmonary artery conduits: a fifteen-year experience. *Circulation* 2006;113:2569-2571.
27. Prakash A, Garg R, Marcus EN, Reynolds G, Geva T, **Powell AJ**. Faster flow quantification using sensitivity encoding for velocity encoded cine magnetic resonance imaging: in vitro and in vivo validation. *Journal of Magnetic Resonance Imaging* 2006;24:676-682.
28. Valente AM, Sena L, **Powell AJ**, Del Nido, PJ, Geva, T. Cardiac MRI evaluation of sinus venosus defects: comparison to surgical findings. *Pediatric Cardiology* 2007; 28:51-56.
29. McMahon CJ, Moniotte S, **Powell AJ**, del Nido PJ, Geva T. Usefulness of magnetic resonance imaging evaluation of congenital left ventricular aneurysms. *American Journal of Cardiology* 2007;100:310-315.
30. Samyn MM, **Powell AJ**, Garg R, Sena L, Geva T. Range of ventricular dimensions and function by steady state free precession cine MRI in repaired tetralogy of Fallot: right ventricular outflow tract patch versus conduit repair. *Journal of Magnetic Resonance Imaging* 2007;26:934-940.

31. Dorfman AL, Odegard KC, **Powell AJ**, Laussen PC, Geva T. Risk factors for adverse events during cardiac MR imaging in congenital heart disease. *Journal of Cardiovascular Magnetic Resonance* 2007;9:793-798.
32. Mackie AS, Lang P, **Powell AJ**. Pulmonary atresia with intact ventricular septum co-existing with coarctation of the aorta. *Pediatric Cardiology* 2007; 28:406-408.
33. Meadows J, **Powell AJ**, Geva T, Dorfman AL, Gauvreau K, Rhodes J. Cardiac MRI correlates of exercise function in patients with repaired tetralogy of Fallot. *American Journal of Cardiology* 2007;100:1446-1450.
34. Brown DW, Gauvreau K, **Powell AJ**, Lang P, Colan SD, del Nido PJ, Odegard KC, Geva T. Cardiac magnetic resonance versus routine cardiac catheterization prior to bidirectional Glenn anastomosis in infants with functional single ventricle : A prospective randomized trial. *Circulation* 2007;166:2718-2725.
35. Knauth AL, Gauvreau K, **Powell AJ**, Landzberg MJ, Walsh EP, Lock JE, del Nido PJ, Geva T. Ventricular size and function assessed by cardiac MRI predict major adverse clinical outcomes late after tetralogy of Fallot repair. *Heart* 2008;94:211-216.
36. Moniotte S, **Powell AJ**, Barnewolt CE, Annese D, Geva T. Prenatal diagnosis of thoracic ectopia cordis by real-time fetal cardiac magnetic resonance imaging and by echocardiography. *Congenital Heart Disease* 2008;3:128-131.
37. Soriano BD, Hoch M, Ithuralde A, Geva T, **Powell AJ**, Kussman BD, Graham D, Tworetzky W, Marx GR. Matrix array 3-dimensional echocardiographic assessment of volumes, mass and ejection fraction in young pediatric patients with a functional single ventricle: a comparison study with CMR. *Circulation* 2008;117:1842-1848.
38. Rhodes J, Margossian R, Darras B, Colan SD, Jenkins KJ, Geva T, **Powell AJ**. Safety and efficacy of carvedilol therapy in patients with dilated cardiomyopathy secondary to muscular dystrophy. *Pediatric Cardiology* (in press).
39. Mooij CF, de Wit CJ, Graham DA, **Powell AJ**, Geva, T. Reproducibility of MRI measurements of right ventricular size and function in patients with normal and dilated ventricles. *Journal of Magnetic Resonance Imaging* 2008;28:67-73.
40. Lai WW, Gauvreau K, Rivera ES, Saleeb S, **Powell AJ**, Geva T. Accuracy of guideline recommendations for two-dimensional quantification of the right ventricle by echocardiography. *International Journal of Cardiovascular Imaging*, (in press).
41. Leonardi B, Margosian R, Colan SD, **Powell AJ**. Relationship of MRI estimation of myocardial iron to left ventricular systolic and diastolic function in thalassemia. *JACC: Cardiovascular Imaging*, (in press).

42. Chirnomas SD, Geukes-Foppen M, Barry K, Braunstein J, Kalish LA, Neufeld EJ, **Powell AJ**. Practical implications of liver and heart iron load assessment by T2*-MRI in children and adults with transfusion-dependent anemias. *American Journal of Hematology (in press)*.

Proceedings of Meetings

1. Bloomgarden DC, Morris GR, Valentine J, **Powell AJ**, Chung T. Improved ECG triggering with the T-wave terminator. *Proceedings of ISMRM 1999*;7:1995.
2. Cois CA, Rockot K, Galeotti J, Tamburo R, Gottlieb D, Mayer JE, **Powell AJ**, Sacks M, and Stetten G. Automated segmentation of the right heart using an optimized shells and spheres algorithm. *Proceedings of the Fourth IEEE International Symposium on Biomedical Imaging (ISBI 2007)*, 2007.

Reviews, Chapters, and Editorials

1. Geva T, **Powell AJ**. Current applications of cardiac magnetic resonance imaging in congenital heart disease. *Pediatric Ultrasound Today 1999*;4:150-171.
2. **Powell AJ**, Geva T. Blood flow measurement by magnetic resonance imaging in congenital heart disease. *Pediatric Cardiology 2000*;21:47-58.
3. Geva T, Sahn DJ, **Powell AJ**. Magnetic resonance imaging of congenital heart disease in adults. *Progress in Pediatric Cardiology 2003*;17:21-39.
4. Jay PY, **Powell AJ**, Sherwood MC, Izumo S. CSX/Nkx2-5 and congenital heart disease. In: Epstein CJ, Erickson RP and Wynshaw-Boris A, editors. *Inborn Errors of Development*. New York: Oxford University Press; 2004. p 607-14.
5. Geva T, **Powell AJ**. Pediatric heart disease. In *Clinical Magnetic Resonance Imaging*, Third Edition. Edelman RR, Hesselink JR and Zlatkin MB, Cruess JV, eds. Philadelphia, PA: Saunders Elsevier; 2006. p 1041-1069.
6. Geva T, Chung T, **Powell AJ**. Magnetic resonance imaging assessment in heart failure. In: Chang AC, Towbin JA, editors. *Heart Failure in Children and Young Adults: From Molecular Mechanisms to Medical and Surgical Strategies*. Philadelphia: Saunders Elsevier; 2006. p 155-81.
7. **Powell AJ**, Mandell VS. Vascular rings and slings. In: Keane JF, Lock JE, Fyler DC. Editors. *Nadas' Pediatric Cardiology*, Second Edition. Philadelphia, PA: Saunders Elsevier; 2006. p 811-824.
8. Wald RM, **Powell AJ**. Simple congenital heart lesions. *Journal of Cardiovascular Magnetic Resonance 2006*;8:619-632.

9. Valente, AM, **Powell AJ**. Clinical applications of cardiovascular magnetic resonance in congenital heart disease. *Cardiology Clinics* 2007;25:97-110.
10. Nielsen JC, **Powell AJ**. Cardiovascular MRI applications in congenital heart disease. *Indian Journal of Radiology and Imaging* 2007;17:86-97.
11. Valente, AM, **Powell AJ**. Clinical applications of cardiovascular magnetic resonance in congenital heart disease. *Magnetic Resonance Imaging Clinics of North America* 2007;15:565-577.
12. Geva T, **Powell AJ**. Magnetic resonance imaging. In: Allen HD, Driscoll DJ, Shaddy RE, Feltes TF, (Editors), *Moss & Adams' Heart Disease in Infants, Children, and Adolescents*, 7th Edition. Philadelphia, PA: Lippincott, Williams & Wilkins, 2008. Chapter 7, pp163-199.
13. Wald RM, **Powell AJ**. Congenital heart disease: Indications, patient preparation, and simple lesions. In: *Cardiovascular Magnetic Resonance Imaging*. Kwong R. ed. Totowa, NJ: Humana Press; 2008. p. 537-566.
14. Geva T, Dorfman AL, **Powell AJ**. Complex congenital heart disease—infant and pediatric patients. In: Manning WJ, Pennell DJ, editors. *Cardiovascular Magnetic Resonance* (in press).
15. **Powell AJ**. Vascular rings and slings. In: Lai W, Cohen MS, Geva T, Mertens L, (Editors), *Echocardiography in Pediatric and Congenital Heart Disease*, Blackwell Publishing (in press).
16. Burch TN, McGowan FX, Kussman BD, **Powell AJ**, DiNardo JA. Congenital supra-avalvular aortic stenosis and sudden death associated with anesthesia: What's the mystery? *Anesthesia & Analgesia* (in press).

Nonprint Materials

1. MRI Basics of Congenital Heart Disease [Videocassette/DVD]. Tampa, FL: Educational Symposia, Inc.; 2002. Thirty-minute lecture on MRI of Congenital Heart Disease as part of a series of educational lectures organized by the Society of Cardiovascular Magnetic Resonance directed at radiologists, cardiologists, surgeons, and technologists interested in cardiovascular imaging.
2. Diagnosis and Management of Congenital Heart Disease [Videocassette/DVD]. The National Center for Advanced Medical Education; 2003. Thirty-five minute lecture on imaging strategies for vascular rings and slings as part of a course sponsored by Children's Hospital Boston directed at radiologists, cardiologists, surgeons, and technologists interested in congenital heart disease.

3. Dorfman A, **Powell AJ**, Geva T. Complex congenital heart disease. In: Hundley GW (Editor) Cardiovascular Magnetic Resonance Self Assessment Program (CMR-SAP). Am College of Cardiology, 2004.
4. Pediatric Cardiology Multimedia Library (2005). The multimedia library contains images of multiple diagnostic and therapeutic procedures used to treat congenital heart disease. The library is available in the Cardiovascular Program portion of the Children's Hospital website, and is accessible both within and outside the hospital. Currently there is information on 27 different conditions. Creator and Editor: Robert Geggel, M.D. MRI Section Editor and Contributor: **Andrew Powell, M.D.**
5. Society for Cardiovascular Magnetic Resonance Case Review (2006). Two MRI case presentations with questions and discussion. Wald R and **Powell AJ**.
6. Society for Cardiovascular Magnetic Resonance Case Review (2008). Three MRI case presentations with questions and discussion. Beroukhim R and **Powell AJ**.

Abstracts (last 3 years and not published as full articles)

1. Wald RM, Haber I, Wald R, Valente AM, **Powell AJ**, Geva T. The effect of regional dysfunction on global right ventricular systolic function in patients with repaired tetralogy of Fallot. J Cardiovasc MR 2006;1:27.
2. Hoch M, Soriano B, Kussman B, **Powell AJ**, Geva T, Marx GR. Assessment of right ventricular volumes, mass, and ejection fraction by matrix array three-dimensional echocardiography in pediatric patients with congenital heart disease: comparison with magnetic resonance imaging. Circulation 2006;114:II-639.
3. Strigl S, Beroukhim R, Sena L, Geva T, **Powell AJ**. Feasibility and safety of dobutamine stress cardiovascular magnetic resonance imaging in children. J Cardiovasc MR 2007;9:388.
4. Wald RM, Haber I, Wald R, Valente AM, **Powell AJ**, Geva T. Effects of regional dysfunction on global right ventricular systolic dysfunction and clinical status in patients with repaired tetralogy of Fallot. Circulation 2007;116:II-511.