

# Norman H. Silverman, M.D., D. Sc. (Med.), FACC, FAHA, FASE

## IDENTIFYING DATA

Date of Birth	Sept. 29, 1942	Citizenship:	U.S.A.
Ethnicity:	Caucasian	California Medical License #:	A25867

## ACADEMIC HISTORY

### Education

Date	Institution and Location	Degree or Title	Major
1960–1967	University of the Witwatersrand Johannesburg, South Africa	M.B., B.Ch.	Medicine

### Post-doctoral and Residency Training

1967–1968	Johannesburg General Hospital	Surgery Intern Medical Intern	
1969	Johannesburg Children's Hospital	Senior House Officer	Pediatrics
1969–1972	University of the Witwatersrand Hospitals	Residency	Pediatrics
1970	South African College of Medicine, F.C.P. (S.A.)	Fellow	Pediatrics
1972–1974	University of California, San Francisco	Fellow	Cardiology
1985	University of the Witwatersrand, Johannesburg, South Africa Thesis title: <i>Two-dimensional Echocardiography in Congenital Heart Disease</i>	D.Sc.Med.	Medicine

### Licenses and Boards

1972	ECFMG # 080-243-9
1973	Diplomate of the American Board of Pediatrics
1975	Certified, Sub-board of Pediatric Cardiology
1994	BNDD #AS6050215
1994	Radiation operator license #RHD-121449

### Other Study and Research Opportunities

1977–1979	Granting Agency: National Foundation of March of Dimes Title: Echocardiographic Evaluation of Pulmonary Hypertension in Children with Congenital Heart Disease Role: PI
1978–1980	Granting Agency: California Heart Association Title: Two-dimensional Echo Volume Analysis in Congenital Heart Disease Role: PI
1987	Granting Agency: Academic Senate of the University of California, San Francisco Title: Fetal Doppler Evaluation in the Sheep Role: PI
1990–1992	Granting Agency: American Heart Association, National Center Title: Doppler Ultrasound Assessment of Fetal Blood Flow Role: Co-PI with Abraham Rudolph, M.D., UCSF
1994	Granting Agency: Hewlett-Packard Title: 3-D Imaging of Congenital Heart Defects, Testing and development of a hand-held 3-D reconstruction algorithm Role: Co-PI with Michael Brook, M.D., UCSF

- 1995            Granting Agency: AEGIS-Acuson  
 Title: Digital Versus Videotape Storage of Echocardiograms in a Pediatric Laboratory: A Blinded Comparison  
 Role: PI
- 1998            Granting Agency: Academic Senate of the University of California, San Francisco  
 Title: Evaluation of Fetal Cardiac Chamber Dimensions and Cardiac Output in the Lamb Fetus  
 Role: PI

## **EMPLOYMENT HISTORY**

### **Academic Appointments**

- 1974–1975        Assistant Professor of Pediatrics, Stanford University School of Medicine, Stanford, CA  
 1975–1979        Assistant Professor of Pediatrics, University of California, San Francisco  
 1979–1985        Associate Professor of Pediatrics, University of California, San Francisco  
 1979–1985        Associate Professor of Radiology, University of California, San Francisco  
 1985–2002        Professor of Pediatrics in Residence, University of California, San Francisco  
 1985–2002        Professor of Radiology in Residence, University of California, San Francisco  
 2002–current     Professor of Pediatrics (Cardiology), Stanford University School of Medicine

### **Non-academic Appointments**

- 1974–2002        Director, Pediatric Echocardiography Laboratory, University of California, San Francisco  
 2002–2007        Director, Pediatric Fetal and Echocardiography Laboratory, Stanford University Medical Center, Palo Alto, CA  
 1978              Consultant, Varian Physics, Palo Alto, CA  
 1980              Consultant, Toshiba Medical Systems, Hayward, CA  
 1982–1983        Visiting Professor, Cardiothoracic Institute, University of London, England (Sabbatical)  
 1983              Consultant Cardiologist, Children’s Hospital, San Francisco, CA  
 1984              Consultant Cardiologist, Mt. Zion Hospital, San Francisco, CA  
 1988–2007        Consultant to Acuson, Mountain View, CA  
 1990–2007        Consultant to Hewlett Packard Ultrasound, Andover, MA  
 1993              Senior Fellow, National Heart and Lung Institute of the University of London, England  
 1993              Visiting Professor of Pediatrics, Tel Aviv University (Children’s Medical Center of Israel)  
 1994              Visiting Principal Fellow, Royal Brompton Hospital, London, England  
 1996              Visiting Professor, National Children’s Hospital, Washington, DC  
 1996              Visiting Professor, Yale University, New Haven, CT  
 1996              Visiting Professor, Children’s National Medical Center, Washington, DC  
 1997              Visiting Professor, Children’s National Medical Center, Washington, DC

### **Post-degree Honors and Awards**

- 1981              Sixth Annual Cazden Memorial Visiting Professorship in Pediatric Cardiology—Portland, OR  
 1996              13th Jerome Liebman Visiting Professor—Case Western Reserve University, Cleveland, OH  
 1996              Garbose Lecture, Children’s National Medical Center, Washington, DC  
 1999              Janet Baldwin Lecture, Society of Pediatric Cardiology of New York, New York City, NY: Fetal Experimental Echocardiography—A Personal Perspective  
 2000              11th Annual Scientific Sessions, American Society of Echocardiography, Founder’s Award  
 2000              Ultrasound in Medicine and Biology Clinical Prize  
 2001              20 Years of Service to the Heart House for Continuing Education  
 2001              Sackler Visiting Fellow, University of Tel Aviv, Israel, Oct.- Dec.  
 2003              Fellow of the American Heart Association and the Council on Cardiovascular Disease in the Young

2003 Fellow of the American Society of Echocardiology  
 2004 23rd Annual Katkov-Lundeen Visiting Professorship in Pediatric Cardiology, The Children's Heart Clinic, Children's Hospitals and Clinics, Minneapolis, MN  
 2004 Sackler Visiting Fellow, University of Tel Aviv, Israel, Nov.- Dec.  
 2005 The Roma and Marvin Auerback Scholar in Pediatric Cardiology, Department of Pediatrics  
 2008 The American Society of Echocardiography Award for Excellence in Teaching in Pediatrics

## **PUBLIC AND PROFESSIONAL SERVICE**

### **Professional Organization Activities**

1977–1979 Secretary, Society for Pediatric Echocardiography  
 1980–1984 Board of Governors, American Society of Echocardiography  
 1981–1983 President, Society for Pediatric Echocardiography  
 1982–1984 Scientific Program Committee, American Heart Association  
 1984–1985 Board Member, President, Bay Area Echocardiography Society  
 1985–1987 Board of Governors, American Society of Echocardiography  
 1988–1990 Program Committee, American College of Cardiology Annual Scientific Session  
 1993 Standards Committee, American Society of Echocardiography  
 1995–1997 Physician Training Committee, American Society of Echocardiography  
 1997–2000 Echocardiography Subcommittee, Council on Clinical Cardiology, American College of Cardiology  
 2000–2001 President, California Society of Pediatric Cardiology  
 2008–2010 President, California Medical Society

### **University Committees**

1979–2002 Ad Hoc Committee for Promotions  
 1985–2002 Appointments and Promotions Committee, Department of Pediatrics  
 1986 Department: Committee for Use of 6-North  
 1989 Department: Search Committee, Division of Behavior and Development  
 1989 Department: Search Committee, Pediatric Cardiology  
 1989 School of Medicine: Search Committee, Department of Pathology  
 1991–1994 Department of Pediatrics Representative on Academic Senate  
 2000 Ad-Hoc Committee No. 99–77, Peer Review

### **Service To Professional Publications**

1981–1985	<i>Circulation</i>	Editorial Board
1982–1984	Scientific Programs Committee, American Heart Association	Reviewer
1982–1985	Scientific Publications Committee, American Heart Association	
1983–1992	<i>International Journal of Cardiology</i>	Editorial Board
1984–1993	<i>American Journal of Cardiology</i>	Editorial Board
1984–2007	<i>Echocardiography</i>	Editorial Board
1987–2007	National Heart, Lung & Blood Institute	Clinical Trials Review Committee
1987–2007	<i>American Journal of Cardiac Imaging</i>	
1990–2007	<i>Pediatric Cardiology</i>	Editorial Board
1992–1996	American College of Cardiology, <i>Journal of the American College of Cardiology</i>	Editorial Board
2000–2004	American College of Cardiology, <i>Journal of the American College of Cardiology</i>	Editorial Board

2000-2007	<i>Cardiology in the Young</i>	Editorial Board
1997-2001	<i>Journal of the American Society of Echocardiography</i>	Editorial Board
2005-2009	<i>Pediatric Ultrasound Today</i>	Editorial Board

#### Ad Hoc Reviewer

<i>American Heart Journal</i>	<i>American Journal of Cardiology</i>	<i>British Heart Journal</i>
<i>Circulation</i>	<i>Chest</i>	<i>Echocardiography</i>
<i>European Journal of Pediatrics</i>	<i>Journal of the American College of Cardiology</i>	
<i>Journal of Clinical Ultrasound</i>	<i>Journal of Pediatric</i>	<i>Mayo Clinical Proceedings</i>
<i>New England Journal of Medicine</i>	<i>Pediatrics</i>	<i>Pediatric Cardiology</i>
<i>Pediatric Pulmonology</i>	<i>Pediatric Research</i>	<i>The Lancet</i>

#### MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

1968–1974	Medical Association of South Africa
1974–1997	American Academy of Pediatrics
1974–current	Fellow of the American College of Cardiology
1975–current	Society of Pediatric Echocardiography
1975–current	American Society of Echocardiography
1976–current	Western Society for Pediatric Research
1978–current	Society of Pediatric Research
1979–current	American Institute for Ultrasound in Medicine (Senior Member, 1996–current)
1985–1995	North American Society for Cardiac Radiology
1992–current	American Pediatric Society
1993–2007	Fellow, Sociedad Chilena De Cardiologia Y Cardiovascular
1998–current	California Academy of Medicine (President 2008)
1999–2001	President and member, California Society of Pediatric Cardiology,
1999–current	Western Society of Pediatric Cardiology

#### PUBLICATIONS

##### 216 Peer Reviewed Articles

1. Sapire DW, **Silverman NH**. Myocardial involvement in antimonial therapy: A case report of acute antimonial poisoning with serial EKG changes. *S Afr Med J* 1970; 44:948.
2. **Silverman NH**, Buchanan N, Wagstaff L. Penicillin induced haemolytic anemia: A case report. *S Afr Med J* 1970; 44:1247.
3. Lurie A, **Silverman NH**, Jackson FR. An approach to dental extractions in haemophilia and related bleeding disorders in children. *S Afr Med J* 1972; 46:1743.
4. **Silverman NH**, Katz JS, Levin SE. Capillaria hepatica infestation in a child. *S Afr Med J* 1973; 47:219.
5. **Silverman NH**, Lewis AB, Heymann MA, Rudolph AM. Echocardiographic assessment of ductus arteriosus shunt in premature infants. *Circulation* 1974; 50:821–5.
6. Goetzman BW, Sunshine P, Johnson JD, Wennberg RP, Kackel A, Merten D, Bartoletti AL, **Silverman NH**. Neonatal hypoxia and pulmonary vasospasm: Response to tolazoline. *J Pediatr* 1976; 89:617–621.
7. Heymann MA, Rudolph AM, **Silverman NH**. Closure of the ductus arteriosus in premature infants by inhibition of prostaglandin synthesis. *N Engl J Med* 1976; 295:530–3.
8. **Silverman NH**, Hoffman JIE. Echocardiographic assessment of pulmonary artery pressure and pulmonary vascular resistance. *Circulation* 1976; 54:525.
9. Stanger P, Lister G, **Silverman NH**, Hoffman JIE. Electrocardiographic monitor artifacts in a neonatal intensive care unit. *Pediatrics* 1977; 60:689.

10. Roge CL, **Silverman NH**, Hart PA, Ray RM. Cardiac structure growth pattern determined by echocardiography. *Circulation* 1978; 57:285–90.
11. **Silverman NH**, Schiller NB. Apex echocardiography: A two-dimensional technique for evaluating congenital heart disease. *Circulation* 1978; 7:503.
12. **Silverman NH**, Bunker W. Photographic techniques for retrieving echocardiographic images from substandard recordings. *J Clin Ultrasound* 1978; 6:249.
13. **Silverman NH**, Payot M, Stanger P. Simulated tricuspid valve echoes in tricuspid atresia. *Am Heart J* 1978;95:761.
14. **Silverman NH**, Payot M, Stanger P, Rudolph AM. The echocardiographic profile of patients after Mustard's operation *Circulation* 1978; 58:1083–93.
15. Ports TA, **Silverman NH**, Schiller NB. Two-dimensional echocardiographic assessment of Ebstein's anomaly *Circulation* 1978; 58:336.
16. Schiller NB, Acquatella H, Ports TA, Drew D, Goerke J, Ringerts H, **Silverman NH**. Left ventricular volume from paired biplane two-dimensional echocardiographs. *Circulation* 1979; 60:547.
17. Snider AR, Ports TA, **Silverman NH**. Venous anomalies of the coronary sinus: Detection by M-mode, two-dimensional and contrast echocardiography. *Circulation* 1979; 60:271
18. Snider AR, **Silverman NH**, Schiller NB, Ports TA. Echocardiographic evaluation of ventricular septal aneurysms. *Circulation* 1979; 59:920.
19. **Silverman NH**, Ports TA, Snider AR, Schiller NB, Carlsson E, Heilbron DC. Determination of left ventricular volume in children: Echocardiographic and angiographic comparisons. *Circulation* 1980; 66:548.
20. **Silverman NH**, Snider AR, Rudolph AM. Evaluation of pulmonary hypertension by M-mode echocardiography in children with ventricular septal defect. *Circulation* 1980; 61:1125.
21. Snider AR, Roge CL, Schiller NB, **Silverman NH**. Congenital left ventricular inflow obstruction evaluated by two-dimensional echocardiography. *Circulation* 1980; 61:848–55.
22. Levin SE, **Silverman NH**, Milner S. Hypoplasia or absence of the depressor anguli oris muscle and congenital abnormalities, with special reference to the cardiofacial syndrome. *S Afr Med* 1981; 3:227–31.
23. Mahony L, Snider AR, **Silverman NH**. Echocardiographic diagnosis of intracardiac thrombi complicating total parenteral nutrition. *J Pediatr* 1981; 98:469–71.
24. Schabelman S, Schiller NB, **Silverman NH**, Ports TA. Left atrial volume estimation by two-dimensional echocardiography. *Catheterization and Cardiovascular Diagnosis* 1981; 7:165.
25. Schatz RA, Schiller NB, Tri TB, Bowen TE, Ports TA, **Silverman NH**. Two-dimensional echocardiographic diagnosis of a ruptured right sinus of valsalva aneurysm. *Chest* 1981; 79:584.
26. Snider AR, **Silverman NH**. Suprasternal notch echocardiography: A two-dimensional technique for evaluating congenital heart disease. *Circulation* 1981; 63:165–73.
27. Snider AR, Soifer SJ, **Silverman NH**. Detection of intracranial arterio-venous fistula by two-dimensional echocardiography. *Circulation*,1981; 63:1179–85.
28. Toubas PL, **Silverman NH**, Heymann MA, Rudolph AM. Cardiovascular effects of acute hemorrhage in fetal lambs. *Am J Physiol* 1981; 240:H45–H48.
29. **Silverman NH**, Snider AR, Cóló J, Ebert PA, Turley K. Superior vena caval obstruction after Mustard's operation: detection by two-dimensional contrast echocardiography. *Circulation* 1981; 64:392–6.
30. Dumesic DA, **Silverman NH**, Tobias S, Golbus MS. Transplacental cardioversion of fetal supraventricular tachycardia with procainamide. *N Engl J Med* 1982; 307:1128–31.
31. Fisher DJ, Snider AR, **Silverman NH**, Stanger P. Ventricular septal defect with silent discrete subaortic stenosis. *Pediatr Cardiol* 1982; 2:265–9.
32. **Silverman NH**, Snider AR, Schiller NB. Quantitative assessment of congenital heart disease by two-dimensional echocardiography. In: Rijsterborgh H (ed.), *Echocardiology*. The Hague, Erasmus University, Martinus Nijhoff Publ. 1982; 333.
33. Snider AR, **Silverman NH**, Turley K, Ebert PA. Evaluation of infradiaphragmatic total anomalous pulmonary venous connection with two-dimensional echocardiography. *Circulation* 1982; 66:1129–32.
34. Turley K, **Silverman NH**, Teitel D, Mavroudis C, Snider AR, Rudolph AM. Repair of aortico-left ventricular tunnel in the neonate: surgical, anatomic, and echocardiographic considerations. *Circulation*, 1982; 65:1015–20.
35. Schiller NB, Skióldebrand CG, Schiller EJ, Mavroudis CC, **Silverman NH**, Rahimtoola SH, Lipton MJ. Canine left ventricular mass estimation by two-dimensional echocardiography. *Circulation* 1983; 68:210–6.
36. **Silverman NH**, Hudson S. Evaluation of right ventricular volume and ejection fraction in children by two-dimensional echocardiography. *Pediatr Cardiol* 1983; 4:197–204.

37. **Silverman NH**, Hunter S, Anderson RH, Ho SY, Sutherland GR, Davies MJ. Anatomical basis of cross sectional echocardiography. *Br Heart J* 1983; 50:421–31.
38. **Silverman NH**, Enderlein MA, Golbus MS. Ultrasonic recognition of aortic valve atresia in utero. *Am J Cardiol* 1984; 53:391–2.
39. **Silverman NH**, Schiller NB. Cross sectional echocardiographic assessment of cardiac chamber size and ejection fraction in children. *Ultrasound Med Biol* 1984; 10:757–69.
40. Macartney FJ, Rigby ML, Anderson RH, Stark J, **Silverman NH**. Double outlet right ventricle: cross sectional echocardiographic findings, their anatomical explanation, and surgical relevance. *Br Heart J*, 1984; 52:164–77.
41. Cooper MJ, Teitel DF, **Silverman NH**, Enderlein MA. Study of the infradiaphragmatic total anomalous pulmonary venous connection with cross-sectional and pulsed Doppler echocardiography. *Circulation*, 1984; 70:412–6.
42. Cooper MJ, Teitel DF, **Silverman NH**, Enderlein M. Comparison of M-mode echocardiographic measurement of right ventricular wall thickness obtained by the subcostal and parasternal approach in children. *Am J Cardiol* 1984; 54:835–8.
43. Ostman-Smith I, **Silverman NH**, Oldershaw P, Lincoln C, Shinebourne EA. Cor triatriatum sinistrum: diagnostic features on cross sectional echocardiography. *Br Heart J* 1984; 51:211–9.
44. **Silverman NH**, Ho SY, Anderson RH, Smith A, Wilkinson JL. Atrioventricular septal defect with intact atrial and ventricular septal structures. *Int J Cardiol* 1984; 5:567–72.
45. Higgins CB, Byrd BF III, Farmer DW, Osaki L, **Silverman NH**, Cheitlin MD. Magnetic resonance imaging in patients with congenital heart disease. *Circulation* 1984; 70:851–60.
46. **Silverman NH**, Golbus MS. Echocardiographic techniques for assessing normal and abnormal fetal cardiac anatomy. Bethesda Conference #14. *J Am Coll Cardiol* 1985; 5:20S–9S.
47. **Silverman NH**, Enderlein MA, Stanger P, Teitel DF, Heymann MA, Golbus MS. Recognition of fetal arrhythmias by echocardiography. *J Clin Ultrasound* 1985; 13:255–63.
48. Shaddy R, **Silverman NH**, Stanger P, Ebert P. Two-dimensional echocardiographic recognition and repair of subvalvular mitral aneurysm of the left ventricle in an infant. *J Am Coll Cardiol*, 1985; 5:765–9.
49. Cooper M, Shaddy R, **Silverman NH**, Enderlein M. Usefulness of Doppler echocardiography for determining hemodynamic improvement with intravenous Verapamil in hypertrophic cardiomyopathy. *Am J Cardiol*, 1985, 56:201–2.
50. Cooper MJ, Bernstein D, **Silverman NH**. Recognition of left coronary artery fistula to the left and right ventricles by contrast echocardiography. *J Am Coll Cardiol*, 1985; 6:923–6.
51. **Silverman NH**, Kleinman CS, Rudolph AM, Copel JA, Weinstein EM, Enderlein M. Golbus M. Fetal atrioventricular valve insufficiency associated with nonimmune hydrops: a two-dimensional echocardiographic and pulsed Doppler ultrasound study. *Circulation*, 1985; 72:825–32.
52. **Silverman NH**, Zuberbuhler JR, Anderson RH. Atrioventricular septal defects: cross-sectional echocardiographic and morphologic comparisons. *Int J Cardio* 1986; 13:309–31.
53. Enderlein MA, **Silverman NH**, Stanger P, Heymann MA. Usefulness of suprasternal notch echocardiography for diagnosis of double aortic arch. *Am J Cardiol* 1986; 57:359–61.
54. Ramaciotti C, Keren A, **Silverman NH**. Importance of (perimembranous) ventricular Septal aneurysm in the natural history of isolated perimembranous ventricular septal defect. *Am J Cardiol*, 1986; 57:268–72.
55. Martin GR, Cooper MJ, **Silverman NH**, Soifer SJ. Contrast echocardiography in the diagnosis of anomalous left coronary artery arising from the pulmonary artery. *Pediatr Cardiol* 1986; 6:203–5.
56. Didier D, Higgins CB, Fisher MR, Osaki L, **Silverman NH**, Cheitlin MD. Congenital heart disease: gated MR imaging in 72 patients. *Radiology*, 1986; 158:227–35.
57. Shaddy RE, Snider AR, **Silverman NH**, Lutin W. Pulsed Doppler findings in patients with coarctation of the aorta. *Circulation* 1986; 73:82–8.
58. Zureikat GY, Martin GR, **Silverman NH**, Newth CJL. Urokinase therapy for a catheter-related right atrial thrombus and pulmonary embolism in a 2-month-old infant. *PediatrPulmonol* 1986; 2:303–6.
59. **Silverman NH**, de Araujo LML. An echocardiographic method for the diagnosis of cardiac situs and malpositions. *Echocardiography*, 1987;4:35–57.
60. Martin GR, Soifer SJ, **Silverman NH**, Dae MW, Stanger PS. Effect of activity on ascending aortic velocity in children with valvar aortic stenosis. *Am J Cardiol* 1987; 59:1386–90.
61. Schmidt KG, **Silverman NH**. Cross-sectional and contrast echocardiography in the diagnosis of interatrial communications through the coronary sinus. *Int J Cardiol*, 1987; 16:193–9.
62. de Araujo LML, **Silverman NH**, Filly RA, Golbus MS, Finkbeiner WE, Schmidt KG. Prenatal detection of left atrial isomerism by ultrasound. *J Ultrasound Med* 1987; 6:667–70.

63. de Araujo LML, Schmidt KG, **Silverman NH**, Finkbeiner WE. Prenatal detection of truncus arteriosus by ultrasound. *Pediatr Cardiol* 1987; 8:261–3.
64. Cloez JL, Schmidt KG, Birk E, **Silverman NH**. Determination of pulmonary to systemic blood flow ratio in children by a simplified Doppler echocardiographic method. *J Am Coll Cardiol* 1988; 11:825–830
65. Schmidt KG, de Araujo LML, **Silverman NH**. Evaluation of structural and functional abnormalities of the fetal heart by echocardiography. *Am J Cardiac Imaging* 1988; 2:57–76.
66. Schmidt KG, Cooper MJ, **Silverman NH**, Stanger P. Pulmonary artery origin of the left coronary artery: diagnosis by two-dimensional echocardiography, pulsed Doppler ultrasound and color flow mapping. *J Am Coll Cardiol* 1988; 11:396–402.
67. Frantz EG, **Silverman NH**. Doppler ultrasound evaluation of valvar pulmonary stenosis from multiple transducer positions in children requiring pulmonary valvuloplasty. *Am J Cardiol* 1988; 61(10):844–9.
68. Martin GR, **Silverman NH**, Soifer SJ, Lutin WA, Scagnelli SA. Tricuspid regurgitation in children: a pulsed Doppler, contrast echocardiographic and angiographic comparison. *J Am Soc Echo*, 1988; 1(4):257–63.
69. Van Hare GF, Townsend SF, Hardy K, Turley K, **Silverman NH**. Interrupted aortic arch with a right descending aorta and right ductus arteriosus, causing severe right bronchial compression. *Pediatr Cardiol* 1988; 9:171–4.
70. Cooper MJ, **Silverman NH**, Huey E. Group A  $\alpha$ -hemolytic streptococcal endocarditis precipitating rupture of sinus of Valsalva aneurysm: evaluation by two-dimensional, Doppler, and contrast echocardiography. *Am Heart J* 1988; 115(5):1132–4.
71. Schmidt KG, Cassidy SC, **Silverman NH**, Stanger P. Doubly committed subarterial ventricular septal defects: echocardiographic features and surgical implications. *J Am Coll Cardiol* 1988; 12:1538–46.
72. Cooper MJ, Tyndall M, **Silverman NH**. Evaluation of the responsiveness of elevated pulmonary vascular resistance in children by Doppler echocardiography. *J Am Coll Cardiol* 1988; 12:470–5.
73. Van Hare GF, Schmidt KG, Cassidy SC, Gooding CA, **Silverman NH**. Color Doppler flow mapping in the ultrasound diagnosis of total anomalous pulmonary venous connection. *J Am Soc Echo* 1988; 1:341–7.
74. Van Hare GF, **Silverman NH**. Contrast two-dimensional echocardiography in congenital heart disease: techniques, indications and clinical utility. *J Am Coll Cardiol* 1989; 13(3):673–86.
75. Byrd BF III, Finkbeiner W, Bouchard A, **Silverman NH**, Schiller NB. Accuracy and reproducibility of clinically acquired two-dimensional echocardiographic mass measurements. *Am Heart J* 1989; 118:133–7.
76. Schmidt KG, Birk E, **Silverman NH**, Scagnelli SA. Echocardiographic evaluation of dilated cardiomyopathy in the human fetus. *Am J Cardiol*, 1989; 63:599–605.
77. Schmidt KG, **Silverman NH**, Harrison MR, Callen PW. High-output cardiac failure in fetuses with large sacrococcygeal teratoma: diagnosis by echocardiography and Doppler ultrasound. *J Pediatr* 1989; 114:1023–8.
78. Schmidt KG, Cloez J-L, **Silverman NH**. Assessment of right ventricular performance by pulsed Doppler echocardiography in patients after intraatrial repair of aortopulmonary transposition in infancy or childhood. *J Am Coll Cardiol* 1989; 13:1578–85.
79. Langer JC, Harrison MR, Schmidt KG, **Silverman NH**, Anderson RL, Goldberg JD, Filly RA, Crombleholme TM, Longaker MT, Golbus MS. Fetal hydrops and death from sacrococcygeal teratoma: rationale for fetal surgery. *Am J Obstet Gynecol*, 1989; 160:1145–50.
80. Schiller NB, Shah PM, Crawford M, DeMaria A, Devereux R, Feigenbaum H, Gutgesell H, Reichek N, Sahn D, Schnittger I, **Silverman NH**, Tajik AJ. Recommendations for quantitation of the left ventricle by two-dimensional echocardiography. *J Am Soc Echocardiography* 1989; 2:358–67.
81. Roberson DA, **Silverman NH**. Ebstein’s anomaly: echocardiographic and clinical features in the fetus and neonate. *J Am Coll Cardiol* 1989; 14:1300–7.
82. Velvis H, Schmidt KG, **Silverman NH**, Turley K. Diagnosis of coronary artery fistula by two-dimensional echocardiography, pulsed Doppler ultrasound and color flow imaging. *J Am Coll Cardiol* 1989; 14:968–976.
83. Muhiudeen IA, Roberson DA, **Silverman NH**, Haas G, Turley K, Cahalan MK. Intraoperative echocardiography in infants and children with congenital cardiac shunt lesions: transesophageal versus epicardial echocardiography. *J Am Coll Cardiol* 1990; 16:1687–95.
84. Bond SJ, Harrison MR, Schmidt KG, **Silverman NH**, Flake AW, Slotnick RN, Anderson RL, Warsof SL, Dyson DC. Death due to high-output cardiac failure in fetal sacrococcygeal teratoma. *J Pediatr Surg* 1990; 25:1287–91.
85. Schmidt KG, **Silverman NH**, Van Hare GF, Hawkins JA, Cloez J-L, Rudolph AM. Two-dimensional echocardiographic determination of ventricular volumes in the fetal heart: validation studies in fetal lambs. *Circulation* 1990; 81:325–33.

86. Barth RA, Filly RA, Goldberg JD, Moore P, **Silverman NH**. Conjoined twins: prenatal diagnosis and assessment of associated malformations. *Radiology* 1990; 177:201–7.
87. Roberson DA, **Silverman NH**. Malaligned outlet septum with subpulmonary ventricular septal defect and abnormal ventriculoarterial connection: a morphologic spectrum defined echocardiographically. *J Am Coll Cardiol* 1990; 16:459–468.
88. Ciricillo SF, Edwards MSB, Schmidt KG, Hieshima GB, **Silverman NH**, Higashida RT, Halbach VV. Interventional neuroradiological management of vein of Galen malformations in the neonate. *Neurosurgery* 1990; 27:22–8.
89. Ciricillo SF, Schmidt KG, **Silverman NH**, Hieshima GB, Higashida RT, Halbach VV, Edwards MSB. Serial ultrasonographic evaluation of neonatal vein of Galen malformations to assess the efficacy of interventional neuroradiological procedures. *Neurosurgery* 1990; 27:544–8.
90. Roberson DA, Muhiudeen IA, **Silverman NH**. Transesophageal echocardiography in pediatrics: techniques and limitations. *Echocardiography* 1990; 7(6):699–712.
91. **Silverman NH**, Schmidt KG. Ventricular volume overload in the human fetus: observations from fetal echocardiography. *J Am Soc Echo* 1990; 3:20–9.
92. Cassidy SC, Van Hare GF, **Silverman NH**. The probability of detecting a subaortic ridge in children with ventricular septal defect or coarctation of the aorta. *Am J Cardiol* 1990; 66:505–8.
93. Anderson RH, **Silverman NH**, Zuberbuhler JR. Congenitally unguarded tricuspid orifice: its differentiation from Ebstein’s malformation in association with pulmonary atresia and intact ventricular septum. *Pediatr Cardiol* 1990; 11:86–90.
94. Shiraishi H, **Silverman NH**: Echocardiographic spectrum of double inlet ventricle: evaluation of interventricular communication. *J Am Coll Cardiol* 1990; 15:1401–8.
95. Schmidt KG, Di Tommaso M, **Silverman NH**, Rudolph AM. Evaluation of changes in umbilical blood flow in the fetal lamb by Doppler waveform analysis. *Am J Obstet Gynecol* 1991; 164:1118–26.
96. Schmidt KG, Ulmer HE, **Silverman NH**, Kleinman CS, Copel JA. Perinatal outcome of fetal complete atrioventricular block: a multicenter experience. *J Am Coll Cardiol* 1991; 17:1360–6.
97. Schmidt KG, Di Tommaso M, **Silverman NH**, Rudolph AM. Doppler echocardiographic assessment of fetal descending aortic and umbilical blood flows: validation studies in fetal lambs. *Circulation*, 1991; 83:1731–7.
98. Roberson DA, Muhiudeen IA, **Silverman NH**, Turley K, Haas GS, Cahalan MK. Intraoperative transesophageal echocardiography of atrioventricular septal defect. *J Am Coll Cardiol* 1991; 18:537–45.
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86. **Silverman NH**. Non-invasive assessment of fetal cardiac function. In: *Book of Proceedings: 28th Annual Scientific Meeting, Australasian Society for Ultrasound in Medicine*. Melbourne, Australia, 1998, p. 101
87. **Silverman NH**: Fetal cardiac catheterization. In: Book of Proceedings: 28th Annual Scientific Meeting, Australasian Society for Ultrasound in Medicine. Melbourne, Australia, 1998, p. 117
88. Rouillard K, Rouine-Rapp K, Miller-Hance W, Cahalan M, **Silverman NH**, Russel I. Intraoperative segmental wall-motion abnormalities among neonates after an arterial switch operation. *J Am Soc Echocardiogr*, 1998;11:530.
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91. Tworetzky W, Margossian RE, McElhinney DB, **Silverman NH**, van der Valde ME, Allan LD. Multiple cardiac tumors in fetuses and neonates as a predictor of tuberous sclerosis. The Third World Congress of Pediatric Cardiology and Cardiac Surgery, Toronto, ON, May 2001.

92. Friedberg MK, **Silverman NH**. Changing Indications for fetal Echocardiography in a University Center Population Division of Pediatric Cardiology, Department of Pediatrics, Stanford University, Stanford, CA, USA, *Prenat Diag*, 2004; 24: 781–6.
93. Friedberg MK, **Silverman NH**, Grady AM, Tong E, Nourse J, Sorenson B, McNeil K, Lee J, Roge C, Hornberger LK. The Influence of Maternal, Fetal and Health-Care Provider Characteristics on Low Prenatal Detection Rates of Congenital Heart Disease and Post-Natal Course of Affected Infant: A Multi-Center Study in Northern California, Stanford University, Stanford, CA; University of California Davis, Davis, CA; University of California San Francisco, San Francisco, CA; Kaiser Permanente, San Francisco, CA, 2007.

## INVITED PRESENTATIONS

### Continuing Medical Education

- |           |  |
|-----------|--|
| 1980      | American Heart Association Meeting, Scientific Session<br>American College of Cardiology, Scientific Session   |
| 1984–1986 | Advanced Pediatrics  |
| 1987      | 7th Symposium on Echocardiology, Rotterdam, The Netherlands  |
| 1989      | Fetal Cardiac Symposium, Paris, France<br>2nd Congress of the International Perinatal Doppler Society, Paris, France<br>American College of Cardiology—Pediatric Cardiac Imaging for the Nineties<br>American College of Cardiology—Heart House Course   |
| 1990      | Pediatric Cardiac Ultrasound for the New Decade, American College of Cardiology, Bethesda, MD<br>Congenital Heart Disease After Pediatrics: An Expanding Patient Population, American College of Cardiology, 22nd Bethesda Conference.   |
| 1991      | 4th International Symposium on Echocardiography and Doppler in Cardiac Surgery: Intraoperative Echo in Congenital Heart Disease Surgery, Innsbruck, Austria.<br>American Heart Association, Anaheim CA   |
| 1994      | St. Joseph’s Heart Institute Annual Echocardiography Conference.   |
| 1996      | American College of Cardiology—Symposium on Congenital Heart Disease, Charleston, SC<br>UCSF, Department of Pediatrics, 29th Annual postgraduate course: Advances and Controversies in Clinical Pediatrics. 16 credit hours Category   |
| 1997      | Annual Meeting, American College of Cardiology, Anaheim, CA<br>Heart House Learning Center, American College of Cardiology: Advanced Pediatric Cardiac Ultrasound<br>Second World Congress of Pediatric Cardiology and Cardiac Surgery, Honolulu, HI<br>12th Symposium on Echocardiology and 9th Meeting of the International Cardiac Doppler Society, Rotterdam, The Netherlands. |
| 1998      | 47th Annual Scientific Sessions, American College of Cardiology, Atlanta, GA<br>Advanced Pediatric Cardiac Ultrasound: American College of Cardiology, Heart House Learning Center, Bethesda, MD<br>9 <sup>th</sup> Annual Scientific Session American Society of Echocardiography, San Francisco, CA  |
| 1999      | 14th Annual Symposium on Echocardiography in Congenital Heart Disease, Mayo Clinic, Rochester, MN<br>Annual Meeting, California Society of Pediatric Cardiology, San Diego<br>4 <sup>th</sup> International Workshop of Cardiothoracic Surgery, San Diego<br>Anatomical and Echocardiographic Correlations in CHD, Turin, Italy  |

- 2000 Annual Meeting of California Society of Pediatric Cardiology, Napa, CA  
11th Annual Scientific Session, American Society of Echocardiography, Chicago, IL  
American College of Cardiology, Advances in Pediatric Cardiac Ultrasound, Heart House, Bethesda, MD  
California Society of Pediatric Cardiology, Napa, CA  
Mayo Clinic, Rochester, MN
- 2001 The 3rd World Congress of Pediatric Cardiology and Cardiac Surgery, Toronto, Ontario, Canada  
Annual Meeting, California Society of Pediatric Cardiology, San Diego  
Cardiovascular Laboratory II (Congenital Heart Disease and Morphology)
- 2007 The Advance of Knowledge in Cardiac Morphology, Institute of Child Health, London .  
(This event has been registered with the Royal College of Paediatrics & Child Health Continuing Professional Development Office (CPDO – 18 points )
- 2008 State of the Art Imaging and Analysis of cardiac Performance in Congenital Heart Disease  
The Children’s Hospital, University of Colorado, Denver
- Tetralogy of Fallot: Implications for the child and counseling  
18<sup>th</sup> World Congress on Ultrasound in Obstetrics and Gynecology, Chicago, IL
- Cardiology in Perinatal, Neonatal and Pediatric Practice  
Sacred Heart Medical Center Children’s Hospital, Spokane, WA
- In-utero Therapy for Fetal Arrhythmias  
Case Presentation: Fetal PA/IVS  
Children’s National Heart Institute, Washington, DC
- 2009 Tetralogy of Fallot in Adolescents and Young Adults  
Epstein’s Malformation in Adolescents and Young Adults  
University of Kansas Medical Center, Kansas City, MO
- Epstein’s and Double Outlet Right Ventricle  
Echo of Partial and Total Veins  
Coronary Artery Anomalies  
University of Utah, Salt Lake City, WA
- Fetal Echocardiology for the Clinician  
Tetralogy of Fallot, Double Outlet Right Ventricle, Transposition of the Great Arteries  
Practical Approach to Fetal Arrhythmia  
Society for Maternal-Fetal medicine, Scottsdale, AZ
- Basics of Pediatric Transesophageal Echocardiography  
Normal Anatomy and Segmental Analysis  
Knobology  
Stanford University, Stanford, CA

## **INVITED LECTURES**

### **International and National**

- March 1977 American College of Cardiology, Seminar on Congenital Heart Disease  
1) Aortic stenosis—the value of echocardiography  
2) Aortopulmonary transposition after Mustard’s operation—the value of echocardiography
- November 1977 American Heart Association  
1) Sector Scanners in the evaluation of children with congenital heart diseases
- March 1979 American College of Cardiology  
1) Two-dimensional echocardiography: The apex four-chamber view  
2) Meet the experts: Two-dimensional echocardiography in congenital heart disease  
3) Fireside Panel: Left ventricular volume estimation by two-dimensional echocardiography

- July 22–27, 1979 Second World Congress of Ultrasound in Medicine and Biology—Miazaki, Japan
- September. 2–7, 1979 South American Congress of Cardiology—Caracas, Venezuela
- March 1980 American College of Cardiology—Houston, TX  
 1) Minicourse: Appraisal of left ventricular outflow lesions by two-dimensional echocardiography  
 2) Symposium on noninvasive diagnosis in pediatrics
- September 1980 Echocardiography Symposium—Newcastle upon Tyne, UK  
 1) Echocardiographic diagnosis of situs problems  
 2) The proper place of real time two-dimensional echocardiography
- October 1980 American Academy of Pediatrics—Detroit, MI  
 Plenary Session: Two-dimensional echocardiography in evaluation of atrioventricular valves
- June 1–2, 1981 Internationale Symposium, Quantitative Echocardiographie—Kiel, Germany  
 Determination of ventricular and atrial volume by two - dimensional echocardiography: achievement and limitations
- June 22–26, 1981 Fourth International Symposium of Echocardiography—Rotterdam, Netherlands
- October 1, 1981 Sixth Annual Cazden Memorial Visiting Professorship in Pediatric Cardiology, Portland, OR.  
 1) Echocardiography and its role in pediatrics  
 2) Echocardiography in the diagnosis of congenital heart disease
- March 10-12, 1982 American College of Cardiology Heart House  
 Two-dimensional echocardiography of congenital heart disease
- April 23–24, 1982 First International Symposium on Fetal Echocardiography, Strasbourg, France  
 Perspectives on fetal echocardiography
- September 13–16, 1982 Freeman Hospital—Newcastle upon Tyne, England  
 1) Right and left ventricular function in congenital heart disease  
 2) Fetal echocardiography—a method with a future
- October 3, 1982 C. T. Radiology Complex—Bayamon, Puerto Rico  
 1) Two-dimensional echocardiography, instrumentation and physics  
 2) Conotruncal abnormalities: tetralogy of Fallot, double outlet right ventricle, truncus arteriosus, transposition of great arteries
- October 27, 1982 Echo Course for Erasmus University—Rotterdam Fetal Echocardiography
- November 15–18 1982 American Heart Association 55th Scientific Sessions, Dallas, TX  
 Recognition of fetal arrhythmias by echocardiography
- February 2, 1983 Children's Hospital—Birmingham, England  
 1) Some indications and uses of ultrasound in diagnosing congenital heart disease
- February 14, 1983 Guy's Hospital, London. Symposium on fetal and neonatal Doppler studies
- March 20–24, 1983 American College of Cardiology 32nd Annual Scientific Session, New Orleans, LA  
 Chairman, Abstract Session—Pediatric Cardiology:  
 Two dimensional and Doppler echocardiography

- June 8–10, 1983 American College of Cardiology Learning Center, Bethesda, MD  
Noninvasive diagnostic instrumentation in the assessment of cardiovascular disease in the young
- October 6–9, 1983 Italian Society of Echocardiography  
1) Presidio Ospedaliero Multizonale, Bari, Italy  
2) Two-dimensional and Doppler echocardiographic diagnosis of congenital heart disease in children
- November 14–17, 1983 American Heart Association 56th Annual Scientific Sessions, Anaheim, CA  
How to use echocardiography to solve clinically difficult congenital cardiovascular problems
- February 2–4, 1984 American College of Cardiology Learning Center, Bethesda, MD  
Two-dimensional and Doppler echocardiographic diagnosis of congenital heart disease in children.
- March 26–29, 1984 American College of Cardiology 33rd Annual Scientific Session Dallas, Texas  
1) Fireside Panel: Recognition and management of cardiac disease in the fetus  
2) Meet the Experts: Evaluation of the fetal heart
- July 19–20, 1984 Children’s Hospital of Pittsburgh—Pittsburgh, Pennsylvania  
1) Use of Doppler ultrasound in congenital heart disease  
2) Fetal echocardiography  
3) Cardiac Doppler ultrasound
- January 29, 1985 C.S. Mott Children’s Hospital—Ann Arbor, MI  
Grand Rounds—Fetal echocardiography and Doppler ultrasonography
- September 3–6, 1984 3rd Newcastle Symposium on Echocardiography, United Kingdom  
1) Evaluation of the great arteries by cross-sectional echocardiography  
2) Fetal Doppler  
3) Total anomalous pulmonary venous drainage—a new look at an old problem
- January 23–25, 1985 American College of Cardiology Learning Center, Bethesda, MD  
1) Anomalies of systemic arterial flow and anatomy  
2) Single ventricle and related disorders  
3) Cardiac function, integration of classical volume indices and Doppler flow parameters
- March 11–14, 1985 American College of Cardiology 34th Annual Scientific Sessions, Anaheim, CA  
1) Right ventricular function in congenital heart disease
- June 2–6, 1985 Second World Congress of Pediatric Cardiology, New York  
1) Uses of pulsed Doppler ultrasound in the human fetus
- May 19–21, 1986 American College of Cardiology Learning Center, Bethesda, MD  
1) Anomalies of Systemic Arterial Flow and Anatomy
- September 11–13, 1986 Pediatric Cardiology in Pittsburgh, University of Pittsburgh  
1) Cross-Sectional Echo and Doppler  
2) Echocardiographic  
3) Pitfalls in Echo Investigation
- October 1–4, 1986 Mayo Clinic, Rochester, MN  
1) 2-D Doppler and color flow imaging in congenital heart disease



- November 17–20, 1986 American Heart Association 59th Scientific Sessions, Dallas, TX  
Utility of Doppler echocardiography in evaluating responsiveness of elevated pulmonary vascular resistance in children.
- June 24–26, 1987 7th Symposium on Echocardiology—Rotterdam, The Netherlands  
Experience with fetal echocardiography for structural heart disease
- October 31, 1987 Fetal Cardiovascular Diagnosis and Management  
56th Annual Meeting, American Academy of Pediatrics, New Orleans, LA
- January 25–27, 1988 American College of Cardiology Heart House—Washington, D.C.  
Two-dimensional and Doppler echocardiography of congenital and acquired heart disease in pediatrics
- May 5–10, 1988 Visiting Professor, Children’s Hospital, Boston, MA
- May 29–31, 1988 6th Conference of Echocardiography, Paris, France  
1) Comparative imaging of the heart—echocardiography, magnetic resonance imaging, computerized tomography, and angiography  
2) Fetal cardiac Doppler ultrasound
- October 9–12, 1988 ProMedica International/Decision Making in Congenital Heart Disease 2-Echo Technologies
- October 31–November 2, 1988 American College of Cardiology, Bethesda, MD  
Two-Dimensional and Doppler Echocardiography of Congenital and Acquired Heart Disease in Pediatrics.  
1) Anomalies of Left Ventricular Outflow  
2) Conotruncal Anomalies I (Tetralogy of Fallot and Truncus Arteriosus Communis)  
3) Anomalies of Systemic Arterial Flow  
4) Asplenia, Polysplenia and Heterotaxy Complexes  
5) Cardiac Masses—Congenital and Acquired
- November 12–14, 1988 Fetal Cardiology in Conjunction with the American Heart Association 60th Scientific Session Washington DC  
1) Atrioventricular & Ventricular Arterial Connections  
Epstein’s Anomaly in the Fetus and Child: Echo-Pathological Correlations
- June 8–11, 1989 8th Annual Meeting of the International Fetal Medicine and Surgery Society, Asilomar/Pacific Grove, CA  
1) High-Output Failure in Sacrococcygeal Teratoma
- October 20, 1989 Yale University, New Haven, CT
- September 10–12, 1989 Fetal Cardiac Symposium—Doppler Waveform Analysis is Insensitive to Moderate Acute Changes of umbilical Blood Flow in Fetal Lambs—French Society of Cardiology, Paris, France
- May 9-12, 1990 3rd International Symposium on Echocardiography and Doppler in Cardiac Surgery, Vienna, Austria  
Transesophageal Echocardiography in Infants and Children with Regurgitant Valvar Lesions
- June 4-6, 1990 American College of Cardiology, Bethesda, MD. Pediatric Cardiac Ultrasound for the New Decade  
1) Standard Doppler Examination  
2) Fetal Anomalies  
3) Anomalies of systemic venous return

- 4) Aortic Arch abnormalities
  - 5) Evaluation of single ventricle, guidance of surgical management.
  - 6) Tetralogy of Fallot and truncus arteriosus repair without cardiac catheterization.
  - 7) Double outlet right ventricle, spectrum and issues.
- June 13–15, 1990 American Society of Echocardiography, National Scientific Sessions, Arlington, VA
- 1) Transesophageal Echocardiography in Children with Congenital Heart Disease
  - 2) Effects of Mean Left Atrial pressure on Pulmonary Venous Flow and Mitral Inflow: An Intraoperative
  - 3) Transesophageal Study
- October 18–19, 1990 American College of Cardiology, 22nd Bethesda Conference—Congenital Heart Disease after Childhood: An Expanding Patient Population
- December 7–9, 1990 Advances in Heart Disease, American College of Cardiology, San Francisco, CA, Fetal Echocardiography and Cardiology—New Advances
- February 23–24, 1991 American Institute of Ultrasound in Medicine, Atlanta, GA
- 1) Color Doppler Ultrasonography Course
  - 2) Uses of Doppler Color Flow Imaging in Congenital Heart Disease
- March 5, 1991 American College of Cardiology, 40th Annual Scientific Session, Fetal Cardiology, Atlanta, GA
- 1) Meet the Experts, Evaluation of Cardiovascular
  - 2) Performance in the Infant and Child
- Apr 29–May 1 1991 American College of Cardiology, Bethesda, MD—Pediatric Cardiac Ultrasound for the New Decade
- 1) Standard Doppler examination
  - 2) Fetal anomalies
  - 3) Anomalies of systemic venous return
  - 4) Mitral valve abnormalities
  - 5) Aortic arch abnormalities
  - 6) Double outlet right ventricle, spectrum and issues.
- May 7, 1991 University of Michigan, Ann Harbor, MI,
- 1) Experience with echocardiography and Doppler ultrasound in the sheep fetus
- May 29, 1991 Intraoperative Evaluation, Surgical Approach and Clinical Impact of Intraoperative Echo, UCSF Experience, 4th International Symposium on Echocardiography and Doppler in Cardiac Surgery, Innsbruck, Austria
- October 12–15, 1991 7th Annual Symposium. Echocardiography in Congenital Heart Disease, Mayo Clinic, Rochester, MN
- 1) Doppler and Color Flow Doppler: Impact on fetal echocardiographic diagnosis. Impact on fetal Echocardiographic diagnosis.
  - 2) Congenital Anomalies of the Atrioventricular Valves and their Support Apparatus
  - 3) Supravalvular Aortic and Pulmonic Valve Stenosis, including Aortic Arch Anomalies. Hemodynamic and anatomic assessment
  - 4) Levocardia, Dextrocardia and Mesocardia. Diagnostic tips and morphologic markers.
- November 21–23, 1991 V Simposio Internacional de Ecocardiografia
- 1) Congenital Anomalies of the Mitral Valve
  - 2) Color Doppler in Fetal Echocardiography
  - 3) Color Doppler in Echocardiography—Double Outflow Right Ventricle
  - 4) Ebstein’s Anomalies—Aspects of Fetal and Neonatal Presentation

- January 13–15, 1992 American College of Cardiology, Bethesda, MD—Advances in Pediatric Cardiac Ultrasound  
 1) Mitral valve abnormalities  
 2) Coronary artery fistulas  
 3) Arch anomalies: diagnosis and post-repair  
 4) Intraoperative echocardiography  
 5) Prosthetic valves
- May 4–7, 1992 APS/SPR Annual Meeting, Baltimore, MD—Subspecialty Platform Session, Neonatal Cardiology  
 Phasic Flow Events in the Sheep Fetus at Foramen Ovale, Atrial Septum and Aortic Isthmus—Ductus Arteriosus By Ultrasound
- May 10–13, 1992 IV Brazilian Congress of Echocardiography (Ecocardiografia Congresso Brasileiro), Rio de Janeiro, Brazil  
 1) Total Anomalous Pulmonary Venous Drainage and Management  
 2) Ebstein's anomaly in the fetus and neonate  
 3) Echo pathological correlations in fetal cardiac disease  
 4) Aortic arch abnormalities in Children
- May 23–27, 1992 XIV InterAmerican Congress of Cardiology meeting, Orlando, FL; Symposium: Pediatric Cardiology I—Congenital Heart Disease in the Young:  
 Fetal Cardiology: Diagnosis and Management
- July 11–15, 1992 5th International Symposium of Echocardiography in Cardiac Surgery, Horsaalzentrum General Hospital, Vienna, Austria;  
 Evaluation of Congenital Heart Defects
- September 20–24, 1992 The Southern African Cardiac Society, Johannesburg Branch, XVIII Biennial Southern African Cardiac Society Congress, Sun City, Bophuthatswana, South Africa
- October 11–14, 1992 Mayo Clinic, Rochester, MN: 8th Annual Symposium: Echocardiography in Congenital Heart Disease  
 1) Basics of color flow imaging. Unique applications in congenital heart disease. Pitfalls and limitations.  
 2) Fetal and Doppler color flow imaging. Normal and abnormal.  
 3) Congenital anomalies of the atrioventricular valves and their support apparatus.  
 4) Mustard/Senning operation
- December 11–13, 1992 American College of Cardiology, The Tenth Annual Advances in Heart Disease, Grand Hyatt Hotel on Union Square, San Francisco;  
 1) Fetal Cardiology: Diagnosis and Management
- March 14–18, 1993 American College of Cardiology, Anaheim, CA. Symposium—Cardiac anatomy and physiology viewed from the esophagus
- April 12, 1993 Oxford University, England  
 1) Experience with Color Flow Doppler Imaging in the Fetus  
 2) Detection and Treatment of Arrhythmias in the Fetus
- April 14–16, 1993 American College of Cardiology, Bethesda, MD—Advanced Pediatric Cardiac Ultrasound  
 1) Mitral valve abnormalities  
 2) Coronary artery fistulas  
 3) Arch anomalies: diagnosis and post-repair  
 4) Intraoperative echocardiography  
 5) Prosthetic valves
- May 6, 1993 National Heart and Lung Institute, London—Cyanotic Congenital Heart Disease

- May 10, 1993 Southampton General Hospital, Hampshire, England  
 1) Ebstein's Anomaly in the Fetus, Neonate, and Adult  
 2) Echocardiographic Monitoring in Children
- June 2 1993 Jerusalem Heart Society, Israel  
 1) Fetal Echo—the Spectrum of Disease  
 2) Use of Transesophageal Echocardiography in Pediatrics
- June 4 1993 Pediatric Cardiac Society of Israel, Tel Aviv, Israel  
 Intraoperative Transesophageal
- June 21–25, 1993 IV World Congress of Pediatric Cardiology & Cardiac Surgery, Paris, France  
 1) Co-Chair, Main Session: New Diagnostic Techniques  
 2) Effect of aortic banding on wall stress and contractility in the newborn pig,  
 3) Phasic Flow Events in the Sheep Fetus at Foramen Ovale, Atrial Septum, and Aortic Isthmus-Ductus Arteriosus by Ultrasound.
- August 11–14, 1993 II Simpósio Internacional de Medicina Fetal, São Paulo, Brazil  
 1) Fetal Arrhythmias,  
 2) Fetal Echocardiography: Experience at the University of California,  
 3) Color Echo-Doppler,  
 4) Fetal Surgery: Experience in San Francisco
- October 10–13, 1993 9th Annual Symposium: Echocardiography in Congenital Heart Disease, Mayo Clinic, Rochester, MN  
 Workshops:  
 1) Noninvasive hemodynamics,  
 2) Fascinating case presentations and therapeutic dilemmas—Congenital heart disease,  
 3) Case presentations—parachute MV  
 Invited lectures:  
 1) Management decisions based on echocardiography: hydrops, arrhythmia, and fetal cardiac anomaly  
 2) Spectrum of atrioventricular valve abnormalities: congenital hypoplasia, stenosis and atresia  
 3) Conotruncal abnormalities—Aortic over-ride: tetralogy of Fallot, truncus arteriosus and pulmonary atresia, VSD,  
 4) Surgical management—Waterston anastomosis and other aortopulmonary shunts
- November 8–11, 1993 American Heart Association, Councils on Cardiovascular Disease in the Young and Cardiovascular Surgery, Atlanta, GA  
 Invited lectures  
 1) Preoperative echocardiographic evaluation of Ebstein's anomaly  
 2) Echocardiographic - fetal pathological correlations  
 3) Correlations between echocardiography, MRI, angiography and pathology after birth.  
 4) Transesophageal in the pediatric population undergoing cardiac surgery.  
 5) Abnormalities of the mitral valve and left ventricular inflow abnormalities.
- February 16–18, 1994 American College of Cardiology: Advanced Pediatric Cardiac Ultrasound, Heart House, Bethesda, MD  
 1) Left heart obstructive lesions,  
 2) Functionally single ventricle,  
 3) Left ventricular outflow
- February 18–19, 1994 St. Joseph's Heart Institute Seventh Annual Echocardiography Conference: Echocardiography in the Young and Old:  
 1) Pediatric transesophageal echocardiography  
 2) Demonstration of specimens of congenital heart defects

- March 13–17, 1994 43rd Annual American College of Cardiology Conference, Atlanta, GA  
 1) Prenatal Diagnosis and Management of Congenital Heart Disease  
 2) Controversies in Pediatric Cardiology—Magnetic resonance imaging is more helpful than cardiac ultrasound in defining cardiac anatomy for decision making in patient care
- May 20–21, 1994 Symposium on Fetal Cardiology: A Womb with a View, The Galt House Hotel, Louisville, KY  
 1) Doppler/Color Flow Evaluation of Fetal Circulation  
 2) The Spectrum of Prenatal Heart Disease  
 3) Fetal Arrhythmias  
 4) Future Trends in Fetal Cardiology
- June 13–15, 1994 Fifth Annual Scientific Sessions, American Society of Echocardiography, San Francisco-  
 1) Left ventricular obstruction/aortic coarctation; Pediatric session 3,  
 2) Preoperative evaluation of congenital heart disease: Integration of echocardiography and catheterization  
 3) Right ventricular obstruction; Pediatric Session 9, Fetal echocardiography diagnosis and management
- July 16, 1994 7th Congress of World Federation of Ultrasound in Medicine & Biology, Tokyo, Japan  
 1) The use of transesophageal echocardiography (transgastric) monitoring of patients undergoing surgery.
- July 17–22, 1994 7th Congress of World Federation of Ultrasound in Medicine & Biology, Sapporo, Hokkaido, Japan-  
 1) Ultrasonography in congenital heart disease  
 2) The uses of ultrasound for studying congenital heart disease.
- November 14–16, 1994 American Heart Association: Cardio-Thoracic and Vascular Surgery/Cardiovascular Disease in the Young: Fontan Surgery and the Cavopulmonary Shunt, Dallas, TX
- March 26, 1995 American Institute of Ultrasound in Medicine, Moscone Center, San Francisco  
 Doppler color flow enhancement of fetal cardiac imaging
- April 24–26, 1995 American College of Cardiology: Advanced Pediatric Cardiac Ultrasound, Heart House Learning Center, Bethesda, MD  
 1) Preoperative Evaluation and Management: Left heart obstructive lesions  
 2) Preoperative Evaluation and Management: Functionally single ventricle  
 3) Postoperative Echocardiography: Left ventricular outflow anomalies  
 4) Fetal Cardiology: Fetal arrhythmias, evaluation and management
- June 21–23, 1995 11th Symposium on Echocardiography, Rotterdam, The Netherlands  
 1) The use of transesophageal echocardiography and the transgastric approach in infants and small children  
 2) The use of transesophageal echocardiography—new applications and monitoring potential
- September 16–21, 1995 8th Congress of the International Perinatal Doppler Society & the Rudolph Symposium, Jerusalem Israel  
 1) Flow patterns in the ductus venosus, ductus arteriosus, and foramen ovale  
 2) Cardiac failure in the fetus
- December 6–9, 1995 XV Interamerican Congress of Cardiology and the XXXII Chilean Congress of Cardiology and Cardiovascular Surgery  
 1) Fetal Echocardiography  
 2) Management of Fetal Arrhythmias  
 3) Inoperative Transesophageal in Pediatric Cardiac Surgery  
 4) Evaluation of Patients with Arterial Switch

- January  
17–19, 1996 Echocardiography: Concepts and Practice, Genolier Suisse, Aldo Casteñeda Institute, Geneva, Switzerland
- 1) Doppler of Fetal Blood Flow
  - 2) Ventricular Function in the Fetus
  - 3) Arrhythmias in the Fetus
  - 4) Extracardiac Anomalies in the Fetus
  - 5) Conotruncal Anomalies in the Fetus
  - 6) Doppler Exam and Interpretation
  - 7) TGA/DORV
- January  
22–23, 1996 University of Cape Town Cardiac Society, Cape Town, South Africa:
- 1) Transgastric Echocardiography in Conventinal Wall Disease
  - 2) Echo-pathological Correlations of Atrial and Ventricular Septal Defect
- February 1, 1996 University of the Witwatersrand, Johannesburg, South Africa:
- 1) Transgastric two-dimensional and color Doppler echocardiography in congenital heart disease
  - 2) 2-D Echo features of ASD's, VSD's, and PDA
- February  
15–16, 1996 13th Annual Jerome Liebman Visiting Professor, Case Western Reserve University, Cleveland, Ohio—Invited lectures:
- 1) Echocardiographic-Pathologic Correlation in Congenital Heart Disease (Liebman Lecture)
  - 2) Doppler Exam and Interpretation
  - 3) TGA/DORV
  - 4) Doppler of Fetal Blood Flow
  - 5) Ventricular Function in the Fetus
  - 6) Arrhythmias in the Fetus
  - 7) Extracardiac Anomalies in the Fetus
  - 8) Conotruncal Anomalies in the Fetus
  - 9) Echo-Pathology Correlations (Specimen Presentation)
- March  
13–16, 1996 American College of Cardiology: Eighth Charleston Symposium on Congenital Heart Disease, Charleston, SC
- 1) Development of congenital heart disease in the second and third trimester
  - 2) Accuracy of fetal echocardiography
  - 3) Use of intraoperative transesophageal echo
- Apr 15–17, 1996 Advanced Pediatric Cardiac Ultrasound American College of Cardiology, Heart House Learning Center, Bethesda, MD
- 1) Anomalies of the thoracic aorta
  - 2) Functionally single ventricle
  - 3) Arrhythmias in the fetus: diagnosis and management
  - 4) Cardiopulmonary evaluation of the fetus with thoracic and abdominal wall anomalies
- May 21–24, 1996 Yale University, New Haven, CT
- 1) Left ventricular functional assessment by cardiac ultrasound.
  - 2) Echo-correlations of cardiac morphology
- June 9–12, 1996 American Society of Echocardiography 7th Annual Scientific Sessions, Chicago, IL  
Complex atrioventricular connections: what should the surgeon know?
- Septemner  
18, 1996 Pediatric Grand Rounds, Children's National Medical Center, Washington, DC  
Garbose Lecture: Advances in Fetal Echocardiography
- October  
20–23, 1996 Mediterranean Association of Cardiology and Cardiac Surgery, Tel Aviv, Israel:  
Pediatric cardiac imaging—an historical perspective and future challenges

- December 6–7, 1996 The One and One Half Ventricle Repair, Associazione Umbria pre la Lotta Cardiopatie Infantile, Gubbio, Italy
- 1) Which two ventricles cannot be used for a biventricular repair? Echocardiographic analysis.
  - 2) Atrioventricular valve dysfunction: pre-interoperative evaluation and surgical management.
  - 3) The hypoplastic ventricle. Echocardiographic quantitation.
  - 4) One and one half ventricle repair. Echocardiographic indices.
- December 13, 1996 Rudolph Symposium, Hospital Enfants Malade-Necker, Paris, France  
Flow patterns in the fetus determined by echocardiography.
- March 18, 1997 Annual Meeting, American College of Cardiology, Anaheim, CA  
Panel discussion: Advances in Pediatric Echocardiography
- 1) Diagnostic accuracy of pediatric echocardiograms performed in adult laboratories.
  - 2) Hypoplastic left ventricle, or simply a squashed ventricle?
  - 3) Echocardiographic hemodynamic predictors of survival after two-ventricle repair in infants with critical aortic stenosis.
  - 4) Reducing aortic regurgitation from discrete subaortic stenosis; modified surgical method and results.
  - 5) Comparison of echocardiography and magnetocardiography for evaluation of fetal cardiac rhythms.
- April 7–9, 1997 Heart House Learning Center, American College of Cardiology: Advanced Pediatric Cardiac Ultrasound, Bethesda, MD
- 1) Ebstein's anomaly of the tricuspid valve (lecture plus case presentation)
  - 2) Anomalies of the mitral valve
  - 3) Intraoperative transesophageal echocardiography—assessment of aortic and mitral valve intervention
  - 4) Arrhythmias in the fetus: diagnosis and management
- May 11–15, 1997 Second World Congress of Pediatric Cardiology and Cardiac Surgery, Honolulu, HI:  
Experimental fetal surgery in the animal model and in the human fetus
- June 14, 1997 Ohio Valley Heart Care Center, Evansville, IN—Invited lecture: Pre- and post-operative evaluation of congenital heart defects: Echocardiographic-anatomic correlates
- June 25–27, 1997 12th Symposium on Echocardiology and 9th Meeting of the International Cardiac Doppler Society, Rotterdam, The Netherlands
- 1) Transesophageal echocardiography (presiding with D.J. Sahn)
  - 2) Advances in pediatric transesophageal echocardiography (invited lecture)
- June 30–July 1, 1997 Scuola Internazionale di Perfezionamento, First Postgraduate Course on Congenital Heart Disease, Hesperia Hospital, Modena, Italy
- 1) Transesophageal echocardiography in the operating room
  - 2) Double inlet ventricle (with Robert H. Anderson, Peter Lang)
  - 3) Straddling valves (with Robert H. Anderson, Peter Lang)
  - 4) Unbalanced atrioventricular septal defect. Intraoperative assessment of atrioventricular valve (with Robert H. Anderson, Peter Lang)
  - 5) Atrioventricular valvar atresia (with Robert H. Anderson, Peter Lang)
- October 3, 1997 3rd International Workshop on Pediatric Cardiothoracic Surgery, Marina del Rey, CA
- 1) Fetal echocardiography
- February 9, 1998 Kanagawa Children's Medical Center, Yokohama, Japan
- 1) The evaluation of the lamb fetus by echocardiographic methods.

- February 10, 1998 Nagano Children's Hospital, Nagano, Japan  
1) The evaluation of the lamb fetus by echocardiographic methods.
- February 13, 1998 Kurume University, Kurushu, Japan  
1) The evaluation of the lamb fetus by echocardiographic methods.
- February 14, 1998 Japanese Society of Fetal Cardiology, Utsonomiya, Japan  
1) The evaluation of the lamb fetus by echocardiographic methods.
- September 4–6, 1998 28th Annual Scientific Meeting, Australasian Society for Ultrasound in Medicine, Melbourne, Australia  
1) Non-invasive assessment of fetal cardiac function  
2) Fetal cardiac catheterization
- September 7, 1998 1) Department. of Cardiology, Royal Children's Hospital, Melbourne, Australia:  
1) Fetal cardiac assessment  
2) An evening of fetal echocardiography with Dr. Norman Silverman
- September 8, 1998 Grand Rounds, Monash Medical Centre, Melbourne, Australia:  
Advances in fetal cardiology and its relevance to clinical care
- October 11–14, 1998 14th Annual Symposium on Echocardiography in Congenital Heart Disease, Mayo Clinic, Rochester, MN  
Color flow and contrast echocardiography: appropriate use of each technique in 1998
- January 27, 1999 Columbia Hospital, Babies and Children's Hospital, New York, NY  
Ebstein's Malformation
- January 27, 1999 Janet Baldwin Lecture, Society of Pediatric Cardiology of New York,  
Fetal Experimental Echocardiography—A Personal Perspective
- March 29–April 1, 1998 47th Annual Scientific Sessions, American College of Cardiology, Atlanta, GA
- April 27–29, 1998 Advanced Pediatric Cardiac Ultrasound: American College of Cardiology, Heart House Learning Center, Bethesda, MD  
1) Ebstein's anomaly of the tricuspid valve  
2) Management of pulmonary atresia with interventricular septal defect (clinical symposium, with Dr. Bierman)  
3) Intraoperative assessment of aortic and mitral valve intervention  
4) Postoperative transesophageal imaging (workshop)  
5) Arrhythmias in the fetus: Diagnosis and management  
6) Fetal surgical therapy and the role of cardiac ultrasound
- June 10–13, 1998 9th Annual Scientific Sessions, American Society of Echocardiography  
San Francisco, CA  
1) New technologies in pediatric echocardiography  
2) Controversies in pediatric echocardiography: Quantification should represent a major portion of the pediatric echocardiographic exam (argued Con; R. Snider argued Pro)  
3) Fetal echocardiography: In utero intervention  
4) Cases of the year: Samantha Meister  
5) Congenital heart defect surgery



- October 11–4, 1998 14th Annual Meeting, Australasian Society of the Mayo Clinic on Echocardiography: Back to Basics, Melbourne, Australia
- 1) Contrast echocardiography in the current era
  - 2) Ebstein's malformation
  - 3) Fetal arrhythmias
- December 2–5, 1998 XXXV Congreso Chileno de Cardiología y Cirugía Cardiovascular, Cardiología Para el Año 2000 Iquique, Chile
- 1) Ecocardiografía de Contraste en la Era del Doppler Color
  - 2) Controversia Pediátrica (with Dr. Pedro del Nido)
- March 4–6, 1999 Scuola Internazionale de Perfezionamento Hesperia Dwight C. McGoon: Aortic valve disease and its management: a spectrum from in utero to senescence, Hesperia Hospital, Modena, Italy:
- 1) Critical congenital aortic stenosis: Prenatal diagnosis
  - 2) Intraoperative TEE in aortic valve surgery
- March 22–24, 1999 1) Ipokrates Clinical Seminar: Pediatric Echocardiography, Mainz, Germany—Invited lectures:
- 2) The normal heart: echo-anatomic correlations
  - 2) Rhythm disturbances in the fetus
  - 3) Common cyanotic lesions I, TOF, truncus, Ebstein's anomaly
  - 4) Echocardiography on the neonatal service
  - 5) Evaluation of the baby with stridor
- April 26–28, 1999 Advanced Pediatric Cardiac Ultrasound: American College of Cardiology, Heart House Learning Center, Bethesda, Maryland
- 1) Ebstein's anomaly of the tricuspid valve
  - 2) Case presentation: Ebstein's anomaly
  - 3) Anomalies of systemic venous return
  - 4) Anomalies of the atrioventricular canal
  - 5) Case presentation: Anomalies of systemic venous return and the atrioventricular canal
  - 6) Anomalies of the thoracic aorta
  - 7) Management of fetal arrhythmias
- May 26–Jun 4, 1999 Dwight C. McGoon International School of Cardiology, Hesperia Hospital, Modena, Italy
- 1) Normal echocardiographic anatomy
  - 2) Planes of examination
  - 3) Atrial septal defects and device placements
  - 4) Ventricular septal defects
  - 5) Patent ductus arteriosus
  - 6) Anomalous pulmonary venous connections
  - 7) Tetralogy of fallot
  - 8) Ebstein's malformation.
  - 9) 36 left heart lesions.
    - A. Cor triatriatum sinistrum.
    - B. Supravalvar mitral rings
    - C. Mitral valvar abnormalities.
      - (i) Congenital mitral stenosis (with one and two papillary muscles)
      - (ii) Rheumatic mitral valve disease
      - (iii) Double orifice mitral valve
      - (iv) Mitral valvar clefts without atrioventricular septal defects
      - (v) Mitral valve prolapse in children
  - 10) Aortic abnormalities
  - 11) Evaluation of the infant with stridor

- June 8–11, 1999 9<sup>th</sup> International Parma Echo Meeting: From Fetus to Young Adult, Centro S. Elisabetta, Parma, Italy:
- 1) Color flow and contrast echocardiography in 1999
  - 2) Echocardiographic assessment of coronary artery anomalies
  - 3) Fetal arrhythmias and their management
  - 4) Ebstein's anomaly
- October 1999 Anatomical and Echocardiographic Correlations in Congenital Heart Disease, a Fetal and Neonatal Course, Turin, Italy,
- 1) Magisterial lecture: New Horizons of Fetal Echocardiography
  - 2) Congenital Heart Disease in Postnatal Life
  - 3) Ventricular Septal Defect
  - 4) Atrio-Ventricular Septal Defect
  - 5) Tetralogy of Fallot
  - 6) Left and Right Isomerism, lecture of Echocardiography,
  - 7) Hearts with Univentricular Atrioventricular Connections
  - 8) Double Outlet Right Ventricle
  - 9) Complete Transposition of the Great Arteries, 11:15 am
  - 10) Left Ventricular Outflow Tract Obstructions
  - 11) Pediatric Echocardiography on the Eve of the Millennium
- November 8, 1999 Royal Infirmary, Bristol, UK,
- 1) Perinatal Cardiology for the Perinatologist
  - 2) Impact of Transesophageal Echocardiography on Operative Results
- February 28–March 1, 2000 Advanced Pediatric Cardiac Ultrasound: American College of Cardiology Heart House Learning Center, Bethesda, MD:
- 1) Ebstein's Anomaly of the Tricuspid Valve
  - 2) Anomalies of Systemic Venous Return
  - 3) Anomalies of the Atrioventricular Canal
  - 4) Anomalies of the Thoracic Aorta Fetal Case Presentations
- March 12, 2000 American College of Cardiology, 48<sup>th</sup> Annual Scientific Session--Panel: Echocardiography in Congenital Heart Disease:
- 1) The Role of Echocardiography During Surgical Repair of TOF--Preoperative, Intraoperative, and Postoperative Evaluation: Interactive Case Presentations
- June 11, 2000 American Society of Echocardiography 11<sup>th</sup> National Scientific Sessions, Chicago
- 1) Can echo be used to predict outcomes?
  - 2) Unbalanced AV septal defects.
  - 3) Case Studies: Read with the experts
- July 24–25, 2000 Columbia University, NYC
- September 8–10, 2000 Congenital Heart Surgery: Challenges for the 21<sup>st</sup> Century, Fairmont Hotel, San Francisco
- 1) Surgery in Premature and Low Birth Weight Infants Diagnosis.
  - 2) Role of Echocardiography in Determining the Approaches
- October 9–11, 2000 Ipokrates Clinical Seminar: Pediatric Echocardiography, Mainz, Germany—Invited lectures:
- 1) The Normal Heart Echo-Anatomic Correlations
  - 2) Rhythm Disturbances in the Fetus
  - 3) Common Cyanotic Lesions: Tetralogy, Truncus, Double Outlet Right Ventricle
  - 4) Echocardiography in the Neonatal Nursery
  - 5) Anomalies of the Aortic Arch

- October  
12–13, 2000 Medizinche-Einrichtungen der Heinrich Heine Universitat, Dosseldorf, Germany  
1) Atrioventricular Canal Defects Echo: Pathology and Correlations  
2) Ebstein's Malformation Echo: Pathology and Correlations
- October  
15–18, 2000 Echocardiography in Congenital Heart Disease, Mayo Clinic, Rochester, MN  
1) Cardiac Anatomy Workshop  
2) Case Studies in Shunt Lesions. Atrioventricular Septal Defect(pre-operative)  
3) Case Studies in Outflow Obstruction. Subvalvar Stenoses  
4) Case Studies in Contruncal Defects. State of the Art Lecture: Echocardiographic Assessment of Conotruncal Defects  
5) Case Studies in Atrioventricular Connections. Straddling and Criss-Cross AV Valves
- February  
8–10, 2001 Echocardiography of Post-Operative Heart Disease, Vancouver, British Columbia, Canada  
1) TGA - Echo Features  
2) Norwood Procedure - Echo Features
- Mach. 10, 2001 Ebstein's Anomaly from Fetus to Adulthood  
Gaslini Institute, Genoa, Italy
- March 15, 2001 Atrial Septal Defect: New Therapy Possibilities: Di Catania Institute of Cardiology  
Catania, Italy
- April 2–4, 2001 Advanced Pediatric Cardiac Ultrasound, Heart House, Bethesda, MD  
1) Ebstein's Anomaly of the Tricuspid Valve  
2) Anomalies of Systemic Venous Return  
3) Anomalies of the Atrioventricular Canal  
4) Atrial Isomerism and Related Anomalies of Atrial Morphology  
5) Anomalies of the Thoracic Aorta  
6) Case Presentation- Fetal Equivalents  
7) Cardiovascular Masses
- May 25–26, 2001 Advances in Fetal & Perinatal Cardiology, Toronto, Ontario, Canada  
1) Doppler and M-Mode Assessment of Fetal Tachyarrhythmia Mechanisms  
2) Tissue Doppler Imaging In Fetal Cardiac Arrhythmias: The Fetal Kinetocardiogram  
3) Therapeutic Strategies in the Management of Fetal Supraventricular Tachyarrhythmias  
4) Diagnosis, Management and Outcome of Congenital Atrioventricular Block  
5) Conotruncal Abnormalities in the Fetus
- October  
24–26, 2001 IPOKRATES Clinical Seminar: Pediatric Echocardiography, Verona Italy  
1) The Normal Heart Echo-Anatomic Correlations  
2) Rhythm Disturbances in the Fetus  
3) Common Cyanotic Lesions: Tetralogy, Truncus and Double Outlet  
4) Right Ventricle Echocardiography in the Neonatal Nursery  
4) Anomalies of the Aortic Arch.
- Nov. 6, 2001 Schneider's Children's Hospital Petach Tikva , Israel  
1) The Sackler Visiting Professor Lecture Series I.  
2) Fetal Echocardiographic Experience at the University of California, San Francisco.
- November  
15, 2001 Bikur Cholim Hospital Jerusalem  
Fetal Echocardiographic Experience at the University of California, San Francisco
- November  
30, 2001 Schneider's Children's Hospital Petach Tikva , Israel.  
The Sackler Visiting Professor Lecture Series II.  
1) Ebstein.s Malformation for the Surgeon,  
2) Atrioventricular Canal Defects- Surgical and morphologic

- considerations
- 3) Tetralogy of Fallot, Diagnostic , Intraoperative and Postoperative
  - 4) Echocardiographic Considerations.
- January 30–  
February 2, 2002 All Children's Hospital Education & Conference Center, San Petersburg, FL
- 1) Assessment Techniques for Atrioventricular Septal Defects
  - 2) Echocardiographic Assessment of the Tricuspid Valve.
- April 8–10, 2002 Advanced Pediatric Cardiac Ultrasound, Heart House, Bethesda, MD
- 1) Ebstein's Anomaly of the Tricuspid Valve
  - 2) Anomalies of Systemic Venous Return
  - 3) Congenital Absence of the right Pulmonary Artery in a Neonate: Recognition and Repair
  - 4) Anomalies of the Atrioventricular Canal
  - 5) Postoperative Pearls: Surgically induced Mitral Stenosis following repair of Atrioventricular Septal Defect.
  - 6) Anomalies of the Thoracic Aorta
  - 7) Case Presentation- Fetal Equivalents: Fetal Aortico-Left Ventricular Tunnel: Fetal and Neonatal presentation.
  - 8) Right Ventricular Dependent Coronary *Circulation* in Pulmonary Atresia with Intact Ventricular Septum
  - 9) Cardiovascular Masses
- June 18–21, 2002 11<sup>th</sup> Course On Pediatric Echocardiography. The University Degli Studi, Parma, Italy.
- 1) Fetal Echocardiography- The UCSF Experience.
  - 2) Cardiac tumors - The UCSF Experience
- October 6–9, 2002 18<sup>th</sup> Annual Echocardiography in Congenital Heart Disease-Essentials of the Examination and Interactive Case Studies. Mayo Clinic, Rochester, MN.
- 1) The Essentials of Doppler Echocardiography: Color Flow and the Estimation of Pressures, Gradients, and Flows
  - 2) Atrioventricular Septal Defect: Spectrum, Evaluation, and Case Studies
  - 3) Valvular Regurgitation: Pearls, Pitfalls, and Case Studies
  - 4) Who Wants to be an Echo-Millionaire?-Interactive Quiz
  - 5) Prenatal Presentation of Cardiac Disease and Dysfunction: Diagnosis, Treatment, and Counseling:  
Illustrated with Case Example
- October  
16–18, 2002 IPOKRATES Society Meeting: Pediatric Echocardiography, Verona Italy
- 1) The Normal Heart: Echo-Anatomic Correlations
  - 2) Rhythm Disturbances in the Fetus
  - 3) Common Cyanotic Lesions I Tetralogy Truncus, Double Outlet Right Ventricle
  - 4) Echocardiography in the Neonatal Nursery
  - 5) Anomalies of the Aortic Arch
- October 21, 2002 University of Catania, Sicily, Italy  
The Role of Fetal Echocardiography in the Diagnosis of Congenital Heart Disease
- February  
15–18, 2003 3rd International Symposium on Congenital Heart Disease With Echocardiographic, Anatomic, Surgical and Pathologic Correlation, All Children's Hospital, St. Petersburg, FL
- 1) Fetal Assessment of HLHS
  - 2) Left Ventricular Size Assessment
  - 3) Echocardiography and the Single Ventricle
- April 7–9, 2003 Advanced Pediatric Echocardiography, Heart House Course, Bethesda, MD
- 1) Anomalies of Systemic Venous Return
  - 2) Anomalies of the Atrioventricular Canal

- 3) Anomalies of the Thoracic Aorta
  - 4) Cardiovascular Masses
- April 10, 2003 Columbia University and Babies Hospital, New York  
Ebstein's Malformation From Fetus to Adult
- May 9, 2003 Johannesburg General Hospital, Grand Rounds. Johannesburg, South Africa.  
The Pre-operative Evaluation of Atrioventricular Canal Defects by Echocardiography.
- May 15–17, 2003 IPOKRATES Society Meeting: Pediatric Echocardiography, Athens, Greece
- 1) The Normal Heart: Echo-Anatomic Correlations
  - 2) Rhythm Disturbances in the Fetus
  - 3) Common Cyanotic Lesions I Tetralogy Truncus, Double Outlet Right Ventricle
  - 4) Echocardiography in the Neonatal Nursery
  - 5) Anomalies of the Aortic Arch
- June 11–14, 2003 American Society of Echocardiography-14th Annual Scientific Sessions, Las Vegas, Nevada
- 1) Unusual Venous Anomalies
  - 2) Illustrative Cases in Pediatric Echo; Anomalous Origin of Left Coronary Artery from the Pulmonary Artery
- June 27–28, 2003 The First International Symposium Focusing on Prenatal Therapeutic Cardiac Interventions, Children's hospital of Boston, Boston, MA
- i. Echocardiographic evaluation of fetal physiology
- October 30–31, 2003 The First Annual Symposium on Advances in Perinatal Cardiology, All Children's Hospital and the University of South Florida College of Medicine, St. Petersburg, FL
- 1) Left heart defects in the Fetus
  - 2) Assessment of the Prognosis of CHD
- November 3–5, 2003 Clinical Update in Pediatric and Perinatal Medicine, Big Island of Hawaii, Stanford School of Medicine, Lucile Packard Children's Hospital, Stanford University Medical Center  
Perspectives on Fetal Anomalies: Cardiac Perspective
- November 8, 2003 Innovations in Pediatric and Perinatal Medicine, Kapi'olani Medical Center For Women & Children, Honolulu, HI, Stanford School of Medicine, Lucile Packard Children's Hospital, Stanford University Medical Center
- ii. Perspectives on Fetal Anomalies: Cardiac Perspective
- February 13–17, 2004 The 4<sup>th</sup> Annual International Symposium on Congenital Heart Disease with Echocardiographic, Anatomic, Surgical and Pathologic Correlation, All Children's Hospital, St. Petersburg, FL
- 1) Transposition of the Great Arteries
  - 2) Aortic Insufficiency
  - 3) Two Transthoracic or Transesophageal Echocardiography Examples
  - 4) Echocardiographic Assessment of the Coronary Arties in the Transposition of the Great Arteries
- May 24–25, 2004 Katkov-Lundeen Visiting Professorship in Pediatric Cardiology, The Children's Heart Clinic, The Children's Hospitals and Clinics, Minneapolis, MN
- 1) Advances in Fetal Cardiology
  - 2) Aortic Arch: Anatomy, Physiology and Imaging
  - 3) Assessment of Atrioventricular Septal Defect
  - 4) Ebstein's Malformation-Pathology, Imaging and Clinical Outcomes
  - 5) Evaluating the Spectrum of D-TGA
  - 6) Hearts with Functionally Single Ventricle
  - 7) Pediatric Grand Rounds-The Future of Pediatric Cardiology

- June 26–30, 2004 15<sup>th</sup> Annual Scientific Sessions, American Society of Echocardiography: The Heart of Clinical Cardiology  
Ebstein's Malformation; The echocardiographic presentation.
- October 3–6, 2004 20<sup>th</sup> Annual Echocardiography in Pediatric and Adult Congenital Heart Disease, Mayo Clinic, Rochester, MN  
 1) Doppler Hemodynamics in Congenital Echocardiography with Illustrative Case Examples  
 2) Truncus Arteriosus  
 3) Right Ventricular Outflow Conduits  
 4) Coarctation of the Aorta and Interruption of the Aortic Arch  
 5) Prenatal Interventions: Clinical Curiosities or a New Era in Cardiology?  
 6) A case study : Absent right pulmonary artery in a neonate: echocardiographic findings
- December 3, 2004 Sackler Visiting Fellow Lectures, The Mortimer and Raymond Sackler Institute of Advanced Studies, Tel Aviv University, Israel  
 1) The Echocardiography of Bicuspid Aortic Valve.  
 2) Fetal Echocardiographic Experience at Stanford.
- February 11–15, 2005 The Fifth Annual International Symposium on Congenital Heart Disease with Echocardiographic, Anatomic, Surgical, and Pathologic Correlation. The Congenital Heart Institute of FL, All Children's Hospital and The University of South Florida, St. Petersburg, FL.  
 1) Echocardiography and Transesophageal (TEE) Symposium: Heterotaxia Syndromes  
 2) Glenns and Fontans  
 3) Examples for discussion.  
 4) Cardiac Transplantation  
 5) Echocardiographic Assessment of the Falling Fontan
- February 16–20, 2005 Eighth Annual Post Graduate Course on Pediatric Cardiovascular Disease, organized by The Cardiac Center at the Children's Hospital in Philadelphia, in Orlando, FL.  
 1) Fourth Annual William J. Rashkind Memorial Lecture, Ebstein's Anomaly: From Fetus to the Adult
- February 28–March 2, 2005 IPOKRATES Clinical Seminar, Innsbruck Austria, Contrast Echocardiography: An Application in Congenital Heart Disease. Pediatric Cardiology: What All Pediatricians Need to Know  
 1) The Fetal Circulation and Congenital Heart Disease  
 2) Prenatal Intervention for Cardiac Abnormalities  
 3) Systemic and Pulmonary Venous Anomalies  
 4) Cyanotic Defects – TOF, TOF/PA, TAC  
 5) Tumors of the Heart
- May 15–18, 2005 International Symposium Congenital Heart Disease: Which Future? Palermo, Italy  
 1) Imaging in Conotruncal Abnormalities
- June 6–8, 2005 14<sup>th</sup> International Parma Echo Meeting, From Fetus to Young Adult, Parma, Italy.  
 1) LV Inflow Obstructive Lesions  
 2) Aortic Arch Obstructive Lesions  
 3) Development of Left Heart Hypoplasia in Utero,
- June 13, 2005 Grand Rounds, Hospitale Bambino Jesu, Rome, Italy  
 1) Fetal Interventions for Congenital Heart Disease
- June 15–18, 2005 American Society of Echocardiography, 16th Annual Scientific Session, Boston, MA, Echo 2005: A Comprehensive Cardiovascular Disease Training Opportunity Tailored to Fit Your Educational Needs Ebstein's Anomaly
- July 3–9, 2005 International Symposium & Landmark Workshop, Children's Heart Link: Jaslok Hospital, Mumbai, India. Echocardiography.  
 1) Future of Cardiac Ultrasound in Children

- 2)Echo Morphological Correlation  
3)Tetralogy of Fallot Pre- and Post-Operative Evaluation
- Sept. 17, 2005 60<sup>th</sup> Congress of the Brazilian Society of Cardiology, Porto Alegre, Brazil.  
1) Value of Intraoperative Transesophageal Echocardiography in Heart Disease.  
2) Fetal Cardiology at Stanford University.
- September 18–22, 2005 The Fourth World Congress of Pediatric Cardiology and Cardiac Surgery, Buenos Aires, Argentina.  
1) Situs Assessment and Heterotaxy Syndrome Diagnosis in the Fetus.  
2) The Challenge of Growing Hypoplastic Ventricles: Small Right Ventricle: How to Determine Treatment as Uni, One and a Half, or Biventricular Repair.
- October 20, 2005 Third Annual Symposium on Advances in Perinatal Cardiology, St. Petersburg, FL.  
iii.Cardiac surgical Interventions in the Human fetus: Lessons to be Learned.
- December 8, 2005 Israel Pediatric Hospital Association, 5<sup>th</sup> Annual Meeting, Dead Sea, Israel.  
1) Monitoring of Amplatzer Devices Using Cardiac Ultrasound: The LPCH-Stanford Experience.
- February 18–22, 2006 Sixth Annual International Symposium on Congenital Heart Disease, All Children’s Hospital, St. Petersburg, FL  
1) Echocardiography of the Atrioventricular junction and A-V valve  
2) The Role of the Echocardiographer in the Operating Theatre.  
3) Panel Discussion
- April 25–27, 2006 Present and Future Applications of Cardiac Ultrasound Primary at Children’s Hospital, Salt Lake City, UT  
1) First Garth Orsmond Honor Lecture  
2) General Presentation of Cardiac Pathology
- June 18, 2006 The 2<sup>nd</sup> Annual Toronto Symposium. Contemporary Questions in Congenital Heart Disease The Right Heart.  
1) The Small RV: How small is too small?  
2) Ebstein’s Anomaly: Which leaflet is which, and does it matter?
- September 13, 2006 PICCS 2006: Pediatric and Adult Interventional Therapies for Congenital and Valvular Heart 10–Disease., Las Vegas, NV  
1) Echocardiographic Assessment of the Aortic Valve  
2) Ventricular Septal Defects: Echocardiographic Evaluation
- Oct.29–November 1, 2006 7th Annual Congress of SA Heart, Integrating Cardiac Care Capetown, South Africa  
1) T.E.E. in the Operating Room  
2) Anatomical and echocardiographic correlates in VSD  
3) The echocardiography of situs and its abnormalities  
4) Echocardiographic assessment of Fontan & Glenn procedures
- November 22–23, 2006 2nd AGM of the British Congenital Cardiac Association, Assembly Rooms, Bath, England  
1) Echo Diagnosis – Fetal & Post-natal  
2) Echocardiography in Congenital Cardiology – Past, present and the future  
3) Intraoperative TOE – is it necessary?
- November 24, 2006 Fetal treatment in the modern age, Oxford University, England
- Jan 8, 2007 Pathology Demonstration of Congenital Heart Disease, Salt lake City, UT

- January  
19–26, 2007 Children’s HeartLink Medical Mission to Asian Heart Institute, Mumbai, India
- February  
17–20, 2007 7<sup>th</sup> Annual International Symposium on Congenital Heart Disease, Special Focus: Hypoplastic Left Heart Syndrome, All Children’s Hospital, St. Petersburg, FL  
1) Echocardiography of the Hypoplastic Left Heart Syndrome
- February  
21–25, 2007 10<sup>th</sup> Annual Update on Pediatric Cardiovascular Disease, The Children’s Hospital of Philadelphia Continuing Medical Education Department, Philadelphia, PA  
1) Echocardiography 2007: My Most Interesting Case – Ashbury AB  
2) Left ventricular Inflow Anomalies – Abnormalities of the left ventricular Inflow by Echocardiography
- March 8–11, 2007 SPA/AAP Pediatric Anesthesiology 2007, Phoenix, AZ  
1) Morphological Aspects of Congenital Heart Disease: Correlation with TEE
- April 9–11, 2007 The 18<sup>th</sup> Annual Scientific Meeting Of the Japanese Society of Echocardiography, co-hosted by Mochida Siemens medical Systems Co., Ltd, Karuizawa Prince Hotel, Nagano, Japan  
1) Echocardiographic Findings of Postoperative patients with Congenital Heart Disease  
2) Morphology and Physiology in the development of Heart Disease In Utero
- April 20–22 2007 Western Society of Pediatric Cardiology Annual Meeting, Children’s Heart Center Las Vegas  
1) Echo in the Univentricular Heart
- June 16–20 2007 American Society of Echocardiography, Seattle, WA  
1) Stump the Experts  
2) When the Echocardiogram Gets Tough...: Complex AV Valve Abnormalities
- July 9, 2007 Special Meeting of Israel Pediatric Heart Association, Rabin Medical Center, Petach Tikva, Israel: Double Outlet Ventricle Echocardiographic indicators for Surgery
- July 13–16, 2007 XIV Puerto Rican Congress of Cardiology, Fajardo, Puerto Rico (18.5 hrs CME credits Category 1)  
1) The Use of Transesophageal Echocardiography in the Operating Room  
2) Echo of Bicuspid Valve
- July 22–25, 2007 PICS & AICS 2007: Pediatric Interventional Cardiac Symposium and Adult Interventional Cardiac Symposium, Las Vegas, NV  
1) Neonatal TOF: Echocardiographic Assessment
- September  
12–14, 2007 IPOKRATES Clinical Seminar; Pediatric Cardiology: What All Pediatricians to Know, Budapest, Hungary  
1) The Fetal Circulation and Congenital Heart Disease  
2) Prenatal Intervention for Cardiac Abnormalities  
3) Systemic and Pulmonary venous Anomalies  
4) Cyanotic Defects, TOF, TOF/PA., TAC  
5) Other Inflammatory Diseases of the Heart  
6) Tumors of the Heart
- September  
20, 2007 The Howard P. Gutgesell Pediatric Echocardiography Symposium, University of Virginia Health System, Charlottesville, VA  
1) Fetal Imaging Session  
2) Fetal Flow Dynamics  
3) Discussions/ Questions



- October  
7–10 2007
- The 23<sup>rd</sup> Annual Echocardiography in Pediatric and Adult Congenital Heart Disease: *Focus on the Postoperative Patient with CHD*, Mayo Clinic, Rochester, MN
- 1) Understanding the importance and challenges of Echocardiography in the Operating Room – The Echocardiologist’s Perspective
  - 2) Daily Echo Challenge – Right Atrial Myxoma and Carney Syndrome
  - 3) Infantile Total Anomalous Pulmonary Venous Connection (TAPVC)
  - 4) Daily Echo Challenge
  - 5) Double Outlet Right ventricle (DORV): Understanding the Connections and Repairs
  - 6) Case Studies in Management of Adult With Postoperative CHD – Presentation of Partial Anomalous Pulmonary Venous Return
  - 7) Atrioventricular Septal Defects
  - 8) Gaucher Disease – Murmur of Mitral Stenosis
- October  
11–13 2007
- Fifth Annual Symposium on Advances in Perinatal Cardiology: Special Focus: Evolution of Congenital Heart Disease, Renaissance Vinoy Resort & Golf Club, St. Petersburg, FL
- 1) Diagnosis of Congenital heart Disease: Diagnosis of Heart Disease in Utero`
  - 2) Left Atrial Isomerism & Complete Heart Block: Pathology and Clinical Spectrum
  - 3) Pathology of Left Atrial Isomerism & Complete Heart Block
  - 4) Fetal CHD with Specimens
- February  
6–10, 2008
- Eleventh Annual Update on Pediatric Cardiovascular Disease, Scottsdale AZ
- 1) Truncus Arteriosus – Echocardiography
  - 2) Echocardiography: Carney’s Syndrome: a rare presentation of cardiac myxomas
  - 3) Hot topics in Fetal cardiology
  - 4) How to Make a Video Presentation using Dicom, PowerPoint and Beyond
- February  
14–16, 2008
- Eighth Annual International Symposium on Congenital Heart Disease, St. Petersburg, FL
- 1). Preoperative Evaluation of ToF by Echocardiography
- April 12, 2008
- 3<sup>rd</sup> Annual Spring Symposium, Kansas City Echo Society
- i. Postoperative Congenital Heart Disease: A Primer
- May 27–30, 2008
- The 2<sup>nd</sup> Asia-Pacific Congress of Pediatric Cardiology and Cardiac Surgery, Jeju, Korea
- 1) Fetal Cardiology Abnormalities: The Stanford Experience
  - 2) The Use of Transesophageal Echocardiography in the Operating Room
- June 9, 2008
- American Society of Echocardiography; 19<sup>th</sup> Annual Scientific Sessions, Toronto, Ontario
- 1) Mentoring Workshop
  - 2) Hypoplastic Left Heart
  - 3) Stump the Experts
  - 4) The Art of Teaching
- June 25–28, 2008
- 17<sup>th</sup> International Parma Echo Meeting, Parma, Italy
- 1) Advances in Fetal Imaging and Fetal Physiology
  - 2) Fetal Cardiac Intervention
  - 3) Use of Live 3D Echo in Intraoperative and Catheterization Laboratories
- August 1-3, 2008
- State of the Art Imaging & Analysis of cardiac Performance in Congenital Heart Disease  
Aspen, CO
- 1) State of the Art Imaging – 2D, M-mode and Doppler Assessment
- August 12-16,  
2008
- IX International course on Fetal and Pediatric Cardiology, Porto Alegre, Brazil
- 1) Evolving heart disease in hypoplastic left heart syndrome
  - 2) Isolated myocardial non-compaction: from the fetus to the child
  - 3) The Echocardiography of Tetralogy of Fallot Form Fetus to Adult

- August 23–28 2008 18<sup>th</sup> World Congress on Ultrasound in Obstetrics and Gynecology, Chicago, IL  
1) Fetal Echocardiography
- October 31– November 1, 2008 First Phoenix Fetal Cardiology Symposium, Phoenix, AZ  
1) Pitfalls of Cardiac Imaging  
2) History of Fetal Cardiology
- January 27, 2009 The Society of Thoracic Surgeons Annual Meeting, San Francisco, CA  
With Contemporary Non-invasive Imaging Do We Need Catheterization?
- February 13– 17, 2009 9<sup>th</sup> Annual International Symposium on Congenital Heart Disease, St. Petersburg, FL  
1) TTE, TEE and ICE: Echo Alphabet Soup  
2) Long Term Follow-up: Is it Important for Patients with Cardiac Septal Defects  
3) Echocardiography Evaluation of Post-repair Atrioventricular Valvar Regurgitation
- June 6–10, 2009 American Society of Echocardiography; 20<sup>th</sup> Annual Scientific Sessions, Washington DC  
1) Debate: Anatomic Diagnosis of Double Outlet Right Ventricle: The “50%” Rule Rules!  
2) Extracardiac Lesions in the Fetus: Assessment of the Cardiovascular Status.
- June 12–16, 2009 XXII Interamerican Congress of Cardiology, Fajardo Puerto Rico  
1) Tetralogy of Fallot: Pediatric to Adult Spectrum  
2) Univertricular Heart Syndromes
- September 14– 18, 2009 18<sup>th</sup> International Parma Echo Meeting, Parma, Italy  
1) Echocardiogram for the hospital based pediatrician  
2) Extra-cardiac Causes of Fetal Cardiac Failure
- October 11– 14, 2009 25<sup>th</sup> Annual Echocardiography in Pediatric and Adult Congenital Heart Disease Symposium  
Essentials for Clinical Practice, Mayo Clinic, Rochester, MN  
The Challenging Role of Congenital Echo – 25+ Years of Experience  
Evolution of Medical and Surgical Management of ToF  
Epstein Anomaly: The Prenatal Presentation and Evaluation  
Daily Echo Challenge
- October 26–30 2009 University of Padova Medical School, Padua, Italy  
1)TTE, TEE and ICE – “Echo alphabet soup” which one and why? What is best to evaluate normal cardiac anatomy and cardiac septal defects?  
2) Long term follow-up: is it important for Patients with Cardiac Septal Defect?  
3) Ecocardiography evaluation of post-repair AV canal Defects  
4) Stanford experience on fetal echocardiography  
5) Echocardiography of partial and total anomalous pulmonary venous return  
6) Isomerism of atrial appendices  
7) Ecocardiography of the functionally single ventricle  
8)Ecocardiographic evaluation of myocardiopathies in the pediatric age

#### **Regional Presentations and Invited Talks**

- September 1978 Institute for Graphic Communications, San Francisco  
The Place of Clinical Two-dimensional Echocardiography in Clinical Practice
- August 1979 Institute for Graphic Communications, San Francisco  
The Place of Two-dimensional Echocardiography in Clinical Practice
- May 12–14, 1983 Advances in Pediatrics, Extended Programs in Medical Education, University of California, San Francisco  
Prenatal recognition of fetal cardiac disease by echocardiography

- June 7, 1983 Johns Hopkins Hospital, Baltimore  
Echo-anatomical comparisons in congenital heart disease
- May 20–22, 1984 Meet the Masters Echocardiography Seminar, Western Medical Center, Santa Ana, CA  
1) Doppler echo case studies discussion  
2) Advances in technique—fetal echo  
3) Congenital heart disease, 2D and Doppler case studies
- May 16, 1985 Advances in Pediatrics, University of California, San Francisco  
1) Doppler echocardiography in pediatrics
- October 3–5, 1985 Doppler Echocardiography Seminar-Costa Mesa, CA  
1) Fetal Doppler Ultrasound
- October, 1985 Third Biannual UCSF Noninvasive Cardiac Imaging Symposium, San Francisco  
1) Echo/Doppler Assessment—Is it all we need?
- December 6, 1986 Doppler and 2-D Echocardiography, Institute for Medical Studies  
1) Review of Doppler in congenital heart diseases  
2) Comparative imaging techniques in congenital heart disease
- March 19, 1987 Doppler Echocardiography, Letterman Army Medical Center, San Francisco
- April 10, 1987 Fetal Echocardiography, OB/GYN and Abdominal Sonography, UCSF, San Francisco.
- April 27, 1987 Medicine III, Mechanisms of Disease, UCSF, San Francisco  
Problems in Cardiology
- May 14, 1987 Fetal Echocardiography, American Heart Association, California Affiliate  
1987 Scientific Session, Monterey, CA
- July 30, 1987 Patent ductus arteriosus: Now you see it, now you don't  
Pediatric Grand Rounds, UCSF
- November 14–15, 1987 Fetal Cardiology in Conjunction with the American Heart Association 60th Scientific Session.  
Anaheim, CA  
Atrioventricular & Ventricular Arterial Connections
- November 30–December 6, 1987 The Institute for Medical Studies Fourth Annual San Francisco Bay Area Symposium in  
Doppler and 2-D Echocardiography
- March 5, 1988 4th Northern California National Tuberos Sclerosis Association Parent-Medical Conference  
Tuberos Sclerosis: New Findings and Treatment Alternatives University of California, San  
Francisco: Cardiac rhabdomyomas.
- April 6, 1988 University of California, San Francisco Brown Bag Tours  
Non-Invasive Color-Coded Imaging of Blood Flow in the Heart
- April 12–14, 1988 Doppler Echocardiography: Current Techniques and Applications of Pulsed and Continuous  
Wave Doppler—University of California, San Francisco  
Evaluation of Prosthetic Valves: Including Technique and Detection of Paravalvular Leaks
- June 11, 1988 Antepartum and Intrapartum Management, Mark Hopkins Hotel, San Francisco  
Which Fetus Needs an Echo?

- December 15, 1988 Echocardiographic Techniques: Impact on Management Decisions, Radiology Grand Rounds, UCSF
- February 25, 1989 Diagnosis of Prenatal Cardiac Disorders by Ultrasound UCSF Pediatrics 75th Anniversary Symposium: 75 Years of Caring of Children, San Francisco, CA
- November 4, 1989 Hewlett Packard Co., North Hollywood, CA  
Faculty, Third Annual Symposium: Doppler Color Flow Imaging—Practical Applications In Congenital Heart Disease
- June 27, 1990 Monterey County Natividad Medical Center, Salinas, California. Noon Conference-Pediatric Echocardiography
- January 19, 1991 Doppler Color Flow Imaging: Applications & Pitfalls of Color Doppler in Complex Congenital Heart Disease, Fourth Annual Hewlett Packard Symposium, N. Hollywood, CA
- September 14, 1991 Recent Advances in Cardiovascular Ultrasound, San Francisco.
- February 24–26, 1992 UCSF Pediatric Echocardiography Department—Advanced Symposium on Cardiac Ultrasound.  
Course Director: Norman H. Silverman, Assistance from: Accuson; San Francisco  
1) Quantification in the Fetus  
2) Conotruncal Abnormalities
- November 7, 1992 Hewlett Packard Company, North Hollywood, CA: 5th Annual Symposium—Pediatric Echocardiography; Intraoperative applications of pediatric TEE, San Francisco experience.
- March 17, 1992 Salinas Valley Memorial Hospital, Salinas, CA—Fetal and Neonatal Echocardiography
- June 5, 1992 Grand Rounds CME Lecture, Queen of the Valley Hospital, Napa, CA—Congenital Heart Disease
- September 11, 1993 California Pediatric Regional Meeting, Santa Monica—Current status of fetal echocardiography
- June 12, 1994 UCSF Congenital Heart Disease in the Adult: Clinical and Non-invasive Correlations, San Francisco  
Echocardiographic evaluation of situs, position, atrioventricular and ventriculoarterial connections
- October 7–8, 1994 Advances in Pediatric Echocardiography: Sixth Biannual Symposium on Pediatric Transesophageal Echocardiography with Commentaries on Pediatric Transthoracic and Fetal Echocardiography, Hewlett-Packard Company, San Diego, CA  
1) Expectations of Fetal Echocardiography in 1994  
2) Pathology Specimens Demonstration
- March 11, 1995 Department of Radiology, UCSF: Ob/Gyn & Abdominal Sonography: Update 1995, San Francisco  
Fetal cardiac abnormalities: What to worry about
- October 31, 1995 Neonatal/Pediatric ECMO, UCSF Invited lecture: Cardiac issues important in pre-ECMO screening
- February 22, 1996 What's New in Echocardiography, UCSF Grand Rounds
- March 21, 1996 UCSF, Department of Pediatrics, Conference on Death and Dying
- May 9, 1996 UCSF Foundation: Heart Disease: From Test Tube to Treatment  
Congenital heart lesions in children

- May 16–18, 1996 UCSF, Department of Pediatrics, 29th Annual postgraduate course: Advances and Controversies in Clinical Pediatrics  
New advances in echocardiography
- March 25, 1997 Bay Area Ultrasound Society, UCSF, San Francisco  
Ultrasound evaluation of the fetal heart
- September 25, 1999 California Society of Pediatric Cardiology Annual Meeting, San Diego, CA:  
In utero longitudinal development of congenital cardiac defects
- October 11, 1999 Congenital Heart Workshop, UCSF
- October 22, 1999 4th International Workshop on Cardiothoracic Surgery, San Diego, CA  
Fetal cardiac monitoring and interventions: an update
- September 15–17, 2000 Annual Meeting of California Society of Pediatric Cardiology, Napa, CA  
President and Moderator
- April 30, 2001 Valley Children's Hospital & The Department of Cardiology and Cardiothoracic Surgery, Madera, CA  
The State of Fetal Echocardiography and the Anatomic Correlate
- September 7–8, 2001 California Society of Pediatric Cardiology: Session Meeting, San Diego, California.  
Contrast Echocardiography in Children, Revisited.
- March 1–3, 2002 8th Annual Conference: Current Topics & Controversies in Perinatal/Neonatal Medicine  
Fetal Diagnosis and Management, Los Angeles, CA
- September 21, 2002 Western Society of Pediatric Cardiology, Monterey, CA  
Echocardiographic diagnosis of heterotaxy syndromes
- May 2, 2003 Red Cross Memorial Hospital for Children, Cape Town, South Africa  
The Evaluation of the Fetus with Heart Disease by Echocardiography.
- July 18–19, 2003 Eleventh Annual Pediatric Update, Lucile Packard Children's Hospital, Palo Alto, CA,  
Neonate with Cardiac Disease
- August 2, 2004 Stanford University, Adult Echocardiography Group, Ventricular Septal Defects
- October 1, 2004 Stanford University, Adult Echocardiography Group, Ebstein's malformation
- April 2, 2005 Stanford University, Adult Echocardiography Group, Conotruncal Defects
- May 2, 2005 Stanford University, Adult Echocardiography Group, Atrioventricular Canal Defects  
The Impact of Fetal Cardiac Diagnosis on the Treatment of the Fetus
- February 10, 2006 Roma and Marvin Auerback Symposium Lectures: LPCH, Stanford  
Cardiac Ultrasound: The past and the fantastic Journey into the Future.
- February 11, 2007 Evaluating the Fetal Heart in Obstetrical Ultrasound, Salinas Valley Memorial Healthcare System, Salinas, CA  
1) Images in Fetal Cardiac Ultrasound  
2) Demo Session with Volunteers  
3) Fetal Heart Block and Other Rhythm Abnormalities
- December 7–9, 2007 Update on Fetal Cardiology – 2008, Marina Del Ray, CA  
Tetralogy of Fallot, Double Outlet Right Ventricle and Transposition of Great Arteries  
Practical Approach to Fetal Arrhythmias  
The Role for Fetal Cardiac Interventional Procedures: A Dialogue  
Quantitative Measurement of the Fetal Heart Using 2D and M-Mode Ultrasound

November 6, 2009 Basics of Pediatric Transesophageal Echocardiography, Stanford University, Stanford, CA  
Normal Anatomy and Segmental Analysis  
Knobology

## **MENTORSHIP**

### **Postdoctoral Fellows Worldwide**

1980 Phillip Adams, M.D., Adelaide, Australia  
José Coló, M.D., México City, México

1981 Felix Wyler, M.D., Switzerland  
Ivor Obeyesekere, Melbourne, Australia  
Adriaan Cromme Dekhuis, M.D., Groningen, the Netherlands

1982 K. C. Lau, M.D., Hong Kong  
S. Q. Wei, M.D., Beijing, People's Republic of China  
Manual Perez, M.D., Caracas, Venezuela  
Ursula Grosse Brohoff, M.D., West Germany

1983 Oscar Chacon, M.D., Manila, the Philippines  
Joachim Pfeffercorn, M.D., Munster, West Germany  
Harold Tarnoff, M.D., Kaiser, San Francisco, CA  
David Brauner, M.D., Alaska, USA

1984 Claudio Ramaciotti, M.D., Rio de Janeiro, Brazil  
Martin Gerke, M.D., Hamburg West Germany

1985 Sue Hendricks, M. D., Seattle, Washington  
Elton Goldblatt, M.D., Adelaide, Australia  
Solomon Seevy, M.D., Kaiser, Santa Clara, CA, USA  
Lillian Araujo, M.D., Sao Paulo, Brazil  
Klaus Schmidt, M.D., Heidelberg, West Germany

1986 Ennio De Dominicis, M.D., Vincenza, Italy  
Jean Louis Cloez, M.D., Nancy, France

1987 Anil Kumar, M.D., India  
Anthony Camerota, M.D., Oak Knoll Naval Base, CA, USA  
Vlasta Fesslova, M.D., Milan, Italy

1988 Dr. Cécile Marall, Nancy, France  
Leonard Linde, Children's Hospital of Los Angeles  
Nicholas Archer, M.D., Oxford, England  
Richard Kirk, M.D., Oxford, England  
Hirohiko Shiraishi, M.D., Jichi Medical School, Tochigi, Japan

1989 Xu Huan Li, M.D., Hunan Medical College, Changsha, China

1990 Julie Tan, M.D., Guangdong Provincial Cardiovascular Research Institute, Canton, People's Republic of China  
Marvin Auerback, M.D., Mills-Peninsula Hospital—Cardiology  
Richard Kirk, M.D., London, England

1991 Elizabeth Ozawa, M.D., Sao Paulo, Brazil

1992 Hema Rane, M.D., India

1993–1995 Thomas Kohl, M.D., Munster, Germany

1993–1994 Luc Jutra, M.D., Montreal, Quebec, Canada

1994 John Lawrenson, M.D., Cape Town, South Africa  
Peter Von Bodegom, M.D., Germany

1995 Paulina Droggenweiler, M.D., Hospital Calvo Mackenna, Santiago, Chile  
Dr. Gabriela Enriquez M.D., Hospital Calvo Mackenna, Santiago Chile  
Pilar Soler, M.D., Hospital Calvo Mackenna, Santiago, Chile

1997 Carmen J. Botero, M.D., M.P.H. (8/18/97–9/17/97)  
John Kovalchin, M.D., Baylor College of Medicine Houston, Texas

1998 Enricico Chiappa, M.D. Turin, Italy  
GianPaulo Ussia, M.D., Modena, Italy  
Cora Firpo, M.D., Brazil  
Francesco Daluca, M.D., Messina, Italy  
Merzat Fargallah, M.D., Dubai, Egypt

2000 Lillian Lopes, M.D., Brazil  
Celia Nagematsu, M.D., Brazil  
Ana Carolina Coll, M.D., Stanford University

2001 Jo Won Jung, M.D., Suwon, Korea  
Lidija Vu-canjk, M.D., Celje, Slovenia  
Khanh Tuan Huyhn, M.D., Ho Chi Minh City, Vietnam

**Postdoctoral Fellows at UCSF**

1976 Maurice Payot, M.D.

1977 Charles S. Kleinman, M.D.

1978–1980 Rebecca Snider, M.D.

1979 Claude L.L. Rogé, M.D.

1980–1981 David F. Teitel, M.D.

1981–1983 Gary Mayman, M.D.  
Michael Cooper, M.D.  
Lynn Mahony, M.D.

1982–1984 Robert Loitz, M.D.

1984–1986 Elman Frantz, M.D.  
Robert Shaddy, M.D.  
Daniel Bernstein, M.D.  
Michael Tyndall, M.D.  
Einat Birk, M.D.  
Gerard Martin, M.D.

1986–1988 George Van Hare, M.D.  
James Bristow, M.D.

1986–1989 Steven Cassidy, M.D.

1987–1990 David Roberson, M.D.  
Hermannus Velvis, M.D.

1988–1990 Sharon Weil, M.D.

1988–1991 Biadin Roldan, M.D.

1988–1992 Phillip Moore, M.D.

1989–1992 Michael Brook, M.D.

1990–1991	Anne Green, M.D.
1990–1992	Anirban Banerjee, M.B.B.S. Twyman Owens, M.D.
1991–1994	Richard A. Berning, M.D. Stanford Ewing, M.D.
1992–1995	Alan Flint, M.D.
1992–1996	Grant Burch, M.D.
1994–1994	Harold Bernstein, M.D.
	Dianne Dow, M.D.
1994–1997	Colin Phoon, M.D.
1994–1996	Darlene Horton, M.D.
1994–1998	Carl Owada, M.D.
1995–1998	Wayne Tworetsky, M.D.
	Kenneth Rouillard, M.D.
1995–1997	Amy Senhert, M.D.
1996–1999	Grace Kung, M.D. William Gottliebson, M.D.
1997–2000	Katherine Ruppel, M.D. Adel Younoszai, M.D.
1998–2000	Jeff Messinger, M.D.
1998–2001	Michael Puchalski, M.D. James Thompson, M.D.
1999–2002	Anita Grady, M.D. David Gremmels, M.D. Kelly Gleason, M.D. Martha Nicholson, M.D.
2000–2002	Susannah Kim, M.D. Christopher Tan, M.D.

**Stanford Fellows**

2002–2005	Mark K Friedberg, M.D.
2002–2004	Ron Pompeu, M.D. Edythe Tham, M.D.
2003–2005	Nancy Kim, M.D.
2003–2004	Suzan Tourner, M.D.
2004–2006	Jonathan Bernheimer, M.D.
2004–2007	Mariska Kemna, M.D.
2005–2007	Douglas Balster, M.D.
2005–2009	Christopher Talluto, M.D.
2006–2007	David Axelrod, M.D. Reema Kamal, M.D. Derek Obayashi, M.D.



2007–2008 Kara Motonaga, M.D.  
Raj Punn, M.D.  
Eric Silver, M.D.  
Ashish Sureka, M.D.

**Residents, Medical Students Supervised, including non-UCSF trainees**

1986 William E. Groves, University of Miami Medical School  
Marc Ovadia, M.D., Stanford University

1987 Igor Van Laere, The Netherlands, Univ. Amsterdam  
Lisa Ponce, UCSF  
John Simpson, Univ. of Edinburgh  
Tomas Diacovo, McGill Univ., Montreal, Canada  
Michael Vigoda, M.D.

1988 Ann Thomas, M.D., Columbia University, NY  
Aruna Koduri, M.D., Cedars-Sinai of Los Angeles  
Michael Franks, M.D.

1989 Keith Lindermayer, Oak Knoll Naval Base Hospital, CA  
Jacqueline Tejada, Albert Einstein Hospital New York, NY  
Harold Bernstein, Mt. Sinai Medical School, New York  
Jaqueline Tejada, Yeshiva University

1990 Chip Miel, M.D., Stanford, CA  
Marc Ovadia, M.D., Stanford, CA  
Mikhail Roitshteyn, Department of Pediatrics, Stanford University  
Elizabeth Ann Zimmerman, Children’s Hospital, George Washington University, DC

1991 Steven Wilson, Harvard, MA  
Meryl Cohen, M.D., Mt. Sinai Hospital, New York, NY  
Jutta Wirthmann, M.D., University of Berlin, Germany

1994 Isabelle DePlaen, M.D., University of Louvian, Brussels, Belgium  
Esther Sanchez-Leonhardt, M.D., Barcelona, Spain

**Residents, Medical Students Supervised, including non-Stanford trainees**

2003 Giovanna Ciotti, Liverpool, England,

2003–2004 Antoius Vlahos, Ionnina, Greece

2004 Elizabeth Nguyen, MIT  
Bridget Philip, Stanford

2005 Emily Liu, Stanford  
Brigit Maass, Stanford

2006 –2007 Roberto Sarnari, Italy  
Jeannie Seybold, Stanford

2007–2008 Meredith Brooks, Stanford

2008–2009 Robin Church, Stanford  
Josh DuBois, Stanford  
Nicholette Kasman, Stanford  
Glrrn Valenzuela, Stanford