

CURRICULUM VITAE

Name: Lissa Sugeng, M.D., M.P.H., FACC, FASE

Home Address: 61 Huntington St.
New Haven, CT 06511

Office Address: Mailing address:
Yale School of Medicine
Section of Cardiovascular Medicine
P.O. Box 208017
New Haven, CT 06520-8017

Office Address and for Courier Service:
Yale School of Medicine
Section of Cardiovascular Medicine
Dana Building
789 Howard Avenue, Rm 318
New Haven, CT 06519

Office phone: (203) 785-2469
Office fax: (203) 785-6954

Email Address: lissa.sugeng@yale.edu

Date of Birth: May 11, 1965

Birthplace: Semarang, Central Java-Indonesia

Citizenship: US Citizen

Education:

9/1984 - 4/1991 M.D. (Udayana University- Bali, Indonesia)
5/1992 - 5/1993 M.P.H. School of Public Health, Boston University- Boston, MA

Career/Academic Appointments:

7/1993-6/1995 Instructor of Medicine, Research Fellow in Cardiology (Echocardiography)
Tufts University-New England Medical Center, Boston, MA

7/1995-6/1998 Internship and Residency in Internal Medicine, University of Massachusetts
Medical Center, Worcester, MA

7/1998-6/2001 Fellowship in Cardiology, University of Chicago, Chicago, IL

7/2001-6/2002 Fellowship in Echocardiography, University of Chicago, Chicago, IL

7/2002-6/2010 Assistant Professor of Medicine, Cardiology Department, Cardiovascular Imaging
Lab, University of Chicago, Chicago, IL

7/2010-9/2010 Associate Professor of Medicine, Cardiology Department, Cardiovascular
Imaging Lab, University of Chicago, Chicago, IL

10/2010-present Associate Professor of Medicine, Cardiology Department, Cardiovascular Imaging
(Echocardiography), Yale University, New Haven, CT

Administrative Positions:

10/2010-present Associate Director of the Echolab, Director of Echolab Research
Director of the Echo Corelab (Yale Cardiovascular Research Group)

10/2012- present Director of the Echolab, Director of Yale Echolab (includes York St. Campus, St. Raphael's Hospital Campus, HVC offices)

10/2011- present Director of the Echo Corelab (Yale Cardiovascular Research Group)

Board Certification:

1995 Diplomate, ECFMG

2001 Diplomate, American Board of Internal Medicine (Recert. 2011)

2003 Diplomat, in Subspecialty of Cardiovascular Disease American Board of Internal Medicine (Recert. 2013)

2011 Testamur in Echocardiography (NBE 2011)

2014 Diplomat, in Subspecialty of Cardiovascular disease ABIM (Recert 2023)

2014 Diplomat, in Adult Comprehensive Echocardiography (Valid till 6/30/2021)

Professional Honors & Recognition

Regional

2008 Rory Childers Teaching Award (University of Chicago)
2011 Teaching Award (Yale University)

University (Udayana University)

Jan. 1985 Cum Laude (Preclinical Sciences)
May 1991 Graduated MD with highest honors

Grant History:

Sponsor	Title	Dates	Total
Medtronic	Multimodality Imagin of the aortic valve in Cadaver Hearts	2009-2010	\$30,000
Siemens Medical Solutions	Yale: Structural Heart Disease Investigative Collaboration	2012-2015	\$43,400
Cardiokinetix	PARACHUTE III	5/2011-7-2016	\$357,524
	PARACHUTE IV	11/2012-20-2017	\$1,498,565
	PARACHUTE CHINA	10/2014-9/2019	\$93,691
	PARACHUTE COMMERCIAL	11/2013-10/2018	\$31,395
	PARACHUTE IV ECHO SCREENING INITIATIVE	12/2015-12/2020	\$27,533
Philips Healthcare	Professional Services Agreement CV SPIQ7	2014-2015	\$11,601

	Project		
St. Jude	PORTICO	9/2013-9/2018	\$1,012,115
Pheonix Cardiac	BACE	9/2013-9/2015	\$169970
Admittance Technologies	RECHARGE	8/2014-07/2019	\$15,697
Biocardia	CardiAmp	6/2015-5/2021	\$881,493
Caisson	PRELUDE	6/2016-5/2021	\$253,006
Gore	ASD 14-04 Trial	7/2016-7/2019	\$738,770 (pending)

Lectures, Courses, Web-based Education:

2016 Siemens Workshops (January, March, April, May, June 2016)

1. Introduction to 3DE and Clinical Applications
2. Siemens Knobology
3. Z6M and Matrix Probe Technology
4. 4D Acquisition and Display
5. eSie Valve tutorial, demonstration and hands-on cases

2016 C3 (July 30, Orlando, FL)

1. Mitral Valve Assessment in 2016: What Do We Need for a Successful Clip?

2016 ASE (June, 11-16, 2016, Seattle, WA)

2. Advanced Imaging: It Takes a Team: 3D What Does It Add? (June 12, 2016)
3. 3D Echo in Assessing MV Repairability (June 14, 2016)
4. 3D What Does It Add? (Session Chair, June 12, 2016)

2016 ACC (April 4-6, 2016, Chicago, IL)

5. Pregnant, 2nd Trimester, CHF, MV Disease..Uh-Oh (April 4, 2016)
6. Pathology and Mechanism of MR: Primary, Function...Prognosis? (April 5, 2016)

2015 Siemens Roadshow (June 4, 2015, Tampa, FL and October, 3, 2015, Ft. Lauderdale, FL)

2015 Siemens Workshops (August 28, September 19, and November 7, 2015, Cary, NC)

6. Introduction to 3DE and Clinical Applications
7. Siemens Knobology
8. Z6M and Matrix Probe Technology
9. 4D Acquisition and Display
10. eSie Valve tutorial, demonstration and hands-on cases

2015 (invited) Tufts 8th Annual Heart Failure Conference (Nov. 13, 2015, Waltham, MA):

1. Non-Invasive Assesesment of Mitral Regurgitation in Heart Failure (Nov 13, 2015)

2015 (invited) ECHO ASE ASEAN (Oct. 23-25, 2015, Bangkok, Thailand)

1. Approaches for Assessing LV Function and their Pitfalls (Oct.23, 2015)
2. 3D and Strain Echo in Heart Failure (Oct. 25, 2015)
3. Assessment of ASDs and Closure Devices (Oct. 25, 2015)
4. 3D and Strain Live Imaging (Oct. 25, 2015)
5. Siemens Event (Oct. 23, 2015): Applying Innovations: Volume TEE in Daily Clinical Practice

- 2015 (invited) Echo Today and Tomorrow (June 22-26, St. Wolfgang, Austria):
1. 3DE-New Methodologic Innovations
 2. Fungal Endocarditis
 3. Artifacts
 4. A New Paradigm in 4D Imaging (June 22, 2015)
- 2015 (invited) Multimodality CV Imaging Conference (New Haven, CT, Nov. 1, 2014)
1. 2D and 3D Echocardiography for Evaluation of Ischemic Mitral Regurgitation
- 2015 (invited) ASE Boston, MA (June 16, 2015)
1. True Volume Case Review (June 12, 2015)
 2. Echo Contrast: See the Difference, Experience the Impact (June 14, 2015)
 3. Moderator: Real-Time 3D Echo: Time to Change Our Perspective (Joint EACVI and ASE Symposium) (June 16, 2015)
 4. Challenging Cases in Diastology and Pericardial Disease (Restriction) (June 16, 2015)
 5. Lantheus Event: Operational Efficiency of Contrast Utilization (June 14, 2015)
 6. Siemens Event: True Volume TEE (June 12, 2015)
- 2014 (invited) ASE Portland, Oregon (June 21, 2014)
1. Incorporating 3D in Daily Clinical Practice: Ventricular Function
 2. Operational Efficiency of Contrast Utilization
 3. Three Dimensional Echo for Mitral Valve Morphology and Regurgitation
 - 4.
- 2014 (invited) Echo Hawaii (January 2014)
1. 2D and 3D assessment of Systolic Function
 2. 3DE in Valve Disease
 3. Incremental Value of 3DTEE
 4. Diastology Workshop
 5. 3D and Strain Workshop
- 2013 (invited) EuroEcho Imaging 2013 (Istanbul, Turkey, December 12, 2013)
1. Right Ventricular Volumes and Ejection Fraction
- 2013 SDMS (invited) (Las Vegas, NV, October 11,2013)
1. Understanding the Mitral Valve: Not Just Noting the Presence
 2. Sonographer's Scope of Practice: Role in the TEE lab and Beyond
 - 3.
- 2013 (invited) St. Raphael's Grand Rounds (New Haven, CT, October 2013)
1. Hypertrophic Cardiomyopathy
 - 2.
- 2013 (invited) Advanced Echo 2013 (Newport Beach, CA, September 27, 2013)
1. 3D and TTE: How to incorporate 3D TTE in a busy echo lab, Techniques, Knobology, varied approaches and diagnostic application. (Sep 27, 2013)
 2. Role of 3-D in evaluation of the tricuspid valve and the right ventricle
 3. Role of 3D echo in quantitation of mitral regurgitation
 4. Spectrum of mitral stenosis: Case studies
 5. Unknown challenging case studies using 2D/3D images
- 2013 (invited) Hoag Hospital Cardiology Grand Rounds (Newport Beach, CA)
1. 3D Echocardiography: Innovation in Practice (Sep. 26, 2013)
- 2013 (invited) Ramathibodi International Echo Symposium and Workshop: From Guidelines to Practice)

(Bangkok, Thailand)

1. How to 3D TTE (Sep. 9, 2013)
2. How 3D TEE works (Sep. 9, 2013)
3. 2D and 3D assessment of MV complex (Sep. 10, 2013)
4. Role of Echo in Transcatheter Intervention (Sep. 10, 2013)

2013 (invited) 4th InaEcho (Jakarta, Indonesia)

Co-Director of the InaEcho Meeting

1. Recommendation for Image Acquisition and Display (Sep. 6, 2013)
2. Echo Examination for TAVI procedure (Sept 6, 2013)
3. Echo Reporting and Maintaining Quality (Sep 6, 2013)
4. Moderator: Building a good echolab (Sep 6, 2013)

2013 (invited) 3rd Kuala Lumpur Valve Summit (Kuala Lumpur, Malaysia)

1. How I assess Systolic function? (Aug 22, 2013)
2. Role of 3D in the assessment of LV and RV function (Aug 22, 2013)
3. Interesting Cases (Aug 22, 2013)
4. 3D Echo Anatomy of the Aortic Valve (Aug 23, 2013)
5. Ventricular remodeling after MV intervention (Aug 24, 2013)

2013 (invited) American Society of Echocardiography Scientific Sessions (Minneapolis, MN)

1. 3D Quantitation: When to Use
2. Basics of 3D Acquisition

2013 (invited) Grand Rounds Beth Israel Hospital (BIDMC)

1. 3D Echocardiography: Innovation in Practice (April 25, 2013)

2012 (invited) Grand Rounds Rhode Island Hospital (Brown University):

1. 3D Echocardiography: Current Applications and Future Vision (Nov 2, 2012)

2012 (invited) American Society of Echocardiography Scientific Sessions (Washington DC)

1. 3D Applications for the LV and MV (July 1, 2012)
2. The Added Value of 3DE: An ASE/EAE Consensus (Joint EAE Session): 3D Congenital Heart Disease (July 1, 2012)
3. 3D ICE: Up Close and Three-Dimensional (Siemens) (July 2, 2012)
4. Prosthetic Valve: Illustrative Cases (MV perivalvular regurgitation) (July 3, 2012)

2011 (invited) American Society of Echocardiography Scientific Sessions (

1. Prosthetic Valve: Using the Guidelines
2. Session chair: Prosthetic Valve
3. Session chair: Extreme Echo (Optimal Image Management)

2011 (invited) Bridgeport Hospital Internal Medicine Grand Rounds (May 26, 2011)

1. 3DE: When, Why and How

2011 (invited) Norwalk Hospital Internal Medicine Grand Rounds (May 26, 2011)

2. 3DE: When, Why and How

2011 (invited) Multimodality Imaging in Heart Failure (May 5, 2011)

1. 3DE in heart failure

2011 (invited) Cardiovascular Symposium Program (June 4, 2011)

1. 3D Echo: Avatar in the Chest

2011 (invited) 17th Charlestown Symposium: Multi-modality Imaging (March 13-16, 2011)

1. Mitral Valve Pathology: 3DE Datasets, Hands-on
2. 3DE quantifying mitral valve function: hands-on
3. 3DE LV Quantitation: Hands-on

2010 (invited) 9th Holistic Approach in Cardiovascular Diseases Symposium (Workshop Echocardiography) (June 30-July 1)

1. The Role of 3D Echo in the Management of Valve Disease
2. Assessment of Ventricular Function and Anatomy
3. Recent Advances in 3D: Current Issue and Clinical Application
4. Workshop MVQ

2010 (invited) Ramathibodi Echo Workshop(May 29-30, 2010)

1. Imaging Technologies in Heart Valve Disease
2. Role of Imaging Modality in Aortic Surgery
3. Future Direction of Echocardiography: What's Next for Heart Surgery

2010 (invited) CDI (May 28, 2010)

1. Echo 2D/3D TTE in valvular Heart Disease
2. Step by step in 3D/4D TTE (Live Demo)
3. Step by step in 2D and 3D/4D TEE (Live Demo)
4. Role of 2D/ 3D TEE in valvular heart disease
5. Roles of Echo in heart failure

2010 (invited) Inaecho 2010 (Jakarta, Indonesia)

- (May 22, 2010) Echocardiographic Assessment for Right Ventricular Function
- (May 23, 2010) Case: IOE TEE for MV Surgery MR How to Repair
- (May 23, 2010) Evaluating the Mechanism of MR by Echocardiography

2010 (invited) 29th Advanced Echo Conference 2010 (April 18-21, 2010)-Huntington Beach, CA

- (Apr 18, 2010) Role of 3D in Aortic Valve Disease
- (Apr 18, 2010) Evolution of 3D Echocardiography: Is 4D for Real?
- (Apr 18, 2010) 3D Assessment of Left Ventricular Systolic Function: Overall Clinical applicability
- (Apr 18, 2010) Imaging Artifacts Using 3D and How to Avoid Them
- (April 19, 2010) Role of 3D in Aortic Valve Disease
- (April 19, 2010) How Does 3D Improve Quantitation of Mitral Stenosis?
- (April 19, 2010) Live 3D Demonstration (3D TEE)

2010 (invited) University of Chicago Grand Rounds

- 3DE: Did the Child Ever Grow Up? Au Contraire

2010 (invited) Yale Grand Rounds (March 23, 2010)

- 3DE: Did the Child Ever Grow UP? Au Contraire

2009 (invited) Echo Singapore- Singapore

- (Oct. 15, 2009) Quantitative Analysis of Left Ventricular Chamber Size and Function: Better for Diagnosis and Prognosis? What can 3D Echo Offer?
- (Oct. 16, 2009) The Singapore Cardiac Society Echo Lecture
- 3-D and 4-D Echo: Did the Child Ever Grow Up? Au Contraire!
- (Oct. 16,2009) Philips QLab Workshop

2009 (invited) Heart Valve Summit –Chicago, IL

- (Sept 10, 09)Case Presentation for Mitral Valve Disease
- (Sept 10, 09)Breakout session (Advanced Cardiac Imaging)
- (Sept 11, 09)Case Presentation for Aortic Valve Disease

2009 (invited) ASE-Washington, DC

(June, 2009) Do You See What I See?-Rapid Fire from the OR
(June, 2009) Symposia: Clinical Decision-Making in Valvular Disease; When and How 3D is Helpful?

(June,2009) Plenary Session: 3D Echo in Valve Ds. 3D Echo in Valvular Regurgitation

2009 (invited) ACC Orlando

(March, 31,2009) Symposium 667: Advances in Non-Invasive Imaging-3D Echocardiography for Anatomy and Flow
(March 31, 2009) Symposium 669-5: Right Ventricular Function
(March 28, 2009) E3: Pre and Post MV Repair Leaflet Evaluation

2008 (invited) Charm City Echo-Philadelphia

(Sept., 19, 2008) 3D Echocardiography: Concepts and Use in CRT

2008 (invited) Deborah Heart and Lung

(Sept. 18,2008) 3D Echocardiography: Current Technology and Applications

2008 (invited) Delaware Valley Echo Society Meeting (Philadelphia)

(Sept. 18,2008) The Use of 3D Imaging In the Assessment of Valve Disease-Pre and Intraoperatively

2008 (invited) Grand Rounds (Albert Einstien Hospital-Philadelphia)

(Sept. 17, 2008) From Slices to Volumes

2008 (invited) ASE 08 (Baltimore)

3D Echo of the Mitral Valve (iScan lecture)
iSEE My Heart (Mitral Valve Repair for Degenerative MR)

2008 (invited) ACC 2008 (Chicago, IL)

(Mar. 29, 2008) Echocardiography of the Right Ventricle
(Mar. 30, 2008) ACC Integrated Imaging 2008: Cardiac Resynchronization Therapy
(Mar. 31, 2008) Symposium: Applications of New Echocardiography Techniques: Three-Dimensional Assessment of Volumes
(Apr. 1, 2008) Meet the Experts: Role of Echocardiography in Management of Mitral Regurgitation

2007 (invited) AHA 2007 (Orlando, FL)

(Nov. 5, 2007) How to Use 3DE in Clinical Practice

2007 (Invited) International Valve Symposium (Huntington Beach, CA)

(Oct. 17,2007) Quantitation, Pathophysiology and Surgical Anatomy of MR: Real Time 3DE
(Oct. 17, 2007) Quantitation, Pathophysiology and Surgical Anatomy of MS: 3DE
(Oct. 18, 2007) Quantification of LV function: 2D vs. 3DE

2007 (Invited) ACC 2007 (New Orleans, LA)

(Mar. 25, 2007) Ischemic MR: Newer Insights
(Mar 27,2007) The Role of 3DE: Evaluation of LV size and function in the post MADIT Era

2006 (invited) San Francisco Electrophysiology Forum (San Francisco, CA)

(Oct. 7, 2007) Imaging Ventricular Dyssynchrony

- 2006 (Invited) Update and Review of Echocardiography 2006 (Boston)
 A Case-Based Approach
 - Workshop: Practical Echo Measurements: 3DE
 - Case Studies: of systolic Function
 - Practical application of RT3DE
 - 3D cases-A New Way to Guide Intraoperative Management
- 2006 (Invited) Local ASE San Diego Echo Society Meeting
 How to Incorporate 3DE in Daily Practice (Oct. 9, 2006)
- 2006 (Invited) Echocardiography for the Practitioner (Workshop)
 Workshop 4: 3-D Echocardiography (UC Irvine-March 30, 2006)
- 2006 (Invited) ACC (Atlanta, GA)
 1. Meet the Experts: 3D Echocardiography in a Clinical Laboratory
- 2005 (Invited) Advances in Echocardiography (St. Wolfgang, Austria- June 28-30, 2005)
 - Differing Perspectives "3D Echo"
 - 3D is Needed Today and It is Here to Stay! (Debate)
 - Case presentation (unusual cases)
- 2005 (Invited) American Society of Echocardiography 2005 (Boston, MA)
- 2005 (Invited) Advances in Echo 2005 (ACC), 25th Annual Symposium
 April 28-21, 2005, Huntington Beach, CA
 - 3D Assessment of Valvular Anatomy
 - 3D Echocardiography: Current Status and Future Prospects. Is it a Must Have
 Technology in Every EchoLab?
 - Left Ventricular and Right Ventricular Assessment
- 2005 (Invited) ACC 2005 (Orlando, FL)
 - RT3DE in Acute MI
- 2004 Advances in real-time 3D Echocardiography: Bothell and Andover. Symposiums sponsored by by
 Philips Medical Systems
- 2004 (Invited) Grand Rounds: Sentara Norfolk General Grand Rounds (May18, 2004)
- 2004 (Invited) ASE 2004 (San Diego, CA)
 -RT3DE: My Best Cases.
- 2004 (Invited) Grand Rounds: Hoag Memorial Hospital Presbyterian and its Affiliates.
 title:Clinical Applications of RT3DE: Show me the Data
- 2000 Advances in real-time 3D Echocardiography: Bothell and Andover. Symposiums sponsored by by
 Philips Medical Systems
- 2003 Phillips event (Tampa, FL)
 title:Live 3D Echocardiography: Current Status (June 2003)
- 2003 Phillips event (Andover, MA)
 title:Live 3D Echocardiography: Current Status (June, 2003)
- 2003 Phillips event (Detroit, Michigan)
 title:Live 3D Echocardiography: Current Status (June, 2003)

- 2003 (Invited) International Meeting of Echocardiography (France Soc. Echo-La Defense, France-June, 2003)
- 2003 (Invited) Brazilian Echo Society Meeting (Goiana, Brazil. May,2003)
- 2003 Phillips event (Omaha and Lincoln, NE)
title:Live 3D Echocardiography: Current Status (April 2003)
- 2003 Phillips event (St. Louis, MO)
title:Live 3D Echocardiography: Current Status (Jan 2003)
- 2001 (Invited) ASE 2001
title: Intraoperative 3DEcho (June 2001)
- 2000 (Invited) 13th ASEAN Cardiology Congress (Echocardiography Workshop): title:
3D Echocardiography Principles and Practical Application: Assessment of LV
Function (June 2000)

PROFESSIONAL SERVICE

Professional Organizations

Connecticut ACC Chapter:

2010-2012 Committee Member

American Society of Echocardiography

2010 - present International Relations Committee

2012 - 2015 Research Committee

2016 – present ASE Foundation

Meeting Planning/Participation

2008 Co-Chair First Live 3D TEE Conference

2013 Co-Director 4th InaEcho (Indonesian Society of Echocardiography)

BIBLIOGRAPHY:

- Pandian NG, Roelandt J, Nanda NC, Sugeng L, Cao QL, Azevedo J, Schwartz SL, Vannan MA, Ludomirski A, Marx G, et al. Dynamic three-dimensional echocardiography: Methods and clinical potential. *Echocardiography*. 1994;11:237-259
- Delabays A, Pandian NG, Cao QL, Sugeng L, Marx G, Ludomirski A, Schwartz SL. Transthoracic real-time three-dimensional echocardiography using a fan-like scanning approach for data acquisition: Methods, strengths, problems, and initial clinical experience. *Echocardiography*. 1995;12:49-59
- Marx GR, Fulton DR, Pandian NG, Vogel M, Cao QL, Ludomirsky A, Delabays A, Sugeng L, Klas B. Delineation of site, relative size and dynamic geometry of atrial septal defects by real-time three-dimensional echocardiography. *J Am Coll Cardiol*. 1995;25:482-490
- Vannan MA, Cao QL, Pandian NG, Sugeng L, Schwartz SL, Dalton MN. Volumetric multiplexed transmission holography of the heart with echocardiographic data. *J Am Soc Echocardiogr*. 1995;8:567-575
- Magni G, Cao QL, Sugeng L, Delabays A, Marx G, Ludomirski A, Vogel M, Pandian NG. Volume-rendered, three-dimensional echocardiographic determination of the size, shape, and position of atrial septal defects: Validation in an in vitro model. *Am Heart J*. 1996;132:376-381

6. Magni G, Hijazi ZM, Pandian NG, Delabays A, Sugeng L, Laskari C, Marx GR. Two- and three-dimensional transesophageal echocardiography in patient selection and assessment of atrial septal defect closure by the new das-angel wings device: Initial clinical experience. *Circulation*. 1997;96:1722-1728
7. Sugeng L, Cao QL, Delabays A, Esakof D, Marx G, Vannan M, Washburn D, Pandian NG. Three-dimensional echocardiographic evaluation of aortic disorders with rotational multiplanar imaging: Experimental and clinical studies. *J Am Soc Echocardiogr*. 1997;10:120-132
8. Yao J, Cao QL, Pandian NG, Sugeng L, Marx G, Masani N, Yeung H. Multiplane transthoracic echocardiography: Image orientation, anatomic correlation, and clinical experience with a prototype phased array multiplane surface probe. *Echocardiography*. 1997;14:559-578
9. Kardon RE, Cao QL, Masani N, Sugeng L, Supran S, Warner KG, Pandian NG, Marx GR. New insights and observations in three-dimensional echocardiographic visualization of ventricular septal defects: Experimental and clinical studies. *Circulation*. 1998;98:1307-1314
10. Bednarz JE, Spencer KT, Weinert L, Sugeng L, Mor-Avi V, Lang RM. Identification of cardiac masses and abnormal blood flow patterns with harmonic power doppler contrast echocardiography. *J Am Soc Echocardiogr*. 1999;12:871-875
11. Godoy IE, Bednarz J, Sugeng L, Mor-Avi V, Spencer KT, Lang RM. Three-dimensional echocardiography in adult patients: Comparison between transthoracic and transesophageal reconstructions. *J Am Soc Echocardiogr*. 1999;12:1045-1052
12. Mor-Avi V, Bednarz J, Weinert L, Sugeng L, Lang RM. Power doppler imaging as a basis for automated endocardial border detection during left ventricular contrast enhancement. *Echocardiography*. 2000;17:529-537
13. Ward RP, Sugeng L, Weinert L, Korcarz C, Verdino RJ, Spencer KT, Lang RM. Images in cardiovascular medicine. Hemolysis after mitral valve repair. *Circulation*. 2000;101:695-696
14. Sugeng L, Spencer KT, Balasia B, Lang RM. Prolapsing aortic dissection. *Echocardiography*. 2001;18:391
15. Lang R, Sugeng L. A fantastic journey: 3d cardiac ultrasound goes live. *Radiol Manage*. 2002;24:18-22
16. Mahia P, Sugeng L, Lang RM. [percutaneous mitral valvuloplasty guided by three-dimensional echocardiography]. *Rev Esp Cardiol*. 2003;56:1016
17. Sugeng L, Kirkpatrick J, Lang RM, Bednarz JE, Decara JM, Lammertin G, Spencer KT. Biplane stress echocardiography using a prototype matrix-array transducer. *J Am Soc Echocardiogr*. 2003;16:937-941
18. Sugeng L, Spencer KT, Mor-Avi V, DeCara JM, Bednarz JE, Weinert L, Korcarz CE, Lammertin G, Balasia B, Jayakar D, Jeevanandam V, Lang RM. Dynamic three-dimensional color flow doppler: An improved technique for the assessment of mitral regurgitation. *Echocardiography*. 2003;20:265-273
19. Sugeng L, Weinert L, Lammertin G, Thomas P, Spencer KT, Decara JM, Mor-Avi V, Huo D, Feldman T, Lang RM. Accuracy of mitral valve area measurements using transthoracic rapid freehand 3-dimensional scanning: Comparison with noninvasive and invasive methods. *J Am Soc Echocardiogr*. 2003;16:1292-1300
20. Sugeng L, Weinert L, Lang RM. Left ventricular assessment using real time three dimensional echocardiography. *Heart*. 2003;89 Suppl 3:iii29-36
21. Sugeng L, Weinert L, Thiele K, Lang RM. Real-time three-dimensional echocardiography using a novel matrix array transducer. *Echocardiography*. 2003;20:623-635
22. Bacha EA, Zimmerman FJ, Mor-Avi V, Weinert L, Starr JP, Sugeng L, Lang RM. Ventricular resynchronization by multisite pacing improves myocardial performance in the postoperative single-ventricle patient. *Ann Thorac Surg*. 2004;78:1678-1683
23. Caiani EG, Sugeng L, Weinert L, Husson S, Bailliart O, Capderou A, Lang RM, Vaida P. Feasibility of real-time 3d echocardiography in weightlessness during parabolic flight. *J Gravit Physiol*. 2004;11:P235-236
24. Kirkpatrick JN, Wong T, Bednarz JE, Spencer KT, Sugeng L, Ward RP, DeCara JM, Weinert L, Krausz T, Lang RM. Differential diagnosis of cardiac masses using contrast echocardiographic perfusion imaging. *J Am Coll Cardiol*. 2004;43:1412-1419

25. Mor-Avi V, Sugeng L, Weinert L, MacEneaney P, Caiani EG, Koch R, Salgo IS, Lang RM. Fast measurement of left ventricular mass with real-time three-dimensional echocardiography: Comparison with magnetic resonance imaging. *Circulation*. 2004;110:1814-1818
26. Schwalm SA, Sugeng L, Raman J, Jeevanandam V, Lang RM. Assessment of mitral valve leaflet perforation as a result of infective endocarditis by 3-dimensional real-time echocardiography. *J Am Soc Echocardiogr*. 2004;17:919-922
27. Schwalm SA, Sugeng L, Ward RP, Lang RM. Combination of acceleration and collision involving the left atrial appendage limbus as a mechanism of hemolytic anemia in the setting of periprosthetic mitral valve regurgitation. *J Am Soc Echocardiogr*. 2004;17:913-915
28. Sugeng L, Lang RM. Atypical cardiac myxomas. *Echocardiography*. 2004;21:43-47
29. Ward RP, Collins KA, Balasia B, Spencer KT, Decara JM, Mor-Avi V, Sugeng L, Lang RM. Harmonic imaging for endocardial visualization and myocardial contrast echocardiography during transesophageal echocardiography. *J Am Soc Echocardiogr*. 2004;17:10-14
30. Zamorano J, Cordeiro P, Sugeng L, Perez de Isla L, Weinert L, Macaya C, Rodriguez E, Lang RM. Real-time three-dimensional echocardiography for rheumatic mitral valve stenosis evaluation: An accurate and novel approach. *J Am Coll Cardiol*. 2004;43:2091-2096
31. Zamorano J, Perez de Isla L, Sugeng L, Cordeiro P, Rodrigo JL, Almeria C, Weinert L, Feldman T, Macaya C, Lang RM, Hernandez Antolin R. Non-invasive assessment of mitral valve area during percutaneous balloon mitral valvuloplasty: Role of real-time 3d echocardiography. *Eur Heart J*. 2004;25:2086-2091
32. Caiani EG, Coon P, Corsi C, Goonewardena S, Bardo D, Rafter P, Sugeng L, Mor-Avi V, Lang RM. Dual triggering improves the accuracy of left ventricular volume measurements by contrast-enhanced real-time 3-dimensional echocardiography. *J Am Soc Echocardiogr*. 2005;18:1292-1298
33. Caiani EG, Corsi C, Zamorano J, Sugeng L, MacEneaney P, Weinert L, Battani R, Gutierrez-Chico JL, Koch R, Perez de Isla L, Mor-Avi V, Lang RM. Improved semiautomated quantification of left ventricular volumes and ejection fraction using 3-dimensional echocardiography with a full matrix-array transducer: Comparison with magnetic resonance imaging. *J Am Soc Echocardiogr*. 2005;18:779-788
34. Carr JA, Sugeng L, Weinert L, Jeevanandam V, Lang RM. Images in cardiovascular medicine. Subaortic membrane in the adult. *Circulation*. 2005;112:e347
35. Goonewardena S, Sugeng L, Min JK, Lang R. Cardiac papillary fibroelastoma-a volatile variant. *Echocardiography*. 2005;22:536-537
36. Min JK, Spencer KT, Furlong KT, DeCara JM, Sugeng L, Ward RP, Lang RM. Clinical features of complications from transesophageal echocardiography: A single-center case series of 10,000 consecutive examinations. *J Am Soc Echocardiogr*. 2005;18:925-929
37. Schwalm S, Hijazi Z, Sugeng L, Lang R. Percutaneous closure of a post-traumatic muscular ventricular septal defect using the amplatzer duct occluder. *J Invasive Cardiol*. 2005;17:100-103
38. Caiani EG, Corsi C, Sugeng L, MacEneaney P, Weinert L, Mor-Avi V, Lang RM. Improved quantification of left ventricular mass based on endocardial and epicardial surface detection with real time three dimensional echocardiography. *Heart*. 2006;92:213-219
39. Caiani EG, Sugeng L, Weinert L, Capderou A, Lang RM, Vaida P. Objective evaluation of changes in left ventricular and atrial volumes during parabolic flight using real-time three-dimensional echocardiography. *J Appl Physiol*. 2006;101:460-468
40. Corsi C, Coon P, Goonewardena S, Weinert L, Sugeng L, Polonsky TS, Veronesi F, Caiani EG, Lamberti C, Bardo D, Lang RM, Mor-Avi V. Quantification of regional left ventricular wall motion from real-time 3-dimensional echocardiography in patients with poor acoustic windows: Effects of contrast enhancement tested against cardiac magnetic resonance. *J Am Soc Echocardiogr*. 2006;19:886-893
41. Goonewardena SN, Shah DP, Sugeng L, Lang RM. Bioprosthetic valve thrombosis. *Echocardiography*. 2006;23:75-76
42. Lang RM, Mor-Avi V, Sugeng L, Nieman PS, Sahn DJ. Three-dimensional echocardiography: The benefits of the additional dimension. *J Am Coll Cardiol*. 2006;48:2053-2069
43. Mor-Avi V, Jacobs LD, Weiss RJ, Sugeng L, Weinert L, Bouchard T, Spencer KT, Lang RM. Color encoding of endocardial motion improves the interpretation of contrast-enhanced

- echocardiographic stress tests by less-experienced readers. *J Am Soc Echocardiogr.* 2006;19:48-54
44. Mor-Avi V, Sugeng L, Weiss RJ, Toledo E, Weinert L, Bouchard T, Spencer KT, Lang RM. Computerized evaluation of echocardiographic stress tests in patients with poorly visualized endocardium using analysis of color-encoded contrast-enhanced images. *Eur J Echocardiogr.* 2006;7:122-133
 45. Shah DP, Sugeng L, Goonewardena SN, Coon P, Lang RM. Images in cardiovascular medicine. Takotsubo cardiomyopathy. *Circulation.* 2006;113:e762
 46. Sugeng L, Coon P, Weinert L, Jolly N, Lammertin G, Bednarz JE, Thiele K, Lang RM. Use of real-time 3-dimensional transthoracic echocardiography in the evaluation of mitral valve disease. *J Am Soc Echocardiogr.* 2006;19:413-421
 47. Sugeng L, Mor-Avi V, Weinert L, Niel J, Ebner C, Steringer-Mascherbauer R, Schmidt F, Galuschky C, Schummers G, Lang RM, Nesser HJ. Quantitative assessment of left ventricular size and function: Side-by-side comparison of real-time three-dimensional echocardiography and computed tomography with magnetic resonance reference. *Circulation.* 2006;114:654-661
 48. Caiani EG, Weinert L, Takeuchi M, Veronesi F, Sugeng L, Corsi C, Capderou A, Cerutti S, Vaida P, Lang RM. Evaluation of alterations on mitral annulus velocities, strain, and strain rates due to abrupt changes in preload elicited by parabolic flight. *J Appl Physiol.* 2007;103:80-87
 49. Cross B, Nicolarsen J, Bullock J, Sugeng L, Bardo D, Lang R. Cardiac sarcoidosis presenting as mitral regurgitation. *J Am Soc Echocardiogr.* 2007;20:906 e909-913
 50. Joachim Nesser H, Sugeng L, Corsi C, Weinert L, Niel J, Ebner C, Steringer-Mascherbauer R, Schmidt F, Schummers G, Lang RM, Mor-Avi V. Volumetric analysis of regional left ventricular function with real-time three-dimensional echocardiography: Validation by magnetic resonance and clinical utility testing. *Heart.* 2007;93:572-578
 51. Lodato JA, Weinert L, Baumann R, Coon P, Anderson A, Kim A, Fedson S, Sugeng L, Lang RM. Use of 3-dimensional color doppler echocardiography to measure stroke volume in human beings: Comparison with thermodilution. *J Am Soc Echocardiogr.* 2007;20:103-112
 52. Sugeng L, Lang RM. Current status of three-dimensional color flow doppler. *Cardiol Clin.* 2007;25:297-303
 53. Sugeng L, Weinert L, Lang RM. Real-time 3-dimensional color doppler flow of mitral and tricuspid regurgitation: Feasibility and initial quantitative comparison with 2-dimensional methods. *J Am Soc Echocardiogr.* 2007;20:1050-1057
 54. Takeuchi M, Jacobs A, Sugeng L, Nishikage T, Nakai H, Weinert L, Salgo IS, Lang RM. Assessment of left ventricular dyssynchrony with real-time 3-dimensional echocardiography: Comparison with doppler tissue imaging. *J Am Soc Echocardiogr.* 2007;20:1321-1329
 55. Adams DH, Anyanwu AC, Sugeng L, Lang RM. Degenerative mitral valve regurgitation: Surgical echocardiography. *Curr Cardiol Rep.* 2008;10:226-232
 56. Lim KK, Sugeng L, Lang R, Knight BP. Double transseptal catheterization guided by real-time 3-dimensional transesophageal echocardiography. *Heart Rhythm.* 2008;5:324-325
 57. Mor-Avi V, Jenkins C, Kuhl HP, Nesser HJ, Marwick T, Franke A, Ebner C, Freed BH, Steringer-Mascherbauer R, Pollard H, Weinert L, Niel J, Sugeng L, Lang RM. Real-time 3-dimensional echocardiographic quantification of left ventricular volumes: Multicenter study for validation with magnetic resonance imaging and investigation of sources of error. *JACC Cardiovasc Imaging.* 2008;1:413-423
 58. Mor-Avi V, Sugeng L, Lang RM. Three-dimensional adult echocardiography: Where the hidden dimension helps. *Curr Cardiol Rep.* 2008;10:218-225
 59. O'Gara P, Sugeng L, Lang R, Sarano M, Hung J, Raman S, Fischer G, Carabello B, Adams D, Vannan M. The role of imaging in chronic degenerative mitral regurgitation. *JACC Cardiovasc Imaging.* 2008;1:221-237
 60. Shah SJ, Bardo DM, Sugeng L, Weinert L, Lodato JA, Knight BP, Lopez JJ, Lang RM. Real-time three-dimensional transesophageal echocardiography of the left atrial appendage: Initial experience in the clinical setting. *J Am Soc Echocardiogr.* 2008;21:1362-1368
 61. Sugeng L, Mor-Avi V, Lang RM. Three-dimensional echocardiography: Coming of age. *Heart.* 2008;94:1123-1125
 62. Sugeng L, Shernan SK, Salgo IS, Weinert L, Shook D, Raman J, Jeevanandam V, Dupont F, Settlemier S, Savord B, Fox J, Mor-Avi V, Lang RM. Live 3-dimensional transesophageal

- echocardiography initial experience using the fully-sampled matrix array probe. *J Am Coll Cardiol*. 2008;52:446-449
63. Sugeng L, Shernan SK, Weinert L, Shook D, Raman J, Jeevanandam V, DuPont F, Fox J, Mor-Avi V, Lang RM. Real-time three-dimensional transesophageal echocardiography in valve disease: Comparison with surgical findings and evaluation of prosthetic valves. *J Am Soc Echocardiogr*. 2008;21:1347-1354
 64. Takeuchi M, Nishikage T, Mor-Avi V, Sugeng L, Weinert L, Nakai H, Salgo IS, Gerard O, Lang RM. Measurement of left ventricular mass by real-time three-dimensional echocardiography: Validation against magnetic resonance and comparison with two-dimensional and m-mode measurements. *J Am Soc Echocardiogr*. 2008;21:1001-1005
 65. Veronesi F, Corsi C, Sugeng L, Caiani EG, Weinert L, Mor-Avi V, Cerutti S, Lamberti C, Lang RM. Quantification of mitral apparatus dynamics in functional and ischemic mitral regurgitation using real-time 3-dimensional echocardiography. *J Am Soc Echocardiogr*. 2008;21:347-354
 66. Kronzon I, Sugeng L, Perk G, Hirsh D, Weinert L, Garcia Fernandez MA, Lang RM. Real-time 3-dimensional transesophageal echocardiography in the evaluation of post-operative mitral annuloplasty ring and prosthetic valve dehiscence. *J Am Coll Cardiol*. 2009;53:1543-1547
 67. Lodato JA, Cao QL, Weinert L, Sugeng L, Lopez J, Lang RM, Hijazi ZM. Feasibility of real-time three-dimensional transoesophageal echocardiography for guidance of percutaneous atrial septal defect closure. *Eur J Echocardiogr*. 2009;10:543-548
 68. Maffessanti F, Nesser HJ, Weinert L, Steringer-Mascherbauer R, Niel J, Gorissen W, Sugeng L, Lang RM, Mor-Avi V. Quantitative evaluation of regional left ventricular function using three-dimensional speckle tracking echocardiography in patients with and without heart disease. *Am J Cardiol*. 2009;104:1755-1762
 69. Maffessanti F, Sugeng L, Takeuchi M, Weinert L, Mor-Avi V, Lang RM, Caiani EG. Feasibility of regional and global left ventricular shape analysis from real-time 3d echocardiography. *Conf Proc IEEE Eng Med Biol Soc*. 2009;2009:3641-3644
 70. Mehrotra AK, Shah D, Sugeng L, Jolly N. Echocardiography for percutaneous heart pumps. *JACC Cardiovasc Imaging*. 2009;2:1332-1333
 71. Mor-Avi V, Sugeng L, Lang RM. Real-time 3-dimensional echocardiography: An integral component of the routine echocardiographic examination in adult patients? *Circulation*. 2009;119:314-329
 72. Nesser HJ, Mor-Avi V, Gorissen W, Weinert L, Steringer-Mascherbauer R, Niel J, Sugeng L, Lang RM. Quantification of left ventricular volumes using three-dimensional echocardiographic speckle tracking: Comparison with mri. *Eur Heart J*. 2009;30:1565-1573
 73. Perk G, Lang RM, Garcia-Fernandez MA, Lodato J, Sugeng L, Lopez J, Knight BP, Messika-Zeitoun D, Shah S, Slater J, Brochet E, Varkey M, Hijazi Z, Marino N, Ruiz C, Kronzon I. Use of real time three-dimensional transesophageal echocardiography in intracardiac catheter based interventions. *J Am Soc Echocardiogr*. 2009;22:865-882
 74. Sonne C, Sugeng L, Takeuchi M, Weinert L, Childers R, Watanabe N, Yoshida K, Mor-Avi V, Lang RM. Real-time 3-dimensional echocardiographic assessment of left ventricular dyssynchrony: Pitfalls in patients with dilated cardiomyopathy. *JACC Cardiovasc Imaging*. 2009;2:802-812
 75. Sonne C, Sugeng L, Watanabe N, Weinert L, Saito K, Tsukiji M, Yoshida K, Takeuchi M, Mor-Avi V, Lang RM. Age and body surface area dependency of mitral valve and papillary apparatus parameters: Assessment by real-time three-dimensional echocardiography. *Eur J Echocardiogr*. 2009;10:287-294
 76. Sugeng L, Chandra S, Lang RM. Three-dimensional echocardiography for assessment of mitral valve regurgitation. *Curr Opin Cardiol*. 2009;24:420-425
 77. Veronesi F, Corsi C, Sugeng L, Mor-Avi V, Caiani EG, Weinert L, Lamberti C, Lang RM. A study of functional anatomy of aortic-mitral valve coupling using 3d matrix transesophageal echocardiography. *Circ Cardiovasc Imaging*. 2009;2:24-31
 78. Cui W, Gambetta K, Zimmerman F, Freter A, Sugeng L, Lang R, Roberson DA. Real-time three-dimensional echocardiographic assessment of left ventricular systolic dyssynchrony in healthy children. *J Am Soc Echocardiogr*. 2010;23:1153-1159

79. Freed BH, Sugeng L, Furlong K, Mor-Avi V, Raman J, Jeevanandam V, Lang RM. Reasons for nonadherence to guidelines for aortic valve replacement in patients with severe aortic stenosis and potential solutions. *Am J Cardiol.* 2010;105:1339-1342
80. Gomberg-Maitland M, Maitland ML, Barst RJ, Sugeng L, Coslet S, Perrino TJ, Bond L, Lacouture ME, Archer SL, Ratain MJ. A dosing/cross-development study of the multikinase inhibitor sorafenib in patients with pulmonary arterial hypertension. *Clin Pharmacol Ther.* 2010;87:303-310
81. Maffessanti F, Caiani EG, Tamborini G, Muratori M, Sugeng L, Weinert L, Alamanni F, Zanobini M, Mor-Avi V, Lang RM, Pepi M. Serial changes in left ventricular shape following early mitral valve repair. *Am J Cardiol.* 2010;106:836-842
82. Mor-Avi V, Sugeng L, Lindner JR. Imaging the forgotten chamber: Is the devil in the boundary? *J Am Soc Echocardiogr.* 2010;23:141-143
83. Otani K, Takeuchi M, Kaku K, Sugeng L, Yoshitani H, Haruki N, Ota T, Mor-Avi V, Lang RM, Otsuji Y. Assessment of the aortic root using real-time 3d transesophageal echocardiography. *Circ J.* 2010;74:2649-2657
84. Sugeng L, Mor-Avi V, Weinert L, Niel J, Ebner C, Steringer-Mascherbauer R, Bartolles R, Baumann R, Schummers G, Lang RM, Nesser HJ. Multimodality comparison of quantitative volumetric analysis of the right ventricle. *JACC Cardiovasc Imaging.* 2010;3:10-18
85. Tsang W, Ahmad H, Patel AR, Sugeng L, Salgo IS, Weinert L, Mor-Avi V, Lang RM. Rapid estimation of left ventricular function using echocardiographic speckle-tracking of mitral annular displacement. *J Am Soc Echocardiogr.* 2010;23:511-515
86. Ahmad H, Mor-Avi V, Lang RM, Nesser HJ, Weinert L, Tsang W, Steringer-Mascherbauer R, Niel J, Salgo IS, Sugeng L. Assessment of right ventricular function using echocardiographic speckle tracking of the tricuspid annular motion: Comparison with cardiac magnetic resonance. *Echocardiography.* 2011
87. Ben Zekry S, Lang RM, Sugeng L, McCulloch ML, Weinert L, Raman J, Little SH, Xu J, Lawrie GM, Zoghbi WA. Mitral annulus dynamics early after valve repair: Preliminary observations of the effect of resectional versus non-resectional approaches. *J Am Soc Echocardiogr.* 2011;24:1233-1242
88. Chandra S, Salgo IS, Sugeng L, Weinert L, Settlemier SH, Mor-Avi V, Lang RM. A three-dimensional insight into the complexity of flow convergence in mitral regurgitation: Adjunctive benefit of anatomic regurgitant orifice area. *Am J Physiol Heart Circ Physiol.* 2011;301:H1015-1024
89. Chandra S, Salgo IS, Sugeng L, Weinert L, Tsang W, Takeuchi M, Spencer KT, O'Connor A, Cardinale M, Settlemier S, Mor-Avi V, Lang RM. Characterization of degenerative mitral valve disease using morphologic analysis of real-time three-dimensional echocardiographic images: Objective insight into complexity and planning of mitral valve repair. *Circ Cardiovasc Imaging.* 2011;4:24-32
90. Kaku K, Takeuchi M, Otani K, Sugeng L, Nakai H, Haruki N, Yoshitani H, Watanabe N, Yoshida K, Otsuji Y, Mor-Avi V, Lang RM. Age- and gender-dependency of left ventricular geometry assessed with real-time three-dimensional transthoracic echocardiography. *J Am Soc Echocardiogr.* 2011;24:541-547
91. Maffessanti F, Marsan NA, Tamborini G, Sugeng L, Caiani EG, Gripari P, Alamanni F, Jeevanandam V, Lang RM, Pepi M. Quantitative analysis of mitral valve apparatus in mitral valve prolapse before and after annuloplasty: A three-dimensional intraoperative transesophageal study. *J Am Soc Echocardiogr.* 2011;24:405-413
92. Raman J, Jagannathan R, Chandrashekar P, Sugeng L. Can we repair the mitral valve from outside the heart? A novel extra-cardiac approach to functional mitral regurgitation. *Heart Lung Circ.* 2011;20:157-162
93. Roberson DA, Cui W, Patel D, Tsang W, Sugeng L, Weinert L, Bharati S, Lang RM. Three-dimensional transesophageal echocardiography of atrial septal defect: A qualitative and quantitative anatomic study. *J Am Soc Echocardiogr.* 2011;24:600-610
94. Tsang W, Weinert L, Sugeng L, Chandra S, Ahmad H, Spencer K, Mor-Avi V, Lang RM. The value of three-dimensional echocardiography derived mitral valve parametric maps and the role of experience in the diagnosis of pathology. *J Am Soc Echocardiogr.* 2011;24:860-867

95. Dodson JA, Wang Y, Desai MM, Barreto-Filho JA, Sugeng L, Hashim SW, Krumholz HM. Outcomes for mitral valve surgery among medicare fee-for-service beneficiaries, 1999 to 2008. *Circ Cardiovasc Qual Outcomes*. 2012;5:298-307
96. Lang RM, Badano LP, Tsang W, Adams DH, Agricola E, Buck T, Faletra FF, Franke A, Hung J, de Isla LP, Kamp O, Kasprzak JD, Lancellotti P, Marwick TH, McCulloch ML, Monaghan MJ, Nihoyannopoulos P, Pandian NG, Pellikka PA, Pepi M, Roberson DA, Shernan SK, Shirali GS, Sugeng L, Ten Cate FJ, Vannan MA, Zamorano JL, Zoghbi WA. Eae/ase recommendations for image acquisition and display using three-dimensional echocardiography. *Eur Heart J Cardiovasc Imaging*. 2012;13:1-46
97. Lang RM, Badano LP, Tsang W, Adams DH, Agricola E, Buck T, Faletra FF, Franke A, Hung J, de Isla LP, Kamp O, Kasprzak JD, Lancellotti P, Marwick TH, McCulloch ML, Monaghan MJ, Nihoyannopoulos P, Pandian NG, Pellikka PA, Pepi M, Roberson DA, Shernan SK, Shirali GS, Sugeng L, Ten Cate FJ, Vannan MA, Zamorano JL, Zoghbi WA. Eae/ase recommendations for image acquisition and display using three-dimensional echocardiography. *J Am Soc Echocardiogr*. 2012;25:3-46
98. Mor-Avi V, Yodwut C, Jenkins C, Kuhl H, Nesser HJ, Marwick TH, Franke A, Weinert L, Niel J, Steringer-Mascherbauer R, Freed BH, Sugeng L, Lang RM. Real-time 3d echocardiographic quantification of left atrial volume: Multicenter study for validation with cmr. *JACC Cardiovasc Imaging*. 2012;5:769-777
99. Tsang W, Bateman MG, Weinert L, Pellegrini G, Mor-Avi V, Sugeng L, Yeung H, Patel AR, Hill AJ, laizzo PA, Lang RM. Accuracy of aortic annular measurements obtained from three-dimensional echocardiography, ct and mri: Human in vitro and in vivo studies. *Heart*. 2012;98:1146-1152
100. Veronesi F, Caiani EG, Sugeng L, Fusini L, Tamborini G, Alamanni F, Pepi M, Lang RM. Effect of mitral valve repair on mitral-aortic coupling: A real-time three-dimensional transesophageal echocardiography study. *J Am Soc Echocardiogr*. 2012;25:524-531.
101. Pellikka PA, Douglas PS, Miller JG, Abraham TP, Baumann R, Buxton DB, Byrd BF, 3rd, Chen P, Cook NL, Gardin JM, Hansen G, Houle HC, Husson S, Kaul S, Klein AL, Lang RM, Leong-Poi H, Lopez H, Mahmoud TM, Maslak S, McCulloch ML, Metz S, Nagueh SF, Pearlman AS, Pibarot P, Picard MH, Porter TR, Prater D, Rodriguez R, Sarano ME, Scherrer-Crosbie M, Shirali GS, Sinusas A, Slosky JJ, Sugeng L, Tatpati A, Villanueva FS, von Ramm OT, Weissman NJ, Zamani S. American society of echocardiography cardiovascular technology and research summit: A roadmap for 2020. *J Am Soc Echocardiogr*. 2013;26:325-338
102. Ruisi CP, Brysiewicz N, Asnes JD, Sugeng L, Marieb M, Clancy J, Akar JG. Use of intracardiac echocardiography during atrial fibrillation ablation. *Pacing and clinical electrophysiology : PACE*. 2013.
103. Subrahmanyam L, Stilp E, Bujak M, Cornfeld D, Sugeng L. Hepatocellular carcinoma metastatic to the right ventricle. *J Am Coll Cardiol*. 2013;61:e77
104. Tsang W, Veronesi F, Sugeng L, Weinert L, Takeuchi M, Jeevanandam V, Lang RM. Mitral valve dynamics in severe aortic stenosis before and after aortic valve replacement. *J Am Soc Echocardiogr*. 2013;26:606-614
105. Lombardi KC, Northrup V, McNamara RL, Sugeng L, Weismann CG. Aortic stiffness and left ventricular diastolic function in children following early repair of aortic coarctation. *The American journal of cardiology*. 2013
106. Brysiewicz N, Mitiku T, Haleem K, Bhatt P, Al-Shaaraoui M, Clancy JF, Marieb MA, Sugeng L, Akar JG. 3d real-time intracardiac echocardiographic visualization of atrial structures relevant to atrial fibrillation ablation. *JACC. Cardiovascular imaging*. 2014;7:97-100
107. Barreto-Filho JA, Wang Y, Dodson JA, Desai MM, Sugeng L, Geirsson A, Krumholz HM. Trends in aortic valve replacement for elderly patients in the united states, 1999-2011. *JAMA : the journal of the American Medical Association*. 2013;310:2078-2085
108. Morbach C, Lin BA, Sugeng L. Clinical application of three-dimensional echocardiography. *Progress in cardiovascular diseases*. 2014;57:19-31
109. Penciu OM, Mojibian H, Sugeng L, Cleman M, Brennan J, DePasquale E, McKenna W, Bonde P, Jacoby D. Anomalous left coronary artery in hypertrophic cardiomyopathy. *The Annals of thoracic surgery*. 2014;97:2190-2193

110. Weismann CG, Lombardi KC, Grell BS, Northrup V, Sugeng L. Aortic stiffness and left ventricular diastolic function in children with well-functioning bicuspid aortic valves. *European heart journal cardiovascular Imaging*. 2015
111. Thomas M, Nienaber CA, Ince H, Erglis A, Vukcevic V, Schafer U, Ferreira RC, Hardt S, Verheye S, Gama Ribeiro V, Sugeng L, Tamburino C. Percutaneous ventricular restoration (pvr) therapy using the parachute device in 100 subjects with ischaemic dilated heart failure: One-year primary endpoint results of parachute iii, a european trial. *EuroIntervention : journal of EuroPCR in collaboration with the Working Group on Interventional Cardiology of the European Society of Cardiology*. 2015;11:710-717
112. Chamberland CR, Sugeng L, Abraham S, Li F, Weismann CG. Three-dimensional evaluation of aortic valve annular shape in children with bicuspid aortic valves and/or aortic coarctation compared with controls. *The American journal of cardiology*. 2015;116:1411-1417

Chapters:

1. Yao J, **Sugeng L**, Marx G, Pandian N. Three Dimensional Echocardiography. In: Diagnostic Medical Sonography, A Guide to Clinical Practice, 2nd Edition. Editors:Mark N. Allen. Lippincott, Williams & Williams. Philadelphia, PA. Page 167-177.
2. Atlas of three-dimensional echocardiography. Editors: Nanda NC and Sorrell VL. Futura Publishing Company, Inc. Armonk, NY. Page 27-29, 32, 33, 39, 51, 57, 71, 72, 78, 99, 106, 205, 213, 214, 217, 221-3.
3. Spencer KT, **Sugeng L**, Lang RM. Imaging protocols and normal measurements. (pages 1- 26), in Vannan MA, Lang RM, Rakowski H, Tajik AJ, Braunwald E. (eds) Atlas of Echocardiography Current Medicine, LLC. Philadelphia , 2005
4. Mor-Avi V, **Sugeng L**, Lang RM: Three-dimensional Echocardiography. UpToDate 2007
5. Mor-Avi V, Spencer **KT**, **Sugeng L**, Lang RM: Three-dimensional echocardiography and hand-carried ultrasound. In Atlas of Echocardiography. Ed. E. Braunwald, 2008
6. Mor-Avi V, **Sugeng L**, Lang RM: Three-Dimensional Echocardiographic Imaging. In Non-Invasive Cardiovascular Imaging: A multimodality Approach. Ed. M. J. Garcia, Lippincott Williams & Wilkins, 2009; pp. 138-149
7. **Sugeng L**. Chandra S, Weinert L. Clinical Echocardiography Review. A Self Assessment Tool. Editors: Klein AL and Asher CR. Lippincott Williams & Wilkin, 2011 Philadelphia, PA. Page 38-44.
8. Weinert L, **Sugeng L**, Gill A. 3D Echocardiography. Integration of Three-Dimensional Echocardiography in Routine Clinical Practice. Editors. Gill, EA. Saunders, 2013. Philadelphia, PA. pp. 27-41.

Educational Material (CD ROM/ DVD)

1. Diagnostic Challenge: Adventures in Contrast Echocardiography. A CME-Certified Interactive CD-ROM Game Featuring Echocardiography Case Studies. Sponsored by Bristol-Myers Squibb Medical Imaging, Inc.
2. Lang RM, **Sugeng L**, Weinert L. Live 3D echo: A practical clinical approach (overview, reference poster and CD). Sponsored by the University of Chicago Hospitals and Philips Medical Systems, 2003

3. Lang RM, Franke A, Nanda N. Live 3D Echo: Case Study World Atlas. (case presentation). Sponsored by Philips Medical Systems.
4. **Sugeng L**, Weinert L, Lang RM. Matrix TEE 3D