Stanford



David Liang, MD, PhD

Professor of Medicine (Cardiovascular) at the Stanford University Medical Center, Emeritus

Retiree

CONTACT INFORMATION

- **Adminstrative Assistant**

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Bio

BIO

Stanford researchers are creating a micro-device that physicians could guide through the body to help diagnose and treat clogged arteries and other diseases. Tethered to the outside world by a thin wire, a tiny machine creeps through blood vessels, searching out deadly plaques and obliterating them with a zap of a laser. While a laser will come later, for now David Liang, MD, PhD, is focusing on a tiny eye that could give physicians an unprecedented view into blood vessels.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Retiree
- Member, Cardiovascular Institute

PROFESSIONAL EDUCATION

- BSEE, MIT , Electrical Engineering (1981)
- Ph.D., Stanford University , Electrical Engineering (1989)
- M.D., Stanford University , Medicine (1989)

Research & Scholarship

CLINICAL TRIALS

- Evaluating the Benefit of Concurrent Tricuspid Valve Repair During Mitral Surgery, Recruiting

Publications

PUBLICATIONS

- **Greater asymmetric wall shear stress in Sievers' type 1/LR compared with 0/LAT bicuspid aortic valves after valve-sparing aortic root replacement** *JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY*

  Stephens, E. H., Hope, T. A., Kari, F. A., Kvitting, J. E., Liang, D. H., Herfkens, R. J., Miller, D. C.

  2015; 150 (1): 59-68

- **Geometric perturbations in multiheaded papillary tip positions associated with acute ovine ischemic mitral regurgitation** *JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY*
  Timek, T. A., Lai, D. T., Bothe, W., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  2015; 150 (1): 232-237

- **Defining "Severe" Secondary Mitral Regurgitation Emphasizing an Integrated Approach** *JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY*
  Grayburn, P. A., Carabello, B., Hung, J., Gillam, L. D., Liang, D., Mack, M. J., McCarthy, P. M., Miller, D. C., Trento, A., Siegel, R. J.
  2014; 64 (25): 2792-2801

- **Tirone David procedure for bicuspid aortic valve disease: impact of root geometry and valve type on mid-term outcomes†.** *Interactive cardiovascular and thoracic surgery*
  Kari, F. A., Kvitting, J. E., Stephens, E. H., Liang, D. H., Merk, D. R., Fischbein, M. P., Mitchell, R. S., Miller, D. C.
  2014; 19 (3): 375-381

- **Relationship between Echocardiographic and Magnetic Resonance Derived Measures of Right Ventricular Size and Function in Patients with Pulmonary Hypertension.** *Journal of the American Society of Echocardiography*
  Shiran, H., Zamanian, R. T., McConnell, M. V., Liang, D. H., Dash, R., Heidary, S., Sudini, N. L., Wu, J. C., Haddad, F., Yang, P. C.
  2014; 27 (4): 405-412

- **Incidence and progression of mild aortic regurgitation after Tirone David reimplantation valve-sparing aortic root replacement** *JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY*
  Stephens, E. H., Liang, D. H., Kvitting, J. E., Kari, F. A., Fischbein, M. P., Mitchell, R. S., Miller, D. C.
  2014; 147 (1): 169-?

- **Aortic wall thickness: an independent risk factor for aortic dissection?** *journal of heart valve disease*
  Shiran, H., Odegaard, J., Berry, G., Miller, D. C., Fischbein, M., Liang, D.
  2014; 23 (1): 17-24

- **Focused transthoracic echocardiography during critical care medicine training: curriculum implementation and evaluation of proficiency*.** *Critical care medicine*
  Beraud, A., Rizk, N. W., Pearl, R. G., Liang, D. H., Patterson, A. J.
  2013; 41 (8): e179-81

- **Focused transthoracic echocardiography during critical care medicine training: curriculum implementation and evaluation of proficiency*.** *Critical care medicine*
  Beraud, A., Rizk, N. W., Pearl, R. G., Liang, D. H., Patterson, A. J.
  2013; 41 (8): e179-81

- **Race differences in ventricular remodeling and function among college football players.** *American journal of cardiology*
  Haddad, F., Peter, S., Hulme, O., Liang, D., Schnittger, I., Puryear, J., Gomari, F. A., Finocchiaro, G., Myers, J., Froelicher, V., Garza, D., Ashley, E. A.
  2013; 112 (1): 128-134

- **Tirone David valve-sparing aortic root replacement and cusp repair for bicuspid aortic valve disease** *JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY*
  Kari, F. A., Liang, D. H., Kvitting, J. E., Stephens, E. H., Mitchell, R. S., Fischbein, M. P., Miller, D. C.
  2013; 145 (3): S35-?

- **David valve-sparing aortic root replacement: Equivalent mid-term outcome for different valve types with or without connective tissue disorder** *JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY*
  Kvitting, J. E., Kari, F. A., Fischbein, M. P., Liang, D. H., Beraud, A., Stephens, E. H., Mitchell, R. S., Miller, D. C.
  2013; 145 (1): 117-?

- **Comparison of Aortic Root Diameter to Left Ventricular Outflow Diameter Versus Body Surface Area in Patients With Marfan Syndrome** *AMERICAN JOURNAL OF CARDIOLOGY*
  Shiran, H., Haddad, F., Miller, D. C., Liang, D.
  2012; 110 (10): 1518-1522

- **VALIDATION OF A POWER LAW MODEL IN UPPER EXTREMITY VESSELS: POTENTIAL APPLICATION IN ULTRASOUND BLEED DETECTION** *ULTRASOUND IN MEDICINE AND BIOLOGY*

Wang, A. S., Liang, D. H., Bech, F., Lee, J. T., Zarins, C. K., Zhou, W., Taylor, C. A.
2012; 38 (4): 692-701

- **A FAST SLAM APPROACH TO FREEHAND 3-D ULTRASOUND RECONSTRUCTION FOR CATHETER ABLATION GUIDANCE IN THE LEFT ATRIUM** *ULTRASOUND IN MEDICINE AND BIOLOGY*
  Koolwal, A. B., Barbagli, F., Carlson, C. R., Liang, D. H.
  2011; 37 (12): 2037-2054

- **Ectopia Lentis as the Presenting and Primary Feature in Marfan Syndrome** *AMERICAN JOURNAL OF MEDICAL GENETICS PART A*
  Zadeh, N., Bernstein, J. A., Niemi, A. K., Dugan, S., Kwan, A., Liang, D., Hyland, J. C., Hoyme, H. E., Hudgins, L., Manning, M. A.
  2011; 155A (11): 2661-2668

- **Effects of different annuloplasty ring types on mitral leaflet tenting area during acute myocardial ischemia** *JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY*
  Bothe, W., Kvitting, J. E., Stephens, E. H., Swanson, J. C., Liang, D. H., Ingels, N. B., Miller, D. C.
  2011; 141 (2): 345-353

- **Power Law as a Method for Ultrasound Detection of Internal Bleeding: In Vivo Rabbit Validation** *IEEE TRANSACTIONS ON BIOMEDICAL ENGINEERING*
  Wang, A. S., Abilez, O. J., Zarins, C. K., Taylor, C. A., Liang, D. H.
  2010; 57 (12): 2870-2875

- **Determinants of Evolution and Progression of Acute Ovine Ischemic Mitral Regurgitation** *JOURNAL OF HEART VALVE DISEASE*
  Timek, T. A., Lai, D. T., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  2010; 19 (4): 420-426

- **An Ultrasound-based Localization Algorithm for Catheter Ablation Guidance in the Left Atrium** *INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH*
  Koolwal, A. B., Barbagli, F., Carlson, C., Liang, D.
  2010; 29 (6): 643-665

- **Dyssynchrony Assessment with Tissue Doppler Imaging and Regional Volumetric Analysis by 3D Echocardiography Do Not Predict Long-Term Response to Cardiac Resynchronization Therapy.** *Cardiology research and practice*
  Kuppahally, S. S., Fowler, M. B., Vagelos, R., Wang, P., Al-Ahmad, A., Hsia, H., Liang, D.
  2010; 2011: 568918-?

- **A probabilistic framework for freehand 3D ultrasound reconstruction applied to catheter ablation guidance in the left atrium** *INTERNATIONAL JOURNAL OF COMPUTER ASSISTED RADIOLOGY AND SURGERY*
  Koolwal, A. B., Barbagli, F., Carlson, C. R., Liang, D. H.
  2009; 4 (5): 425-437

- **Multiplanar Reconstruction of Three-Dimensional Transthoracic Echocardiography Improves the Presurgical Assessment of Mitral Prolapse** *JOURNAL OF THE AMERICAN SOCIETY OF ECHOCARDIOGRAPHY*
  Beraud, A., Schnittger, I., Miller, D. C., Liang, D. H.
  2009; 22 (8): 907-913

- **Worsening of Left Ventricular End-Systolic Volume and Mitral Regurgitation without Increase in Left Ventricular Dyssynchrony on Acute Interruption of Cardiac Resynchronization Therapy** *ECHOCARDIOGRAPHY-A JOURNAL OF CARDIOVASCULAR ULTRASOUND AND ALLIED TECHNIQUES*
  Kuppahally, S. S., Fowler, M. B., Vagelos, R., Wang, P., Al-Ahmad, A., Paloma, A., Liang, D.
  2009; 26 (7): 759-765

- **Reduced Systolic Torsion in Chronic "Pure" Mitral Regurgitation** *CIRCULATION-CARDIOVASCULAR IMAGING*
  Ennis, D. B., Nguyen, T. C., Itoh, A., Bothe, W., Liang, D. H., Ingels, N. B., Miller, D. C.
  2009; 2 (2): 85-92

- **Catheter Localization in the Left Atrium using an Outdated Anatomic Reference for Guidance** *Annual International Conference of the IEEE-Engineering-in-Medicine-and-Biology-Society*
  Koolwal, A. B., Barbagli, F., Carlson, C. R., Liang, D. H.
  IEEE.2009: 5567–5570

- **An Image-Based Localization Algorithm for Catheter Navigation in the Left Atrium** *11th International Symposium on Experimental Robotics (ISER)*
  Koolwal, A. B., Barbagli, F., Carlson, C. R., Liang, D. H., Prinz, F. B.
  SPRINGER-VERLAG BERLIN.2009: 251–260

- **Alterations in transmural myocardial strain - An early marker of left ventricular dysfunction in mitral regurgitation?** *80th Annual Scientific Session of the American-Heart-Association (AHA)*
  Carlhaell, C. J., Nguyen, T. C., Itoh, A., Ennis, D. B., Bothe, W., Liang, D., Ingels, N. B., Miller, D. C.
  LIPPINCOTT WILLIAMS & WILKINS.2008: S256–S262

- **Laser-machined shape memory alloy sensors for position feedback in active catheters** *SENSORS AND ACTUATORS A-PHYSICAL*
  Tung, A. T., Park, B., Liang, D. H., Niemeyer, G.
  2008; 147 (1): 83-92

- **The effect of pure mitral regurgitation on mitral annular geometry and three-dimensional saddle shape** *87th Annual Meeting of the American-Association-for-Thoracic-Surgery*
  Nguyen, T. C., Itoh, A., Carlhall, C. J., Bothe, W., Timek, T. A., Ennis, D. B., Oakes, R. A., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  MOSBY-ELSEVIER.2008: 557–65

- **Effect of local annular interventions on annular and left ventricular geometry** *21st Annual Meeting of the European-Association-for-Cardio-Thoracic-Surgery (EACTS)*
  Timek, T. A., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  OXFORD UNIV PRESS INC.2008: 1049–54

- **The aortopathy of bicuspid aortic valve disease has distinctive patterns and usually involves the transverse aortic arch** *33rd Annual Meeting of the Western-Thoracic-Surgical-Association*
  Fazel, S. S., Mallidi, H. R., Lee, R. S., Sheehan, M. P., Liang, D., Fleischman, D., Herfkens, R., Mitchell, S., Miller, D. C.
  MOSBY-ELSEVIER.2008: 901–U54

- **Effect of semi-rigid or flexible mitral ring annuloplasty on anterior leaflet three-dimensional geometry** *4th Biennial Meeting of the Society-for-Heart-Valve-Disease*
  Timek, T. A., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  I C R PUBLISHERS.2008: 149–54

- **Functional uncoupling of the mitral annulus and left ventricle with mitral regurgitation and dopamine** *4th Biennial Meeting of the Society-for-Heart-Valve-Disease*
  Nguyen, T. C., Itoh, A., Carlhall, C. J., Oakes, R. A., Liang, D., Ingels, N. B., Miller, D. C.
  I C R PUBLISHERS.2008: 168–77

- **Pre- and postoperative imaging of the aortic root for valve-sparing aortic root repair (V-SARR).** *Seminars in thoracic and cardiovascular surgery*
  Fleischmann, D., Liang, D. H., Mitchell, R. S., Miller, D. C.
  2008; 20 (4): 365-373

- **Developing an Arterial Bleed Detection Algorithm for Diagnostic Ultrasound** *IEEE Ultrasonics Symposium*
  Wang, A. S., Bech, F., Lee, J., Taylor, C. A., Liang, D. H.
  IEEE.2008: 1627–1630

- **Advances in echocardiography.** *Seminars in thoracic and cardiovascular surgery*
  Liang, D. H.
  2008; 20 (4): 374-379

- **Technical advances in cardiovascular imaging.** *Seminars in thoracic and cardiovascular surgery*
  Fleischmann, D., Liang, D. H., Herfkens, R. J.
  2008; 20 (4): 333-339

- **An Incremental Method for Registering Electroanatomic Mapping Data to Surface Mesh Models of the Left Atrium** *11th International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI2008)*
  Koolwal, A. B., Barbagli, F., Carlson, C. R., Liang, D. H.
  SPRINGER-VERLAG BERLIN.2008: 847–854

- **An incremental method for registering electroanatomic mapping data to surface mesh models of the left atrium.** *Medical image computing and computer-assisted intervention : MICCAI ... International Conference on Medical Image Computing and Computer-Assisted Intervention*
  Koolwal, A. B., Barbagli, F., Carlson, C. R., Liang, D. H.
  2008; 11: 847-854

- **Multiplanar visualization in 3D transthoracic echocardiography for precise delineation of mitral valve pathology** *ECHOCARDIOGRAPHY-A JOURNAL OF CARDIOVASCULAR ULTRASOUND AND ALLIED TECHNIQUES*
  Liang, D., Paloma, A., Kuppahally, S. S., Miller, D. C., Schnittger, I.
  2008; 25 (1): 84-87

- **Effect of chronotropy and inotropy on stitch tension in the edge-to-edge mitral repair** *79th Annual Scientific Session of the American-Heart-Association*
  Timek, T. A., Nielsen, S. L., Lai, D. T., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  LIPPINCOTT WILLIAMS & WILKINS.2007: I276–I281

- **Laser-machined shape memory, alloy actuators for active catheters** *1st IEEE RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob 2006)*
  Tung, A. T., Park, B., Niemeyer, G., Liang, D. H.
  IEEE-INST ELECTRICAL ELECTRONICS ENGINEERS INC.2007: 439–46

- **Rapid aneurysmal degeneration of a Stanford type B aortic dissection in a patient with Loeys-Dietz syndrome** *JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY*
  Lee, R. S., Fazel, S., Schwarze, U., Fleischmann, D., Berry, G. J., Liang, D., Miller, D. C., Mitchell, R. S.
  2007; 134 (1): 242-U32

- **Undersized mitral annuloplasty inhibits left ventricular basal wall thickening but does not affect equatorial wall cardiac strains** *3rd Biennial Meeting of Society-for-Heart-Valve-Disease*
  Cheng, A., Nguyen, T. C., Malinowski, M., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  I C R PUBLISHERS.2007: 349–58

- **Interventional three-dimensional echocardiography: Using real-time three-dimensional echocardiography to guide and evaluate intracardiac therapies** *CARDIOLOGY CLINICS*
  Gill, E. A., Liang, D. H.
  2007; 25 (2): 335-?

- **Comparison of three-dimensional echocardiography to two-dimensional echocardiography and fluoroscopy for monitoring of endomyocardial biopsy** *AMERICAN JOURNAL OF CARDIOLOGY*
  Amitai, M. E., Schnittger, I., Popp, R. L., Chow, J., Brown, P., Liang, D. H.
  2007; 99 (6): 864-866

- **Septal-lateral annnular cinching perturbs basal left ventricular transmural strains** *20th Annual Meeting of the European-Association-for-Cardio-Thoracic-Surgery/14th Annual Meeting of the European-Society-of-Thoracic-Surgeons*
  Nguyen, T. C., Cheng, A., Tibayan, F. A., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  OXFORD UNIV PRESS INC.2007: 423–29

- **Transesophageal echocardiography assessment of severe aortic regurgitation in type a aortic dissection caused by a prolapsed circumferential intimal flap** *JOURNAL OF CARDIOTHORACIC AND VASCULAR ANESTHESIA*
  Chow, J. L., Mariano, E. R., Liang, D.
  2007; 21 (1): 85-87

- **Tenting volume: Three-dimensional assessment of geometric perturbations in functional mitral regurgitation and implications for surgical repair** *75th Annual Scientific Session of the American-Heart-Association*
  Tibayan, F. A., Wilson, A., Lai, D. T., Timek, T. A., Dagum, P., Rodriguez, F., Zasio, M. K., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  I C R PUBLISHERS.2007: 1–7

- **Altered myocardial shear strains are associated with chronic ischemic mitral regurgitation** *42nd Annual Meeting of the Society-of-Thoracic-Surgeons*
  Nguyen, T. C., Cheng, A., Langer, F., Rodriguez, F., Oakes, R. A., Itoh, A., Ennis, D. B., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  ELSEVIER SCIENCE INC.2007: 47–54

- **Feasibility of noncontact intracardiac ultrasound ablation and Imaging catheter for treatment of atrial fibrillation** *IEEE TRANSACTIONS ON ULTRASONICS FERROELECTRICS AND FREQUENCY CONTROL*

Wong, S. H., Scott, G. C., Conolly, S. M., Narayan, G., Liang, D. H.
2006; 53 (12): 2394-2405

- **Mitral leaflet remodeling in dilated cardiomyopathy** *78th Annual Scientific Session of the American-Heart-Association*
  Timek, T. A., Lai, D. T., Dagum, P., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  LIPPINCOTT WILLIAMS & WILKINS.2006: I518–I523
- **Passive ventricular constraint prevents transmural shear strain progression in left ventricle remodeling** *78th Annual Scientific Session of the American-Heart-Association*
  Cheng, A., Nguyen, T. C., Malinowski, M., Langer, F., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  LIPPINCOTT WILLIAMS & WILKINS.2006: I79–I86
- **Effects of undersized mitral annuloplasty on regional transmural left ventricular wall strains and wall thickening mechanisms** *78th Annual Scientific Session of the American-Heart-Association*
  Cheng, A., Nguyen, T. C., Malinowski, M., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  LIPPINCOTT WILLIAMS & WILKINS.2006: I600–I609
- **Posterior mitral leaflet extension: An adjunctive repair option for ischemic mitral regurgitation?** *JOURNAL OF THORACIC AND CARDIOVASCULAR SURGERY*
  Langer, F., Rodriguez, F., Cheng, A., Ortiz, S., Nguyen, T. C., Zasio, M. K., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  2006; 131 (4): 868-875
- **Amplitude-modulating switching feedback for position control of shape memory alloy actuators** *1st IEEE RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob 2006)*
  Koolwal, A. B., Park, B. H., Nelson, B., Niemeyer, G., Liang, D. H.
  IEEE.2006: 429–434
- **Design and fabrication of tubular shape memory alloy actuators for active catheters** *1st IEEE RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob 2006)*
  Tung, A. T., Park, B., Koolwal, A., Nelson, B., Niemeyer, G., Liang, D.
  IEEE.2006: 885–890
- **Effect of cutting second-order chordae on in-vivo anterior mitral leaflet compound curvature** *3rd Biennial Meeting of Society-for-Heart-Valve-Disease*
  Rodriguez, F., Langer, F., Harrington, K. B., Tibayan, F. A., Zasio, M. K., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  I C R PUBLISHERS.2005: 592–601
- **Subvalvular repair - The key to repairing ischemic mitral regurgitation?** *77th Scientific Meeting of the American-Heart-Association*
  Langer, F., Rodriguez, F., Ortiz, S., Cheng, A., Nguyen, T. C., Zasio, M. K., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  LIPPINCOTT WILLIAMS & WILKINS.2005: I383–I389
- **Annular height-to-commissural width ratio of annulolasty rings in vivo** *77th Scientific Meeting of the American-Heart-Association*
  Timek, T. A., Glasson, J. R., Lai, D. T., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  LIPPINCOTT WILLIAMS & WILKINS.2005: I423–I428
- **Time-resolved three-dimensional magnetic resonance velocity mapping of aortic flow in healthy volunteers and patients after valve-sparing aortic root replacement** *30th Annual Meeting of the Western-Thoracic-Surgical-Association*
  Markl, M., Draney, M. T., Miller, D. C., Levin, J. M., Williamson, E. E., Pelc, N. J., Liang, D. H., Herfkens, R. J.
  MOSBY-ELSEVIER.2005: 456–63
- **Annular or subvalvular approach to chronic ischemic mitral regurgitation?** *30th Annual Meeting of the Western-Thoracic-Surgical-Association*
  Tibayan, F. A., Rodriguez, F., Langer, F., Zasio, M. K., Bailey, L., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  MOSBY-ELSEVIER.2005: 1266–75
- **Altered mitral valve kinematics with atrioventricular and ventricular pacing** *2nd Biennial Meeting of the Society-for-Heart-Valve-Disease*
  Langer, F., Tibayan, F. A., Rodriguez, F., Timek, T., Zasio, M. K., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  I C R PUBLISHERS.2005: 286–94
- **A microfabricated intravascular ultrasound scanner for intravascular interventions** *Conference on MOEMS Display and Imaging Systems III*
  Liang, D. H., Park, B. H., Koolwal, A., Prinz, F.
  SPIE-INT SOC OPTICAL ENGINEERING.2005: 115–118

- **An evaluation of using real-time volumetric display of 3D ultrasound data for intracardiac catheter manipulation tasks** *4th International Workshop on Volume Graphics*
  Wang, A. S., Narayan, G., Kao, D., Liang, D.
  EUROGRAPHICS ASSOC.2005: 41–45

- **Feasibility of intravascular ultrasound ablation and imaging catheter for treatment of atrial fibrillation** *IEEE International Ultrasonics Symposium*
  Wong, S. H., Scott, G. C., Conolly, S. M., Narayan, G., Liang, D. H.
  IEEE.2005: 1751–1754

- **Importance of mitral valve second-order chordae for left ventricular geometry, wall thickening mechanics, and global systolic function** *40th Annual Meeting of the Society-of-Thoracic-Surgeons*
  Rodriguez, F., Langer, F., Harrington, K. B., Tibayan, F. A., Zasio, M. K., Cheng, A., Liang, D., Daughters, G. T., Covell, J. W., Criscione, J. C., Ingels, N. B., Miller, D. C.
  LIPPINCOTT WILLIAMS & WILKINS.2004: II115–II122

- **Undersized mitral annuloplasty alters left ventricular shape during acute ischemic mitral regurgitation** *CIRCULATION*
  Tibayan, F. A., Rodriguez, F., Langer, F., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  2004; 110 (11): II98-II102

- **Cutting second-order chords does not prevent acute ischemic mitral regurgitation** *76th Annual Scientific Session of the American-Heart-Association*
  Rodriguez, F., Langer, F., Harrington, K. B., Tibayan, F. A., Zasio, M. K., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  LIPPINCOTT WILLIAMS & WILKINS.2004: II91–II97

- **Effects of paracommissural septal-lateral annular cinching on acute ischemic mitral regurgitation** *76th Annual Scientific Session of the American-Heart-Association*
  Timek, T. A., Liang, D., Tibayan, F., Langer, F., Rodriguez, F., Daughters, G. T., Ingels, N. B., Miller, D. C.
  LIPPINCOTT WILLIAMS & WILKINS.2004: II79–II84

- **Alterations in left ventricular torsion and diastolic recoil after myocardial infarction with and without chronic ischemic mitral regurgitation** *CIRCULATION*
  Tibayan, F. A., Rodriguez, F., Langer, F., Zasio, M. K., Bailey, L., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  2004; 110 (11): II109-II114

- **Increases in mitral leaflet radii of curvature with chronic ischemic mitral regurgitation** *2nd Biennial Meeting of the Society-for-Heart-Valve-Disease*
  Tibayan, F. A., Rodriguez, F., Langer, F., Zasio, M. K., Bailey, L., Liang, D., Daughters, G. T., Karlsson, M., Ingels, N. B., Miller, D. C.
  I C R PUBLISHERS.2004: 772–78

- **Mitral suture annuloplasty corrects both annular and subvalvular geometry in acute ischemic mitral regurgitation** *JOURNAL OF HEART VALVE DISEASE*
  Tibayan, F. A., Rodriguez, F., Langer, F., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  2004; 13 (3): 414-420

- **Does septal-lateral annular cinching work for chronic ischemic mitral regurgitation?** *29th Annual Meeting of the Western-Thoracic-Surgical-Association*
  Tibayan, F. A., Rodriguez, F., Langer, F., Zasio, M. K., Bailey, L., Liang, D., Daughters, G. T., Ingels, N. B., Miller, D. C.
  MOSBY-ELSEVIER.2004: 654–63

- **Mitral annular size predicts Alfieri stitch tension in mitral edge-to-edge repair** *JOURNAL OF HEART VALVE DISEASE*
  Timek, T. A., Nielsen, S. L., Lai, D. T., Tibayan, F., Liang, D., Daughters, G. T., Beineke, P., Hastie, T., Ingels, N. B., Miller, D. C.
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