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Welcome to the first issue of the Stanford Department of Cardiothoracic Surgery Quarterly Newsletter! We are honored to serve our patients, drive research innovation, and train the next generation of leaders in cardiothoracic surgery. Below are highlights of the latest news, patient stories, research developments, education updates, and publications reflecting our department's mission in clinical care, research, and education. Thank you for your continued support and dedication to our community.

Sincerely,

Joseph Woo, MD

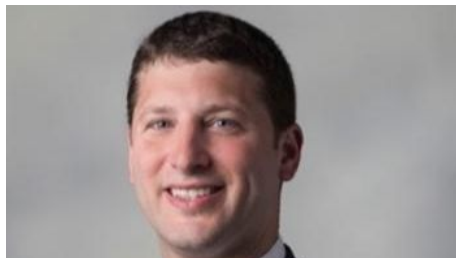
Norman E. Shumway Professor and Chair
Stanford Department of Cardiothoracic Surgery

In the News



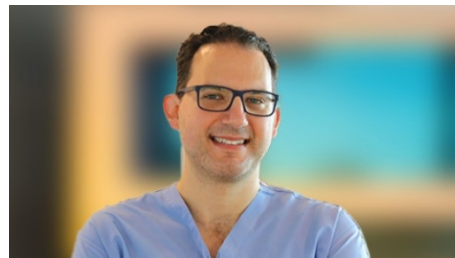
JAMA Surgery appoints Leah Backhus as inaugural Deputy Editor

JAMA Surgery recently announced the appointment of Leah Backhus, MD, MPH, as the inaugural deputy editor of diversity, equity, and inclusion. [Read more.](#)



NIH awards \$2.8M to develop AI-based platform to predict cardiovascular surgery and heart failure outcomes

NIH has awarded nearly \$2.8 million to Dr. William Hiesinger's deep learning lab to support the development of an artificial intelligence-based platform to predict cardiovascular surgery and heart failure outcomes. [Read more.](#)



Kapi'olani Medical Center for Women & Children welcomes Louis Capecci as its first full-time pediatric heart surgeon

Kapi'olani Medical Center for Women & Children recently welcomed Stanford Children's Health cardiothoracic surgeon Louis Capecci, MD, as its first full-time pediatric surgeon to its team. [Read more.](#)

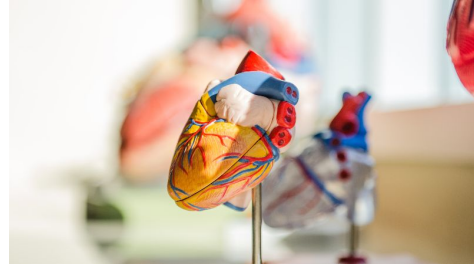
platform to predict cardiovascular surgery and heart failure outcomes. [Read more.](#)



Stanford's expertise in rare and complicated heart surgeries provides life-saving options for patients

For patients like Nathan Foss, Stanford's expertise in rare and complicated heart surgeries provides better options. [Read more.](#)

first full-time pediatric surgeon to its team. [Read more.](#)



Woman with heart problem achieves dream of becoming a mother, twice over

Stanford hospitals collaborated closely to provide deeply specialized care to an expectant mom with a heart condition. [Read more.](#)



Groundbreaking heart-lung procedure gives toddler a chance at a full life

The heart team at Stanford Children's Hospital performed a lifesaving surgical procedure for Santana, who had both heart failure and lung complications. [Read more.](#)



Esteemed cardiothoracic surgeon and long-time mentor D. Craig Miller retires after 43 years

The Department of Cardiothoracic Surgery extends its heartfelt appreciation to D. Craig Miller, MD, for his 43 years of outstanding service at Stanford School Medicine, who retired on August 31, 2021. [Read more.](#)



Philip E. Oyer, honored cardiothoracic surgeon and pioneer, retires after 45 years

The Department of Cardiothoracic Surgery expresses deep gratitude to Philip E. Oyer, MD, PhD, for his 45 years of distinguished legacy and service at Stanford School of Medicine, who retired on August 31, 2021. [Read more.](#)

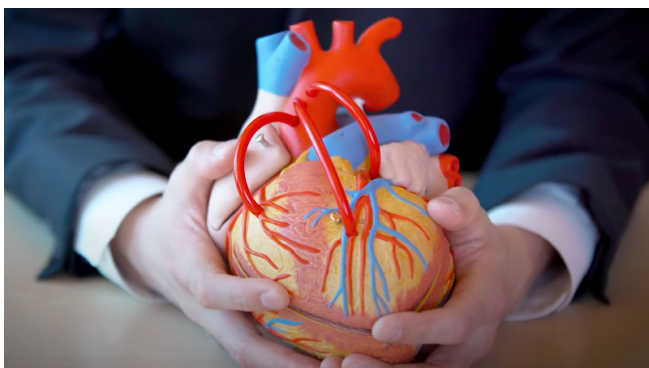


SCVMC chief of cardiothoracic surgery David Ogden retires after 13 years at Stanford

The Department of Cardiothoracic Surgery extends its appreciation to David Ogden, MD, for his 13 years of service at Stanford Medicine, who retired on February 28, 2022. [Read more.](#)

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Research



Stanford's experience in heart transplantation over five decades

A study led by the Department of Cardiothoracic Surgery found long-term survival after heart transplantation has improved over the last 50 years at the longest-running heart transplant center in the U.S. [Read more.](#)



Tissue engineering in space could treat age-related muscle loss on Earth

In an experiment funded by the U.S. National Science Foundation, Ngan F. Huang, PhD, and her lab sent engineered skeletal tissue to space to explore microgravity effects on sarcopenia.

[Read more.](#)



Donor hearts can withstand longer ischemic times

Based on a study presented by Brandon Guenthart, MD, at the Society of Thoracic Surgeons 58th Annual Meeting, the practice of accepting extended ischemic times appears safe. [Read more.](#)

- ✓ Interview Performance
- ✓ Evidence of Professionalism
- ✓ Letters of Recommendation

How to become a heart surgeon: A study on cardiothoracic surgery residency programs

In a study led by first author Oluwatomisin Obafemi, MD, and senior author Anson Lee, MD, researchers surveyed U.S. cardiothoracic surgery residency program directors about the characteristics of successful candidates. [Read more.](#)

[Read more.](#)



Machine-learning to predict right ventricular heart failure in LVAD patients

In a study led by lead author Rohan Shad, MD, and senior author, William Hiesinger, MD, researchers found using a deep learning system could predict right ventricular failure after cardiac surgery, significantly outperforming a team of human experts conducting the same evaluation. [Read more.](#)

Visit Research Page

Education



Kelly Higa
University of Colorado
School of Medicine



Hannah McMullen
Columbia University
College of Physicians and
Surgeons



Alexander Reed
Harvard Medical School

Department welcomes new CT surgery residents

The Department of Cardiothoracic Surgery is excited to welcome the newest residents to the Integrated Cardiothoracic Surgical Training Program! Kelly Higa, Hannah McMullen, and Alexander Reed will start their training at the end of June 2022. [Read more.](#)



Stanford Medcast: Celebrating Women in Medicine with Leah Backhus

In this podcast, Leah Backhus, MD, MPH, shares her journey in medicine and covers topics on unconscious bias, diversity, minorities in medicine, and the importance of creating a circle of advocates and mentors. [Listen now.](#)



2022 AATS Annual Meeting will showcase clinical and research expertise from Department

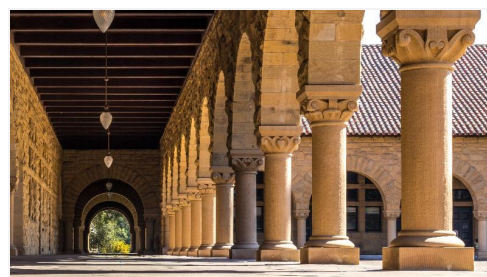
The Department of Cardiothoracic Surgery will showcase their clinical and research expertise at the American Association for Thoracic Surgery 102nd Annual Meeting on May 14-17, 2022.

[Learn more.](#)



Department research featured at 2022 STS Annual Meeting

The Department of Cardiothoracic Surgery presented the latest research at the Society of Thoracic Surgeons 58th Annual Meeting from January 29 to 30, 2022. [Read more.](#)



Educational Excellence Spotlights

In this new Educational Excellence Spotlight series, we feature individuals who pursue advanced degrees while in practice, training, or residency within the Department of Cardiothoracic Surgery. [Read more.](#)



SPOTLIGHT: Featuring Amanda Steele, a former postdoctoral research fellow in Dr. Joseph Woo's laboratory. Amanda received her PhD in Bioengineering from Stanford in 2019. [»»](#)

Featured Publications

The Department of Cardiothoracic Surgery is dedicated to conducting cutting-edge research. Check out more of our [faculty publications](#).

[Alternative to heart-lung transplantation for end-stage tetralogy of Fallot with major aortopulmonary collaterals: Simultaneous heart transplantation and pulmonary artery reconstruction.](#) Adamson GT, Profita EL, Quinonez ZA, McElhinney DB, Rosenthal DN, Ma M. *J Heart Lung Transplant.* 2021 May;40(5):392-394. doi: 10.1016/j.healun.2021.02.003. Epub 2021 Feb 17. PMID: 33674153

[History of Surgery for Mitral Stenosis: John Mayow to Charles Bailey.](#) Bajaj SS, Fann JI. *Ann Thorac Surg.* 2022 Jan 17;S0003-4975(22)00047-9. doi: 10.1016/j.athoracsur.2021.12.046. PMID: 35051396

[Generation of AAVS1 integrated doxycycline-inducible CRISPR-Prime Editor human induced pluripotent stem cell line.](#) Bharucha N, Ataam JA, Gavidia AA, Karakikes I. *Stem Cell Res.* 2021 Nov 24;57:102610. doi: 10.1016/j.scr.2021.102610. PMID: 34875545

[Biomechanical Analysis of the Ross Procedure in an Ex Vivo Left Heart Simulator.](#) Bryan AY, Brandon Strong E, Kidambi S, Gilligan-Steinberg S, Bennett-Kennett R, Lee JY, Imbrie-Moore A, Moye SC, Hendrickx-Rodriguez S, Wang H, Dauskardt RH, Joseph Woo Y, Ma MR. *World J Pediatr Congenit Heart Surg.* 2022 Mar;13(2):166-174. doi: 10.1177/21501351211070288. PMID: 35238706

[A brief overview of thoracic surgery in the United States.](#) Byrd CT, Williams KM, Backhus LM. *J Thorac Dis.* 2022 Jan;14(1):218-226. doi: 10.21037/jtd-21-1504. PMID: 35242386.

[Poorly sized TEVAR: implications and lessons learned.](#) Dalal AR, Dossabhoy SS, Watkins AC. *Ann Cardiothorac Surg.* 2021 Nov;10(6):804-806. doi: 10.21037/acs-2021-taes-87. PMID: 34926186

[Rational Dispersion of TAVR: Failed Expectations and Unintended Consequences.](#) Holmes DR Jr, Miller DC. *J Am Coll Cardiol.* 2021 Aug 24;78(8):807-810. doi: 10.1016/j.jacc.2021.07.008. PMID: 34412814

[Comparative Effects of Basic Fibroblast Growth Factor Delivery or Voluntary Exercise on Muscle Regeneration after Volumetric Muscle Loss.](#) Hu C, Ayan B, Chiang G, Chan AHP, Rando TA, Huang NF. *Bioengineering (Basel).* 2022 Jan 14;9(1):37. doi: 10.3390/bioengineering9010037. PMID: 35049746

[Commentary: A new Fontan commandment.](#) Ma M. *J Thorac Cardiovasc Surg.* 2022 Jan 11:S0022-5223(22)00012-5. doi: 10.1016/j.jtcvs.2022.01.008. PMID: 35125211.

[Relation Between Pulmonary Artery Pressures Measured](#)

[Reintervention and Survival After Transcatheter Pulmonary Valve Replacement.](#) McElhinney DB, Zhang Y, Levi DS, Georgiev S, Biernacka EK, Goldstein BH, Shahanavaz S, Qureshi AM, Cabalka AK, Bauser-Heaton H, Torres AJ, Morray BH, Armstrong AK, Millan-Iturbe O, Peng LF, Aboulhosn JA, Rużyłło W, Berger F, Sondergaard L, Schranz D, Cheatham JP, Jones TK, Ewert P, Schubert S. *J Am Coll Cardiol.* 2022 Jan 4;79(1):18-32. doi: 10.1016/j.jacc.2021.10.031. PMID: 34991785

[Multicenter Study of Endocarditis After Transcatheter Pulmonary Valve Replacement.](#) McElhinney DB, Zhang Y, Aboulhosn JA, Morray BH, Biernacka EK, Qureshi AM, Torres AJ, Shahanavaz S, Goldstein BH, Cabalka AK, Bauser-Heaton H, Georgiev S, Berger F, Millan-Iturbe O, Peng LF, Armstrong AK, Levi DS, Fronczak-Jakubczyk A, Sondergaard L, Anderson JH, Schranz D, Jones TK, Cheatham JP, Schubert S, Ewert P. *J Am Coll Cardiol.* 2021 Aug 10;78(6):575-589. doi: 10.1016/j.jacc.2021.05.044. PMID: 34353535

[Characteristics of Integrated Thoracic Surgery Residency Matriculants: A Survey of Program Directors.](#) Obafemi OO, Mullis DM, Rogers AB, Lee AM. *Ann Thorac Surg.* 2022 Feb 11:S0003-4975(22)00178-3. doi: 10.1016/j.athoracsur.2022.01.030. PMID: 35157846

[Acute Induced Pressure Overload Rapidly Incites Thoracic Aortic Aneurysmal Smooth Muscle Cell Phenotype.](#) Pedroza AJ, Shad R, Dalal AR, Yokoyama N, Nakamura K, Hiesinger W, Fischbein MP. *Hypertension.* 2022 Feb 7:HYPERTENSIONAHA12118640. doi: 10.1161/HYPERTENSIONAHA.121.18640. PMID: 35124970

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[Patient-Specific Computational Fluid Dynamics Reveal Localized Flow Patterns Predictive of Post-Left Ventricular Assist Device Aortic Incompetence.](#) Shad R, Kaiser AD, Kong S, Fong R, Quach N, Bowles C, Kasinpila P, Shudo Y, Teuteberg J, Woo YJ, Marsden AL, Hiesinger W. *Circ Heart Fail.* 2021 Jul;14(7):e008034. doi: 10.1161/CIRCHEARTFAILURE.120.008034. Epub 2021 Jun 18. PMID: 34139862

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[Ex vivo biomechanical analysis of flexible versus rigid](#)

[Intraoperatively and at One-Year Catheterization After Unifocalization and Repair of Tetralogy with Major Aortopulmonary Collateral Arteries.](#) Ma M, Peng LF, Zhang Y, Wise-Faberowski L, Martin, E; Hanley, FL; McElhinney, DB. Semin Thorac Cardiovasc Surg. 2022 Jan 26:S1043-0679(22)00007-7. doi: 10.1053/j.semctvs.2022.01.004. PMID: 35092847

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[Biomechanical engineering analysis of an acute papillary muscle rupture disease model using an innovative 3D-printed left heart simulator.](#) Marin-Cuartas M, Zhu Y, Imbrie-Moore AM, Park MH, Wilkerson RJ, Leipzig M, Pandya PK, Paulsen MJ, Borger MA, Woo YJ. Interact Cardiovasc Thorac Surg. 2022 Jan 12:ivab373. doi: 10.1093/icvts/ivab373. PMID: 35022737

[annuloplasty rings in mitral valves using a novel annular dilation system.](#) Zhu Y, Imbrie-Moore AM, Wilkerson RJ, Paulsen MJ, Park MH, Woo YJ. BMC Cardiovasc Disord. 2022 Feb 26;22(1):73. doi: 10.1186/s12872-022-02515-x. PMID: 35219298.

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