

Stanford



Yuanjia Zhu

- Ph.D. Student in Bioengineering, admitted Autumn 2019
- Masters Student in Bioengineering, admitted Winter 2022
- Resident in Cardiothoracic Surgery

Bio

INSTITUTE AFFILIATIONS

- Member (Postdoc), Cardiovascular Institute

PROFESSIONAL EDUCATION

- PhD, Stanford University , Bioengineering
- Residency, Stanford University , Cardiothoracic Surgery
- MD, Cleveland Clinic Lerner College of Medicine , Medicine (2017)
- BS, Northwestern University , Biomedical Engineering (2012)

Publications

PUBLICATIONS

- **A novel photosynthetic biologic topical gel for enhanced localized hyperoxygenation augments wound healing in peripheral artery disease.** *Scientific reports*
Zhu, Y., Jung, J., Anilkumar, S., Ethiraj, S., Madira, S., Tran, N. A., Mullis, D. M., Casey, K. M., Walsh, S. K., Stark, C. J., Venkatesh, A., Boakye, A., Wang, et al
2022; 12 (1): 10028
- **FDA Emergency Use Authorization-Approved Novel Coronavirus Disease 2019, Pressure-Regulated, Mechanical Ventilator Splitter That Enables Differential Compliance Multiplexing.** *ASAIO Journal (American Society for Artificial Internal Organs : 1992)*
Paulsen, M. J., Zhu, Y., Park, M. H., Imbrie-Moore, A. M., Baker, S., Walter Edmonston, D., Dawson, T., Ly, E., Martin Bell, S., Tran, N. A., Jung, J., Cedarleaf-Pavy, J., Sridhar, et al
2022
- **Biomechanical analysis of neochordal repair error from diastolic phase inversion of static left ventricular pressurization.** *JTCVS techniques*
Park, M. H., Marin-Cuartas, M., Imbrie-Moore, A. M., Wilkerson, R. J., Pandya, P. K., Zhu, Y., Wang, H., Borger, M. A., Woo, Y. J.
2022; 12: 54-64
- **Ex vivo biomechanical analysis of flexible versus rigid annuloplasty rings in mitral valves using a novel annular dilation system.** *BMC cardiovascular disorders*
Zhu, Y., Imbrie-Moore, A. M., Wilkerson, R. J., Paulsen, M. J., Park, M. H., Woo, Y. J.
2022; 22 (1): 73
- **A Novel Device for Intraoperative Direct Visualization of a Pressurized Root in Aortic Valve Repair.** *The Annals of thoracic surgery*
Zhu, Y., Imbrie-Moore, A. M., Paulsen, M. J., Park, M. H., Tran, N. A., Woo, Y. J.
2022
- **Biomechanical engineering analysis of an acute papillary muscle rupture disease model using an innovative 3D-printed left heart simulator.** *Interactive cardiovascular and thoracic surgery*
Marin-Cuartas, M., Zhu, Y., Imbrie-Moore, A. M., Park, M. H., Wilkerson, R. J., Leipzig, M., Pandya, P. K., Paulsen, M. J., Borger, M. A., Woo, Y. J.

1800

- **Natural cardiac regeneration conserves native biaxial left ventricular biomechanics after myocardial infarction in neonatal rats.** *Journal of the mechanical behavior of biomedical materials*
Wang, H., Wisneski, A., Imbrie-Moore, A. M., Paulsen, M. J., Wang, Z., Xuan, Y., Lopez Hernandez, H., Hironaka, C. E., Lucian, H. J., Shin, H. S., Anilkumar, S., Thakore, A. D., Farry, et al
1800; 126: 105074
- **Electrophysiologic Conservation of Epicardial Conduction Dynamics After Myocardial Infarction and Natural Heart Regeneration in Newborn Piglets.** *Frontiers in cardiovascular medicine*
Wang, H., Pong, T., Obafemi, O. O., Lucian, H. J., Aparicio-Valenzuela, J., Tran, N. A., Mullis, D. M., Elde, S., Tada, Y., Baker, S. W., Wang, C. Y., Cyr, K. J., Paulsen, et al
2022; 9: 829546
- **Post-Transplant Extracorporeal Membrane Oxygenation for Severe Primary Graft Dysfunction to Support the Use of Marginal Donor Hearts.** *Transplant international : official journal of the European Society for Organ Transplantation*
Shudo, Y., Alassar, A., Wang, H., Lingala, B., He, H., Zhu, Y., Hiesinger, W., MacArthur, J. W., Boyd, J. H., Lee, A. M., Currie, M., Woo, Y. J.
2022; 35: 10176
- **Biomechanical engineering comparison of four leaflet repair techniques for mitral regurgitation using a novel 3-dimensional-printed left heart simulator.** *JTCVS techniques*
Paulsen, M. J., Cuartas, M. M., Imbrie-Moore, A., Wang, H., Wilkerson, R., Farry, J., Zhu, Y., Ma, M., MacArthur, J. W., Woo, Y. J.
2021; 10: 244-251
- **Biomechanical engineering comparison of four leaflet repair techniques for mitral regurgitation using a novel 3-dimensional-printed left heart simulator** *JTCVS TECHNIQUES*
Paulsen, M. J., Cuartas, M., Imbrie-Moore, A., Wang, H., Wilkerson, R., Farry, J., Zhu, Y., Ma, M., MacArthur, J. W., Woo, Y.
2021; 10: 244-251
- **Ex Vivo Model of Ischemic Mitral Regurgitation and Analysis of Adjunctive Papillary Muscle Repair.** *Annals of biomedical engineering*
Imbrie-Moore, A. M., Zhu, Y., Bandy-Vizcaino, T., Park, M. H., Wilkerson, R. J., Woo, Y. J.
2021
- **Videographic conceptual dynamic representation of bicuspid aortic valve anatomic configurations and structural inter-relationships.** *JTCVS techniques*
Woo, Y. J., Paulsen, M. J., de Kerchove, L., Zhu, Y.
2021; 9: 44-45
- **From hardware store to hospital: a COVID-19-inspired, cost-effective, open-source, in vivo-validated ventilator for use in resource-scarce regions.** *Bio-design and manufacturing*
Park, M. H., Zhu, Y., Wang, H., Tran, N. A., Jung, J., Paulsen, M. J., Imbrie-Moore, A. M., Baker, S., Wilkerson, R., Marin-Cuartas, M., Mullis, D. M., Woo, Y. J.
2021: 1-8
- **Exvivo biomechanical analysis of the Ross procedure using the modified inclusion technique in a 3-dimensionally printed left heart simulator.** *The Journal of thoracic and cardiovascular surgery*
Zhu, Y., Marin-Cuartas, M., Park, M. H., Imbrie-Moore, A. M., Wilkerson, R. J., Madira, S., Mullis, D. M., Woo, Y. J.
2021
- **Graft Type and Routing for Repair of Aorto-esophageal Fistula** *ANNALS OF THORACIC SURGERY*
Zhu, Y., Lee, A. M.
2021; 112 (3): 1033-1034
- **A neonatal leporine model of age-dependent natural heart regeneration after myocardial infarction.** *The Journal of thoracic and cardiovascular surgery*
Wang, H., Hironaka, C. E., Mullis, D. M., Lucian, H. J., Shin, H. S., Tran, N. A., Thakore, A. D., Anilkumar, S., Wu, M. A., Paulsen, M. J., Zhu, Y., Baker, S. W., Woo, et al
2021
- **The Stanford experience of heart transplantation over five decades.** *European heart journal*
Zhu, Y., Lingala, B., Baiocchi, M., Toro Arana, V., Williams, K. M., Shudo, Y., Oyer, P. E., Woo, Y. J.
2021
- **Cusp repair techniques in bicuspid and tricuspid aortic valves.** *JTCVS techniques*
Zhu, Y., Woo, Y. J.

2021; 7: 109-116

- **Cusp repair techniques in bicuspid and tricuspid aortic valves** *JTCVS TECHNIQUES*
Zhu, Y., Woo, Y.
2021; 7: 109-116
- **Extracorporeal Membrane Oxygenation Bridge to Heart-Lung Transplantation.** *ASAIO journal (American Society for Artificial Internal Organs : 1992)*
Shudo, Y., Elde, S., Lingala, B., He, H., Casselman, K. G., Zhu, Y., Kasinpila, P., Woo, Y. J.
2021
- **The impact of donor sex on heart transplantation outcomes-a study of over 60,000 patients in the United States.** *The Journal of heart and lung transplantation : the official publication of the International Society for Heart Transplantation*
Zhu, Y., Shudo, Y., Lingala, B., Joseph Woo, Y.
2021
- **Graft Type and Routing for Repair of Aortoesophageal Fistula.** *The Annals of thoracic surgery*
Zhu, Y., Lee, A. M.
2021
- **Heart Valve Biomechanics: The Frontiers of Modeling Modalities and the Expansive Capabilities of Ex Vivo Heart Simulation.** *Frontiers in cardiovascular medicine*
Park, M. H., Zhu, Y., Imbrie-Moore, A. M., Wang, H., Marin-Cuartas, M., Paulsen, M. J., Woo, Y. J.
2021; 8: 673689
- **Photosynthetic symbiotic therapeutics - An innovative, effective treatment for ischemic cardiovascular diseases.** *Journal of molecular and cellular cardiology*
Zhu, Y., Woo, Y. J.
2021
- **Electrophysiologic Conservation of Epicardial Conduction Dynamics After Myocardial Infarction in Newborn Piglets**
Wang, H., Pong, T., Lucian, H., Aparicio-Valenzuela, J., Tada, Y., Sakhamuri, S., Baker, S. W., Tran, N. A., Paulsen, M. J., Zhu, Y., Lee, A. M., Woo, Y.
LIPPINCOTT WILLIAMS & WILKINS.2020
- **Collagen-Supplemented Incubation Rapidly Augments Mechanical Property of Fibroblast Cell Sheets.** *Tissue engineering. Part A*
Zhu, Y., Thakore, A. D., Farry, J. M., Jung, J., Anilkumar, S., Wang, H., Imbrie-Moore, A. M., Park, M. H., Tran, N. A., Woo, Y. J.
2020
- **Ex Vivo Analysis of a Porcine Bicuspid Aortic Valve and Aneurysm Disease Model.** *The Annals of thoracic surgery*
Zhu, Y., Imbrie-Moore, A. M., Park, M. H., Paulsen, M. J., Wang, H., MacArthur, J. W., Woo, Y. J.
2020
- **Novel bicuspid aortic valve model with aortic regurgitation for hemodynamic status analysis using an exvivo simulator.** *The Journal of thoracic and cardiovascular surgery*
Zhu, Y., Imbrie-Moore, A. M., Paulsen, M. J., Priomprintr, B., Wang, H., Lucian, H. J., Farry, J. M., Woo, Y. J.
2020
- **Bilateral vs. Single Internal Mammary Artery Grafts for Coronary Artery Bypass in the United States.** *The Annals of thoracic surgery*
Zhu, Y., Lingala, B., Wang, H., Woo, Y. J.
2020
- **Multiaxial Lenticular Stress-Strain Relationship of Native Myocardium is Preserved by Infarct-Induced Natural Heart Regeneration in Neonatal Mice.** *Scientific reports*
Wang, H., Bennett-Kennett, R., Paulsen, M. J., Hironaka, C. E., Thakore, A. D., Farry, J. M., Eskandari, A., Lucian, H. J., Shin, H. S., Wu, M. A., Imbrie-Moore, A. M., Steele, A. N., Stapleton, et al
2020; 10 (1): 7319
- **A novel cross-species model of Barlow's disease to biomechanically analyze repair techniques in an exvivo left heart simulator.** *The Journal of thoracic and cardiovascular surgery*
Imbrie-Moore, A. M., Paulsen, M. J., Zhu, Y., Wang, H., Lucian, H. J., Farry, J. M., MacArthur, J. W., Ma, M., Woo, Y. J.
2020

- **Natural Heart Regeneration in a Neonatal Rat Myocardial Infarction Model.** *Cells*
Wang, H., Paulsen, M. J., Hironaka, C. E., Shin, H. S., Farry, J. M., Thakore, A. D., Jung, J., Lucian, H. J., Eskandari, A., Anilkumar, S., Wu, M. A., Cabatu, M. C., Steele, et al
2020; 9 (1)
- **Type A Aortic Dissection-Experience Over 5 Decades: JACC Historical Breakthroughs in Perspective.** *Journal of the American College of Cardiology*
Zhu, Y. n., Lingala, B. n., Baiocchi, M. n., Tao, J. J., Toro Arana, V. n., Khoo, J. W., Williams, K. M., Traboulsi, A. A., Hammond, H. C., Lee, A. M., Hiesinger, W. n., Boyd, J. n., Oyer, et al
2020; 76 (14): 1703–13
- **Biomimetic six-axis robots replicate human cardiac papillary muscle motion: pioneering the next generation of biomechanical heart simulator technology.** *Journal of the Royal Society, Interface*
Imbrie-Moore, A. M., Park, M. H., Paulsen, M. J., Sellke, M. n., Kulkarni, R. n., Wang, H. n., Zhu, Y. n., Farry, J. M., Bourdillon, A. T., Callinan, C. n., Lucian, H. J., Hironaka, C. E., Deschamps, et al
2020; 17 (173): 20200614
- **Outcomes after heart retransplantation: A 50-year single-center experience.** *The Journal of thoracic and cardiovascular surgery*
Zhu, Y. n., Shudo, Y. n., Lingala, B. n., Baiocchi, M. n., Oyer, P. E., Woo, Y. J.
2020
- **A Novel Aortic Regurgitation Model from Cusp Prolapse with Hemodynamic Validation Using an Ex Vivo Left Heart Simulator.** *Journal of cardiovascular translational research*
Zhu, Y. n., Imbrie-Moore, A. M., Paulsen, M. J., Priromprintr, B. n., Park, M. H., Wang, H. n., Lucian, H. J., Farry, J. M., Woo, Y. J.
2020
- **Heart Transplant Using Hepatitis C-Seropositive and Viremic Organs in Seronegative Recipients.** *Annals of transplantation*
Zhu, Y. n., Shudo, Y. n., Lee, R. n., Woo, Y. J.
2020; 25: e922723
- **Quadrupling the N95 Supply during the COVID-19 Crisis with an Innovative 3D-Printed Mask Adaptor.** *Healthcare (Basel, Switzerland)*
Imbrie-Moore, A. M., Park, M. H., Zhu, Y. n., Paulsen, M. J., Wang, H. n., Woo, Y. J.
2020; 8 (3)
- **Artificial papillary muscle device for off-pump transapical mitral valve repair.** *The Journal of thoracic and cardiovascular surgery*
Imbrie-Moore, A. M., Zhu, Y. n., Park, M. H., Paulsen, M. J., Wang, H. n., Woo, Y. J.
2020
- **Engineered biomaterials for heart disease.** *Current opinion in biotechnology*
Stapleton, L. n., Zhu, Y. n., Woo, Y. J., Appel, E. n.
2020; 66: 246–54
- **Comprehensive Ex Vivo Comparison of 5 Clinically Used Conduit Configurations for Valve-Sparing Aortic Root Replacement Using a 3-Dimensional-Printed Heart Simulator.** *Circulation*
Paulsen, M. J., Imbrie-Moore, A. M., Baiocchi, M. n., Wang, H. n., Hironaka, C. E., Lucian, H. J., Farry, J. M., Thakore, A. D., Zhu, Y. n., Ma, M. n., MacArthur, J. W., Woo, Y. J.
2020; 142 (14): 1361–73
- **Redo Valve-Sparing Root Replacement for Delayed Cusp Derangement From Ventricular Septal Defect** *ANNALS OF THORACIC SURGERY*
Zhu, Y., Cohen, J. E., Ma, M., Woo, Y.
2019; 108 (5): E295–E296
- **Multidisciplinary approach utilizing early, intensive physical rehabilitation to accelerate recovery from veno-venous extracorporeal membrane oxygenation** *EUROPEAN JOURNAL OF CARDIO-THORACIC SURGERY*
Zhu, Y., Bankar, D., Shudo, Y., Woo, Y.
2019; 56 (4): 811–12
- **Integrated Thoracic Surgery Residency: Current Status and Future Evolution** *SEMINARS IN THORACIC AND CARDIOVASCULAR SURGERY*
Zhu, Y., Goldstone, A. B., Woo, Y.
2019; 31 (3): 345–49
- **Redo Valve-Sparing Root Replacement for Delayed Cusp Derangement from Ventricular Septal Defect.** *The Annals of thoracic surgery*

Zhu, Y., Cohen, J. E., Ma, M., Woo, Y. J.
2019

- **Multidisciplinary approach utilizing early, intensive physical rehabilitation to accelerate recovery from veno-venous extracorporeal membrane oxygenation.** *European journal of cardio-thoracic surgery : official journal of the European Association for Cardio-thoracic Surgery*
Zhu, Y., Bankar, D., Shudo, Y., Woo, Y. J.
2019
- **Impact of "increased-risk" donor hearts on transplant outcomes: A propensity-matched analysis.** *The Journal of thoracic and cardiovascular surgery*
Shudo, Y., Cohen, J. E., Lingala, B., He, H., Zhu, Y., Woo, Y. J.
2019; 157 (2): 603-10
- **Loeys-Dietz syndrome: Intermediate-term outcomes of medically and surgically managed patients.** *The Journal of thoracic and cardiovascular surgery*
Aftab, M., Cikach, F. S., Zhu, Y., Idrees, J. J., Rigelsky, C. M., Kalahasti, V., Roselli, E. E., Svensson, L. G.
2019; 157 (2): 439-450.e5
- **Surgical Management for Aorto-esophageal Fistula After Endovascular Aortic Repair.** *The Annals of thoracic surgery*
Zhu, Y. n., MacArthur, J. W., Lui, N. n., Lee, A. M.
2019
- **50 Year Heart Transplantation Ultra Long-Term Outcomes - The Stanford Experience**
Zhu Yuanjia, Shudo, Y., Lingala, B., Yasukawa, L., Loh, E., Oyer, P. E., Woo, Y. J.
LIPPINCOTT WILLIAMS & WILKINS.2018
- **Successful heart-lung-kidney and domino heart transplantation following veno-venous extracorporeal membrane oxygenation support.** *Interactive cardiovascular and thoracic surgery*
Zhu, Y., Shudo, Y., Lee, A. M., Woo, Y. J.
2018
- **Cardiac Surgery Outcomes in Patients With Chronic Lymphocytic Leukemia.** *The Annals of thoracic surgery*
Zhu, Y., Toth, A. J., Lowry, A. M., Blackstone, E. H., Hill, B. T., Mick, S. L.
2018; 105 (4): 1182-1191
- **Machine-learning phenotypic classification of bicuspid aortopathy.** *The Journal of thoracic and cardiovascular surgery*
Wojnarski, C. M., Roselli, E. E., Idrees, J. J., Zhu, Y., Carnes, T. A., Lowry, A. M., Collier, P. H., Griffin, B., Ehrlinger, J., Blackstone, E. H., Svensson, L. G., Lytle, B. W.
2018; 155 (2): 461-469.e4
- **Combined Transapical Transcatheter Aortic Valve Replacement and Thoracic Endovascular Aortic Repair for Severe Aortic Stenosis and Arch Aneurysm.** *Aorta (Stamford, Conn.)*
Zhu, Y., Roselli, E. E., Idrees, J. J., Kapadia, S., Svensson, L. G.
2016; 4 (5): 175-177
- **Reoperative transapical transcatheter aortic valve replacement for central aortic regurgitation.** *Journal of cardiac surgery*
Zhu, Y., Kapadia, S., Krishnaswamy, A., Svensson, L. G., Mick, S.
2016; 31 (9): 572-4
- **Atypical Findings in Massive Bupropion Overdose: A Case Report and Discussion of Psychopharmacologic Issues.** *Journal of psychiatric practice*
Zhu, Y., Kolawole, T., Jimenez, X. F.
2016; 22 (5): 405-9
- **Outcomes After Operations for Unicuspid Aortic Valve With or Without Ascending Repair in Adults.** *The Annals of thoracic surgery*
Zhu, Y., Roselli, E. E., Idrees, J. J., Wojnarski, C. M., Griffin, B., Kalahasti, V., Petterson, G., Svensson, L. G.
2016; 101 (2): 613-9
- **Nanocytology of rectal colonocytes to assess risk of colon cancer based on field cancerization.** *Cancer research*
Damania, D., Roy, H. K., Subramanian, H., Weinberg, D. S., Rex, D. K., Goldberg, M. J., Muldoon, J., Cherkezyan, L., Zhu, Y., Bianchi, L. K., Shah, D., Pradhan, P., Borkar, et al
2012; 72 (11): 2720-7