DASSAULT SYSTEMES

7th INTERNATIONAL SYMPOSIUM: VIRTUAL TWIN OF HUMAN & LIVING HEART

December 7-8, 2021 | VIRTUAL EVENT

THE NEXT HORIZON IN HEALTHCARE

FINAL PROGRAM

FOREWORD

Welcome to the 7th International Symposium on the Virtual Twin of the Human Body. This is no ordinary symposium. Each year it connects the global community of medical and biomedical experts working independently, but with the shared commitment to coordinate around a common reference for the physiology of the human body. Beginning with the Living Heart Project, these pioneers are bringing the vision of virtual twins capable of safely testing new innovations and guiding precise treatments to a reality.

Whether you are already part of the community, just learning about it or simply hoping to utilize its achievements, this conference provides a window into its ambitions, its progress and challenges still on the horizon. The mission, to systematically create virtual twins for all human body systems and usher in a new era of medical innovations and healthcare system reform will be the hallmark of this generation.

With the symposium, we bring leaders from academia, healthcare industries, clinical care and government together to share advances made in the past year and plan those for the next. Multidisciplinary panels will address the key challenges and identify synergies to bring an end to the massive fragmentation of information and bring us closer to a single source of truth we can all benefit from.

I look forward to learning from you during and after the symposium.

Steve Levine,
Founder, Living Heart Project & Senior Director Virtual Human Modeling,
Dassault Systèmes

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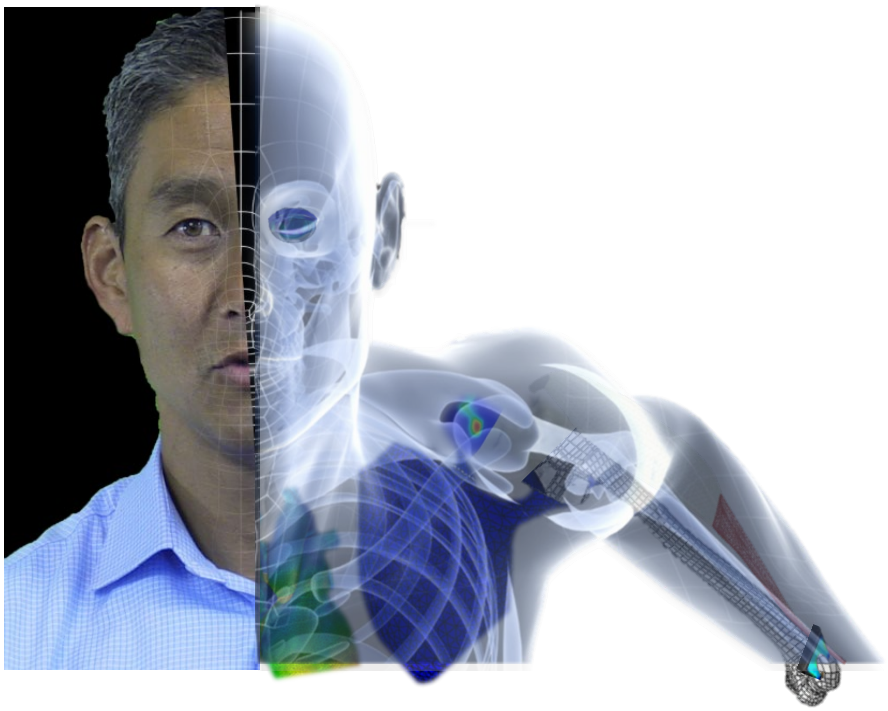
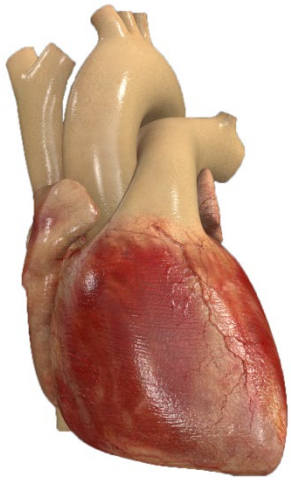




The Living Heart Project

3DEXPERIENCE® Lab

TUESDAY, DECEMBER 7

10:00 AM WELCOME & PLENARY SESSION

Time zone: Eastern US

Welcome and Introduction

Steve Levine, *Dassault Systèmes*

The Dawn of the Virtual Human Twin

Claire Biot & Patrick Johnson, *Dassault Systèmes*

View from the Field – 3D in Clinical Practice

3D for Virtual Surgical Planning

Silvina Zabala Travers, MD, *Pereira Rossell Hospital*

3D for Simulating Surgical Outcomes

David Hoganson, MD, *Boston Children's Hospital*

Panel: Adoption of Virtual Twins in Clinical Environment

Making Healthcare Smart - Sensor Cloud to Transform Biomarkers Into Evidence

Arnaub Chatterjee. *Dassault Systèmes*

Living Heart & Virtual Human Twin Community Update

Steve Levine. *Dassault Systèmes*

12:00 PM BREAK

Fireside Chat: Transformations in Regulatory Science at the FDA

Tina Morrison, *U.S. Food & Drug Administration* & Daniel Matlis, *Axendia*

12:30 PM VIRTUAL TWINS FOR PHARMACEUTICAL APPLICATIONS

Modeling Cerebrospinal Fluid Dynamics

Kevin Hallock, *Biogen*

Sex Differences in Drug-induced Arrhythmogenesis

Mathias Peirlinck, *Delft University of Technology*

Personalized Modeling of Alzheimer's Disease Using AI

Ellen Kuhl, *Stanford University*

Alzheimer's Disease a Mystery Yet to be Resolved

Juveria Farhath, *Sultan-ul-Uloom College of Pharmacy*

1:30 PM TAKING VIRTUAL TWINS INTO NEW DOMAINS

Brain Shape Changes Associated With Cerebral Atrophy in Healthy Aging and Alzheimer's Disease

Johannes Weickenmeier, *Stevens Institute of Technology*

Lung Biomechanics Advancements in the Age of COVID-19

Mona Eskandari, *University of California, Riverside*

FDA Enrichment in silico Clinical Trial

Steve Levine, *Dassault Systèmes*

Brent Craven & Kenneth Aycock, *U.S. Food & Drug Administration*

Computational Epidemiology Modeling COVID-19 Progression

Ellen Kuhl, *Stanford University*

2:50 PM BREAK

TUESDAY, DECEMBER 7 *(continued)*

3:15 PM PURSUITS OF EXCELLENCE (*Parallel Sessions with Access Links*)

Virtual Patients and Pandemic Preparation / Response

Discussion: How can Virtual Twins Help Prepare the World For Future Health Crises?

Ellen Kuhl, *Stanford University*

Steve Levine, *Dassault Systèmes*

Stay in main session.

AI & ML with Virtual Human Modeling for Rational Digital Health

Detection and the Geometrical Information Extraction of Endocardial Scar Tissue in Left Ventricular Using CT Modalities

Yashbir Singh, *Mayo Clinic*

A Machine Learning Platform for Prediction of MitraClip Intervention

Yaghoub Dabiri, *3DT Holdings*

Wolfgang Gentzsch, *The UberCloud*

Using ML Trained with the Living Heart Simulations to Create a Representative Patient Population

Zhenxiang Jiang, *Dassault Systèmes*

Living Heart Model Applications

Interplay Between Cardiac Microtissue Structure and Function - An in silico Approach

Milica Nikolic, *Eindhoven University of Technology*

Living Heart Mesh Morphing for Generating Subject-specific Models

Jonathan Weissmann, *Tel Aviv University*

Uncovering the Effects of Structural Intervention on the Human Tricuspid Valve Using Predictive Models

Mrudang Mathur, *The University of Texas at Austin*

4:15 PM VIRTUAL TWIN FOR ACCELERATED AGING STUDIES

Characterization of Exercise-Induced Myocardium Growth Using Finite Element Modeling and Bayesian Optimization

Yiling Fan, *Massachusetts Institute of Technology*

An Initial Experience of Constrained Mixture Based-cardiac Growth and Remodelling

Hao Gao, *University of Glasgow*

4:55 PM CLOSING REMARKS

WEDNESDAY, DECEMBER 8

10:00 AM WELCOME & PLENARY SESSIONS

Day 1 Recap & Day 2 Outlook

Steve Levine, *Dassault Systèmes*

Importance of Regulatory Science Tools

Ed Margerrison, *U.S. Food & Drug Administration*

FEops HEARTguide, Combining Digital Twins with AI for Unprecedented Structural Heart Disease Management

Matthieu De Beule, *FEops*

Patient-Specific Analysis of Ascending Thoracic Aortic Aneurysm with the Living Heart Human Model

Salvatore Pasta, *University of Palermo*

11:10 AM **BREAK**

Oncology Tumor Assessment

Meriem Ben Abdallah-Bernstein, *Dassault Systèmes*

Towards a COVID-19 Patient-specific Virtual Lung

Daniel Hurtado, *Pontificia Universidad Católica de Chile*

Panel: Virtual Twin from Molecules to Bodies

Reza Sadeghi, Steve Levine & Victor Oancea, *Dassault Systèmes*

12:20 PM BUILDING THE VIRTUAL HUMAN TWIN *(Parallel Sessions)*

Living Brain / Lung Project Planning

Discussion: Advancing the Living Brain and Living Lung Projects

Steve Levine, *Dassault Systèmes*

Stay in main session.

Methodologies for Digital Biomarkers and Synthetic Patients

Arnaub Chatterjee, Jacob Aptekar, & Ruthanna Davi, Dassault *Systèmes*

Accelerating the Use of Virtual Patients in the Regulatory Framework

The Workforce of the Future

Virtual Twin-based Education Centers

Jean-Philippe LaGuerre, Dassault *Systèmes*

Digital Medical Engineering & Technology

Natacha DePaola, *Illinois Institute of Technology*

Virtual Twin Simulation Lab

Nicolas Gallo, *Long Island University*

Technology and Model Update

Tom Battisti & Jiang Yao, Dassault *Systèmes*

Living Heart Members' Breakout

1:20 PM **BREAK**

WEDNESDAY, DECEMBER 8 *(continued)*

1:30 PM INNOVATION CENTERS

3DEXPERIENCE Labs: An Open Innovation Laboratory to Accelerate Disruptive Innovation

Abhishek Bali, *Dassault Systèmes*

ViTrack™: Revolutionize Hemodynamic Monitoring for Better Healthcare Outcomes

José Wong, *Dynocardia*

1:50 PM VIRTUAL TWIN APPLICATION SHOWCASE

Use of the Living Heart as an Engine to Generate a Virtual Patient Cohort for an in silico Trial of a Medical Device: Application to Left Atrial Appendage Occlusion

Steve Kreuzer & Paul Briant. *Exponent*

Are we there yet? Using Computational Heart Modeling to Guide Clinical Trial Protocols

Kevin Sack, *Medtronic*

Modelling Strategies for Medical Devices in Living Heart - Part I

Nils Götzen , *4RealSim Services BV*

Modelling Strategies for Medical Devices in Living Heart - Part II

Karthik Thalappully. *Dassault Systèmes*

Learning Atrial Fiber Orientations from Intracardiac Maps Using Physics-informed Neural Networks

Francisco Sahli Costabal, P*ontificia Universidad Católica de Chile*

3:30 PM BREAK

Fluid-Structure Interaction Simulations for Bio-Prosthetic Heart Valves: Challenges, Solutions and Applications

Harkamaljot Kandail, *CAPVIDIA*

Hemodynamics of the Living Heart with an Left Ventricular Assist Device

Elena Ovsyannikova, *TESIS, Ltd.*

Risk Assessment of Cardiac Conduction Abnormality Associated with TAVR Using the Living Heart Human Model

Symon Reza, *Stony Brook University*

Modeling and Simulation of Patient-specific Aortic Root with Calcific Aortic Valve Disease (CAVD) Using the 3DEXPERIENCE Left Heart Model

Salwa Anam, *Stony Brook University*

5:00 PM FUTURE DIRECTION AND CONCLUDING REMARKS

Concluding Thoughts on the Future of the Virtual Human Twin

Steve Levine, *Dassault Systèmes*

5:05 PM SYMPOSIUM ADJOURNS

3DEXPERIENCE LAB & SUPPORTED STARTUPS

3DEXPERIENCE LAB

The 3DEXPERIENCE Lab is an open innovation laboratory, which embraces the concept of the social enterprise. It draws upon all 3DS people and the company's long history of expertise in virtual technologies to open new perspectives of innovation for a more sustainable world. The Lab looks to support disruptive innovation in the domains of city, life and lifestyle, with a focus on the mentoring Dassault Systèmes' experts can offer to nascent companies with amazing ideas. It supports collective projects— either collaboration around a start-up or communities of passionate people willing to achieve a common cause. Collecting information and managing new ideas with the 3DEXPERIENCE platform is a key asset for this inclusive innovation approach. https://3dexperiencelab.3ds.com/en

DYNOCARDIA

Dynocardia's ViTrack™ is based on technology developed out of MIT & Tufts. It is the first standalone, continuous non-invasive blood pressure (cNIBP) monitor using novel, cuff-less technology. The current arm cuff-based BP devices provide inadequate single-point BP measurements, which lead to 30% misdiagnoses and are inadequate for management of hypertension with less than 50% of patients with controlled BP. The ViTrack will address gaps in patient monitoring in hospitals, improve workflow, detect patient deterioration early to improve outcomes and provide actionable real-world data. Dynocardia expects to have the commercial device and regulatory approval (Class II device) in the next 24 months. https://www.dynocardia.care/

PRENATAL HOPE

Prenatal Hope is seeking to improve the safety of the birth experience through the development of a a non-invasive, in utero testing device that instantly provides pH levels of an unborn baby's blood which correlates directly to oxygen levels of the fetus. Such data helps reduce the risks associated with oxygen deprivation during childbirth, thereby, providing women with improved care and reduced costs during childbirth. https://www.prenatal-hope.com/

MEET THE PRESENTERS

Salwa Anam, – Stony Brook University

PhD Candidate

Salwa Anam is a PhD student in Professor Danny Bluestein's lab at Stony Brook University. Her expertise lies in patient-specific in-vitro and in-silico modeling of TAVR procedure and assessment of post-TAVR complications in bicuspid aortic valve patients.

Jacob Aptekar, MD, PhD – Dassault Systèmes

Senior Director Integrated Evidence - Trial Design Solutions

Abhishek Bali – Dassault Systèmes

3DEXPERIENCE Lab North America Manager

Abhishek drives the 3DEXPERIENCE Lab Startup Accelerator and Open Innovation program for North America. The Accelerator is focused on incubating early- to mid-stage startup companies around the space of Product, Life and Nature that can potentially shift the scales of Innovation in their respective industries. Boston Lab was set up in May 2017 in collaboration with MIT's Center for Bits and Atoms and Fab Foundation, and is a vital node for Dassault Systèmes to foster a culture of maker-ship within the community globally.

Tom Battisti – Dassault Systèmes

Senior Director Life Sciences Industry Experience

Tom received his Masters of Science in Mechanical Engineering with a focus in finite element simulation from Worcester Polytechnic Institute in 1991. Tom has held positions at the US Army Research, Development and Engineering Center, EMC Corporation, and with DS. While at HKS, Abaqus, and DS SIMULIA, Tom has held many positions including those in technical support, sales and marketing and alliances. In 2002, Tom founded the alliances organization and was responsible for developing alliances programs and building and managing an ecosystem of over 120 software and technology partners. In 2013, he was named the Senior Director of Brand Initiatives at DS SIMULIA. In this role, Tom was responsible for managing strategic brand initiatives which encompassed all SIMULIA projects in the field of Virtual Human Modeling (VHM) including the Living Heart Project. In 2018 Tom joined the corporate life sciences team and continues to manage collaborative projects with the VHM ecosystem including those with the US FDA for which he is the principal investigator on the Collaborative Research Agreement between the parties.

MEET THE PRESENTERS

Meriem Ben Abdallah-Bernstein, PhD – Dassault Systèmes

Living Twins for Practitioner Technology Specialist

Meriem Ben Abdallah-Bernstein is a Living Twins for Practitioner Technology Specialist at Dassault Systèmes in France. In her current role, her mission is to provide Machine Learning & Deep Learning healthcare solutions towards the virtual human twin. Prior to Dassault Systèmes, Meriem pursued a postdoc at the Research Center of the University Hospital of Montréal in Canada where she led a research project on the automatic definition of knee osteoarthritis grade using deep learning. She holds a PhD in Computer Science, Automation & Signal Processing at the Lorraine University and an MSc in Mathematics & Computer Science at the Paris University.

Claire Biot, PhD – Dassault Systèmes

Vice President Life Sciences Industry

Claire Biot was appointed Vice President, Life Sciences Industry, Dassault Systèmes in 2019.

Her multifaceted experience in healthcare-related research, business and government administration supports Dassault Systèmes' aim to drive the life sciences industry's digital transformation. As the industry shifts its focus to personalized medicine and patient-centric experiences, she is responsible for helping companies adopt a new unified approach to scientific innovation by using the 3DEXPERIENCE platform to catalyze the next generation of therapeutics.

Claire Biot began her career as manager of industrial methods at the biopharmaceutical company LFB. Later, she was head of division, health products pricing and reimbursement at the French Ministry of Health. She was then appointed managing director of France's Health products and Technologies Central Agency (AGEPS), a subsidiary of Greater Paris University Hospitals (AP-HP). Here, she oversaw 500 employees and two sites dedicated to the development of its procurement policy and supply chain, as well as the development and manufacturing of drugs for specific hospital unmet needs.

Claire Biot graduated from France's Ecole Polytechnique engineering institute. She later earned a Master of Science degree in life sciences from the Watson School of Biological Sciences in New York, and an engineering degree from the Corps des mines program in Paris. She studied cancer immunotherapy at Institut Pasteur in Paris and graduated with a doctorate in immunology.

Claire Biot has been an active member of several World Health Organization working groups on health products, has co-authored four publications and was granted a patent in the field of immunotherapy. Additionally, Claire Biot sits at Mauna Kea Technologies Board of Directors

MEET THE PRESENTERS

Paul Briant, PE, PhD – Exponent, Inc.

Principal Engineer

Dr. Paul Briant is a Principal Engineer in Exponent's Mechanical Engineering practice. Dr. Briant specializes in solid mechanics, finite element analysis, mechanical engineering, biomechanics, and digital image processing. He has extensive experience with finite element analysis and fatigue testing of medical devices, and he has assisted numerous medical device companies prepare for FDA submission. In addition, Dr. Briant has served as an expert witness in medical device litigation cases. Prior to joining Exponent, Dr. Briant's research focused on laboratory and numerical analysis of cartilage tissue mechanics, as well as the design and analysis of orthopaedic biomedical devices

Arnaub Chatterjee – Dassault Systèmes

Senior Vice President of Product and Ecosystem

Arnaub Chatterjee is Senior Vice President of Product and Ecosystem at Medidata Solutions. Medidata is a largest provider of electronic data capture for clinical trials in the world and in his role, Arnaub leads Acorn AI, the data science and analytics business of Medidata, that helps life science companies accelerate their innovation. In addition to his role at Medidata, he also serves as Teaching Associate in the Department of Health Care Policy at Harvard Medical School and Lecturer in the Department of Policy Analysis and Management at Cornell University.

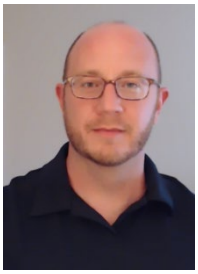
Prior to Medidata, Arnaub was Associate Partner in the Pharmaceutical and Medical Products group at McKinsey & Company, where he advised pharmaceutical and technology companies. Before his time at McKinsey, he served as Director of Merck's Data Science and Insights group within the Center for Observational and Real World Evidence. He previously served in the Obama Administration as an advisor to former Chief Technology Officers Todd Park and Bryan Sivak at the U.S. Department of Health and Human Services (HHS). He also worked in the Office of the Secretary at HHS as a lead policy analyst on healthcare fraud and abuse initiatives around the Affordable Care Act. Prior to government service, he began his career as a strategy consultant at Deloitte Consulting.

His work has been published in journals such as the Harvard Business Review and Nature and he has presented at conferences ranging from South by Southwest to the American College of Cardiology. He holds graduate degrees in health administration (MHA) and public administration (MPA) from Cornell University and received his undergraduate degree from the University of Michigan.

Laurent Coste – Dassault Systèmes

Chief Innovation Officer, Medidata

MEET THE PRESENTERS



Brent Craven, PhD – U.S. Food and Drug Administration

Research Scientist and Principal Investigator

Brent Craven is a Research Scientist and Principal Investigator in the Division of Applied Mechanics, Office of Science and Engineering Laboratories, Center for Devices and Radiological Health (CDRH) at the U.S. Food and Drug Administration (FDA). He received his PhD in Mechanical Engineering from the Pennsylvania State University in 2008. His areas of expertise include computational fluid dynamics (CFD), fluid-structure interaction (FSI), multiphysics modeling, patient-specific modeling, and verification and validation (V&V) of computer modeling applied to medical devices such as mechanical circulatory support devices, artificial heart valves, intravascular blood clot filters, and inhalers. His research at the FDA primarily focuses on (i) advancing the use of V&V for physics-based computational modeling of medical devices, and (ii) developing improved models for reliably predicting flow-induced blood damage in cardiovascular devices. In addition to research, he regularly serves as a subject matter expert and technical consulting reviewer on regulatory submissions to CDRH. He has authored 47 refereed journal papers and more than 90 conference proceedings and abstracts. He was a recipient of an FDA CDRH COVID-19 award in 2020 for his regulatory contributions in the technical review of emergency use ventilators, the FDA CDRH Excellence in Scientific Research Award in 2018, the American Society for Artificial Internal Organs (ASAIO) Kolff Award in 2016, and his research was featured in the 2015-2016 FDA Regulatory Science Progress Report to Congress.

Yaghoub Dabiri, PhD –3DT Holdings

Project Manager

Yaghoub has more than 10 years of experience in simulation of biological systems. He has numerous papers on cardiac modeling including modeling of the regurgitation and MitraClip intervention in the mitral and tricuspid valves. Dr. Dabiri has a PhD in Mechanical Engineering, and he is working with 3DT Holdings as a project manager.

Ruthie Davi, PhD – Dassault Systèmes

Vice President, Data Science at Acorn AI

Ruthie Davi is a Statistician and Vice President, Data Science at Acorn AI, a Medidata company, and has a background in pharmaceutical clinical trials with more than 20 years working as a Statistical Reviewer, Team Leader, and Deputy Division Director in the Office of Biostatistics in CDER at FDA. At Acorn AI Ruthie is part of a team creating analytical tools to improve the efficiency and rigor of clinical trials. Ruthie's recent work is focused on creation and analysis of synthetic or external controls. Ruthie holds a Ph.D. in Biostatistics from George Washington University.

Matthieu DeBeule, PhD – FEops

CEO

Under Matthieu's leadership, FEops has transformed from a small academic spin-off into a fast-growing venture capital backed gazelle in the medtech sector. He completed his degree in engineering at the University of Ghent in 2002 and gained his PhD in 2008 for his research on cardiovascular device and procedure modeling.

MEET THE PRESENTERS

Natacha DePaola, PhD – Illinois Institute of Technology

Professor of Biomedical Engineering

Dr. DePaola has 35 years of combined experience in biomedical engineering research, education, and academic leadership. Her research investigates the role of physical mechanisms on cellular behavior stressing its importance in the understanding of human disease, the development of new therapies, and the engineering of functional tissues and devices. Dr. DePaola is committed to excellence in engineering education and the empowerment of a diverse and agile workforce to succeed in today's rapidly changing technological-driven industry and society. She has received various awards and recognitions, is a Fellow of the American Institute for Medical and Biological Engineering (AIMBE), member of eight other professional societies, and serves/has served in various public and private (academic and non-academic) advisory committees or boards. Dr. DePaola is a co-inventor of a few biotechnologies focused on the development of instrumentation for biomedical research and diagnostics. Dr. DePaola holds a Ph.D. in Medical Engineering/Medical Physics from the Division of Health Science and Technology at Harvard Medical School – Massachusetts Institute of Technology. She has held academic and research appointments at Columbia University (NY), Northwestern University (IL), the University of Huntsville (AL), Rensselaer Polytechnic Institute (NY), and the Albany Medical College Center for Cardiovascular Sciences (NY). While chair of the Global Engineering Deans Council (GEDC) (2017-2019), Dr. DePaola promoted Academia–Industry interactions and led the partnership agreement for the GEDC Industry Forum (international workshops bringing academic and corporate leadership together to discuss contemporary challenges in the development of the engineering workforce of the future). She currently leads the Illinois Tech-Dassault Systèmes partnership focused in the development of educational solutions and the application of advanced digital tools in biomedical engineering research.

April Deady – Dassault Systèmes

Life Sciences Industry Solution Experience Manager

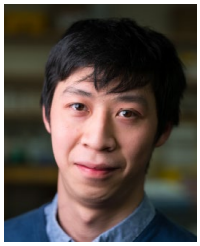
April Deady is a Life Sciences Industry Experience Manager responsible for marketing and administration of the Living Heart Project and other human modeling-related initiatives. Prior to joining the Virtual Human Modeling group, April had a similar role in the Alliances team where she worked since graduating from Bryant College, now Bryant University, in 2004 with a Bachelors of Science degree in Business Administration.

Mona Eskandari, PhD – University of California Riverside

Assistant Professor, Mechanical Engineering

Mona Eskandari is an Assistant Professor in the Department of Mechanical Engineering and associated faculty of Bioengineering and the BREATHE Center in the School of Medicine at UC-Riverside. Prior to her postdoctoral fellowship at UC-Berkeley, she received her doctorate and master's degree from Stanford University, and her bachelor's degree from the University of Arizona, where she was also a Nugent medalist. She is a recipient of the prestigious Hellman Faculty Fellowship and holds the honored title of Distinguished Teaching Professor. Additionally, she is a recipient of the renowned K. Patricia Cross Future Leaders of Higher Education Award from the Association of American Colleges and Universities. She has been honored with the University of California Provost's Engineering Faculty Research Fellowship, and was previously named a National Science Foundation Graduate Research Fellow, a DARE Doctoral Fellow, and a Stanford Graduate Science and Engineering Fellow. Her area of expertise is computational modeling and experimental characterization of biological systems, with an emphasis on pulmonary mechanics.

MEET THE PRESENTERS



Yiling Fan – Massachusetts Institute of Technology

PhD Candidate

Yiling is a PhD student in Mechanical Engineering at MIT. He works in the Therapeutic Technology Design & Development lab led by Prof. Ellen Roche. His research focuses on building patient-specific computational models to study myocardium growth under pathological and physiological growth conditions.

Juveria Farhath – Sultan ul-Aloom College of Pharmacy

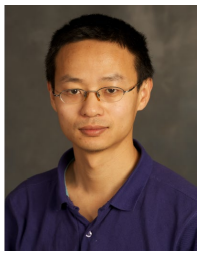
PhD Candidate

Juveria Farhath is a 4th year Doctor of Pharmacy student at the Sultan Ul-Aloom College of Pharmacy.

Nicolas Gallo, PhD – Long Island University

Assistant Professor

Dr. Gallo is an Assistant Professor at the College of Pharmacy of Long Island University with 10 years of experience in medical engineering research and education. Dr. Gallo is working to contribute to the digitalization of healthcare through the development of computational modelling to address current life science issues in our society. He is committed to innovative research by connecting multiple scientific disciplines and driving the digital revolution in Life Science education. His research focuses on multiphysics and multiscale modelling of human systems to understand disease progression and drug metabolism for the purpose of developing adequate patient specific therapeutics and diagnostic technologies. Dr. Gallo holds a PhD from the Biomedical Engineering department of the Illinois Institute of Technology.



Hao Gao, PhD – University of Glasgow

Lecturer, Applied Mathematics

Dr. Hao Gao is a lecturer in Applied Mathematics and a key member of the SofTMech Centre at the School of Mathematics and Statistics, University of Glasgow. He studied theoretical and applied mechanics at Fudan University China before completing his PhD in computational biomechanics at Brunel University London. He has been working in University of Glasgow after his PhD first as a research associate then a research fellow in the SofTMech Centre. His primary research interest lies in the mathematical modelling of cardiovascular system through closely working with clinicians and modellers, in particular, multi-physics/-scale personalized biomechanical models with an aim of translating cutting-edge mathematical models into the clinic.

Wolfgang Gentzsch – The UberCloud

President & Co-Founder

Wolfgang Gentzsch is president and co-founder of the UberCloud. He was the chairman of the International ISC Cloud Conferences 2010 – 2015, an Advisor to EU projects EUDAT & DEISA, directed the German D-Grid Project and the North Carolina State Grid, and was a member of the Board of Directors of the Open Grid Forum and of the US President's Council of Advisors for Science and Technology, PCAST. After his Ph.D. in Appl Math at Technical University Darmstadt, he started his professional career as a magneto-hydrodynamics researcher at the Max-Planck-Insitute for Plasmaphysics and headed the CFD Department at the German Aerospace Center in Gottingen.

MEET THE PRESENTERS

Nils Götzen, PhD – 4RealSim Services BV

Global Senior FEA Consultant & Life-Science Expert

Nils Götzen holds a Dipl.-Ing in Aeronautical Engineering, a M.Sc. & Dr.-Ing in Biomedical Engineering. He has more than 25 years of experience in biomedical engineering with focus on biomechanics and medical device development. After completing his academic education, he started working as a stent development engineer & technical project manager for Biotronik and was responsible for the design development for the biodegradable magnesium stent - Magmaris, among other things. He then continued to work for Straumann AG as a Project/Program Manager for the Digital Dentistry Program. Afterwards, he moved with his family to the Netherlands to work for Xeltis BV as the Senior Program Manager and was bringing the Pulmonary Valve from the feasibility phase into clinical trial stage. Since 2017 he is working for 4RealSim as a Senior FEA Consultant & Life-Science Expert. He is now also acting as the Principle Consortium Coordinator of the EU funded H2020 project SimInSitu - In-silico Development- and Clinical-Trial-Platform for Testing in-situ Tissue Engineered Heart Valves.

Kevin Hallock, PhD – Biogen

Associate Director, Head of Modeling and Simulation

Kevin Hallock received his Ph.D. in Physical Chemistry and Biophysics from the University of Michigan (U of M) where he studied the impact of antimicrobial peptides on lipid bilayers using solid-state NMR. After U of M, he moved to Boston University (BU) where used magnetic resonance techniques (MRM, MRI, MRS) to investigate questions in areas as diverse as solid-state imaging, insects, neurology, and obesity. He also taught two classes: Biology, Chemistry, and Physics of Natural and Man-made Hazards and Introduction to Systems Modeling, in BU's Healthcare Emergency Management program. He continues to be an adjunct faculty at BU, but moved to Pfizer several years ago, where he focused on data visualization and simulation techniques including virtual, augmented, and mixed realities during his tenure. While at Biogen, he has had several roles including leading the Modeling and Simulation group in Digital and Quantitative Medicine, where his team focused on data analytics, simulation, visualization and simulation using a variety of computational techniques, including targeted use of extended realities.

David Hoganson, MD – Boston Children's Hospital

Assistant, Department of Cardiac Surgery; Director, Computational 3D Visualization Program; Instructor of Surgery, Harvard Medical School

Dr. Hoganson is an Assistant in Cardiac Surgery, Department of Cardiac Surgery at Boston Children's Hospital, and is an Instructor of Surgery at Harvard Medical School. His clinical focus is on neonates and children with congenital heart disease. He has co-lead development of patient specific 3D modeling and computational flow modeling of complex cardiac disease for improved pre-operative planning and intraoperative guidance. His lab also focuses on development of medical devices to improve the safety and effectiveness of cardiac surgery. Dr. Hoganson has a background in engineering and industry experience developing cardiovascular medical devices prior to medical school. He graduated from the Temple University School of Medicine in 2004 and completed his general surgery residency and CT fellowship at the Washington University in St. Louis, and completed a congenital cardiac surgery fellowship at the Boston Children's Hospital in 2016.

MEET THE PRESENTERS

Barbara Holtz, PhD – Dassault Systèmes

Life Sciences Industry Expert Consultant

Dr. Holtz is a Life Science Value Expert at Dassault Systèmes with 20+ years of experience in the industry, working with companies such as Bayer, GSK and AstraZeneca to help them improve their business processes through digitalization.

A PhD physicist by training, Dr. Holtz uses her analytical skills to understand why customers are engaging with us, what drives the need to digitalize and what can be improved in terms of changing business processes, which ultimately guides how people will work tomorrow using the 3DEXPERINECE Platform and its applications.

Daniel Hurtado, PhD - Pontificia Universidad Católica de Chile

Associate Professor, School of Engineering and Institute of Biological and Medical Engineering

Daniel Hurtado is an associate professor with the Engineering School and Institute for Biological and Medical Engineering at Pontificia Universidad Catolica de Chile. His research focuses in the development of computational models of the respiratory system for medical translational research. He is an elected member of the World Council of Biomechanics.

Zhenxiang Jiang – Dassault Systèmes / Michigan State University

PhD Candidate

Zhenxiang Jiang is currently pursuing a PhD degree in Cardiovascular and Tissue Mechanics Research Lab at Michigan State University and working as an intern for the Living Heart Project in Dassault Systèmes. Since receiving his bachelor's degree in engineering mechanics from the Dalian University of technology, has acquired a strong background in nonlinear mechanics, finite element analysis, programming, and machine learning. With more than 6 years of experience in modeling cardiovascular tissue and solving complex engineering problems, he has a great ability to apply theories of mechanics to complex practice.

Patrick Johnson – Dassault Systèmes

Senior Vice President, Corporate Science & Research

Patrick Johnson is SVP Corporate Science & Research at Dassault Systèmes. His mission is to define the scientific bases of the company's solutions, invent new disruptive technologies for the Industry Renaissance and animate the group's global research ecosystem.

After joining in 1996, he held various positions in R&D, from Product Lifecycle Management infrastructure to virtual product design solutions for the CATIA flagship brand. In 2001, he became head of the artificial intelligence department and played an instrumental role with new engineering practices currently now adopted in multiple sectors, such as smart morphing templates, and industrial processes capitalization & reuse automation.

As Head of Corporate Research in 2004, he launched the development of original technologies for all brands, and significantly grew the global innovation ecosystem of public/private partnerships with prestigious research bodies. In addition, he launched a strategic diversification for 3DS, following a very large European research program (BioIntelligence), resulting in a suite of collaborative applications for the life sciences sector, and the creation of the BIOVIA brand with a worldwide R&D lab in modeling, simulation, big data for life sciences.

A graduate of ENSAE, Mr. Johnson is based at 3DS Headquarters near Paris. He is or has been a member of the National Academy of Technology as well as of the scientific boards of INRIA, and International Society of Computational Biology.

MEET THE PRESENTERS

Harkamaljot Kandail, PhD – CAPVIDIA

Cardiovascular Expert

Dr. Harkamaljot Kandail obtained his PhD from Imperial College London, UK in 2016 where he developed computational models for abdominal aortic aneurysms. Following his PhD, he did two postdocs, first at Marquette University, USA and second one at TU/e, Netherlands. He is interested in computer-aided biomedical engineering with particular emphasis on the amalgamation of clinical imaging techniques such as computed tomography and magnetic resonance imaging with computational cardiovascular biomechanics. The overarching objective of his research activities is to elucidate the role structural deformations and hemodynamics play in cardiovascular disease development and progression, along with designing novel biomedical devices to treat such diseases.

Steven Kreuzer, PhD, PE – Exponent, Inc.

Managing Engineer

Dr. Kreuzer specializes in structural mechanics utilizing both finite element modeling and custom mechanical tests. He has extensive experience with analysis and testing of cardiovascular medical devices including stents and catheters, as well as musculoskeletal implants. Prior to joining Exponent, Dr. Kreuzer studied myocyte protein mechanics using molecular dynamics and cellular fluid/structural interactions in maturing and remodeling orthopedic tissues including cartilage and cortical bone.

Ellen Kuhl, PhD – Stanford University

Professor, Department of Mechanical Engineering

Ellen Kuhl is a professor of Mechanical Engineering. She received her PhD from the University of Stuttgart in 2000 and her Habilitation from the University of Kaiserslautern in 2004. Her area of expertise is Living Matter Physics, the design of theoretical and computational models to predict the acute and chronic behavior of living structures. Ellen has published more than 200 peer-reviewed journal articles and edited two books; she is an active reviewer for more than 20 journals at the interface of engineering and medicine and an editorial board member of seven international journals in her field. Ellen is the current Chair of the US National Committee on Biomechanics and an Executive Member of the US Association for Computational Mechanics. She is a Fellow of the American Society of Mechanical Engineers and of the American Institute for Mechanical and Biological Engineering and a founding member of the Living Heart Project, a translational research initiative to revolutionize cardiovascular science through realistic simulation. Ellen received the National Science Foundation Career Award in 2010, was selected as Midwest Mechanics Seminar Speaker in 2014, and received the Humboldt Research Award in 2016. Ellen is an All American triathlete on the Wattie Ink. Elite Team, a multiple Boston, Chicago, and New York marathon finisher, and a Kona Ironman World Championship qualifier.

MEET THE PRESENTERS

Jean-Philippe Laguerre, PhD – Dassault Systèmes

Director, Education NAM – 3DExperience / PLM

JP Laguerre is a business executive leader with more than 20 years of experience in international consultative, strategic and enterprise Sales, and in managing enterprise accounts and strategic corporate initiatives.

JP is Director for Education in North America with Dassault Systèmes (DS), the 3DEXPERIENCE Company that provides end-to-end software, content and services, designed to support companies' innovation processes. In his role, he manages activities and relationships with academic institutions across North America to transform engineering education. He develops strategic partnerships to establish and manage Centers of Excellence engaged in various industries and focused on impactful research activities. He also works with Dassault Systèmes commercial customers to orchestrate and execute outreach programs focusing on Sciences, Technology, Engineering and Math (STEM).

Formerly, JP Laguerre had management responsibilities with DS commercial customers in various industries where he has managed executive relationships, has led sales engagement and managed engineering and project execution.

He joined Dassault Systemes in 1996 in Tokyo, Japan as an expert for the manufacturing solutions working with OEM and suppliers in the aerospace and automotive industries. He then transferred to California in the same capacity for North America.

Born in France, he holds a Master's degree in Electrical Engineering from The Polytech Group. He is also a graduate from UCLA Anderson.

JP Laguerre is on multiple boards with a common goal to transform STEM/STEAM education to be accessible to all, exciting and effective at all levels. He has been serving as a judge for engineering competitions and undergraduate senior design projects. He facilitated the creation of a FIRST Robotics team in Boyle Heights (East Los Angeles) volunteering his time with the i.am.angel Foundation to TRANS4M Lives in underserved communities.

Steve Levine, PhD – Dassault Systèmes

Executive Director Living Heart Project & Sr. Director, Virtual Human Modeling

Dr. Steve Levine is Sr. Director of Life Science and the Executive Director of the Living Heart Project at Dassault Systèmes. Steve is responsible for leading the DS strategy for digital healthcare, including the 3DEXPERIENCE Twin, which uses advanced AI and VR to create functioning 3D human models. He is also responsible for incubating a startup community within the 3DEXPERIENCE Labs at DS and creating a marketplace of digital healthcare services.

Dr. Levine holds a Ph.D. in Materials Science from Rutgers University and was elected as a Fellow in the American Institute for Medical and Biological Engineering (AIMBE). He also has nearly 30 years of experience driving innovation in technology, beginning his career in health tech at the San Diego based startup Biosym that went public as Accelrys in 2004 and acquired by Dassault Systèmes in 2014.

MEET THE PRESENTERS

Ed Margerrison – U.S. Food & Drug Adminstration

Director, Office of Science and Engineering Labs, Center for Devices and Radiological Health

Ed is the Director for the Office of Science and Engineering Laboratories at the Center for Devices and Radiological Health, US FDA. The Office is responsible for providing technical expertise and analyses in support of the regulatory processes within CDRH. In addition, the c300 scientists and engineers engage in representing the Agency on International standards organizations, provide scientific guidance for policy, and "futureproof" the Center for technologies making their way into novel medical devices.

Previously, he was President and CEO of Ortho Regenerative Technologies, a biotech startup based in Montreal, developing novel biomaterial approaches to surgical soft tissue repair. During this appointment, Ed steered the company to listing on the Canadian stock exchange, and started the regulatory process for the technology with the Center for Biologics at FDA.

He has also held senior positions at Zimmer Biomet (Vice President of Biologics), where he was primarily responsible for the cartilage repair business, resulting in the division becoming Zimmer's Business Unit of the Year for 2014, and other positions in both the pharmaceutical (Akela Pharma) and Orthopedics (Smith & Nephew) industries.

Mrudang Mathur – University of Texas at Austin

PhD Candidate

Mrudang is a PhD student in Mechanical Engineering at The University of Texas at Austin working with Dr. Manuel K. Rausch. He received a bachelor's degree in Mechanical Engineering from Delhi Technological University. His research focuses on developing and using high-fidelity computational models of the human tricuspid valve to optimize surgical intervention.

Daniel Matlis – Axendia

President

Daniel R. Matlis is Founder and President of Axendia, an analyst and strategic advisory firm providing trusted advice to executive in the Pharmaceutical, Medical Device, Diagnostics, Biotechnology and Healthcare industries.

Dan has almost three decades of industry experience spanning the Health-Science value chain. He has been involved in projects spanning R&D, clinical, manufacturing, regulatory compliance, business development and information technology.

He has been an active member in FDA's Case for Quality Initiative since 2014 and has presented Axendia's research findings to industry executives and the FDA officials.

Dan began his career at Johnson & Johnson, where he provided leadership in the areas of technology, regulatory compliance and business. Before founding Axendia, Dan was a Partner, VP and General Manager at a leading Life-Science consultancy firm.

He is a frequent lecturer at Industry events and has published numerous research reports and articles on key issues facing the Life-Sciences and Healthcare industries.

MEET THE PRESENTERS

Tina Morrison, PhD – U.S. Food and Drug Administration

Director, Office of Regulatory Science and Innovation

As Director of Regulatory Science and Innovation, and a member of Senior Executive Service, Dr. Morrison provides strategic leadership, coordination, infrastructure and support for excellence and innovation in science at the FDA. Tina has been working to advance the role of computer modeling and simulation in medical device design and product evaluation. Lauding her work ethic, in 2016 the FDA Office of the Chief Scientist entrusted her with forming and leading an agency-wide working group on modeling and simulation, whose first workshop attracted hundreds of FDA participants. She also headed the drafting of FDA's breakthrough guidance for modeling: Reporting of Computational Modeling studies in Medical Device Submissions, attracting international recognition. Outside the Agency, Tina has led the development of pathways for enhancing modeling credibility and acceptance. For instance, she was selected by her peers to lead a 3-year effort in developing a verification and validation standard for the American Society of Mechanical Engineers (ASME), which culminated in 2018 with the first-ever set of evaluating procedures for computational modeling of medical devices, called the ASME V&V 40 standard. The FDA recently recognized this standard for supporting medical device evaluation. Because of these efforts, Tina was selected as the 2019 Federal Engineer of the Year for FDA. She is the Deputy Director of the Division of Applied Mechanics in FDA's Office of Science and Engineering Laboratories. She is Chair of the ASME Verification and Validation Committee, and an Associate Editor for the Journal on Verification, Validation and Uncertainty Quantification. She is a mechanical engineer who received her PhD in Theoretical & Applied Mechanics from Cornell University.

Milica Nikolic, PhD – Eindhoven University of Technology

PostDoc

Milica Nikolic obtained PhD in mechanical engineering 2017 (University of Kragujevac, Serbia). Currently she is a postdoc at Eindhoven University of Technology. With focus in computational modelling in bioengineering she has published several papers and book chapters.

Victor Oancea, PhD – Dassault Systèmes

Chief Strategy Officer, SIMULIA

Victor Oancea is a Technology Director at Dassault Systemes SIMULIA Corp. He has over 20 years of industrial experience in finite element and numerical modeling development and analysis. He currently advises the core additive manufacturing process simulation team for advancement of physics-based predictive simulation tools. He received his Ph.D. degree in Computational Mechanics from Duke University.

MEET THE PRESENTERS

Elena Ovsyannikova, PhD – TESIS, Ltd.

Technical Support Engineer

Dr. Elena Ovsyannikova graduated from the Bauman Moscow State Technical University (BMSTU) in 2016 and in 2017 was a postgraduate student of the Department of Applied Mechanics. Her PhD work focused on the study of the left ventricle assist device (LVAD) rotor dynamics, hemodynamics, and LVAD impeller control. In 2019 Elena became an Assistant Professor at BMSTU while also working as an employee at the Numerical Engineering Platform Ltd (TESIS sister company) where she performed fluid-structure interaction simulations in CFD and FEA packages (Flowsion, Abaqus, others). Her areas of interest include fluid structure interaction, nonlinear dynamics, rotor dynamics, strength analysis, finite element modelling, and computational fluid dynamics.

Salvatore Pasta, PhD – University of Palermo

Assistant Professor

My research activity is focused on the application of biomechanical principles to improve the way we diagnose and treat cardiovascular diseases. I have gained a considerable experience (15+years) in the utilization of different finite-element techniques (CFD, FEM and FSI) and experimental mechanics for the understanding of pathophysiological mechanisms leading to disease progression with the final goal to develop new risk stratification strategies and computer-based clinical decision support system. I was the recipient of a number of awards as PI from public (Italian Ministry of Health), H2020, and private funding schemes. I was a research scientist at the University of Pittsburgh and the head of the cardiovascular engineering program at the transplant institute, IRCCS ISMETT, before joining the University of Palermo.

Mathias Peirlinck, PhD – Delft University of Technology

Assistant Professor

Dr. Peirlinck currently serves as an Assistant Professor of Biomechanical Engineering at Delft University of Technology in the Netherlands. Before that, he joined the core Living Heart Project R&D team as a Virtual Human Modeling Intern, completed his PhD in Biomedical Engineering at Ghent University (Belgium) and worked as a postdoctoral research fellow in the Department of Mechanical Engineering at Stanford University (USA). Dr. Peirlinck's research focuses on the multiscale behavior of the human heart, bridging the cell, tissue and organ scale. An improved understanding of the tissue's biophysical functioning is crucial for the choice for, and development of, efficient clinical treatment strategies focused on patient-specific pathophysiology. Using finite element analysis and machine learning techniques, dr. Peirlinck integrates information from various data sources into computer models that simulate the patient-specific biophysical behavior of the heart as accurately as possible.

Symon Reza – Stony Brook University

PhD Candidate

Symon Reza completed his bachelor's degree in Mechanical Engineering from the National Institute of Technology in India, and went on to obtain a master's degree in Mechanical Engineering from Northern Arizona University. He is now a Biomedical Engineering PhD Candidate at Stony Brook University where he is able to apply his interests in Computational Fluid Dynamics, Finite Element Analysis, and Fluid-Structure Interaction to his research focus which is analyzing the risk of post TAVR cardiac conduction abnormality (CCA) using computational modeling of TAVR procedure in patient specific anatomies and Living Human Heart Model (LHHM).

MEET THE PRESENTERS

Kevin Sack, PhD – Medtronic

Biomedical Engineer

Kevin Sack is Biomedical Engineer, Finite Element (FE) enthusiast and pursuer of patient-specific computational cardiac solutions. Kevin received his doctoral degree at the University of Cape Town, South Africa, the same institute he lectured FE methods courses for over several years. After a postdoc at the University of California, San Francisco, Kevin began working for Medtronic Inc. His work at Medtronic focuses on applying FE modeling to solve cardiac mechanics problems. Specifically, the computational investigation of emerging therapies, medical devices and their efficacy in treating the failing heart.

Reza Sadeghi – Dassault Systèmes

Chief Strategy Officer, BIOVIA

Reza has over 20 years of experience in executive management, portfolio planning, product development, mergers and acquisitions and has deep knowledge of both discrete and the formulated industries. As chief strategy officer, he is responsible for BIOVIA's strategy at DASSAULT SYSTEMES as well as BIOVIA's contract research. After beginning his career in defense R&D, Reza moved on to an executive role at a Palo Alto startup (MARC Analysis Research Corporation) and later with MSC Software, both of which are developers of scientific software with focus on modeling and simulation. Prior to Dassault Systems, Reza was the chief technology officer at MSC Software, responsible for product strategy and a multi-industry portfolio with a global team covering the US, Europe and Asia. He is a regular speaker at a number of international life science and material science events as well as holds a number of advisory board positions. Reza lives in La Jolla Ca.

Francisco Sahli Costabal, PhD – Pontificia Universidad Católica de Chile

Assistant Professor

Dr. Sahli is an Assistant Professor at the Pontificia Universidad Católica de Chile, where he began his studies and received his bachelor and master degrees. During his master's thesis he developed a semi-automatic method to estimate the load bearing capacity of vertebral bodies from CT images using finite elements. In 2017, he earned his PhD in the Living Matter Lab of Prof. Ellen Kuhl at Stanford University. His research focuses on modeling the electrophysiology of the heart in organ-level simulations. In particular, he has developed a high resolution, multi-scale model to predict potential side effects of drugs in the heart.

Yashbir Singh, PhD – Mayo Clinic

PostDoc

Currently, I am working as Post Doc at Mayo clinic where I am involved in developing innovative informatics tools that can extract and convey the wealth of information available in medical images in a clear and concise fashion to improve patient outcomes. Prior to Mayo clinic, I was working as a Medical scientist at the heart and vascular institute, WVU, Medicine with an interest in artificial intelligence implementation in cardiology. Before coming to the USA, I completed my Ph.D. in Biomedical engineering from Taiwan. In my Ph.D., I developed an automated method for detecting the scar tissue in the left ventricular endocardial wall using a deep learning approach.

During my Ph.D., I received DAAD (Deutscher Akademischer Austauschdienst) Fellowship, Germany, to work at Otto von Guericke University, Magdeburg. I am involve with several international scientific societies and projects.

MEET THE PRESENTERS

Ashley Stroh – Dassault Systèmes

Intern – Solution Consultant

Ashley Stroh is an intern at Dassault Systèmes on the Living Heart Project for the past year. Her work has been primarily on developing methodologies for heart models in order to make them easier to use and more realistic. She has developed experience using the CATIA and the 3DExperience platform to do so. She has worked on developing a baseline full adult heart, a pediatric heart, a left heart submodel, and a few disease state models. In addition to this work, she is a junior at Wichita State University in Kansas, studying Biomedical Engineering. "Working on the Living Heart Project has been such a great opportunity for me."

Karthik Thalappully, PhD – Dassault Systèmes

SIMULIA User Success Engineering Manager

Mohan Thanikachalam – Dynocardia

CEO

Mohan Thanikachalam, MD is a cardiovascular surgeon with a long-standing interest in public health. As a surgeon managing critically ill inpatients and a physician involved in programs offering community- and home-based services for diabetes and hypertension management, he has first-hand knowledge of the current blood pressure measuring devices and their limitations. To address these limitations, as the principal investigator of a NIH grant, Mohan has led the joint effort (TUFTs and MIT) to develop the ViTrack technology, a first-of-its-kind technology for continuous non-invasive blood pressure monitoring. Mohan is a faculty at Tufts University School of Medicine and an Affiliate Faculty at MIT.

Johannes Weickenmeier, PhD – Stevens Institute of Technolgy

Assistant Professor

Dr. Johannes Weickenmeier is an Assistant Professor of Mechanical Engineering at Stevens Institute of Technology with a PhD from ETH Zurich 2015 and a Postdoc at Stanford University 2015-2018. His lab specializes in computational soft tissue biomechanics with a particular interest in brain aging.

Jonathan Weissmann, MD – Tel Aviv University

PhD Candidate

Dr. Jonathan Weissmann comes from a background of mathematics and computer science and also holds a M.D. degree. Currently, he is a PhD candidate in biomedical engineering at Tel Aviv University under the supervision of Dr. Gil Marom and Prof. Shmuel Einav. He builds an algorithm-based subject-specific framework to investigating the change in mechanical properties in heart failure with preserved ejection fraction (HFpEF).

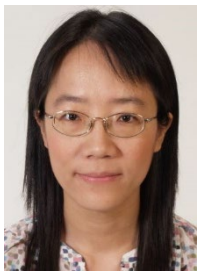
MEET THE PRESENTERS

Jose Wong – Dynocardia

Chief Product Officer

As CPO, lead product development, support business strategy, and build/improve development infrastructure. Prior to joining Dynocardia, spent 30+ years leading med tech development and strategy for McKinsey, Flex, GE Healthcare, and Johnson & Johnson. Held roles across numerous functions including R&D, manufacturing, and quality. Also has been the lead architect for the development of several successful medical products including patient wearables to complex electromechanical systems.

Received a BS in Mechanical Engineering from the University of Virginia and an MBA from the University of Miami.



Jiang Yao, PhD – Dassault Systèmes

Life Sciences Industry Solution Technical Senior Manager

Jiang Yao received a bachelor's degree in Mechanical Engineering from Tsinghua University in 1999. She graduated from University of Rochester with a PhD in Computational Biomechanics in 2006, where she developed a finite element model for the knee joint to study the effect of knee injuries. She performed postdoctoral researches in computational simulation of cardiac morphogenesis in chick embryo and material modeling of plaque tissues using intravascular elastography. She lectured linear and nonlinear finite elements for undergraduate and graduate students at the University of Rochester in 2010. She joined Dassault Systèmes in 2011 as a technical specialist supporting Virtual Human Modeling activities and deliverables on human modeling and simulations. She developed musculoskeletal models for the upper and lower extremities, material databases and finite element models for various human organs and tissues (hand, foot, skin, bone etc.). She is the main developer for the Living Heart Human Model (LHHM) since 2017. Her major contribution on the LHHM is the addition of valves and coronaries, and implementation of the advanced electrophysiological model that enables LHHM to investigate cardiac toxicity of drugs.

Silvina Zabala Travers, MD – Pereira Rossell Hospital

Pediatric Radiologist. Head of Surgical Virtual Planning and 3D Printing Area, Radiology Department, Pereira Rossell Hospital, Uruguay. Ex-Assistant Professor Pediatric Radiology

Dr. Silvina Zabala-Travers is a pediatric radiologist and 3D specialist. She leads the Surgical Virtual Planning and 3D Printing Area at the Radiology Department Pereira Rossell Hospital Center, a state and university laboratory for the application of 3D technologies in diagnostics, surgical virtual planning, clinical simulation and education for pediatric and adult patients. She also works as a 3D specialist independent consultant for other local and international clinics. She presides of the Latin American Society of Pediatric Radiology (SLARP) New Technologies Committee, which works for the implementation of new technologies such as 3D biomodeling and artificial intelligence in Latin American countries. She also works as Radiology Section Editor for the Elsevier Journal Annals of 3D Printed Medicine.

Dr Zabala-Travers obtained her medical doctor and radiologist degree in Uruguay, and trained on the application of 3D technologies in medicine on a various courses abroad, including the Expert 3D course and an internship at the Sant Joan de Déu 3D Printing Unit at Barcelona, Spain. She has been since participating as invited professor at the Expert 3D course sharing her experience implementing a hospital 3D lab in a low-resource facility, as well as giving conferences and hands-on training on segmentation, biomodeling and virtual planning for bioengineers and surgical specialists.

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