UBEC

Utah Biomedical Engineering Conference

2024 Program

Saturday, September 21, 2024

University of Utah Alumni House

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UBEC SCHEDULE

Time	What's happening	Location
8:30AM - 9:15AM	Registration/Poster Set up/Breakfast/Meet the exhibitors	Front Entrance/ Ballroom/Atrium
9:15AM - 9:30AM	Welcome	Ballroom
9:30AM - 10:15AM	Keynote Speaker: Kirk Ririe	Ballroom
10:25AM - 11:55AM	Morning Podium Sessions	Room A: Boyer (upstairs), Room B: Dumke (downstairs), and Room C: Henricksen (downstairs) Conference Rooms
12:00PM - 1:00PM	Lunch/Exhibitors Expo	Atrium
12:45PM - 1:00PM	Exhibitor highlight	Atrium
1:15PM - 1:30PM	Grand Round Rapid Poster Presentations	Atrium and Ballroom
1:30PM - 2:15PM	Poster Session A/Exhibitor Expo	Ballroom
2:15PM - 3:00PM	Poster Session B/Exhibitor Expo	Ballroom
3:15PM - 4:15PM	Afternoon Podium Sessions	Room A: Boyer (upstairs), Room B: Dumke (downstairs), and Room C: Henricksen (downstairs) Conference Rooms
4:25PM - 5:15PM	U of U Biomedical Engineering PhD Alumni Panel	Ballroom
5:15PM - 5:30PM	Closing Remarks, Awards Ceremony, Picture	Ballroom
5:30PM – 6:30PM	Networking/Cocktail Hour	Atrium

UBEC SPONSORS

We would like to thank our 2024 UBEC sponsors for their generosity and willingness to support UBEC initiatives and university research in Utah!

Platinum Sponsors ($2,500+)

- The office of Dr. Rachel Hess, MD, Associate Vice President for Research, Health Sciences, University of Utah
- Dr. Patrick Tresco, PhD
- The office of Dr. Erin Rothwell, PhD, Vice President of Research at the University of Utah, the University of Utah Technology Licensing Office (TLO), and the I-Corps program
- The Department of Biomedical Engineering

Gold Sponsors ($1,000+)

- Jeffery R. & Katie C. Nelson Foundation
- John and Marcia Price College of Engineering at the University of Utah
- Purgo Scientific and Vetlen

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- Edwards Lifesciences
- 3Helix
- Stryker
- Utah Innovation Center
- Thermo Fisher Scientific

Bronze Sponsors ($250+)

- Achievement Rewards for College Scientists (ARCS)
- The University of Utah Health Center for Medical Innovation

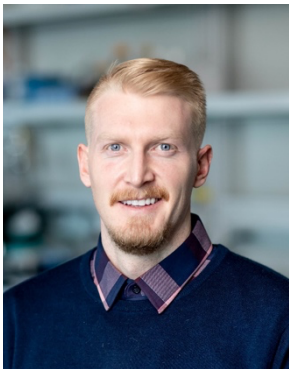
UBEC Keynote Speaker

KIRK RIRIE

In 1990, Kirk Ririe co-founded Idaho Technology with Carl Wittwer at the University of Utah. With a license for Rapid-PCR technology developed in Wittwer's laboratory, they initially operated in the corner of the Ririe family potato equipment company in Idaho. The company relocated to Utah in 1999 where Ririe and team developed a series of innovative PCR platforms. The company re-branded as BioFire in 2012 before being sold to bioMerieux S.A. (bMx) in 2014. Ririe stayed with bMx during an extended transition period as CEO of BioFire Defense until 2016, and then as Chief Innovation Officer of bMx until 2019. After leaving bMx, Ririe and Wittwer launched a new business, Faro Molecular Inc. where they continue to develop the tools of molecular biology to improve human health.

Meet our UBEC Panelists

Our 2024 UBEC panelists are all alumni from the University of Utah Biomedical Engineering PhD Program. The panel discussion will happen from 4:25PM - 5:15PM. There will be time for audience questions if you have them!



Luke Bennink, PhD
Chief Technology Officer @ 3Helix, Inc

Dr. Luke Bennink graduated from the University of Utah in 2018 with his PhD in biomaterials. His PI was Dr. Michael Yu in the biomedical engineering department. In his thesis, Dr. Bennink focused on peptide design for drug delivery and diagnostics. He is currently the CTO at 3Helix, Inc, which was founded by Dr. Yu and Dr. Li and spun out of the University of Utah in 2015. He has been working at 3Helix for 5 years developing the next generation collagen hybridizing peptides for use in cosmetics, therapeutics, and diagnostic applications.

Brett Davis, PhD
Co-founder & CEO @ Rebel Medicine

Brett Davis, PhD serves as Co-founder and CEO of Rebel Medicine, where he spearheads the development of drug delivery-based non-opioid analgesic drug products. He has multiple patents and peer-reviewed publications in the field of drug delivery science and has served as principal investigator on multiple SBIR grants.

Jocelyn Todd, PhD
Senior Software Analytics Project Manager @ bioMerieux

Dr. Jocelyn Todd completed her PhD in Biomedical Engineering with a concentration in Biomechanics under the guidance of Dr. Jeff Weiss. Her dissertation research, which she completed in October 2020, focused on cartilage mechanics in the hip, utilizing both computational and experimental approaches.

Following her graduation, Dr. Todd joined OrthoGrid Systems as a Research Bioengineer. At OrthoGrid, she contributed significantly to the development of an image-based guidance platform for orthopedic surgery, primarily for hip replacements. Her expertise and leadership skills led her to head the Product Development team.

In July 2023, Dr. Todd transitioned to bioMerieux (formerly known as BioFire) as a Senior Software Analytics Project Manager. In this role, she oversees the coordination of the development, testing, and regulatory documentation of the analysis component for a rapid PCR product that detects various infectious diseases.

Sophia Bou-Ghannam, PhD
Medical Science Liaison @ Humacyte, Inc

Dr. Sophia Bou-Ghannam serves as Medical Science Liaison at Humacyte, bringing a decade of clinical research experience in tissue engineering and regenerative medicine. Dr. Bou-Ghannam holds a PhD in Biomedical Engineering from the University of Utah. She completed her doctoral training under Professors David W. Grainger and Teruo Okano, making significant advancements in allogeneic stem cell therapies.

Throughout her career, Dr. Bou-Ghannam has authored more than 10 peer-reviewed publications demonstrating the clinical utility of Mesenchymal Stem Cells (MSCs) for treating a variety of complex fibrotic and degenerative diseases, including cardiomyopathy, liver fibrosis, and orthopedic defects. Her original research focused on engineering MSCs in such a way as to augment their intrinsic pro-regenerative and anti-inflammatory capacity and maximize their ability to act as bioactive factor delivery depots upon transplantation.

Dr. Bou-Ghannam recently held the role of Cell Line Development Lead at a prominent company specializing in the large-scale production of stem cells, managing operations at scales up to 6,000 liters for commercial applications.

Dr. Bou-Ghannam joined Humacyte to leverage her extensive experience in advanced biologics and their manufacturing to support the clinical implementation of regenerative medicine technologies at all stages of clinical development and in post-market use.

UBEC Exhibitor Info

We are lucky to have 10 exhibiting local organizations at our UBEC Expo. Learn more about them here:

Table 1. Vice President for Research, the Technology Licensing Office, and I-Corps

I-Corps highlight: The National Science Foundation's I-Corps Program is a key initiative of the Office of the Vice President for Research and the Technology Licensing Office here at the University of Utah. This program is designed to help you turn laboratory discoveries into real-world solutions by reducing the time and risk associated with commercialization. This program is open to everyone, including those outside of the University of Utah. I-Corps provides a supportive community of entrepreneurs, educators and mentors to help you gain the skills and knowledge needed to determine the commercial feasibility of your idea and launch your new venture. Together, the Office of the Vice President of Research, the Technology Licensing Office and your Utah I-Corps Team are committed to fostering a vibrant and innovative research ecosystem here at the U and beyond. Let's collaborate and push the boundaries of what's possible!

Please see page 24 for more detailed information about the Vice President for Research, the Technology Licensing Office, and I-Corps

Table 2. The Center for Medical Innovation

A collaborative effort among the University of Utah's leaders in health, business, engineering, and commercialization, the Center for Medical Innovation (CMI) combines formal education programs, faculty and student project development, and support for facilitation of device development and commercialization.

CMI creates a one-stop-shop environment that assists novice and experienced innovator through ideation, concept generation, intellectual

property, market analysis, prototyping and testing, business plan development, and commercialization.

CMI | Bench to Bedside:
https://uofuhealth.utah.edu/center-for-medical-innovation/programs/bench-to-bedside

Dr. Julie Hansen Fellowship:
https://uofuhealth.utah.edu/center-for-medical-innovation/programs/fellowships/hansen-fellowship

Please see page 25 for more detailed information about the CMI.

Table 3. Purgo Scientific and Vetlen

Purgo Scientific is developing a refillable drug delivery device that sustains local high dose antibiotic or other therapy in a surgical site. The Purgo Pouch is being developed to treat open fracture-related infections in humans, and will be in clinical trials next year. The Vetlen Pouch is now available to treat surgical site infections in dogs and horses. Future applications of the pouch technology include tumor therapy and pain management.

To learn more about this technology, please visit www.purgoscientific.com and www.vetlen.com.

Table 4. Stryker

Stryker is a global leader in medical technologies and, together with our customers, we are driven to make healthcare better. We offer innovative products and services in MedSurg, Neurotechnology, Orthopaedics and Spine that help improve healthcare outcomes.

Stryker's Neurovascular division is located in Salt Lake City, Utah and strives to propel the field of stroke care through continuous, purposeful innovation that powers meaningful outcomes. Focused on advancing the practice of less invasive stroke therapies through its Complete Stroke Care

solutions, Stryker is dedicated to providing innovative solutions for ischemic and hemorrhagic stroke care, education and clinical support. Products include: stent retriever, detachable coils, stents, balloons, guidewires and microcatheters.

We will not be recruiting for specific roles at this event, but open positions can be found here: Stryker Jobs

Table 5. Thermo Fisher Scientific

Thermo Fisher Scientific is the leading resource serving scientific research. Providing instruments, expertise, and materials to meet research needs in many disciplines.

Table 6. Edwards Lifesciences

Innovation starts from the heart. At Edwards Lifesciences, we put patients first. We invest a significant proportion of our revenue towards research and development to drive and develop groundbreaking medical innovations for structural heart disease and critical care. As part of our Internship Program, you will work on hands-on project that address significant, unmet clinical needs that impact patients' lives around the world.

We will be targeting students graduating December 2025 or later for our Summer 2025 Internship Program. This will most likely be Sophomores, Juniors, and MS students.

Eligible students can apply online through Handshake.

Table 7. 3Helix

3Helix strives to empower collagen for diagnosing and treating human inflammatory and fibrotic conditions. Our Collagen Hybridizing Peptides (CHPs) can target and bind to denatured or remodeling collagen based on structural recognition. The triple-helical structural recognition enables CHPs to detect the entire collagen alpha chains across all collagen types,

regardless of species or tissue type. We are working on next-generation CHPs for diagnostic, therapeutic, and cosmetic applications.

3Helix is looking for driven students in cell biology, chemistry, biochemistry, or bioengineering students in their junior/senior year for part-time positions in 2025. If you are interested, please visit the 3Helix table.

Table 8. Utah Innovation Center

The Utah Innovation Center, housed in the Governor's Office of Economic Opportunity (GOEO), provides a funding roadmap for Utah startups and emerging companies through the federal Small Business Innovation Research (SBIR) and the Small Business Technology Transfer programs. These federal grants provide research and development funding to small businesses developing novel technology and products. Let us help you fund your life science technology!

For more information, visit https://business.utah.gov/innovation/

Table 9. BioUtah Student Chapter

Our BioHive Student Chapters foster vibrant communities for aspiring biotech and healthtech students around the state of Utah. Each chapter is dedicated to cultivating networking opportunities, professional growth, and impactful outreach initiatives for their members. These chapters offer invaluable connections with industry experts and peers alongside workshops and events geared toward acquiring essential job skills and knowledge.

Interested students can get involved by visiting our table, filling out this form (https://forms.gle/27i2CnDteXzKU6XQA), or emailing Henry Crandall at henry.crandall@utah.edu.

Table 10. UHealth Data Science Services

Data science is the discipline of extracting knowledge from data and medical informatics is the science of how to use data, information, and knowledge to improve human health and the delivery of health care services. Data Science

Services (DSS) is a research analytics team that provides integrated data science and informatics expertise to the University's clinical and translational research community. DSS serves as the research data concierge for the UHealth Enterprise Data Warehouse (EDW), Epic electronic health record (3+ million UHealth patients), and Epic Cosmos (250+ million patients from 200+ healthcare organizations) data. DSS provides analytic, technical, and consultative support, education, and training to clinicians and researchers on healthcare data, self-service tools, and the effective use of all available resources to answer complex, data-intensive research questions.

To learn more, please visit the following websites:
https://pulse.utah.edu/site/DSS (University of Utah internal site)
https://cores.utah.edu/data-science-service/ (External site)

Please see page 26 for more detailed information about UHealth Data Sciences Services.

Podium Session Schedule

Podium Session A Morning – Boyer Room

Time	Presenter	Title
10:25 am - 10:35 am	Farhan Muhib	Subject-specific Finite Element Analysis Workflow to Study Local Mechanics at Segmental Bone Fractures
10:35 am - 10:45 am	Kai Pruyn	Autonomous Powered Ankle Exoskeleton Improves Foot Clearance and Knee Hyperextension After Stroke: A Case Study
10:45 am - 10:55 am	James Anderson	Negative Biomechanical Effects of Fusion in the Craniocervical Junction
10:55 am - 11:05 am	Marissa Cowan	Active Knee Prosthesis Improves Metabolic Cost of Walking in Individuals With a Transfemoral Amputation
11:05 am - 11:15 am	Andrew Miller	Preliminary Analysis of Circulating Biomarkers Identified in Sheep Implanted with a Percutaneous Osseointegrated Prosthesis
11:15 am - 11:25 am	Luke Hudson	Validation of a Simplified Modeling Approach to Predict Labral Strain in Normal and FAIS Hips
11:25 am - 11:35 am	Kate Benfield	Unraveling the Role of Mechanical Factors in the Wear-and-Tear of Knee Meniscus
11:35 am - 11:45 am	Andrew Gunnell	Powered Hip Exoskeleton Increases Step Width with Frontal Plane Assistance and Improves Margin of Stability Post-Stroke: A Case Study
11:45 am - 11:55 am	Madelyn Stout	Modeling Acromial Deflection in Reverse Total Shoulder Arthroplasty: Understanding Post-rTSA Shoulder Biomechanics

Podium Session B Morning – Dumke Room

Time	Presenter	Title
10:25 am - 10:35 am	Hassan Sher	Exploring and Engineering Novel Microbial Halogenases for Biosynthetic Applications
10:35 am - 10:45 am	Alexandra Richey	Large-Scale Identification of Proteins Affecting Estrogen Receptor-Alpha Behavior in Cancer
10:45 am - 10:55 am	Christian Lewis	CRISPR Regulation of ZNF865 Rescues Human Nucleus Pulposus Cell Populations from Senescence
10:55 am - 11:05 am	Andy Yu	Artificial Extracorporeal Replicate for Drugs (AERx): A Low-cost Extracorporeal Membrane Oxygenator (ECMO) Mimic for High Throughput Drug Screening
11:05 am - 11:15 am	Abigail Cheever	CAR T cells specifically eliminate autoreactive B cells, providing novel treatment potential for Graves' Disease
11:15 am - 11:25 am	Porter Stulce	Immunofluorescence Mapping of Skin-Dwelling Bacteria That May Contribute to Surgical Site Infections
11:25 am - 11:35 am	Onkar M Joshi	Contributions of the individual domains of αIIbβ3 integrin to its extension: insights from multiscale modeling
11:35 am - 11:45 am	Neetu Singh	PET Imaging of LPS-induced APC Activation
11:45 am - 11:55 am	Mitchell R. Lewis	Tissue specific promoters for autonomous and self-timed gene expression during hematopoiesis

Podium Session C Morning – Henricksen Room		
Time	**Presenter**	**Title**
10:25 am - 10:35 am	Hannah Duffy	Bacteria persist after presurgical skin preparation in the operating room
10:35 am - 10:45 am	Hayat Ullah	Exploration and characterization of nitroreductase from Acinetobacter sp. NRRL B-65365 that reduces nitro compounds
10:45 am - 10:55 am	Gregory Hirst	Validating Novel Imaging Technologies for In-situ Characterization of Tissue Morphology and Stiffness
10:55 am - 11:05 am	Christopher Young	Detection of Denatured Collagen in Mechanically Overloaded Cartilage with Collagen Hybridizing Peptides
11:05 am - 11:15 am	Remi Sondaz	Stabilization of integrin adhesions controls actin organization in mechanotransduction
11:15 am - 11:25 am	Farhana Islam	Biomanufacturing of Platelets through Megakaryopoiesis Using Spinner Flask Bioreactors
11:25 am - 11:35 am	Parker Johns	Proving the Application of a Hydrophobic Surface Coating on 3D Resin Printed Microfluidic Devices
11:35 am - 11:45 am	Sushanto Kumar Saha	Effects of silica nanoparticles (SNPs) with varied physicochemical properties on the survival and immune function of SNP-saturated macrophages
11:45 am - 11:55 am	Kyle Jackson	The Hidden Threat - Nanoplastics Increase Internal Reactive Oxygen Species in Human Cells

Podium Session A Afternoon – Boyer Room		
Time	**Name**	**Title**
3:15 pm - 3:25 pm	Eric Paccione	Structural Remodeling of Irradiated Myocardium
3:25 pm - 3:35 pm	Eugene Kwan	Diffuse Functional and Structural Abnormalities in Fibrosis: Potential Structural Basis for Sustaining Atrial Fibrillation
3:35 pm - 3:45 pm	Caleb Berggren	VALIDATING A COMPUTATIONAL FRAMEWORK TO PREDICT THE 3D ARTERIAL MECHANICAL ENVIRONMENT
3:45 pm - 3:55 pm	Emmanuel Offei	Antitachycardia pacing delivered to the left bundle branch entrains more of the myocardium than right ventriclular antitachycardia pacing in a canine model of ischemic ventricular tachycardia
3:55 pm - 4:05 pm	Bram Hunt	Transfer Learning for Improved Classification of Drivers in Atrial Fibrillation
4:05 pm - 4:15 pm	Jiawei Dong	Catheter Ablations For Atrial Fibrillation Slows The Reduction Of LA Function

Podium Session B Afternoon – Dumke Room		
Time	**Name**	**Title**
3:15 pm - 3:25 pm	Adam Kotter	Improved Interpretability without Performance Reduction in a Sepsis Prediction Risk Score
3:25 pm - 3:35 pm	Nicole Peterson	Influence of interobserver variability in segmentation on breast cancer MRgFUS simulations
3:35 pm - 3:45 pm	Grange Simpson	FINDING OPTIMAL SENSOR COMBINATIONS ACROSS VARIABLE TERRAINS USING tSNE AND REINFORCEMENT LEARNING
3:45 pm - 3:55 pm	Samuel Adams-Tew	Physics models for neural network-based property estimation from configuration state MR imaging
3:55 pm - 4:05 pm	Mahima Choudhury	Determining transcription factor dynamics during osteogenic differentiation
4:05 pm - 4:15 pm	Reza Kolasangiani	Molecular dynamics simulations provide insights into the structural response of integrin to force and ligand binding

Podium Session C Afternoon – Henricksen Room		
Time	**Name**	**Title**
3:15 pm - 3:25 pm	Abigail Harrison	Analysis of Transcutaneous Stimulation at the Wrist for Haptic Feedback from the Hand in VR/AR
3:25 pm - 3:35 pm	Veronica Zarr	Propofol induced burst suppression evolkesnneuronal firing and local field potential traveling waves in the human brain
3:35 pm - 3:45 pm	Caleb Thomson	Proportional myoelectric control of a virtual bionic arm in participants with hemiparesis, muscle spasticity, and impaired range of motion
3:45 pm - 3:55 pm	Phillip Comeaux	Testing the Efficacy of Corticocortical Communication Using Optogenetics
3:55 pm - 4:05 pm	Connor D. Olsen	Advancements in Intuitive Human-Machine Interfaces Through Wrist-Based EMG Control
4:05 pm - 4:15 pm	Jude Werth	Using Spike Sorting to Better Understand Neural Data

Poster List

Name	Number	Title
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Cassandra Burdick	2	Investigating the Role of the Protein Interaction Domains of UBR5 in Mantle Cell Lymphoma
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Melissa Requist	4	Osseous Morphology Differences Between Demyelinating and Axonal Subtypes of Charcot-Marie-Tooth Disease
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Chloe Kang	9	Engineering chimeric autoantigen receptor (CAAR) T cells to eliminate autoreactive B cells in Graves' Disease
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Phat Nguyen	11	Pseudo Noise Code Evaluation of Spread Spectrum Time Domain Reflectometry (SSTDR) For Breast Cancer Detection
Tanya Chhibber	12	Transdermal delivery of miR211-5p stabilizes BRAFV600E+ melanocytic nevi
Sumaiya Dipty	13	Phase Shift Microbubbles and MRI-guided focused ultrasound: a combination for mediating intracranial non-thermal tumor ablation.
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Nicholas Richards	81	In Vivo 3D Hybrid MR Thermometry via Simultaneous Proton Resonance Frequency Shift and T1 Measurement

Poster Grand Rounds

Rapid-Fire Talks

New this year, UBEC is hosting a short session of rapid-fire poster talks from 12 students with the highest-scoring posters. Voting for posters will open as soon as the Grand Rounds talks finish.

Student Presenters:

Poster #46 - Elise Nielsen
Poster #24 - Keira Lenz
Poster #15 - Sonny Jones
Poster #14 - Ethan Griswold
Poster #40 - Chimdi Ihediwa
Poster #5 - Elana Lapins
Poster #26 - Sofia Ruiz
Poster #21 - Kristin Durrant
Poster #4 - Melissa Requist
Poster #33 - Josh Gubler
Poster #16 - Rui Jin
Poster #34 - Kaysen Hansen

UBEC Acknowledgements

The UBEC Committee would like to specifically thank the following people who contributed substantial time and effort to make this year's conference possible:

Dr. Patrick Tresco, PhD
Dr. David Grainger, PhD
Matt Kitterer
Ryan Boyack
Ty Jones
Monica Kohler
Sheila Olson
2024 UBEC Sponsors
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2024 UBEC Podium Judges

Thank you for your dedicated effort to make UBEC a success! We could not do this without you.

UBEC 2024 Feedback

Thank you for attending UBEC 2024! We would love to hear your experience at the conference. Please fill out this form to help the 2025 UBEC Planning Committee host a great conference:

https://forms.gle/Pb8k1BPtJUW3nRWDA

UNLOCK INNOVATION WITH THE UNIVERSITY OF UTAH'S I-CORPS™ PROGRAM

READY TO TURN YOUR RESEARCH INTO COMMERCIAL SUCCESS? THE UNIVERSITY OF UTAH'S I-CORPS™ PROGRAM IS HERE TO HELP.

What is I-CORPS™?

I-CORPS™ fosters innovation and research commercialization, empowering researchers with essential resources. The Utah I-CORPS™ team is part of the National Science Foundation (NSF) I-CORPS™ Hub West Region. This workshop is designed for innovators motivated to translate their research, get funding and make a lasting impact. Join the introductory free workshop and bring your inventions to the world.

Key Features of the Utah Regional Program

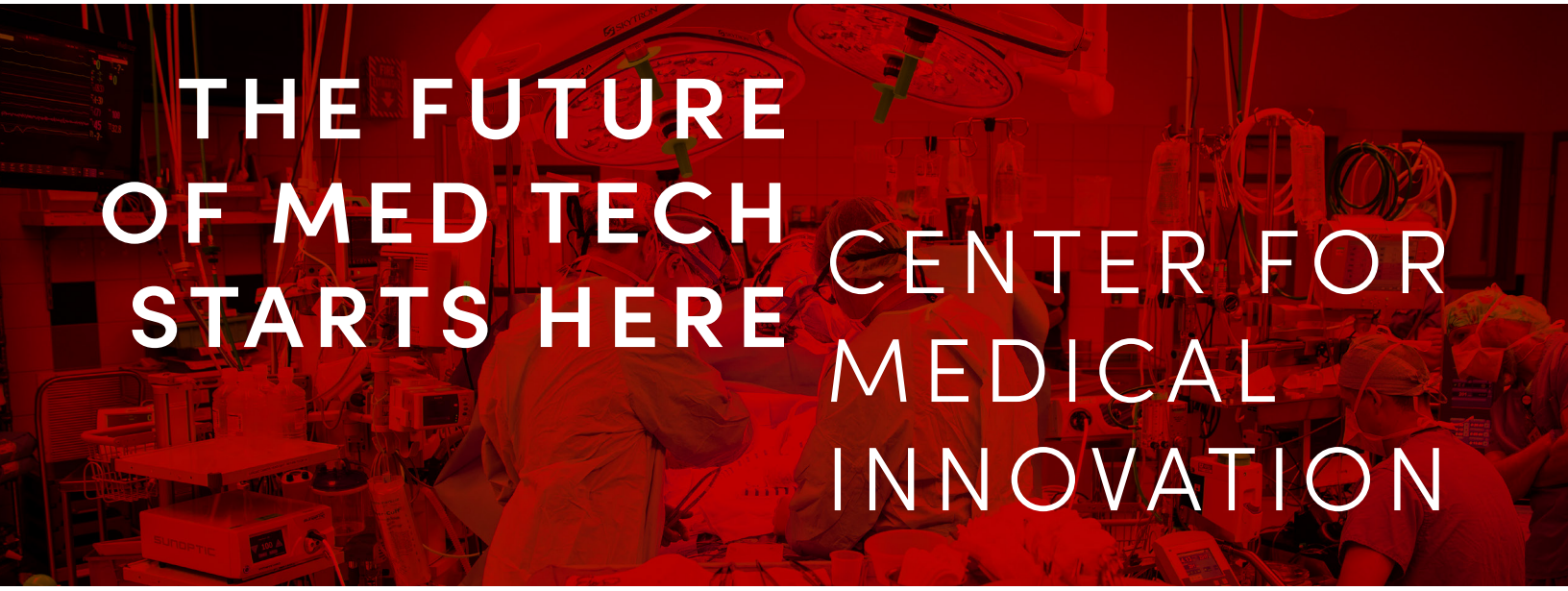
- You will learn specific methodologies to assess the commercial feasibility of your solution and understand more about your potential target industry and consumer base.
- 10 interviews during the 3 week program with people who could use or benefit from the invention.
- Increase chances of securing grants and partnerships by presenting a well-researched and validated business case with formal customer discover.

U.S. National Science Foundation
Innovation Corps

Contact: amy.graham@utah.edu

TECHNOLOGY LICENSING OFFICE
THE UNIVERSITY OF UTAH

Office of the VICE PRESIDENT FOR RESEARCH
THE UNIVERSITY OF UTAH



THE FUTURE OF MED TECH STARTS HERE

CENTER FOR MEDICAL INNOVATION

The Center for Medical Innovation at University of Utah Health is an ecosystem of innovation focused programs and resources dedicated to identifying, developing, and commercializing next-generation medical technologies.

We welcome the next generation of Biomedical Engineers to join us on our mission to discover innovations that make healthcare better for everyone.

MED TECH VENTURE STUDIO

A defined development process, our MedTech Venture Studio offers faculty and clinicians the opportunity to collaborate with our engineering and commercialization staff to de-risk and prepare new technologies for market entry.

REGULATORY AFFAIRS

Understanding the pathways necessary to receive FDA approval for new devices, our Regulatory Affairs team offers consultation, filing, and quality management system expertise.

PROTOTYPING & DESIGN

Our Prototyping & Design Lab offers advanced fabrication equipment including 3D printing, microelectronics assembly, CNC machining, and all the power tools necessary to build first-generation prototype devices.

BENCH TO BEDSIDE COMPETITION

The annual Bench to Bedside Competition gives multidisicplinary student teams guidance and resources necessary to build technology-based solutions addressing unmet clinical needs and launch succesful start-ups.

JAMES LEVOY SORENSON CENTER FOR MEDICAL INNOVATION

OPENING SPRING 2026

LET'S GET CONNECTED

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SALT LAKE CITY, UTAH

HEALTH
UNIVERSITY OF UTAH

Data Science Services

Data science is the discipline of extracting knowledge from data and medical informatics is the science of how to use data, information, and knowledge to improve human health and the delivery of health care services. Data Science *Services* (DSS) is a research analytics team that provides integrated data science and informatics expertise to the University's clinical and translational research community. DSS serves as the research data concierge for the UHealth Enterprise Data Warehouse (EDW), Epic electronic health record (3+ million UHealth patients), and Epic Cosmos (250+ million patients from 200+ healthcare organizations) data. DSS provides analytic, technical, and consultative support, education, and training to clinicians and researchers on healthcare data, self-service tools, and the effective use of all available resources to answer complex, data-intensive research questions.

Datasets: we provide raw data, analytic datasets, controlled medical vocabularies, metadata, and other types of supporting documentation during the post-award through publication stages.

Analytics: we provide broad healthcare analytics development and support for research including techniques like machine learning, data visualization, and various business intelligence approaches, including analyses using Epic Cosmos.

Feasibility: we support research from the early design stage onwards through consultations, feasibility estimates, preliminary analyses, pre-award support, pre-IRB submission cohort size estimations, etc.

Tools and applications: we provide access and ongoing support for various EDW research tools like Epic SlicerDicer, Business Objects Enterprise (BOE) Clinical Universe, Human Subjects Recruitment Tool, Warthog, DWCell, etc.

Clinical trials: we enhance clinical trials recruitment through Epic MyChart, Human Subject Recruitment Tool (HSRT), automated BOE and Tableau reports to meet accrual goals and reduce cost.

Natural Language Processing (NLP): we provide clinical NLP support for retrospective and prospective studies using commercial products like CliniThink, text-searches using EDW tools like Oracle Text and Warthog.

Data management: we host research datasets within the EDW and other UHealth repositories and provide comprehensive support for datasets, recurring reports, automatically refreshed datasets, etc.

Collaborations and training: we support multi-center studies through Cosmos Teleport, other research networks, research registries, etc., and conduct seminars, workshops, and hands-on training for departments and divisions on healthcare data.

More information: https://pulse.utah.edu/site/DSS
Contact: datascience@hsc.utah.edu

DRIVEN TO DISCOVER
WHAT'S POSSIBLE

HEALTH
UNIVERSITY OF UTAH

At University of Utah Health, we're always asking, **"What's next?"** Our thinking jumps off the page and into lives. We're **creating digital health tools** that diagnose disease more quickly and accurately. And we're **taking cues from sea snails** to create better medicines. From performing the first permanent artificial heart transplant to **developing new therapies** that recover failing hearts, our discoveries are **changing lives every day** in Utah and beyond.

DISCOVER OUR RESEARCH
uofuhealth.utah.edu/research