



**VIRGINIA COMMONWEALTH UNIVERSITY BOARD OF VISITORS  
ACADEMIC AND HEALTH AFFAIRS COMMITTEE**

**March 21, 2024**

**VCU James Branch Cabell Library  
907 Floyd Ave. Room 303  
RICHMOND, VIRGINIA**

**MINUTES**

**DRAFT**

**COMMITTEE MEMBERS PRESENT**

Dr. Tonya Parris-Wilkins, *Chair*  
Dr. Dale Jones, *Vice Chair*  
Ms. Rooz Dadabhoy  
Mr. Steve DeLuca  
Ambassador Carmen Lomellin  
Dr. Clifton Peay  
Mr. P2 Sandhu

**COMMITTEE MEMBERS NOT PRESENT**

Mr. Keith Parker

**OTHERS PRESENT**

Dr. Michael Rao, *President*  
Dr. Fotis Sotiropoulos, *Provost and Senior Vice President for Academic Affairs*  
Dr. Marlon Levy, *Interim Senior Vice President for Health Sciences and Interim CEO of the VCUHS*  
Dr. Aaron Hart, *Vice President for Student Affairs*  
Dr. Hernan Bucheli, *Interim Vice President for Strategic Enrollment Management and Student Success*  
Dr. Srirama Rao, *Vice President for Research and Innovation*  
Ms. Jamie Stillman, *Executive Director of Academic Operations, Office of the Provost*  
Members of the VCU Board of Visitors  
Presidential Cabinet of VCU  
VCU students, faculty and staff  
Members of the media

**CALL TO ORDER**

Dr. Tonya Parris-Wilkins, Chair of the Academic and Health Affairs Committee, called the meeting to order at 3:16 p.m. The public was able to view the open session of the meeting via livestream at <https://mssvideo.vcu.edu/BOV>.

**ACTION ITEMS**

Dr. Parris-Wilkins began by asking the committee to consider approving two items that were provided in advance for review: the December 7, 2023 committee meeting minutes and two academic proposals in the School of Nursing: to discontinue the current MS degree program in Nursing and to establish a new MSN degree program in Nursing. On a motion duly made and seconded, each of the two items were approved. The meeting minutes are posted at <https://bov.vcu.edu/meetings/minutes/>. The two program proposal briefs are attached hereto as *Attachment A* and is made a part hereof.

**CLOSED SESSION**

On motion made and seconded, the Board of Visitors of Virginia Commonwealth University convened a closed session under Section 2.2-3711(A)(2) for the discussion or consideration of admission or disciplinary matters or any other matters that would involve the disclosure of information contained in a scholastic record concerning any student of any Virginia public institution of higher education or any state school system, specifically regarding the selection of the Board of Visitor Student Scholarship recipient which requires disclosure of scholastic records. The motion was approved by roll call vote:

<b><u>Vote</u></b>	<b><u>Ayes</u></b>	<b><u>Nays</u></b>
Dr. Tonya Parris-Wilkins, <i>Chair</i>	X	
Dr. Dale Jones, <i>Vice Chair</i>	X	
Ms. Rooz Dadabhoy	X	
Mr. Steve DeLuca	X	
Ambassador Carmen Lomellin	X	
Dr. Clifton Peay	X	
Mr. P2 Sandhu		X

**Resolution of Certification**

**BE IT RESOLVED**, that the Committee certifies that, to the best of each member's knowledge, (i) only public business matters lawfully exempted from open meeting requirements under this chapter were discussed in the closed meeting to which this certification resolution applies, and (ii) only such public business matters as were identified in the motion by which the closed session was convened were heard, discussed or considered by the Board.

<b><u>Vote</u></b>	<b><u>Ayes</u></b>	<b><u>Nays</u></b>
Dr. Tonya Parris-Wilkins, <i>Chair</i>	X	
Dr. Dale Jones, <i>Vice Chair</i>	X	
Ms. Rooz Dadabhoy	X	
Mr. Steve DeLuca	X	
Ambassador Carmen Lomellin	X	
Dr. Clifton Peay	X	
Mr. P2 Sandhu	X	

All members present for voting responding affirmatively, the resolution of certification was adopted.



## **REPORTS**

- Provost and Senior Vice President for Academic Affairs Fotis Sotiropoulos provided a report on the progress of One VCU Academic Repositioning Initiative. A copy of the presentation slides is attached hereto as *Attachment B* and is made a part hereof.
- Dr. Marlon Levy, interim senior vice president for health sciences and CEO VCU Health, provided an update on issues pertaining to the health sciences schools and campus. A copy of the presentation slides is attached hereto as *Attachment C* and is made a part hereof.
- Dr. Sriram Rao provided provide a brief update on VCU's research enterprise and, also, introduced a panel of faculty inventors and entrepreneurs who discussed their innovations and the processes towards commercialization. Copies of the handout describing the panelists and their presentations are attached hereto as *Attachment D* and are made a part hereof.

## **ADJOURNMENT**

There being no further business, Dr. Parris-Wilkins adjourned the meeting at 5:04 p.m.

# Attachment A

## **Virginia Commonwealth University Proposed Program Discontinuance Brief Proposal to close the Master of Science in Nursing degree program**

### **Overview**

Virginia Commonwealth University (VCU) requests approval to discontinue the Master of Science (M.S.) degree program in Nursing (CIP code: 51.3818). The degree is located in the School of Nursing.

### **Delivery Format**

The program is offered in the traditional, face-to-face format except for the concentration in nursing leadership and organizational science (NLOS) which is offered fully online.

### **Target Implementation Date**

Summer 2024. Following implementation of a teach-out plan, full closure of the degree program will take place at the end of spring 2027 semester.

### **Demand and Workforce Development**

A shortage exists for advanced practice registered nurses in VA. Given the demand for advanced practice registered nurses, VCU offers and will continue to offer the Doctor of Nursing Practice (DNP) in Nursing Practice degree program. The DNP in Nursing Practice has become and is the endorsed entry-level preparation for nurse practitioners and prepares graduate to become nurse practitioners and nurse leaders. The same advanced practice concentrations available with the M.S. in Nursing are currently embedded and available in the DNP in Nursing Practice degree program.

### **External Competition**

Currently, no other public institution in the Commonwealth offers a master's degree in advanced nursing practice (CIP code: 51.3818). Four other public institutions offer a master's of nursing under a generalized registered nursing/registered nurse CIP code 51.3801.

### **Target Population**

A teach-out plan is in place for the 137 students currently enrolled in the M.S. in Nursing degree program. All students are expected to graduate by spring 2026. The last term that students will be able to complete the M.S. in Nursing degree is Spring of 2027. The 6 students that have "stopped out" have been considered and will be advised that the program will no longer graduate students after the spring of 2027. A revised plan of study will be completed for each student.

### **Impact on Existing Programs**

With the closure of the M.S. in Nursing, registered nurses interested in advanced practice training will be able to enroll in the Doctor of Nursing Practice (DNP) in Nursing Practice program. VCU School of Nursing has dedicated the past three years to transitioning advanced practice nursing programs to the DNP degree level as the entry point for nurse practitioners. VCU anticipates a further increase in enrollment in the DNP in Nursing Practice degree program.

### **Impact on Faculty**

No faculty positions will be lost as a result of the discontinuance of the degree program. Faculty teaching core and required courses in the Master of Science in Nursing will teach coursework in other degree programs.

**Funding**

No funding is needed or requested for the discontinuance of the M.S. degree program in Nursing.

**Next Steps**

- February 20 – University Graduate Curriculum committee meeting
- February 22 – University Committee on Academic Affairs (UC-AA) meeting
- March 7 - University Council (UC) meeting
- March 11 - President's Cabinet
- March 21/22 - Board of Visitor's Meeting (BOV)
- March 25 – Submission for SCHEV and SACSCOC approval

## **Virginia Commonwealth University Proposed Program Brief** **Proposal to create a Master of Science in Nursing (MSN) degree program in Nursing**

### **Overview**

Virginia Commonwealth University seeks approval for a Master of Science in Nursing (MSN) degree program in Nursing at the MCV campus in Richmond, VA. The proposed degree program will be administered through the dean's office in the School of Nursing.

The proposed master's degree program is designed as a direct-entry pre-licensure degree that will focus on providing students with entry-level professional nursing education and core competencies for nurse generalists. Students will learn foundational nursing concepts, health assessment techniques, chronic and acute care management, evidence-based practice, informatics, and leadership principles, preparing them for diverse roles in the nursing profession. The proposed degree program will prepare students to conduct health assessments in delivering comprehensive patient care, promoting wellness, and making informed clinical decisions. Students will learn to utilize nursing informatics to improve healthcare data management, enhance clinical decision-making, and optimize patient care outcomes across the lifespan. Graduates will be prepared to take the NCLEX-RN and serve as Registered Nurses (RNs) and nursing leaders or managers, capable of working in various healthcare organizations and settings. The degree program will address the growing demand for nurses in the Commonwealth.

### **Delivery Format**

The proposed program will be offered in a hybrid format.

### **Target Implementation Date**

Summer 2025

### **Demand and Workforce Development**

Employment projections in the U.S. Bureau of Labor Statistics' (BLS) Occupational Outlook Handbook show the viability of employment for graduates of the proposed MSN in Nursing. According to the BLS, employment for nurses is expected to grow 6.2%, or "faster than the average for all occupations." Data from Virginia Employment Commission demonstrate demand for nurses to grow by 8.26%.

### **External Competition**

One (1) public university offers a similar or related degree program. University of Virginia is the only public institution in the Commonwealth offering a direct entry pre-licensure MSN degree program in Nursing.

### **Target Population**

The program is designed for individuals who hold a bachelor's degree in a non-nursing field and wish to pursue a fast-track route to enter the nursing profession and immediately join the healthcare workforce.

### **Impact on Existing Programs**

The proposed MSN in Nursing will not compromise any existing degree programs at Virginia Commonwealth University. No degree programs will close as a result of the initiation and operation of the proposed degree program.

### **Impact on Faculty**

The School of Nursing has twenty-two (22) full-time faculty members. All faculty will teach core and required experiential learning courses for the proposed degree program.

### **Funding**

The proposed degree program will require approximately 16.5 FTE of instructional effort to initiate, rising to approximately 22 FTE by the target year of 2026-2027. The School of Nursing has the faculty, classified support, equipment, space, library, and other resources necessary to initiate the proposed program. The program will be supported by resources already in place to sustain existing academic programs, including student support services (enrollment services, library support, and career services) and faculty support services.

### **Alignment with the VCU Mission**

The proposed degree program aligns with Virginia Commonwealth University's mission. Through "real-world learning," students engage in civic service projects promoting health and wellness in at-risk populations. This hands-on experience fosters a spirit of "inquiry," enhancing clinical problem-solving skills and competencies. The program focuses on "translating" research into evidence-based practice to elevate the quality of care. Emphasizing "collaboration" with various health disciplines, students develop holistic care plans addressing social determinants of health. Community partnerships with healthcare providers and agencies contribute to the program's success, designed intentionally to foster "diversity, inclusion, and equity." Students learn to appreciate the diversity of the human body, value differences, advocate for inclusion, and promote equitable access to healthcare for improved outcomes across populations.

### **Next Steps**

- January 25 – University Committee on Academic Affairs (UC-AA) Meeting
- February 1 – University Council (UC) Meeting
- February 19 – President's Cabinet
- March 21 – Board of Visitor's Meeting (BOV)

# One VCU Academic Repositioning Task Force Update

Fotis Sotiropoulos, Ph.D.  
Provost



# Responding to Higher Education's “Perfect Storm”

- Declining birthrates
- Questions about the value of college
- Game-changing technologies

# Objectives

- Maximize operational efficiencies and collaboration;
- Facilitate more cross-unit engagement and transdisciplinary research opportunities; and
- Propose new transdisciplinary degree programs.



## Goal & Guiding Principles

“...recommend an academic structure that ensures an academically exciting and leaner university. Its guiding principles are trust and transparency.”

# Timeline

Begin

**May - June 2023:** Task Force Recruitment

**July - September 2023:** Work Group research, investigations and discussions

**Sept. 9 – Oct. 20, 2023:** Work Groups determine recommendations that will move forward

**Oct. 27, 2023:** Final recommendations presented to the Task Force

**Nov. 3, 2023:** Combined group recommendations submitted to the Provost

**December 5, 2023** – Recommendations shared with VCU campus communities

**January - February, 2024** – Provost hosts unit-level conversations across academic units

**March, 2024** – University leadership reviews recommendations and feedback

**Spring 2024** – Priority recommendations vetted through university shared governance

**May – Sept., 2024:** Board of Visitors and SCHEV review

**Fall 2025:** Tentative implementation

# 52

VCU faculty and staff members served on the task force

# 4

The number of months the task force worked

# 100

The number of recommendations created



**WE ARE THE UNCOMMON.**

# Timeline

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**Phase II** →

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# One VCU Academic Repositioning Portal

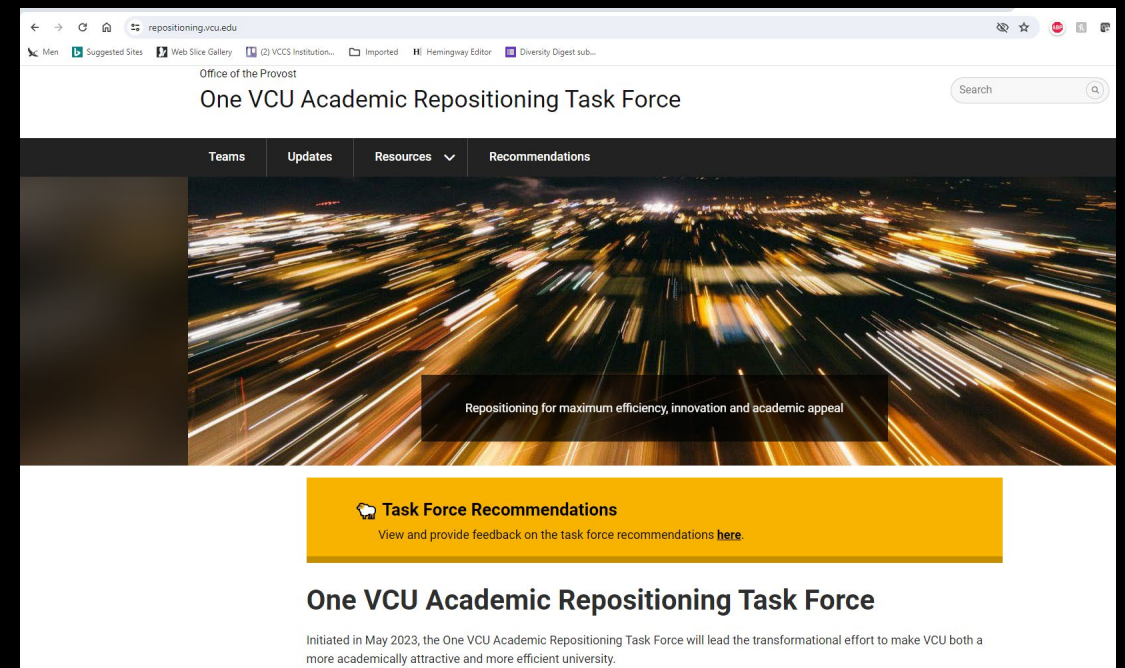
**27,000+**

Portal engagements (*as of Feb. 15*)

**2,500+**

Responsive comments shared  
(*as of Feb. 15*)

([Portal Link](#))



# Timeline

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# 17

Listening session across  
VCU's Richmond campuses

# 1,205

Faculty and staff attendees



College of Humanities & Sciences



School of Nursing



School of Social Work



**WE ARE THE UNCOMMON.**

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# Identified Opportunity Areas Include...

- Virtual academic units
- Thematically-focused faculty hiring
- Innovation-focused investment
- Increasing the value of a VCU degree

# VCU's Inaugural NIRA Class

The National/International Recognition Award (NIRA) recognizes VCU faculty who were nationally or internationally recognized for exceptional accomplishments during the course of their current evaluation period, performing at the top of their academic unit, and were recommended by their dean. ([LINK](#))



*February 8, 2024*



Thank you

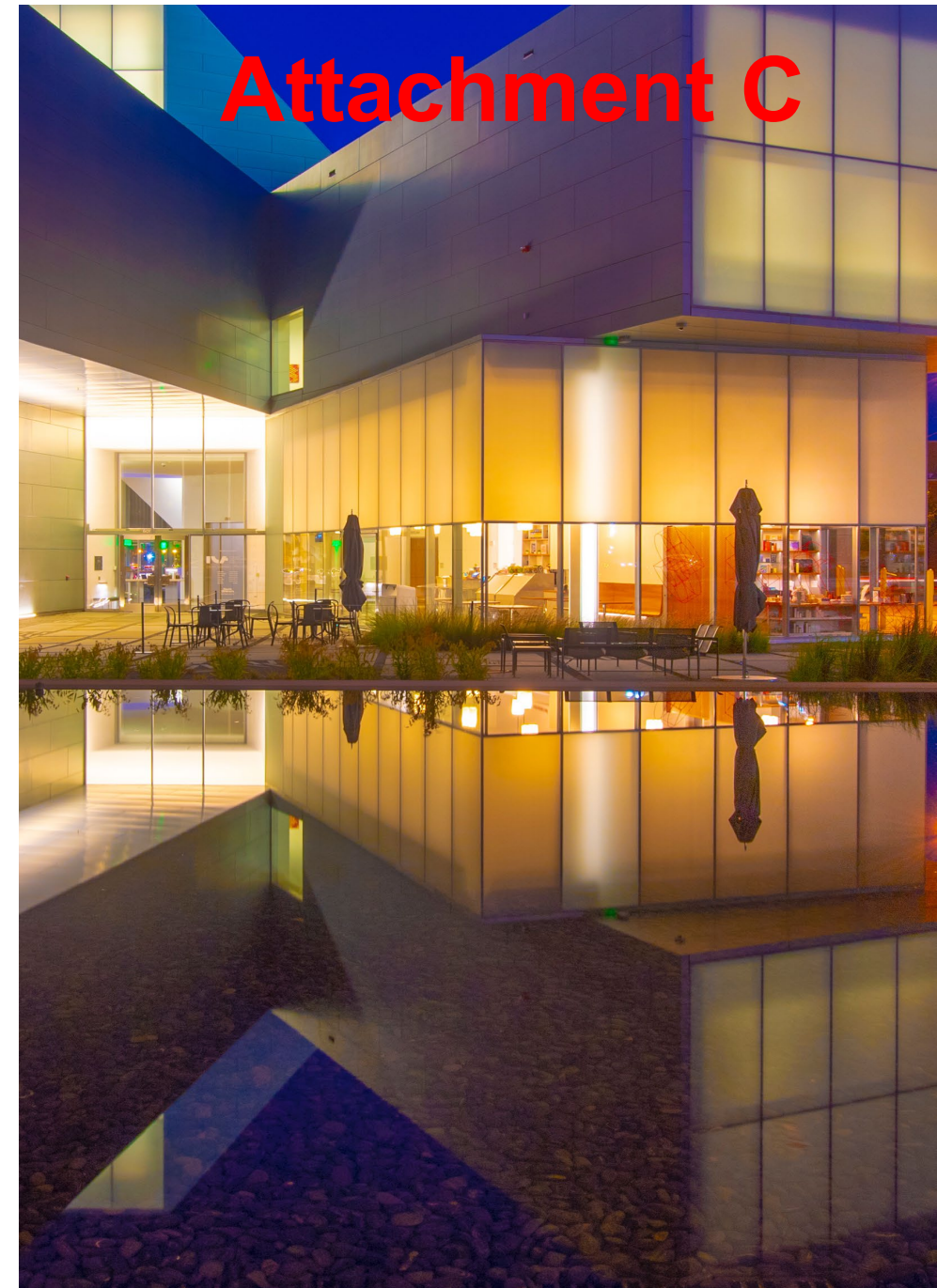


# Report from Health Sciences

Marlon Levy, MD, MBA  
Interim Senior Vice President for Health Sciences and CEO VCU Health



Attachment C





# Awards & Recognitions

- College of Health Professions (CHP) awarded the 2023 Higher Education Excellence in Diversity (HEED) Award from *INSIGHT Into Diversity magazine*
- VCU SoP recognized as Academy for Gerontology in Higher Education's first Pharm.D. program of merit
- Dr. Curtis Sessler (SoM), named 2023 Billy R. Martin VCU Innovator of the Year for developed and validated the Richmond Agitation Sedation Scale (RASS)
- Martin K. Safo (SoP) and Richard T. Marconi (SoM) named to National Academy of Inventors

# Enrollment

- 200 students in new BS in Health Services (21% increase from previous year). CHP at highest enrollment in its history
- SoP enrollment reduced over past few years to 85 / class with target of 100
- SoM, SoD and SoN enrollments stable

# Research

- External sponsored research in FY23: \$231M (50% of VCU total)
  - SoM increased research awards 7.6% from previous year
  - CHP increased research awards by 13%
- 79 Invention disclosures from health science units HS schools FY23 (most from SoM and SoP)
- BRIMR National Rankings (Blue Ridge Institute for Medical Research)
  - SoP rank #16, SoN #26 (was 35),
  - SoM #60 (was 63): top departments: Pharmacology / Toxicology, Psychiatry, Family Medicine, Population Health, Human & Molecular Genetics
- Over 5,500 participants enrolled in 718 clinical trials last year.

# Organization Growth and Realignment

- BS in Pharmaceutical Sciences (BSPS) submitted to SCHEV for potential fall 2024 first class. Eventual class size 100 / year
- CHP - new certificate in sustainability, health, and healthcare approved by SCHEV for Fall '24
- SoN – undergoing major curriculum redesign to meet new national standards
- SoM – combined basic science departments from 8 to 4
- SoD – Establishing new clinic for Special Needs Adults and submitted application to establish an Advanced Education Program in Prosthodontics
- Practice Plan 12% volume growth, \$35M ahead of budget



# School of Population Health

- Approved by SCHEV March 2023
- Council on Education for Public Health (CEPH) approved VCU request to transition to the school of public health.
- SCHEV approval for name change to School of Public Health in preparation
- > 40% growth in research funding in FY24
- > 300 publications in 2023

# School of Dentistry

**MARCH 4, 2024**

## **VCU identifies location of future School of Dentistry building**

Authorization is pending before the Virginia General Assembly.

The governor's proposed budget, released in December, included \$5.2 million in non-general fund authorization for VCU to begin planning the facility through the schematic design phase.

The building will be home to VCU School of Dentistry classrooms, patient clinics and laboratories. The university has identified university-owned property co-located at the site of VCU's Larrick Student Center as the location for the new dentistry center, should planning be authorized by the commonwealth.

# Fundraising

- Health Science Campus fundraising \$88M to date in FY24 (7.9% increase in dollars and 4.2% increase in donors from previous year).
- CHP approaching year record of \$4M raised

# Recruitment

- CHP Dean search - three finalists coming to campus (March 19-April 9)
- New SoM Chairs: Neurosciences (Dr. Pam Knapp), Ophthalmology (Dr. Mary Daly)
- Dr. Scott P. Stringer hired as MCVP President and Senior Dean of Clinical Affairs
- Dr. MaryPeace McRae new Associate Dean for Research in SoP (from UVa)

# School of Nursing Interim Dean

Patricia Kinser, PhD, WHNP-BC, RN, FAAN

Endowed Professor

Assistant Dean for Research in Scholarship, and Innovation

VCU Alumna (BS, MS)

Research: ~\$10M funded grants

Board-certified Women's Health Nurse Practitioner

Rosalind Franklin Society Mary Ann Liebert Award in Science.

Appointed by Governor to the Commonwealth of Virginia's Board of Health

Fellow in the American Academy of Nursing



Dean Giddens departs April 15 for University of Kansas

# School of Medicine Accreditation

- SoM completed LCME site visit (February 19-21)
- Peer-review process that fosters institutional and programmatic improvement
- 102 elements reviewed in the reaccreditation process
- 23 “findings” were noted that may or may not translate into citations, related to longitudinal data collection, revision of policies and quality improvement
- Final report to be sent to VCU June-Oct 2024
- Last review cycle conferred full 8-year accreditation

# Retreat, March 6, 2024

- 30 Health science school leaders at Rice River Center for half-day retreat.
- Addressed topics related to financial stability, program growth, collaboration opportunities, shared resources, and student wellbeing.
- Special presentation on Artificial Intelligence in Healthcare by Ellen Wiegand (SVP and CIO, VCU Health).

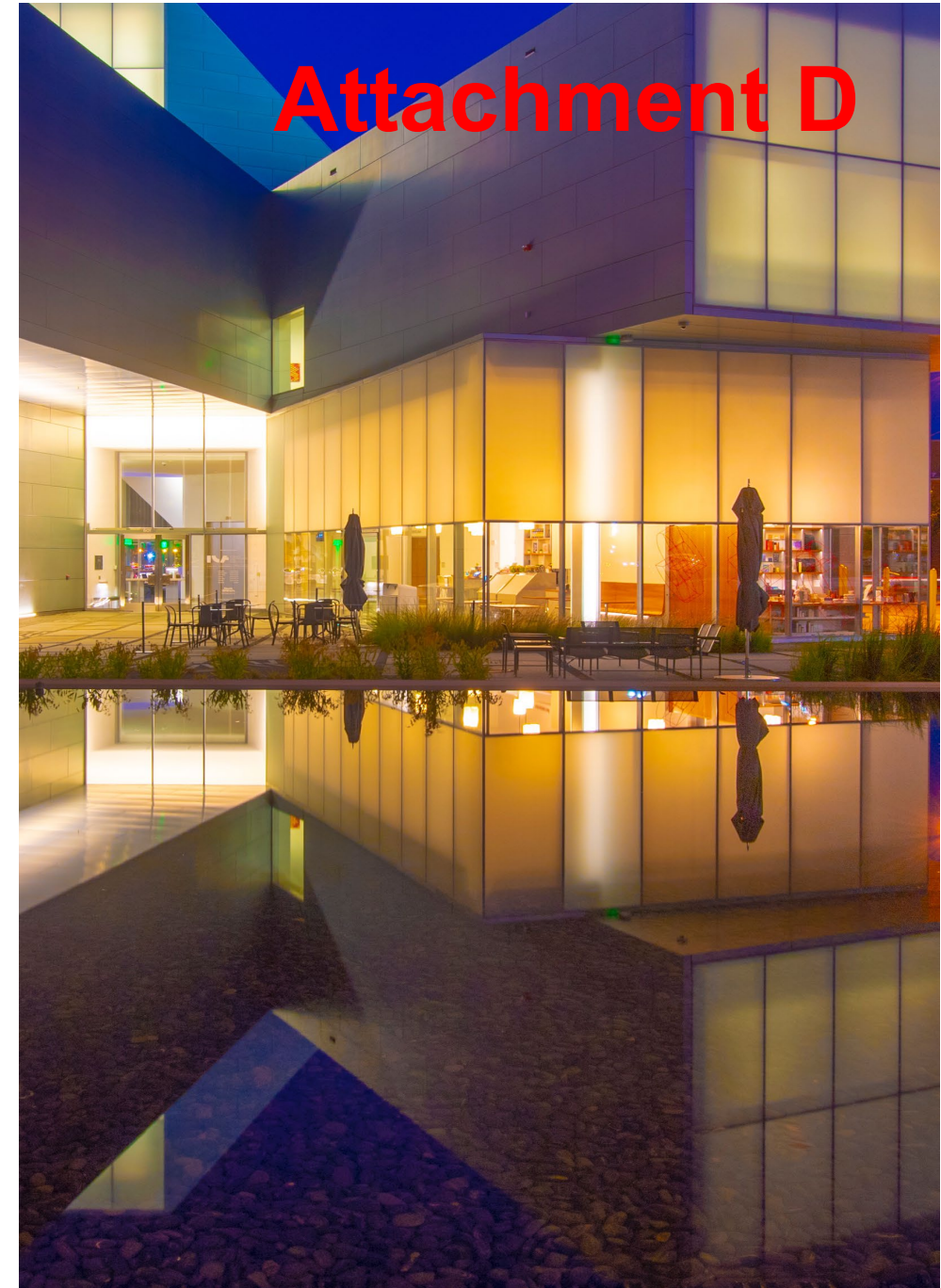




# Technology and Commercialization at VCU

## Faculty Inventor / Entrepreneur Presentations and Panel Discussion

P. Srirama Rao, Ph.D., Vice president for research and innovation





**Technology and Commercialization at VCU:  
Faculty Inventor / Entrepreneur Presentations and Panel Discussion  
BOV AHAC Meeting on Thursday, 3/21 from 3-4:30PM**

Report from the Vice President for Research and Innovation (40 minutes): Dr. Srirama Rao will provide a brief update on VCU's research enterprise. He will also introduce a panel of faculty inventors and entrepreneurs who will discuss their innovations and the process towards commercialization. The panel discussion will be led by AHAC Co-chair, Dr. Dale Jones, and Dr. Srirama Rao.

**GROUP #1: FDA-cleared Nerve Tape for nerve end repair and alignment**



**Geetanjali Bendale, Ph.D. (presenter)**  
**Assistant Professor, Department of Orthopedic Surgery  
VCU School of Medicine**

**Senior scientist in Isaacs Lab**

*Dr. Bendale is presenting on behalf of Dr. Isaacs and BioCircuit Technologies.*



**Jonathan E. Isaacs, M.D.**  
**Professor and Chair, Division of Hand Surgery  
Department of Orthopedic Surgery  
VCU School of Medicine**

**Inventor and expert advisor to BioCircuit Technologies**

*Dr. Isaacs is traveling and unable to join on presentation day.*

Nerve Tape is a novel nerve coaptation aid designed to efficiently and consistently achieve precise nerve end alignment and repair. Pre-clinical comparative data versus conventional micro-sutures including specific testing, study and repair models have demonstrated superior holding strength, markedly faster repair times, improved nerve end alignment and equal or slightly superior regeneration and functional recovery. Having recently received FDA clearance, many predict Nerve Tape will be a disruptive technology in peripheral nerve surgery.

[BioCircuit Technologies](#): Dr. Isaacs is the expert advisor to this company on a range of IP opportunities with a focus on alternative market applications for Nerve Tape. (Note: He is not an equity holder in or paid by the company).

[Video: Nerve Tape for Sutureless Nerve Repair](#)

## GROUP #2: ThermaGEL is a patented technology for effective thermal insulation



**Marc McConnaughey (presenter)**

President / CEO, [ThermaGEL Innovations, Inc.](#)

Marc McConnaughey has an extensive international career in Europe, Asia and North America with a focus on nurturing materials and components into useful products and solutions with scale. Alongside taking ViewSonic from \$50M to \$1.4B in sales, he is a veteran startup executive raising over \$110M in funding and an expert in New Product Process and Global Supply Chains.



**Massimo F. Bertino, Ph.D.**

**Professor of Experimental Nanoscience in the Department of Physics**

**VCU College of Humanities and Sciences**

**Inventor, co-founder and Chief Science Officer, [ThermaGEL Innovations, Inc.](#)**



**Everett Carpenter, Ph.D., MBA**

**Co-director of the Nanoscience and Nanotechnology Program**

**Professor, Department of Chemistry**

**VCU College of Humanities and Sciences**

**Co-founder and Chief Operations Officer, [ThermaGEL Innovations, Inc.](#)**

Based in the center of Richmond, Virginia's tech hub, ThermaGEL is a climate materials solutions company transforming the built environment with a groundbreaking aerogel material delivering reduced cost, energy savings, ease of installation and significant upside in CO2 savings. ThermaGel Innovations is the developer, patent holder and manufacturer of a radically more effective thermal insulation. They utilize breakthrough patented science and technology to deliver ground-breaking Mold, Moisture Fire Resistant and Acoustically Dynamic insulation products with the structural integrity to serve multiple applications. There are 122 million homes and 6 million buildings in the U.S. alone. Those buildings consume 40% of energy produced domestically and because most of them were built before 1990, their poor insulation results in a staggering 30% energy loss. ThermaGel's slimline aerogel panel products are focused directly on disrupting the \$61B global new and retrofit construction market.

[VCU News article: Climate tech startup licenses VCU-created insulation for homes, commercial buildings](#)

**GROUP #3: Patented IV drug infusion for patients affected by shock**

**Gerard Eldering, MBA (presenter)**  
CEO, [Perfusion Medical](#)

**Entrepreneur-in-residence**  
**OVPRI's TechTransfer and Ventures, VCU**

Gerard Eldering is a registered patent agent, an experienced entrepreneur, a nationally recognized authority on technology transfer venture creation and the CEO of Perfusion Medical. At Perfusion Medical he leads a team of life science business experts working with the VCU research team to bring an important IV drug to market. Since becoming an entrepreneur in 2007 Gerard has participated in the formation of more than 12 tech startups, raised more than \$10 million in seed funding, and led the successful turnaround and sale of a technology consulting firm. Gerard is an expert at university licensing, startup formation and company operations. Before 2007 he founded and served as Director of the Technology Transfer Office (TTO) at The MITRE Corporation. Gerard is a military veteran who served in the U.S. Air Force for seven years as a UH-1 Helicopter Pilot and Instructor Pilot.



**Martin J. Mangino, Ph.D.**  
**Professor, Department of Surgery (Trauma / Critical Care and**  
**Emergency Surgery)**  
**VCU School of Medicine**

**Inventor, Chief Scientific Officer and co-founder, [Perfusion Medical](#)**

Perfusion Medical is commercializing a patented IV drug for the restoration of tissue perfusion developed by researchers at VCU with \$12 million in Army funding. The drug is a game-changing therapy for patients affected by shock (e.g., hemorrhagic, acute kidney injury) and large animal trials indicate it could improve survival from hemorrhagic shock by 4 times or more. Perfusion Medical has received more than \$6.7M in Department of Defense funding in the past six months and expects to start Phase I Clinical Trials at VCU this year.

[Venture Victories story: Air Force issues awards to VCU-backed shock therapeutic startup Perfusion Medical](#)

**GROUP #4: A Virtual Reality platform for patients with substance use disorders**

**Mark Lambert (presenter)**  
Founder, [Lighthouse XR](#)

Mark Lambert is a visual effects and VR developer whose film work includes “Narnia: The Lion, the Witch and the Wardrobe”, “Polar Express” and “Harry Potter and the Sorcerer’s Stone.” In 2015, he began creating in virtual reality, working with companies around the world before starting Lighthouse XR with his wife, Dale.



**Jarrod Reisweber, Psy.D.**  
Affiliate Assistant Professor, Department of Psychology  
VCU College of Humanities and Sciences

Faculty collaborator and partner, [Lighthouse XR](#)

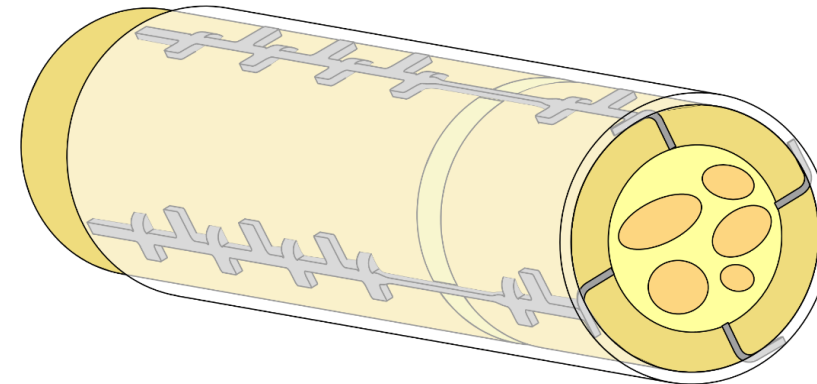
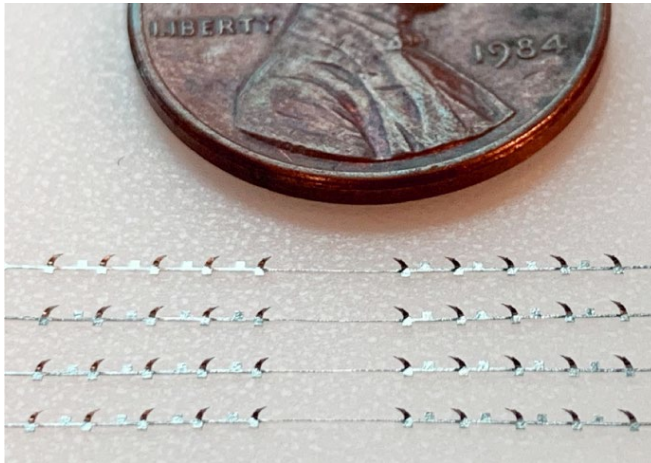
The Transcending Self Therapy Retreat is an integrative Virtual Reality platform for patients with substance use disorders. In the platform, patients go to a beautiful retreat in the woods where they learn and apply therapeutic concepts shown to improve mood and decrease the likelihood of relapse. Data is very positive with one paper published in a peer reviewed journal and three more additional publications in development. The project has been deployed at the Richmond Veterans Affairs Medical Center and pilot sites across the country.

[VCU News article: Healing with a headset: Virtual Reality shows promise in treating substance use disorders](#)



# VCU

## Nerve Tape : A Coaptation Aid for Peripheral Nerve Repair



**Geetanjali Bendale, PhD**

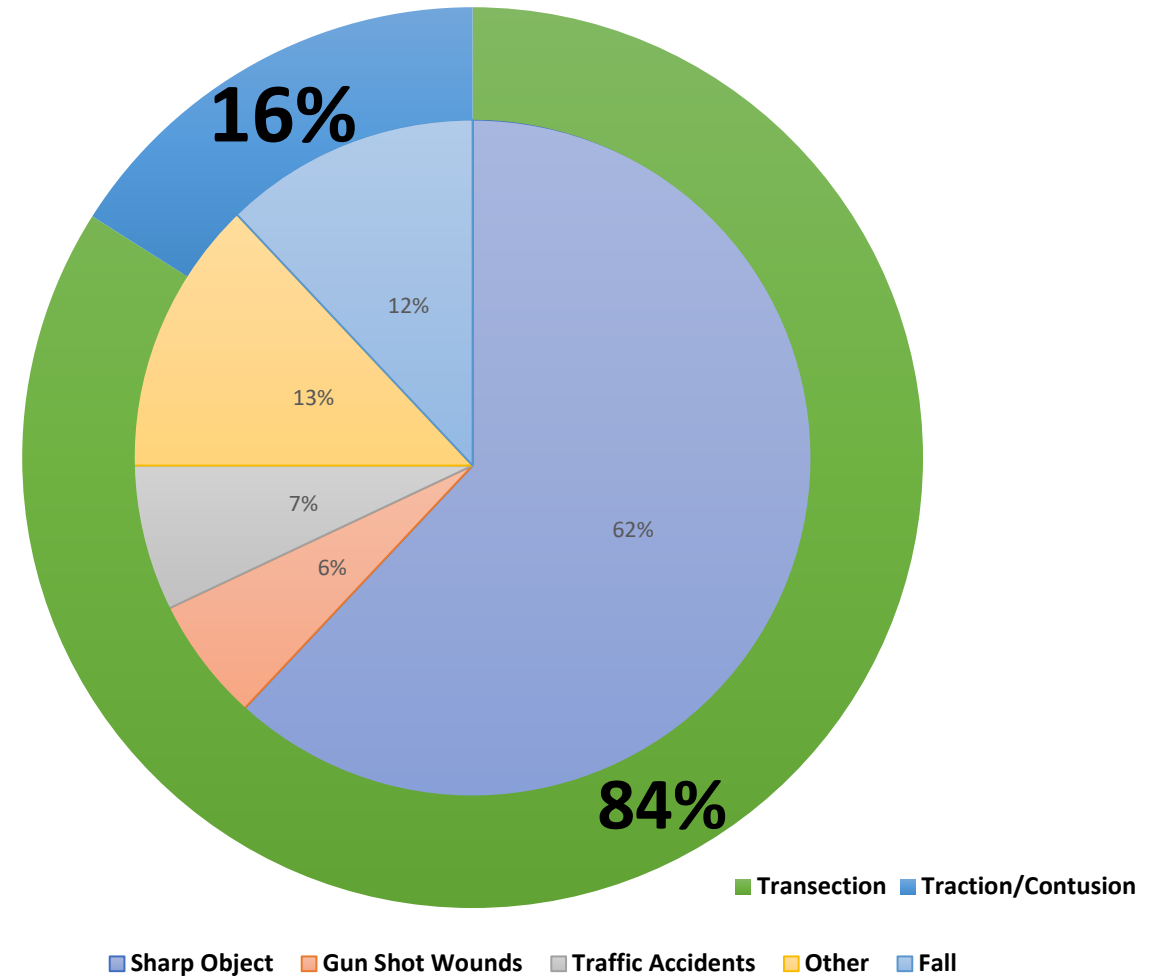
Research Scientist  
Orthopedic Surgery  
VCU SOM



**BIOCIRCUIT**  
TECHNOLOGIES

# Peripheral Nerve Injuries

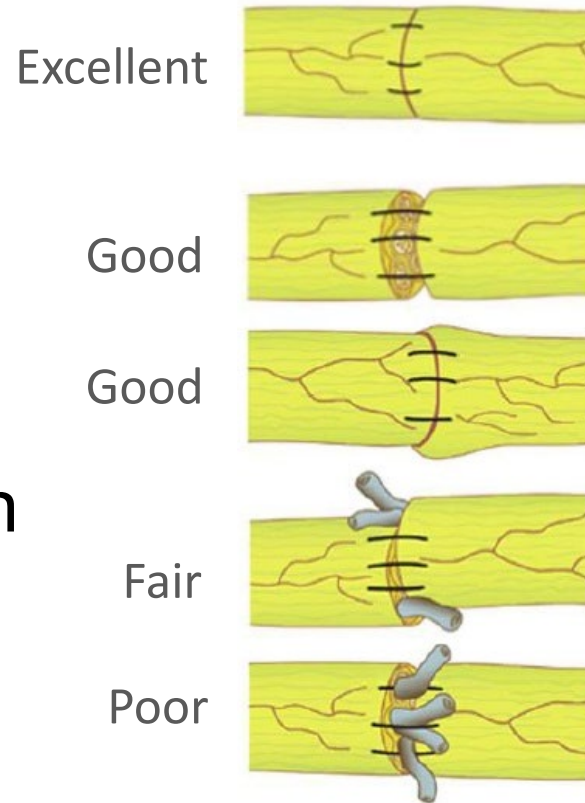
- Approximately 1.2 million upper extremity injuries reported in the US each year, ~3% of these result in peripheral nerve trauma
- Can lead to permanent loss of function, chronic pain and poor QOL
- Satisfactory recovery only achieved about half of the time





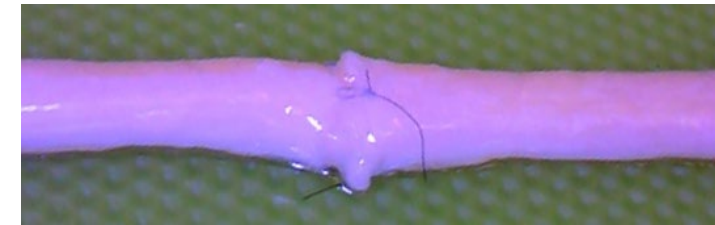
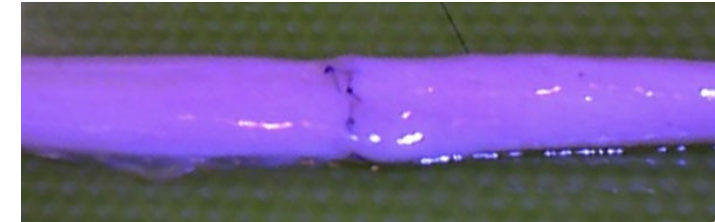
# Traditional Technique: Suture Repair

- Technical challenges
  - Limited number of surgeons can do proficiently
  - Time consuming
  - Resource intensive
- Often inconsistent and results in sub-optimal functional recovery
- **40% of cadaver repairs unacceptable**
- Sutures generate scar tissue



Nerve repair grading scale

*Bernstein et al. 2013*



40% of cadaver repairs **unacceptable**

*Isaacs et al. 2016*

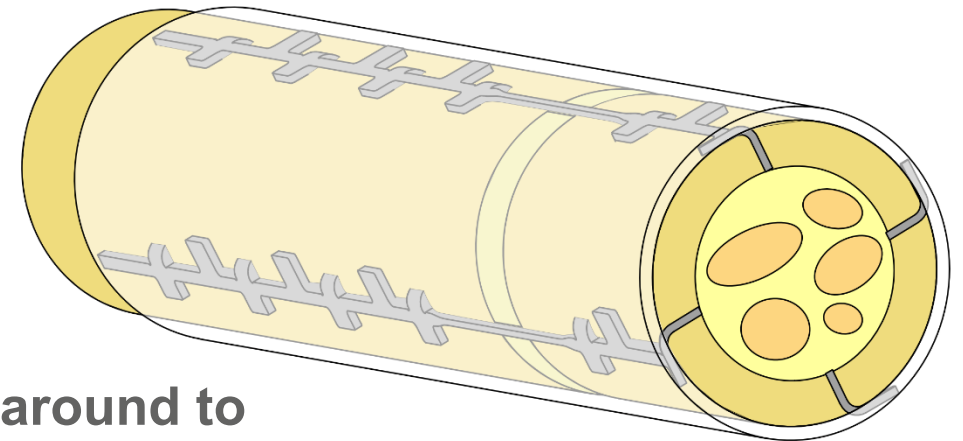
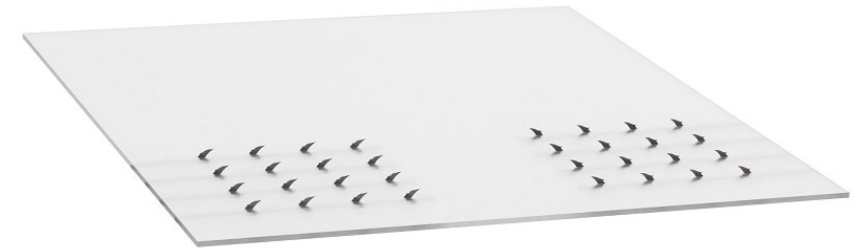
# Nerve Tape for sutureless nerve repair

- **Simple and efficient**
- **Ensures technical accuracy**
- **Strong hold, minimized damage**
- **Many superficial attachments sum to great strength**
- **Distribution of tension**
- **Pro-regenerative environment**



**BIOCIRCUIT**  
TECHNOLOGIES

Microhooks  
embedded in flexible  
backing layer




Wraps around to  
secure nerve stumps

- U.S. Pat. No. 10,994,130
- FDA 510k Approval granted

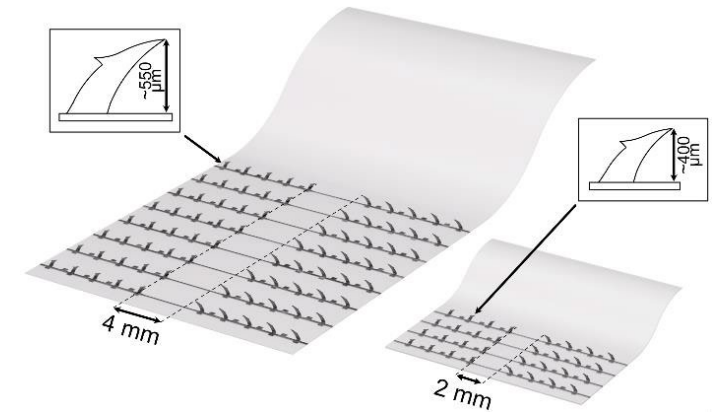
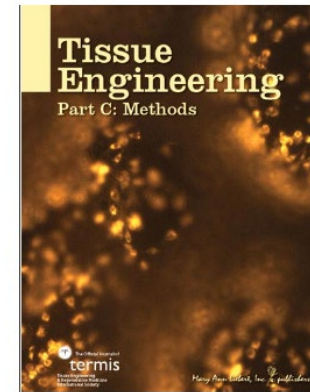




# Biomechanical Testing of a Novel Device for Sutureless Nerve Repair

Dr. Geetanjali Bendale , Mr. Maximilian Sonntag, Dr. Isaac P Clements, and Dr. Jonathan E Isaacs

Published Online: 19 Jul 2022 | <https://doi.org/10.1089/ten.TEC.2022.0080>



# *In Vivo* Efficacy of a Novel, Sutureless Coaptation Device for Repairing Peripheral Nerve Defects

Geetanjali Bendale  , Matt Smith, Lida Daniel, Isabelle deBruler, Mariana Fernandes Gagnani, Ryan Clement , Jules McNeice, Fletcher Griffiths, Maximilian Sonntag, Jack Griffis, Isaac Clements, and Jonathan Isaacs

Published Online: 2 Jun 2023 | <https://doi.org/10.1089/ten.tea.2023.0004>

 Sections  View article

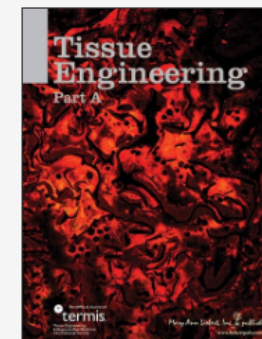
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The Journal of Hand Surgery

Available online 7 February 2024

In Press, Corrected Proof [What's this?](#)



Editor's Choice

# Usability of Nerve Tape: A Novel Sutureless Nerve Coaptation Device

[Kyle R. Eberlin MD](#)\*, [Bauback Safa MD](#)†, [Rudy Buntic MD](#)†, [Mark S. Rekant MD](#)‡, [Marc J. Richard MD](#)§, [Joseph F. Styron MD, PhD](#)||, [Geetanjali Bendale PhD](#)¶, [Jonathan Isaacs MD](#)¶

- Top Hand Surgeons in the US
- Experts vs Residents (6 per group)
- Outcome measures:
  - Repair quality score
  - Time to repair
  - Repair strength



**Dr. Kyle Eberlin**  
MGH  
Lead Investigator



**Dr. Jonathan Isaacs**  
VCU  
Lead Investigator



**Dr. Bauback Safa**  
Buncke Clinic



**Dr. Mark Rekant**  
Philadelphia Hand Center



**Dr. Rudy Buntic**  
Buncke Clinic

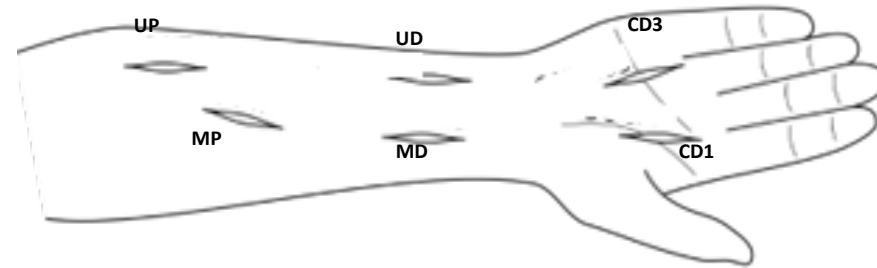


**Dr. Joe Styron**  
Cleveland Clinic

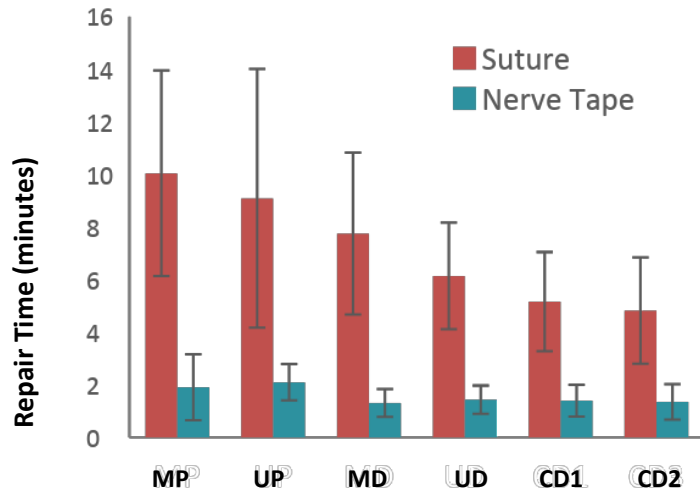


**Dr. Marc Richard**  
Duke University

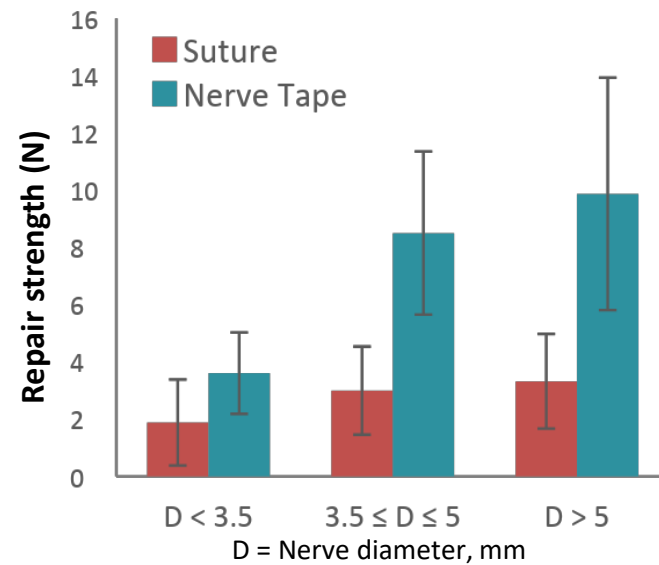
# Nerve Tape is faster, stronger and consistent



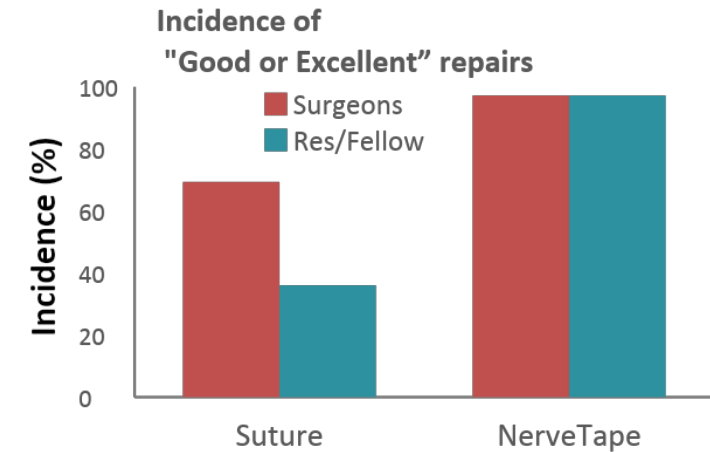
MP: median proximal    UP: ulnar proximal    MD: median distal    UD: ulnar distal    CD1:    CD2:    CD3: common digital nerves



Nerve Tape repairs **~4.8x faster** vs microsuture repairs



Nerve Tape repairs **~2.6x stronger** vs microsuture repairs



Nerve Tape repairs were **higher quality** vs. microsuture, and with **“skill-leveling”** across surgeon experience

# Current Status...

- Demonstrated safety and efficacy of Nerve Tape
- Demonstrated speed, ease of use and consistency
- FDA Approval Obtained
- Early adopter centers identified
- Preliminary launch planned for Q2 2024
- First in human implant planned for 2024

The logo for ThermaGEL Innovations features the word "ThermaGEL" in a dark blue font, with "GEL" in a green font. A green swoosh arches over the text, and a series of green dots forms a curved path below it.

ThermaGEL Innovations

# The Future of Insulation

Marc McConnaughey-CEO

[marcm@thermagelinnovations.com](mailto:marcm@thermagelinnovations.com) 909-631-9598



**IMPEL**  
INNOVATOR

FOSL Driving the Innovation Economy





# Poor Insulation Is a Major Problem

Current Aerogels Are Very Difficult and Expensive to Make

We make and sell *affordable* ridged Aerogel Insulation Panels, for Walls, Ceilings, Floors, Roofs, Siding

Superior Protection

100C 212F-  
125C -148F

Our product is Thin and Fire-Moisture-Mold Proof

Fiberglass 15"

Polystyrene 11"

Polyurethane 7"

**Our Aerogel VIP**

**R44 at 3.5"**

# Technology Created At VCU

We Mix



We Mold



We dry at 60 °C & Vacuum Seal



**It's Like Making Gummy Bears!**

## How We Scale-Up-Key Breakthrough

- Each Line 250 feet long. 5,000 sq ft-Cost
- \$1M Cost. Capacity 12M SqFt Per Year
- Standard Equipment



# ThermaGEL's Core Target Customers

Architects  
Construction Influencers



Building Material  
Suppliers



Commercial & Residential  
Contractors and Installers



Buildings Owner/Operators  
Sustainability Mgrs.



## Commercial Buildings – Retrofit – Overlays

### Why They Will Buy

1. Reduce Energy Costs
2. Improve Comfort
3. Meet ESG, ZNE and mandated building codes

# Our Difference - Thin Matters

## Tackling Retrofit For Wall, Ceiling, Attic and Floor Overlays

- No Demolition Cost
- No Occupancy Downtime
- No Thermal Bridges
- Keep Existing Walls, Ceilings, Floors
- Easy to Install – Choose Your Own Finish
- Enable Contractors to Design/Make/Install
- 60 year+ useful life
- Payback 2 to 2.5 Years

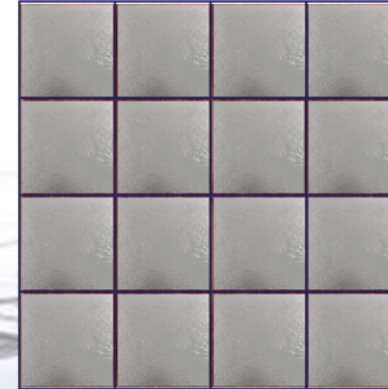
Profile View

Paint, Wallpaper,  
Decorative Panel

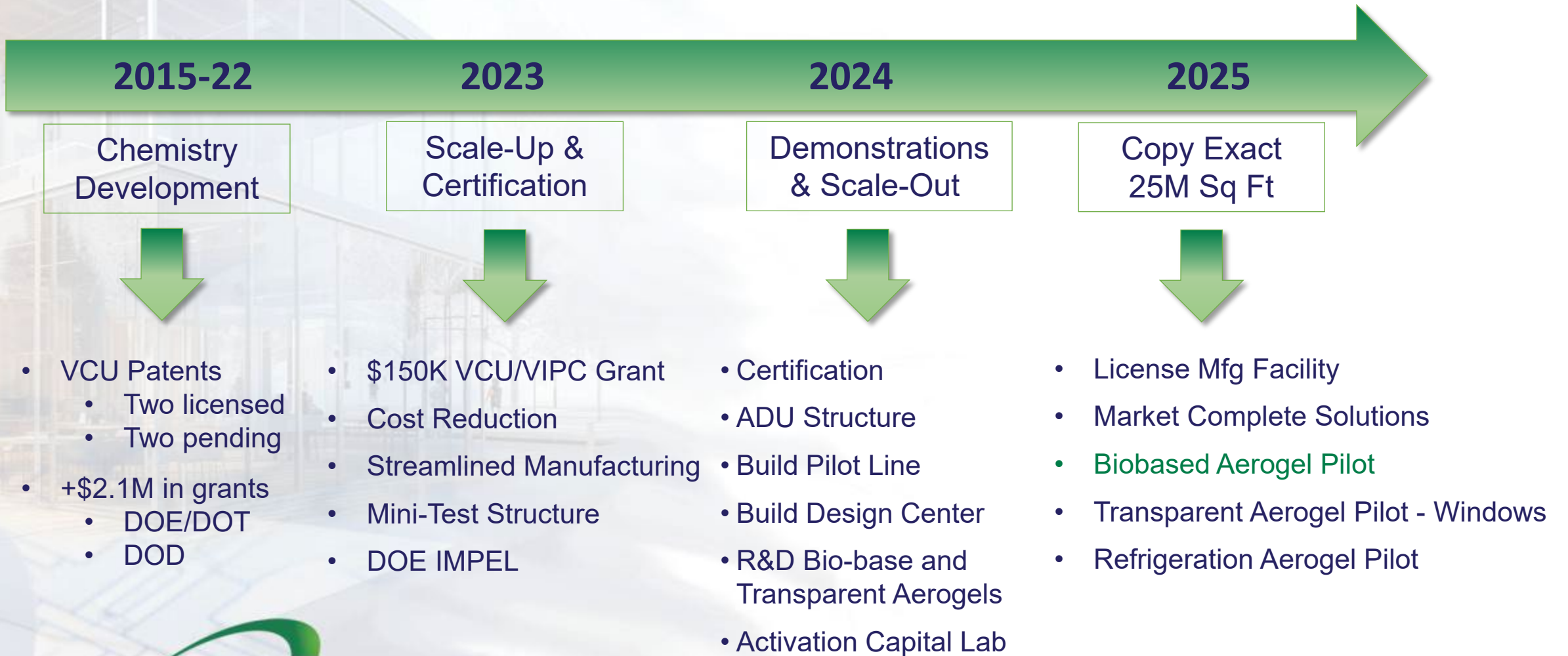
Gypsum/Plywood

AeroGels

Aerogel VIP's



# Milestones: Past, Present, and Future





# Market Traction – Early Win

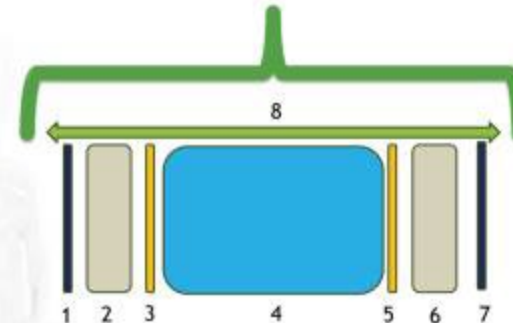
**Struere Green Technologies**  
LA Designer/Builder of ADUs  
For Low Income Housing

**Pilot-Order for \$600,000**  
**R22 \$\$5.99 per Sqft**

**Makes 195 Quick Shelters**



Width 108.9 mm



**August 2024**



# ThermaGEL Team



**Marc McConnaughey**  
CEO

- 35 yrs- Display and Nanomaterials Scale Up
- 4 Startups and JV's \$110M raised
- 7 Patents, Licensing Experience
- NPI-Supply Base-Operations & Extensive International Experience



**Massimo 'Max' Bertino**  
CTO

- Professor of Physics VCU
- Co-Director of Nanoscience and Nanotechnology VCU
- Senior Member of the National Academy of Inventors
- 20 years experience in synthesis and characterization



**Everett Carpenter**  
COO

- Professor of Chemistry and Chemical Engineering VCU
- Certified in Patent Valuation Analysis
- Completed the Inaugural ARPA-e I-Corps Program
- MBA in International Marketing and Entrepreneurship



**Adam Matalon**  
CMO

- Award winning & Emmy Nominated, Oscar qualified storyteller.
- 20+ years Managing Multi-Mil Content Projects and Strategy
- Proven Ideation & Delivery of Branded Content
- Deep legal and business affairs experience in IP



**William Daughtrey**  
Fractional CFO Advisor

- Former Group Managing Partner, Consulting, Price Waterhouse Coopers
- Advisor to Early-Stage Technology Companies
- Wide Range of C - Level Experience as CEO, CFO, COO
- MS Physics, MBA Finance, CPA (non-active)

A **VCU Spinout Company**  
commercializing a novel  
drug to treat  
**Hemorrhagic Shock**



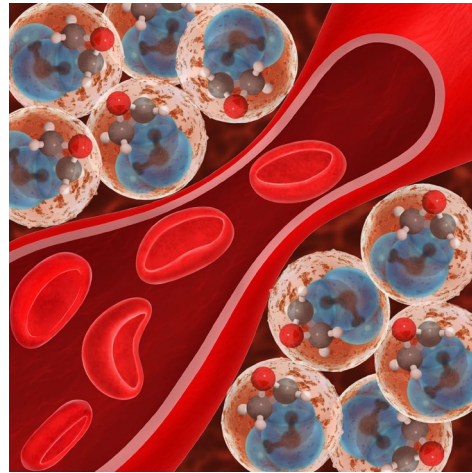
## HEMORRHAGIC SHOCK SOLUTION

In Hemorrhagic Shock oxygen deprivation results in cells swelling up with water, compressing the capillaries and **reducing blood flow by about 50%**. Our **IV drug, PM-208**, very quickly pulls water out of the cells, taking the pressure off the capillaries.

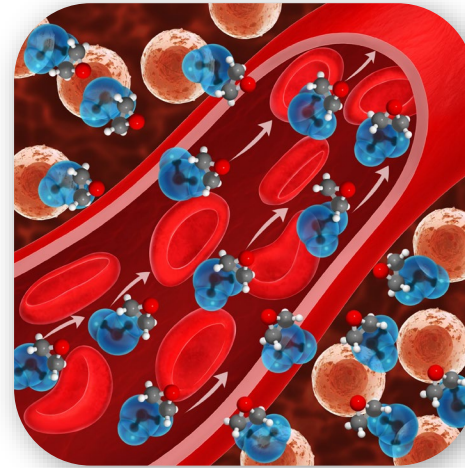


Dr. Martin Mangino, VCU

HEMORRHAGIC SHOCK



STEP 1

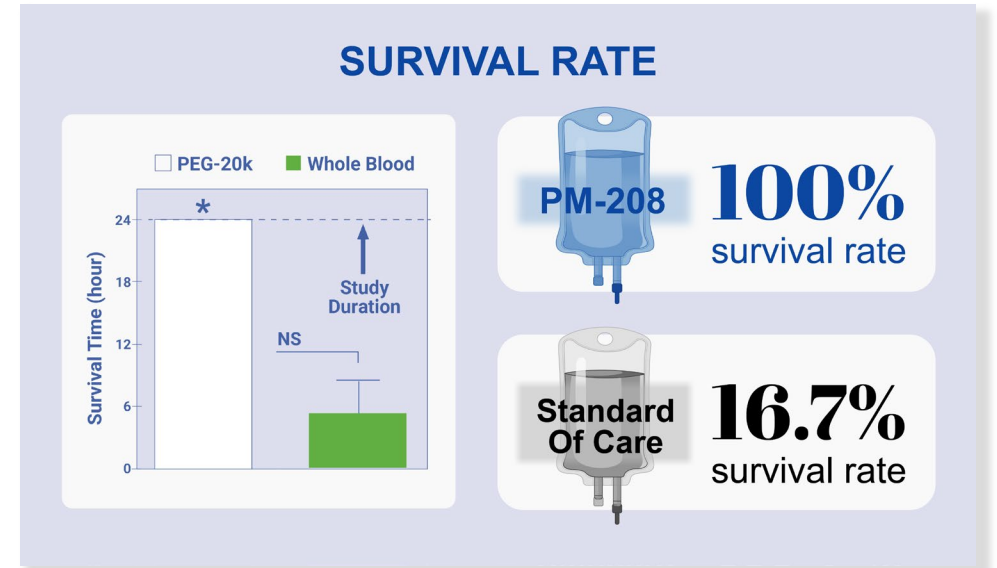


STEP 2

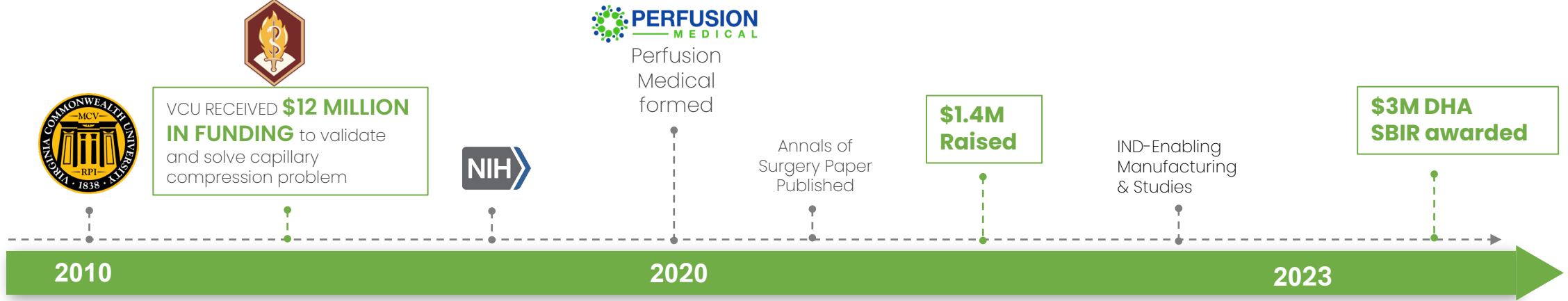




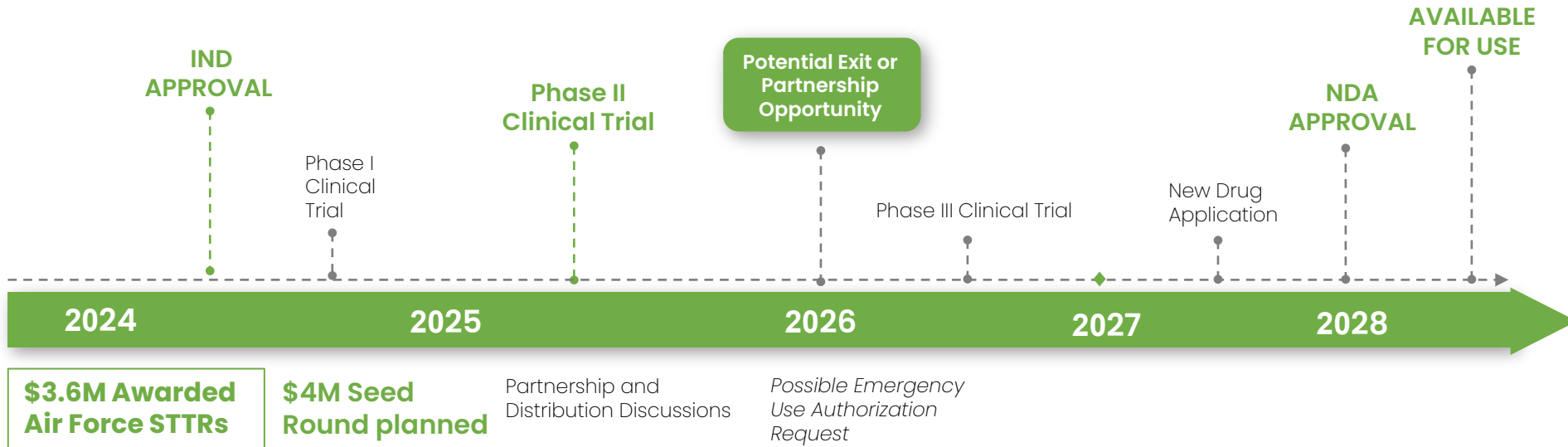
Multiple large animal trials show an **order of magnitude improvement** over the standard of care.



## HEMORRHAGIC SHOCK MILESTONES



## HEMORRHAGIC SHOCK ROADMAP





# The Retreat

## Virtual Reality Treatment for Substance Use Disorders



### **Mark Lambert**

Co-Founder Lighthouse XR

### **Dr. Jarrod Reisweber**

Licensed Clinical Psychologist, Richmond VAMC  
Assistant Professor, VCU Dept. Of Psychology





Mark has over 35 years experience leading creative and technical teams at companies such as Sony Pictures. He has been a creative lead on 14 feature films, software developer, director, producer and entrepreneur.



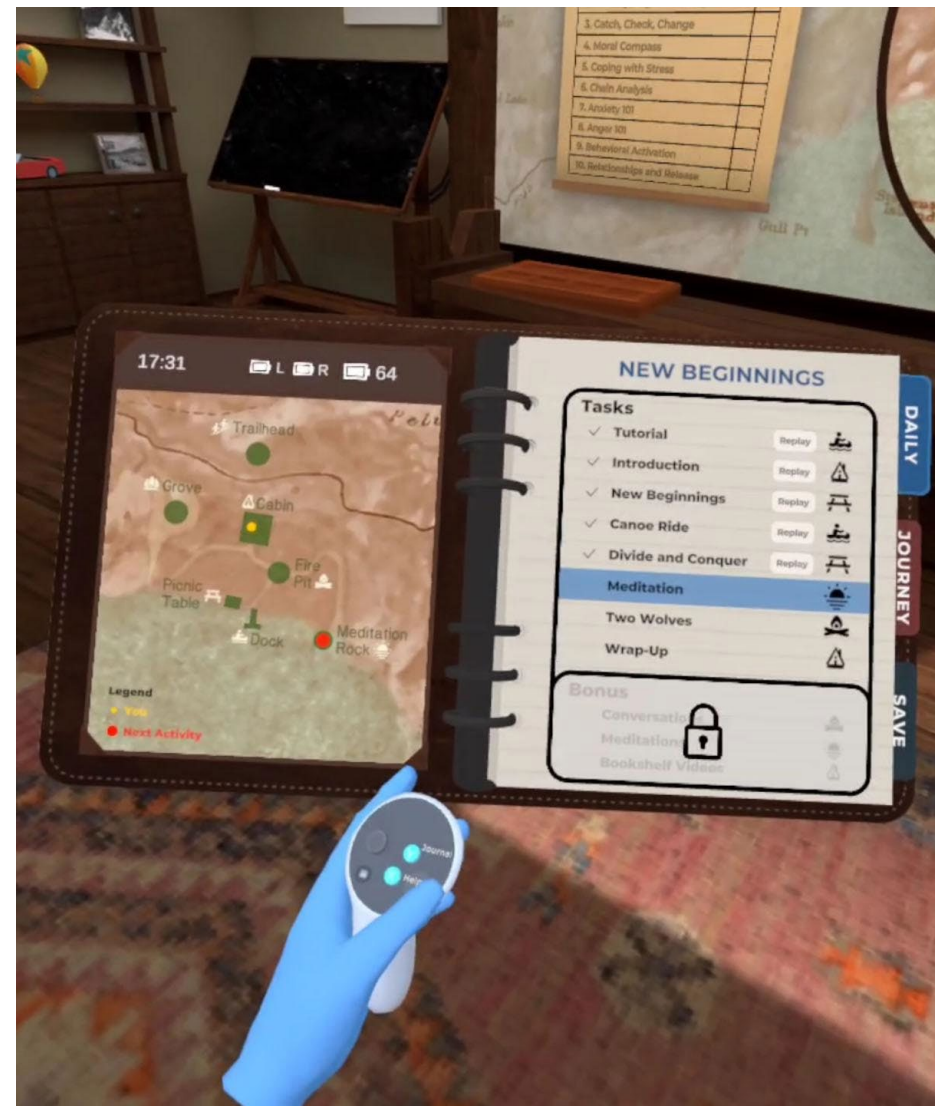
Mark filming 360 video on top of the Burj Khalifa in Dubai for a VR project.

<https://vimeo.com/866064339/f65d31d84d>

TST-VR at The Retreat



1. New Beginnings
2. Science of Addiction/Personal Compassion
3. Identifying Negative Thoughts
4. Checking and Changing the Thought
5. Identifying Thinking Traps
6. The Moral Compass
7. Your North Star
8. Coping Intro (Stress)
9. Anxiety



## **VETERANS ADMINISTRATION -**

**In 2018, over 150,000 veterans received some form of SUD treatment from the VHA**

## **OUTSIDE VHA -**

**~46.3 million people in the USA met criteria for substance use disorder**

**In 2021, ~9M people received treatment (ER, inpatient, outpatient, virtual)**

**The US cost for residential & outpatient treatment is > \$7 billion, the cost to US hospitals for ER and inpatient SUD associated encounters was estimated at > \$13 billion**

- GAO-20-35: Dec 2019 – Veterans Health Care: Services for Substance Use Disorders, and Efforts to Address Access Issues in Rural Areas
- SAMSHA – Key Substance Use and Mental Health Indicators in the United States: Results from the 2021 National Survey on Drug Use and Health
- JAMA: Mar 2021: Assessment of Annual Cost of Substance Use Disorder in US Hospitals: Cora Peterson et.al. e210242

## VETERANS ADMINISTRATION -

- Currently in talks with the VHA for a large pilot of The Retreat in telehealth (based on funding opportunity)
- Developing deck for corporate sponsorship to support a pilot for 500 veterans in residential treatment

## OUTSIDE VHA -

- In discussions with B2B2C firm for inclusion in corporate health plans
- Researching/discussions for commercial residential treatment facilities to partner

---

# Thank you.

**Mark Lambert**

Mark@LighthouseXR.com

**Dr. Jarrod Reisweber**

Jarrod.Reisweber@va.gov





# **Technology and Commercialization at VCU: Panel Discussion**