

Innovation at **speed** and **scale**

September 22–23, 2026 | Boston

2026.worldmedicalinnovation.org

 Mass General Brigham

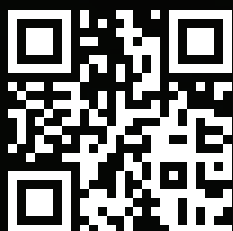
World Medical Innovation Forum

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2027
World Medical Innovation Forum

Welcome to the World Medical Innovation Forum. Our speakers and attendees look forward to sharing their views on the future of healthcare innovation and investment. Please be aware that by attending this Forum, you are agreeing to abide at all times by the Forum's respectful and collaborative environment.



Anne Klibanski, MD

President and CEO, Mass General Brigham
Laurie Carrol Guthart Professor of Medicine,
Harvard Medical School

Welcome

For more than 200 years, Mass General Brigham has helped define the future of medicine—driving discovery, transforming how care is delivered, and improving outcomes for patients. Today, as the nation's largest hospital-based research enterprise, we harness the power of discovery, collaboration, and scientific excellence to turn bold ideas into breakthroughs and accelerate their impact on patients.

In partnership with Bank of America, we are pleased to welcome you to the 2026 World Medical Innovation Forum. Each year, the Forum brings together senior healthcare leaders, clinicians and scientists, entrepreneurs, investors, and government officials to explore the ideas and partnerships transforming medicine and bringing new approaches closer to patients.

This year's theme, "Innovation at Speed and Scale," examines how promising ideas can move more effectively from bench to bedside. Speakers and attendees will explore artificial intelligence, emerging therapeutics and precision medicine, investment and commercialization, and the systems and care delivery models needed to translate new ideas into lasting change. These conversations will examine where momentum is building, where challenges persist, and what lies ahead.

At Mass General Brigham, research-infused, patient-centered care anchors the ecosystem that makes this work possible. We are proud to share our perspective and hope the Forum fosters meaningful dialogue, new connections, and bold ideas that will shape the future of healthcare and accelerate progress for patients.



Brian Moynihan
Chair and CEO, Bank of America

Thanks for Joining

Welcome to the 2026 World Medical Innovation Forum. Thank you for joining us for this important gathering of leaders from across healthcare, research, business and government. We are proud to once again partner with Mass General Brigham to bring together organizations and individuals who are helping shape the future of medicine, and to recognize the New England region and the important role it plays in advancing medical innovation.

This year's theme, **Innovation at Speed and Scale**, reflects the remarkable pace of discovery and the importance of translating new ideas into real-world impact. As breakthroughs continue to emerge across healthcare, success increasingly depends on collaboration among researchers, healthcare providers, entrepreneurs, investors and policymakers working toward a common goal of improving outcomes for patients.

At Bank of America, we see firsthand the investment, expertise and relationships that are taking place to help innovative ideas grow from initial ideas to solutions that can improve lives at scale. We work with healthcare and life sciences clients ranging from emerging companies pursuing new discoveries to established global organizations advancing the next generation of therapies, technologies and care models. Through our corporate and investment banking capabilities, strategic advice, and treasury and financing solutions, we help clients navigate growth, invest in innovation and bring new possibilities to market.

We also provide clients with insights from Bank of America Global Research, helping them better understand the trends, technologies and market dynamics shaping the healthcare landscape. In a rapidly evolving environment, timely and complete information is essential to turning opportunity into progress.

One of the reasons we value the World Medical Innovation Forum is its ability to bring together leaders from across sectors to exchange ideas, challenge assumptions and build relationships. The conversations that begin here can help advance collaboration, unlock new opportunities and accelerate the development of innovations that make a meaningful difference in people's lives.

Thank you for being part of this year's Forum. Our team here looks forward to talking with you about how we can be of assistance to you and your goals.

2026 PLANNING COMMITTEE CO-CHAIRS



Miceal Chamberlain

President of Massachusetts, Bank of America



Christopher Coburn

Chief Innovation Officer, Mass General Brigham

To Our Forum Community

Welcome to the 12th annual World Medical Innovation Forum. This year, we gather in Boston at a moment of extraordinary momentum in medical innovation, and the central question is no longer only what is possible, but what can be developed, adopted, and scaled to improve care for patients and communities. We are pleased to bring together leaders across medicine, industry, investment, research, and government to exchange ideas, build connections, and help advance the innovations that will shape what comes next.

Presented by Mass General Brigham and Bank of America, the Forum is built on a shared commitment to advancing medical innovation that addresses unmet patient needs, strengthens communities, and helps deliver breakthroughs to patients worldwide.

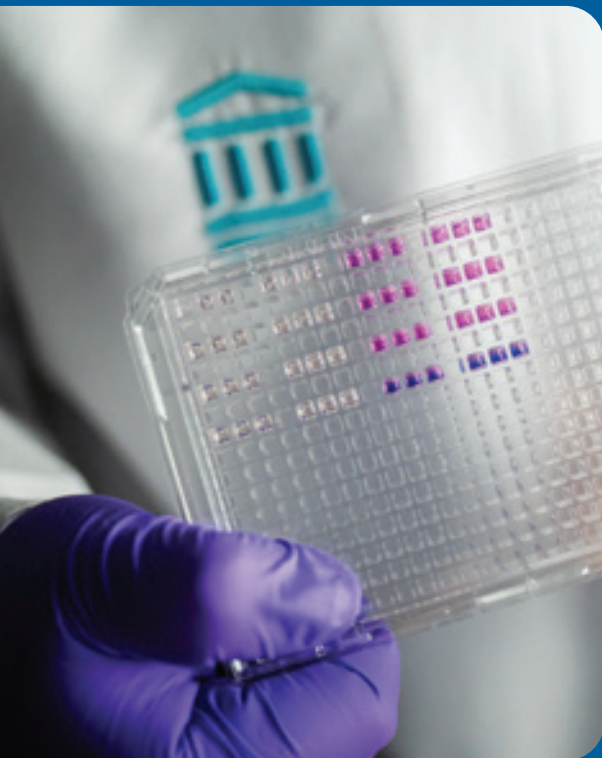
This year's theme, **Innovation at Speed and Scale**, reflects the significance of this moment and the opportunity before us. Across therapeutics, devices, diagnostics, digital health, AI, and care delivery, new ideas are moving faster than ever. Our shared focus is on the advances that can be responsibly developed, funded, adopted, and scaled to improve care in meaningful and lasting ways.

Over the next two days, the Forum will convene CEOs, investors, clinical leaders, scientists, entrepreneurs, and policy experts for high-level discussions on the future of medicine. The program will feature C-suite fireside chats, focused sessions, market-facing conversations, First Look presentations, and emerging technology showcases that highlight the research, partnerships, and investment needed to accelerate progress.

From AI-enabled care and imaging to oncology, neuroscience, fibrosis, cardiovascular disease, community health, and the evolving health care model, this year's sessions reflect the breadth of innovation shaping the next decade of medicine.

Our thanks to the Forum planning team and to the generous support of our sponsors: Accenture, Astellas, AstraZeneca, Canon, Genentech, Ozlo, Philips, Siemens Healthineers, ThermoFisher, Quarles, and United Imaging.

Thank you for joining us in Boston, one of the world's leading centers of medical innovation. We are grateful to have you with us and wish you an engaging, productive, and inspiring Forum.



Research and innovation bring hope to patients everywhere.

We are dedicated to improving the lives of patients. As No. 1 in the nation in hospital medical research,* our medical breakthroughs drive the best possible outcomes for patients around the world.

*Based on NIH funding



Committed to our community

Today, Boston stands tall as a leading hub for medical innovation. Bank of America is proud to work with Mass General Brigham to connect biotech and other industry pioneers to capital so they can continue to advance this great city's growth.

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AMERICA

Paul Matsen

World M

2025 World Medical Innovation Forum

FOCUSED SESSION

Consumerism 2.0 | Can Healthcare Meet Patients' Needs?

Moderator: **Mark Bohen**, Chief Marketing and Communications Officer,
Mass General Brigham

Tanya Andreadis, Chief Marketing, Communication & Digital Officer,
University of Miami

Patrick Ellinor, MD, PhD, Executive Director, Heart and Vascular Institute,
Mass General Brigham; Professor of Medicine, Harvard Medical School

Adele Gulfo, President & CEO, Biopharma Strategies and Insights

Paul Matsen, Chief Marketing and Communications Officer, Cleveland Clinic



Event Guide

Tuesday, September 22

Continental Breakfast

Grand, Astellas Marina & Genentech Harbor Ballroom Foyers

Thermo Fisher Emerging Technology Zone

Pavilion | 11:00AM – 5:00PM

Attendees can explore the future of healthcare at Mass General Brigham—where cutting-edge technologies such as virtual and augmented reality, robotics, and AI-driven learning and diagnostic solutions come to life—advancing our mission as an integrated academic health system.

Public Policy Sessions

Hear from current government leaders addressing national health policy and its challenges.

First Look

**Genentech Harbor Ballroom I
| 9:00AM – 11:15AM**

Join us for 12 rapid fire presentations from Mass General Brigham researchers on the commercial opportunities for new technologies across clinical areas. Abstracts for these technologies are located on page 35 of this event guide. Speakers will be available to meet with attendees after their presentations. Posters of their research will also be on display throughout the Forum on screens in the Harbor Ballroom Foyer.

Focused Sessions

Blocks I, II and III

Grand, Astellas Marina & Genentech Harbor Ballrooms

Concurrent sessions featuring some of the hottest topics in medicine, including emerging treatments, digital innovation and AI, advances in clinical care, evolving care delivery and provider strategies, and key investment insights. Full details and room locations are available in the mobile app; pages 15–21 in this program lists summaries only.

Grab and Go Lunch

SPONSORED BY ASTELLAS

**The Galleria – lower level Harbor Side
11:00AM – 11:55AM**

Boxed lunches and beverages are available beginning at 11:00AM. Selections are available on a first come first served basis.

Fireside Chats

Don't miss these one-on-one discussions with leading minds. Refer to the app for up-to-date times.

Shelley Moore Capito | Senator (R-WV)

Richard Neal | Congressman (D-MA)

Bernd Montag, PhD | CEO, Siemens

Toshio Takiguchi | CEO, Canon Medical Systems

Roy Jakobs | CEO, Philips

Tadaaki Taniguchi, MD, PhD | Chief R&D Officer, Astellas

Eliav Barr, MD | CMO, Merck

Kara Brotemarkle | Global Head, Commercialization Strategy, Genentech

Grab and Go AM & PM Breaks

SPONSORED BY PHILIPS

Grand, Astellas Marina & Genentech Harbor Ballroom Foyers

Attendee Reception and Dinner

Thomas Michael Menino Convention and Exhibition Center | 5:00PM – 8:00PM

Featuring MGB Institute Heads: Merit Cudkowicz, MD, Patrick Ellinor, MD, PhD and David Ryan, MD

Pre-registration is required for dinner. Check with the Registration desk for availability.

Times, content, location, and speakers are subject to change.
Head to the World Medical Innovation Forum app for up to date information.

Wednesday, September 23

Continental Breakfast

SPONSORED BY ACCENTURE

Grand, Astellas Marina & Genentech Harbor Ballroom Foyers

Thermo Fisher Emerging Technology Zone

Pavilion | 8:00AM – 3:30PM

Attendees can explore the future of healthcare at Mass General Brigham—where cutting-edge technologies such as virtual and augmented reality, robotics, and AI-driven learning and diagnostic solutions come to life—advancing our mission as an integrated academic health system.

Grab and Go AM Break

SPONSORED BY CANON

Grand, Astellas Marina & Genentech Harbor Ballroom Foyers

Focused Sessions

Blocks IV, V, VI and VII

Grand, Astellas Marina & Genentech Harbor Ballrooms

Concurrent sessions featuring some of the hottest topics in medicine, including emerging treatments, digital innovation and AI, advances in clinical care, evolving care delivery and provider strategies, community health and key investment insights. Full details and room locations are available in the mobile app; pages 15–21 in this program lists summaries only.

Grab and Go Lunch

SPONSORED BY GENETECH

Grand, Astellas Marina & Genentech Harbor Ballroom Foyers

Boxed lunches and beverages are available for pick up beginning at 12:50PM in all Ballroom Foyers. Please pick up your lunch outside the breakout room you have chosen to attend. Selections are available on a first come, first served basis. Please enjoy your lunch during Block VII of the Focused Sessions.

Kraft Prize for Community Health

The second annual Kraft Prize for Excellence and Innovation in Community Health recognizes a program that is making a measurable impact on health outcomes and has the potential to become a scalable model for addressing community health.

Fireside Chats

Don't miss these one-on-one discussions with leading minds. Refer to the app for up-to-date times.

Julie Kim | CEO, Takeda

Brian Moyhihan | CEO, Bank of America

Grab and Go PM Break

SPONSORED BY ASTRAZENECA

Grand Ballroom Foyer

The Pavilion

A place to network with fellow Forum attendees. Schedule meetings directly with attendees via the World Medical Innovation Forum mobile app or make new friends in the Lounge area while tuning into Main Stage sessions via a live stream. Snacks and beverages will be available.

Tuesday: 8:00AM – 5:00PM

Wednesday: 8:00AM – 5:00PM

Find more information in the World Medical Innovation app.

ThermoFisher
SCIENTIFIC

Emerging Technology Zone

Innovative Healthcare Technology Showcase Highlights AI, VR, and Advanced Medical Training Tools

This event features demonstrations of cutting-edge healthcare solutions from Mass General Brigham innovators and researchers, as well as industry-leading vendors. Solutions will include AI documentation and data abstraction solutions, smart diagnostic platforms, digital imaging products, and clinical training modules using immersive technologies. Experience in-person healthcare technologies that will impact care delivery today.





Focused Sessions

The World Medical Innovation Forum convenes experts from Mass General Brigham and other leading organizations for candid, interactive conversations at the leading edge of medical innovation and markets. Sessions move past prediction and into substance — where breakthroughs are already changing care, where real barriers remain, and what it will take to move discovery from the lab to the patient.

Clinical sessions trace emerging therapeutics across Alzheimer's disease, cardiovascular disease, dermatology, lung cancer, hematologic cancers, and obesity and metabolic health, alongside deeper dives into precision oncology, autism diagnosis and treatment, immunology and inflammation, cell and gene therapy, RNAi, and fibrotic disease. AI in Healthcare sessions ground the technology in practical impact — opportunistic screening, clinical decision support, cybersecurity and privacy, AI-enabled personalized care through

nanotechnology, mental health innovation, and the organizational change required to scale AI responsibly. The program also examines business and care delivery innovation, including the affordability and financing of high-cost curative therapies, building patient trust in AI, the global expansion of American academic medicine, next-generation diagnostic intelligence, community health equity, tech-enabled care delivery, and the accelerating shift toward direct-to-consumer and home-based care.

Times, content, location, and speakers are subject to change.
Head to the World Medical Innovation Forum app for up to date information.

CARE DELIVERY | POLICY

Affordability and Financing of High-Cost Curative Therapies

A rising number of breakthrough, high-cost therapies with curative potential, including cell and gene therapies, offer transformative outcomes for patients but also pose unprecedented challenges for affordability within current healthcare insurance and payment structures. This panel explores innovative pricing models, risk-sharing agreements, and alternative financing structures that can improve patient access and sustain incentives for future innovation while also ensuring that these treatments are affordable for patients and the health care system.

AI in Healthcare | Building Patient Trust & Understanding

Patients do not seek out healthcare to experience artificial intelligence. They interact with the healthcare system to solve fundamental human problems: understanding a scary diagnosis, finding the right specialist, navigating complex insurance pipelines, and ultimately getting back to living their lives.

This panel explores AI through a practical "Jobs to Be Done" framework. Instead of asking what AI can do, our experts will debate where AI genuinely helps patients make progress and where it creates friction or distrust. By looking at technology entirely from the patient's perspective, the session will map out how to deploy intelligent tools that support, rather than alienate, the people they are meant to serve.

American Academic Medicine's Global Reach | International Innovation

American academic medical centers are shifting from traditional international patient referral models toward dynamic, embedded global ecosystems. Through strategic offshore hospital operations, joint ventures, cross-border clinical trials, and digital health platforms, premier U.S. health systems are exporting their clinical standards and innovation engines across global markets.

This panel brings together international business executives and chief medical officers from top U.S. health systems to examine how institutions navigate complex regulatory landscapes, build sustainable global operations, and adapt cutting-edge care models to meet regional health needs worldwide.

Beyond the Result | Architecting the Future of Diagnostic Intelligence, Global Scale & Precision Care

For most patients, "medical diagnostic" has come to mean a test that is designed and administered to determine or confirm that someone with their symptoms has a specific disorder. In reality, however, over the last 50 years or so diagnostics have become far more diverse in their purpose and their form, comprising a broad range of assays that predict, detect and track disease and in many cases suggest very precise interventions. These include screening assays, genomic profiling, highly accurate and precise molecular tests, diverse imaging modalities, rapid point of care tests and surveillance panels that monitor epidemics/pandemics. This panel will frame the current view of the medical diagnostics domain, gaps and opportunities that exist, the impact of big data/AI and innovations we can expect going forward and importantly, their impact on the global practice of medicine.

From Innovation Tourism to Innovation Embedment

ARC Landing Boston brings together global healthcare founders and Massachusetts Secretary of Economic Development Eric Paley to explore what it takes for international innovation to take root, integrate, and create lasting impact within our local healthcare ecosystems.

High-Tech, High-Touch, No Walls | Democratizing Care & Trust in the Community

This session will explore how pioneering health leaders are dismantling traditional clinical boundaries to improve community health outcomes. Featuring winners of the Kraft Prize for Excellence and Innovation in Community Health and the Kraft Impact Acceleration Award alongside Mass General Brigham clinical and community health experts, the panel will examine the powerful intersection of digital platforms—such as AI and remote biometric monitoring—with trusted human infrastructure. From neighborhood barbershops and tech-enabled doula networks to community-based harm reduction and decentralized oncology screenings, these innovators are redefining healthcare delivery for underserved populations. With solutions stemming from lived and learned experience and a commitment to improving community health outcomes, the discussion will reveal how blending scalable tech with cultural trust can bypass systemic bureaucratic inertia, eliminate geographic and financial barriers, and ultimately improve outcomes across maternal health, cardiovascular disease, substance use disorder, and cancer care.

Impact of Technology on Community Providers

As digital innovation accelerates across healthcare, community health systems face a unique imperative: integrating sophisticated digital tools while preserving the close, high-touch care that defines local provider-patient relationships. This session convenes executive leaders from regional health systems to examine how frontline organizations are leveraging clinical technology, operational automation, and virtual platforms to strengthen care delivery.

Driven by perspectives spanning clinical medicine, nursing background, and health policy leadership, the panel will explore actionable strategies for implementing high-impact technology that improves patient outcomes, streamlines clinical workflows, and ensures long-term institutional sustainability.

International Scale-Up | Capital, Partnerships & Commercialization in US Healthcare

Ireland has become a recognised global hub for healthcare innovation, producing a new generation of life sciences and health technology companies that are successfully competing on the world stage. Yet achieving scale in the United States, the world's largest and most complex healthcare market, requires far more than innovative technology. Success depends on securing the right capital, building strategic partnerships, navigating regulatory and reimbursement pathways, and executing a disciplined commercialisation strategy.

This panel brings together senior leaders from four high-growth Irish healthcare companies spanning respiratory diagnostics, medical devices, oncology pharmaceuticals, and digital health. Drawing on their experience building and scaling businesses in the US, the panellists will share practical insights

on attracting investment, establishing a US presence, forging partnerships with healthcare providers and industry leaders, and accelerating growth in one of the world's most competitive healthcare environments.

Longevity | Toward A Model of Age, Aging & Therapeutic Rejuvenation

This panel examines the paradigm shift from treating age-related diseases sequentially to targeting the interconnected biological mechanisms underpinning aging itself. While interventions like mTOR inhibition and partial cellular reprogramming extend simpler organisms' lifespans by up to ten-fold, translating these lab milestones to humans faces a massive translational gap. The strongest scientific evidence currently supports extending health span—delaying frailty, dementia, and cardiovascular decline—rather than radically expanding absolute lifespan. Robust lifestyle behaviors have strong evidence for improving healthspan, while emerging therapies such as rapamycin show encouraging but still evolving clinical evidence, yet no drug is approved to treat aging, and high-hype frontiers like senolytics or NAD+ boosters lack definitive human proof. Ultimately, the panel will cut through commercial overstatement to show that while science fiction is becoming genuine biology, the near-term reality promises more healthy years, not lifespans of 150.

Re-Inventing the Academic Hospital for Biodesign Co-Creation

Japan's declining birthrate, aging population, shrinking workforce, and rising healthcare demand foreshadow challenges many countries will soon face. As health systems worldwide work to extend healthy life expectancy with limited resources, academic hospitals must reinvent themselves beyond diagnosis and treatment. Since 2014, Tohoku University Hospital has embedded 1,900+ researchers from 80+ companies in clinical settings to identify unmet needs. This panel explores how the ecosystem translates clinical insights into scalable, globally transferable solutions, transforming academic hospitals into rapid-response engines for future demographic challenges, and considers its U.S. expansion.

Tech-Enabled Care Delivery | Scaling Access & Elevating Outcomes at Greater Efficiency

While digital health tools were once viewed primarily as point solutions, the industry is shifting toward tech-enabled care delivery models—blending human clinical expertise with smart technology to dismantle long-standing barriers in healthcare. From pediatric mental health to primary care and terminal illness management, technology is allowing clinical teams to extend their reach, personalize care, reduce medical expenditure and improve patient outcomes without losing the essential human connection. In this panel, clinical and executive leaders who are actively redesigning care delivery on the ground will explore how technology transforms patient access and clinical efficacy across the full spectrum of care.

The Great Decoupling | Navigating Healthcare's Shift to DTC & Autonomous Care

While the "hospital of the future" is often portrayed as a strictly acute-care ICU, health systems will likely retain a significant portion of outpatient surgery, infusion, and low-acuity work due to their integrated infrastructure and safety-net mandates. Nevertheless, even a modest 5-10% shift of high-margin volume to outside competitors would constitute a massive, destabilizing disruption to the traditional provider business model.

This panel will conduct a rigorous "Audit of the Future," identifying which components of the traditional healthcare enterprise are resilient and which are destined for obsolescence. We will move beyond the hype of digital transformation to discuss the Systemic Disruption of the hospital's four walls. As care migrates to the home and "Pre-Symptomatic Intervention" becomes the clinical gold standard, the question for investors is no longer "Who is innovating?" but "Who will remain relevant?"

Transforming Unimodal Silos in Computable Medicine

Modern health systems generate extraordinary quantities of longitudinal, multimodal data, yet these data remain fragmented across clinical silos. Apollo is a multimodal temporal foundation model trained on more than three decades of clinical data from 7.2 million patients, comprising 25 billion records across 28 medical modalities. By learning a unified representation of structured clinical events, imaging and text, Apollo learns individual patient representations, providing a computational substrate for modeling whole-patient trajectories over time. This panel will examine how such representations may support forecasting of disease onset, progression, treatment response and adverse events, and will address the validation, generalizability, interpretability and governance required to translate retrospective performance into prospective clinical utility.

Unlocking Japan | Accelerating Global Drug Development from Day One

Japan represents one of the world's most vital healthcare markets, yet navigating its regulatory ecosystem and seamlessly integrating Japanese clinical development into global trial strategies remains a complex challenge. To accelerate access to life-saving therapies, forward-thinking biopharmaceutical leaders are moving away from traditional regional delays and embedding Japan into global development plans from Day One.

This panel brings together prominent executives across biotech, global pharma, clinical operations, and leading research institutions to explore actionable strategies for unlocking Japan's full potential in global drug execution.

Whiteboarding the Future of the HC Enterprise | AI Lessons from Other Industries

While healthcare has distinct regulatory and clinical realities, sectors like banking, consumer goods, tech, and private equity have spent over a decade deploying artificial intelligence at scale. With technology rapidly evolving, and healthcare operational pressures persisting, leaders must look beyond traditional playbooks to modernize clinical effectiveness, administrative operations, and consumer engagement.

This executive panel brings together leaders in strategy, investment, digital transformation, and enterprise AI to "whiteboard" how proven cross-industry AI strategies can be adapted to transform healthcare operations and patient care delivery.

KOL DEEP DIVE | EMERGING THERAPEUTICS

Alzheimer's Disease

Alzheimer's disease (AD) remains the most common cause of dementia (~60–80% of cases), with prevalence expected to rise meaningfully as populations age. Beyond the significant economic costs, the emotional burden on families and caregivers is often just as substantial and too easily overlooked. While management has historically been limited, there has been notable (albeit incremental) progress in diagnosis and treatment over the last few years. This panel will discuss where the field stands today: what recent advances have—and have not—delivered; where treatment may be headed next; and reasons for both hope and caution. Topics will include the uptake of anti-amyloid monoclonal antibodies, including lecanemab/ Leqembi and donanemab/ Kisunla; the growing role of blood-based biomarkers in diagnosis and development; and emerging data from the next wave of assets, including next-gen anti-amyloid antibodies and new modalities, particularly anti-tau.

Cardiovascular Disease

Ischemic heart disease remains the leading cause of death globally and attracts significant investment by pharma and biotech. New therapies for cardiomyopathies such as transthyretin amyloid cardiomyopathy and hypertrophic cardiomyopathy have improved outcomes and are driving new diagnoses. This panel will explore the evolving pharmaceutical pipeline for cardiovascular disease, focusing on promising advances such as oral PCS-K9s, lipoprotein(a) reduction, Factor XI anticoagulation, apolipoprotein C-III lowering (APOC3), TTR silencers and stabilizers, and cardiac myosin inhibitors. The session will examine how these breakthroughs may shift clinical practice and improve long-term outcomes for patients living with CVD and CM.

Dermatology

Dermatologic diseases have grown in importance as focus areas for both established pharma and earlier stage biotech companies. The combination of large markets and under met need have made diseases such as atopic dermatitis (AD) as well as rarer diseases an area of focus. For AD the panel will discuss current standard of care among mild to severe patients, areas for improvement, their thoughts on new mechanisms of action and their view of what will be needed to differentiate in what could be an increasingly crowded market and the entrance of a biosimilar in the future. We will also discuss what physicians feel the market opportunity is for the less common diseases such as vitiligo, HS and beyond and their thoughts on what would be good data.

Lung Cancer

Lung cancer is the third most common cancer in the U.S. and the leading cause of cancer death. This session will focus on NSCLC, including both wild-type and genomically altered tumors. In wild-type NSCLC, immune-based therapies (checkpoint inhibitors) have significantly improved the potential for durable survival, but benefits remain uneven across patient subgroups. Despite setbacks in dual IO/IO combination strategies, the field continues to explore new IO partners to drive therapeutic synergy. These approaches include combinations such as PD-1/PD-L1 with VEGF, TROP2 and other ADCs, targeted therapies, and late-stage cancer vaccines. Following ASCO 2026, the PD-1/VEGF class has progressed toward clarifying the concordance between PFS and OS benefit. Upcoming pivotal data should further define the role of this class and inform future combination strategies.

Obesity and Metabolic Disorders

Obesity and related metabolic disorders remain a public health epidemic in the U.S., but the emergence of GLP-1–based therapies offers the potential for a paradigm shift. This panel will examine the real-world outcomes of GLP-1–based therapies and the key barriers to reducing or reversing this public health burden. GLP-1 therapies have seen widespread adoption, but it remains unclear whether current modalities strike the optimal balance between efficacy, safety, and tolerability. Topics will include emerging mechanisms that may shape the field beyond current GLP-1 therapies, such as amylin agonists and other orthogonal approaches in development. Specifically, can these new mechanisms of action — alone or in combination with GLP-1 therapies — address key unmet needs in the category, such as preserving lean muscle mass and improving tolerability by mitigating side effects. This session will map the future of care—where science, policy, and patient experience converge.

Ophthalmology

The ophthalmology landscape is undergoing a period of rapid transformation, driven by advances in retinal therapeutics, ocular immunology, regenerative medicine, and precision drug delivery. Importantly, ophthalmology has emerged as a leading area for therapeutic innovation, with the potential to validate a broad range of novel modalities including gene therapies, cell-based approaches, targeted biologics, and tissue-regenerative platforms. This panel brings together leading experts in retinal disease, corneal disorders, and ocular immunology to discuss emerging treatments for vision-threatening diseases. Panelists will share perspectives on the evolving treatment paradigms for retinal degeneration, macular disease, and inflammatory eye diseases, while examining the scientific, clinical, and regulatory challenges that shape development in ophthalmology. Together, these experts will explore how advances in technologies are creating new opportunities to preserve and restore vision and why ophthalmology remains an increasingly important arena for next-generation drug development.

Personalized Cancer Vaccines

This panel will focus on how rapid innovation is reshaping treatment in hematological malignancies including multiple myeloma, leukemia, and non-Hodgkin's lymphoma, with emphasis on next-generation cellular therapies, bispecific antibodies, and targeted small molecules. New CAR-T constructs with improved durability and safety, alongside off-the-shelf allogeneic approaches, are expanding access and moving earlier in lines of therapy, though access remains a challenge with debates around how quickly to replace transplant. CD20-, BCMA-, and CD3-directed bispecifics are redefining algorithms across lymphoma and myeloma with outpatient-ready efficacy but raise questions around optimal sequencing relative to CAR-T. Advances in precision medicine, including protein degraders and mutation-targeted inhibitors, are enabling more tailored strategies in leukemia and lymphoma as well. We aim to unpack how these modalities are shifting care away from chemotherapy toward targeted, immune-driven approaches and the balance efficacy, durability, safety, and real-world feasibility of these various approaches.

AI & DIGITAL

AI-Enabled Opportunistic Screening

While traditional medicine fixates on controlled clinical data, the future of opportunistic screening lies in "data exhaust" – leveraging untapped tech insights and routine imaging to identify risks before symptoms appear. This panel explores how AI transforms routine scans into preventive powerhouses, shifting healthcare from "react-and-rescue" to a proactive model. We will address the "who pays" hurdle by discussing the shift from fee-for-service to value-based care and the emerging 2026 reimbursement landscape. Success requires bridging institutional silos and external tech data, ensuring that as we scale AI-driven insights, we maintain rigorous security and patient privacy in an increasingly interconnected ecosystem.

AI to Enhance Care

As AI shifts from administrative support to clinical decision-making, providers and patients are increasingly leveraging real-time insights to refine treatment strategies. This panel examines the transition from assistive AI to autonomous decision support, highlighting how high-fidelity data improves precision while cautioning against "algorithmic bias" and automation complacency. Central to the discussion is the mounting regulatory pressure on "machine behavior" – the challenge of auditing non-deterministic AI outputs in high-stakes clinical settings. We will explore how to balance rapid innovation with the emerging 2026 frameworks for AI safety, liability, and the evolving patient-provider relationship.

AI to Improve Healthcare Delivery | International Perspectives

The AI revolution is occurring globally. Innovations with potential to transform US healthcare delivery, from increasing access, to enhancing workflow, improving outcomes and reducing costs are emerging from many regions. This panel will feature a range of high impact companies launching their AI-enabled technologies in the U.S. and collaborating with MGB as well as other leading institutions.

Cybersecurity and Privacy

As AI-driven threats evolve, healthcare organizations face a new frontier of risk: offensive agentic AI that automates reconnaissance and bypasses traditional defenses in real-time. This panel explores the shift toward Agentic SOC's—AI-powered security that triages and contains threats instantly. We will also address the 2026 "shadow AI" crisis, where clinicians' use of unsanctioned tools creates critical data leaks. Beyond the hospital walls, our experts discuss the urgent need to protect patient privacy in the burgeoning wellness tech sector, balancing institutional security with the individual's right to digital safety.

How AI & Nanotechnology is Shaping the Future of Personalized Healthcare

The convergence of bionanosensors, AI, molecular diagnostics, and therapeutic technologies is shifting healthcare from an episodic, reactive model to a continuous, predictive, and personalized paradigm. Driven by breakthroughs in nanotechnology, biochemistry, and semiconductors, these innovations enable early disease detection, preclinical tracking, and automated real-time intervention. Technologies like continuous glucose monitors and point-of-care genomics bring laboratory-grade molecular analysis directly to patients, optimizing management for critical conditions like heart failure, cancer, and sepsis. This shift is vital for aging populations, providing minimally invasive, continuous monitoring that preserves independence and quality of life. In this session, leading health sciences experts from academia and industry will discuss how these emerging platforms transform clinical decision-making and delivery, outlining a future where healthcare is accessible, cost-effective, and highly personalized.

Reimaging Mental Healthcare in the Age of AI

The global mental health crisis demands solutions beyond traditional, resource-constrained clinical models. As artificial intelligence evolves from a theoretical tool into an active catalyst for psychiatric care, it offers unprecedented scale, earlier intervention, and highly personalized support. This session brings together pioneering clinical leaders, AI entrepreneurs, and digital builders to explore how emerging platforms can leverage generative AI, validate tools for safety, and ethically deploy intelligent ecosystems that expand access without compromising human connection.

Riding the AI Tsunami | How Organizations Are Driving Cultural Change

While many organizations are drowning in "pilot fatigue," leaders are now racing to outrun the AI tsunami through intentional enterprise acceleration. This panel explores the shift from fragmented experimentation to a unified strategy built on AI literacy and culture change. We will discuss how healthcare systems are moving beyond basic automation to drive systemic enablement—transforming workforce roles and operational structures. Join us to analyze the blueprints for scaling AI safely, ensuring that organizational culture evolves as fast as the technology to turn a disruptive wave into a sustainable engine for clinical and operational excellence.

The Darwin Factor | Survival & Synergy in the AI Ecosystem

The healthcare AI landscape is entering a "Darwinian" phase of evolution. This panel explores the shifting power dynamics between bespoke AI vendors and Big Tech giants (EHR providers and hyperscalers) who control the data and fine-tuned LLMs.

Beyond the low-hanging fruit of ambient documentation, we will identify the next wave of "early winners" – from autonomous coding to predictive clinical triaging. Most importantly, we will examine the Darwin Factor for patients: how this competition drives hyper-personalized care, reduces diagnostic errors, and ensures that the most adaptive, patient-centric solutions survive.

CLINICAL INNOVATION

Autism | Diagnosis & Treatment

Autism spectrum disorder and associated neurodevelopmental conditions represent a rapidly advancing frontier in clinical care, molecular medicine, and digital health. Long reliant on delayed behavioral assessments, the field is shifting toward early biological detection, targeted therapeutics, and dedicated capital deployment. Led by academic leadership in neuroimaging and autism research, this panel brings together biopharmaceutical executives, clinical strategists, venture investors, and ecosystem accelerators. The discussion examines how early biophysical markers, novel central nervous system therapies, and specialized venture funding are converging to improve outcomes across the lifespan.

Beyond the Blueprint | The Next Frontier of Precision Oncology

Cancer is a complex and heterogeneous disease that involves both tumor cell genetic alterations and changes in the responding microenvironment around cancers. The initial era of Precision Oncology was driven by the genetics of tumors, but emerging data has shown the importance of the plasticity of the cellular state of tumor cells driven by epigenetic changes that are influenced by the microenvironment.

In light of this complexity, Precision Oncology has evolved as the iterative process of uncovering as much detail about a patient's cancer as practical followed by devising therapeutic strategies by which it may be treated. This involves the addition of modalities that can target cell states and leverage the changes in the microenvironment that can overcome resistance to targeted and conventional cytotoxic therapies.

This panel will discuss the current state and practice of Precision Oncology as well as attendant opportunities and challenges. The roles of ADCs, Bi/Tri specifics, radiotherapeutics, immune system manipulation and other approaches will be described in isolation as well as in the adjuvant and neo adjuvant settings.

Building the Next Generation of MedTech Breakthroughs | A Conversation with CEOs on the Cutting Edge of Medical Devices

Breakthrough innovations are reshaping the future of healthcare, but turning bold ideas into successful medical technology companies requires navigating significant clinical, regulatory, commercial, and financing challenges. In this candid CEOs discussion, leaders from emerging Massachusetts-based MedTech companies will discuss their innovative technologies and share how they are advancing their transformative technologies, securing investment, generating clinical evidence, and bringing innovation to patients. Moderated by MassMEDIC President Brian Johnson, the conversation will showcase some of the best of the next generation of MedTech growth and innovation.

Dementia | Progress in Treatments for Severe Neurological Disease

The approvals of lecanemab in 2023 and donanemab in 2024 marked a major milestone in the treatment of Alzheimer's Disease. Specifically, the performance of these drugs in Randomized Controlled Trials validated these agents as disease modifying therapeutics in AD. Both drugs were initially approved as IV therapies. Since the initial approvals a second formulation of lecanemab has been approved for subcutaneous administration especially suitable for maintenance therapy. While the battle with AD is not over by any means, for the first time, it is reasonable to view dementia as a treatable disorder.

AMCs like Mass General Brigham are advancing along two paths: (1) refining the standards of care to optimize patient outcomes using these first generation products; and, (2) pursuing the development of new, more effective diagnostics and therapeutics for this devastating disease. This latter set of initiatives includes development of more potent MAB's with reduced side effects as well as drugs that will operate with novel mechanisms of action. This panel will discuss the current state of AD as well as directions and potential advancements that may be expected over the next decade.

How International Healthcare Leaders are Transforming Health Systems at Speed and Scale

Health systems around the world are navigating how to improve access, outcomes, workforce resilience, and sustainability while accelerating the adoption of innovations such as AI. This session brings together international healthcare leaders to share how they are driving transformation at speed and scale—from strategy and integration to digital innovation, research, workforce, and global collaboration. The conversation will explore the leadership decisions and system capabilities needed to translate innovation into sustainable, system-wide impact.

Immunology & Inflammation | Commercial Potential & Clinical Frontiers

Driven by multi-billion-dollar successes like Dupixent, Skyrizi, and Keytruda, the Immunology & Inflammation (I&I) pipeline is rapidly expanding. This panel explores five key areas shaping the field: allergies, autoimmunity, immune deficiencies, immunometabolism/aging, and AI-driven personalized medicine. Join industry experts as they evaluate current therapeutic breakthroughs, high-value opportunities, and the market trajectory for the next decade.

Innovation Before Disease | The Next Frontier in Metabolic Health

GLP-1 therapies have transformed obesity care and brought metabolic health to the center of medical innovation. Yet medication alone cannot address the upstream biological, environmental, and food-system conditions that drive metabolic dysfunction. This panel examines the next frontier: preserving metabolic health before disease develops.

The discussion brings together clinical leadership, food-industry transformation, and venture investment. Panelists will explore how advances in metabolic science can be translated into practical, commercially viable solutions—and how healthcare systems, companies, innovators, and investors can work together to redesign the environments that shape human health.

The session moves from cellular biology to population health at business scale, using the Metabolic Matrix as one example of upstream innovation: a science-based framework for re-engineering food products to feed the gut, protect the liver, and support the brain. The goal is not to diminish treatment, but to complement it with prevention capable of reaching mainstream populations.

Investing in High-Impact Drug Leads in the AI Era

This session brings together investors, biotech innovators and academic physician-scientists to examine how AI models translate complex chemical mixtures -- including those found in nature -- into drug leads and how the industry investment approaches are changing at all stages as the new technology advances. Investment strategies and emerging applications with implications for novel next-generation drug discovery platforms will be the focus.

New Approaches to Developing I&I Therapies | Solving the Unmet Need

The Inflammation and Immunology (I&I) landscape is shifting toward precise, tissue-specific and cell-targeting platforms to address large unmet needs that remain in chronic autoimmune diseases. This panel features leading biotech executives and an early-stage investor moderator discussing next-generation company creation and new approaches to I&I drug development.

Panelists will share insights on targeted interventions within cellular signaling cascades and responses, the pursuit of specific cell populations and strategies for translating experimental concepts into clinic-ready candidates. Together, these experts will outline how shifting away from broad immunosuppression toward precise molecular targeting will define the future of transformative, personalized patient care for I&I diseases.

Beyond the First Wave | Reimagining Cell & Gene Therapies for the Next Generation

The first generation of cell and gene therapies proved that genetic diseases can be treated—and in some cases cured—ushering in a new era of precision medicine. As these landmark therapies have entered clinical practice, they have also revealed important challenges, including complex autologous manufacturing, limitations of viral vector delivery, durability of response, and the need for broader patient access and affordability.

Today, the field is undergoing a profound transformation. Advances in in vivo gene editing, programmable cell engineering, non-viral delivery platforms, and next-generation vector technologies are redefining what is possible, enabling therapies that are safer, more scalable, more durable, and applicable to far larger patient populations.

This panel brings together internationally recognized clinician-scientists, biotechnology leaders, and innovators who have helped shape the first generation of cell and gene therapies and are now driving the next. Through the lens of hematologic, neurodegenerative, and rare genetic diseases, panelists will explore how emerging technologies are overcoming the limitations of current approaches and accelerating the transition toward broadly accessible, precision genetic medicines.

Seeing the Unseen | Breakthroughs in Back-of-the-Eye Therapies

Retinal diseases represent some of the most complex challenges in ophthalmology, long constrained by target delivery barriers and intricate genetic drivers. Today, breakthroughs across viral vector gene therapies, encapsulated cell technology, and genomics-driven target discovery are transforming care for both rare inherited retinal dystrophies and common degenerative conditions.

Led by academic ophthalmology leadership, this panel brings together biotech CEOs and pioneering clinician-scientists to examine how advanced delivery vehicles, genomic patient stratification, and translational clinical trials are accelerating durable, vision-restoring therapies from the lab to the clinic.

Silencing the Disease Code | The Next Frontier of RNAi Therapeutics

RNA interference (RNAi) has evolved from a Nobel Prize-winning biological discovery into a precise, validated therapeutic modality capable of silencing disease-causing genes at their source. While first-generation RNAi medicines established proof-of-concept by targeting liver-expressed proteins, the field is currently undergoing a massive leap forward. Breakthroughs in tissue-specific ligand conjugation, optimized siRNA chemical design, and novel delivery architectures are opening up previously undruggable targets across extrahepatic tissues, including the central nervous system, lungs, skin, and tumor microenvironments.

This panel brings together biotech pioneers, nucleic acid chemists, and life sciences financial strategists to examine how advances in gene-silencing chemistry, targeted tissue delivery, and creative capital deployment are expanding the therapeutic reach of RNAi across human disease.

Treatment Possibilities in Fibrotic Diseases

Fibrotic diseases collectively account for nearly 45% of deaths in the developed world. Rooted in a dysfunctional wound-healing response to injury or inflammation, fibrosis is characterized by excessive collagen deposition that leads to irreversible scarring. Whether affecting the skin, lungs, liver, kidneys, or heart, these progressive conditions represent a massive unmet clinical need. Recent breakthroughs in deconvoluting disease pathways have confirmed that fibrosis is targetable, leading to earlier detection and the development of drugs that slow progression.

This panel will examine fibrotic diseases across various organ systems and explore the trajectory of innovation over the next two decades. Experts will discuss the current therapeutic landscape and provide perspectives on a "holy grail" of regenerative medicine: the possibility of developing a single, pan-fibrotic drug capable of treating fibrosis in multiple organs simultaneously.



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What science can do

Cardiovascular, renal and metabolic diseases

CVRM diseases such as heart failure, cardiovascular disease, diabetes and chronic kidney disease share common and distinct mechanisms. AstraZeneca is researching the interplay and potential causal relationship between these diseases with the aim of improving outcomes in patients with one specific diagnosis before co-morbidities emerge.





World Medical Innovation Forum 2026

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A special thanks to the Planning Committee and Event Team for their unwavering commitment over the last 18 months to produce the 2026 World Medical Innovation Forum.

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First Look

The Next Wave of Breakthroughs in Healthcare

Top Mass General Brigham Harvard faculty will present 8-minute “First Look” pitches on their market-ready, breakthrough technologies.

With cash prizes for the best market-focused presentations, this Forum element showcases the high impact commercial potential of the cutting edge work of some of Harvard’s most successful innovators.

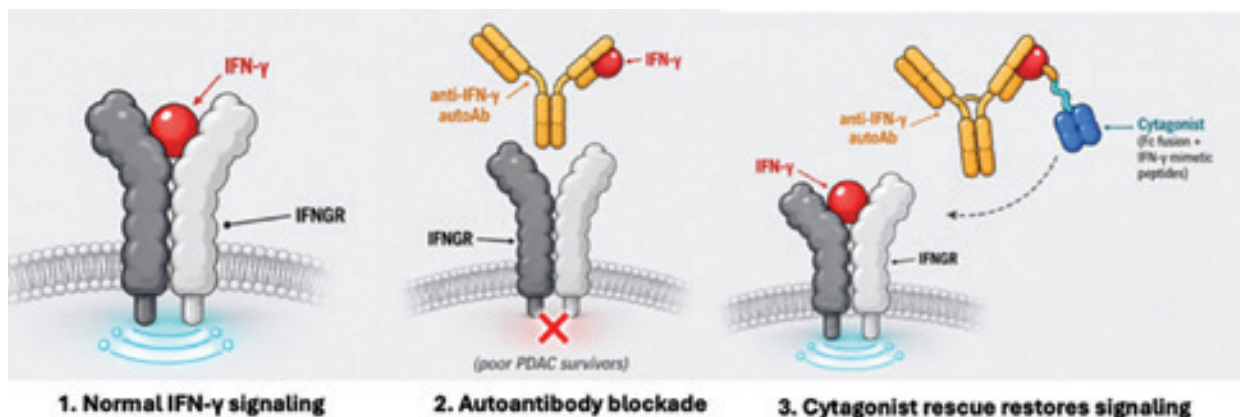


Figure 1. Cytagonists selectively sequester pathogenic anti-IFN- γ autoantibodies, freeing endogenous IFN- γ to engage its receptor and restore anti-tumor immune signaling.

Cytagonists: Restoring Immune Function by Neutralizing Disease-Promoting Autoantibodies



Lloyd Bod, PhD

Principal Investigator, Mass General Brigham Cancer Institute



Pancreatic ductal adenocarcinoma (PDAC) remains one of the deadliest malignancies, with limited treatment options and poor long-term survival. Although immune signaling is essential for controlling tumor growth, the mechanisms that disable these protective responses in patients remain incompletely understood.

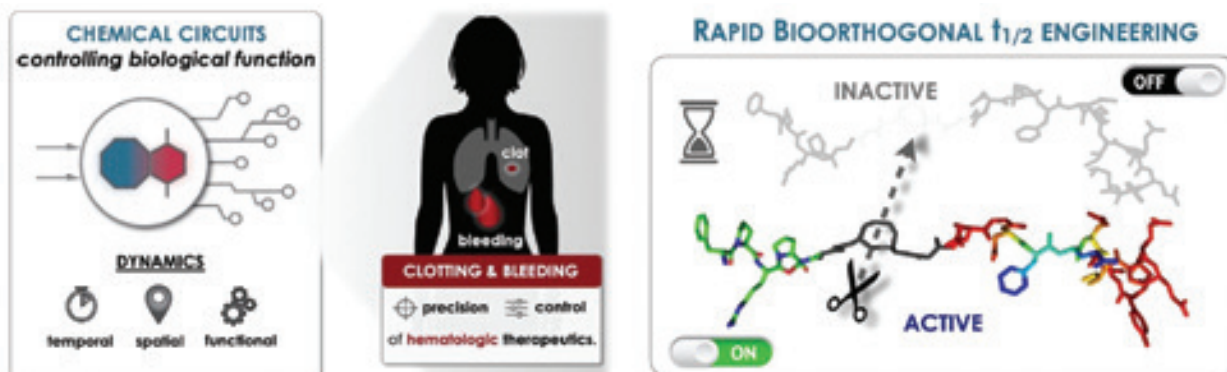
We discovered that approximately 50% of patients with poor-outcome PDAC have elevated autoantibodies against interferon- γ (IFN- γ), a cytokine that is central to anti-tumor immunity. These autoantibodies directly neutralize IFN- γ , suppressing downstream immune signaling and allowing tumors to escape immune control. This finding identifies disease-promoting autoantibodies as a previously underappreciated mechanism of immune dysfunction and a new therapeutic vulnerability in pancreatic cancer.

To address this challenge, we developed Cytagonists, a first-in-class platform of engineered receptor-mimetic peptides designed to selectively bind and neutralize pathogenic autoantibodies. Cytagonists reproduce key molecular surfaces of cytokine receptors, acting as decoys for harmful antibodies while preserving the activity of the endogenous cytokine. Unlike conventional strategies that replace cytokines, broadly suppress antibodies, or deplete immune cells, Cytagonists remove a specific barrier to immunity and allow the patient's natural immune signaling to function as intended (Figure 1).

In preclinical studies, our lead IFN- γ Cytagonists neutralized patient-derived autoantibodies, restored IFN- γ signaling, and re-established IFN- γ -mediated suppression of tumor growth. These findings provide proof of concept for a fundamentally new therapeutic strategy: directly targeting disease-driving autoantibodies to restore protective immune function.

Beyond IFN- γ , we have identified three additional autoantibody targets in PDAC and are developing Cytagonists to address additional patient populations. Because the platform is modular, Cytagonists can be rapidly engineered against other pathogenic autoantibodies that disrupt essential signaling pathways. This creates opportunities not only in cancer, but also in autoimmune, inflammatory, and infectious diseases.

Cytagonists represent a differentiated and scalable therapeutic platform for diseases in which harmful autoantibodies drive pathology. Our initial anti-IFN- γ PDAC indication alone could address approximately 30,000 newly diagnosed U.S. patients annually, representing a potential multibillion-dollar opportunity. We are seeking strategic and investment partners to advance lead optimization, translational development, and expansion of the platform into additional indications.



Programmable Anticoagulants: Mitigating Systemic Risk through Spatial Control



Jonathan Carlson, MD, PhD

Director of Chemistry, Center for Systems Biology, Mass General Brigham
carlson.jonathan@mgh.harvard.edu



Despite decades of effort, medications that modulate coagulation to prevent/treat blood clots invariably increase the risk of bleeding. Intensifying the challenge, patients face life-threatening scenarios in which clotting and bleeding are simultaneous hazards every day, especially in the setting of trauma, cardiac surgery, and critical illness. This creates irreconcilable dilemmas in which anticoagulation (AC) is acutely necessary in one anatomic territory – at the site of a pulmonary embolism, or in the blood flowing through advanced life support devices – and actively harmful in another – at the site of traumatic injury, surgery, or other life-threatening spontaneous bleeding.

Given the rapid, continuous recirculation of the bloodstream, anticoagulation treatment has always been inherently systemic; doses can be carefully titrated, and treatments held, restarted, or reversed, but a binary choice to treat the whole patient is ultimately required. For unstable patients, the pace of evolving illness can outstrip clinicians' ability to reevaluate risk or adjust dosing. No existing technology delivers locoregional therapeutic anticoagulation.

To address this need, we have devised versatile new chemical tools for biomolecular ON/OFF control, leveraging next-generation biocompatible, bioorthogonal chemistries to assemble/disassemble molecules on demand. Applied to anticoagulation, we can reengineer existing clinical anticoagulants so that their half-lives are governed by calibrated disintegration of the molecular backbone itself, rather than physiologic pharmacokinetics. This mechanism restricts drug activity to the intravascular distance the molecule travels during its programmed lifetime. The chemistry enables anticoagulants with a customized range of lifetimes, matched to specific clinical scenarios where spatiotemporal control is needed: a new paradigm for cardiothoracic surgery, critical illness, and advanced life support, offering a safer strategy for high-risk patients facing concomitant bleeding and clotting.

This novel platform is built on a modular chemistry, not a single molecule – the same ON/OFF backbone architecture is, in principle, adaptable across several existing anticoagulant classes and to other drug categories where spatial or temporal confinement of activity would reduce toxicity. With significant clinical need and no existing locoregional alternative on the market, we see a clear path to partnership across cardiac surgery, critical care, and other settings where a safer anticoagulation strategy could reduce both bleeding complications and their associated costs.



DHR-causing T cell clones in skin/blood.

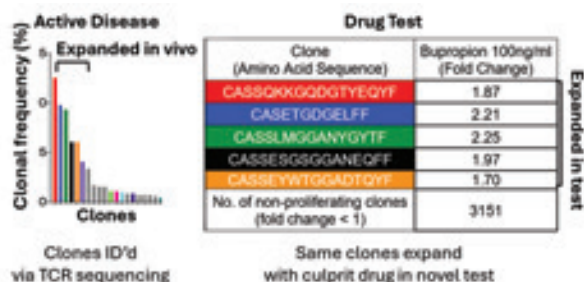


Figure 1. Skin and blood in DHR patients contain expanded drug-reactive clonal T cells that express unique and highly specific T cell receptors (TCR). Reactivation of drug-reactive clones are detectable via TCR sequencing in a novel assay, confirming drug culpability.

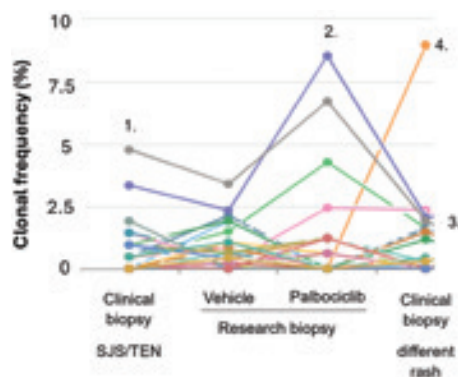


Figure 2. SJS/TEN test subject. (1) Clinical biopsy taken at start of disease demonstrated two disease causing clones (gray & purple). (2) Research sample shows expansion of those two clones with presumed culprit drug, confirming drug reactivity. (3) Treatment with alternative chemotherapy weeks later caused a new rash. Clinical biopsy shows that the original drug reactive clones remain in skin but are not mediating the second drug reaction. (4) Instead, clinical biopsy showed an unrelated clone (orange) mediating that separate reaction. These results demonstrate the power of TCR sequencing to identify drug culpability.

Keeping Patients on Their Meds: A Diagnostic Test to Identify Culprit Drug in Drug Hypersensitivity Reactions

Sherrie Divito, MD, PhD

Physician-Scientist, Mass General Brigham
sdivito@bwh.harvard.edu



Drug hypersensitivity reactions (DHR) are a cause of significant morbidity, mortality and cost to the healthcare system. Reactions range in severity from mild rash to life-threatening sloughing of the skin and mucosa along with systemic involvement. Reactions are common and unpredictable. They affect both sexes, all ages, and all races/ethnicities, and they can occur to any drug in any field of medicine. Cancer patients are especially prone as traditional chemotherapy, targeted drugs, and immune-checkpoint inhibitors can cause DHR, and cellular therapies can induce clinically indistinguishable reactions. Moreover, patients are frequently on multiple potential culprit drugs when a reaction occurs, further complicating the problem.

A major limitation in clinical care is the lack of a reliable test to identify culprit drug. Consequently, all potential culprit treatments are stopped, even if no other effective therapy exists. Developing a test to identify culprit drug would completely shift clinical care by preventing reactions and allowing patients to safely continue efficacious medications.

Building on data from mouse models and human patients, our team recognized that the majority of DHR cases exhibit expansion of one to a few T cell clones during active disease. We developed a novel method to identify culprit drug by harnessing T cell receptor sequencing, a highly sensitive and specific modality, as a read-out for drug culpability testing. Pivotal testing has been performed successfully on real patients, with positive confirmatory secondary assays. Studies span multiple sequencing platforms, providing further confidence in results.

Our findings support that this novel diagnostic could allow patients to avoid dangerous drugs while continuing safe efficacious treatments. This work was awarded the 2024 Bright Futures Prize, an internationally voted-on award for innovation. IP protection is underway with full patent pending. We have not identified competing tests addressing DHR, and importantly, there is a clear and readily available regulatory pathway. Analysis of CPT benchmarks indicates favorable payment rates.

In summary, DHR represents a large and underserved clinical need, our preliminary data support feasibility, and the diagnostic has a clear path to commercialization. We are seeking partners to advance this technology.

Targeted Reticulase-Assisted Continuous Evolution



Figure 1. TRACE integrates targeted diversification with continuous selection to accelerate biologic optimization. Focused sequence variation at user-defined protein positions is coupled to phage-based selection, so beneficial variants gain a propagation advantage and rapidly dominate the population.

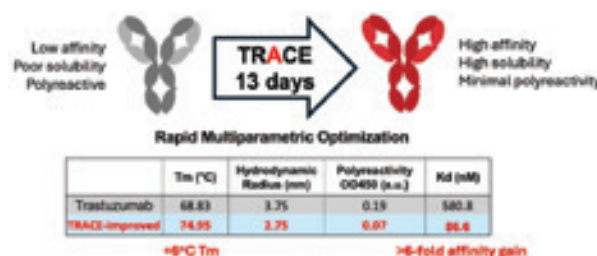


Figure 2. TRACE enables rapid multiparametric optimization of a clinically relevant antibody. A trastuzumab-derived single-chain antibody gained greater than six-fold affinity together with increased thermal stability, reduced polyreactivity, and a decreased hydrodynamic radius, improving both affinity and developability in one 13-day campaign.

TRACE: Compressing Optimization of Biologics from Years to Weeks



Gaurav Gaiha, MD, DPhil

Associate Professor, Ragon Institute of MGB, MIT and Harvard
ggaiha@mgh.harvard.edu



Protein biologics have transformed our ability to treat and cure disease, but turning a promising molecule into a clinical candidate remains slow and labor-intensive. Conventional optimization campaigns cycle through library construction, protein production, screening, clonal isolation, and biophysical characterization, collectively taking months to years. Meanwhile, artificial intelligence (AI) can now nominate beneficial mutations far faster than any laboratory can build and test them. The bottleneck has moved from design to experiment.

To address this bottleneck, we developed Targeted Reticulase-Assisted Continuous Evolution (TRACE), a synthetic biology platform that uses a unique combination of molecular components to precisely diversify user-defined positions within therapeutic proteins while continuously selecting for improved fitness. TRACE embeds programmable, focused sequence variation within phage-based selection circuits that confer a propagation advantage on fitter variants, thereby rapidly driving the targeted enhancement of therapeutic proteins.

We validated TRACE using trastuzumab, a clinically approved HER2-targeting antibody. TRACE achieved targeted affinity maturation against HER2 in fewer than four days. A parallelized, two-round campaign then produced a single-chain trastuzumab variant with greater than six-fold higher affinity (dissociation constant reduced from 580.8 to 86.6 nM), a melting temperature more than 6°C higher, roughly three-fold lower polyreactivity – the off-target stickiness that derails many antibodies in development – and a smaller hydrodynamic radius (3.75 to 2.75 nm), all within 13 days. Thus, TRACE was able to rapidly improve affinity and developability in a single campaign.

We are now applying TRACE across antibody and soluble T cell receptor therapeutics to advance development-ready leads. TRACE is exceptionally well-positioned to capture the value of protein AI: it converts computationally nominated residue positions into focused libraries and rapidly determines which designs actually succeed. We envision compressing biologic optimization from months or years into weeks, which will change both the cost and the risk profile of the programs that leverage the technology. We are seeking partners to deploy TRACE across therapeutic development programs and to co-develop lead candidates.

MR Probe for Fibrogenesis Visualization: A New Tool for Fibrosis Diagnosis and Drug Development

Eric Gale, PhD

Associate Professor, Mass General Brigham
emgale@mgh.harvard.edu



Fibrosis is a common driver of progressive organ failure in chronic liver and kidney disease, yet its diagnosis and staging still rely heavily on invasive tissue biopsy, an approach that is costly, carries risk, and is poorly suited to routine monitoring. Molecular magnetic resonance (MR) imaging offers a non-invasive alternative but faces a fundamental challenge: distinguishing genuine disease signal from the nonspecific background of probe simply passing through tissue. This challenge is greatest in the kidney and liver, where probes concentrate nonspecifically en route to elimination, forcing reliance on delayed imaging protocols that constrain clinical throughput and slow diagnostic turnaround.

We developed a magnetic resonance probe, Fe-IAFP2, engineered to decouple disease-specific signal from nonspecific probe distribution using three complementary activation mechanisms. Fe-IAFP2 is injected and distributed through normal tissues but remains in a state that is not visible to the MRI scanner. In inflammatory, fibrogenic microenvironments common across many fibrotic diseases, rapid oxidation of Fe-IAFP2 activates MR signal enhancement, while reversible binding to remodeled extracellular matrix further amplifies that signal and retains the probe at the site of injury. Together, this activation-and-retention design produces robust, disease-specific signal within minutes of injection, removing the need for delayed imaging entirely.

In mouse models of renal and hepatic fibrogenesis, Fe-IAFP2 enabled rapid, selective visualization of active fibrotic remodeling immediately after intravenous administration, distinguishing disease activity from background with a clarity that outperforms existing molecular probes reliant on delayed-imaging workarounds.

Providing robust MR signal response that is specific to fibrogenic activity, rather than fibrosis itself, offers a non-invasive means to detect the presence of often irreversible organ scarring before clinical signs emerge, enabling more precise treatment titration. Importantly, this technology also offers an early, non-invasive readout assessing the efficacy of anti-fibrotic treatments, something with the potential to profoundly impact clinical trials focused on treating chronic diseases of the liver and other organ systems.

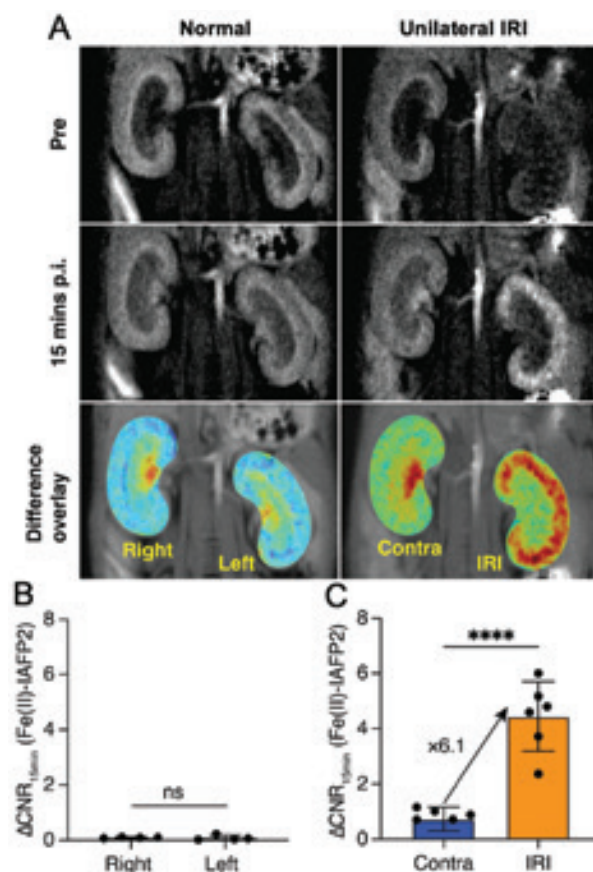


Figure 1. In vivo MR imaging of renal fibrogenesis in the unilateral IRI mouse model. (A) Representative T1-weighted MR images acquired before and 15 mins post probe injection using Fe-IAFP2 in normal mice and mice receiving unilateral ischemic reperfusion injury (IRI) to the kidney on the right-hand side of the image. Subtraction maps (post-pre) highlight the signal difference in the fibrotic IRI kidney (orange arrow) relative to the contralateral side (blue arrow). (B,C) Quantification of kidney-to-muscle contrast-to-noise ratio (ΔCNR) at 15 min post-injection for contralateral and IRI kidneys following administration of Fe-IAFP2 in normal mice (B) and mice receiving unilateral IRI (C). Statistical significance was determined using an unpaired two-tailed Student's t-test ($p < 0.05$, **** $p < 0.0001$; ns, not significant). Data are presented as mean $\pm$ SD

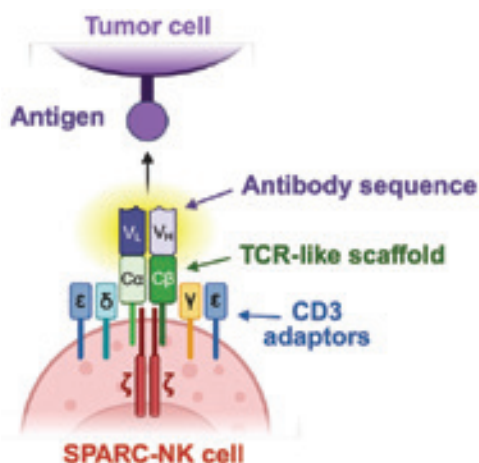


Figure 1. Schematic of the synthetic programmable antigen receptor complex (SPARC) engineered into natural killer (NK) cells. An antibody-derived binding domain is coupled to a T-cell receptor-like scaffold with CD3 adaptors.

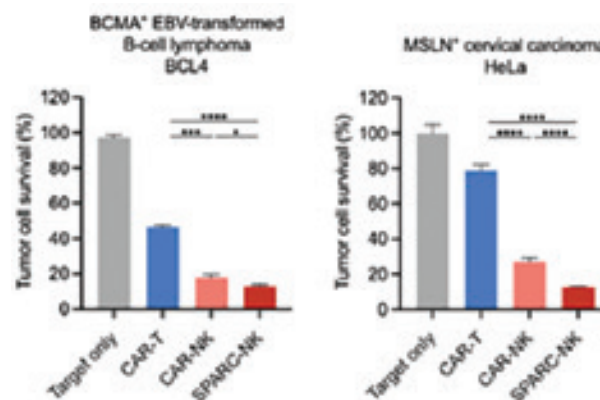


Figure 2. Survival of BCMA+ lymphoma cells and MSLN^{low} cervical carcinoma cells after co-culture with antigen-matched CAR-T, CAR-NK, or SPARC-NK cells at a 1:1 effector-to-target ratio (t = 8 h and 16 h, respectively). Survival was measured by flow cytometry and normalized to target-only controls. SPARC-NK cells left the lowest tumor cell survival in both models.

Engineering SPARC-NK: A Next-Generation “Off-the-Shelf” Cell Therapy Platform for Blood Cancers and Solid Tumors



Wilfredo Garcia Beltran, MD, PhD

Principal Investigator, Ragon Institute of MGB, MIT and Harvard
wgarcibeltran@mgh.harvard.edu



Chimeric antigen receptor (CAR)-T cells have demonstrated remarkable clinical efficacy against blood cancers, but each dose must be manufactured from an individual patient's own cells — a personalized process that is slow, costly, and reaches only a subset of eligible patients. CARs also require their target antigen to be present at high density on the tumor surface, which limits their efficacy against solid tumors and cancers expressing the target at low or uneven levels.

Genetically engineered natural killer (NK) cells have emerged as a promising allogeneic alternative: they are innately cytotoxic, carry a favorable safety profile, and can be sourced from cord blood, adult donors, or established lines and manufactured in advance as an “off-the-shelf” product. However, current CAR-NK therapies borrow receptors designed for T cells. T-cell receptors (TCRs) evolved to detect antigen with far greater sensitivity, amplifying weak signals through the CD3 signaling complex. To capture that machinery, we engineered NK-92 cells to express a synthetic programmable antigen receptor complex (SPARC): a TCR-like signaling scaffold with CD3 adaptors that accepts any known antibody variable sequence, combining the targeting flexibility of an antibody with the sensitivity of a TCR.

SPARC-NK cells targeting B-cell maturation antigen (BCMA) killed BCMA+ lymphoma cells more effectively than clinically validated anti-BCMA CAR-T cells carrying identical variable regions. In solid tumor models, SPARC-NK cells targeting mesothelin (MSLN) outperformed both matched CAR-NK and CAR-T cells, with the largest margin against tumor cells expressing MSLN at low density, where conventional CARs lose potency.

These results establish SPARC as a new modality for cellular therapy beyond conventional CAR paradigms, combining the modularity of antibody-based recognition, the sensitivity of the TCR, and the safety and scalability advantages of NK cells in a single platform. Because the antibody-binding region is interchangeable, each new target becomes a new program on the same manufacturing backbone. We are seeking translational funding and strategic partnerships to support preclinical development and clinical translation.

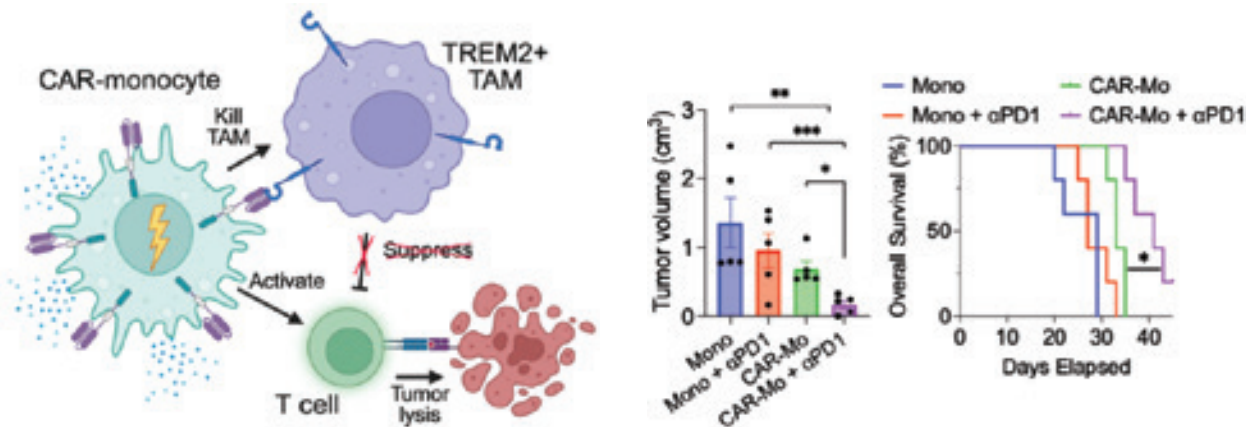


Figure 1. TREM2-CAR-monocytes destroy immunosuppressive TREM2-expressing tumor associated macrophages to drive T cell activity and tumor suppression, reducing tumor size and extending survival in a syngeneic triple-negative breast cancer model.

Trojan Horses: A First-in-Class CAR-Monocyte Cell Therapy Targeting Immunosuppressive Macrophages to Treat Checkpoint-Resistant Cancer

Jennifer Guerriero, PhD

Assistant Professor, Mass General Brigham
jguerriero@bwh.harvard.edu

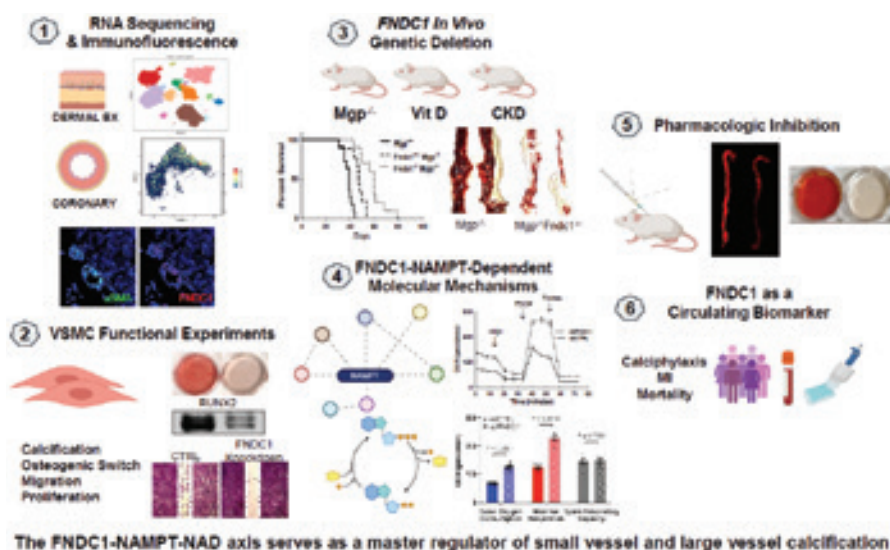


Immune checkpoint blockade (ICB) has reshaped cancer treatment, but benefit is limited to a minority of patients with solid tumors. A central driver of incomplete responses is the tumor microenvironment, where tumor-associated macrophages (TAMs) enforce an immunosuppressive state that disarms the very T cells on which ICB acts. TAMs comprise up to half of all cells present in many solid tumors, and immunosuppressive TAM signatures strongly correlate with poor outcomes across treatment modalities. There are currently no FDA-approved therapies that target TAMs.

To address this gap, we are developing TREM2-CAR-Mo, a first-in-class chimeric antigen receptor monocyte (CAR-Mo) therapy that selectively eliminates the TREM2-expressing TAM population driving this suppression. TREM2 is a receptor strongly and specifically enriched on immunosuppressive TAMs across solid tumor indications and largely absent from healthy peripheral tissue. Monocytes are our Trojan horse: where T cells are limited by inefficient trafficking to and persistence within solid tumors, monocytes efficiently home to tumors, navigate physical barriers, and differentiate into persisting macrophages, right where the CARs are needed.

Both murine and human TREM2-CAR-Mo selectively phagocytose TREM2+ macrophages in vitro and produce pro-inflammatory cytokines upon TREM2 engagement. In immunocompetent, orthotopic breast tumor models, TREM2-CAR-Mo significantly reduced tumor growth by 50% and increased intratumoral T cell accumulation. Critically, combining TREM2-CAR-Mo with PD-1 immune checkpoint blockade further enhances anti-tumor responses and significantly improves overall survival, turning a cold, myeloid-dominated tumor into one responsive to checkpoint blockade.

We are advancing TREM2-CAR-Mo toward the clinic with a previously validated adenoviral manufacturing platform. We have selected triple-negative breast cancer as our lead indication given high levels of immunosuppressive macrophage infiltration and limited immunotherapy responses, representing a significant unmet need for patients with advanced disease. As TREM2+ TAMs are found across nearly all human solid tumors, this human-validated target positions the platform to expand well beyond the first indication. We are seeking strategic partners and investors to accelerate TREM2-CAR-Mo toward IND-enabling studies.



The FNDC1-NAMPT-NAD⁺ Axis: A First-in-Class Target for Vascular Calcification

Rajeev Malhotra, MD

Associate Professor, Mass General Brigham
rmalhotra@mgh.harvard.edu



Vascular calcification is a major unmet medical need that drives myocardial infarction, stroke, peripheral artery disease, chronic kidney disease, and the rarer, more severe calciphylaxis, yet there are no approved therapies that directly inhibit the underlying calcification process. We identified fibronectin type III domain-containing 1 (FNDC1) as a previously unrecognized master regulator of vascular calcification and a compelling therapeutic target with broad translational potential. Our strategy offers a first-in-class approach targeting a fundamental driver of vascular disease rather than downstream calcium deposition, offering a novel mechanism to modify disease progression.

Integrative transcriptomic and proteomic profiling of human calciphylaxis lesions and atherosclerotic coronary arteries identified FNDC1 as one of the most significantly upregulated molecules across both microvascular and macrovascular calcific disease. Functional studies in primary human vascular smooth muscle cells demonstrated that FNDC1 drives osteogenic phenotypic switching, proliferation, migration, and matrix mineralization. Mechanistically, FNDC1 induces nicotinamide phosphoribosyltransferase (NAMPT), the rate-limiting enzyme of the NAD⁺ salvage pathway, resulting in increased intracellular NAD⁺ biosynthesis and metabolic reprogramming that supports osteogenic differentiation. Importantly, pharmacologic inhibition of NAMPT abolished FNDC1-mediated calcification, establishing the FNDC1–NAMPT–NAD⁺ axis as a druggable pathway.

In three complementary murine models of vascular calcification, including chronic kidney disease-associated calcification, genetic deletion of FNDC1 markedly reduced arterial calcification and improved survival, while NAMPT inhibition phenocopied these protective effects. Additionally, plasma FNDC1 concentrations were significantly elevated in calciphylaxis and coronary artery disease, and independently predicted coronary artery calcification burden, adverse cardiovascular events, and mortality in 42,687 UK Biobank participants, demonstrating the strong utility of FNDC1 as a clinical biomarker.

Collectively, these findings establish FNDC1 as a central regulator of vascular calcification and nominate FNDC1 inhibition as a first-in-class therapeutic strategy with the potential to transform the treatment of calcific cardiovascular diseases while simultaneously enabling biomarker-guided precision medicine.

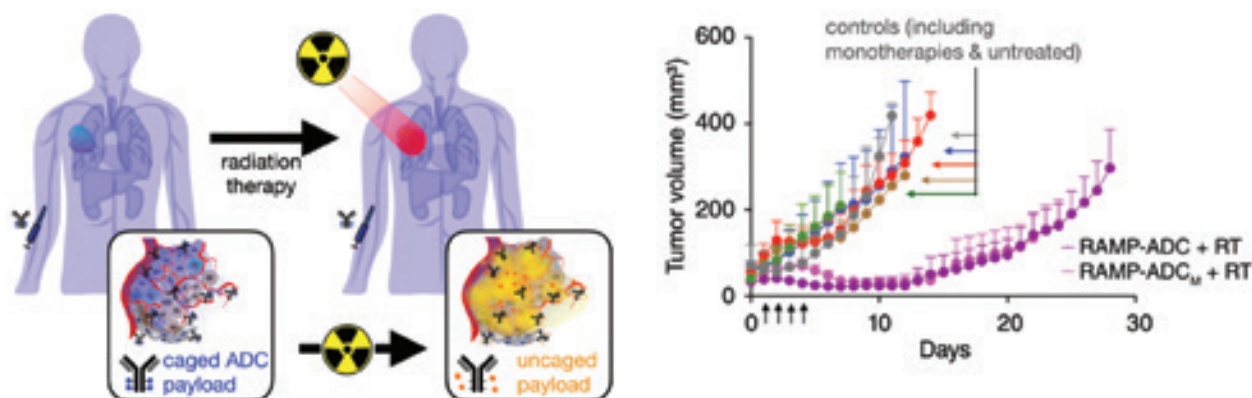


Figure 1. Using clinical radiation treatments to locally uncage therapeutics in tumors. Left: A radiation-AMPlified antibody drug conjugate (RAMP-ADC) carries a stably caged cytotoxic payload (blue) to the tumor following systemic administration. Local tumor irradiation uncages and releases an active ADC payload (yellow) from the antibody. Right: Example of RAMP-ADC combining with radiation to delay tumor growth in a radioresistant xenograft model.

Radiation-AMPlified (RAMP) Medicines: Making Radiotherapy a Precision Drug-Activation Switch



Miles Miller, PhD

Associate Professor, Mass General Brigham
miles.miller@mgh.harvard.edu



Cancer patients commonly receive radiotherapy, but many tumors are resistant, and combining radiation with systemic chemotherapy intensifies toxicities. Antibody-drug conjugates and other targeted therapies similarly expose normal tissues to potent and potentially toxic payloads. A treatment that preferentially confines drug activity to irradiated tumors could widen the therapeutic window while improving local control.

RAMP (Radiation AMPlified) is a modular prodrug platform that uses standard X-ray or proton radiation, or targeted radiopharmaceuticals, as spatially precise drug-activation switches. A systemically administered, long-circulating conjugate carries an inactive payload that is chemically uncaged selectively within the radiation field. The platform is modular across drug delivery vehicles (e.g. antibodies), cytotoxic and immunomodulatory payloads, and standard antibody-drug conjugate (ADC) manufacturing. This approach does not depend on variable tumor biology such as pH or protease expression, unlike existing tumor-activated prodrug strategies. Extended circulation aligns with fractionated radiotherapy, allowing one infusion to support activation across multiple treatment days.

Preclinical studies testing two constructs, a long-circulating albumin-conjugate or an antibody-drug conjugate (RAMP-ADC), demonstrated the efficacy of this approach. When combined with radiation, tested RAMP medicines increased cytotoxic potency up to 2,100-fold, improved tumor-payload selectivity >500-fold, delayed tumor growth, and extended humane survival. Additional studies demonstrated activation with low-dose X-ray radiotherapy and markedly greater tolerated payload exposure than achievable with a conventional protease-cleavable linker.

Initial clinical applications are expected to target locally recurrent or oligoprogressive cancers already treated with radiation as part of standard of care, including head and neck, colorectal, and pancreatic cancers. Lead development is focusing on complementary formats: long-circulating albumin-bound cytotoxins that exploit albumin-mediated tumor accumulation without requiring a tumor antigen, and tumor-targeted RAMP-ADCs using well-characterized oncology targets, established cytotoxic payload classes, and standard bioconjugation methods.

Targeting Reductive Stress: A New Therapeutic Axis in Rare and Common Disease



Vamsi Mootha, MD

Professor, Mass General Brigham

mootha.vamsi@mgh.harvard.edu



Mitochondria are found in virtually all of our body's cells and tend to power down in a variety of diseases, from rare, inborn errors of metabolism to diabetes and age-associated degenerative diseases, to aging itself. Yet we still have few ways of targeting mitochondrial dysfunction for therapeutic benefit.

While ATP deficiency is traditionally invoked as the key driver of pathology in these instances, our biomarker work points to NADH reductive stress as the most prominent disease signature. NADH is a ubiquitous electron carrier that conveys high-energy electrons from the food we eat to the mitochondrion for full oxidation. In states of mitochondrial dysfunction, the electrons build up and we see signs of "reductive stress" in our biomarker analysis. Indeed, we are observing biomarker evidence of reductive stress not only in ultra-rare mitochondrial diseases, but also in common conditions, notably the classical metabolic syndrome. We built tools to discern whether this reductive stress is simply a marker or a driver of organ pathology.

We have engineered new genetic (LbNOX) and protein (LOXCAT) tools with which to directly manipulate NADH reductive stress. In cellular and animal models, they dissipate the excess electrons to attenuate reductive stress, which results in alleviation of some components of mitochondrial pathology.

Ongoing work aims to determine whether targeting reductive stress with this toolkit is beneficial in animal models of more common conditions. Meanwhile, the biomarkers themselves offer a near-term path to patient stratification and pharmacodynamic readouts. We envision that with additional protein engineering, this suite of tools can be harnessed into gene therapies and injectable protein therapeutics to target disorders attributable to reductive stress, with ultra-rare mitochondrial disease as an orphan entry point and metabolic syndrome the far larger opportunity beyond. These technologies are currently preclinical; we are seeking partners to advance them toward IND-enabling studies.

Organs Should Wait for Patients: Creating the Organ Logistics Infrastructure of the Future



Korkut Uygun, PhD

Professor of Surgery, Mass General Brigham
kuygun@mgh.harvard.edu



More than 100,000 patients await transplantation in the United States, while less than 10% of global demand is met. This unmet need represents a global addressable market of more than \$100 Billion annually (Figure 1). Organ transplantation remains constrained by one fundamental limitation: time. Donor organs must reach recipients within hours, forcing emergency surgical logistics that increase costs and restrict allocation geographically. In tandem, this leads to discard of many transplantable organs and limits deployment of emerging therapies like xenotransplantation or engineered organs. Extending preservation would fundamentally transform organ allocation, utilization, and patient access (Figure 2).

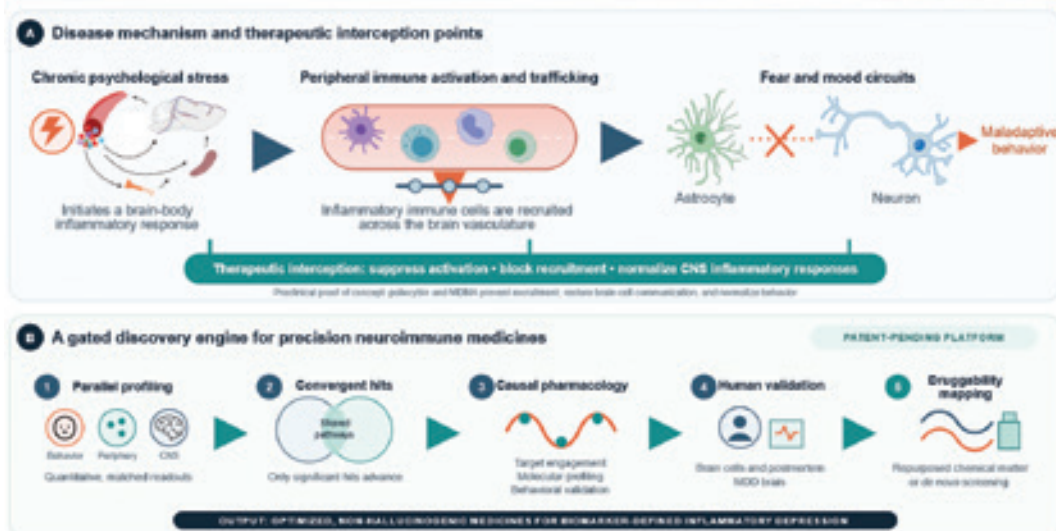
We have developed a platform cryopreservation technology that combines a novel perfusate formulation with precisely controlled subzero organ cooling to extend viable preservation from hours to days and weeks. Developed over more than a decade at Mass General Brigham via over \$56 million in competitive funding and protected by a broad MGB patent estate, this platform preserves organ viability while integrating into existing clinical ex vivo perfusion workflows for transplant. The technology has demonstrated successful preservation of large animal organs and declined human organs (Figure 3), creating a practical path toward clinical translation.

Unlike incremental preservation technologies, organ cryopreservation offers the operating system for the future of transplant logistics, where organs wait for patients. With time no longer the limiting factor, organ banking becomes possible, enabling deeper tissue matching, patient pre-conditioning, global organ exchange, scheduled surgery and access to bioengineered organs. Together, these capabilities enable a fundamentally more scalable and efficient transplant logistics infrastructure that can serve all patients in need of the gift of life.

We are in the process of new company formation, and are seeking investors and strategic partners to accelerate clinical translation and commercialization.



Intercept brain-immune signaling before inflammation remodels mood circuits



An Engine to Turn Brain-Immune Communication into New Medicines for Depression



Michael Wheeler, PhD

Rappaport Research Scholar, Mass General Brigham
mwheeler0@bwh.harvard.edu



Depression, anxiety, and other stress-related disorders are still treated as diseases of the neurons alone, despite persistent inflammation in many patients and poor durability of current therapies. My lab has revealed an actionable route: immune signals arising outside the CNS can be intercepted before they remodel circuits governing anxiety and mood, opening a new class of drug targets.

We discovered that chronic stress in a mouse model recruits inflammatory immune cells to the brain, where they disrupt astrocyte-neuron communication in the brain's fear center and drive maladaptive fear behavior. Removing these cells, blocking their recruitment, or perturbing inflammatory brain cell responses restores molecular homeostasis and improves behavior. Translationally, the same programs are dysregulated in brain cells and postmortem brain from individuals with major depressive disorder, validating the axis both in mice and in human disease.

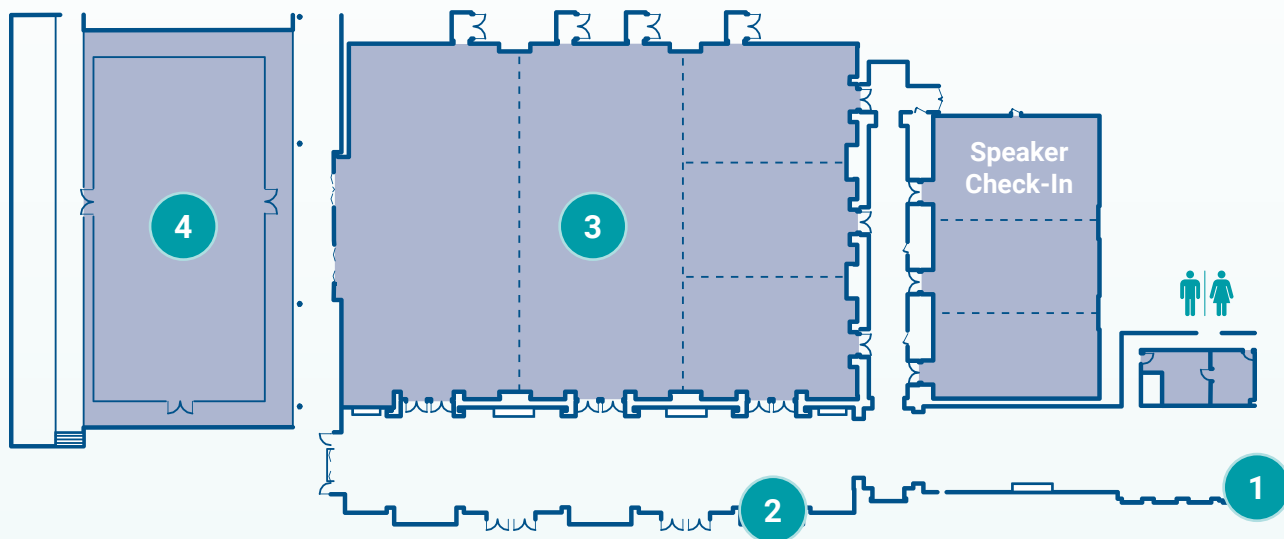
Psilocybin and MDMA – clinically relevant, plasticity-promoting psychedelics – gave unexpected proof of concept. Preclinically, both act through immune and vascular mechanisms to prevent inflammatory immune cell recruitment, restore normal brain cell communication, and normalize behavior, suggesting their key therapeutic effects can be reproduced by precision neuroimmune medicines lacking hallucinogenic activity.

We built a patent-pending discovery platform converting this brain-body biology into proprietary drug programs. It pairs quantitative behavioral models with parallel CNS and peripheral immune profiling to find pathways altered in both systems; only significant hits advance to pharmacological validation, molecular re-profiling, behavioral confirmation, and human tissue validation, so time and capital and go only towards demonstrated targets. It shows causally that blocking immune activation, akin to immunotherapy in autoimmune disease, limits behavioral dysfunction – a new model in which peripheral immunomodulation alters mood-disorder circuits.

The result is a capital-efficient discovery engine for biomarker-defined inflammatory depression, leveraging prior human pharmacology to de-risk early development, while novel immune-brain targets open de novo screening opportunities. Validated targets are mapped against the druggable universe to find chemical matter, including compounds already tested in humans: a rapid pipeline for target pharmacology, engagement, and therapeutic direction. Successful targets and chemotypes seed optimized compounds with independent composition-of-matter IP. We seek partners and investment to advance the first neuroimmune drug programs toward the clinic.

Map

Concourse Level



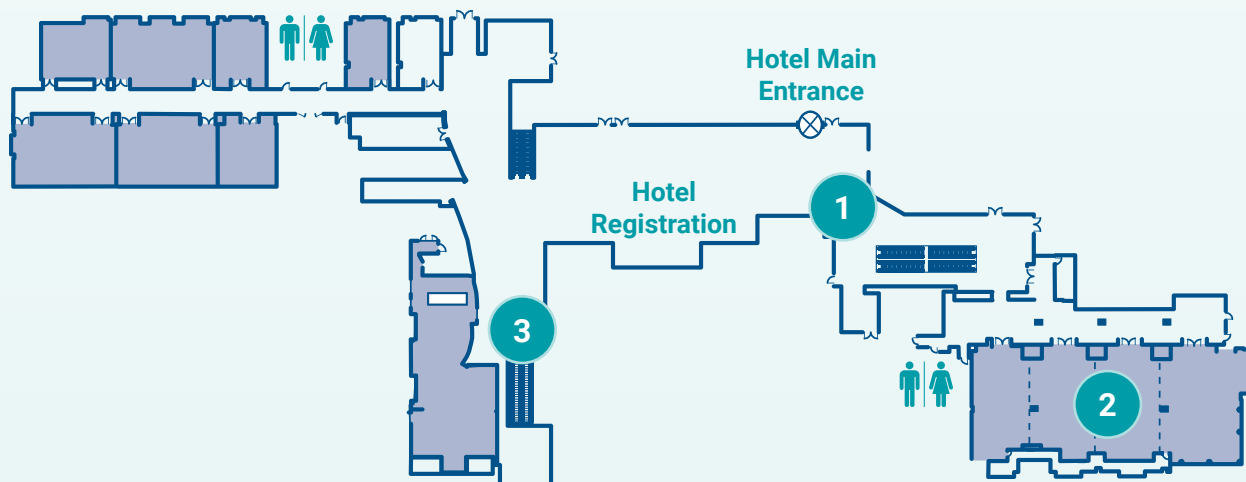
1. Philips MR 1.5T Mobile
Helium-Free Operations

3. Grand Ballroom
General Session

4. Thermo Fisher
Emerging Technology Zone
& Networking District

2. Forum Registration

Lobby Level



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Genentech Harbor Ballroom
First Look & Focused Sessions
Galleria – Tuesday Lunch

3. Escalator to Forum
Registration
Grand Ballroom

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